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October 22, 2021

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

Re: Montville to Horton Cove Rebuild Project

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 Eversource's proposed modifications to its existing 69-kilovolt ("kV") 100 Line, 115-kV 1410 Line, and Montville Substation, collectively referred to as the Montville to Horton Cove Rebuild Project ("Project") in the Town of Montville, Connecticut ("Petition").

Prior to submitting this Petition, Eversource representatives briefed municipal officials concerning the Project and provided written notice to all abutters about both the proposed work and the filing of this Petition with the Connecticut Siting Council ("Council"). Maps of the Project area, as well as line lists identifying the notified property owners, are provided in the Petition as Attachment A: Montville to Horton Cove Rebuild Project – Aerial Maps.

Eversource is submitting this filing electronically and will be providing one hard copy original and 15 copies to the Council, along with the requisite \$625 filing fee.

Sincerely,

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

Kathleen M. Shanley

Enclosure

cc: Mayor Ronald McDaniel, Town of Montville

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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 and 1410 LINES AND THE MONTVILLE SUBSTATION
IN THE TOWN OF MONTVILLE, 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 proposed modifications to the 69-kilovolt (“kV”) 100 Line, 115-kV 1410 Line, and Montville Substation (“Substation”), all located in the Town of Montville (“Town”), Connecticut and collectively referred to herein as the Montville to Horton Cove Rebuild Project (“Project”). Both lines are situated within an existing Eversource right-of-way (“ROW”) or on Eversource property.

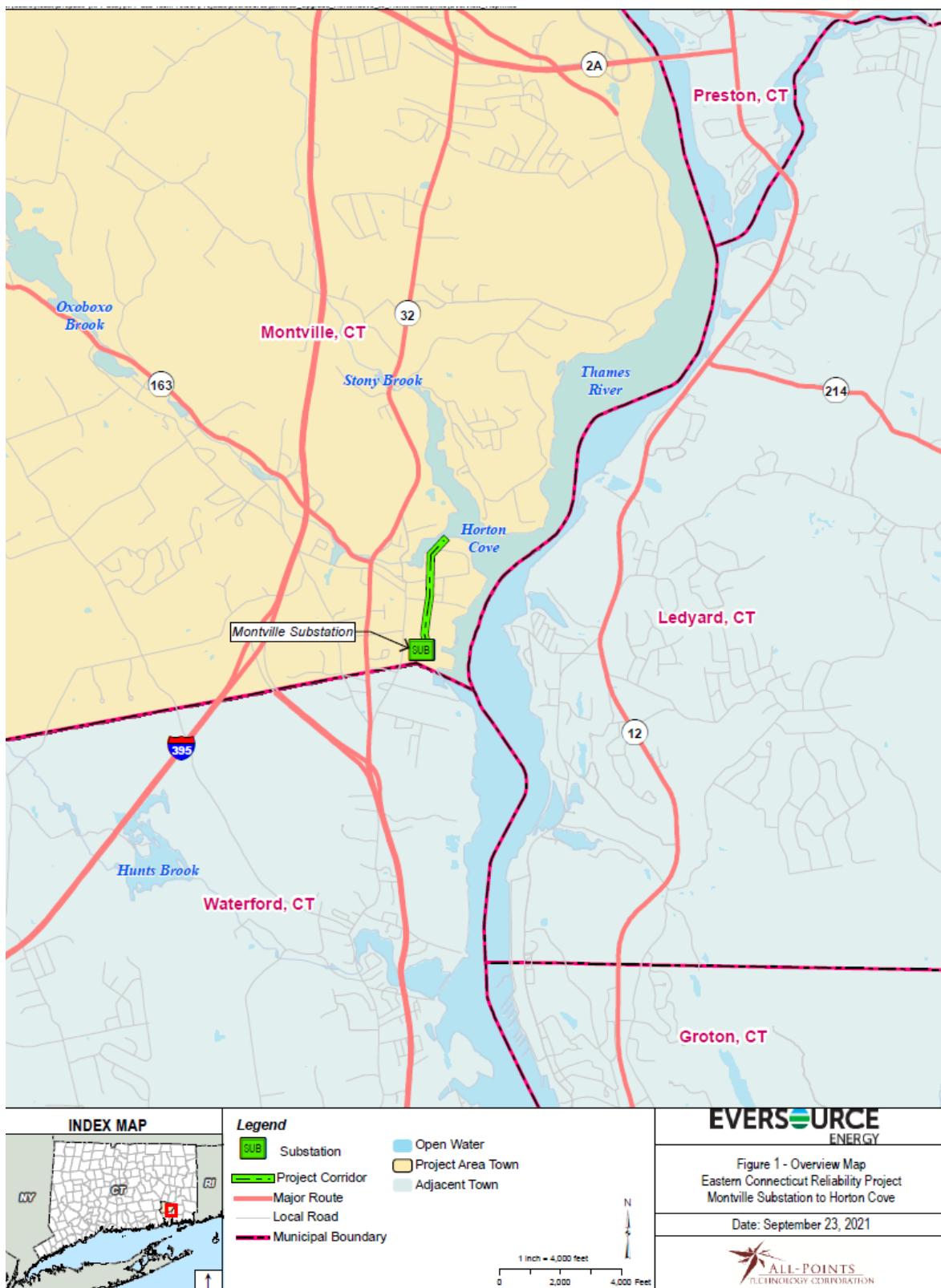
The Substation, a 345-/115-/69-kV facility, occupies an 8.6-acre fenced area, on land subject to an Eversource easement, within property owned by NRG Energy Inc. (“NRG”) a portion of which is occupied by NRG’s Montville Generating Station. NRG also owns approximately 22 acres in the area surrounding the Substation. Figure 1 illustrates the general location of the Project.

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 Project is to improve system reliability by rebuilding an approximately 0.6-mile segment of the double-circuit 1410 and 100 lines within Eversource’s approximately 200-foot-wide ROW between Montville Substation and Horton Cove in Montville. The 100 Line connects Montville Substation to Gales Ferry Substation in the Town of Ledyard, while the 1410 Line connects Montville Substation to Buddington Substation in the City of Groton.

Figure 1: Project Overview Map



The modifications to the 100 Line are necessary to address thermal overloads and voltage violations, as identified in the “Final Eastern Connecticut (“ECT”) 2029 Needs Assessment” issued by the Independent System Operator - New England in November 2019. The rebuild of the 100 Line, which is a component of the selected solution for resolving reliability-based transmission needs in the ECT region, will entail converting the 100 Line from 69-kV to 115-kV.¹ This line upgrade also will require modifications to the Substation and to the two existing 69-kV connections from the substation to the NRG generating station.

Along the 0.6-mile segment of ROW extending north from the Substation, the 100 Line is currently supported, in a double-circuit configuration, on common structures, with the 1410 Line. For both lines, the existing conductors are 556-kcmil aluminum conductor steel reinforced (“ACSR”) and the existing shield wires are 7 #8 Copperweld. The 1410 Line extends into the Substation’s 115-kV yard, whereas the 100 Line crosses through the northeast corner of the Substation and spans the New England Central Railroad tracks to the 69-kV yard, located adjacent to the NRG generating station. The 100 Line provides one of two 69-kV connections to the generating station²; the two connections provide redundancy for enhanced reliability.

The existing conductor for both circuits will be replaced with 1272-kcmil aluminum conductor steel supported (“ACSS”) and the shield wires will be replaced with two 48-fiber optical ground wires (“OPGW”). In addition to the reconductoring, four existing steel lattice structures will be replaced with five galvanized steel monopoles.

Within the Substation, the existing 100 Line’s 69-kV terminal will be removed and the upgraded line (at 115-kV) will be re-terminated on the bus in the Substation’s 115-kV yard. To maintain the second connection to the 69-kV yard, a new segment of 69-kV line will be added between the Substation’s 115-kV yard and 69-kV yard adjacent to the NRG facility. At Montville Substation, the new 69-kV connection will require the addition of a 115-/69-kV power transformer (referred to as the “17X transformer”) and associated terminal equipment for tie-ins to the existing 115-kV and 69-kV yards.³

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

² The second 69-kV transmission connection is an underground cable.

³ Montville Substation currently has three transformers: the 18X and 19X transformers in the 345-kV yard and the 16X transformer in the 115-kV yard.

3. Project Description

The Project will involve rebuilding a 0.6-mile segment of the 1410/100 lines, converting the 100 Line from 69-kV to 115-kV, and performing modifications inside Montville Substation to terminate the upgraded 100 Line in the 115-kV yard, add a new 17X transformer to step down power from 115-kV to 69-kV, and rebuild the 69-kV line connections within the Substation to the 69-kV yard. The proposed Project components are described in the subsections, below. 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* shows the details (general arrangement) of the proposed modifications to the Substation.
- *Attachment C* includes typical cross-sections of the existing and proposed transmission line structures and the limits of the ROW.
- *Attachment D* lists the heights and configurations of the existing and proposed replacement structures.

3.1 Rebuild 1410/100 Lines and Convert 100 Line to 115 kV

The 1410/100 line rebuild work will consist of replacing four lattice steel structures, which range in height from 78 to 82 feet, with five new galvanized steel monopoles, reconductoring both lines, and converting the existing 69-kV 100 Line to 115 kV.⁴ The replacement structures will be 96.5 to 105 feet tall. Because the upgraded 100 Line will require a different line entry to and termination at the Substation, the existing double-circuit lattice structure (No. 7003) directly north of the Substation will be replaced with two new monopoles – one to support the 1410 Line connection to the Substation and one to support the new 115-kV 100 Line connection to the new termination at the Substation's 115-kV yard.

⁴ In addition to the 1410/100 lines, this section of the Eversource ROW also includes four other 115-kV lines, supported on lattice steel towers in double-circuit configurations (i.e., the 1080/1280 lines and the 1090/1000 lines). As part of this Project, the existing shield wire on the 1280 Line will be replaced with 48-fiber OPGW.

The rebuild work will occur within the 0.6-mile segment of Eversource's existing ROW that extends north from Montville Substation to just north of Depot Road. Details of the proposed transmission line work are summarized as follows:

- Improve or construct access roads and work pads.
- Perform selective tree and vegetation removal (mowing) and/or trimming to accommodate the work or to meet required conductor clearances.
- Replace one existing double-circuit structure (Structure 7003) with two single-circuit galvanized steel monopoles (7003 and 7003A).
- Replace three existing double-circuit structures (7004, 7005, and 7006) with three double circuit galvanized steel monopoles.
- Install new attachment hardware and insulators.
- Install grounding and counterpoise.
- Replace approximately 0.6 mile of existing 556-kcmil ACSR conductor with 1272-kcmil ACSS conductor.
- Replace approximately 0.6 mile of existing 7 #8 Copperweld shield wire with 48-fiber OPGW.
- Convert the 100 Line from 69-kV to 115-kV.

3.2 Re-terminate the Upgraded 100 Line at Montville Substation

The existing 69-kV 100 Line extends into the Substation to an approximately 95-foot-tall structure located in the northeast corner of the Substation. From there, the 100 Line spans the New England Central Railroad to a termination in the Substation's 69-kV yard, which is located adjacent to NRG's Montville Generating Station (refer to the Attachment A maps). As part of the Project, Eversource will remove the existing 100 Line's 69-kV termination and instead will connect the upgraded 115-kV 100 Line to a termination in the Substation's 115-kV yard.

Accordingly, the upgraded 100 Line will extend from Structure 7003A into the Substation's 115-kV yard at the 16X transformer. From there, the 115-kV line will connect via a short (250-foot segment) of 3500-kcmil copper, cross-linked polyethylene ("XLPE") insulated underground cable and overhead line to the 115-kV bus.

All work will be performed within the existing Substation fence; refer to Attachment B for a general arrangement of the proposed modifications to the Substation.

The proposed scope of work for re-terminating the upgraded 100 Line at the Substation is summarized as follows:

- Install two new 115-kV, 63-kA circuit breakers.
- Install two 115-kV pothead structures.
- Re-terminate the converted 100 Line into the bus position between the two new circuit breakers.
- Install 12 115-kV cable potheads.
- Install new line terminal equipment (i.e., motor-operated disconnect switch, capacitor coupled voltage transformers, and lightning arresters).
- Install new bus, cable, and connectors as needed to facilitate the connection between the new line terminal equipment and the 115-kV bus.
- Install approximately 250 feet of 3500-kcmil underground 115-kV cable per phase within the Substation yard to connect the upgraded 100 Line to the proposed 115-kV bus position.
- Install necessary grounding connections and ground grid repairs in disturbed areas.
- Complete above- and below-grade civil work (e.g., grading, conduit, foundations, and support steel) required to support the above-listed scope.
- Add related protection relays and associated equipment inside the Montville Substation control enclosure.

3.3 Provide a New Interconnection for the NRG Montville Generation Station 69-kV Bus and AC Station Service Separation from Montville Generation Station

69-kV Line Connection. Currently, the 100 Line extends from Structure 7003, through the Substation (supported on the existing structure in the northeast corner of the substation), before spanning the railroad tracks to terminate at the 69-kV yard adjacent to the Montville Generating Station. This connection will be removed as part of the proposed conversion of the 100 Line to 115-kV and the termination of the upgraded line at the Substation's 115-kV yard.

To maintain 69-kV service to NRG's generating station, a new 115-kV/69-kV transformer (the 17X transformer) is required, along with a short new 69-kV line segment required to continue to provide

the redundant (back-up) connection to the 69-kV yard. Within the 115-kV yard, this new 69-kV line segment will consist of approximately 250 feet of underground XLPE cable, extending from the new 17X transformer to a new underground-overhead transition (riser) structure, to be located in the northeast corner of the Substation 115-kV yard (near the site of the existing 100 Line structure). The 69-kV underground cable will be placed in the same trench as the underground 115-kV cable. From the riser structure (which will be approximately 110 feet in height), an approximately 250-foot-long segment of 69-kV overhead line will span the New England Central Railroad tracks to a termination in the existing 69-kV yard.

AC Station Service. In conjunction with the 100 Line upgrade, AC station service for the Substation control enclosure and yard equipment will also be disconnected from the NRG facility and sourced from the existing 16X transformer and proposed new 17X transformer in the 115-kV yard. This will require the installation of two small new transformers near the control enclosure to provide 120/140-AC power.

The following proposed modifications in the 115-kV and 69-kV yards will be required to re-establish the 69-kV interconnection to the 69-kV yard and to provide independent AC station service for the Substation control enclosure and yard equipment:

- ***Modifications to the 115-kV Yard***

- Add one 115/69-kV, 62.5 MVA transformer.
- Add one 115-kV, 3000A, 63-kA rated circuit breaker (17X high side).
- Add 115-kV, 3000A, horizontal, manually operated disconnect switches.
- Install approximately 250 feet of 69-kV cable from the 17X transformer to the new transition (riser) structure.
- Replace the existing 95-foot-tall 100 Line monopole in the 115-kV yard with a new 110-foot-tall monopole, to be located in northeast portion of the 115-kV yard. At this replacement structure, the underground 69-kV cable will transition to overhead before extending east to span the railroad tracks to the 69-kV yard.
- Add six 115-kV cable potheads.
- Add nine 115-kV, 70-kV MCOV rated lightning arresters.
- Add approximately 1,200 feet of 556-ACSR strain bus (to extend between the 115-kV transformer terminal and the terminal in the 69-kV yard).

- Install new bus, cable and connectors as needed to facilitate the connection between the new terminal equipment and existing 115-kV bus.
- Add two 13.8-kV/120/240 delta-delta padmount AC station service transformers, connected to the 16X and 17X transformers (one each).
- Complete above- and below-grade civil work (i.e., grading, conduit, foundations, and support steel) required to support the above-listed scope.
- Add related protection relays and associated equipment inside the Montville Substation control enclosure.
- Remove 2.3-kV/120/208/240-volt padmount transformers and associated equipment (existing AC station service).

- ***Modifications to the 69-kV Connections and 69-kV Yard***
 - Re-purpose and/or replace existing 100 Line terminal equipment. With the upgrade of the 100 Line from 69-kV to 115-kV, the 100 Line will be removed from its existing terminal position on the 69-kV bus, creating a spare position. This terminal, and its associated equipment, will be the termination point for the rebuilt 69-kV line, which will connect from the new 17X Transformer, via the riser structure in the 115-kV yard, to the 69-kV yard. Existing 69kV terminal equipment will be analyzed to ensure it meets rating requirements for the transformer tie-in.
 - Upgrade the existing 69-kV power circuit breaker and control cabling in the 69-kV yard / Montville Generating Station (i.e., the underground cable located in the southern portion of the Substation yard) by removing an existing protection and control cable and replacing it with a new shielded control cable, all within the existing underground conduit. Protection schemes will also be changed out from line protection to transformer protection.

3.4 Install All-Dielectric Self-Supporting (ADSS) Fiber Cables for the 1410 Line at Montville Substation

- Install ADSS fiber cable in below grade conduit, routed from the splice can installed on the line terminal structure to the control enclosure.
- Install necessary auxiliary equipment in the control enclosure to facilitate proper tie-in to the Critical Infrastructure Protection (CIP) communication network.

3.5 Replace Bus Relay Equipment: Montville Substation

Details of the proposed scope of work for bus relay equipment replacement are summarized as follows:

- Install new relays for the 115-kV A and B buses to accommodate the terminal expansions.
- Add relay cabinets to house new relays.

4. Existing Environment, Environmental Effects, and Mitigation

The Project construction would be performed entirely within Eversource's existing transmission ROW, on Eversource property, or within Eversource's easement area on NRG's property. No expansion of the existing ROW would be required for the Project. Similarly, the proposed modifications at the Substation will be accommodated within the fenced area of the Substation or on land subject to existing Eversource easements, including on NRG property. The Project would not have a substantial adverse environmental effect, for reasons explained more fully below.

Land Use

The Project is located in the eastern portion of the Town of Montville, in upland areas approximately 0.5 mile west of the Thames River. Lands in the Project vicinity are used for a mix of residential, commercial/industrial developments. NRG's Montville Generating Station and Eversource's Montville Substation, along with the Eversource 1410/100, 1080/1280, and 1090/1000 line ROW are predominantly industrial-utility uses. The New England Central Railroad line extends south-north through the Project area and is aligned east of the ROW and directly adjacent to Montville Substation and NRG's generating station. Areas along the ROW south of Structure 7003, outside the Montville Substation fence and at the generating station have Environmental Land Use Restrictions (ELUR) due to prior activities associated with the generating station. The Project will not affect these areas.

Areas in the general Project vicinity also include undeveloped areas characterized by forests, successional habitats, Gay Cemetery Pond (an impounded portion of Oxoboxo Brook), the Thames River, and Horton Cove. Additionally, a municipal water treatment facility is located slightly north of the ROW near Gay Cemetery Pond and Horton Cove.

However, all Project construction activities will be confined to the Eversource ROW or Montville Substation. No off-ROW access roads will be required for the transmission line upgrades and all substation modifications will be performed within the substation fence line or within the established easement areas (e.g., spanning the railroad line). As a result, the Project will not impact adjacent land uses.

As the final phase of Project construction, Eversource will restore the portions of the ROW affected by work activities, coordinating with affected property owners.

Tree and Vegetation Removal

The proposed modifications to the Montville Substation will be performed within the Substation's 115- and 69-kV yards, which are surfaced with traprock and do not encompass vegetated areas.

The vegetation within the approximately 200-foot-wide Eversource ROW within which the 1410/100 lines are located is presently managed in low-growth species, consistent with overhead transmission line clearance requirements. For the Project, some limited vegetation removal/tree trimming would be required in select areas to accommodate access road installation and improvements, for work pad installation, and along the Project ROW where conductor clearance needs to be improved to meet current NESC and Eversource clearance standards.

Vegetation removal/tree trimming 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. Vegetation removal activities will be performed in accordance with Eversource's *2016 Construction & Maintenance Environmental Requirements, Best Management Practices Manual for Massachusetts and Connecticut* (the "BMPs").

After the installation of the structure replacements and new conductor and OPGW, 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. Areas affected by construction within the Substation would be graded and stabilized with gravel.

Scenic, Recreational and Cultural Resources

The Project is not anticipated to have a substantial adverse effect on scenic, recreational, or cultural resources. The rebuilt 1410/100 line monopole structures will present a more streamlined appearance than the existing lattice tower structures. The modifications to Montville Substation will involve the installation of equipment similar to that already operating at this facility. Likewise, the replacement 69-kV structure within the 115-kV yard will be comparable to the existing structure, which will be removed. Moreover, these modifications will be consistent with the existing nearby energy infrastructure, including NRG's generating station.

No portion of the ROW or Project area traverses or is located near any locally or state designated scenic roadways⁵.

The Project area neither crosses nor is proximate to any public open space, Connecticut Blue-blazed hiking trails, or other known trail systems. The nearest mapped trail system to the Project area, the Decatur Trail, is in Gales Ferry, approximately 0.75 mile to the east, across the Thames River.

A cultural (archaeological and historical) resource review of the proposed Project area was conducted by Heritage Consultants, LLC (“Heritage”) in June and September of 2021. This analysis consisted of a Phase 1A assessment of previously recorded cultural resources on file with the Connecticut State Historic Preservation Office (“SHPO”). Heritage determined that there are no National Register of Historic Places listed properties or inventoried historical structures in the vicinity of Project work areas. One state-listed historic structure and two previously identified archeological sites are located within 1,000 feet of the Project area. However, these historical and archeological resources will not be impacted by the Project as currently designed.⁶

Based on a review of historic maps, aerial photographs, available soil profiles, and a pedestrian survey, Heritage determined that one structure location (Structure 7004) and two access roads possessed a potential for moderate to high archaeological sensitivity and recommended that a Phase 1B cultural reconnaissance survey (shovel pit testing) be performed in these three locations. Heritage completed this survey in September 2021. The Phase 1B testing found no physical evidence of archaeological significance; therefore, it was determined that no further archaeological investigations are warranted.

Wetlands, Watercourses, Waterbodies and Flood Zones

Eversource identified and delineated water resources in the Project area during December 2020 and July 2021 (refer to Attachment E: Wetlands and Watercourses Report; see also the map

⁵ Connecticut Department of Transportation (CTDOT), October 1, 2019 Connecticut State Scenic Roads. Accessed April 2, 2021. Available URL: <https://portal.ct.gov/DOT/Programs/Connecticut-Scenic-Roads>. The Town of Montville does not have any listed scenic roads in proximity to the Project.

⁶ One of the two identified archeological sites is located within the ROW near Horton Cove and was identified during the Horton Cove Circuit Separation Project. While this resource is not near the work areas for this Project, it is within the ROW and therefore could be impacted if Project plans change or access to work areas cross the site location. Refer to the cultural resource reports for further details.

sheets provided in Attachment A, which depict water resources). Water resources in the general Project area include an inland wetland, watercourse, waterbody, and 100- and 500-year floodplains as designated by the Federal Emergency Management Agency (“FEMA”). However, the Project will not involve any crossings of or work within water resources.

All Project work near water resources would be conducted in accordance with the BMPs. Details on each of the water resource areas near the Project are provided below:

- **Wetlands:** Wetlands in the Project area were identified and delineated in accordance with industry standard methodology. One wetland was delineated near the Project. This wetland is characterized as the border of Gay Cemetery Pond. There will be no temporary or permanent effects to this wetland as a result of the Project.
- **Watercourses and Waterbodies:** One watercourse, Gay Cemetery Pond, was delineated within the Project area. There will be no temporary or permanent effects to this resource area as a result of the Project.
- **Vernal Pools:** No vernal pools were identified within the Project area. The only water resource identified in the vicinity is Gay Cemetery Pond, a permanent waterbody.
- **FEMA Flood Zones:** The 69-kV yard portion of Montville Substation is within a 100- and 500-year FEMA floodplain. However, in this area, the only Project work will involve the removal of the overhead 100 Line connection to the yard and the establishment of a new overhead 69-kV connection to the same yard. No new structures or equipment will be installed in the floodplain.
- **Water Supply:** Based on Aquifer Protection Areas (“APA”) mapping maintained by the Connecticut Department of Energy and Environmental Protection (“CT DEEP”), there are no APAs within or proximate to the Project ROW. The Project is not located within a public water supply watershed and no public supply reservoirs or public water supply wells are located within the Project area⁷. No private water supply wells were observed within the Project area during field investigation activities.

To protect water quality in the Project area, 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. Construction activities would conform to the BMPs, as well as to the requirements of Project-specific plans.

⁷ Depot Road is served by public water; however, no residential parcels are located within the Project ROW.

Wildlife and Habitat

The Project area is characterized by a variety of habitats, including managed residential land, shrubland, and a pond. Project area habitat is capable of supporting a variety of shrubland birds typical to the managed ROW, and due to the proximity to pond/riverine habitat (e.g., Hortons Cove, Thames River), may provide nesting habitat for aquatic turtles. Where the ROW intersects residential areas, regionally common disturbance-tolerant or “backyard” wildlife are anticipated.

Eversource's review of the CT DEEP Natural Diversity Data Base (“NDDB”) indicates that portions of the Project are located within a NDDB polygon. However, there are no regulatory triggers that necessitate submission of an NDDB Review Request.

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 two federal-listed species; the Northern Long-eared Bat (“NLEB”; *Myotis septentrionalis*), and Small Whorled Pogonia (*Isotria medeoloides*) may potentially occur in proximity to the Project area.

The 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 and the nearest hibernacula is approximately 33 miles to the southwest in North Branford. Further, no tree clearing is required for the Project. Therefore, no impacts to this species are anticipated.

The Small Whorled Pogonia is a small, perennial orchid of deciduous forests that blooms from late spring to early summer.⁸ Habitat requirements for this species include flats or slope bases having a moderate to light shrub layer and a relatively open canopy.⁹ Soil characteristics consistently found within this species' habitat include a sandy loam textured soil type having a fragipan or restrictive layer below the soil surface, allowing for lateral water movement.

⁸ NatureServe. www.natureserve.org. *Isotria medeoloides*. (Flora of North America 2002).

⁹ [National Heritage & Endangered Species Program, Division of Fisheries & Wildlife, Massachusetts Rare and Endangered Plants-Small Whorled Pogonia](#)

Deciduous forests will not be affected by the Project. Additionally, soils within the Project area are comprised of well-drained (dry), glacial outwash derived sand and gravel (Agawam and Merrimac soil types). These soils have high infiltration rates and lack a restrictive layer below the soil surface, limiting surface runoff or lateral water movement. Therefore, no suitable habitat for this species was identified within the Project area.

Visual Effects

As a result of the modifications to the 1410/100 lines, the Project will result in changes to the visual character of the ROW. However, because the upgraded lines will continue to be co-located within the ROW with four other 115-kV overhead lines, the Project modifications are expected to represent a minor and highly localized visual change. Moreover, the replacement of the existing lattice steel towers with monopoles may be subjectively considered a visual improvement.

The replacement structures will be slightly taller than the existing lattice towers, with two of the structures (7004, 7006) increasing in height by 6-6.5 feet and the remaining three structures increasing in height by 14.5 feet.¹⁰ However, in the Project area, the visual environment is characterized by NRG's generating station facilities and the other transmission lines within the ROW, as well as the Substation.

The proposed modifications to the Substation will involve adding equipment and structures similar to those already present at the Substation, including the replacement of the 69-kV structure within the Substation and rebuilding 69-kV line connection to the 69-kV yard adjacent to the NRG generating station.

As a result, the Project will not result in a significant change to the existing visual character in the Project area.

Noise

The Project construction 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

¹⁰ The replacement 69-kV monopole inside the substation fence will increase in height by 15 feet.

construction equipment (e.g., backhoe, bulldozer, crane, trucks, etc.)¹¹. Once in service, the upgraded 1410/100 lines would not have any effect on noise or sound pressure levels.

Similarly, the modifications to the Substation are not expected to have a significant adverse effect on ambient noise levels. The modifications will involve the addition of new 115-kV equipment; however, all such equipment will be positioned within the 115-kV yard, on the eastern portion of the Substation property – that is, near the railroad tracks and the NRG generating station. Further, any minor increase in ambient noise levels that might be associated with the new 115-kV equipment is expected to be masked by the operation of the 345-kV yard equipment, including two transformers (located on the western portion of the Substation site).

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. Eversource proposes to use temporary construction matting at most work pads and most access along the transmission line ROW.

Vehicle emissions will be limited by requiring contractors to properly maintain construction equipment and vehicles, and by minimizing the idling time of equipment and vehicles, including diesel construction equipment, in accordance with Connecticut regulatory requirements¹². Temporary gravel tracking pads (or equivalent) 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 or television interference resulting from the operation of the upgraded 115-kV transmission facilities.

¹¹ Construction noise is exempted under the Connecticut regulations for the control of noise, RCSA 22a-69-1.8(g).

¹² 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.

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. 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 and the Substation. However, the Project-related traffic is generally expected to be temporary and highly localized in the vicinity of the Substation, ROW access points, and Project staging area. 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 the ROW while minimizing disruptions to vehicular traffic along public roads, Eversource or its Project contractor would work with the Town, as appropriate, 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

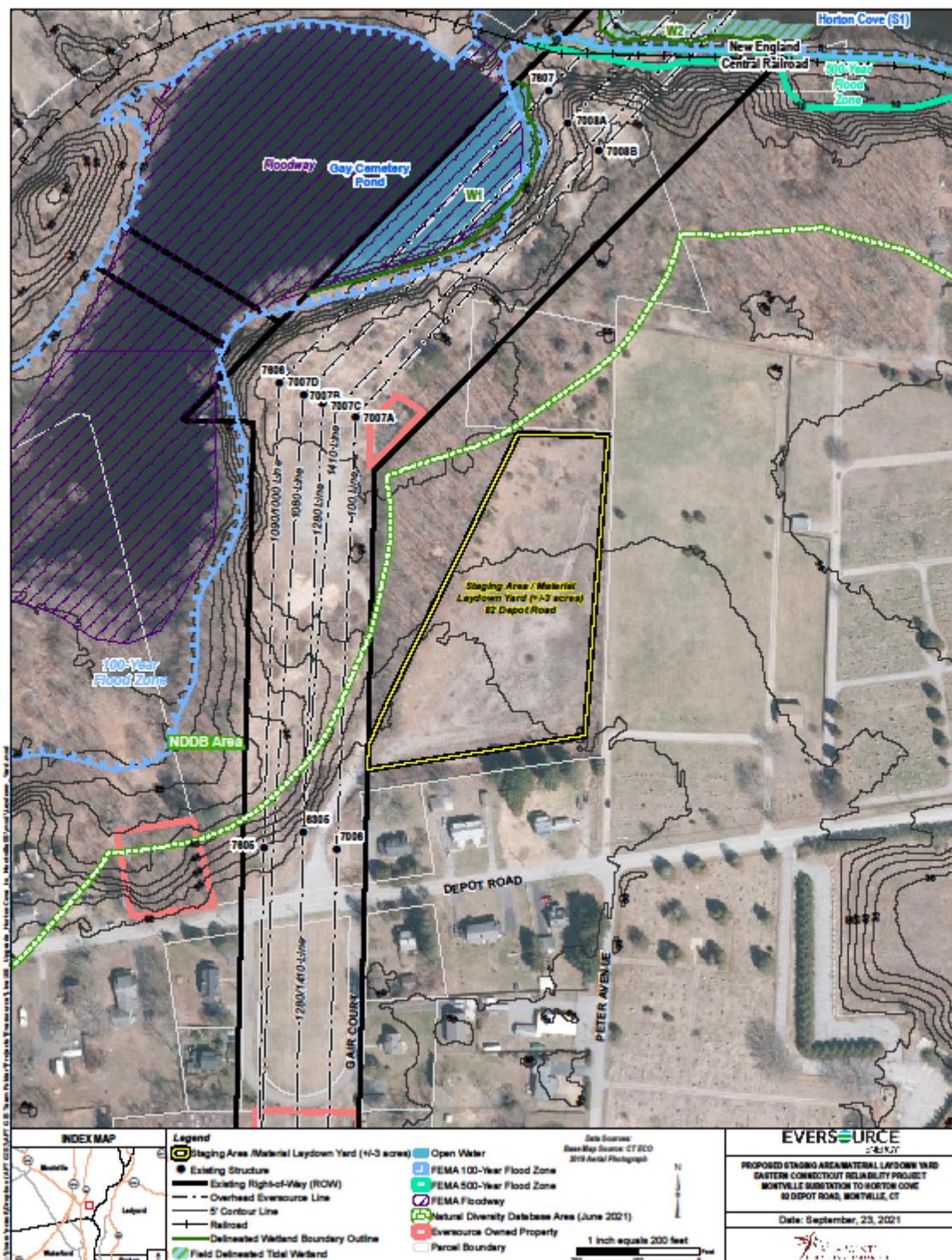
Project construction would include the following activities:

Staging / Laydown Area

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 in Montville. Figure 2 illustrates the location of this staging/laydown yard (also illustrated on the Attachment A maps).

The staging area would be used for surface storage of construction materials, equipment, tools, and supplies (including conductors, cable reels, insulators, hardware, poles, and construction mats) for the Project. Office trailers and Conex storage containers may be located at the staging area.

Figure 2: Proposed Depot Road Staging and Laydown Area



Existing transmission line components removed during the work (structures, conductor, 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.

Eversource also will use available space within the Substation for staging the equipment and components for the Substation modifications.

Soil Erosion and Sediment Control Installation

Project construction would conform to best management practices for E&S control, including those provided in the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* (“*Connecticut Guidelines*”) and the BMPs. 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 as needed 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 conformance to BMPs. After the installation of the Project facilities, seeding and mulching would be used to permanently stabilize the areas of the ROW disturbed by the work. At the Substation, areas disturbed by Project construction would be stabilized with gravel as necessary. Temporary E&S control measures would remain in place until the Project work is complete and all disturbed areas have been deemed stabilized.

Access Roads and Work Pads

Access to the Substation will be via existing station roads. Access to each of the proposed transmission structures to be removed/upgraded will be required during Project construction.

As a result of the operation and maintenance of the existing lines within this 0.6-mile ROW, access roads are already established and Eversource will utilize these existing access roads to the extent possible. No new permanent access roads will be required and all temporary access roads

needed for the Project will utilize construction matting to protect sensitive resource areas (e.g., lawn, meadow). The access roads expected to be used for the proposed Project are illustrated on the maps in Attachment A. E&S controls would be installed as necessary along 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 150 feet by 150 feet; for areas where machinery is needed for pulling conductors through an angled structure, work pads of approximately 150 feet by 50 feet are required. All work pads will be matted except for structure 7006, at which a combination of both matting and gravel will be used.

To facilitate future transmission line maintenance, access roads and 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 approximate locations and configuration of Project work pads, as determined based on the environmental field studies and constructability reviews, are shown on the Attachment A maps.

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 drill rigs, pneumatic hammers, augers, dump trucks, concrete trucks, grapple trucks and light duty trucks. If groundwater is encountered, pumping (vacuum) trucks or other suitable equipment would be used to remove 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 may also be installed at this time. In addition, depending on site-specific soil conductivity, supplemental grounding will be installed. A quad “ditch-witch” plow-cable trencher (or equivalent) 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 new conductors and OPGW would be installed after the new structures are erected. The equipment required for these activities would include cable reels, pulling and tensioning rigs, and bucket trucks.

Structure, Conductor and Static Wire Removal

The removal of the existing conductor and static wire would take place during the active installation of the new conductor and OPGW because the existing conductor and static 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, static wire, and OPGW are installed.

Restoration

Once the new structures are erected, the lines are re-energized and the existing structures have been removed, ROW restoration activities will commence. Restoration activities would include the removal of construction debris, signage, flagging, temporary fencing, and construction mats, as well as work pads that are designated for removal. Areas affected by construction would be re-graded (if needed and 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 the BMPs and in consultation with affected property owners.

Waste Management

Waste materials, such as structure components (e.g., materials from the removed structures, conductor, static wire, associated hardware) and any other construction debris would be disposed of in accordance with the 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 BMPs, applicable regulations, and disposal facility policies.

Dewatering during construction activities would be conducted in accordance with the *Connecticut Guidelines*, the BMPs, and applicable regulations.

7. Construction Schedule and Work Hours

Eversource proposes to begin construction in January 2022. Normal construction hours would be Monday through Saturday from 7:00 AM to 7:00 PM. At the staging area and at the Substation, workers may arrive for and leave work outside of these times for meetings but will not perform any noisy construction activities before or after the designated work hours.

Sunday work hours or evening work hours past 7:00 PM may be necessary due to delays caused by unforeseen circumstances, inclement weather, and/or outage constraints. In the event that evening or Sunday work shifts are necessary, Eversource will provide notice to the Council, Town, and abutters.

8. Electric and Magnetic Fields

Eversource prepared calculations of the existing and post-Project Electric and Magnetic fields (“EMF”). The calculations were based on annual average loading (“AAL”) conditions because these are most representative of typical conditions. The calculations are made relative to the western edge of the ROW looking in the direction of increasing structure numbers 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 circuit is 30 feet above grade.

Eversource proposes to replace double-circuit steel lattice structures with single-circuit and double circuit galvanized steel monopoles. After the completion of the Project, the 1410 Line will continue to operate at 115-kV, whereas the upgraded 100 Line will be energized initially at 69-kV.¹³ Eversource expects to energize the 100 Line at 115-kV in June 2023, after all other portions of the line and line terminations have been upgraded to 115-kV.¹⁴ Therefore, for the EMF analyses for this Project, Eversource’s calculations are provided for the rebuilt double-circuit

¹³ The 100 Line will not be energized at 115-kV as part of this Project. Eversource will submit a request to operate the upgraded line at 115-kV as part of a future petition to the Council.

¹⁴ Eversource will submit separate filings to the Council for the proposed 115-kV upgrades to other portions of the 100 Line.

monopoles, with the 1410 Line energized at 115-kV and the upgraded 100 Line energized at 69-kV.¹⁵

These calculations show that maximum magnetic field levels will decrease by approximately 3.7 milligauss (“mG”) within the ROW. Magnetic fields at the western edge of the ROW will remain essentially unchanged. Magnetic fields at the eastern edge of the ROW are expected to increase due to changes in structure height and conductor spacing. Beyond the edges of the ROW, the magnetic fields will remain essentially unchanged.

Maximum electric field levels in the ROW are expected to remain essentially unchanged. Electric fields at and beyond the edges of the ROW will be essentially unchanged.

Table 1 summarizes the calculated electric and magnetic fields at the ROW edges before and after the Project modifications, with the upgraded 100 Line continuing to operate at 69-kV.

Table 1 - Summary of Calculated Electric and Magnetic Fields

Montville Substation - Structure 7007 (Annual Average Loads)		West ROW Edge	Max in ROW	East ROW Edge
Magnetic Fields (mG)	Existing	51.3	113.0	22.9
Electric Fields (kV/m)	Proposed	51.4	109.3	25.6
Electric Fields (kV/m)	Existing	0.11	2.25	0.09
Electric Fields (kV/m)	Proposed	0.10	2.21	0.12

The results of the calculations show that the proposed modifications would not substantially increase electric or magnetic fields at the western edge of the corridor. At the eastern edge of the corridor, the magnetic field is expected to increase. Attachment F: EMF Graphs and Tabulated Field Calculations provides illustrations of the EMF levels associated with the 115-kV 1410 Line and the upgraded 100 Line, energized at 69-kV.

¹⁵ Eversource also analyzed the EMF levels that would be associated with the energization of the 100 Line at 115-kV (i.e., after June 2023). These calculations are included in Attachment F. They are being submitted to the Council at this time so the Council is aware of the potential changes in the EMF when ruling on the Petition, which includes a proposal to reconductor the 100 Line to enable future operation at 115 kV.

Comparison of Calculated Fields to International Guidelines

The anticipated fields from the proposed transmission lines are well below the internationally established exposure limits for 60-Hz electric and magnetic fields. Specifically, these fields are below 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 of the Town of Montville, briefing them on the proposed Project. Additionally, Eversource provided representatives of the Town with written notice of the Petition filing.

In September and October 2021, Eversource also initiated outreach to property owners located along the Project route. 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. Refer to Attachment F for Project outreach information.

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: Montville to Horton Cove Rebuild Project – Maps
- Attachment B: Montville to Horton Cove Rebuild Project – Montville Substation General Arrangement
- Attachment C: Montville to Horton Cove Rebuild Project – Right-of-Way Cross Sections
- Attachment D: Montville to Horton Cove Rebuild Project -- List of Structure Replacements
- Attachment E: Montville to Horton Cove Rebuild Project -- Wetlands and Watercourses Report
- Attachment F: Montville to Horton Cove Rebuild Project -- EMF Graphs and Tabulated Field Calculations
- Attachment G: Montville to Horton Cove Rebuild Project -- Letter to the Abutters and Affidavit of Notice of Service

Attachment A

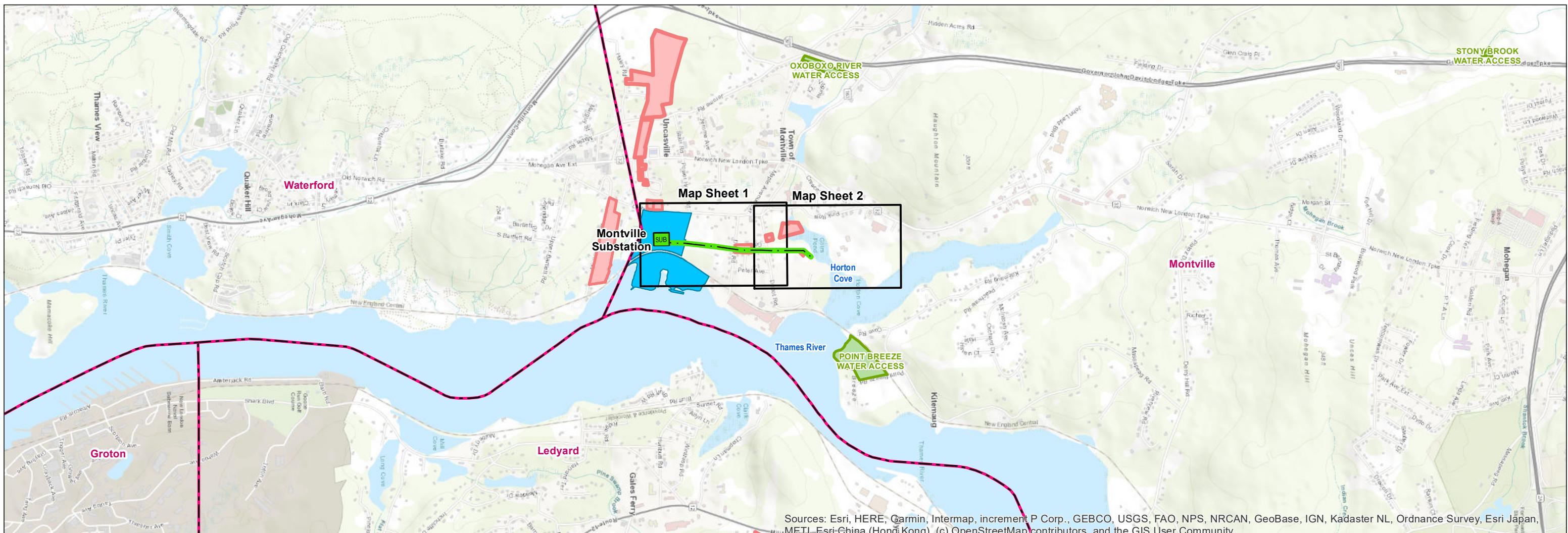
Montville to Horton Cove Rebuild Project

Maps

Eastern Connecticut Reliability Project

Montville Substation to Horton Cove

Montville, CT
Petition Map Set
Date: October 20, 2021



Legend

Substation Project Corridor Map Sheet Eversource Owned Property NRG Property State Owned Property Municipal Boundary

0 0.25 0.5 1 Miles

PREPARED FOR:

EVERSOURCE
ENERGY

107 Selden Street
Berlin, CT 06037

INDEX OF FIGURES

Title Sheet / Index Map
Abutter Tables and Map Sheets 1-2

PREPARED BY:

ALL-POINTS
TECHNOLOGY CORPORATION

567 Vauxhall Street Extension – Suite 311
Waterford, CT 06385

MAPSHEET 1 of 2**Eastern Connecticut Reliability Project****Montville Substation to Horton Cove****Structures 7003/7003A to 7006****Town of Montville, Connecticut****AREA DESCRIPTION***Existing Land Use & Resource Areas*

- 100-year Flood Zone
- 500-year Flood Zone
- Natural Diversity Database Area
- Residential
- Montville Substation
- Montville Power LLC / Montville Generating Station
- Environmental Land Use Restriction (ELUR)
- Eversource Owned Property

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

- Maintained ROW
- ELUR south of structures 7003/7003A
- Montville Substation south of structure 7003/7003A
- Natural Diversity Database Area surrounding Montville Substation and structures 7003/7003A and north of structure 7006

Water Resources

- Wetlands – none
- Wetland Cover Types – none
- Watercourses – none

Wetland and Watercourse Crossings

- None

Right-of-Way Vegetation

- Scrub-shrub
- House/yard

Access

- Structure 7003/7003A to 7005: From matted access road originating off Dock Road
- Structure 7006: From existing driveway/matted originating off Depot Road

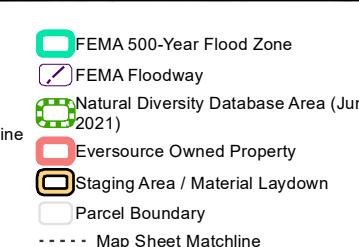
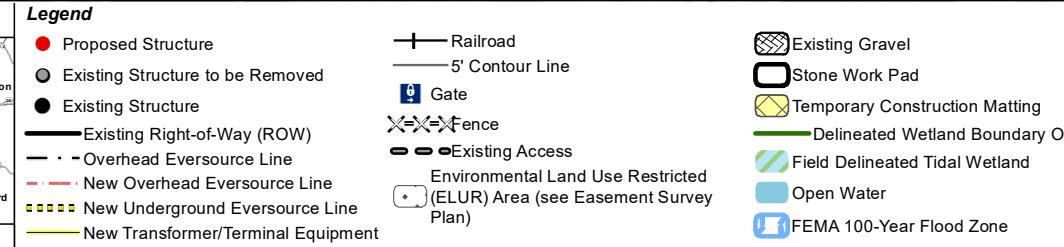
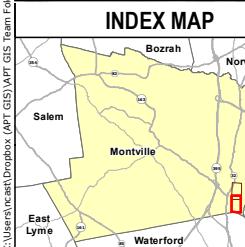
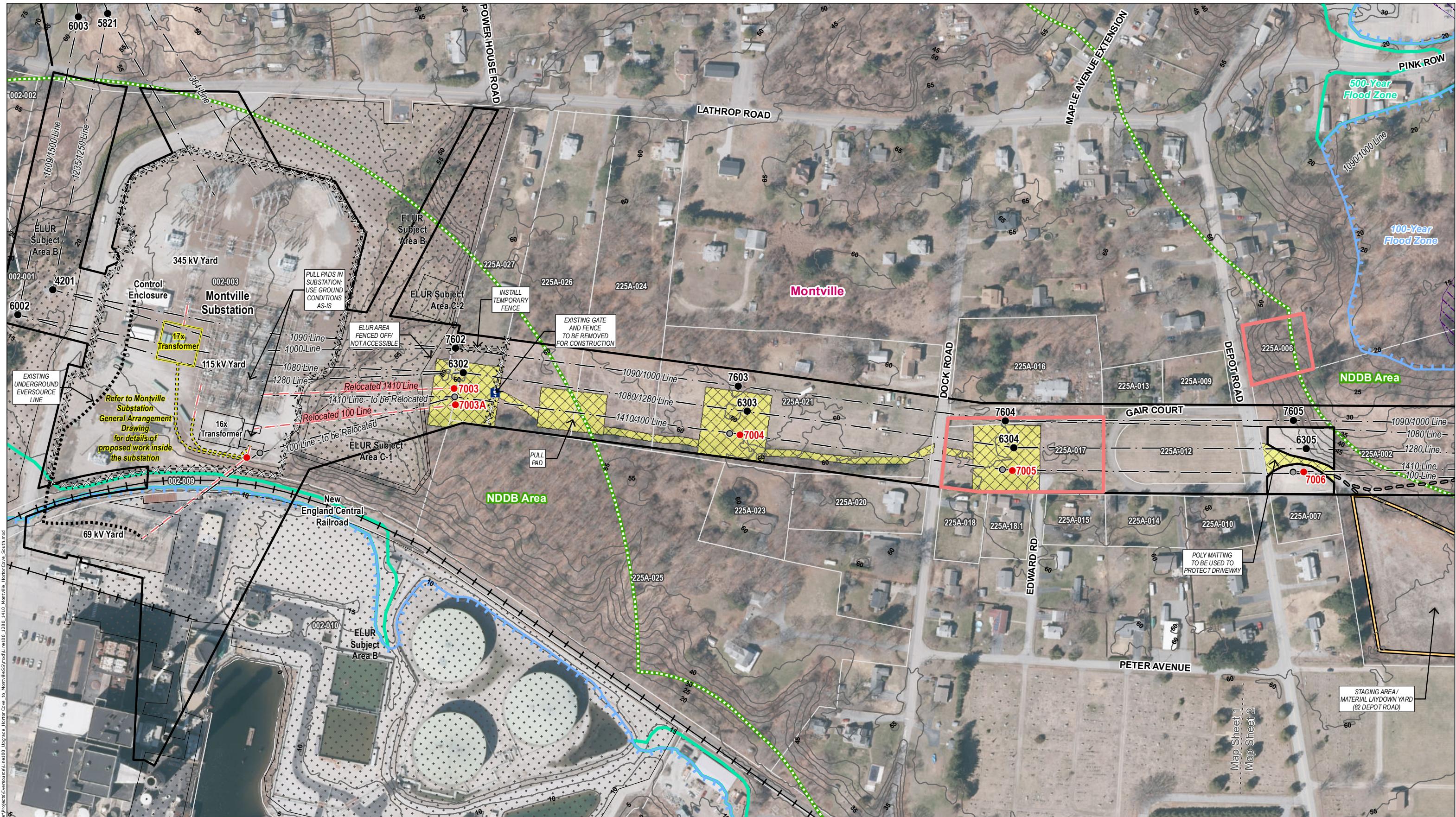
Road Crossings

- Dock Road
- Depot Road

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

- 200-feet / No Proposed Tree Clearing

<u>Line List Number</u>	<u>Parcel Address</u>	<u>City</u>	<u>State</u>	<u>Owner Name</u>
002-001	69R LATHROP RD	WATERFORD	CT	LISA LATHROP
002-002	94 LATHROP RD	UNCASVILLE	CT	LISA A & DONALD J III LATHAM
002-003	LATHROP RD	MONTVILLE	CT	MONTVILLE POWER LLC AND NRG - TAX DEPT
002-009	POINT BREEZE RD	MONTVILLE	CT	CV PROPERTIES INCORPORATED
002-010	LATHROP RD	MONTVILLE	CT	MONTVILLE POWER LLC AND NRG - TAX DEPT
225A-002	82 DEPOT RD	MONTVILLE	CT	UNCASVILLE LLC
225A-006	78 DEPOT RD	MONTVILLE	CT	THE CONNECTICUT LIGHT & POWER CO
225A-007	92 DEPOT RD	MONTVILLE	CT	JOCELYN F TRTE JOHNSON
225A-009	3 GAIR CT	MONTVILLE	CT	CR INVESTMENTS LLC
225A-010	23 GAIR CT	UNCASVILLE	CT	PETER F KERTTULA
225A-012	87 DEPOT RD	MONTVILLE	CT	UNCASVILLE LLC
225A-013	7 GAIR CT	UNCASVILLE	CT	HOWARD E & LINDA L KISSEL
225A-014	19 GAIR CT	UNCASVILLE	CT	RICHARD A JR DAIGLE TRUSTEE AND 19/21 GAIR CT 2014 IRREVOCABLE INC TRST
225A-015	15 EDWARD RD	UNCASVILLE	CT	FIELDS FAMILY LIVING TRUST AND FIELDS RICHARD L & DIANE R TRUSTEES
225A-016	20 DOCK RD	MONTVILLE	CT	GARY & LOIS C O BERN
225A-017	24 DOCK RD	MONTVILLE	CT	THE CONNECTICUT LIGHT & POWER CO
225A-018	28 DOCK RD	UNCASVILLE	CT	PAUL G & MARY JO GUILMETTE
225A-020	29 DOCK RD	UNCASVILLE	CT	ELAINE L BACIEWSKI
225A-021	19 DOCK RD	UNCASVILLE	CT	REGINALD JR & KAREN G ORBE
225A-023	27 DOCK RD	UNCASVILLE	CT	CRAIG HEWITT
225A-024	46 LATHROP RD	UNCASVILLE	CT	KEVIN A & CYNTHIA E PERKINS
225A-025	39 DOCK RD	MONTVILLE	CT	WATERFRONT REALTY INC
225A-026	50 LATHROP RD	MONTVILLE	CT	ANNA C & SANDRA A KONONCHIK AND WILLIAM J GORMAN JR
225A-027	54 LATHROP RD	UNCASVILLE	CT	GLENN P PHILLIPS AND LAURA A ZUKOWSKI



EVERSOURCE
ENERGY

Eastern Connecticut Reliability Project
Montville Substation to Horton Cove

Montville, CT
Map Sheet 1 of 2

Date: October, 2021

REVISIONS



MAPSHEET 2 of 2**Eastern Connecticut Reliability Project****Montville Substation to Horton Cove****Structures 7006 to 7007/pull pad****Town of Montville, Connecticut****AREA DESCRIPTION***Existing Land Use & Resource Areas*

- Gay Cemetery Pond
- Horton Cove
- Thames River
- 100-year Flood Zone
- 500-year Flood Zone
- Natural Diversity Database Area
- Residential
- Commercial
- New England Central Rail Line
- Municipal (Wastewater Treatment Plant)
- Eversource-owned property

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

- Maintained ROW
- Natural Diversity Database Area at structure 7007 and pull pad
- Gay Cemetery Pond west of structure 7007 and pull pad
- Horton Cove northeast of structure 7007 and pull pad
- 100-year Flood Zone west and northeast of structure 7007 and pull pad
- 500-year Flood Zone northeast of structure 7007 and pull pad
- New England Central Rail Line northeast of structure 7007 and pull pad
- Abandoned rail spur northeast of structure 7007 and pull pad

Water Resources

- Wetlands – W2 (tidal)
- Wetland Cover Types – POW, PEM
- Watercourses – W1 (Gay Cemetery Pond), S1 (Horton Cove)
- 100-year Flood Zone – S1 W1 (Gay Cemetery Pond), S1 (Horton Cove)

Wetland and Watercourse Crossings

- None

Right-of-Way Vegetation

- Scrub-shrub
- House/yard

Access

- Structure 7006 to 7007/pull pad: From existing driveway/matted originating off Depot Road

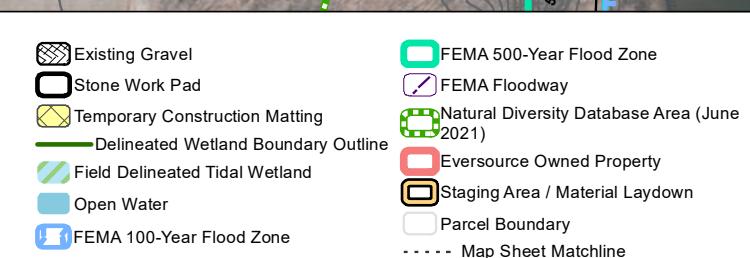
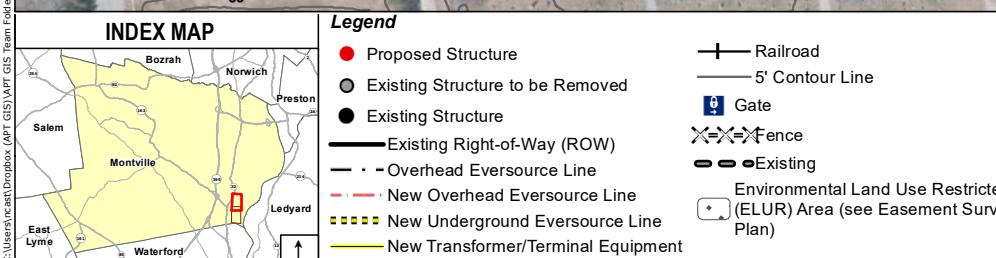
Road Crossings

- Depot Road

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

- 200-feet / No Proposed Tree Clearing

<u>Line List Number</u>	<u>Parcel Address</u>	<u>City</u>	<u>State</u>	<u>Owner Name</u>
225A-002	82 DEPOT RD	MONTVILLE	CT	UNCASVILLE LLC
225A-003	DEPOT RD EXT	MONTVILLE	CT	UNCASVILLE LLC
225A-006	78 DEPOT RD	MONTVILLE	CT	THE CONNECTICUT LIGHT & POWER CO
225A-007	92 DEPOT RD	MONTVILLE	CT	JOCELYN F TRTE JOHNSON
225A-009	3 GAIR CT	MONTVILLE	CT	CR INVESTMENTS LLC
225A-010	23 GAIR CT	UNCASVILLE	CT	PETER F KERTTULA
225A-012	87 DEPOT RD	MONTVILLE	CT	UNCASVILLE LLC
225A-013	7 GAIR CT	UNCASVILLE	CT	HOWARD E & LINDA L KISSEL
225A-014	19 GAIR CT	UNCASVILLE	CT	RICHARD A JR DAIGLE TRUSTEE AND 19/21 GAIR CT 2014 IRREVOCABLE INC TRST



Map Notes:
Base Map Source: CTECO 2019 Aerial 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. Structure locations, ROW, and Parcels are approximate (NOT from survey). Wetland delineation completed in 2020 and July 2021.

1 inch = 200 feet

0 50 100 200

EVERSOURCE ENERGY

Eastern Connecticut Reliability Project Montville Substation to Horton Cove

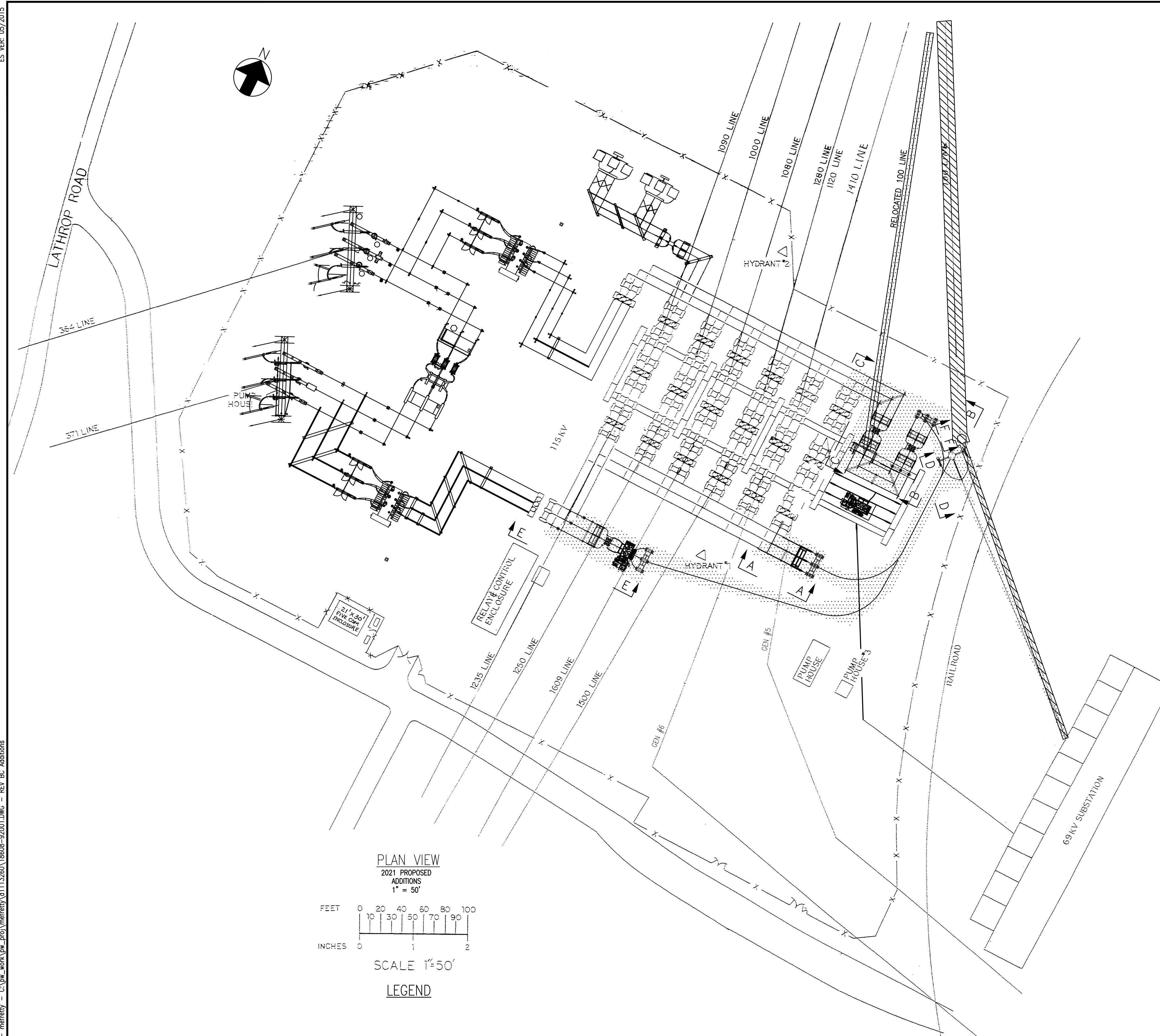
Montville, CT Map Sheet 2 of 2
October 2021 ✓

October, 2021

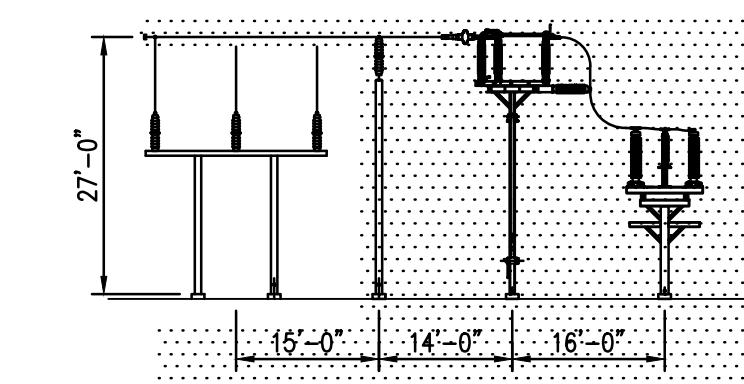


Attachment B

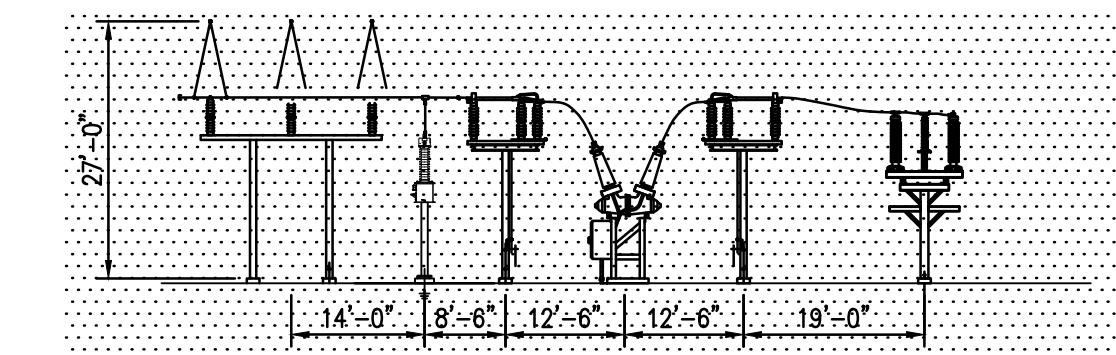
Montville Substation – General Substation Arrangement



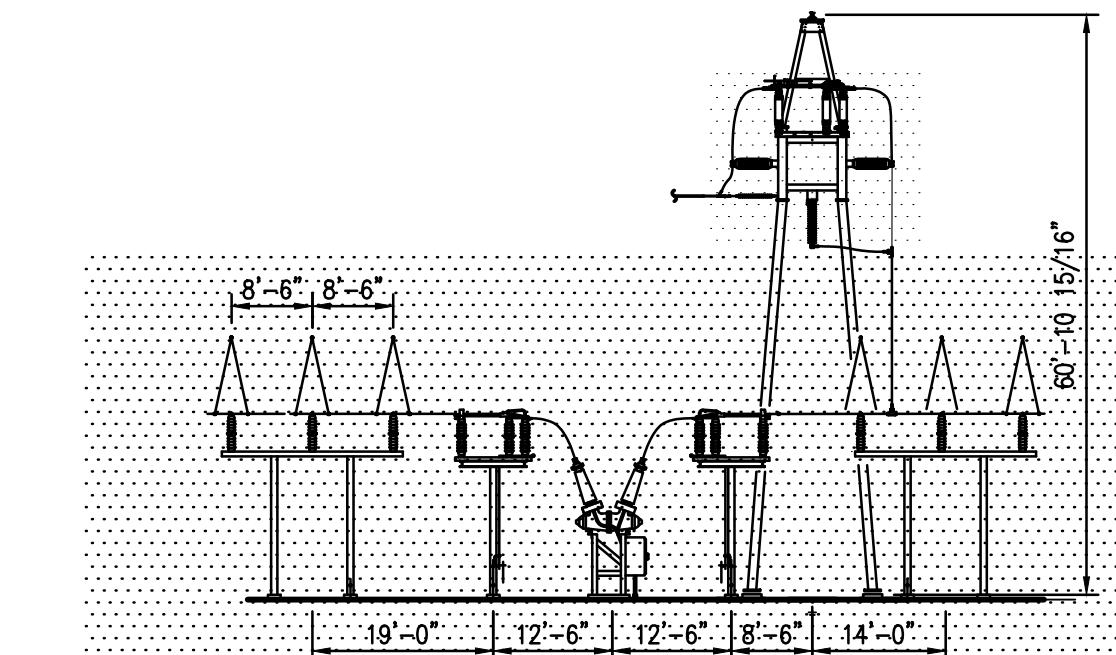
2021 REMOVALS
2021 ADDITIONS



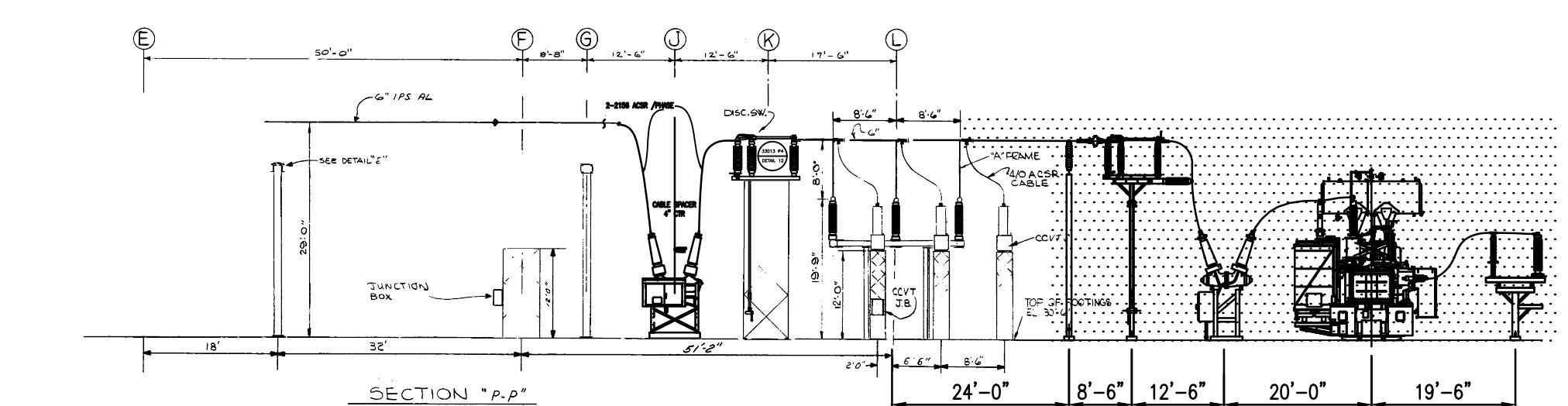
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2021 PROPOSED RELOCATION
1"=20'-0"



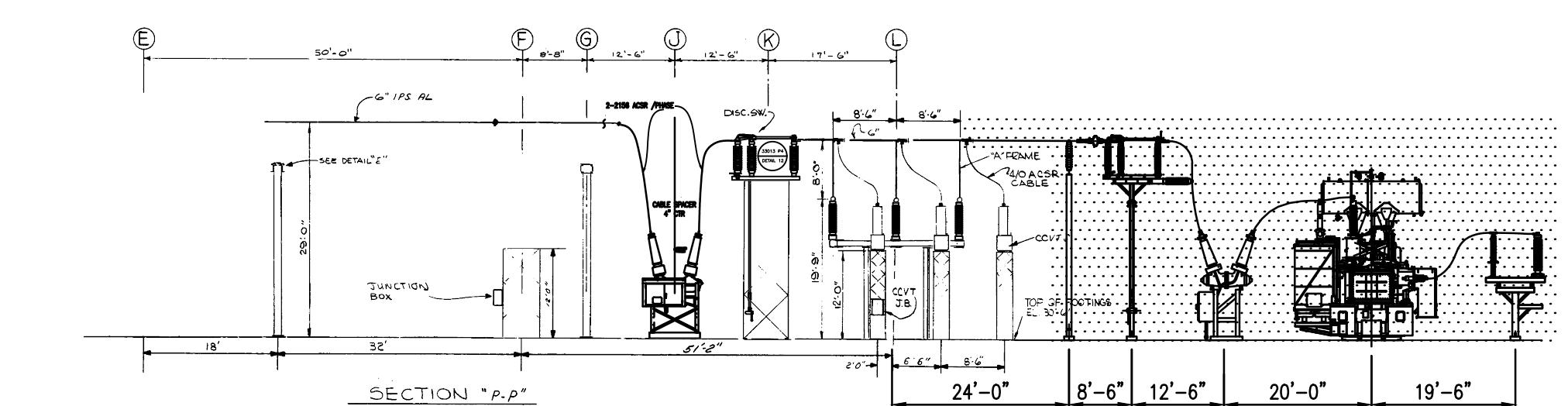
SECTION B-B
2021 PROPOSED ADDITIONS
1"=20'-0"



SECTION C-C
2021 PROPOSED ADDITIONS
1"=20'-0"



SECTION D-D
2021 PROPOSED ADDITIONS
1"=20'-0"



SECTION E-E
2021 PROPOSED ADDITIONS
1"=20'-0"

EVERSOURCE ENERGY

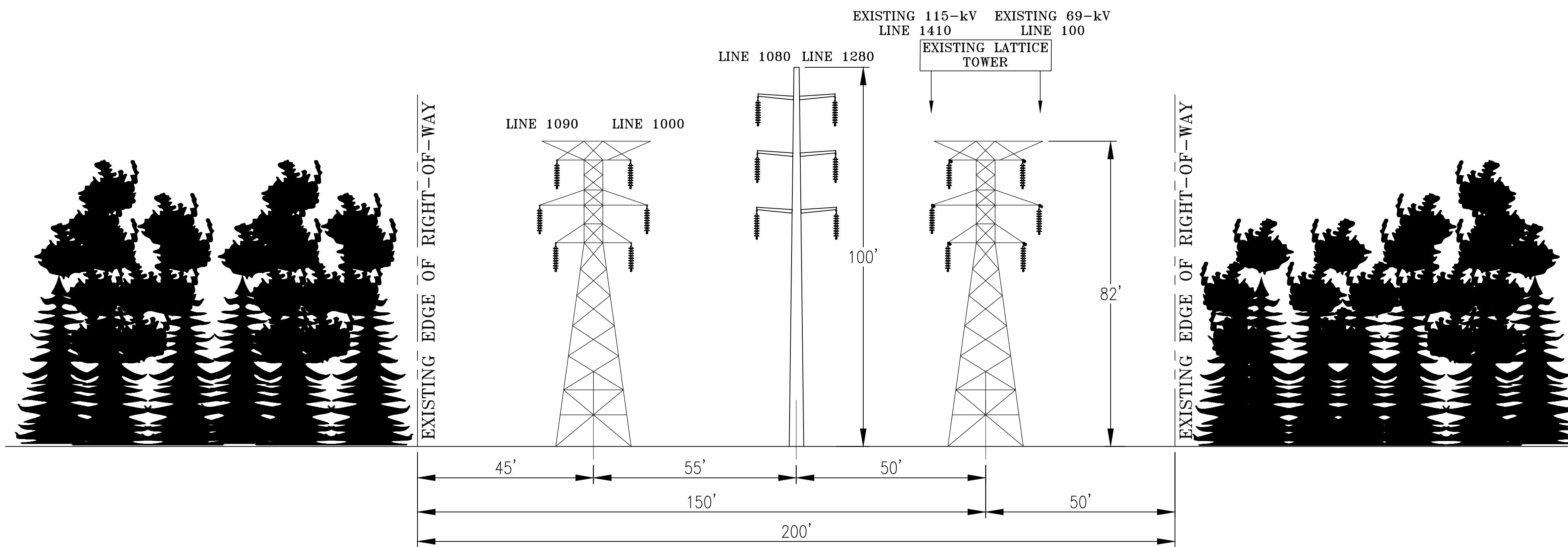
MONTVILLE 4J
GENERAL ARRANGEMENT
CONNECTICUT SITING COUNCIL
MONTVILLE, CT

BY WSP CHRD REM APP LAG APP PSM
DATE 5/2/86 DATE 3/18/87 DATE 3/18/87 DATE 3/18/87
H-SCALE 1"= D FIELD BOOK & PAGES
V-SCALE 50'-0" V.S. R.E. DWG
R.E. PROJ. NUMBER DWG. NO. 18608-92001

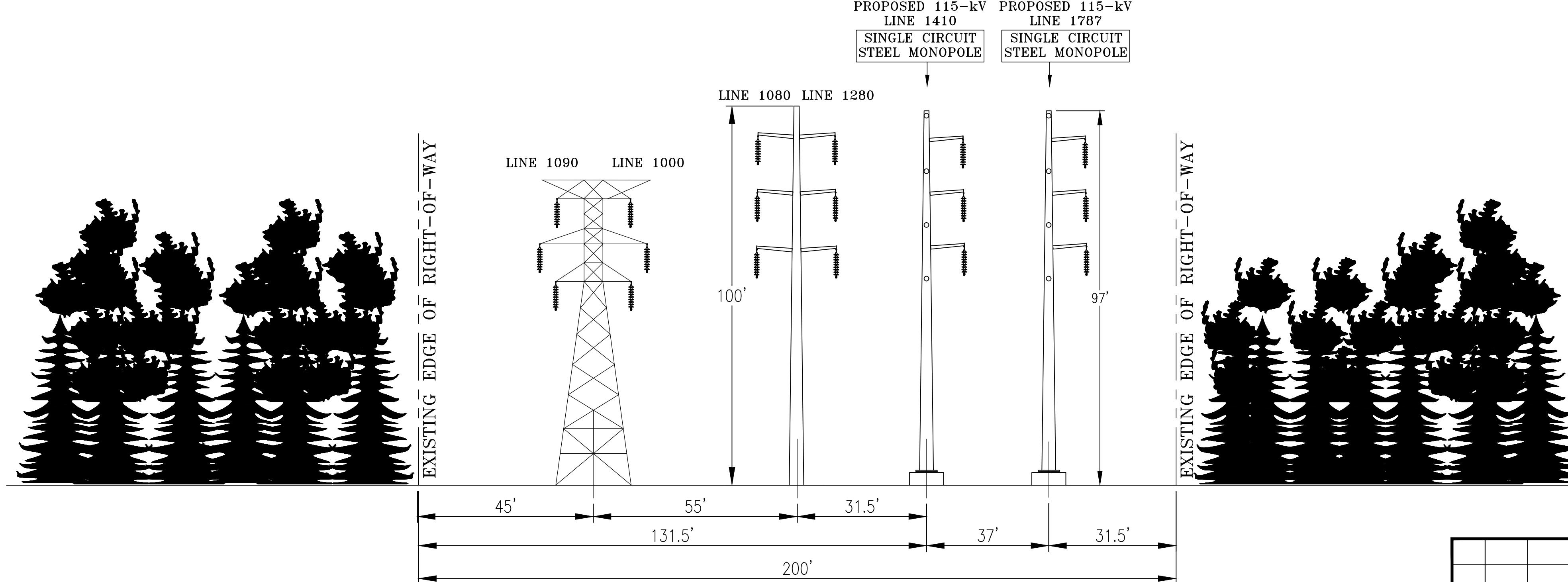
Attachment C

Montville to Horton Cove Rebuild Project

Right-of-Way Cross Sections

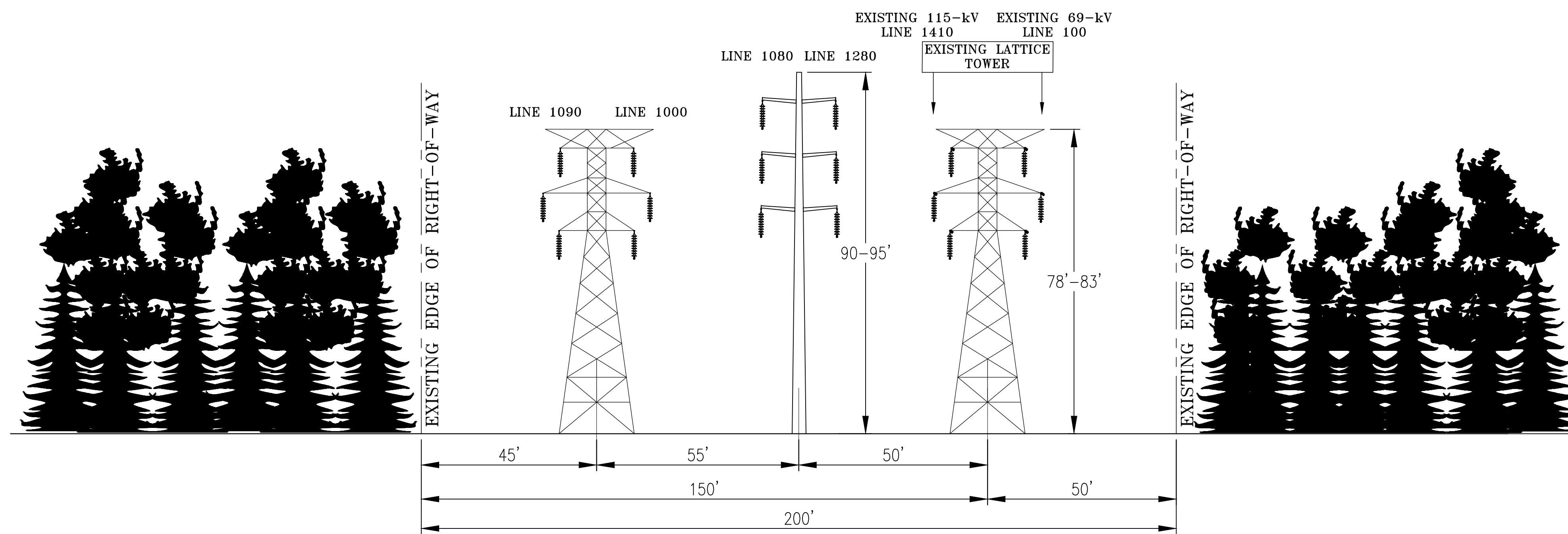


EXISTING R.O.W. CONFIGURATION
DOUBLE CIRCUIT STEEL LATTICE TOWER
LOOKING TOWARD MONTVILLE JCT
IN THE TOWN OF MONTVILLE, CT
STR. #7003

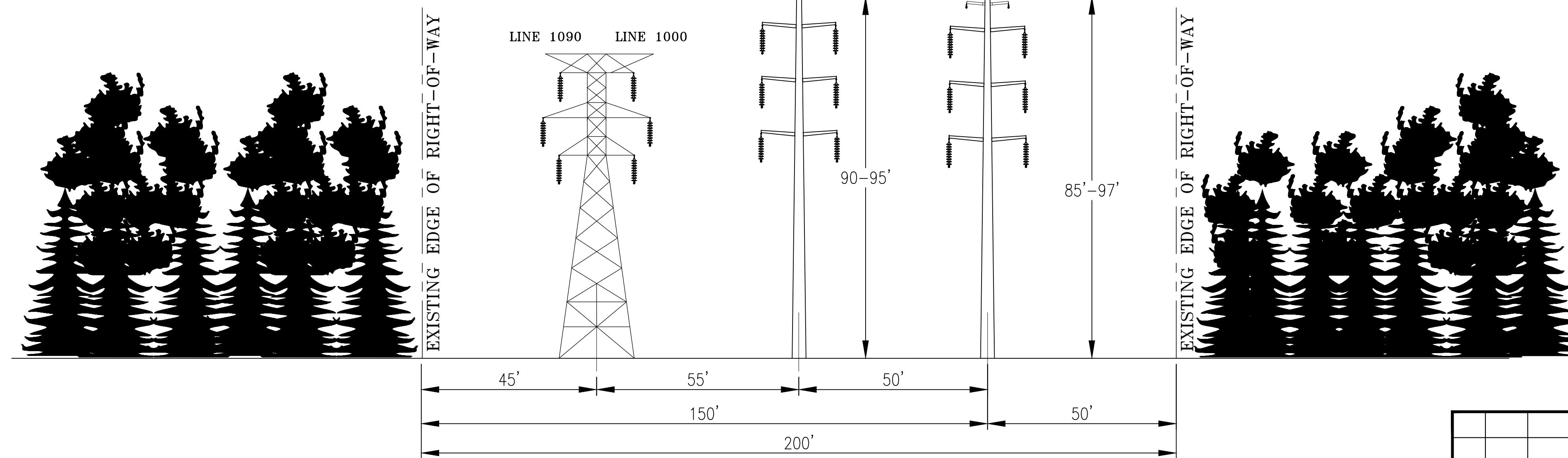


**PROPOSED R.O.W. CONFIGURATION
SINGLE CIRCUIT STEEL MONOPOLE
LOOKING TOWARD MONTVILLE JCT
IN THE TOWN OF MONTVILLE, CT
STRS 7003/7003A**

EVERSOURCE ENERGY



EXISTING R.O.W. CONFIGURATION
DOUBLE CIRCUIT STEEL LATTICE TOWER
LOOKING TOWARD MONTVILLE JCT
IN THE TOWN OF MONTVILLE, CT
STRS. #7004, 7005 & 7006



PROPOSED R.O.W. CONFIGURATION
DOUBLE CIRCUIT STEEL MONPOLE
LOOKING TOWARD MONTVILLE JCT
IN THE TOWN OF MONTVILLE, CT
STRS 7004, 7005 & 7006

REVISIONS DURING CONSTRUCTION									
1	6/18/21	ISSUED FOR REVIEW - WO#	xxxxxx	MM	MEB	GEL			
2	8/27/21	ISSUED FOR CONSTRUCTION - WO#	40512401	MM	MEB	GEL			
EVERSOURCE ENERGY									
TITLE MONTVILLE S/S - HORTON COVE S/S 115-kV TRANSMISSION LINE RIGHT OF WAY CROSS SECTION MONTVILLE, CONNECTICUT									
BY	MM/M/TRC	CHD	MEB/TRC	APP	CEL/TRC	APP			
DATE	6/11/21	DATE	6/11/21	DATE	6/11/21	DATE			
H-SCALE	N.T.S.	SIZE	D	FIELD BOOK & PAGES					
V-SCALE	N.T.S.	V.S.							
R.E. PROJ. NUMBER 40512401									
DWG NO. 1410-100-2021-XS-p002									

Attachment D

Montville to Horton Cove Rebuild Project

List of Structure Replacements

Montville Substation-Horton Cove
1410/100 Line Structure Configurations: Existing and Proposed

Structure No.	Existing 115-kV Type	Existing 115-kV Structure Height (Feet, above ground)	New 115-kV Structure Type*	New 115-kV Structure Height (Feet, above ground)	Height Change from Existing (Feet, above ground)
7003	Steel Lattice	82	Galvanized Steel Monopole	96.5	14.5
7003A	-	-	Galvanized Steel Monopole	96.5	14.5
7004	Steel Lattice	78	Galvanized Steel Monopole	100	6
7005	Steel Lattice	82	Galvanized Steel Monopole	96.5	14.5
7006	Steel Lattice	82	Galvanized Steel Monopole	105	6.5

Average height increase (existing to new structures) = 11.5 feet

*Weathering steel

Attachment E

Montville to Horton Cove Rebuild Project

Wetlands and Watercourses Report



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

Wetland Delineation

September 2, 2021

DE Project No.: 2021-119

Prepared For: Eversource Energy
56 Prospect Street
Hartford, CT 06103
Attn: Ian Cole

Eversource Project Name: Montville to Horton Cove (South) Corridor 100 Line
Structure Replacement and Convert to 115kV
1280/1410 Lines OPGW Project

Project Location: Montville, Connecticut

Date(s) of Investigations: December 2019 & July, 2021

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 Montville to Horton Cove (South) Corridor 100 Line Structure Replacement and Convert to 115kV 1280/1410 Lines OPGW Project
- Wetland Delineation Field Forms

**Table 1: Delineated Wetlands and Watercourses within the
Montville to Horton Cove (South) Corridor 100 Line Structure Replacement and Convert
to 115kV - 1280/1410 Lines OPGW Project**

Aerial Map Sheet No.	Wetland No. ¹	Dominant NWI Class ²	Other NWI Classes	Dominant Water Regime	Associated Watercourse ³	Associated Vernal Pool ⁴
1	W1	POW	PSS	Permanently Flooded	---	---
1	W2	R1US	---	Intermittently Flooded	S1 (Horton Cove)	---

¹Wetland No. refers to the number generated during the 2019 & 2021 field survey within the Project area. 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; PSS = Palustrine Scrub-Shrub; POW = Palustrine Open Water; R1US = Riverine Tidal Unconsolidated Bottom

³Associated Watercourse refers to the identification number assigned during the 2019 & 2021 field survey to identify watercourses within the Project area.

⁴ Vernal pool inspections were conducted in 2021 by Davison Environmental

Wetland Delineation Field Form

Wetland I.D.:	W1 (WF 1-8)	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 type="checkbox"/>	Seasonally Saturated – seepage <input type="checkbox"/>	Seasonally Saturated - perched <input type="checkbox"/>
Comments: Gay Cemetery Pond is an impounded portion of Oxoboxo Brook		

TIDAL

Subtidal <input type="checkbox"/>	Regularly Flooded <input type="checkbox"/>	Irregularly Flooded <input type="checkbox"/>
Irregularly Flooded <input type="checkbox"/>		
Comments: None		

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: Open water is dominant		

WATERCOURSE TYPE:

Perennial <input checked="" type="checkbox"/>	Intermittent <input type="checkbox"/>	Tidal <input type="checkbox"/>
Watercourse Name: Oxoboxo Brook		
Comments: Gay Cemetery Pond is an impounded portion of Oxoboxo Brook		

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:

Speckled Alder (<i>Alnus rugosa</i>)	
Primarily unvegetated open water	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W2 (TWF 1-28)	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 west 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



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

Vernal Pool Survey

September 2, 2021

DE Project No.: 2021-119

Prepared For: Eversource Energy
56 Prospect Street
Hartford, CT 06103
Attn: Ian Cole

Eversource Project Name: Montville to Horton Cove (South) Corridor 100 Line
Structure Replacement and Convert to 115kV
1280/1410 Lines OPGW Project

Project Location: Montville, Connecticut

Date(s) of Investigations: April, 2021

Survey Methodology: Visual & Audial Survey, Dip Netting

The vernal pool survey was performed by:

Davison Environmental, LLC

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

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") installation along the Montville to Horton Cove (South) Corridor, 100 Line Structure Replacement and Convert to 115kV - 1280/1410 Lines OPGW Project within an existing right-of-way ("ROW") in Montville, 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 characterized as having a “permanently flooded” hydrology. Mitsch and Gosselink (2007)¹ defines permanent flooded hydrology as a wetland with standing water that is present throughout the year. Wetlands with a permanently flooded hydrology do not provide optimal breeding habitat for vernal pool indicator species, as they also provide habitat for fish species and other amphibians that predate vernal pool indicator species. Vernal pools lack fish populations.

VERNAL POOL SURVEY

Vernal pool surveys were conducted within the Project area in spring 2021. No vernal pools were identified or delineated.

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



Photo 1 (April 2021): View of W1, Gay Cemetery Pond



Photo 2 (December 2020): View of W2, Horton Cove

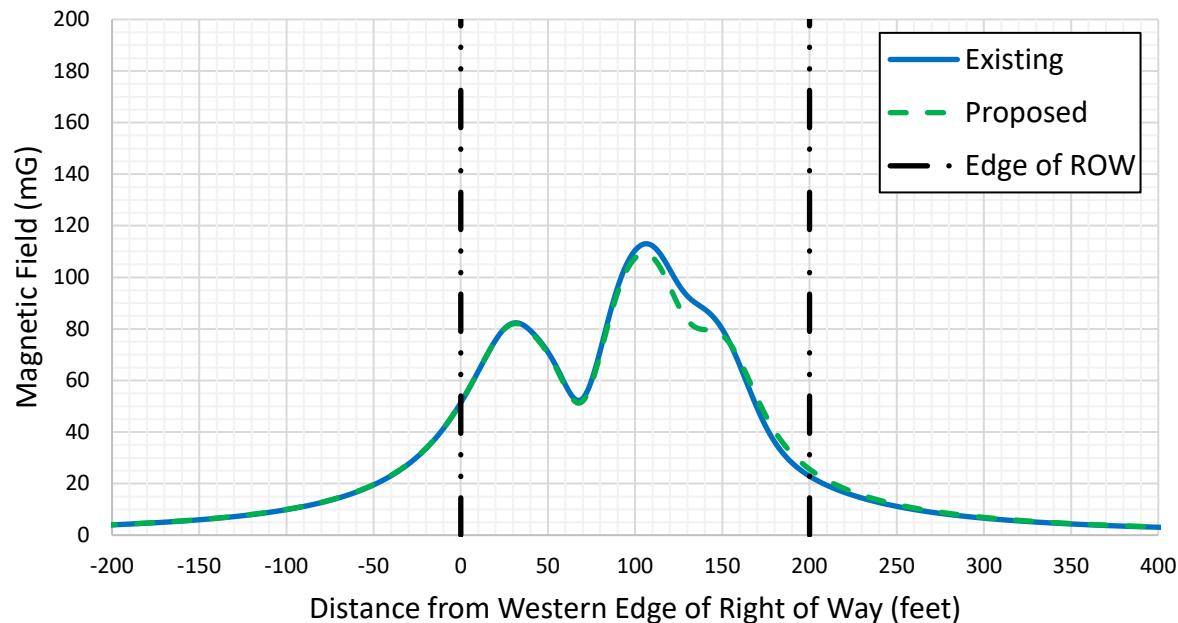
Attachment F

Montville to Horton Cove Rebuild Project

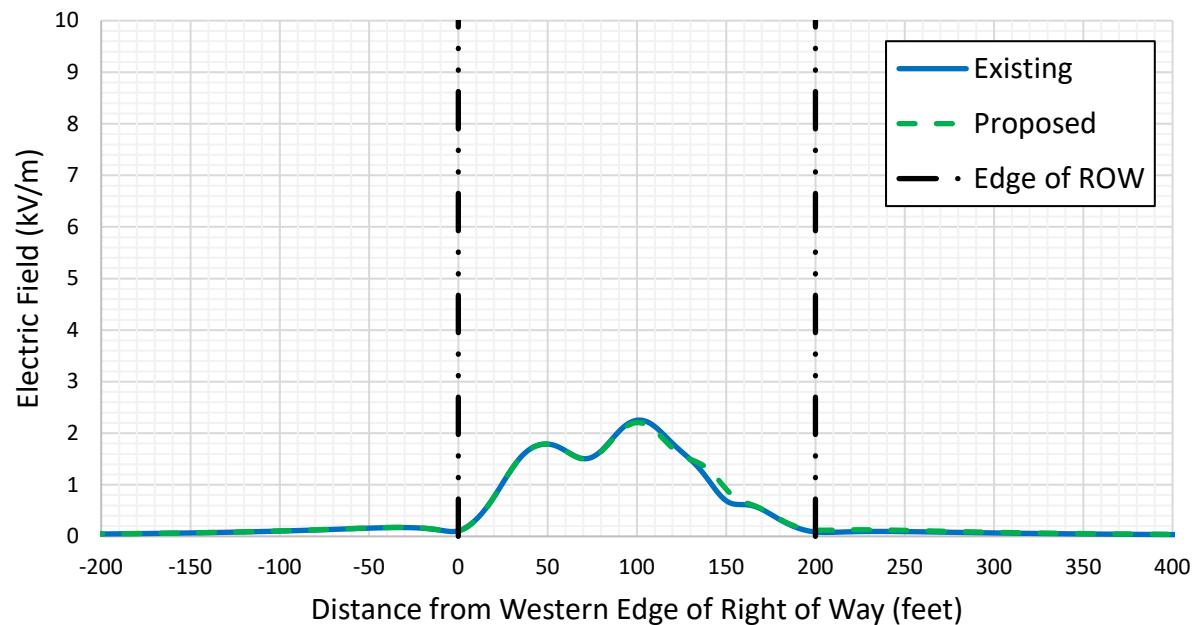
EMF Graphs and Tabulated Field Calculations

EMF GRAPHS: Proposed Project
(with the 100 Line continuing to operate at 69 kV)

Calculated Magnetic Fields (AAL)
Montville Substation - Structure 7007



Calculated Electric Fields (AAL)
Montville Substation - Structure 7007



EMF ANALYSES:
Proposed Project with 1410 Line and 100 Line Energized at 115-kV

Eversource prepared calculations of the existing and post-Project Electric and Magnetic fields (“EMF”) with the potential future operation of the 100 Line operating at 115 kV¹. The calculations were based on annual average loading (“AAL”) conditions because these are most representative of typical conditions. The calculations are made relative to the western edge of the ROW looking in the direction of increasing structure numbers 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.

With the 100 Line operating at 115 kV, maximum magnetic field levels will decrease by approximately 14.2 milligauss (“mG”) within the ROW. Magnetic fields at and beyond the western edge of the ROW will remain essentially unchanged. Magnetic fields at the eastern edge of the ROW are expected to increase when the 100 Line is energized at 115-kV.

Maximum electric field levels in the ROW are expected to remain essentially unchanged. Electric fields at and beyond the edges of the ROW will be essentially unchanged.

Table F-1 summarizes the calculated electric and magnetic fields at the ROW edges before and after the Project modifications. (Note: Calculated magnetic fields reflect the energization of the 100 Line at 115-kV.) Figure F-1.: EMF Graphs and Tabulated Field Calculations provides illustrations of the EMF levels associated with both the 1410 Line and the 100 Line energized at 115-kV.

¹ Eversource will confirm these modeling results in future submittals for modifications to the 100 Line, including in a request to operate the 100 Line at 115 kV.

Table F-1 - Summary of Calculated Electric and Magnetic Fields

Montville Substation - Structure 7007 (Annual Average Loads)		West ROW Edge	Max in ROW	East ROW Edge
Magnetic Fields (mG)	Existing	51.3	113.0	22.9
	Proposed	47.4	98.8	38.8
Electric Fields (kV/m)	Existing	0.11	2.25	0.09
	Proposed	0.10	2.20	0.12

The results of the calculations show that the proposed modifications would not substantially increase electric or magnetic fields at the western edge of the corridor. At the eastern edge of the corridor, the magnetic field is expected to increase.

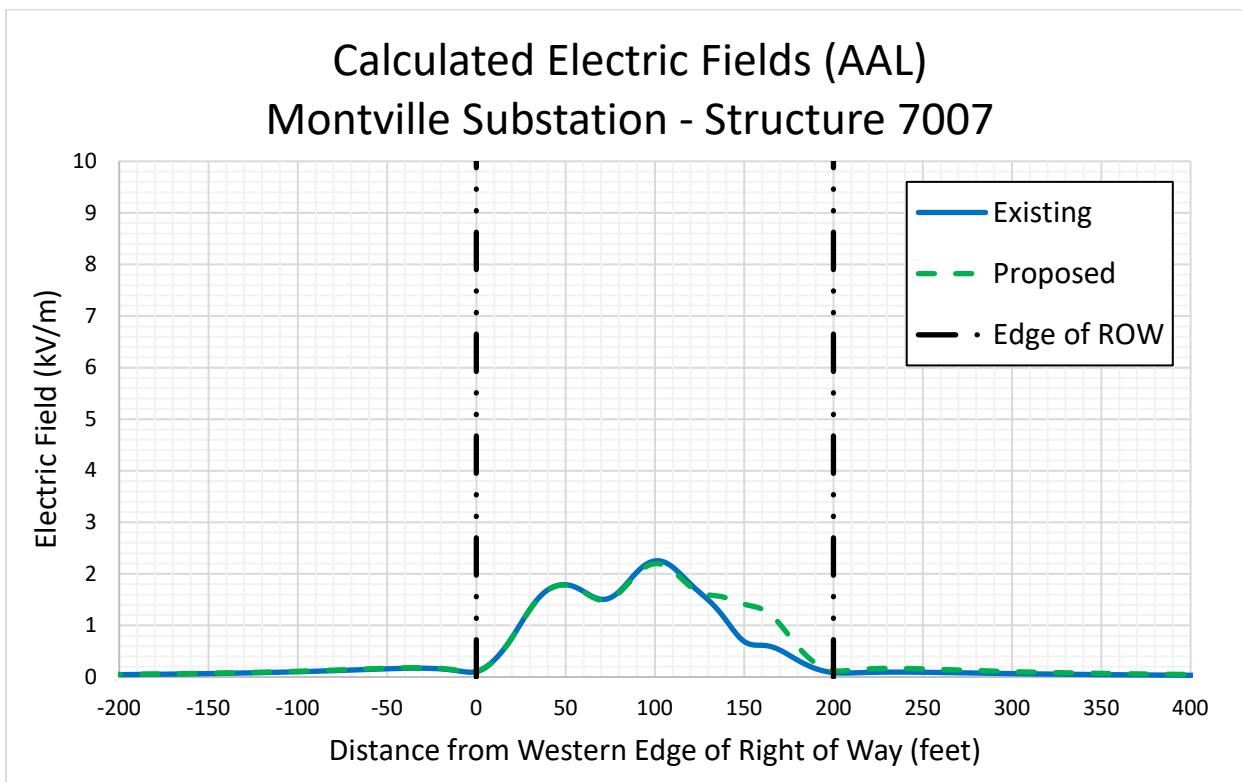
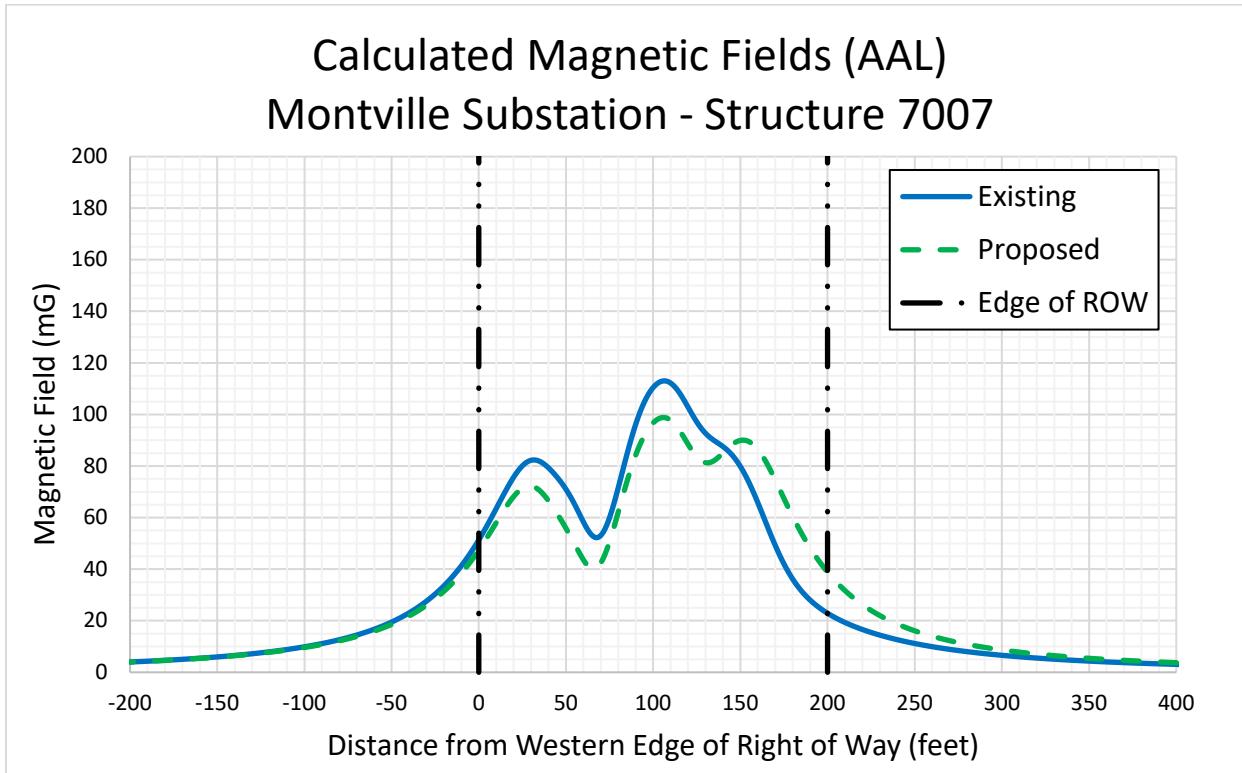
Comparison of Calculated Fields to International Guidelines

The anticipated fields from the proposed transmission lines are well below the internationally established exposure limits for 60-Hz electric and magnetic fields. Specifically, these fields are below 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 F-2.

Table F-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)

Figure F-1: Calculated EMF - 1410 LINE at 115-kV and 100 Line at 115-kV



Attachment G

Montville to Horton Cove Rebuild Project

Letter to Abutters and Affidavit of Notice of Service



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

October 22, 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 upgrade, called the Horton Cove to Montville Reliability Project ("Project"), is necessary to support the continued reliability of the transmission system. The Project work would be located within the existing Eversource right-of-way (ROW), on Eversource fee owned property, and on Eversource facilities on NRG's Montville Generating Station property. The proposed modifications include:

- Rebuild two transmission lines on approximately 0.6 mile of ROW (powerline corridor) between Horton Cove and Montville Substation in Montville, Connecticut. We will replace four existing steel lattice towers with five new steel single pole structures.
- 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.
- Re-terminate the existing 69-kV 100 line at and perform modifications within the Montville Substation. The Project will remove and relocate the line to the 115-kV substation yard as part of the 100 line upgrade.
- Install a redundant backup source for NRG's Montville Generation Station and Eversource's Montville Substation 69-kV switchyard, located at Lathrop Rd. in Montville.

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. We anticipate to complete construction, including restoration of affected areas, by the end of 2023.

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,

Gregory Emery
Eversource Project Manager - Transmission

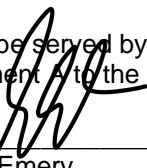
AFFIDAVIT OF SERVICE OF NOTICE

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

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.



Gregory Emery
Project Manager

On this the 22nd day of October 2021, before me, the undersigned representative, personally appeared, Gregory Emery, 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