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December 28, 2021

Melanie Bachman, Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: Eastern Connecticut Reliability Project – Montville Junction to Ledyard Junction

Dear Ms. Bachman:

The Connecticut Light and Power Company doing business as Eversource Energy (“Eversource”) is requesting a Declaratory Ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed modifications to portions of four existing transmission lines, (100/400/1410/1280 Lines) in the Towns of Montville and Ledyard, Connecticut (“Petition”).

Prior to submitting this Petition, representatives from Eversource briefed municipal officials in Montville and Ledyard about the Project. Eversource provided written notice of the proposed work to all abutters and of the filing of this Petition with the Connecticut Siting Council. Maps of the Project area and line lists identifying the notified property owners are provided in the Petition as Attachment A: Aerial Maps.

Eversource is submitting this filing electronically and will deliver one hard copy original and 15 copies of the Petition and a check for the filing fee in the amount of \$625.

Sincerely,

A handwritten signature in blue ink, appearing to read "Kathleen M. Shanley".

Kathleen M. Shanley

Enclosure

cc: Fred Allyn, III, Mayor, Town of Ledyard
Ronald McDaniel, Mayor, Town of Montville

THE CONNECTICUT LIGHT AND POWER COMPANY
doing business as
EVERSOURCE ENERGY

PETITION TO THE CONNECTICUT SITING COUNCIL
FOR A DECLARATORY RULING OF
NO SUBSTANTIAL ADVERSE ENVIRONMENTAL EFFECT
FOR THE PROPOSED MODIFICATIONS TO THE EXISTING 100, 400, 1410 AND 1280 LINES
IN THE TOWNS OF MONTVILLE AND LEDYARD, CONNECTICUT

1. Introduction

The Connecticut Light and Power Company doing business as Eversource Energy (“Eversource” or “Company”) hereby petitions the Connecticut Siting Council (“Council”) for a Declaratory Ruling that no Certificate of Environmental Compatibility and Public Need (“Certificate”) is required pursuant to Section 16-50g *et seq.* of the Connecticut General Statutes for the modifications to the following transmission lines: 100, 400, 1410 and 1280. The 100 and 400 lines operate at 69 kilovolts (“kV”) and the 1410 and 1280 lines operate at 115-kV. All lines are located within an existing Eversource transmission right-of-way (“ROW”). The proposed modification work associated with these lines will be located in the Towns of Montville and Ledyard, Connecticut (“Towns”), as described herein (the “Project”) (See Figure 1, below). Eversource submits that a Certificate is not required because the proposed modifications would not have a substantial adverse environmental effect.

2. Purpose of the Project

The purpose of the proposed Project is to further implement components of the system solution as determined by the Independent System Operator – New England (“ISO-NE”) to address multiple low and high voltage violations in the Mystic, Connecticut to Kent County, Rhode Island corridor. Components of the determined system solution include, in part:

- converting the 100 Line from Montville Substation to Gales Ferry Substation¹ from 69-kV to 115-kV operation;
- converting the 400 Line from Gales Ferry Substation to Tunnel Substation and to Buddington Substation (a Groton Utilities facility) from 69-kV to 115-kV operation;
- upgrading and expanding the Gales Ferry Substation to facilitate the operation of the 100 and 400 Lines at 115-kV, and
- upgrading the Tunnel Substation to facilitate the operation of the 400 Line at 115-kV.

Together, these components of the determined solution² will help address the noted voltage violations, allow power to flow more easily into Connecticut and better accommodate future renewable energy interconnections. This Project would consist, in part, of reconductoring the 100 Line between Montville Junction and Gales Ferry Substation and the 400 Line between Gales Ferry Substation and Ledyard Junction.

In addition to the proposed modifications needed to address the reliability solution, this Project will also include modifications to the 1410 Line and the 1280 Line, which are within the same transmission corridor as the 100 Line and 400 Line segments that are included in this Petition. The purpose of these modifications is to improve system reliability by replacing degraded structures on the 1410 and 1280 Lines, reconductoring the 1410 Line and replacing the existing shield wire with optical ground wire (“OPGW”) on the 1280 Line. The structure replacements are being coordinated with the line work to avoid a near term return to the ROW

¹ The 100 Line and 400 Lines cannot be energized at 115-kV until the entire line and all terminals are converted to 115 kV. This Project is one component of the line upgrades. As part of this Project, Eversource does not seek to energize the rebuilt portion of the 100 or 400 Lines at 115 kV.

² Other components of the determined solution, including modifications to the Gales Ferry and Tunnel Substations, are or will be the subject of separate petitions to the Council.

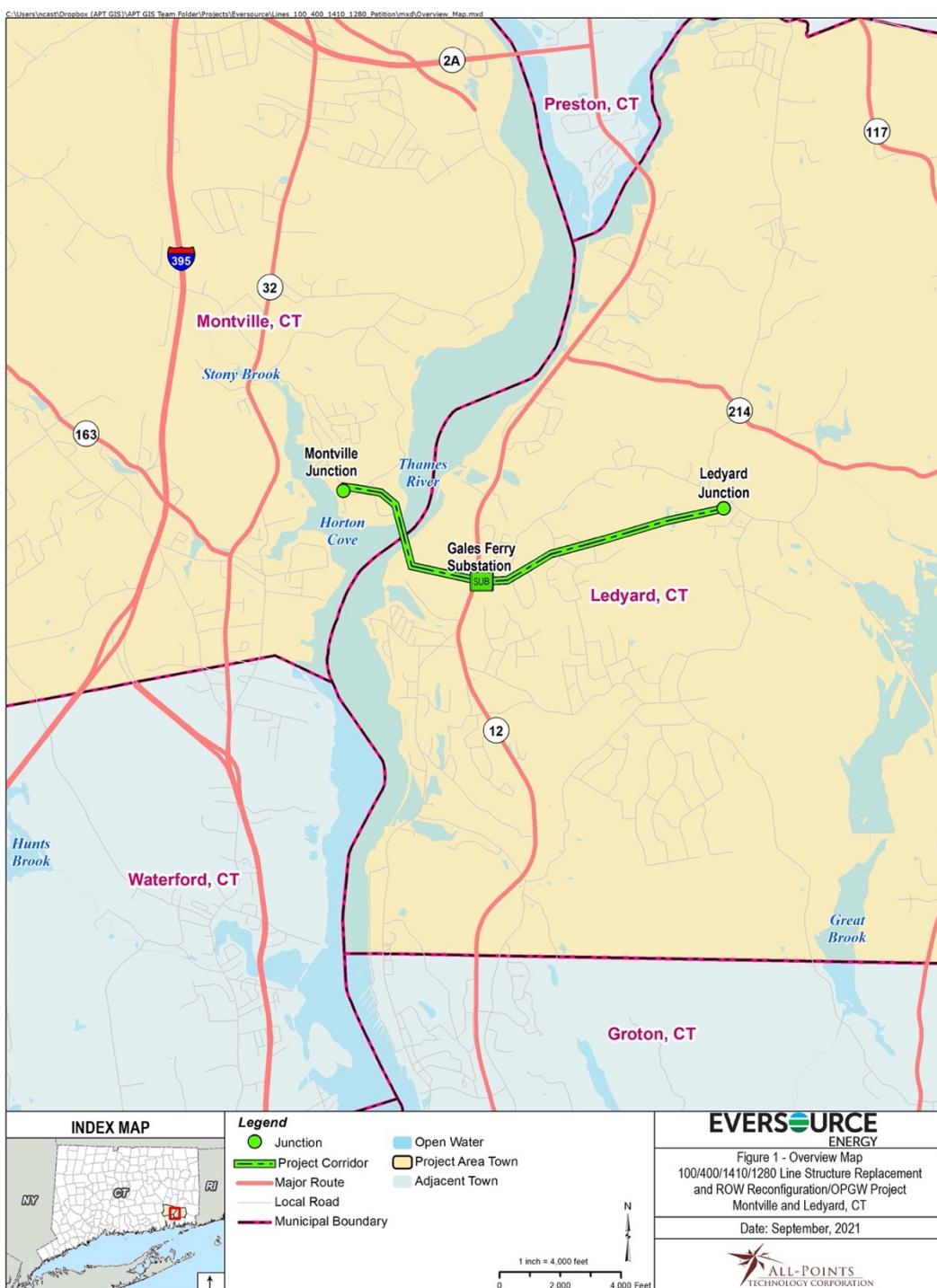
to undertake the asset condition replacements subsequent to the reliability project's completion and provide transparency as to the full scope of Eversource's planned project work in this area.

3. Project Area

As mentioned above, the proposed modifications to the 100 and 400 lines are necessary to help address high and low voltage violations identified in the "2029 Eastern Connecticut Reliability Needs Assessment" conducted by Independent System Operator - New England ISO-NE in 2018 and the "Eastern Connecticut (ECT) 2029 Solutions Study – Final" conducted by ISO-NE in June 2020.³ The Project work begins at a point near Montville Junction (Structures 7011A, 7011B and 8345), which structures are located approximately 1,000 feet northwest of the Thames River in Montville, and extends to Gales Ferry Substation, which is located just east of Whalehead Road in Ledyard, and continues from Gales Ferry Substation to Ledyard Junction, which is located just west of Whalehead Road in Ledyard (refer to Figure 1 – Project Overview, below). From the western terminus of the Project corridor in Montville to Gales Ferry Substation, the ROW corridor contains the 1410 Line on the north, the 100 Line in the center and the 1280 Line on the south. The 100 Line terminates at Gales Ferry Substation. East of Gales Ferry Substation to Ledyard Junction, the line configuration remains the same except the 400 line occupies the center position. In summary, the 100 Line runs from the Montville Junction to Gales Ferry Substation and the 400 Line runs from Gales Ferry

³ The 2027 Eastern Connecticut (ECT) Reliability Needs Assessment ("Needs Study") conducted by ISO-NE in 2018 identified multiple thermal overloads and low voltage violations in the Montville to Card and Montville to Killingly corridors, which would require upgrades to these substations and the 100 and 400 Lines. The Needs Study also identified low and high voltage violations in the Mystic to Kent Corridor (Kent is a National Grid substation in RI). In addition to the Project, the complete solution includes modifications to seven Eversource substations: Killingly, Montville, Shunock, Mystic, Card, Tunnel and Gales Ferry. The solution also requires improvements to the Groton Utilities' Buddington Substation. The 400 Line, which will be converted from 69-kV operation to 115-kV operation, extends beyond the Project area, south to Buddington Substation and north to Tunnel Substation. All of these other modifications have been or will be the subject of separate petitions to the Council.

to Ledyard Junction. The 1410 and 1280 Lines run the length of the Project corridor. The configuration of the lines is illustrated in Attachment A – Aerial Maps.

Figure 1: Project Overview Map

4. Project Description

The proposed Project components specific to each line are described in the subsections, below. Vegetation management activities will serve the entire Project, both the reliability work and the asset condition replacements. Further Project details are provided in the following attachments:

- Attachment A contains maps that depict the locations of existing and proposed structures, the Substation, existing and proposed access roads, and work pads to be used for the Project, as well as environmental resources, other ROW features, and Project elements.
- Attachment B includes typical cross-sections of the existing and proposed transmission line structures and the limits of the ROW.
- Attachment C lists the heights and configurations of the existing and proposed replacement structures. The heights of the existing structures range from 45 to 93 feet above ground level and many of the replacement structures will be taller due to the proposed vertical configuration needed to meet current NESC clearance requirements. The replacement structures will range in height from 84 feet to 140 feet above ground level. Replacement structures will be taller than the corresponding existing structures by between 20 and 54 feet.

4.1 Reconducto the 100 Line from Montville Junction to Gales Ferry Substation

The 100 Line is a 69-kV Line that was constructed in 1945. The current conductor on the 100 Line between Montville Junction and Gales Ferry Substation consists of 0.45 mile of 556-kcmil aluminum conductor steel reinforced (“ACSR”), with Copperweld shield wire supported on wood H-frame structures. Eversource proposes to replace the existing conductor with 1272-

kcmil aluminum conductor steel supported (“ACSS”) capable of operating at 115 kV. The existing shield wire(s) will be replaced with 48 fiber optical ground wire (“OPGW”). In addition to the reconductoring, four existing wood pole structures will be replaced with weathering steel monopoles in a vertical configuration. Following reconductoring, the 100 Line will continue to operate at 69 kV until the improvements at Gales Ferry substation are completed.⁴ The proposed transmission line work consists of the following:

- Replace four single-circuit H-frame wood structures (7016B, 7017B, 7018B and 7019B) with three direct embed weathering steel monopole structures and one engineered steel monopole on a concrete foundation.
- Replace approximately 0.45 mile of existing 556-kcmil ACSR conductor with 1272-kcmil ACSS conductor.
- Replace approximately 0.45 mile of existing Copperweld shield wire with 48-fiber OPGW shield wire.

4.2 Reconducto the 400 Line from Gales Ferry Substation to Ledyard Junction

The 400 Line was also originally constructed in 1945 on wood pole H-frame structures. The current conductor on the 400 Line between the Gales Ferry Substation and Ledyard Junction consists of 1.65 miles of 556-kcmi ACSR, with Copperweld shield wire. Eversource proposes to replace the existing conductor with 1272-kcmil ACSS capable of operating at 115 kV. The existing shield wire(s) will be replaced with 48-fiber OPGW. In addition to the reconductoring, 16 existing wood pole structures will be replaced with weathering steel monopoles in a vertical

⁴ Other required upgrades for the ECT solution subject to review and approval by the Council have been or will be filed separately. The future petition filing for upgrades at Gales Ferry Substation will also include the new terminations for the 100 and 400 lines necessary to operate the lines at 115 kV.

configuration and two new weathering steel monopoles at Ledyard Junction.⁵ Following completion of the reconductoring work, the 400 Line will continue to operate at 69-kV.⁶

The proposed transmission line work consists of the following:

- Reinstall one engineered weathering steel three-pole structure (Structure 7020-2) on new concrete foundations.
- Replace sixteen single-circuit H-frame wood structures with twelve direct embed weathering steel monopole structures and four engineered weathering steel monopole structures on concrete foundations (Structures 7021B through 7035B and 7037).
- Install two new engineered weathering steel monopole structures on concrete foundations (Structures 7036B and 7036B-2).
- Replace approximately 1.65 miles of existing 556-kcmil ACSR conductor with 1272-kcmil ACSS conductor.
- Replace approximately 1.65 miles of existing Copperweld shield wire with 48-fiber OPGW shield wire.

4.3 Reconduct and Reconfigure the 1410 Line from Montville Junction to Ledyard Junction

In addition to the improvements to the 100 and 400 Lines to support needed upgrades, the 1410 Line, which shares the same corridor, will be partially rebuilt, and reconfigured within the ROW. The 1410 Line, which was originally constructed in 1954 and operates at 115-kV, is comprised of 2.1 miles of 556-kcmil ACSR conductor supported primarily on wood pole H-

⁶ Similar to the 100 Line, upon completion of the remaining ECT upgrades, which are subject to separate review and approval by the Council, Eversource will petition the Council to operate the 400 Line at 115 kV.

frame structures. The existing conductor will be replaced with 1272-kcmil ACSS along with approximately 220 feet of 5000-kcmil cross-linked polyethylene (“XLPE”) underground at Ledyard Junction.⁷ Twenty wood pole structures supporting the 1410 Line will be replaced with weathering steel monopoles in a vertical configuration; one lattice tower will be replaced with a weathering steel transition structure to support the transition of the underground portion of the line at Ledyard Junction.

The proposed transmission line work consists of the following:

- Replace 20 existing single-circuit H-frame wood structures with 17 direct-embed weathering steel monopoles and three engineered weathering steel monopoles on concrete foundations with two single-circuit galvanized steel monopoles. (Structures 7016A through 7035A)
- Install approximately 220 feet of underground 5000-kcmil XLPE cable at Ledyard Junction.
- Replace approximately 2.1 miles of existing 556-kcmil ACSR conductor with 1272-kcmil ACSS conductor.
- Replace one lattice structure (Structure 8367) with a weathering steel transition structure (riser) and install one new weathering steel riser structure (to be designated Structure 7036A) to connect to the 220 feet span of underground cross-linked polyethylene insulated conductor at Ledyard Junction (Structure 7036A-2).

⁷ The purpose of the underground segment is to avoid clearance conflicts with the adjacent lattice structure that supports the 1280 Line (Structure 8367) and the structures supporting the 400 Line. Underground construction in this area will eliminate the need for additional replacement structures for the 1410 Line and would avoid the need to increase the heights of the replacement structures for the structures supporting the 400 Line.

- Install one temporary wood pole adjacent to Structure 7020A to facilitate the future installation of a tap from the 1410 Line to a temporary mobile transformer.⁸
- Replace approximately 2.1 miles of existing Copperweld shield wire with 48-fiber OPGW shield wire⁹.

4.4 Replace Shield Wire and Select Structures on the 1280 Line from Montville

Junction to Ledyard Junction

In addition to the above, Eversource proposes to modify the 1280 Line by adding 48-fiber OPGW on an approximate three-mile section from Structure 8343 in Montville to Structure 8370 in Ledyard. To support the new OPGW, seven structures supporting the 1280 Line would need to be replaced and one new structure would be constructed.

The proposed transmission line work consists of the following:

- Replace one existing single circuit wood three-pole structure with a single circuit weathering steel three-pole structure. (Structure 8357)
- Replace five existing single circuit wood H-Frame structures with single circuit weathering steel H-Frame structures. (Structures 8350 through 8353, Structure 8366)
- Replace one existing single circuit wood three-pole structure with a single circuit weathering steel engineered three-pole structure on foundations. (Structure 8354)
- Install one new single circuit weathering steel H-Frame structure to alleviate blowout and clearance concerns to meet current Eversource standards (Structure 8353-1).

⁸ The temporary mobile transformer will be included in a future petition filing for modifications to Gales Ferry Substation. The temporary structure is being requested now to coordinate this construction activity with the other structure installations.

⁹ It will be necessary to install conduit from Structure 7020A to Gales Ferry Substation to carry All-Dielectric Self-Supporting fiber optic cable (ADSS) for secure communications.

5. Existing Environment, Environmental Effects and Mitigation

The Project construction would be performed entirely within the existing transmission ROW or on Eversource owned property. This segment of the ROW is 165 feet wide, and vegetation is generally maintained for the full width of the ROW. No expansion of the existing ROW, or Gales Ferry Substation would be required for the Project work.¹⁰ The Project would not have a substantial adverse environmental effect, for reasons explained more fully below.

Land Use

Land uses adjacent to the Project area consist of a mix of rural residential areas, commercial/industrial, agricultural, and undeveloped lands such as forests, meadows, conservation/recreational properties, Horton Cove, and the Thames River. The ROW also abuts/crosses portions of the New England Central Railroad at Point Breeze Road and the Providence and Worcester Railroad on the eastern shore of the Thames River near Allyn Point.

Additionally, an industrial/chemical manufacturing facility is located slightly northeast of the ROW along the Thames River within Allyn Point.

Though the Project would traverse through some of these areas, it will not impact adjacent land uses. Eversource will work with any affected property owners to restore property conditions upon completion of the Project.

¹⁰ Required modifications to the Gales Ferry substation will be the subject of a separate petition.

Vegetation Removal

Vegetation management activities will serve the entire Project, both the reliability work and the asset condition replacements. The Project ROW ranges from approximately 130 feet wide (near structures 7036A-2 and 7036B-2) to approximately 200 feet wide, near structures 7016 and 7017, with a maintained width that varies along the ROW. While much of the Project would be located within the maintained ROW, some vegetation removal, and tree trimming would be required in select areas to accommodate access road installation and improvements, work pad installation and to remove incompatible species.

Vegetation removal would be accomplished using mechanical methods. This work typically requires the use of flat-bed trucks, brush hogs or other types of mowing equipment, skidders, forwarders, bucket trucks for canopy trimming, and chippers.

Eversource would require the clearing contractor to use low-impact clearing methods to remove brush vegetation to protect wetlands, watercourses, state-listed species and their habitats, and cultural resources. Low-impact clearing incorporates a variety of approaches, techniques, and equipment to minimize site disturbance. Eversource would require the contractor to use some or all of the following low impact clearing methods, depending on site-specific considerations:

- Take into consideration soil and weather conditions when scheduling vegetation removal activities, such as during periods of heavy rainfall;
- Maximize the use of uplands for clearing access routes;
- Use appropriately sized equipment for the site conditions, where possible, to minimize impacts; and,

- Where practical, cut brush close to the ground, leaving root systems and stumps, to retain soil stability.

Temporary construction mats would be used to provide a stable base for equipment across watercourses or within wetlands where hand clearing work is not feasible. Such temporary support would minimize temporary disturbances to wetland soils, and the mats would be removed after the activities are complete. Work activities in wetlands, including the proposed tree removal and vegetation removal/tree trimming, will be conducted in accordance with the Eversource's *2016 Construction & Maintenance Environmental Requirements, Best Management Practices Manual for Massachusetts, and Connecticut* ("BMPs") and comply with Project permits and approvals.

Following the completion of construction, Eversource would perform ROW restoration in accordance with the protocols specified in the BMPs and based on consultations with the property owners affected by the Project.

Scenic, Recreational and Cultural Resources

No portion of the ROW traverses or is located near a locally or state designated scenic roadway¹¹.

While the Project spans the Thames River, no impacts to boating, fishing or other water-based recreational activities are anticipated. The nearest known public boat launch facility, Gales Ferry Public Launch Ramp off Hurlbutt Road, is located approximately 0.4 mile to the southwest of the Project area.

¹¹ Connecticut Department of Transportation (CTDOT), October 1, 2019 Connecticut State Scenic Roads. Accessed May 15, 2020. Available URL: <https://portal.ct.gov/DOT/Programs/Connecticut-Scenic-Roads>. The Town of Ledyard does not have any listed scenic roads in proximity to the Project.

A desktop review of the Connecticut Department of Energy and Environmental Protection's ("CT DEEP") GIS and field investigations data was conducted to identify where portions of the ROW traverse or are adjacent to public open space property or trails. These areas, which are detailed below, provide a variety of recreational opportunities to the public.

A portion of the Project area passes through the Pine Swamp Wildlife Corridor (See Map Sheets 3-5 in Attachment A) which is managed by the Avalonia Land Conservancy ("Conservancy"). This tract of land provides maintained trails for hikers and walkers. While some of the work associated with the Project will temporarily affect public access to trails, Eversource would coordinate with the Conservancy to develop and implement measures to maintain public safety during Project construction, while also avoiding or minimizing short-term impacts to recreational users. Once construction is complete, Eversource would perform ROW restoration at this location in accordance with the protocols specified in the BMPs and based on consultations with the Conservancy¹².

In addition to the Pine Swamp Wildlife Corridor, the Project area is located immediately north of the Point Breeze Water Access Area (See Map Sheet 1 in Attachment A). This Water Access Area is an undeveloped wooded parcel owned and managed by Connecticut Department of Energy and Environmental Protection ("DEEP") for recreational purposes. The Project is not anticipated to have any impacts to this resource.

The Project area neither crosses nor is proximate to any Connecticut Blue-blazed hiking trails.

¹² Eversource is currently working with the Conservancy to develop these protocols.

A cultural (archaeological and historical) resource review of the proposed Project area was conducted by Heritage Consultants, LLC (“Heritage”) in January, July, September, and November of 2021. This review included the following:

- A Phase 1A Cultural Resources Assessment Survey (“Phase 1A”) using a three-step approach to: 1) gather and present data regarding previously identified cultural resources situated within the vicinity of the 100/400/1410/1280 Lines; 2) investigate natural and historical characteristics of the Project area; and 3) evaluate the need for completing additional cultural resources investigations.
- A Phase 1B Cultural Resources Reconnaissance Survey (“Phase 1B”) where Project activities are proposed based on the Phase 1A assessment.

The Phase 1A assessment review of previously recorded cultural resources on file with the Connecticut State Historic Preservation Office (“SHPO”) determined that, while there are no previously identified archaeological sites or inventoried historic standing structures in the vicinity of the Project, one National Register of Historic Places (“NRHP”) property and one State Register of Historic Places property is located within 500 feet of the Project area. Additionally, one historic burial ground, known as the Newton Cemetery, is located approximately 250 feet from the Project corridor. Based on the results of the Phase 1A and Pedestrian Surveys, 18 structure locations and 2 access roads within the Project area were identified to possess a potential for moderate to high archaeological sensitivity, prompting further investigation via the execution of a Phase 1B survey. The Phase 1A also determined that no direct impacts to either the NHRP and/or State Listed properties are anticipated. The Phase 1B Survey was completed in November of 2021 and while the results of the Phase 1B Survey resulted in the recovery of several historical and modern period artifacts, no prehistoric

cultural materials were discovered.¹³ The results of the Phase 1B Survey determined that no impacts to archaeological resources are expected by the Project and no additional archaeological examination is recommended. The results of the Phase 1B Survey results of the Phase 1B Survey will be provided to the Council, SHPO and the Tribal Historic Preservation Offices (“THPO”) of the Mohegan Tribe of Native Americans of Connecticut and the Mashantucket Pequot Tribal Nation for review. Any additional mitigation measures recommended by the Council, SHPO, and/or THPO will be incorporated into Eversource’s BMPs for construction.

Additionally, because the Project involves height increases of the replacement structures in order to meet NESC clearance requirements, limited indirect visual impacts to inventoried historical structures and/or National/State Register of Historic Places located beyond 500 feet from the Project area may be possible. Eversource is currently in contact with SHPO and the US Army Corps of Engineers ("USACOE") to discuss possible compensation measures for potential indirect visual impacts.

Wetlands, Watercourses, Waterbodies and Flood Zones

Eversource identified and delineated water resources in the Project area in May of 2020 (see Attachment D: Wetlands and Watercourses Report; see also the map sheets provided in Attachment A, which depict such water resources). Water resources include inland wetlands, watercourses (the Thames River and intermittent streams), ponds, a vernal pool, and Federal Emergency Management Agency (“FEMA”) Flood Zones. All work in or near these areas would be conducted in accordance with Eversource’s BMPs and with the conditions of

¹³ The historical and modern period artifacts found were determined to lack research potential and were assessed as not significant when applying the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]).

applicable regulatory permit conditions and approvals. Details on each of these resource areas are provided below.

Wetlands

Wetlands in the Project area were identified and delineated in accordance with industry standard methodology. A total of 13 wetlands were identified in or proximate to the Project area.

Permanent wetland effects would result from the replacement of one structure (7020A) currently located in wetlands, the installation of ADSS for the connection of structure 7020A to Gales Ferry Substation, and a permanent bridge to access structures 7030 through 7032. This proposed work will account for approximately 613 square feet of permanent wetland effects.

Additionally, two replacement structures (7020-2 and 8353) will be installed in Wetland 1. These two replacement structures are considered a “like-for-like” replacement and would not result in an incremental increase in permanent effects to Wetland 1.¹⁴

The Project will result in approximately 1.93 acres of temporary effects to wetlands due to the placement of one temporary pole installed near structure 7020A and construction mats for access roads and work pads.¹⁵ The temporary pole and all construction matting will be promptly removed upon Project completion and wetland areas will be restored in accordance

¹⁴ The foundation area for each existing H-frame structure (7020-2 and 8353) is approximately 77 square feet. The foundation area for each replacement monopole structure (7020-2 and 8353) is approximately 50 square feet.

¹⁵ The foundation area for the temporary pole would be approximately 38.5 square feet.

with Eversource's BMPs. Anticipated effects to wetlands from the Project are detailed on Table W-1.

Watercourses and Waterbodies

A total of seven watercourses and waterbodies were delineated within the Project area. These include Horton Cove, Thames River, four intermittent watercourses, and an unnamed pond (Wetland W7). Four temporary watercourse crossings will be required during construction, all for work pads. Each of these watercourses will be spanned using temporary construction mats. All construction mats will be promptly removed upon Project completion and wetland areas will be restored in accordance with Eversource's BMPs. The following Table W-1 provides a summary of Project effects to wetlands and watercourses:

Table W-1: Summary of Project Effects to Wetlands and Watercourses

Wetland / Watercourse ID	200 Scale Petition Mapping Sheet No.	Wetland / Watercourse Effects (± square feet)		
		Temporary (Matting)	Permanent	Secondary (Selective Tree Removal)
W1/S1	2	42,200	193	0
W2	3	2,378	0	0
W4/S2	4	102	0	0
W5/S3	4	1,519	0	0
W7	04-05	12,435	420	0
W8	5	1,670	0	0
W9	5	944	0	0
W10	5	5,838	0	0
W11/S4	5	17,140	0	0
TOTAL		84,226 (1.93 acres)	613 (0.01 acre)	0

Vernal Pools

The Project area was surveyed for vernal pools in late spring 2021. Survey methods used included visual surveys to identify adults and larvae, and dip-net surveys to identify amphibian larvae. One vernal pool was identified and delineated. This vernal pool and its vernal pool envelope (area within 100 feet of a vernal pool depression) are shown in Attachment A. The survey results and recommended protection measures are provided in Attachment E: Vernal Pool Survey. To minimize potential effects to vernal pools, Eversource would implement the recommended protection measures detailed in Attachment E.

FEMA Flood Zones

The Project ROW extends across 100-year FEMA flood zones associated with the Thames River (Attachment A – Map Sheet 1) and Wetland 1 (Attachment A – Map Sheet 2). One transmission line Structure (Structure 8353 – Attachment A – Map Sheet 6) is proposed within the 100-year flood zone. Additional work proposed within the 100-year flood zone is associated with temporary work pads needed for the construction of structures 7020A, 7020-2, 8353 and the temporary pole. This temporary work is not anticipated to have any significant impacts to the 100-year flood zone .

Water Supply

Based on Aquifer Protection Areas (“APA”) mapping maintained by CT DEEP, there are no APAs within the Project ROW. The Tower Division Level A Aquifer Protection Area is located approximately 500 feet south of the Project ROW in Ledyard. The Project ROW crosses the Groton Reservoir System Public Water Supply Watershed on Map Sheet 5. No public supply reservoirs or public water supply wells are located within the Project area. No private water supply wells were observed within the Project area during field investigation activities.

Eversource would require its contractors to employ best practices for the proper storage, secondary containment, and handling of diesel fuel, motor oil, grease, and other lubricants, to protect water quality within the Project area. Construction activities would conform to Eversource's BMPs, as well as to the requirements of Project-specific plans (e.g., Stormwater Pollution Control Plan; Spill Prevention and Control Plan), which would be prepared prior to the commencement of construction.

Wildlife and Habitat

The Project area extends through or over a variety of habitats including managed shrubland, forest edge, pond and riverine (Thames River) habitats. The habitats within the Project area is capable of supporting a variety of shrubland birds typical to the managed ROW and, due to the proximity to pond/riverine habitat, may provide nesting habitat for aquatic turtles. The Thames River provides open water habitat for a variety of waterfowl as well as wading birds, along with brackish wetland species including a variety of fish and other aquatic species.

Eversource has consulted with the CT DEEP Bureau of Natural Resources Wildlife Division's Natural Diversity Database ("NDDB") regarding protection of state-listed species within the Project area and submitted an NDDB Review Request on October 13, 2021 and received a response on October 25, 2021. NDDB identified one animal species that may require certain protection measure during specified times of the year. Eversource will implement species-specific protection and mitigation measures to avoid impacts to the listed species and their habitats during Project construction.

In addition to coordinating with the NDDB for the protection of state-listed species, Eversource consulted with the U.S. Fish & Wildlife Service's ("USFWS") Information, Planning, and Consultation ("IPac") service regarding federal-listed species that may be present within the

Project area. The IPaC report indicated one federal-listed species; the Northern Long-eared Bat (“NLEB”; *Myotis septentrionalis*) may potentially occur in proximity to the Project area.

NLEB roosts in certain trees in the warmer months of the year and at other times hibernates in caves and mines (bat “hibernacula”). However, according to the NLEB Areas of Concern in Connecticut map (dated February 2016), there are no known roost trees within 150 feet of the Project area while the nearest hibernacula is approximately 34 miles away to the southwest in North Branford. In addition, no tree clearing is proposed. Therefore, no impacts to this species are anticipated.

Visual Effects

The Project would result in some change to the visual character of the line. While taller than the existing structures, the new monopoles would be located as close as possible to the existing structures. The weathering steel monopole replacement structures will resemble the appearance of the existing wood structures and will blend with the surrounding wooded landscape.

The heights of the existing structures range from 45 to 93 feet above ground level and many of the replacement structures will be taller due to the change in design from a horizontal to a vertical configuration to meet NESC working clearance requirements within the existing ROW and space constraints resulting from the presence of the other transmission lines. The replacement structures will range in height from 57 feet to 140 feet above ground level. Replacement structures will be taller than the corresponding existing structures by between approximately 4 and 53 feet. The average height increase of the replacement structures is approximately 38 feet.

Some tree side trimming, and vegetation removal, including removal of incompatible species, would be required within the ROW to accommodate the Project. However, this work, will result in minimal change to the visual character of the ROW will not result in a significant visual effect on views beyond the area of the Project.¹⁶

As a result, the Project would not result in a detrimental change to the existing visual character of the line in this area, from nearby residential developments and publicly accessible land.

Sound Levels along the Transmission ROW

The construction of the Project would result in short-term and localized noise, as is typical of similar construction projects. The temporary increase in noise would likely raise localized ambient sound levels immediately surrounding the work areas due to the operation of standard types of construction equipment. (e.g., backhoe, bulldozer, crane, trucks, etc.)¹⁷. Upon completion of construction and during operation, the proposed Project would not have any effect on noise or sound pressure levels. Once in service, the rebuilt lines would not result in any changes to ambient noise levels.

Air Quality

Short-term, localized effects on air quality may result from the Project construction work, primarily from fugitive dust and equipment emissions. To minimize the amount of dust generated by construction activities, the extent of exposed/disturbed areas at any one time would be minimized. Vehicle emissions will be limited by requiring contractors to properly

¹⁶ As noted in the Scenic, Recreational and Cultural Resources section, above, because the Project involves height increases of the replacement structures, limited indirect visual impacts to inventoried historical structures and/or National/State Register of Historic Places located beyond 500 feet from the Project area may be possible.

¹⁷ Construction noise is exempted under the Connecticut regulations for the control of noise, RCSA 22a-69-1.8(g).

maintain construction equipment and vehicles, and by minimizing the idling time of equipment and vehicles, including diesel construction equipment, in accordance with Connecticut regulatory requirements¹⁸. Temporary gravel tracking pads would be installed at points of construction vehicle ingress/egress from the ROW to minimize the potential for equipment to track dirt onto local roads. To further minimize dust, water may be used to wet down disturbed soils or work areas with heavy tracking as needed.

Radio and Television Interference

There will be no increase in radio interference or audible noise from the operation of the new transmission facilities.

5. Traffic Management

Construction vehicles and equipment associated with the work would include, but are not limited to, pickup trucks, bucket trucks, flat-bed trucks, excavators, concrete trucks, drill rigs, front loaders, reel trailers, bulldozers, woodchippers, brush hogs/mowers, forklifts, side booms, dump trucks and cranes. Pullers and tensioners will be used for the line work. Helicopter work also may be necessary. Guard trucks and/or temporary guard structures would be used for protection of roads during the line work.

Construction-related vehicular and equipment movements would utilize public roads in the Project area to access the ROW. However, the Project-related traffic is generally expected to be temporary and highly localized in the vicinity of the ROW access points and at the staging areas.

¹⁸ Regulations of Connecticut State Agencies (RCSA) Section 22a-174-18(b)(3)(C) generally prohibits the idling of motor vehicles for more than three consecutive minutes when not in motion.

Due to phasing of construction work, these Project-related traffic movements are not expected to significantly affect transportation patterns or levels of service on public roads.

To safely move construction vehicles and equipment onto and off of the ROW while minimizing disruptions to vehicular traffic along public roads, Eversource or its Project contractor would, as appropriate, work with the Towns and the Connecticut Department of Transportation to develop and implement traffic management procedures, as needed. The construction contractor is typically responsible for posting and maintaining construction warning signs along public roads near work sites and for coordinating the use of flaggers or police personnel to direct traffic, as necessary.

6. Construction Sequence

Construction is scheduled to begin in early 2022 with a proposed in-service date in the fourth quarter of 2022, provided that all necessary permits and authorizations are received according to schedule. Project construction would include the following activities¹⁹:

Staging/Laydown Areas

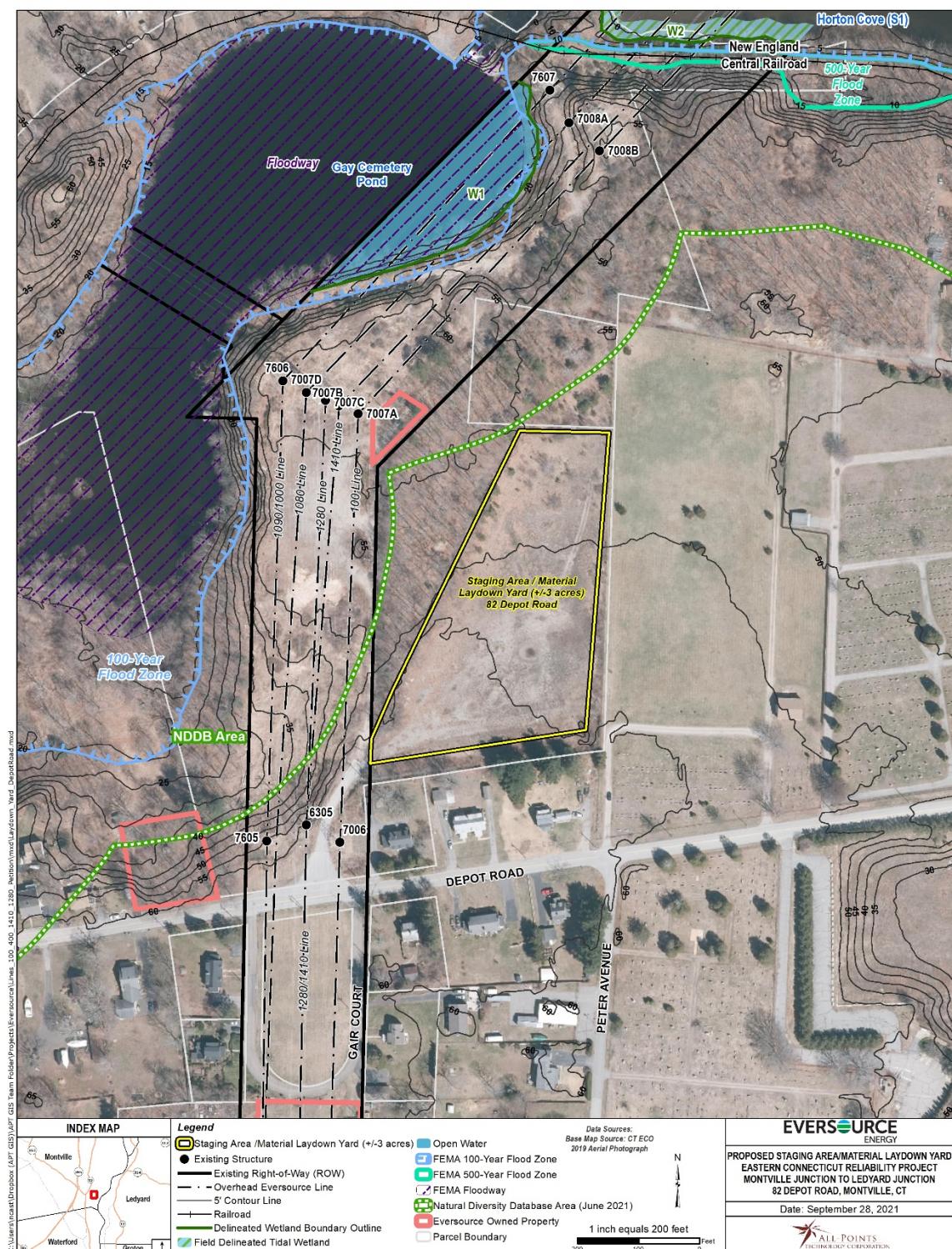
To support Project construction, Eversource proposes to use as a staging/laydown yard an existing leased area encompassing approximately 2 acres and located at 82 Depot Road. Figure 2 illustrates the location of this staging/laydown yard.

The staging area would be used for surface storage of construction materials, equipment, tools, and supplies (including conductors, cable reels, insulators, hardware, poles, and mats) for the Project. Office trailers and equipment storage containers may be located at the staging area. Existing transmission line components removed during the work (structures, conductor,

¹⁹ Construction activities will be coordinated between the reliability and the asset condition work.

hardware, and insulators) may be temporarily accumulated and stored at the staging area prior to removal off-site for salvage and/or disposal. The staging area may also be used by construction crews for parking personal vehicles as well as for construction vehicles and equipment storage, and for performing minor maintenance, when needed, on construction equipment. Appropriate erosion and sedimentation ("E&S") controls would be installed and maintained until completion of the work in accordance with Project permits and the BMPs.

Figure 2: Staging and Laydown Areas at 82 Depot Road, Montville, CT



Soil Erosion and Sediment Control Installation

Project construction would conform to best management practices for iControl, including those provided in the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* ("Connecticut Guidelines") and Eversource's BMPs. This will include the development of a project specific Stormwater Pollution Control Plan ("SWPCP") and registration under CT DEEP's *General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, effective 10/1/13* ("General Permit").

Typical E&S control measures include, but are not limited to, straw blankets, hay bales, silt fencing, gravel anti-tracking pads, soil and slope protection, water bars, check dams, berms, swales, plunge pools, and sediment basins. Silt fence would be installed prior to construction to intercept and retain sediment and/or construction materials from disturbed areas and prevent such materials from discharging to water resources or off ROW. Temporary E&S control measures would be maintained and inspected throughout the Project to ensure their integrity and effectiveness and for compliance with the General Permit. The SWPCP inspections will be in accordance with the General Permit requirements. Following completion of the rebuilt line facilities, seeding and mulching would be completed to permanently stabilize the areas disturbed by the work. The temporary E&S control measures would remain in place until the Project work is complete and all disturbed areas have been deemed and remain stabilized.

Access Roads and Work Pads

Access to each proposed transmission structure location will be required during Project construction. As a result of the operation and maintenance of the existing lines within this ROW, some access roads are already established and Eversource will utilize these existing access roads to the extent possible. However, some new access roads will be required.

Construction matting will be utilized to install temporary access roads through wetland areas to reach certain structure locations. The access roads expected to be used for the proposed Project are illustrated on the maps in Attachment A.

Existing access roads may need to be improved (graded, widened, and/or reinforced) with additional stone material in order to accommodate the safe passage of construction vehicles and equipment. Access road improvements typically include trimming adjacent vegetation and widening roads, as needed, to provide a maximum travel surface that is approximately 16 feet wide (additional width may be needed at turning or passing locations). Access roads would typically be graveled; however, where access roads traverse streams or wetlands, timber construction mats or rail car bridges would be used. E&S controls would be installed as necessary before the commencement of any improvements to or development of access roads.

At each transmission line structure location, a work pad is required to stage material for final on-site assembly and/or removal of structures, to pull conductors and to provide a safe, level work base for the construction equipment. Typical work pads are 100 feet by 100 feet but, due to terrain and spacing between the existing and proposed structures, the work pads may be up to approximately 110 feet by 120 feet. In areas where machinery is needed for pulling conductors through an angled structure, work pads of approximately 130 feet by 80 feet are required. Most work pads will be graveled, though some will use temporary matting to protect sensitive resource areas (i.e., lawn, meadow and identified cultural resource areas) or where work pads are located in wetlands.

To facilitate future transmission line maintenance, access roads, structure work pads in uplands would be left in place (refer to attachment A). If an individual property owner requests

their removal, the Project representatives will work with the property owner on mitigation options. No new permanent access roads or work pads are proposed in water resource areas.

The proximate locations and configuration of the work pads, as determined based on the environmental field studies and constructability reviews, are shown on Attachment A.

Foundation Installation

The proposed structures will have either drilled (caisson) foundations or direct embed foundations. Foundation installation work would require the use of equipment such as augers, drill rigs, pneumatic hammers, augers, dump trucks, concrete trucks, grapple trucks and light duty trucks. If groundwater is encountered, and when working within wetlands, pumping (vacuum) trucks or other suitable equipment would be used to pump water from the excavated areas as the shaft is being drilled or as the structure is being set. The water would then be discharged in accordance with applicable local, state, and federal requirements.

Excavated soils that are generated during construction activities would be stored or spread in an upland area within the ROW, to the extent practicable. Materials that cannot be utilized as backfill would be disposed in accordance with applicable regulations.

As needed, counterpoise installation may also take place at this time. Depending on site-specific soil conductivity, supplemental grounding will be installed. A quad “ditch-witch” plow-cable trencher would be used to install the counterpoise.

Structure Assembly/Installation

Structure sections, structure components and hardware would be delivered to the individual structure locations using flat-bed trucks and assembled on-site using a crane and bucket

trucks. After assembly, the area around direct embed foundations would be backfilled with processed gravel.

Conductor and OPGW Installation

The installation of the new conductors (including attachment hardware and insulators) and OPGW would occur after the new structures have been erected. The equipment required for these activities would include conductor reels, conductor pulling and tensioning rigs, and bucket trucks. Once the structures, conductors and OPGW are installed, grounding work and counterpoise installation will be completed, as necessary.

Structure, Conductor and Static Wire Removal

The removal of the existing conductor and shield wire would take place during the active installation of the new conductor and OPGW because the existing conductor and shield wire will be used as pulling lines, if possible. Conductor dead-ending and splicing will be accomplished with pressed hardware. The existing structures would be removed after the new conductor and OPGW are installed.

Restoration

Once the new structures are erected, the line is energized and the existing structures have been demolished and removed, ROW restoration activities would commence. Restoration activities would include the removal of construction debris, signage, flagging, and temporary fencing, as well as the removal of construction mats and work pads that are designated for removal. Areas affected by construction would be re-graded as practical and stabilized using revegetation or other measures before removing temporary E&S controls. Eversource would

perform ROW restoration in accordance with the protocols specified in Eversource's BMPs and in consultation with affected property owners.

Waste Management

Waste materials, such as structure components (i.e., materials from the removed structures, conductor, shield wire, associated hardware, etc.) and any other construction debris would be disposed of in accordance with Eversource's BMPs, applicable regulations or recycled consistent with applicable rules and regulations and Eversource policies. As described above, excess soils would be managed in accordance with the Company's BMPs, applicable regulations and disposal facility policies. Dewatering during construction activities would be conducted in accordance with the *Connecticut Guidelines*, Eversource's BMPs and applicable regulations.

7. Construction Schedule and Work Hours

Eversource proposes to begin construction in Spring 2022. Normal work hours would be Monday through Saturday from 7:00 AM to 7:00 PM. Sunday work hours or evening work hours past 7:00 PM may be necessary due to delays caused by inclement weather and/or outage constraints. In the event this is necessary, the Council, Town(s) and abutters will be provided notice of the proposed Sunday and/or evening work hours.

8. Electric and Magnetic Fields

Eversource prepared calculations of the existing and post-Project Electric and Magnetic fields ("EMF"). The calculations were based on average annual loading conditions because these

are most representative of typical conditions.²⁰ The calculations are made relative to the centerline of the proposed, modified transmission lines. The calculations apply at one meter (3.28 feet) above grade and assume that the lowest conductor for each 115-kV circuit is 30 feet above grade.

Eversource's proposed design for the Project employs a single-circuit configuration of three phase conductors supported on tubular steel poles, in contrast to the existing horizontal configuration primarily on wood H-frames structures and one lattice structure. Magnetic fields at and beyond the edges of the ROW would increase.

Electric fields at the edges of the ROW would increase slightly at the southern edge of the ROW but would decrease slightly on the northern edge of the ROW. The maximum fields in the ROW and at the southern edge will be essentially unchanged.

Table 1 summarizes the calculated electric and magnetic fields at the ROW edges before and after the modifications.

Table 1 - Summary of Calculated Electric and Magnetic Fields

The results of the calculations show that the proposed modifications would not substantially increase electric or magnetic fields at the edges of the ROW. See Attachment F: EMF Graphs.

²⁰ The calculations of the proposed electric and magnetic fields are based on 115-kV operation. However, the 100- and 400- Lines will not be energized at 115 kV until the substations and terminal connections are upgraded to 115-kV capacity. The request to energize the lines at 115 kV will be the subject of a separate petition. The electric and magnetic fields of the proposed lines are expected to be lower than the existing fields due to the increase in height of the conductors.

Structure 7015 - Gales Ferry Substation (Annual Average Loads)		North ROW Edge	Max in ROW	South ROW Edge
Magnetic Fields (mG)	Existing	20.1	47.9	28.4
	Proposed	34.7	117.1	38.2
Electric Fields (kV/m)	Existing	0.47	0.60	0.44
	Proposed	0.25	1.42	0.60

Gales Ferry Substation - Ledyard Junction (Annual Average Loads)		North ROW Edge	Max in ROW	South ROW Edge
Magnetic Fields (mG)	Existing	14.4	45.6	23.8
	Proposed	33.5	97.5	34.8
Electric Fields (kV/m)	Existing	0.41	0.50	0.40
	Proposed	0.27	1.55	0.53

Comparison of Calculated Fields to International Guidelines

The anticipated fields resulting from the proposed Project are well below the internationally established exposure limits for 60-Hz electric and magnetic fields, specifically, the limits identified by the International Council on Electromagnetic Safety (“ICES”) and the International Council on Non-Ionizing Radiation Protection (“ICNIRP”). These standards are summarized below in Table 2.

Table 2 - International Guidelines for EMF Exposure

	Magnetic Field (mG)	Electric Field (kV/m)
ICNIRP	2000	4.2
ICES	9040	5 (in General)
		10 (on ROW)

9. Municipal and Property Owner Outreach

In October 2021, Eversource consulted with the municipal officials in the Towns of Ledyard and Montville to brief them on the proposed Project. Additionally, in late-December 2021, Eversource provided representatives of the Towns with written notice of the Petition filing.

Beginning in September 2021, Eversource conducted outreach to property owners located along the ROW. In conjunction with the submission of this Petition, all abutting property owners were notified of the filing and provided information on how to obtain additional information on the Project, as well as how to submit comments to the Council. Eversource representatives will continue contact with adjacent property owners to provide advance notification as to the start of construction activities and will continue to update property owners throughout construction and restoration.

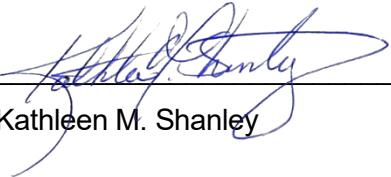
10. Conclusion

Based on the foregoing, Eversource respectfully submits that the proposed modifications would not result in a substantial adverse effect on the environment, nor would they damage existing scenic, historical, or recreational values. Accordingly, Eversource requests that the Council issue a declaratory ruling that the proposed modifications would have no substantial adverse environmental effect.

Communications regarding this Petition for a Declaratory Ruling should be directed to:

Kathleen M. Shanley
Manager – Transmission Siting
Eversource Energy
PO Box 270
Hartford, CT 06141-0270
Telephone: (860) 728-4527

By:

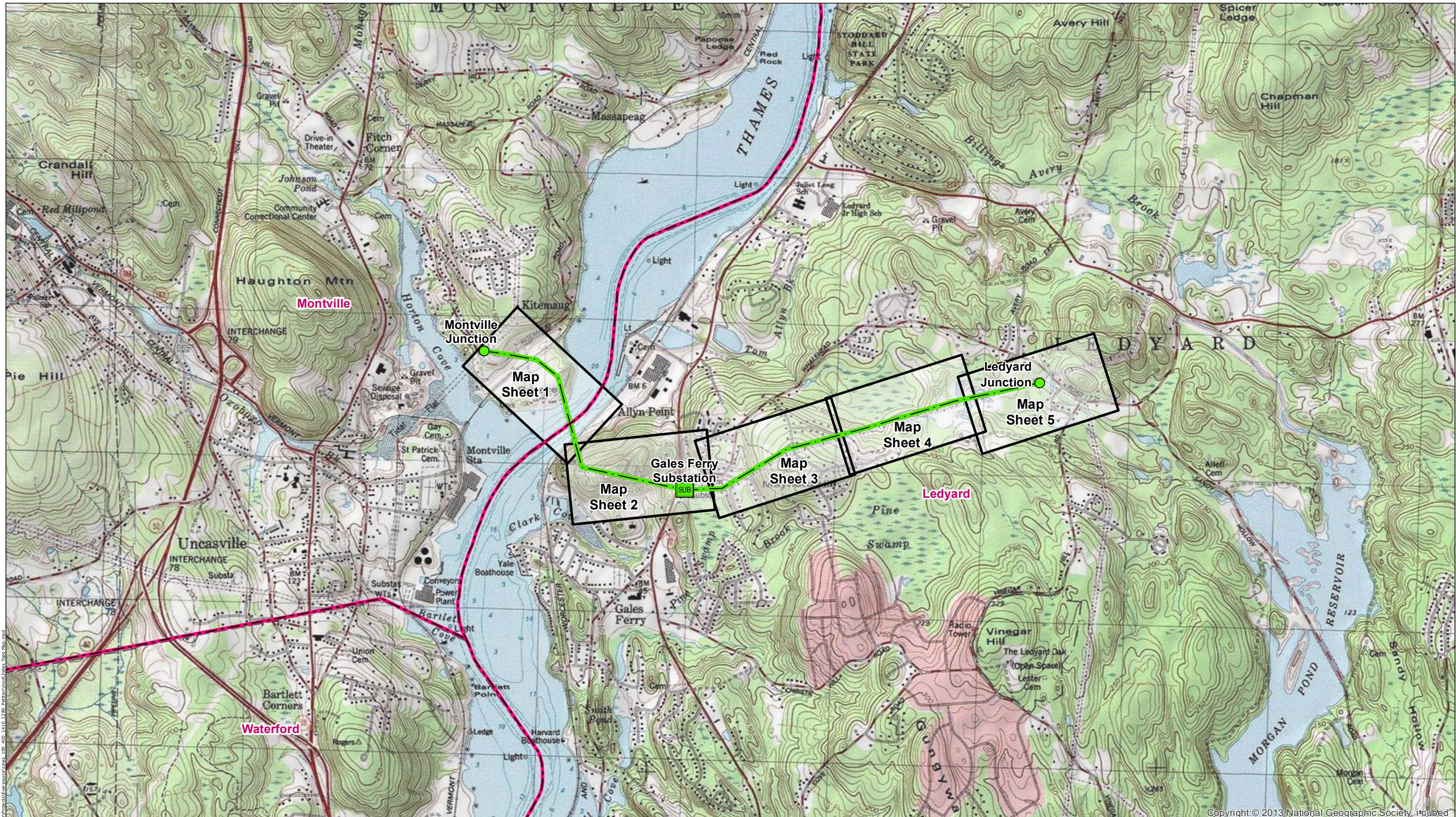


Kathleen M. Shanley

List of Attachments

- Attachment A: Aerial Maps
- Attachment B: Right-of-Way Cross Sections
- Attachment C: List of Structure Replacements
- Attachment D: Wetlands and Watercourses Report
- Attachment E: Vernal Pool Survey
- Attachment F: EMF Graphs
- Attachment G: Letter to the Abutters and Affidavit

Attachment A: – Aerial Maps



Legend

- Substation
- Map Sheet
- Station
- Project Corridor
- Municipal Boundary

Base Map Source: ESRI USA Topographic Maps

1:24,000
0 1,000 2,000
Feet

NO. DATE REVISIONS

EVERSOURCE ENERGY

Index Map
Eastern Connecticut Reliability Project
Montville Junction to Ledyard Junction

Montville and Ledyard, CT

Date: December 10, 2021

Map Author: N. Castro

ALL-POINTS TECHNOLOGY CORPORATION

MAPSHEET 1 OF 5

**100/400/1410/1280/1280 Asset Condition Replacement
and ROW Reconfiguration/OPGW Project
Pull Pad Between Structures 8342 and 8347
Town of Montville, Connecticut**

AREA DESCRIPTION*Existing Land Use & Resource Areas*

- Horton Cove
- Thames River
- 100-Year Flood Zone
- Natural Diversity Database Area
- Residential
- Undeveloped, Forest
- State-Owned property (Point Breeze Water Access)
- Natural Diversity Database Area
- Railroad (New England Central and Providence & Worcester)

<u>Line List Number</u>	<u>Parcel Address</u>	<u>City</u>	<u>State</u>	<u>Owner Name</u>
225A-001	RR ROW	LEDYARD	CT	RR ROW P & W
225A-001.1	10 POINT BREEZE RD	MONTVILLE	CT	COREY B TONDREAU AND SAMANTHA GCHOLEWA
225A-001.2	6 POINT BREEZE RD	MONTVILLE	CT	LOLA ANN & JACK A D ELIA
225A-001.3	2 POINT BREEZE RD	MONTVILLE	CT	STANLEY R GORTON
225A-001.4	285 KITEMAUG RD	MONTVILLE	CT	THOMAS F & DEBORAH JP SAVOY
225A-001.5	9 POINT BREEZE RD	MONTVILLE	CT	THOMAS D & TINA M GROVE
225A-002	1761 ROUTE 12	LEDYARD	CT	TRINSEO LLC
226A-006	207 KITEMAUG RD	MONTVILLE	CT	THEODORE L & MELANIE D MORRISSETTE
152	192 KITEMAUG ROAD	MONTVILLE	CT	BRANDON J & NOELE M MORSE
153	248 KITEMAUG ROAD	MONTVILLE	CT	ROBIN MEYER
158	POINT BREEZE RD	MONTVILLE	CT	STATE OF CONNECTICUT

RIGHT-OF-WAY DESCRIPTION*Right-of-Way Land Use & Resource Areas*

- Maintained ROW
- Maintained meadow/lawn from structures 7011/8345 to 7012/8346
- Residential adjacent to structures 7012/8342/8346
- Railroad (New England Central) adjacent to structures 7011/8345
- Railroad (Providence & Worcester) north of structure 8348
- Natural Diversity Database Area at structures 7013/8347 and north of structure 8348
- Thames River southeast of structures 7013/8347
- 100-year Flood Zone at structures 7013/8347 and north of structure 8348

Water Resources

- Wetlands – TW-1 Horton Cove
- Wetland Cover Types –POW, PEM
- Watercourse – Horton Cove, Thames River

Wetland and Watercourse Crossings

- Thames River

Right-of-Way Vegetation

- Scrub-shrub

Access

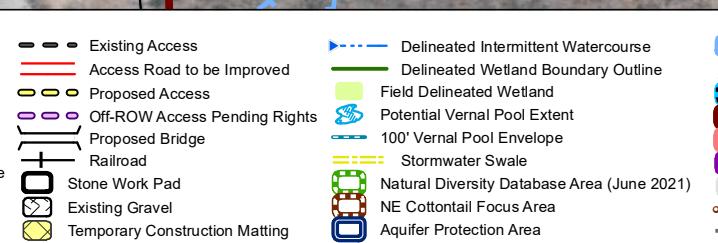
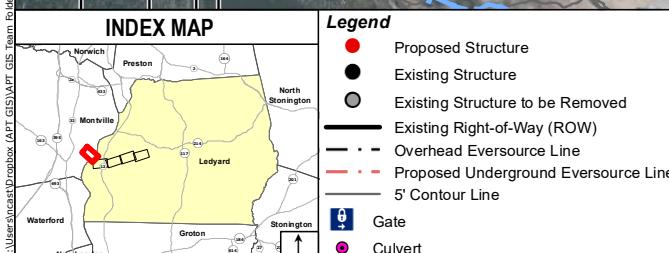
- Structures 8342/8343: From existing access road originating off of Kitemaug Road
- Structures 7011 A/B/8345 to 7013/8347: From Off-ROW access originating off of Point Breeze Road

Road Crossings

- Cove Road
- Kitemaug Road
- Point Breeze Road

*Existing Maintained Right-of-Way Width / Proposed Right-of-Way**Clearing*

- 118-feet (structures 8342/8343) / 0-Feet
- 200-feet (structure 7011 to 8347) / 0-Feet



Row boundary, existing, and proposed structure locations provided by Eversource (12/9/2020).
Wetland data delineated by APT - DE in May and Dec. 2020.

11.1.2009 11:45:00

1 inch = 200 feet

Fe

0 50 100 200

1 inch = 200 feet

Fe

0 50 100 200

EVERSOURCE ENERGY

ENERGY

Montville Junction to Ledyard Junction

Map Sheet 1 of 5

December, 2021



MAPSHEET 2 OF 5

**100/400/1410/1280 Asset Condition Replacement
and ROW Reconfiguration/OPGW Project
Structures 8348 to 7021 A/B
Town of Ledyard, Connecticut**

AREA DESCRIPTION*Existing Land Use & Resource Areas*

- Thames River
- Natural Diversity Database Area
- Residential
- Undeveloped, Forest
- Eversource owned property, Gales Ferry Substation
- 100-Year Flood Zone
- CT NEC Focus Area

RIGHT-OF-WAY DESCRIPTION*Right-of-Way Land Use & Resource Areas*

- Maintained ROW
- Railroad (New England Central) adjacent to structures 7011/8345
- Railroad (Providence & Worcester) north of structure 8348
- Natural Diversity Database Area north of structure 8348
- Gales Ferry Substation

<u>Line List Number</u>	<u>Parcel Address</u>	<u>City</u>	<u>State</u>	<u>Owner Name</u>
071-063-001	1695 ROUTE 12	LEDYARD	CT	DOMINICK CERAVOLO
071-063-002	4 ANDERSON DR	LEDYARD	CT	RAYMOND S & ROBERTS PIERSON AND ANNE TPIERSON
071-063-003	291 WHALEHEAD RD	LEDYARD	CT	BENJAMIN J & SHELLEY R STEENDAM
071-063-004	287 WHALEHEAD RD	LEDYARD	CT	JBCUBED LLC
071-063-005	285 WHALEHEAD RD	LEDYARD	CT	ANDREW J DICK
225A-001	RR ROW	LEDYARD	CT	RR ROW P & W
225A-002	1761 ROUTE 12	LEDYARD	CT	TRINSEO LLC
225A-003	6 CHAPMAN LN	LEDYARD	CT	B UNITED METHODIST CHURCH OF GALES FERRY INC.
225A-004	1711 ROUTE 12	LEDYARD	CT	MADELINE C. SLATER AND LEONARD P. SLATER
225A-005	2 ANDERSON DR	LEDYARD	CT	ERIC PETERSEN
225A-006	301 WHALEHEAD RD	LEDYARD	CT	CONNECTICUT LIGHT AND POWER CO.
225A-007	303 WHALEHEAD RD	LEDYARD	CT	HEIDI L. MIMS
225A-008	1700 ROUTE 12	LEDYARD	CT	JASON ANDREW SECHRIST
225A-009	28 FERRY VIEW DR	LEDYARD	CT	DAVID PROVOST
225A-010	53 NORMAN DR	LEDYARD	CT	TOWN OF LEDYARD
225A-011	295 WHALEHEAD RD	LEDYARD	CT	REGINA S. TURETSKY AND ROBERT A. AND CHARLES S. NIEDERMAN
225A-012	285R WHALEHEAD RD	LEDYARD	CT	TOWN OF LEDYARD
225A-013	283 WHALEHEAD RD	LEDYARD	CT	MICHAEL E. WINSLOW

Water Resources

- Wetlands – W-1
- Wetland Cover Types – PEM, PSS
- Watercourse – S1 (intermittent)

Wetland and Watercourse Crossings

- Wetland W-1 - construction mats for work pad

Right-of-Way Vegetation

- Scrub-shrub

Access

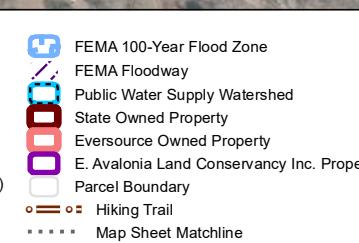
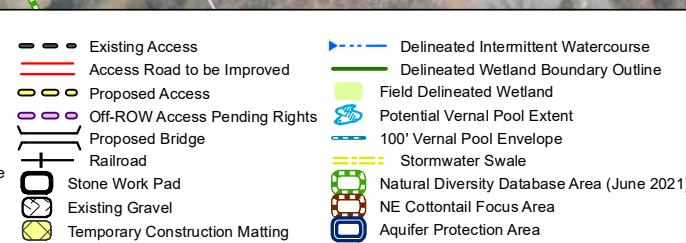
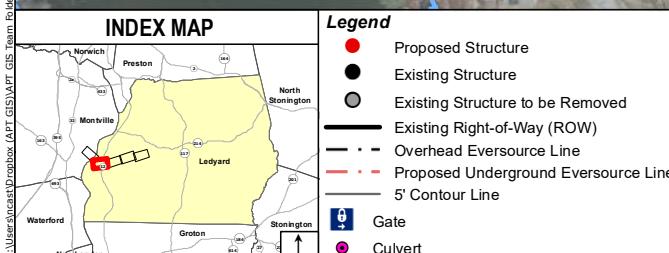
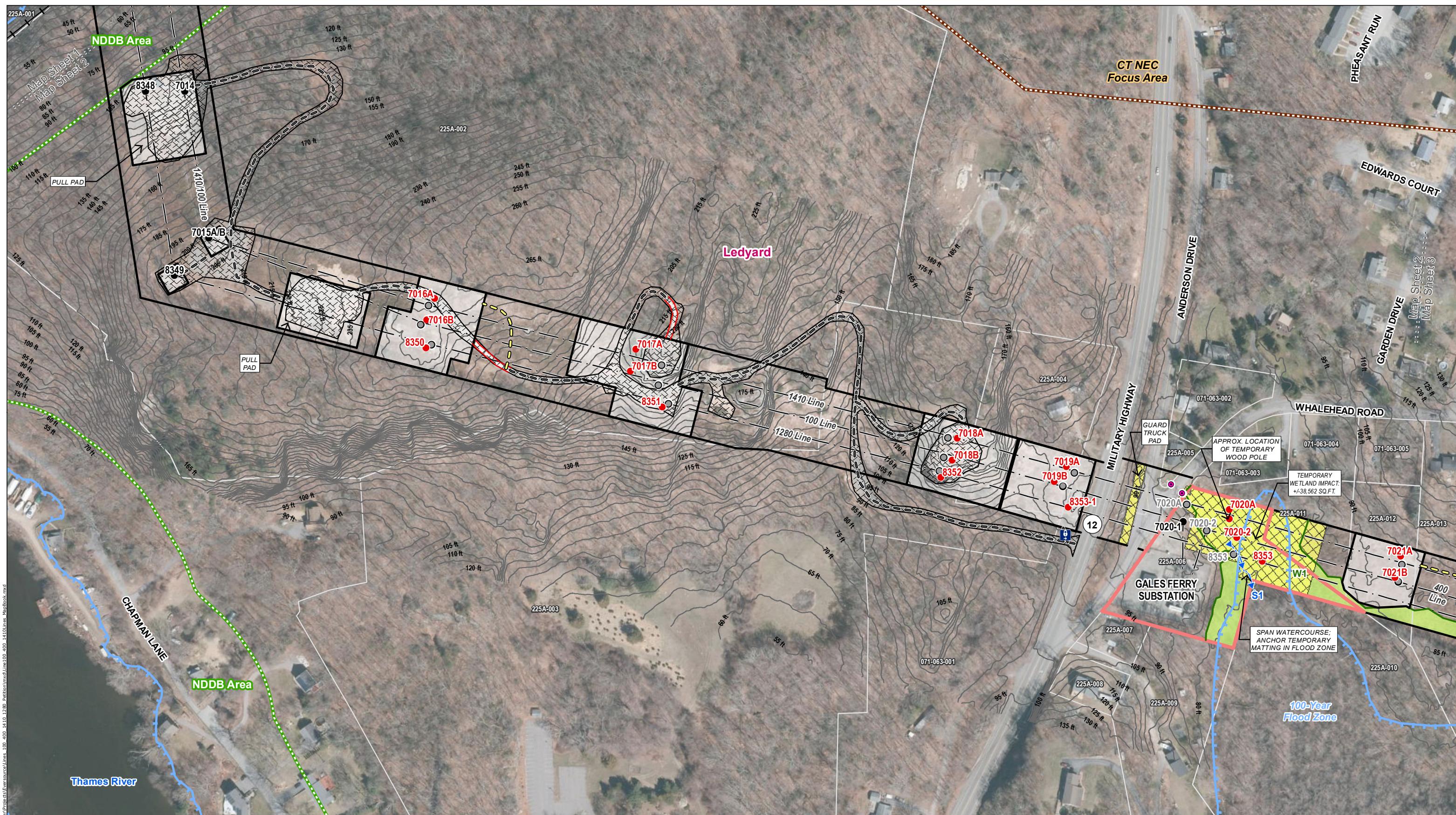
- Structures 7014/8348 to 7019 A/B/8353-1: From existing access road originating off of Military Highway (CT Route 12)
- Structures 7020A to 8353: From Whalehead Road
- Structures 7021 A/B: From new access road originating off of Terry Road (see Map Sheet 3)

Road Crossings

- Military Highway (State Highway Route 12)
- Anderson Drive
- Whalehead Road

Existing Maintained Right-of-Way Width / Proposed Right-of-Way Clearing

- 200-feet (structures 7014 to 7017 A/B) / 0-Feet
- 165-feet (structure 7018 A/B to 7021 A/B) / 0-Feet



Map Notes:
Base Map Source: ESRI Aerial Imagery; CT ECO 2019 imager
This mapping product has been created to comply with submittal requirements to obtain certain regulatory approvals and, as such, there is no reliance on the information contained herein for any other purpose. Parcel boundaries are approximate (NOT survey).
Parcels and LLLN provided by Eversource in May 2020.
ROW boundary, existing, and proposed structure location
provided by Eversource (12/29/20).
Wellhead data collected by ADT, DEP in May and Dec. 2020.

EVERSOURCE ENERGY

Eastern Connecticut Reliability Project
Montville Junction to Ledyard Junction

Ledyard

Map Sheet 2 of 5
December 2021



MAPSHEET 3 OF 5

**100/400/1410/1280 Asset Condition Replacement
and ROW Reconfiguration/OPGW Project
Structures 7022 A/B to 8359
Town of Ledyard, Connecticut**

AREA DESCRIPTION

Existing Land Use & Resource Areas

- E Avalonia Land Conservatory property
- Hiking Trails
- CT NEC Focus Area
- 100-Year Flood Zone
- Residential
- Undeveloped, Forest

RIGHT-OF-WAY DESCRIPTION

Right-of-Way Land Use & Resource Areas

- Maintained ROW
- Residential adjacent to 7024 A/B and 7026 A/B
- E Avalonia Land Conservatory property
- Hiking Trails
- CT NEC Focus Area – Structures 7025 A – 7028 A/B

Water Resources

- Wetlands – W-1, W-2, W-3
- Wetland Cover Types – PEM, PSS
- Watercourse – none

Wetland and Watercourse Crossings

- Wetland W-2 - construction mats for work pad and access

Right-of-Way Vegetation

- Scrub-shrub
- Residential, Lawn

Access

- Structures 7022 A/B/8354: From Proposed access originating off of Terry Road
- Structures: 7023 A/B: From matted access originating off of Terry Road
- Structures 7024 A/B to 7025 A/B/8357: From existing access road originating off of Sherwood Terrace
- Structures 7026 A/B to 7027 A/B/8359: From existing access road originating off of Friar Tuck Drive and/or matted access originating off of Queen Eleanor Drive

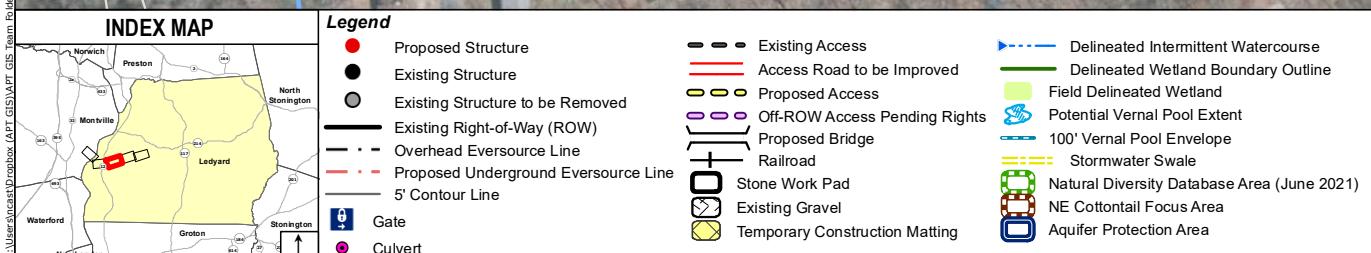
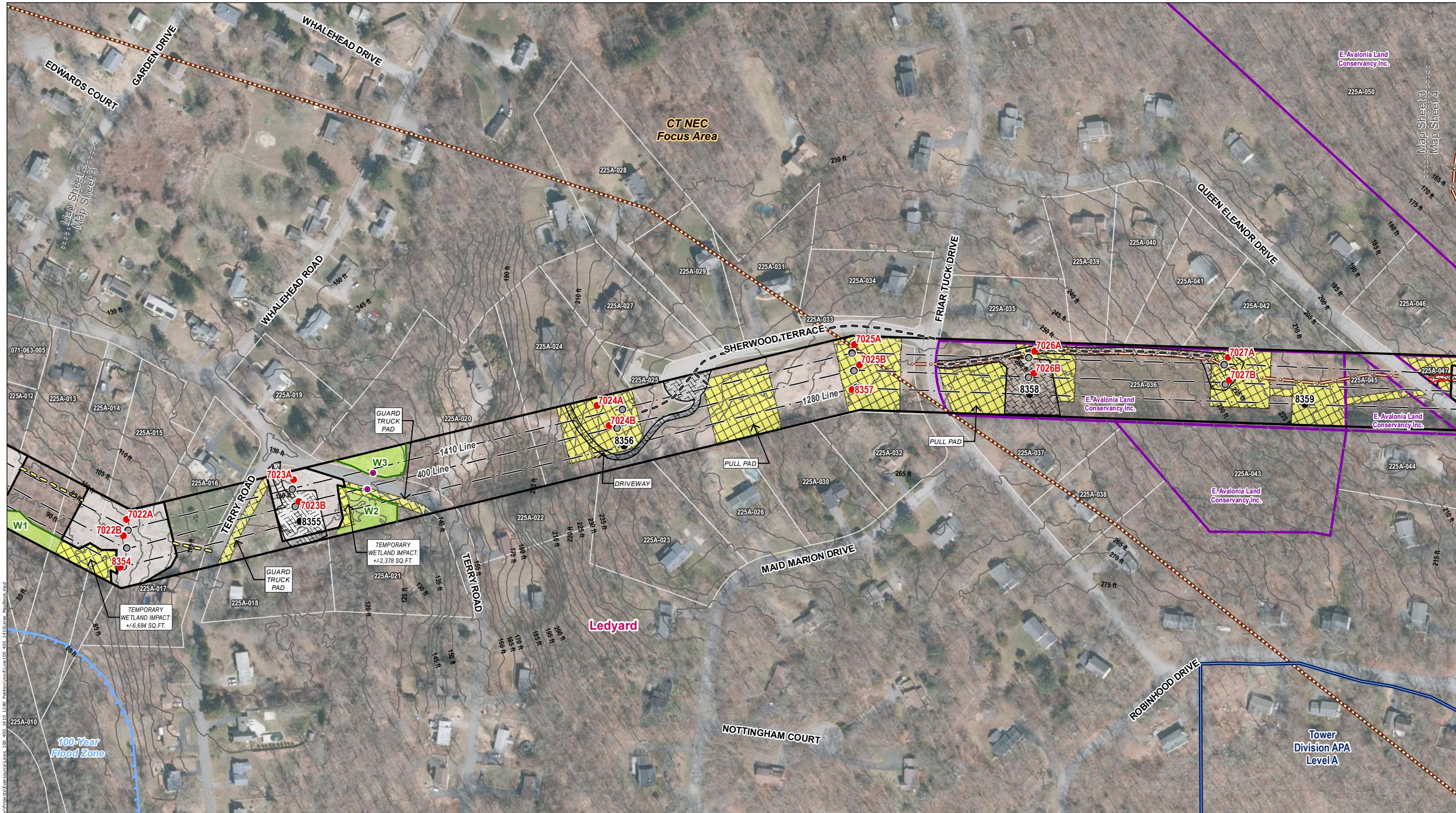
Road Crossings

- Terry Road
- Sherwood Terrace
- Friar Tuck Drive
- Queen Eleanor Drive

Existing Maintained Right-of-Way Width / Proposed Right-of-Way Clearing

- 165-Feet / 0-Feet

<u>Line List Number</u>	<u>Parcel Address</u>	<u>City</u>	<u>State</u>	<u>Owner Name</u>
071-063-005	285 WHALEHEAD RD	LEDYARD	CT	ANDREW J DICK
225A-010	53 NORMAN DR	LEDYARD	CT	TOWN OF LEDYARD
225A-012	285R WHALEHEAD RD	LEDYARD	CT	TOWN OF LEDYARD
225A-013	283 WHALEHEAD RD	LEDYARD	CT	MICHAEL E. WINSLOW
225A-014	281 WHALEHEAD RD	LEDYARD	CT	CAROLYN L. AND SHAWN BISSONNETTE
225A-015	279 WHALEHEAD RD	LEDYARD	CT	CAROLYN L. BISSONNETTE
225A-016	4 TERRY RD	LEDYARD	CT	MICHAEL JOHN AND DAWN KITKO
225A-017	12 TERRY RD	LEDYARD	CT	PAULA AND LUCAS A. GILGER
225A-018	11 TERRY RD	LEDYARD	CT	DALTON J. SCHRICHTEN
225A-019	275 WHALEHEAD RD	LEDYARD	CT	JAMES A. AND SHERI L. THROOP
225A-020	62 TERRY RD	LEDYARD	CT	XU CHENG AND HUANG QI FANG CHEN
225A-021	57 TERRY RD	LEDYARD	CT	LYNN S. WILKINSON
225A-022	56 TERRY RD	LEDYARD	CT	COREY P. AND TORI RYAN
225A-023	10 MAID MARION DR	LEDYARD	CT	ALEXANDER F. AND JENNIFER A. NICKI
225A-024	14 SHERWOOD TRCE	LEDYARD	CT	CATHERINE E. AND CHAPPELLE JOHN A. JR. MATYAS
225A-025	12 SHERWOOD TRCE	LEDYARD	CT	CHARLES C. III GALLAGHER
225A-026	8 MAID MARION DR	LEDYARD	CT	JAMES D. AND KAREN L. ELLIS
225A-027	10 SHERWOOD TRCE	LEDYARD	CT	SCOTT M. AND KATHLEEN R. WILLIAMS
225A-028	6 SHERWOOD TRCE	LEDYARD	CT	CHRISTOPHER A. AND BERNADETTE LEFAIVER
225A-029	4 SHERWOOD TRCE	LEDYARD	CT	MICHELE A. SOLAREK
225A-030	6 MAID MARION DR	LEDYARD	CT	LAWRENCE S. AND BONNIE L. MARTIN
225A-031	2 SHERWOOD TRCE	LEDYARD	CT	BO AND GU ZHENHUA FENG
225A-032	4 MAID MARION DR	LEDYARD	CT	GREGORY L. AND MEREDITH L. ROBINSON
225A-033		LEDYARD	CT	OWNER UNKOWN PER ASSESSOR
225A-034	18 FRIAR TUCK DR	LEDYARD	CT	GREGORY R. AND ELLEN H. YOUNG
225A-035	19 FRIAR TUCK DR	LEDYARD	CT	JOHN M. JR. AND SHEILA D. VINCENT
225A-036	21 FRIAR TUCK DR	LEDYARD	CT	E. AVALONIA LAND CONSERVANCY INC.
225A-037	23 FRIAR TUCK DR	LEDYARD	CT	CARL THOMAS JR. AND BARBARA BERRY
225A-038	25 FRIAR TUCK DR	LEDYARD	CT	CURTIS R. AND JENNIFER J. MCCRACKEN
225A-039	4 QUEEN ELEANOR DR	LEDYARD	CT	KEITH B. AND LORI D. HOEKMAN
225A-040	6 QUEEN ELEANOR DR	LEDYARD	CT	STEVEN T. AND KRISTEN L. WELLER PARADISE
225A-041	8 QUEEN ELEANOR DR	LEDYARD	CT	SCOTT & KRISTY TOMASZEWSKI
225A-042	10 QUEEN ELANOR DR	LEDYARD	CT	MARK E. AND DIANA E. FLANAGAN
225A-043	21R FRIAR TUCK DR	LEDYARD	CT	E. AVALONIA LAND CONSERVANCY INC.
225A-044	20 QUEEN ELEANOR DR	LEDYARD	CT	MARISA AND DELISE NICHOLAS RAINES
225A-045	16 QUEEN ELEANOR DR	LEDYARD	CT	E. AVALONIA LAND CONSERVANCY INC.
225A-046	13 QUEEN ELEANOR DR	LEDYARD	CT	LLOYD MICHAEL MILLER
225A-047	17 QUEEN ELEANOR DR	LEDYARD	CT	E. AVALONIA LAND CONSERVANCY INC.
225A-050	201 WHALEHEAD RD	LEDYARD	CT	E. AVALONIA LAND CONSERVANCY INC.



-  FEMA 100-Year Flood Zone
-  FEMA Floodway
-  Public Water Supply Watershed
-  State Owned Property
-  Eversource Owned Property
-  E. Avalon Land Conservancy Inc. Property
-  Parcel Boundary
-  Hiking Trail
-  Map Sheet Matchline

Map Notes:
Base Map Source: ESRI Aerial Imagery; CT ECO 2019 imagery.
This mapping product has been created to comply with submittal requirements to obtain certain regulatory approvals and, as such, there is no reliance on the information contained herein for any other purpose.
Parcel boundaries are approximate (NOT survey).
Parcels and LLNs provided by Eversource in May 2020.
ROW boundary, existing, and proposed structure locations provided by Eversource (12/9/2020).
Wetland delineated by APT - DE in May and Dec. 2020.

A scale bar and a north arrow are located in the bottom left corner of the map. The scale bar is a horizontal line with tick marks at 0, 50, and 100. Above the scale bar is the text "1 inch = 200 feet". To the left of the scale bar is a north arrow, which is a line with a small circle at the end, pointing upwards.

			EVERSOURCE ENERGY
pose.			Eastern Connecticut Reliability Project Montville Junction to Ledyard Junction
et		Ledyard	
		Map Sheet 3 of 5	
NO.	DATE	REVISIONS	December, 2021

MAPSHEET 4 OF 5

**100/400/1410/1280 Asset Condition Replacement
and ROW Reconfiguration/OPGW Project
Structures 7028 A/B to 7033 A/B
Town of Ledyard, Connecticut**

AREA DESCRIPTION*Existing Land Use & Resource Areas*

- E Avalonia Land Conservatory property
- Hiking Trails
- Natural Diversity Database Area
- CT NEC Focus Area (Entire Map Sheet)
- Public Water Supply Watershed, Groton Reservoir System
- Tower Division Aquifer Protection Area
- Residential
- Undeveloped, Forest

<u>Line List Number</u>	<u>Parcel Address</u>	<u>City</u>	<u>State</u>	<u>Owner Name</u>
225A-044	20 QUEEN ELEANOR DR	LEDYARD	CT	MARISA AND DELISE NICHOLAS RAINES
225A-045	16 QUEEN ELEANOR DR	LEDYARD	CT	E. AVALONIA LAND CONSERVANCY INC.
225A-046	13 QUEEN ELEANOR DR	LEDYARD	CT	LLOYD MICHAEL MILLER
225A-047	17 QUEEN ELEANOR DR	LEDYARD	CT	E. AVALONIA LAND CONSERVANCY INC.
225A-048	21 QUEEN ELEANOR DR	LEDYARD	CT	SALLY J. VAN DYKE
225A-049	17R QUEEN ELEANOR DR	LEDYARD	CT	E. AVALONIA LAND CONSERVANCY INC.
225A-050	201 WHALEHEAD RD	LEDYARD	CT	E. AVALONIA LAND CONSERVANCY INC.
225A-051	50R ROBIN HOOD DR	LEDYARD	CT	E. AVALONIA LAND CONSERVANCY INC.
225A-052	113 WHALEHEAD RD	LEDYARD	CT	E. AVALONIA LAND CONSERVANCY INC.

RIGHT-OF-WAY DESCRIPTION*Right-of-Way Land Use & Resource Areas*

- Maintained ROW
- E Avalonia Land Conservatory property
- Hiking Trails
- Natural Diversity Database Area – Structures 7030 A/B – 7033 A/B
- CT NEC Focus Area – (Entire Map Sheet)

Water Resources

- Wetlands – W-4, W-5, W-6
- Wetland Cover Types – PFO, PSS
- Watercourse – S-2, S3

Wetland and Watercourse Crossings

- Wetland W-4 and Watercourse S-2 – construction mats for work pad
- Wetland W-5 and Watercourse S-3 – construction mats for work pad
- Wetland 7 - construction mats for work pad for 7032 A/B, a new bridge proposed to access Structure 7003 A/B and construction mats for work pads

Right-of-Way Vegetation

- Scrub-shrub

Access

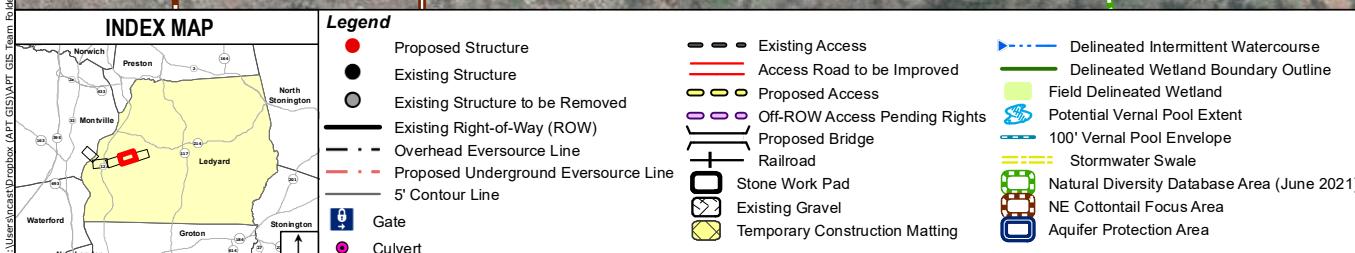
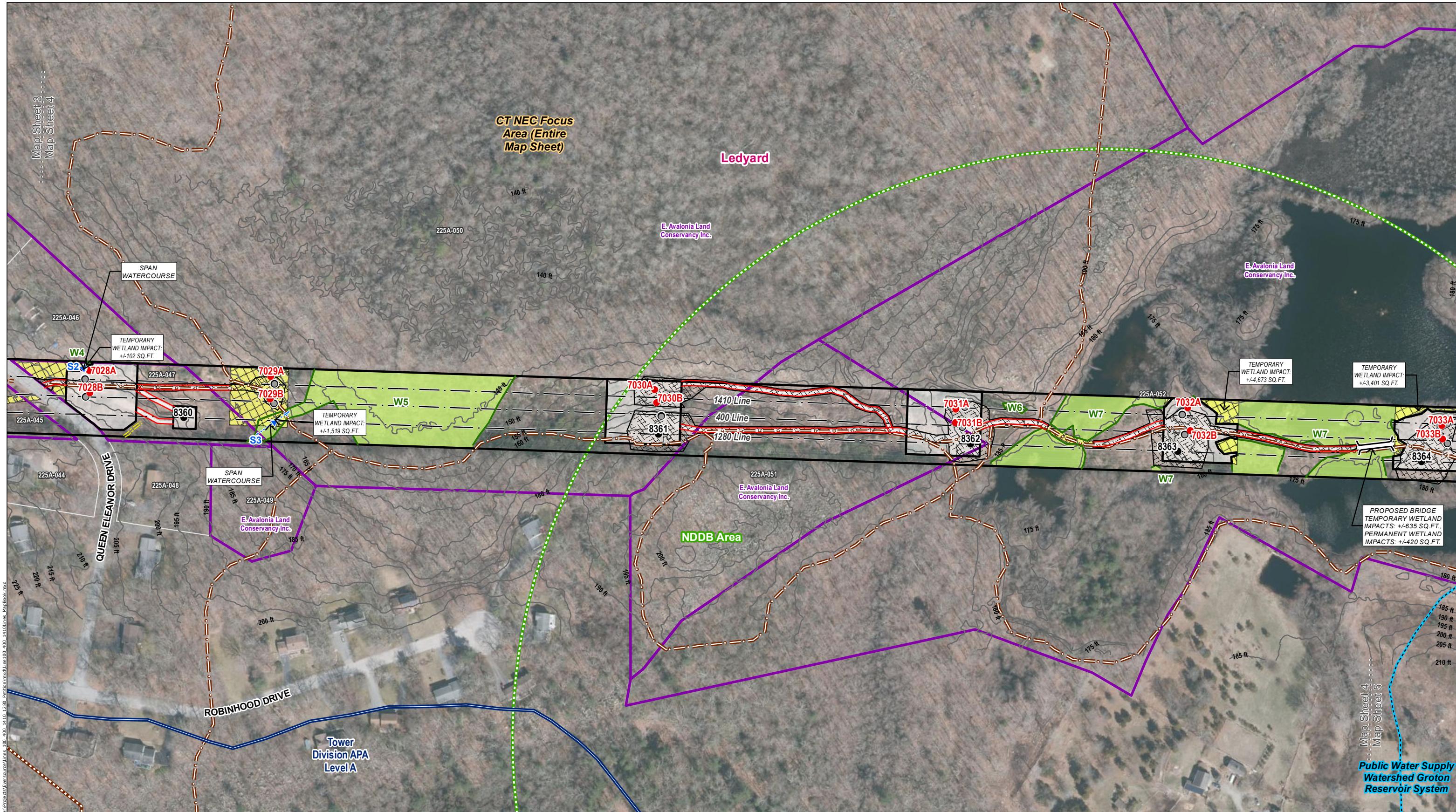
- Structures 7028 A/B to 7029 A/B: From existing access originating off of Queen Eleanor Drive
- Structures 7030 A/B to 7033 A/B: From existing access originating off of Whalehead Road (see Map Sheet 5)

Road Crossings

- Queen Eleanor Drive

Existing Maintained Right-of-Way Width / Proposed Right-of-Way Clearing

- 165-Feet / 0-Feet



-  FEMA 100-Year Flood Zone
-  FEMA Floodway
-  Public Water Supply Watershed
-  State Owned Property
-  Eversource Owned Property
-  E. Avalon Land Conservancy Inc. Prop.
-  Parcel Boundary
-  Hiking Trail
-  Map Sheet Matchline

Parcel Notes:
Base Map Source: ESRI Aerial Imagery; CT ECO 2019 imager
This mapping product has been created to comply with submittal
requirements to obtain certain regulatory approvals and, as such,
there is no reliance on the information contained herein for any other
purpose.
Parcel boundaries are approximate (NOT survey).
Parcels and LNLs provided by Eversource in May 2020.
ROW boundary, existing, and proposed structure locations
provided by Eversource (12/9/2020).
Wetland data delineated by APT - DE in May and Dec. 2020.

A scale bar and a north arrow are located in the top left corner of the map. The scale bar is a horizontal line with tick marks at 0, 50, 100, and 200 feet. Above the scale bar, the text "1 inch = 200 feet" is written. To the left of the scale bar is a north arrow, which is a triangle with a line pointing towards the top-left corner of the map.

EVERSOURCE ENERGY

MAPSHEET 5 OF 5

**100/400/1410/1280 Asset Condition Replacement
and ROW Reconfiguration/OPGW Project
Structures 7033 A/B to 7406 A/B
Town of Ledyard, Connecticut**

AREA DESCRIPTION*Existing Land Use & Resource Areas*

- Residential
- Undeveloped, Forest
- Hiking Trails
- Eversource owned property
- Natural Diversity Database Area
- CT NEC Focus Area (Entire Map Sheet)
- Public Water Supply Watershed, Groton Reservoir System

RIGHT-OF-WAY DESCRIPTION*Right-of-Way Land Use & Resource Areas*

- Maintained ROW
- E Avalonia Land Conservatory property
- Hiking Trails
- Eversource owned property
- Residential near structures 7035 A/B, 8368, 8369, and 7406 A/B
- Natural Diversity Database Area – Structure 7033 A/B
- CT NEC Focus Area – (Entire map sheet)
- Public Water Supply Watershed, Groton Reservoir System Structures 7034 A/B - 7038

Water Resources

- Wetlands – W-7, W8, W-9, W10, W11
- Wetland Cover Types – POW, PSS, PEM
- Watercourse – S-4
- Vernal Pool – VP-1 in W-8

Wetland and Watercourse Crossings

- Wetland W-7 to W-11 – construction mats for work pad

Right-of-Way Vegetation

- Scrub-shrub
- Residential, Lawn

Access

- Structures 7033 A/B to 7036 A-2/B-2: From existing access originating off of Whalehead Road
- Structures 7037 to 7038: From existing access originating off of Whalehead Road
- Structure 8368: From matted and existing access originating off of Whalehead Road
- Structure 8369: From matted access originating off of Vinegar Hill Road
- Structures 7406 A/B and 8370: From existing access originating off of Whalehead Road

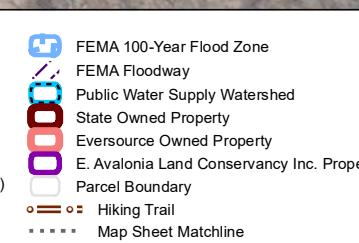
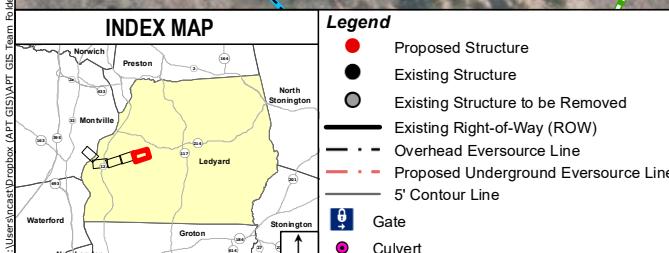
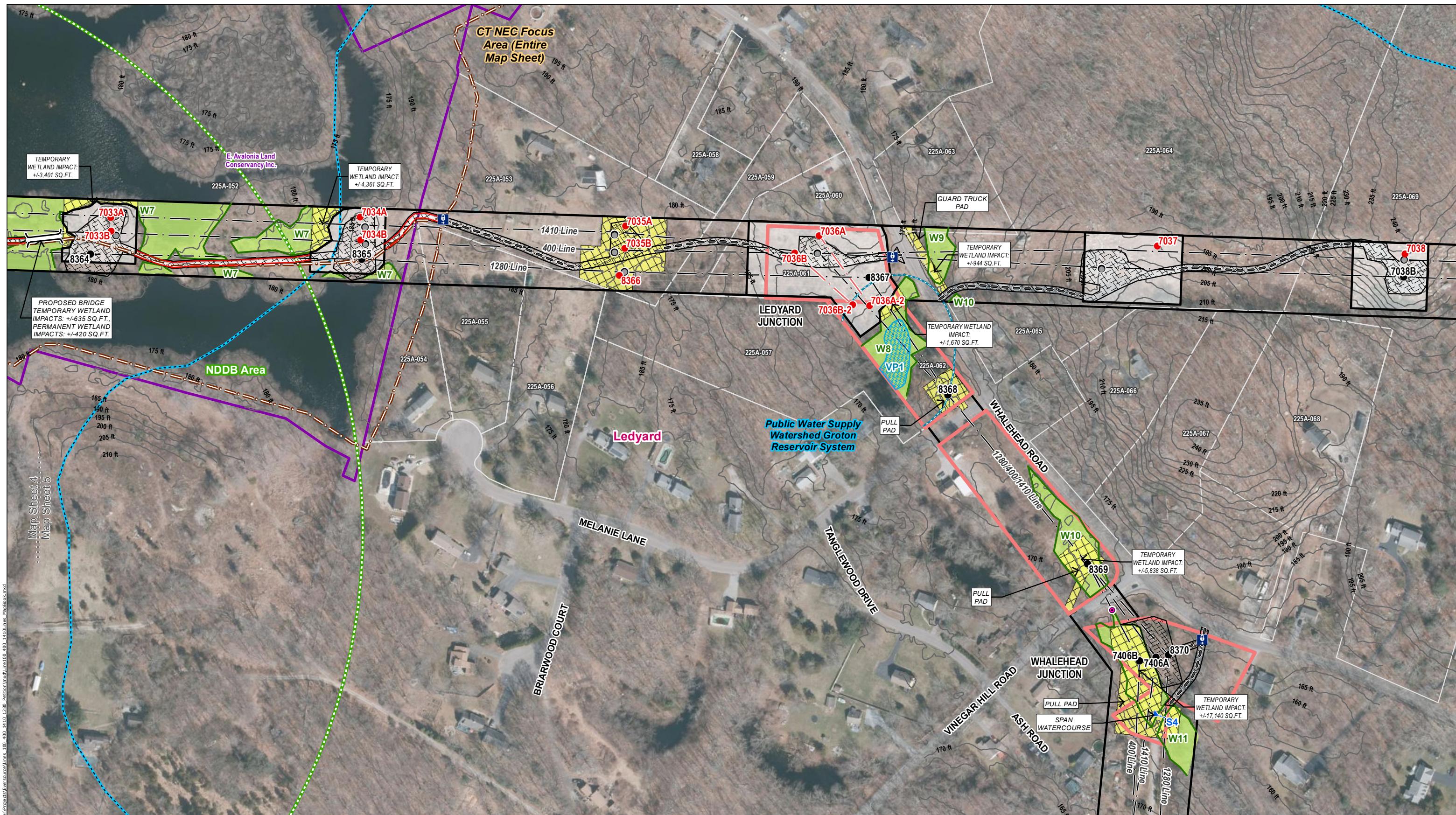
Road Crossings

- Whalehead Road
- Vinegar Hill Road

*Existing Maintained Right-of-Way Width / Proposed Right-of-Way
Clearing*

- 165-feet (structures 7033 A/B to 7038) / 0-Feet
- 130-feet (structure 7036 A-2 to 8370) / 0-Feet

<u>Line List Number</u>	<u>Parcel Address</u>	<u>City</u>	<u>State</u>	<u>Owner Name</u>
225A-052	113 WHALEHEAD RD	LEDYARD	CT	E. AVALONIA LAND CONSERVANCY INC.
225A-053	109 WHALEHEAD RD	LEDYARD	CT	THOMAS AND DAVID HOLLY B. DANIELS
225A-054	15 MELANIE LN	LEDYARD	CT	RICHARD R. BRYANT
225A-055	14 MELANIE LN	LEDYARD	CT	DANIELLE J. ROEDIGER
225A-056	12 MELANIE LN	LEDYARD	CT	RICHARD S. AND KELLY D. HUTCHINS
225A-057	15 TANGLEWOOD DR	LEDYARD	CT	TOWN OF LEDYARD
225A-058	103 WHALEHEAD RD	LEDYARD	CT	HARRY D. AND CAROLYN G. WILLIAMSON
225A-059	97 WHALEHEAD RD	LEDYARD	CT	BRANDEN M & FELICIA M CUMMINGS
225A-060	95 WHALEHEAD RD	LEDYARD	CT	PAUL J. CRADER
225A-061	89 WHALEHEAD RD	LEDYARD	CT	CONNECTICUT LIGHT AND POWER CO.
225A-062	87 WHALEHEAD RD	LEDYARD	CT	CONNECTICUT LIGHT AND POWER CO.
225A-063	94 WHALEHEAD RD	LEDYARD	CT	LUCAS P HERR
225A-064	92 WHALEHEAD RD	LEDYARD	CT	TOWN OF LEDYARD - GLACIAL PARK
225A-065	86 WHALEHEAD RD	LEDYARD	CT	DANA E BOHNAK
225A-066	78 WHALEHEAD RD	LEDYARD	CT	ROBERT & A F BROUILLIER
225A-067	74 WHALEHEAD RD	LEDYARD	CT	SUZANNE J DULEY
225A-068	68 WHALEHEAD RD	LEDYARD	CT	RALPH F & LISA L HIRSCHFIELD
225A-069	60 WHALEHEAD RD	LEDYARD	CT	ROBERT CRAIG & DAWN A VAN GELDER



Map Notes:
Base Map Source: ESRI Aerial Imagery: CT ECO 2019 imagery. This mapping product has been created to comply with submittal requirements to obtain certain regulatory approvals and, as there is no reliance on the information contained herein for any other purpose, Parcel boundaries are approximate (NOT survey). Parcels and LLNs provided by Eversource in May 2020. ROW boundary: existing, and proposed structure location, provided by Eversource (12/9/2020). Modified data delivered by ADT, Inc. May and Dec. 2020.

N

1 inch = 200 feet

0 50 100

EVERSOURCE
ENERGY

Eastern Connecticut Reliability Project
Montville Junction to Ledyard Junction

MONTVILLE

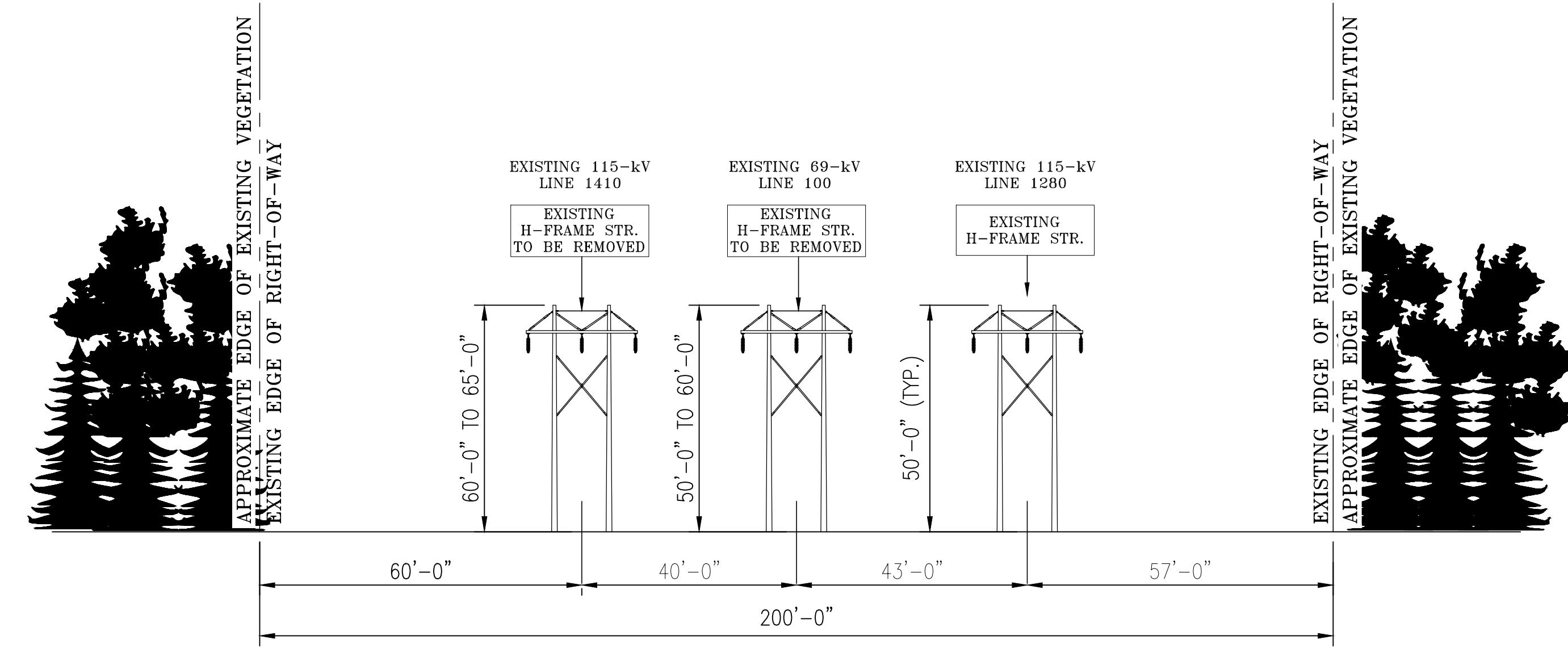
Map Sheet 5 of 5

Map Sheet 3 of 3

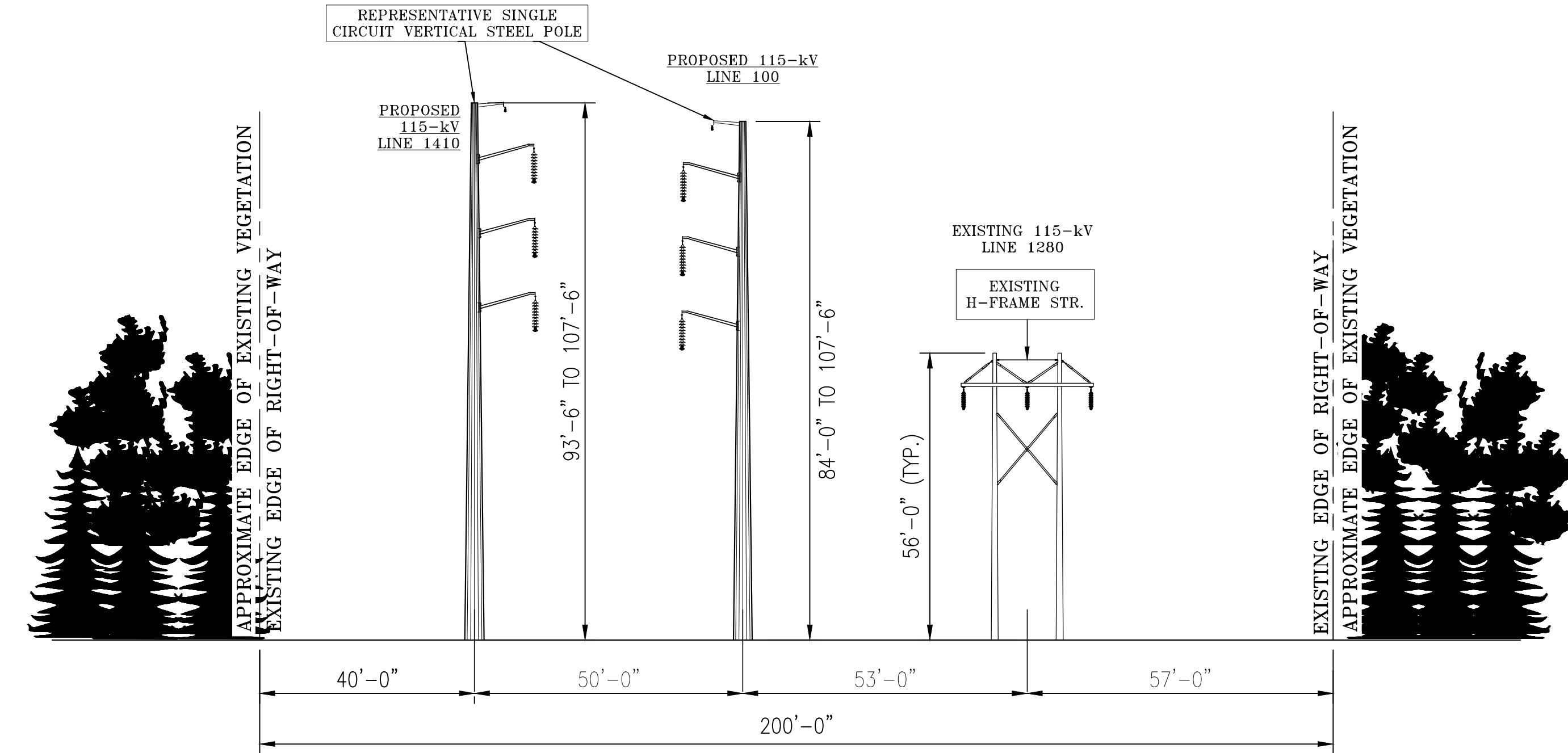
December 2021



Attachment B: – Right-of-Way Cross Sections



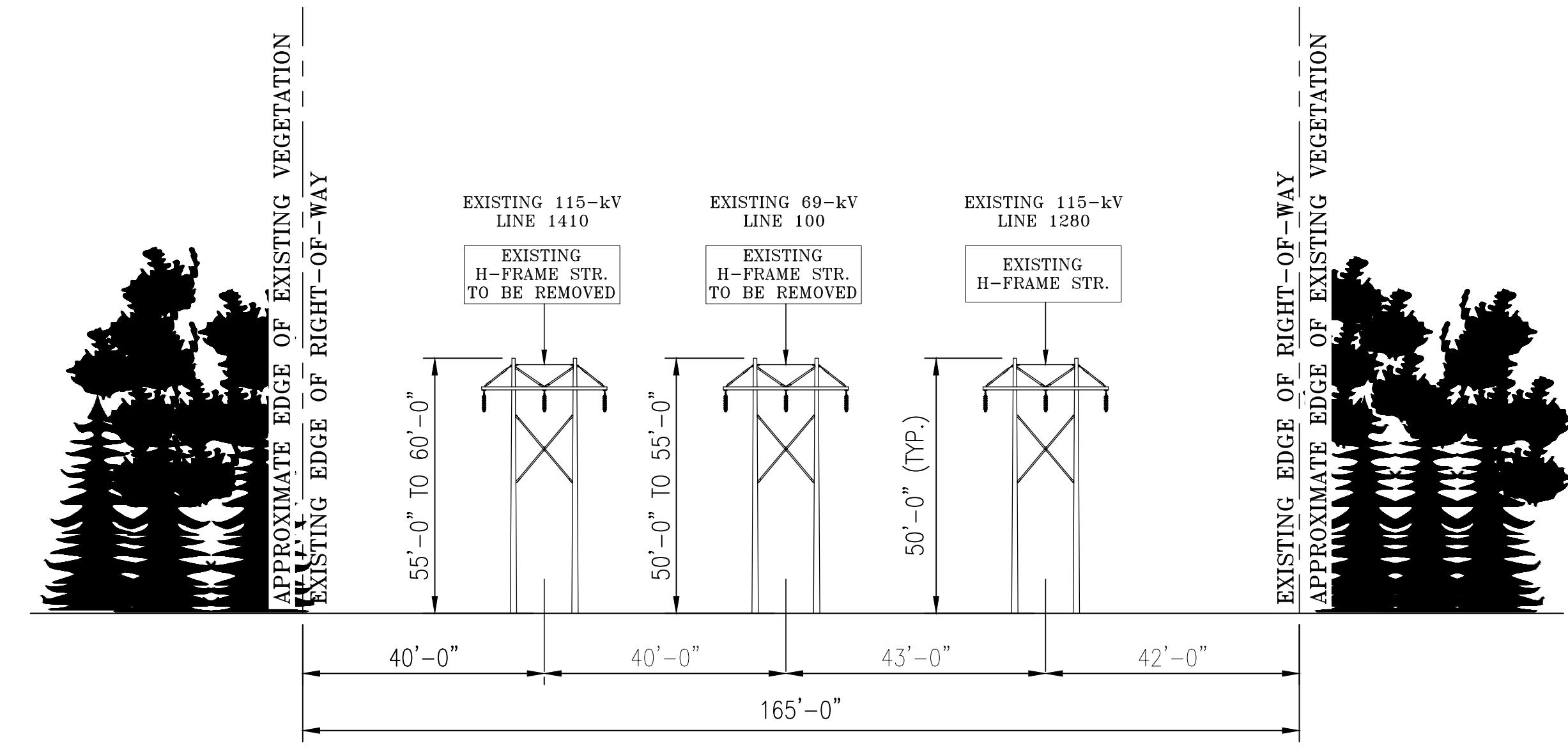
EXISTING R.O.W. CONFIGURATION
SINGLE CIRCUIT HORIZONTAL DESIGN
LOOKING FROM MONTVILLE SUBSTATION TO LEDYARD JUNCTION
IN THE TOWN OF LEDYARD, CT
0.18 MILES, STR. #7016 - STR. #7017



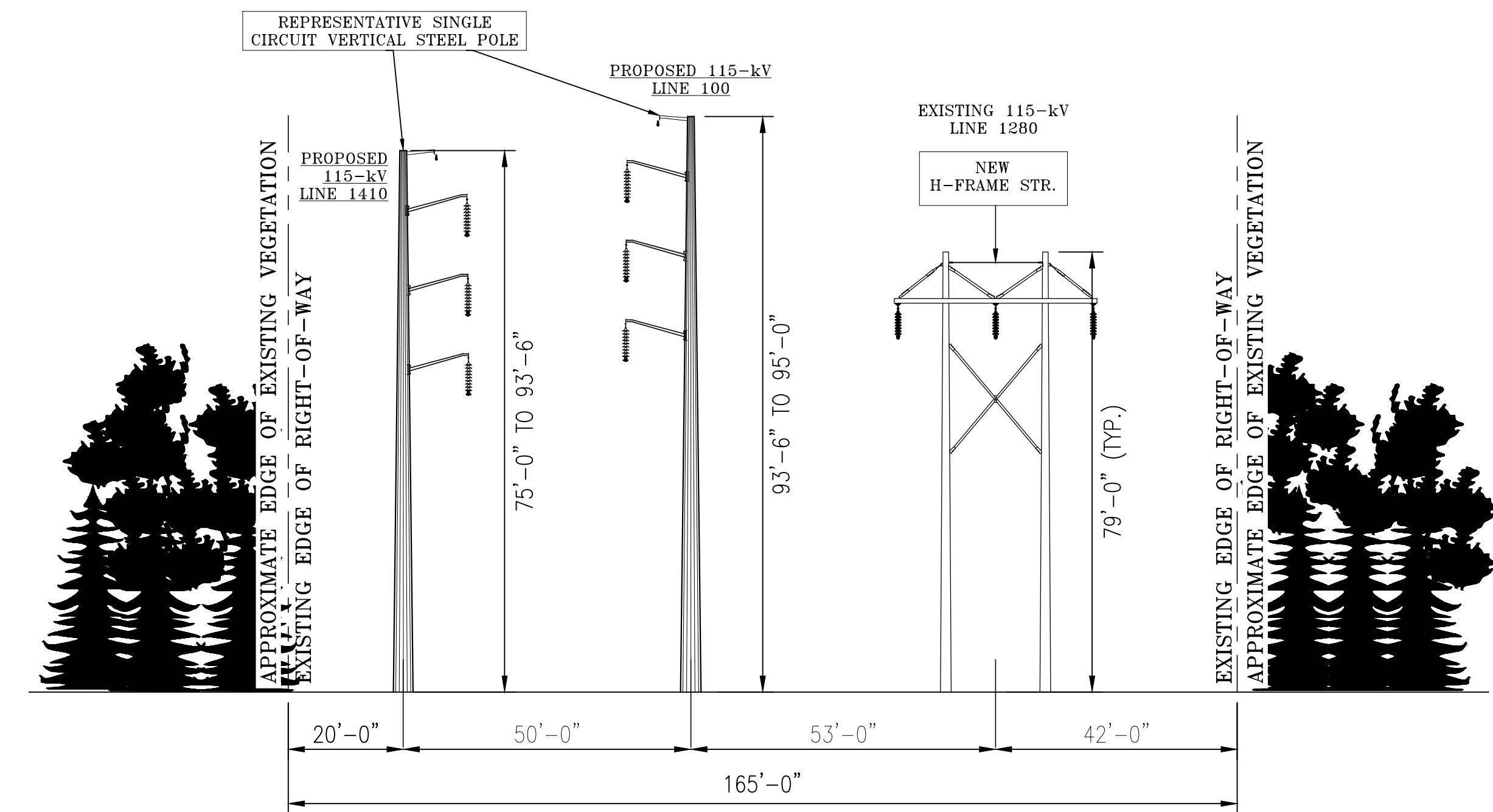
PROPOSED R.O.W. CONFIGURATION
NO ADDITIONAL RIGHT-OF-WAY REQUIRED
SINGLE CIRCUIT VERTICAL DESIGN
LOOKING FROM MONTVILLE SUBSTATION TO LEDYARD JUNCTION
IN THE TOWN OF LEDYARD, CT
0.18 MILES, STR. #7016 - STR. #7017

1	10/20/21	ISSUED FOR REVIEW	DRL	MEB

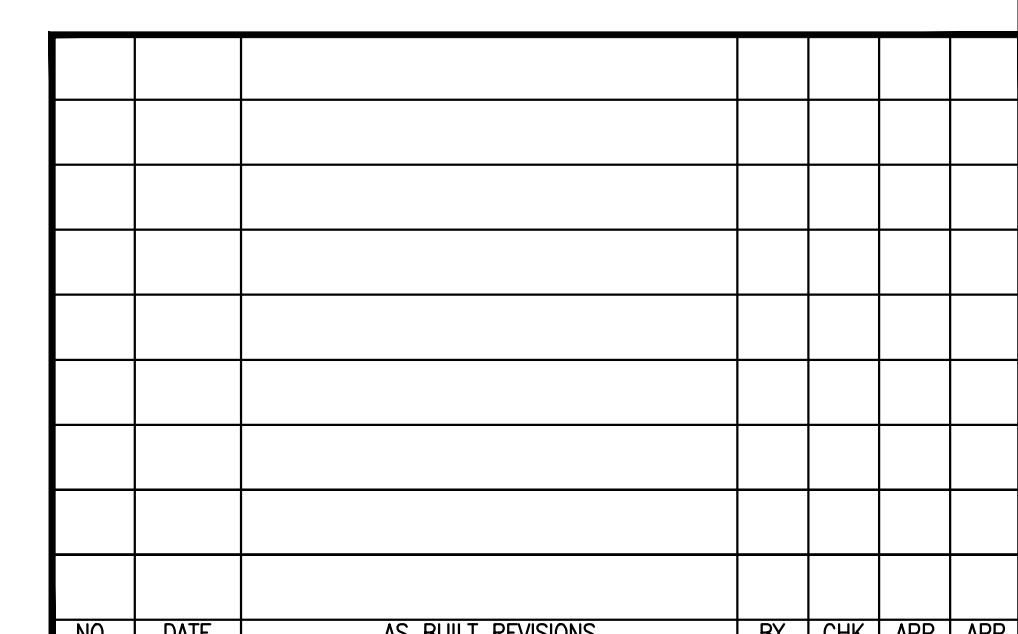
REVISIONS DURING CONSTRUCTION				
1	10/20/21	ISSUED FOR REVIEW	DRL	MEB
EVERSOURCE ENERGY				
MONTVILLE S/S - LEDYARD JCT. 115-KV TRANSMISSION LINE				
RIGHT OF WAY CROSS SECTION - STR. 7016 - 7017 LEDYARD, CONNECTICUT				
BY	DRL/TRC	CHKD	MEB/TRC	APP
DATE	10/21/2021	DATE	10/21/2021	DATE
H-SCALE	N.T.S.	SIZE	D	FIELD BOOK & PAGES
V-SCALE	N.T.S.	V.S.	V.S.	R.E. DWG
NO.	DATE	AS BUILT REVISIONS	BY	CHK APP APP
R.E. PROJ. NUMBER				
DNG NO. 01062-8500xp001				

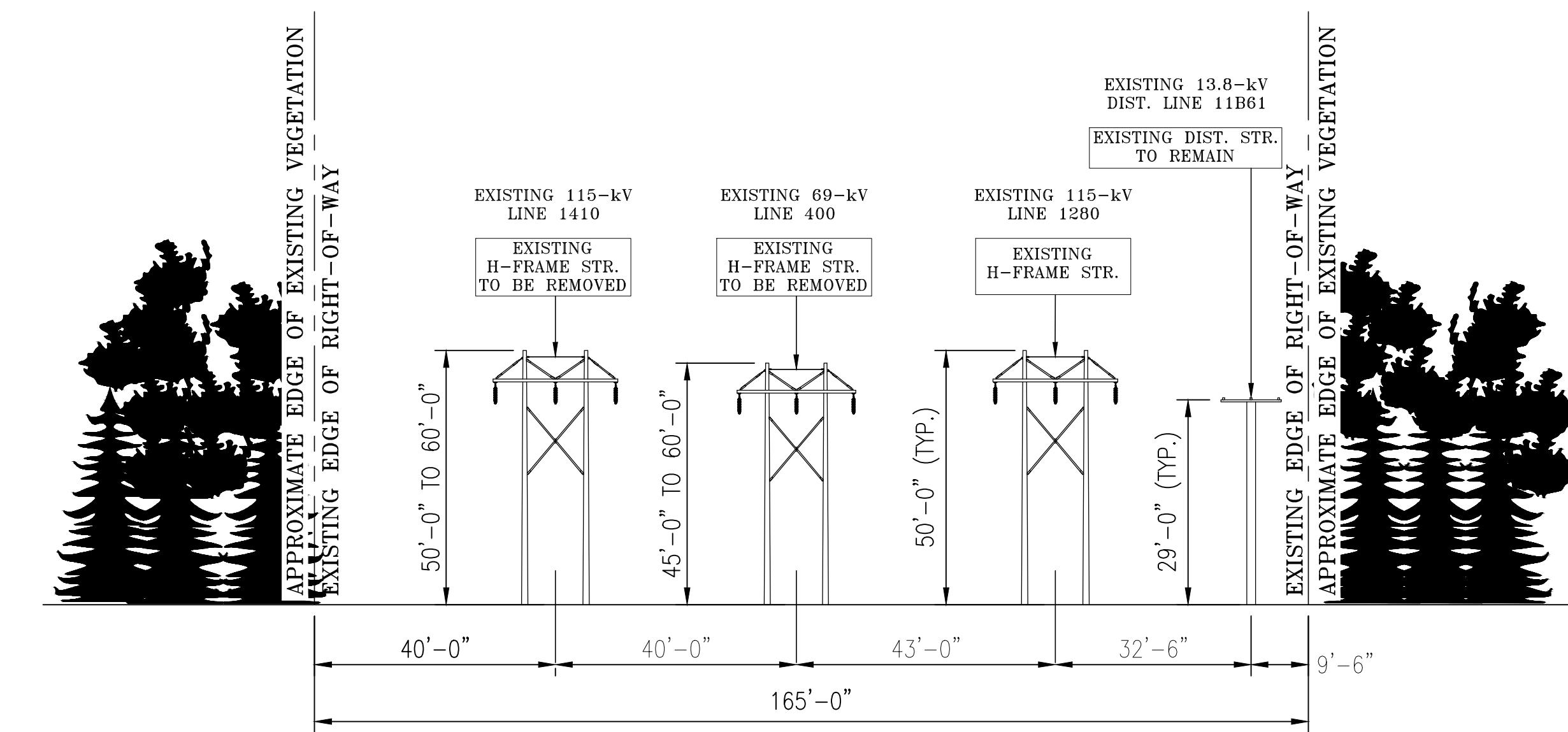


EXISTING R.O.W. CONFIGURATION
SINGLE CIRCUIT HORIZONTAL DESIGN
LOOKING FROM MONTVILLE SUBSTATION TO LEDYARD JUNCTION
IN THE TOWN OF LEDYARD, CT
0.19 MILES, STR. #7018 - STR. #7019

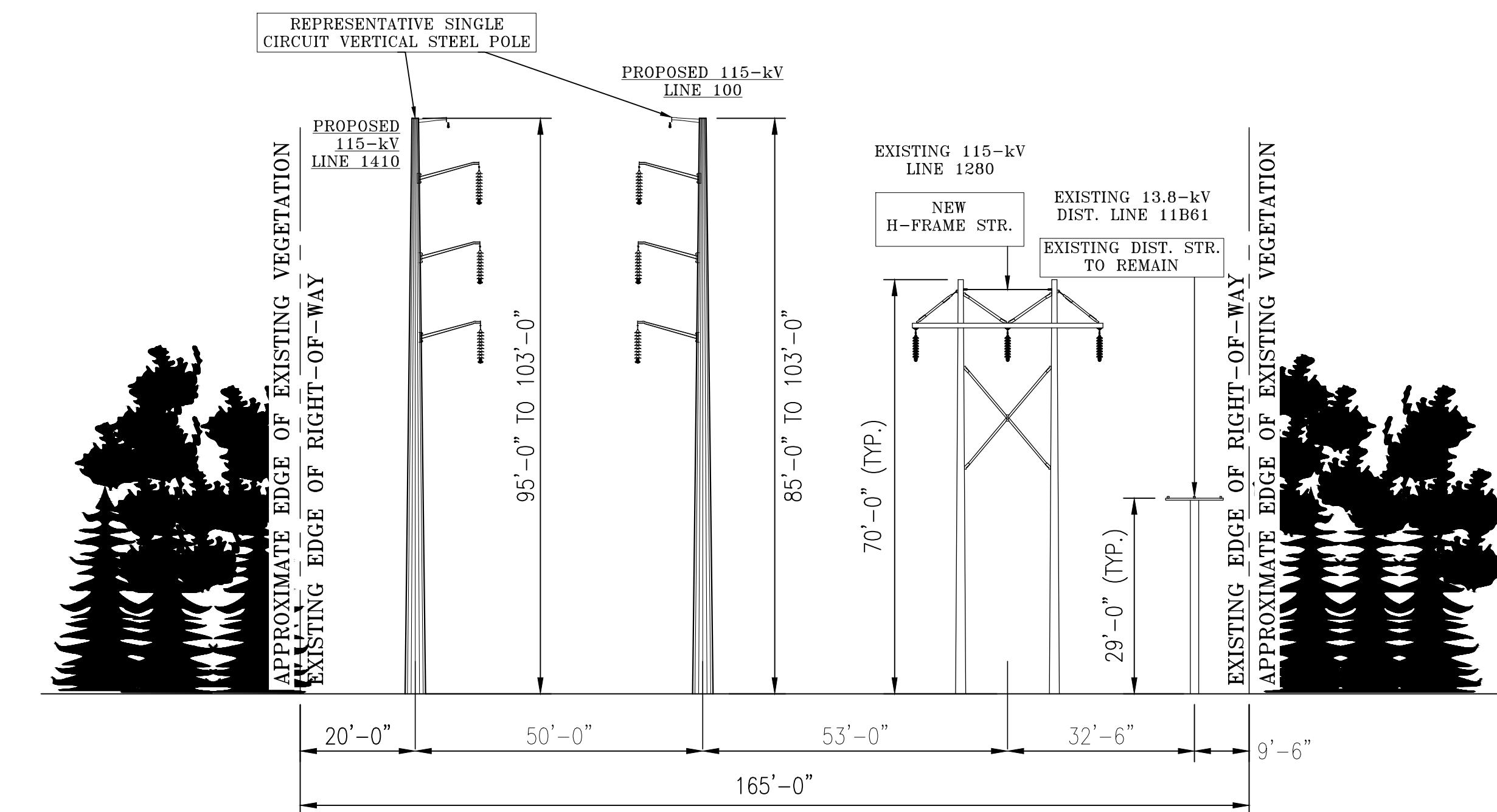


PROPOSED R.O.W. CONFIGURATION
NO ADDITIONAL RIGHT-OF-WAY REQUIRED
SINGLE CIRCUIT VERTICAL DESIGN
LOOKING FROM MONTVILLE SUBSTATION TO LEDYARD JUNCTION
IN THE TOWN OF LEDYARD, CT
0.19 MILES, STR. #7018 - STR. #7019





EXISTING R.O.W. CONFIGURATION
SINGLE CIRCUIT HORIZONTAL DESIGN
LOOKING FROM MONTVILLE SUBSTATION TO LEDYARD JUNCTION
IN THE TOWN OF LEDYARD, CT
1.51 MILES, STR. #7021 - LEDYARD JUNCTION STR. #7035



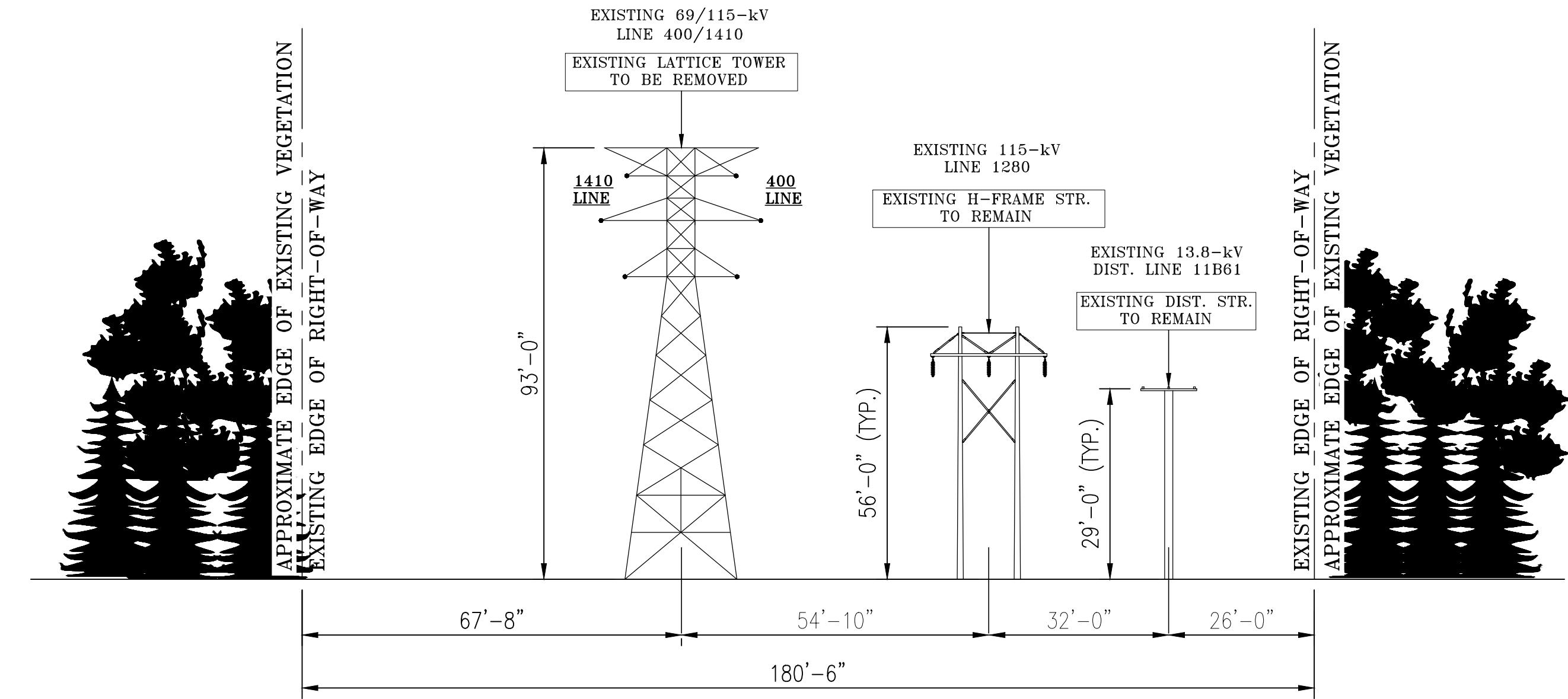
PROPOSED R.O.W. CONFIGURATION
NO ADDITIONAL RIGHT-OF-WAY REQUIRED
SINGLE CIRCUIT VERTICAL DESIGN

LOOKING FROM MONTVILLE SUBSTATION TO LEDYARD JUNCTION
IN THE TOWN OF LEDYARD, CT

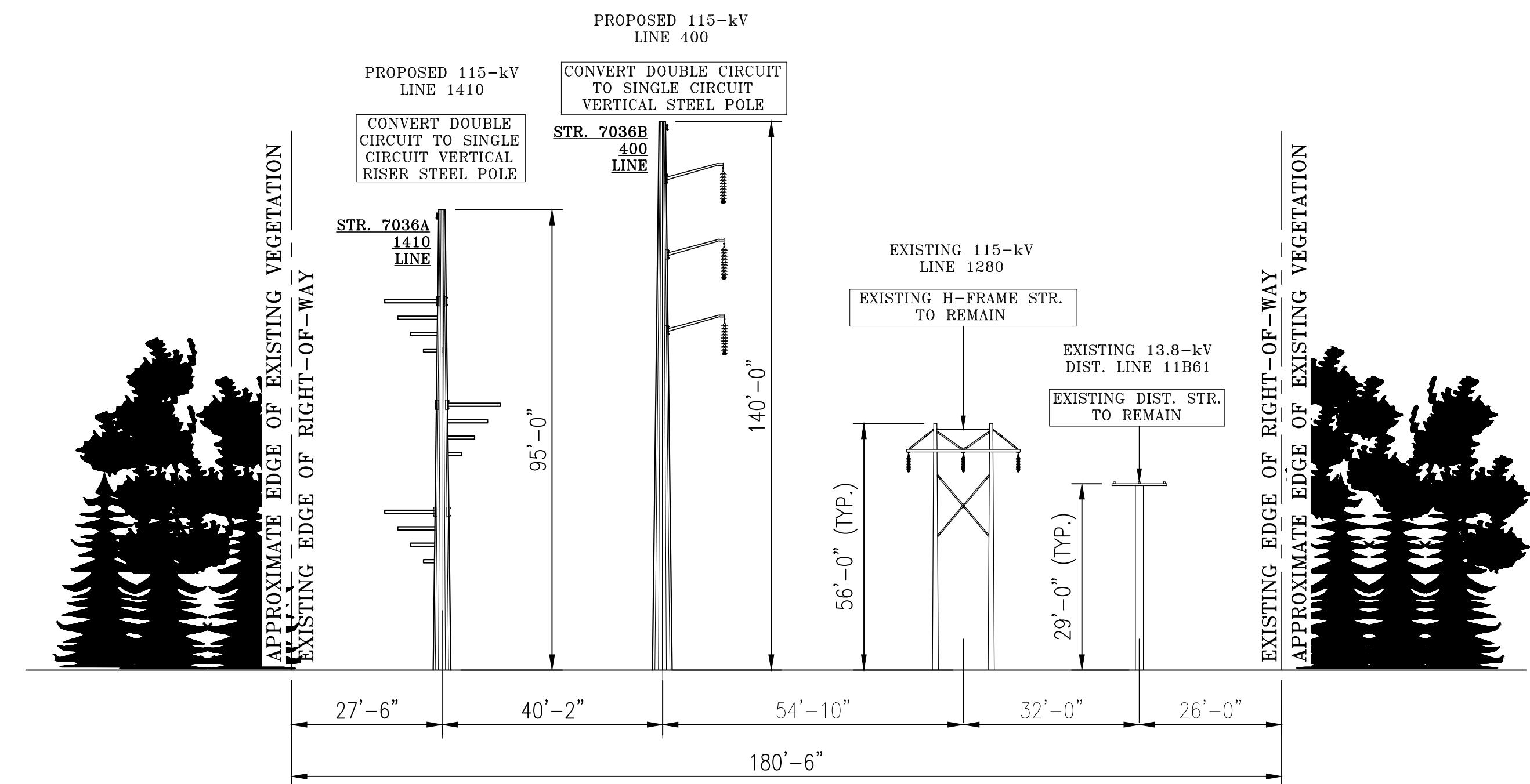
1.51 MILES, STR. #7021 - LEDYARD JUNCTION STR. #7035

NO.	DATE	AS BUILT	REVISIONS	BY	CLIK	APP	APP

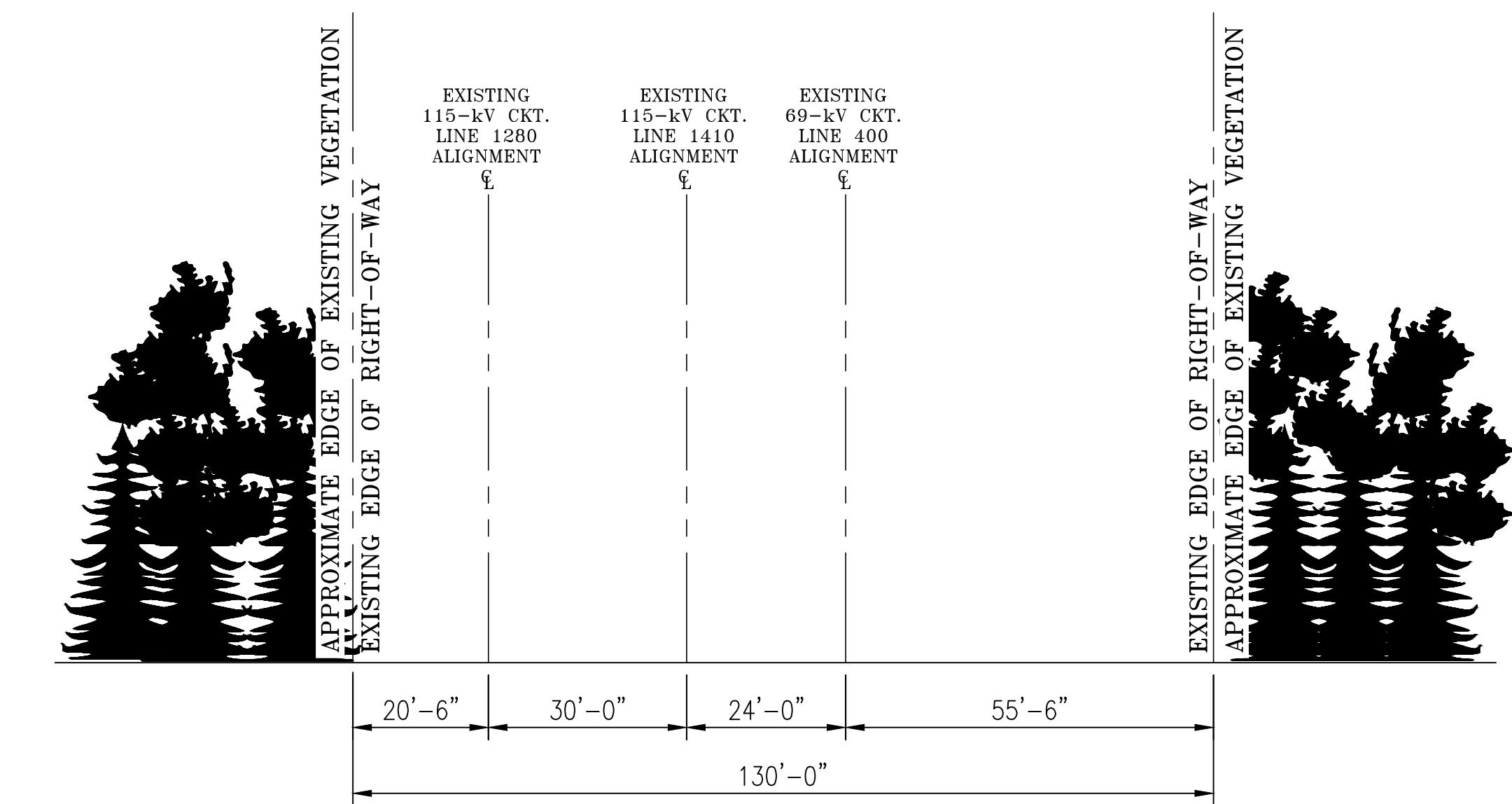
REVISIONS DURING CONSTRUCTION					
1	10/20/21	ISSUED FOR REVIEW	DRL	MEB	
LE	EVERSOURCE ENERGY				
ITE	MONTVILLE S/S - LEDYARD JCT. 115-kV TRANSMISSION LINE RIGHT OF WAY CROSS SECTION – STR. 7021 – 7035 LEDYARD, CONNECTICUT				
DRL/TRC	CHKD	MEB/TRC	APP	GEL/TRC	APP
DATE 10/21/2021	DATE 10/21/2021	DATE 10/21/2021	DATE 10/21/2021		
SCALE N.T.S.	SIZE D	FIELD BOOK & PAGES			
SCALE N.T.S.	V.S.	R.E. DWG			
PROJ. NUMBER			DWG NO.	01062-8500xp003	



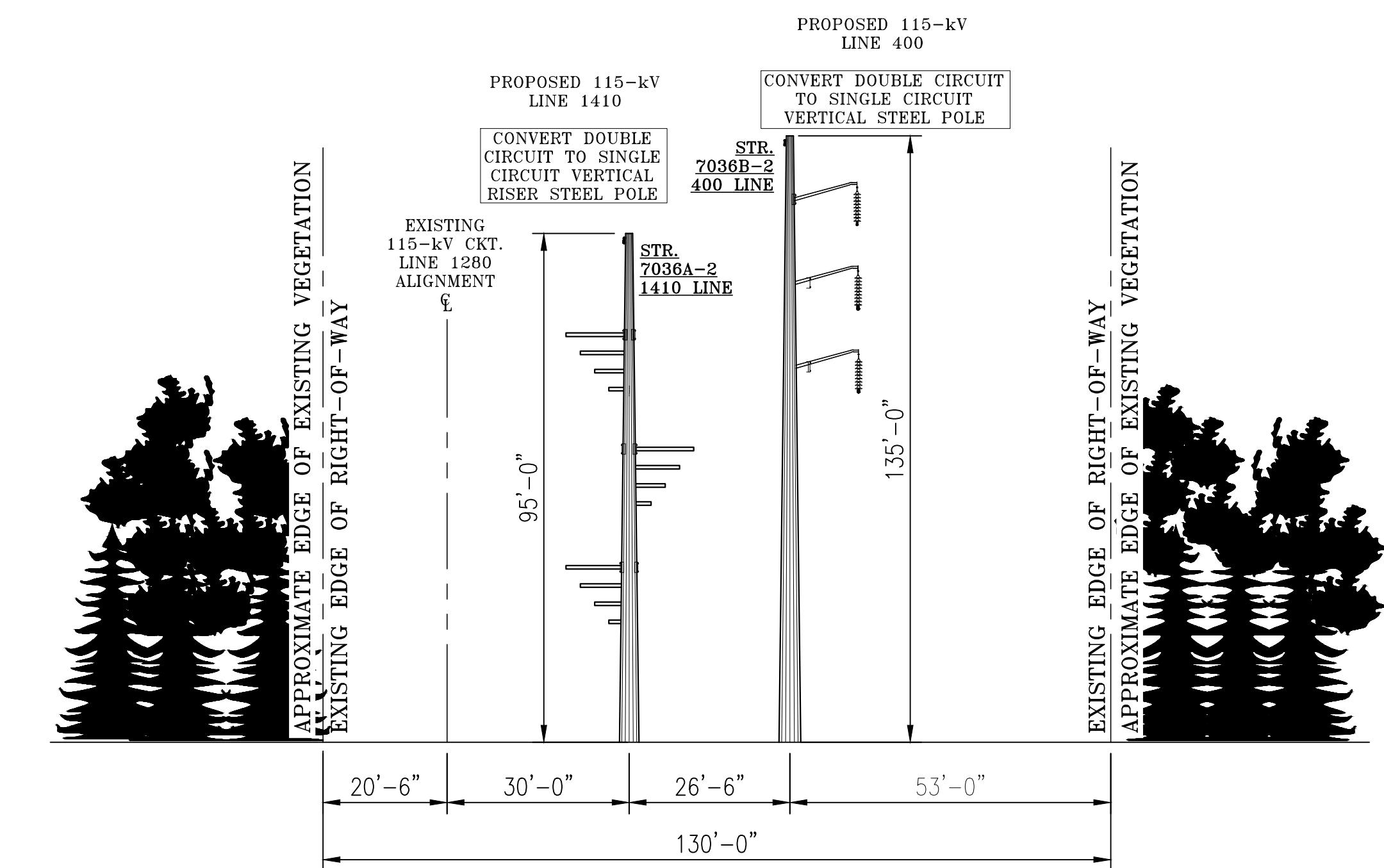
EXISTING R.O.W. CONFIGURATION
DOUBLE CIRCUIT LATTICE TOWER VERTICAL DESIGN
LOOKING FROM MONTVILLE SUBSTATION TO LEDYARD JUNCTION
IN THE TOWN OF LEDYARD, CT
STR. #7036



PROPOSED R.O.W. CONFIGURATION
NO ADDITIONAL RIGHT-OF-WAY REQUIRED
SINGLE CIRCUIT RISER TERMINAL AND SINGLE POLE VERTICAL DESIGN
LOOKING FROM MONTVILLE SUBSTATION TO LEDYARD JUNCTION
IN THE TOWN OF LEDYARD, CT
STR. #7036A AND STR. #7036B



EXISTING R.O.W. CONFIGURATION
DOUBLE CIRCUIT LATTICE TOWER VERTICAL DESIGN
LOOKING FROM LEDYARD JUNCTION TO BUDDINGTON SUBSTATION
IN THE TOWN OF LEDYARD, CT



PROPOSED R.O.W. CONFIGURATION
NO ADDITIONAL RIGHT-OF-WAY REQUIRED
SINGLE CIRCUIT RISER TERMINAL AND SINGLE POLE VERTICAL DESIGN
LOOKING FROM LEDYARD JUNCTION TO BUDDINGTON SUBSTATION
IN THE TOWN OF LEDYARD, CT
STR. #7036A-2 AND STR. #7036B-2

Attachment C: List of Structure Replacements

Circuit #	Str #	Existing		Proposed		
		Above Ground Height (ft)	Section Average (ft)	Above Ground Height (ft)	Section Average (ft)	Structure Height Change Above Ground (ft)
100	7016B	50	55	84	95.8	34
100	7017B	60		107.5		47.5
100	7018B	50	52.5	93.5	94.3	43.5
100	7019B	55		95		40
400	7020-2	82.6	82.6	82.6	82.6	0
400	7021B	45	55.3	85	101.1	40
400	7022B	60		95		35
400	7023B	55		103		48
400	7024B	60		103		43
400	7025B	60		100		40
400	7026B	50		103		53
400	7027B	50		103		53
400	7028B	50		103		53
400	7029B	50		103		53
400	7030B	60		103		43
400	7031B	55		103		48
400	7032B	55		103		48
400	7033B	60		103		43
400	7034B	60		103		43
400	7035B	60		103		43
400	7036B	93	93	140	140	47
400	7036B-2	N/A	N/A	135	135	N/A
1410	7016A	60	62.5	93.5	100.5	33.5
1410	7017A	65		107.5		42.5
1410	7018A	55	56.4	75	99.9	20
1410	7019A	60		93.5		33.5
1410	7020A	60		95		35
1410	7021A	50		103		53
1410	7022A	55		95		40
1410	7023A	60		103		43
1410	7024A	60		103		43
1410	7025A	55		100		45
1410	7026A	55		103		48
1410	7027A	55		103		48
1410	7028A	50		103		53
1410	7029A	55		103		48
1410	7030A	60		103		43
1410	7031A	55		103		48
1410	7032A	55		103		48
1410	7033A	55		103		48
1410	7034A	60	60.7	103	70.5	43
1410	7035A	60		103		43
1410	7036A	93		95		2
1410	7036A-2	N/A		95		N/A
1280	8350	48		57		9
1280	8351	57	60.7	66	70.5	9
1280	8352	66		70		4
1280	8353	70		70		0
1280	8353-1	N/A		95		N/A
1280	8354	61		70		9
1280	8357	57		61		4
1280	8366	66		75		9
Zone 2 Average Totals:		58.7		96.3		37.5

Attachment D: Wetlands and Watercourses Report



Biodiversity Studies • Wetland Delineation & Assessment • Habitat Management • GIS Mapping • Permitting • Forestry

Wetland Delineation

September 2, 2021

DE Project No.: 2020-48

Prepared For: Eversource Energy
56 Prospect Street
Hartford, CT 06103
Attn: Antonio Federici

Eversource Project Name: 100-400-1410-1280 Line Structure Replacement & ROW
Reconfiguration/OPGW Project

Project Location: Ledyard, Connecticut

Date(s) of Investigations: May, 2020

Field Conditions: Weather: variable
Soil Moisture: moist

Wetland/Watercourse

Delineation Methodology¹: Connecticut Inland Wetlands and Watercourses
 Connecticut Tidal Wetlands
 Massachusetts Wetlands
 U.S. Army Corps of Engineers

The wetlands inspection was performed by²:

Davison Environmental, LLC

Matthew Davison
Professional Soil Scientist
Professional Wetland Scientist
Certified Professional in Erosion and Sediment Control
CT Certified Forester

¹ Wetlands and watercourses were delineated in accordance with applicable local, state and federal statutes, regulations and guidance.

² Wetlands were delineated by Davison Environmental Soil Scientist Matthew Davison. All established wetlands boundary lines are subject to change until officially adopted by local, state, or federal regulatory agencies.

Attachments

- Table 1: Delineated Wetlands and Watercourses within the 100-400-1410-1280 Line Structure Replacement & ROW Reconfiguration/OPGW Project Area
- Wetland Delineation Field Forms

**Table 1: Delineated Wetlands and Watercourses within the
100/400/1410/1280 Line Structure Replacement and ROW Reconfiguration/OPGW Project
Area**

Aerial Map Sheet No.	Wetland No. ¹	Dominant NWI Class ²	Other NWI Classes	Dominant Water Regime	Associated Watercourse ³	Associated Potential Vernal Pool ⁴
1	TW1	POW	PEM	Permanently Flooded	Horton Cove	---
1	NA	POW	PEM	Permanently Flooded	Thames River	---
2	W1	PEM	PSS	Seasonally Flooded	S1 (Intermittent)	---
3	W2	PEM	PSS	Seasonally Saturated-seepage	---	---
3	W3	PEM	PSS	Seasonally Saturated-seepage	---	---
4	W4	PFO	PSS	Seasonally Saturated-seepage	S2 (Intermittent)	---
4	W5	PSS	---	Seasonally Saturated-seepage	S3 (Intermittent)	---
4	W6	PSS	---	Seasonally Saturated-seepage	---	---
5	W7	POW	PSS	Permanently Flooded	---	---
5	W8	PSS	PEM	Seasonally Flooded	---	VP1
5	W9	PEM	---	Seasonally Saturated-seepage	---	---
5	W10	PSS	---	Seasonally Saturated-seepage	---	---

¹Wetland No. refers to the number generated during the 2020 field surveys. This Wetland No. is keyed to those depicted on the 200 scale Aerial Maps (Attached to the Petition).

²Wetlands classified according to Cowardin et al 1979; PEM = Palustrine Emergent Wetland; PFO = Palustrine Forested Wetland; PSS = Palustrine Scrub-Shrub Wetland; POW = Palustrine Open Water.

³Associated Watercourse refers to the identification number assigned during the 2020 field surveys to identify watercourses.

⁴ Vernal pools were identified in spring 2020 & 2021 by Davison Environmental

Wetland Delineation Field Form

Wetland I.D.:	TW1 (TWF 1-15)	Stream I.D.:	S1 (Horton Cove)
Flag Location Method:	Site Sketch <input type="checkbox"/>	GPS (sub-meter) located	<input checked="" type="checkbox"/>

WETLAND HYDROLOGY:

NONTIDAL

Intermittently Flooded <input type="checkbox"/>	Artificially Flooded <input type="checkbox"/>	Permanently Flooded <input type="checkbox"/>
Semipermanently Flooded <input type="checkbox"/>	Seasonally Flooded <input type="checkbox"/>	Temporarily Flooded <input type="checkbox"/>
Permanently Saturated <input type="checkbox"/>	Seasonally Saturated – seepage <input type="checkbox"/>	Seasonally Saturated - perched <input type="checkbox"/>
Comments: None		

TIDAL

Subtidal <input type="checkbox"/>	Regularly Flooded <input checked="" type="checkbox"/>	Irregularly Flooded <input type="checkbox"/>
Irregularly Flooded <input type="checkbox"/>		
Comments: Tidal wetland bordering the east side of Horton Cove		

WETLAND TYPE:

SYSTEM:

Estuarine <input type="checkbox"/>	Riverine <input checked="" type="checkbox"/>	Palustrine <input type="checkbox"/>
Lacustrine <input type="checkbox"/>	Marine <input type="checkbox"/>	
Comments: None		

CLASS:

Emergent <input type="checkbox"/>	Scrub-shrub <input type="checkbox"/>	Forested <input type="checkbox"/>
Open Water <input type="checkbox"/>	Disturbed <input type="checkbox"/>	Wet Meadow <input type="checkbox"/>
Comments: None		

WATERCOURSE TYPE:

Perennial <input type="checkbox"/>	Intermittent <input type="checkbox"/>	Tidal <input checked="" type="checkbox"/>
Watercourse Name: None		
Comments: Horton Cove is a tidal cove associated with the Thames River		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Potential <input type="checkbox"/>	Other <input type="checkbox"/>
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
---	---	-----------------------------

DOMINANT PLANTS:

High-tide Bush (<i>Iva frutescens</i>)	
Groundsel tree (<i>Baccharis halimifolia</i>)	
Smooth cordgrass (<i>Spartina alterniflora</i>)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W1	Stream I.D.:	S1
Flag Location Method:	Site Sketch <input type="checkbox"/>	GPS (sub-meter) located <input checked="" type="checkbox"/>	

WETLAND HYDROLOGY:

NONTIDAL

Intermittently Flooded <input type="checkbox"/>	Artificially Flooded <input type="checkbox"/>	Permanently Flooded <input type="checkbox"/>
Semipermanently Flooded <input type="checkbox"/>	Seasonally Flooded <input checked="" type="checkbox"/>	Temporarily Flooded <input type="checkbox"/>
Permanently Saturated <input checked="" type="checkbox"/>	Seasonally Saturated – seepage <input checked="" type="checkbox"/>	Seasonally Saturated - perched <input type="checkbox"/>
Comments: wetland includes 100-year flood zone		

TIDAL

Subtidal <input type="checkbox"/>	Regularly Flooded <input type="checkbox"/>	Irregularly Flooded <input type="checkbox"/>
Irregularly Flooded <input type="checkbox"/>		
Comments:		

WETLAND TYPE:

SYSTEM:

Estuarine <input type="checkbox"/>	Riverine <input type="checkbox"/>	Palustrine <input checked="" type="checkbox"/>
Lacustrine <input type="checkbox"/>	Marine <input type="checkbox"/>	
Comments: None		

CLASS:

Emergent <input checked="" type="checkbox"/>	Scrub-shrub <input checked="" type="checkbox"/>	Forested <input type="checkbox"/>
Open Water <input type="checkbox"/>	Disturbed <input type="checkbox"/>	Wet Meadow <input type="checkbox"/>
Comments: None		

WATERCOURSE TYPE:

Perennial <input type="checkbox"/>	Intermittent <input checked="" type="checkbox"/>	Tidal <input type="checkbox"/>
Watercourse Name: none		
Comments: Embedded intermittent watercourse drains south from wetland		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Potential <input type="checkbox"/>	Other <input type="checkbox"/>
Vernal Pool Habitat Type: NA	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
---	---	-----------------------------

DOMINANT PLANTS:

Common Reed* (Phragmites australis)	
Joe Pye Weed (Eupatorium maculatum)	
Sensitive Fern (Onoclea sensibilis)	
Soft Rush (Juncus effusus)	
Tussock Sedge (Carex stricta)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W2	Stream I.D.:	NA
Flag Location Method:	Site Sketch <input type="checkbox"/>	GPS (sub-meter) located <input checked="" type="checkbox"/>	

WETLAND HYDROLOGY:

NONTIDAL

Intermittently Flooded <input type="checkbox"/>	Artificially Flooded <input type="checkbox"/>	Permanently Flooded <input type="checkbox"/>
Semipermanently Flooded <input type="checkbox"/>	Seasonally Flooded <input type="checkbox"/>	Temporarily Flooded <input type="checkbox"/>
Permanently Saturated <input type="checkbox"/>	Seasonally Saturated – seepage <input checked="" type="checkbox"/>	Seasonally Saturated - perched <input type="checkbox"/>
Comments: none		

TIDAL

Subtidal <input type="checkbox"/>	Regularly Flooded <input type="checkbox"/>	Irregularly Flooded <input type="checkbox"/>
Irregularly Flooded <input type="checkbox"/>		
Comments:		

WETLAND TYPE:

SYSTEM:

Estuarine <input type="checkbox"/>	Riverine <input type="checkbox"/>	Palustrine <input checked="" type="checkbox"/>
Lacustrine <input type="checkbox"/>	Marine <input type="checkbox"/>	
Comments: none		

CLASS:

Emergent <input checked="" type="checkbox"/>	Scrub-shrub <input checked="" type="checkbox"/>	Forested <input type="checkbox"/>
Open Water <input type="checkbox"/>	Disturbed <input type="checkbox"/>	Wet Meadow <input type="checkbox"/>
Comments: none		

WATERCOURSE TYPE:

Perennial <input type="checkbox"/>	Intermittent <input type="checkbox"/>	Tidal <input type="checkbox"/>
Watercourse Name: NA		
Comments: none		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Potential <input type="checkbox"/>	Other <input type="checkbox"/>
Vernal Pool Habitat Type: NA	
Comments: none	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
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DOMINANT PLANTS:

Common Reed* (Phragmites australis)	
Skunk Cabbage (Symplocarpus foetidus)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W3	Stream I.D.:	NA
Flag Location Method:	Site Sketch <input type="checkbox"/>	GPS (sub-meter) located <input checked="" type="checkbox"/>	

WETLAND HYDROLOGY:

NONTIDAL

Intermittently Flooded <input type="checkbox"/>	Artificially Flooded <input type="checkbox"/>	Permanently Flooded <input type="checkbox"/>
Semipermanently Flooded <input type="checkbox"/>	Seasonally Flooded <input type="checkbox"/>	Temporarily Flooded <input type="checkbox"/>
Permanently Saturated <input type="checkbox"/>	Seasonally Saturated – seepage <input checked="" type="checkbox"/>	Seasonally Saturated - perched <input type="checkbox"/>
Comments: none		

TIDAL

Subtidal <input type="checkbox"/>	Regularly Flooded <input type="checkbox"/>	Irregularly Flooded <input type="checkbox"/>
Irregularly Flooded <input type="checkbox"/>		
Comments:		

WETLAND TYPE:

SYSTEM:

Estuarine <input type="checkbox"/>	Riverine <input type="checkbox"/>	Palustrine <input checked="" type="checkbox"/>
Lacustrine <input type="checkbox"/>	Marine <input type="checkbox"/>	
Comments: none		

CLASS:

Emergent <input checked="" type="checkbox"/>	Scrub-shrub <input checked="" type="checkbox"/>	Forested <input type="checkbox"/>
Open Water <input type="checkbox"/>	Disturbed <input type="checkbox"/>	Wet Meadow <input type="checkbox"/>
Comments: none		

WATERCOURSE TYPE:

Perennial <input type="checkbox"/>	Intermittent <input type="checkbox"/>	Tidal <input type="checkbox"/>
Watercourse Name: NA		
Comments: none		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Potential <input type="checkbox"/>	Other <input type="checkbox"/>
Vernal Pool Habitat Type: NA	
Comments: none	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
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DOMINANT PLANTS:

Common Reed* (Phragmites australis)	
Skunk Cabbage (Symplocarpus foetidus)	
Steeplebush (Spiraea tomentosa)	
Sensitive Fern (Onoclea sensibilis)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W4	Stream I.D.:	S2
Flag Location Method:	Site Sketch <input type="checkbox"/>	GPS (sub-meter) located <input checked="" type="checkbox"/>	

WETLAND HYDROLOGY:

NONTIDAL

Intermittently Flooded <input type="checkbox"/>	Artificially Flooded <input type="checkbox"/>	Permanently Flooded <input type="checkbox"/>
Semipermanently Flooded <input type="checkbox"/>	Seasonally Flooded <input type="checkbox"/>	Temporarily Flooded <input type="checkbox"/>
Permanently Saturated <input type="checkbox"/>	Seasonally Saturated – seepage <input checked="" type="checkbox"/>	Seasonally Saturated - perched <input type="checkbox"/>
Comments: none		

TIDAL

Subtidal <input type="checkbox"/>	Regularly Flooded <input type="checkbox"/>	Irregularly Flooded <input type="checkbox"/>
Irregularly Flooded <input type="checkbox"/>		
Comments:		

WETLAND TYPE:

SYSTEM:

Estuarine <input type="checkbox"/>	Riverine <input type="checkbox"/>	Palustrine <input checked="" type="checkbox"/>
Lacustrine <input type="checkbox"/>	Marine <input type="checkbox"/>	
Comments: none		

CLASS:

Emergent <input type="checkbox"/>	Scrub-shrub <input checked="" type="checkbox"/>	Forested <input checked="" type="checkbox"/>
Open Water <input type="checkbox"/>	Disturbed <input type="checkbox"/>	Wet Meadow <input type="checkbox"/>
Comments: none		

WATERCOURSE TYPE:

Perennial <input type="checkbox"/>	Intermittent <input checked="" type="checkbox"/>	Tidal <input type="checkbox"/>
Watercourse Name: NA		
Comments: intermittent watercourse originates from culvert, source is unknown		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Potential <input type="checkbox"/>	Other <input type="checkbox"/>
Vernal Pool Habitat Type: NA	
Comments: none	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
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DOMINANT PLANTS:

Red Maple (<i>Acer rubrum</i>)	
Spicebush (<i>Lindera benzoin</i>)	
Winterberry (<i>Ilex verticillata</i>)	
Skunk Cabbage (<i>Symplocarpus foetidus</i>)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W5	Stream I.D.:	S3
Flag Location Method:	Site Sketch <input type="checkbox"/>	GPS (sub-meter) located <input checked="" type="checkbox"/>	

WETLAND HYDROLOGY:

NONTIDAL

Intermittently Flooded <input type="checkbox"/>	Artificially Flooded <input type="checkbox"/>	Permanently Flooded <input type="checkbox"/>
Semipermanently Flooded <input type="checkbox"/>	Seasonally Flooded <input type="checkbox"/>	Temporarily Flooded <input type="checkbox"/>
Permanently Saturated <input type="checkbox"/>	Seasonally Saturated – seepage <input checked="" type="checkbox"/>	Seasonally Saturated - perched <input type="checkbox"/>
Comments: none		

TIDAL

Subtidal <input type="checkbox"/>	Regularly Flooded <input type="checkbox"/>	Irregularly Flooded <input type="checkbox"/>
Irregularly Flooded <input type="checkbox"/>		
Comments:		

WETLAND TYPE:

SYSTEM:

Estuarine <input type="checkbox"/>	Riverine <input type="checkbox"/>	Palustrine <input checked="" type="checkbox"/>
Lacustrine <input type="checkbox"/>	Marine <input type="checkbox"/>	
Comments: none		

CLASS:

Emergent <input type="checkbox"/>	Scrub-shrub <input checked="" type="checkbox"/>	Forested <input type="checkbox"/>
Open Water <input type="checkbox"/>	Disturbed <input type="checkbox"/>	Wet Meadow <input type="checkbox"/>
Comments: none		

WATERCOURSE TYPE:

Perennial <input type="checkbox"/>	Intermittent <input checked="" type="checkbox"/>	Tidal <input type="checkbox"/>
Watercourse Name: NA		
Comments: watercourse flows through an extremely stony substrate east of trail		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Potential <input type="checkbox"/>	Other <input type="checkbox"/>
Vernal Pool Habitat Type: NA	
Comments: none	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
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DOMINANT PLANTS:

Northern Arrow-wood (<i>Viburnum recognitum</i>)	Bebb Willow (<i>Salix bebbiana</i>)
Spicebush (<i>Lindera benzoin</i>)	Jewelweed (<i>Impatiens capensis</i>)
Joe Pye Weed (<i>Eupatorium maculatum</i>)	
Sensitive Fern (<i>Onoclea sensibilis</i>)	
Speckled Alder (<i>Alnus rugosa</i>)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W6	Stream I.D.:	NA
Flag Location Method:	Site Sketch <input type="checkbox"/>	GPS (sub-meter) located <input checked="" type="checkbox"/>	

WETLAND HYDROLOGY:

NONTIDAL

Intermittently Flooded <input type="checkbox"/>	Artificially Flooded <input type="checkbox"/>	Permanently Flooded <input type="checkbox"/>
Semipermanently Flooded <input type="checkbox"/>	Seasonally Flooded <input type="checkbox"/>	Temporarily Flooded <input type="checkbox"/>
Permanently Saturated <input type="checkbox"/>	Seasonally Saturated – seepage <input checked="" type="checkbox"/>	Seasonally Saturated - perched <input type="checkbox"/>
Comments: none		

TIDAL

Subtidal <input type="checkbox"/>	Regularly Flooded <input type="checkbox"/>	Irregularly Flooded <input type="checkbox"/>
Irregularly Flooded <input type="checkbox"/>		
Comments:		

WETLAND TYPE:

SYSTEM:

Estuarine <input type="checkbox"/>	Riverine <input type="checkbox"/>	Palustrine <input checked="" type="checkbox"/>
Lacustrine <input type="checkbox"/>	Marine <input type="checkbox"/>	
Comments: none		

CLASS:

Emergent <input type="checkbox"/>	Scrub-shrub <input checked="" type="checkbox"/>	Forested <input type="checkbox"/>
Open Water <input type="checkbox"/>	Disturbed <input type="checkbox"/>	Wet Meadow <input type="checkbox"/>
Comments: none		

WATERCOURSE TYPE:

Perennial <input type="checkbox"/>	Intermittent <input type="checkbox"/>	Tidal <input type="checkbox"/>
Watercourse Name: NA		
Comments: none		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Potential <input type="checkbox"/>	Other <input type="checkbox"/>
Vernal Pool Habitat Type: NA	
Comments: none	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
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DOMINANT PLANTS:

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W7	Stream I.D.:	NA
Flag Location Method:	Site Sketch <input type="checkbox"/>	GPS (sub-meter) located <input checked="" type="checkbox"/>	

WETLAND HYDROLOGY:

NONTIDAL

Intermittently Flooded <input type="checkbox"/>	Artificially Flooded <input type="checkbox"/>	Permanently Flooded <input checked="" type="checkbox"/>
Semipermanently Flooded <input type="checkbox"/>	Seasonally Flooded <input type="checkbox"/>	Temporarily Flooded <input type="checkbox"/>
Permanently Saturated <input checked="" type="checkbox"/>	Seasonally Saturated – seepage <input type="checkbox"/>	Seasonally Saturated - perched <input type="checkbox"/>
Comments: wetland includes several hydraulically connected ponds		

TIDAL

Subtidal <input type="checkbox"/>	Regularly Flooded <input type="checkbox"/>	Irregularly Flooded <input type="checkbox"/>
Irregularly Flooded <input type="checkbox"/>		
Comments:		

WETLAND TYPE:

SYSTEM:

Estuarine <input type="checkbox"/>	Riverine <input type="checkbox"/>	Palustrine <input checked="" type="checkbox"/>
Lacustrine <input type="checkbox"/>	Marine <input type="checkbox"/>	
Comments: none		

CLASS:

Emergent <input type="checkbox"/>	Scrub-shrub <input checked="" type="checkbox"/>	Forested <input type="checkbox"/>
Open Water <input checked="" type="checkbox"/>	Disturbed <input type="checkbox"/>	Wet Meadow <input type="checkbox"/>
Comments: none		

WATERCOURSE TYPE:

Perennial <input type="checkbox"/>	Intermittent <input type="checkbox"/>	Tidal <input type="checkbox"/>
Watercourse Name: NA		
Comments: none		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Potential <input type="checkbox"/>	Other <input type="checkbox"/>
Vernal Pool Habitat Type: NA	
Comments: none	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
---	---	-----------------------------

DOMINANT PLANTS:

Speckled Alder (<i>Alnus rugosa</i>)	Northern Arrow-wood (<i>Viburnum recognitum</i>)
Bebb Willow (<i>Salix bebbiana</i>)	Jewelweed (<i>Impatiens capensis</i>)
Pussywillow (<i>Salix discolor</i>)	
Joe Pye Weed (<i>Eupatorium maculatum</i>)	
Woolgrass (<i>Scirpus cyperinus</i>)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W8	Stream I.D.:	NA
Flag Location Method:	Site Sketch <input type="checkbox"/>	GPS (sub-meter) located <input checked="" type="checkbox"/>	

WETLAND HYDROLOGY:

NONTIDAL

Intermittently Flooded <input type="checkbox"/>	Artificially Flooded <input type="checkbox"/>	Permanently Flooded <input type="checkbox"/>
Semipermanently Flooded <input type="checkbox"/>	Seasonally Flooded <input checked="" type="checkbox"/>	Temporarily Flooded <input type="checkbox"/>
Permanently Saturated <input type="checkbox"/>	Seasonally Saturated – seepage <input type="checkbox"/>	Seasonally Saturated - perched <input type="checkbox"/>
Comments: none		

TIDAL

Subtidal <input type="checkbox"/>	Regularly Flooded <input type="checkbox"/>	Irregularly Flooded <input type="checkbox"/>
Irregularly Flooded <input type="checkbox"/>		
Comments:		

WETLAND TYPE:

SYSTEM:

Estuarine <input type="checkbox"/>	Riverine <input type="checkbox"/>	Palustrine <input checked="" type="checkbox"/>
Lacustrine <input type="checkbox"/>	Marine <input type="checkbox"/>	
Comments: none		

CLASS:

Emergent <input checked="" type="checkbox"/>	Scrub-shrub <input checked="" type="checkbox"/>	Forested <input type="checkbox"/>
Open Water <input type="checkbox"/>	Disturbed <input type="checkbox"/>	Wet Meadow <input type="checkbox"/>
Comments: none		

WATERCOURSE TYPE:

Perennial <input type="checkbox"/>	Intermittent <input type="checkbox"/>	Tidal <input type="checkbox"/>
Watercourse Name: NA		
Comments: none		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Potential <input type="checkbox"/>	Other <input type="checkbox"/>
Vernal Pool Habitat Type: 'Cryptic'	
Comments: VP1 - buttonbush swamp is seasonally flooded with confirmed vernal pool habitat	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
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DOMINANT PLANTS:

Buttonbush (<i>Cephalanthus occidentalis</i>)	Skunk Cabbage (<i>Symplocarpus foetidus</i>)
Tussock Sedge (<i>Carex stricta</i>)	Jewelweed (<i>Impatiens capensis</i>)
Soft Rush (<i>Juncus effusus</i>)	
Tearthubs (<i>Polygonum spp.</i>)	
Woolgrass (<i>Scirpus cyperinus</i>)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W9	Stream I.D.:	NA
Flag Location Method:	Site Sketch <input type="checkbox"/>	GPS (sub-meter) located <input checked="" type="checkbox"/>	

WETLAND HYDROLOGY:

NONTIDAL

Intermittently Flooded <input type="checkbox"/>	Artificially Flooded <input type="checkbox"/>	Permanently Flooded <input type="checkbox"/>
Semipermanently Flooded <input type="checkbox"/>	Seasonally Flooded <input type="checkbox"/>	Temporarily Flooded <input type="checkbox"/>
Permanently Saturated <input type="checkbox"/>	Seasonally Saturated – seepage <input checked="" type="checkbox"/>	Seasonally Saturated - perched <input type="checkbox"/>
Comments: None		

TIDAL

Subtidal <input type="checkbox"/>	Regularly Flooded <input type="checkbox"/>	Irregularly Flooded <input type="checkbox"/>
Irregularly Flooded <input type="checkbox"/>		
Comments:		

WETLAND TYPE:

SYSTEM:

Estuarine <input type="checkbox"/>	Riverine <input type="checkbox"/>	Palustrine <input checked="" type="checkbox"/>
Lacustrine <input type="checkbox"/>	Marine <input type="checkbox"/>	
Comments: None		

CLASS:

Emergent <input checked="" type="checkbox"/>	Scrub-shrub <input checked="" type="checkbox"/>	Forested <input type="checkbox"/>
Open Water <input type="checkbox"/>	Disturbed <input type="checkbox"/>	Wet Meadow <input type="checkbox"/>
Comments: None		

WATERCOURSE TYPE:

Perennial <input type="checkbox"/>	Intermittent <input type="checkbox"/>	Tidal <input type="checkbox"/>
Watercourse Name: NA		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Potential <input type="checkbox"/>	Other <input type="checkbox"/>
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
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DOMINANT PLANTS:

Meadowsweet (<i>Spiraea latifolia</i>)	Spicebush (<i>Lindera benzoin</i>)
Steeplebush (<i>Spiraea tomentosa</i>)	Jewelweed (<i>Impatiens capensis</i>)
Northern Arrow-wood (<i>Viburnum recognitum</i>)	
Tearthumbs (<i>Polygonum spp.</i>)	
Joe Pye Weed (<i>Eupatorium maculatum</i>)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W10	Stream I.D.:	NA
Flag Location Method:	Site Sketch <input type="checkbox"/>	GPS (sub-meter) located <input checked="" type="checkbox"/>	

WETLAND HYDROLOGY:

NONTIDAL

Intermittently Flooded <input type="checkbox"/>	Artificially Flooded <input type="checkbox"/>	Permanently Flooded <input type="checkbox"/>
Semipermanently Flooded <input type="checkbox"/>	Seasonally Flooded <input type="checkbox"/>	Temporarily Flooded <input type="checkbox"/>
Permanently Saturated <input type="checkbox"/>	Seasonally Saturated – seepage <input checked="" type="checkbox"/>	Seasonally Saturated - perched <input type="checkbox"/>
Comments: None		

TIDAL

Subtidal <input type="checkbox"/>	Regularly Flooded <input type="checkbox"/>	Irregularly Flooded <input type="checkbox"/>
Irregularly Flooded <input type="checkbox"/>		
Comments:		

WETLAND TYPE:

SYSTEM:

Estuarine <input type="checkbox"/>	Riverine <input type="checkbox"/>	Palustrine <input checked="" type="checkbox"/>
Lacustrine <input type="checkbox"/>	Marine <input type="checkbox"/>	
Comments: None		

CLASS:

Emergent <input checked="" type="checkbox"/>	Scrub-shrub <input checked="" type="checkbox"/>	Forested <input type="checkbox"/>
Open Water <input type="checkbox"/>	Disturbed <input type="checkbox"/>	Wet Meadow <input type="checkbox"/>
Comments: None		

WATERCOURSE TYPE:

Perennial <input type="checkbox"/>	Intermittent <input type="checkbox"/>	Tidal <input type="checkbox"/>
Watercourse Name: NA		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Potential <input type="checkbox"/>	Other <input type="checkbox"/>
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
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DOMINANT PLANTS:

Japanese Knotweed* (Polygonum cuspidatum)	
Spicebush (Lindera benzoin)	
Northern Arrow-wood (Viburnum recognitum)	
Sensitive Fern (Onoclea sensibilis)	
Joe Pye Weed (Eupatorium maculatum)	

* denotes Connecticut Invasive Species Council invasive plant species

Attachment E: Vernal Pool Survey



Biodiversity Studies • Wetland Delineation & Assessment • Habitat Management • GIS Mapping • Permitting • Forestry

Vernal Pool Survey

September 8, 2021

DE Project No.: 2020-48

Prepared For: Eversource Energy
56 Prospect Street
Hartford, CT 06103
Attn: Antonio Federici

Eversource Project Name: 100-400-1410-1280 Line Structure Replacement &
ROW Reconfiguration/OPGW Project

Project Location: Ledyard, Connecticut

Date(s) of Investigations: May, 2020 & 2021

Survey Methodology: Visual & Audial Survey, Dip Netting

The vernal pool survey was performed by:

Davison Environmental, LLC

Eric Davison
Wildlife Biologist
Professional Wetland Scientist

INTRODUCTION

The following details vernal pool surveys conducted by Davison Environmental in support of The Connecticut Light and Power Company doing business as Eversource Energy's ("Eversource") petition to the Connecticut Siting Council for structure replacements and optical ground wire ("OPGW") along the 100-400-1410-1280 Line within an existing right-of-way ("ROW") in Ledyard, Connecticut (the "Project").

VERNAL POOL DEFINITION

Several vernal pool definitions have been developed by both regulatory authorities and conservation organizations. The Connecticut Department of Energy and Environmental Protection (CT DEEP) generally describes vernal pools on its website but cautions that the data provided is informational in nature and should not supplant regulations of municipal inland wetlands agencies. CT DEEP describes vernal pools as "*small bodies of standing fresh water found throughout the spring*" that are "*usually temporary*" and "*result from various combinations of snowmelt, precipitation and high water tables associated with the spring season*".

Calhoun and Klemens (2002) *Best development practices: Conserving pool-breeding amphibians in residential and commercial developments in the northeastern United States* (BDP Manual) provides the following operational definition of vernal pools:

*Vernal pools are seasonal bodies of water that attain maximum depths in the spring or fall and lack permanent surface water connections with other wetlands or water bodies. Pools fill with snowmelt or runoff in the spring, although some may be fed primarily by groundwater sources. The duration of surface flooding, known as hydroperiod, varies depending upon the pool and the year; vernal pool hydroperiods range along a continuum from less than 30 days to more than one year. Pools are generally small in size (<2 acres), with the extent of vegetation varying widely. They lack established fish populations, usually as a result of periodic drying, and support communities dominated by animals adapted to living in temporary, fishless pools. In the region, they provide essential breeding habitat for one or more wildlife species including Ambystomid salamanders (*Ambystoma* spp., called "mole salamanders" because they live in burrows), wood frogs (*Rana sylvatica*), and fairy shrimp (*Eubranchipus* spp.).*

Vernal pool physical characteristics can vary widely while still providing habitat for indicator species. "Classic" vernal pools are natural depressions in a wooded upland with no permanent hydrologic connection to other wetland systems. Anthropogenic depressions such as quarry holes, old farm ponds and borrow pits can also provide similar habitat. Often, vernal pools are depressions or impoundments embedded within larger wetland systems. These vernal pool habitats are commonly referred to as "cryptic" vernal pools.

Several species of amphibians depend on vernal pools for reproduction and development. These species are referred to as indicator (a.k.a. obligate) vernal pool species, and the presence of breeding adults, egg masses or larvae within a seasonally flooded wetland provides confirmation of a vernal pool.

Facultative vernal pool species are fauna that utilize but do not necessarily require vernal pools for reproductive success. Examples of facultative species include spotted turtles (*Clemmys guttata*) and four-toed salamander (*Hemidactylum scutatum*). These species may breed or feed in vernal pools but are also capable of carrying out all phases of their lifecycle in other types of wetlands or water bodies. Evidence of breeding by facultative species alone is not considered indicative of the presence of a vernal pool.

EXISTING WETLANDS ALONG THE PROJECT ROW

Project wetlands are predominantly characterized by wetlands with a “saturated” hydrology. Mitsch and Gosselink (2007)¹ defines a saturated hydrology as a wetland with a substrate that is saturated for extended periods during the growing season, but standing water is rarely present. Wetlands with a saturated hydrology are not capable of supporting breeding by vernal pool indicator species, as they lack prolonged standing water. In order for successful breeding by vernal pool amphibians to occur, a wetland must have standing water from approximately March through June for most indicator species². Such wetlands, referred to as seasonally flooded wetlands, provide optimal habitat for vernal pool indicator species. Additionally, while seasonally flooded conditions are optimal, permanently (or semi-permanently) flooded wetlands can also provide suitable breeding habitat, particularly if they occur in a forested landscape and contain shallow water with emergent and/or submergent vegetation.

VERNAL POOL SURVEY

Vernal pool surveys were conducted within the Project area in 2020 (during the initial wetland delineation) and 2021. One vernal pool was identified within Wetland 8 and was labeled “VP1” on the Project mapping.

Vernal Pool 1 is cryptic vernal pool (as opposed to classic) located southeast of Structures 7036A-2 & 7036B-2. The wetland and vernal pool are characterized by scrub-shrub cover within the maintained ROW which then transitions to a forested wetland beyond the maintained ROW. This is a large vernal pool with the majority of the pool having a seasonally flooded hydrology. The central, deeper portions of the pool are likely permanently ponded. The maximum observed water depth was 26 inches, with an average water depth of approximately 18 inches observed. The pool contains dense shrub cover, primarily of buttonbush (*Cephalanthus occidentalis*).

The pool was evaluated for indicator species on June 18, 2021. The weather during the visit was clear and sunny, with temperatures in the mid-70s. Due to the lateness of the survey beyond the egg mass observation period, the survey consisted of a visual encounter survey along with dip-netting (with a fine mesh dipnet) to locate developing larvae of vernal pool indicator species. The purpose being a rapid assessment presence/absence survey.

One indicator species, the wood frog (*Rana sylvatica*), was confirmed breeding. Larvae of wood frog were abundant, particularly in the northern portions of the pool. Two size classes of tadpole were observed, which are indicative of the protracted breeding season observed for wood frog during 2021. One facultative species, the spring peeper (*Pseudacris crucifer*), was also observed. Adult green frog (*Rana clamitans*), a non-vernal pool wetland generalist species, were also observed. It is likely that the pool also supports spotted salamander (*Ambystoma maculatum*), another common indicator species. As larvae would have been small (approximately ½ inch or

¹ Mitsch, W.J. and Gosselink, J.G. 2007. Wetlands, fourth edition. John Wiley and Sons, Inc.

² The indicator species marbled salamander (*Ambystoma opacum*) breeds in late-summer and fall, with larval development throughout the winter and spring.

less) in mid-June, they would be easily overlooked in such a large, deeply ponded and densely vegetated wetland.

RECOMMENDED BEST MANAGEMENT PRACTICES

The following measures are recommended to avoid or minimize impacts on the above-referenced vernal pools during construction:

- A. During construction, work within the vernal pool depression should be avoided;
- B. Gravel fill required for the work pad at Structure 7036A-2 and 7036B-2 should be minimized to the greatest extent practicable within the vernal pool envelope (0-100 feet);
- C. Existing scrub-shrub vegetation within 25 feet of the vernal pool should be maintained, consistent with ROW vegetation management requirements. Where low growing (scrub-shrub) vegetation must be removed adjacent to the vernal pool, the cut vegetation (slash) should be left in place to serve as recruitment for leaf litter and coarse woody debris;

Attachment:

Photographs of Vernal Pool 1



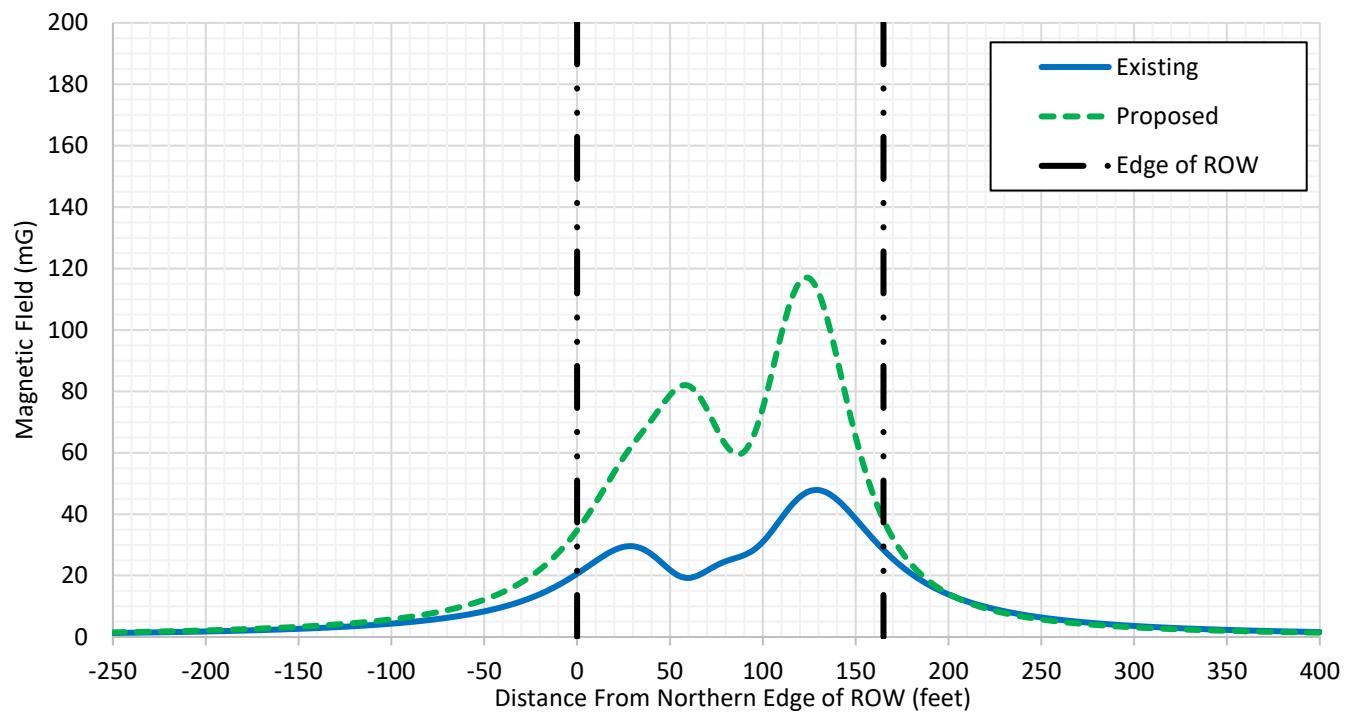
Photo 1: view of overall pool and wetland looking west.



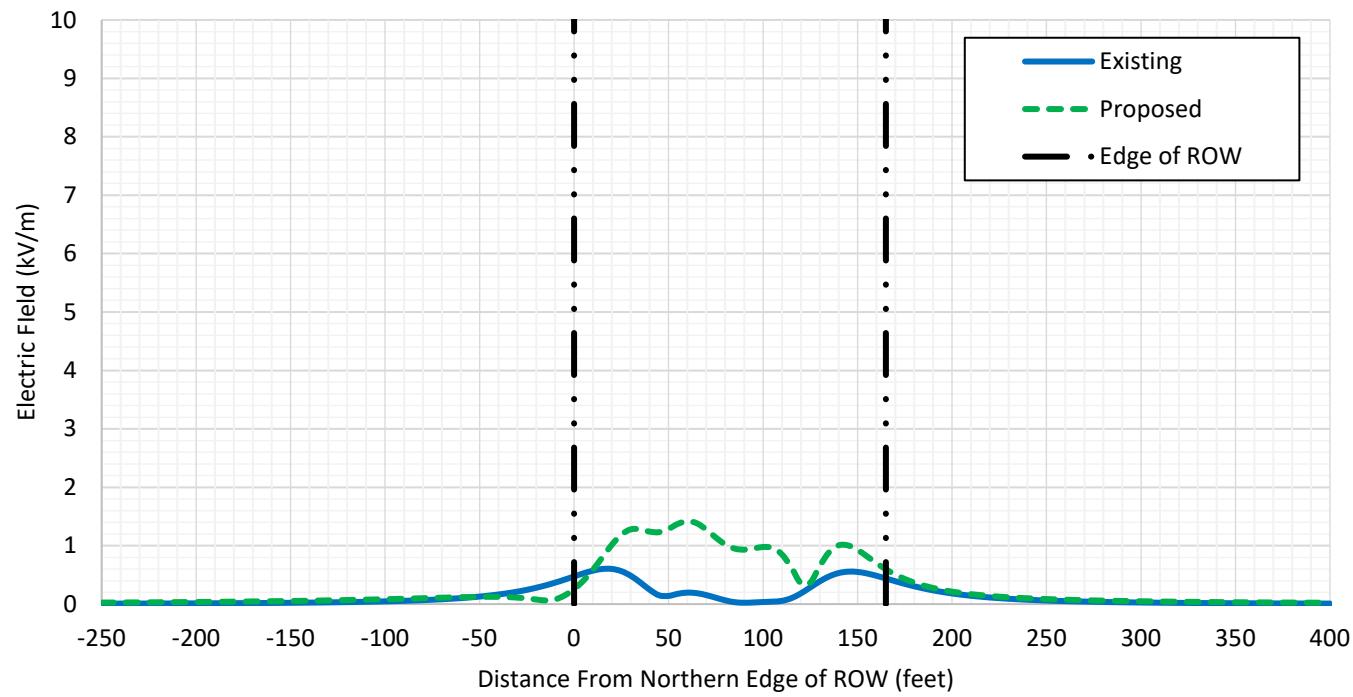
Photo 2: close up view of central portion of vernal pool, looking west.

Attachment F: EMF Graphs

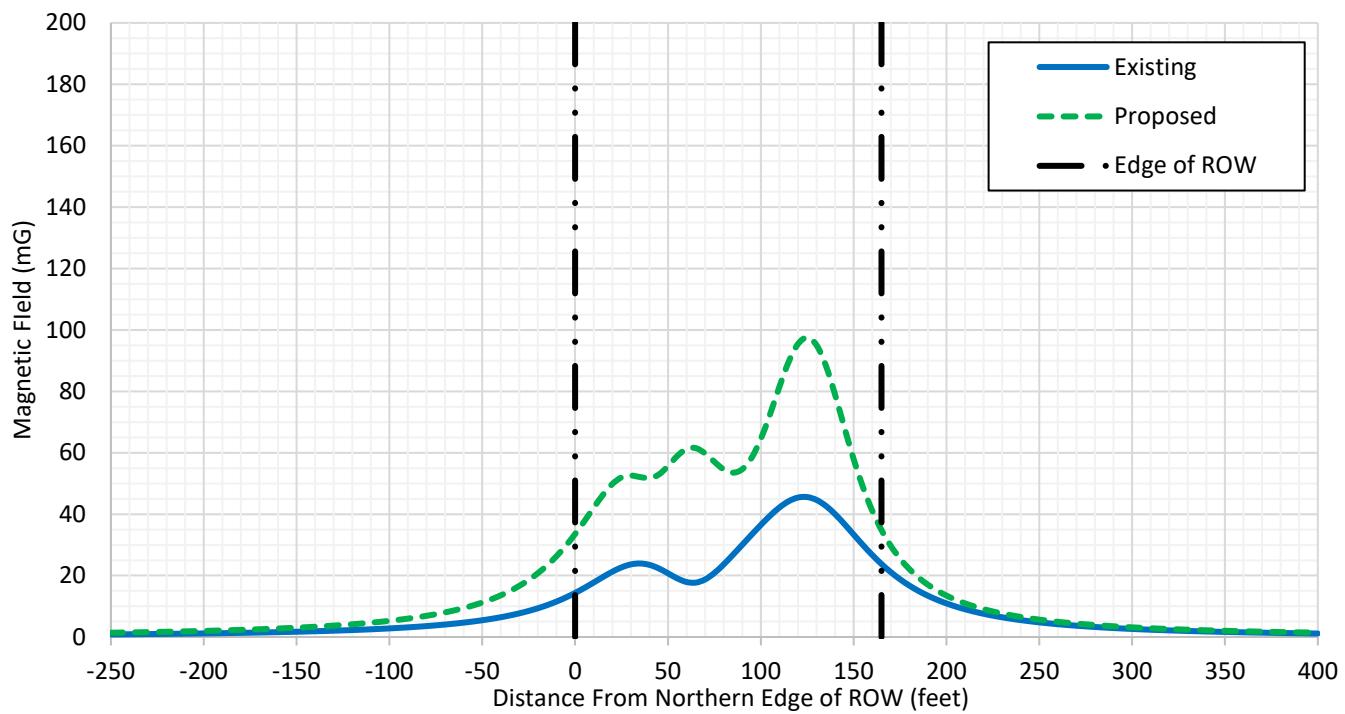
Calculated Magnetic Fields (AAL) Structure 7015 - Gales Ferry Substation



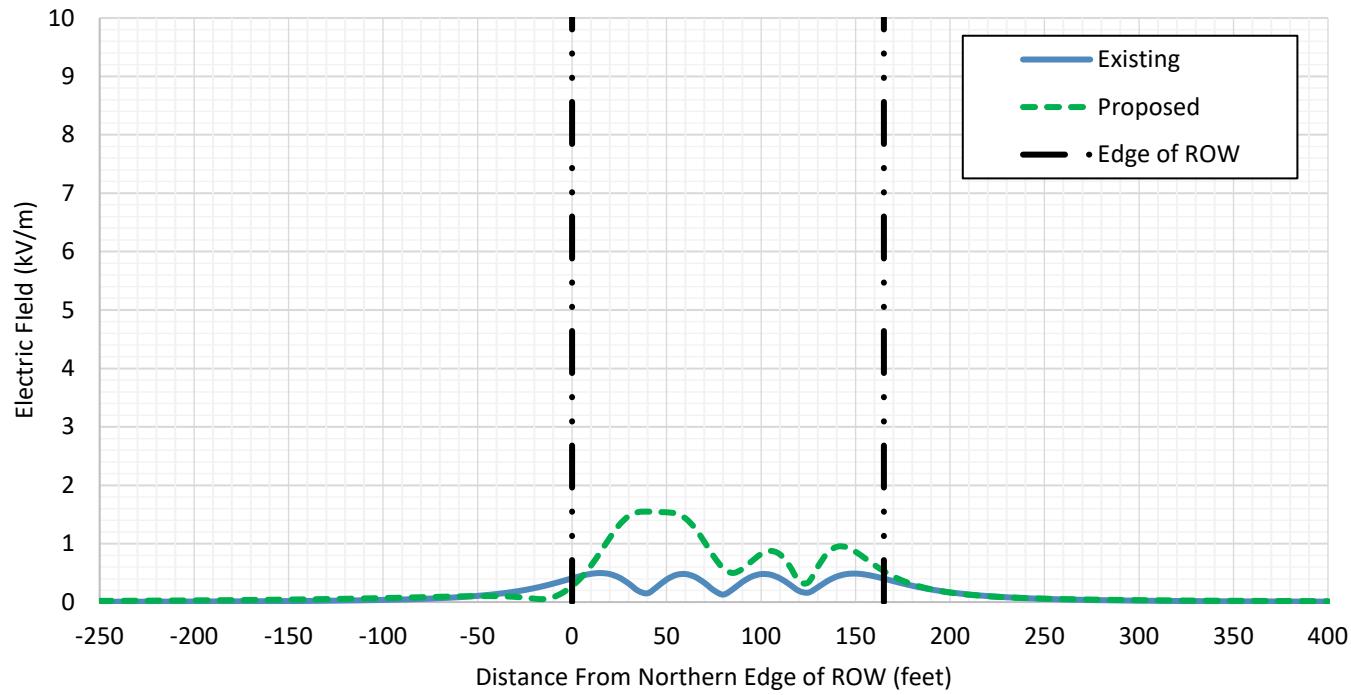
Calculated Electric Fields (AAL) Structure 7015 - Gales Ferry Substation



Calculated Magnetic Fields (AAL) Gales Ferry Substation - Ledyard Junction



Calculated Electric Fields (AAL) Structure 7015 - Gales Ferry Substation



Attachment G: Letter to the Abutters and Affidavit

AFFIDAVIT OF SERVICE OF NOTICE

STATE OF CONNECTICUT)
) ss. Berlin
COUNTY OF HARTFORD)

Sec. 16-50j-40 of the Regulations of Connecticut State Agencies ("RCSA") provides that proof of notice to the affected municipalities, property owners and abutters shall be submitted with a petition for declaratory ruling to the Connecticut Siting Council ("Council"). In accordance with that RCSA section, I hereby certify that I caused notice of the petition for a declaratory ruling of The Connecticut Light and Power Company doing business as Eversource Energy to be served by mail or courier upon the following municipal officials:

- Mayor Ronald K. McDaniel
Montville Town Hall
310 Norwich-New London Turnpike
Uncasville, CT 06382
- Fred Allyn, III
Ledyard Town Hall
741 Colonel Ledyard Highway
Ledyard, CT 06339

I also certify that I caused notice of the proposed modifications to be served by mail or courier upon owners of abutting properties shown on the maps in Attachment A to the Petition.

Taylor LaPierre

Taylor LaPierre
Project Manager

On this the 28th day of December 2021, before me, the undersigned representative, personally appeared, Taylor LaPierre, known to me (or satisfactorily proven) to be the person whose name is subscribed to the foregoing instrument and acknowledged that he executed the same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

Notary Public/My Commission expires: _____

Officer of the Superior Court/ Juris No.: *Andrew W. Sol* 413393



P.O. Box 270
Hartford, CT 06141-0270

December 2021

Dear Neighbor,

At Eversource, we're always working to serve you better. We are submitting a petition to the Connecticut Siting Council (CSC) for a proposed reliability project in your area.

Proposed Project Information

The Project, called the Horton Cove to Ledyard Junction Reliability Project ("Project"), is one of several projects designed to support the continued reliability of the transmission system in Eastern Connecticut. The Project work would be located within the existing Eversource right-of-way (ROW) on or near your property in the towns of Montville and Ledyard. The proposed modifications include:

- Rebuild the transmission lines and reconfigure the right of way (powerline corridor) between an area off Kitemaug Road in Montville and Ledyard Junction off Whalehead Road, in Ledyard. We will replace existing wood and steel structures with new steel structures, with a finish that "weathers" or darkens over time.
- Replace existing conductors, or overhead wires that make up the transmission lines, with new, slightly thicker wires. This will include increasing the voltage of one of the transmission lines from 69-kV to 115-kV.
- Replace the shield wire on the structures with Optical Ground Wire (OPGW). With these improvements, Eversource will improve electric reliability by enabling communication between substations.
- Remove selective tree and vegetation within the right of way to comply with updated electrical standards.

What You Can Expect

Pending receipt of the necessary approvals for this proposed work, construction is expected to begin in the first quarter of 2022.

Contact Information

Eversource is committed to being a good neighbor and doing our work with respect for you and your property. For more information please call our projects hotline at 1-800-793-2202 or send an email to ProjectInfo@eversource.com.

If you would like to send comments regarding Eversource's petition to the CSC, please send them via email to siting.council@ct.gov or send a letter to the following address: Melanie Bachman, Executive Director, Connecticut Siting Council, Ten Franklin Square, New Britain, CT 06051.

Sincerely,

Taylor LaPierre

Taylor LaPierre
Project Manager on Behalf of Eversource - Transmission