EVERSOURCE ENERGY
PETITION TO THE CONNECTICUT SITING COUNCIL
FOR A DECLARATORY RULING OF
NO SUBSTANTIAL ADVERSE ENVIRONMENTAL EFFECT
FOR THE PROPOSED EVERSOURCE
NORWALK BRIDGE TRANSMISSION RELOCATION PROJECT
IN THE CITY OF NORWALK, CONNECTICUT

The Connecticut Light and Power Company doing business as Eversource Energy ("Eversource" or the "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 Sections 16-50g et seq. of the General Statutes of Connecticut ("Conn. Gen. Stat.") for the relocation of two (2) existing 115-kilovolt ("kV") electric transmission facilities currently located within the existing Connecticut Department of Transportation ("CDOT") corridor (the "railroad corridor")[1], and described herein as the "Project". Eversource respectfully submits that a Certificate is not required because the proposed modifications would not have a substantial adverse environmental effect.

Currently, the Eversource transmission system is carried overhead on catenary bonnets (extensions) and other structures within the railroad corridor. In the City of Norwalk ("City"), the railroad corridor crosses the Norwalk River (or "River") via what is commonly referred to as the Walk Bridge (or "Bridge"). The existing Walk Bridge is a 564-foot-long railroad swing bridge constructed in 1896, carrying four tracks that serve the northeast railway system. CDOT has determined that the Bridge is in critical need of replacement due to deterioration, vulnerability to storm surges and high wind events, and operational failures. CDOT is planning to replace its existing 120+ year old Bridge[2], which would require decommissioning the existing lattice structures at either end of the Bridge that support Eversource's 115-kV transmission lines (1028 Line and 1146 Line, respectively[3]). As a result, Eversource's transmission lines must be re-routed prior to the demolition and replacement of the existing Bridge. The purpose of the proposed

[1] The railroad corridor is owned by CDOT and used by Metro North Railroad and Amtrak for transporting passengers, and by CSX for transporting freight.

[2] Additional information can be found at http://www.walkbridgect.com/projects/norwalk.aspx

[3] The 1028 Line is supported by transmission structures within the railroad corridor ROW. The 1146 Line is supported by overbuild (bonnets) on the railroad catenary structures. At the Bridge crossing, both lines are supported by the lattice structures at either end of the Bridge. Eversource has existing rights to be located in the railroad corridor.

Project is to permanently relocate a portion of its 115-kV electric transmission facilities so as not to impede construction and future maintenance of the new Bridge.

Eversource's existing license agreement with CDOT for its transmission facilities along the railroad corridor requires the relocation of these facilities from the Bridge to accommodate CDOT's replacement of the Bridge. CDOT's selected Bridge replacement design cannot accommodate the collocation of Eversource's transmission lines; therefore, the relocation of Eversource's transmission lines must be permanent.

The Project will include both underground and overhead construction consisting of:

- Installing approximately 7,000 underground circuit feet[4] of 5000-kcmil copper conductor cross-linked polyethylene cable ("XLPE") and All-Dielectric Self-Supporting ("ADSS") 144-fiber optic cables (per circuit), all contained within concrete-encased duct banks.
- Installing two (2) new transmission dead-end structures on new drilled shaft foundations, which will replace similar structures in the same general location.
- Installing four (4) new overhead-to-underground transition structures.
- Modifying two (2) existing Eversource transmission structures and four (4) existing railroad catenary extensions overbuilt to support Eversource transmission facilities.

Once this portion of the transmission lines has been relocated, CDOT will be responsible for removing the existing de-energized overhead transmission facilities.

Eversource's Project Elements

Relocation of 1028 and 1146 Transmission Lines

The Project includes re-routing the existing 115-kV 1028 and 1146 transmission lines from a portion of the railroad corridor (refer to attached Supplemental Report, Attachment 1 – Project Plans) over an approximate distance of 0.7 mile. To facilitate the re-routing of the transmission lines, each transition (from overhead to underground and from underground back to overhead) will be accomplished using transition structures within or adjacent to the railroad corridor. The proposed relocation of the 1028 Line would begin on the west side of the railroad corridor at the

[4] The total length of the relocated lines is approximately 3,500 linear feet incorporating double-circuit cable (2 separate cables).

SoNo Gardens Condominiums ("SoNo Gardens") at existing Structure 523WN. SoNo Gardens is located between Monroe Street to the south and Madison Street to the north. From this point, the 1028 Line would connect to a new monopole structure at SoNo Gardens at 15 Monroe Street. The new structure will facilitate the 1028 Line's crossing of the railroad corridor to a new transition structure (Structure 524ES) located within the Norwalk Police Department (or "Police Department") parking lot at 1 Monroe Street.

The proposed relocation of the 1146 Line would begin on the east side of the railroad corridor and east of SoNo Gardens and would run along the east side of the railroad corridor to a new transition structure (Structure 523EN) in the Police Department parking lot. At the Police Department parking lot, both overhead circuits would transition to underground and then extend from the parking lot east beneath Elizabeth Street (and crossing South Main Street and Water Street) to 90 Water Street. The transmission lines would then cross underneath the Norwalk River riverbed in conduits installed using horizontal directional drill ("HDD") equipment to Fort Point Street (State Route 136) north of Veteran's Memorial Park on the east shore of the River. The proposed route would then head northeast and follow Fort Point Street to the Fort Point Street Bridge railroad overpass, where the underground circuits will transition back to overhead, south of the railroad corridor on property owned by CDOT, north of 25 Van Zant Street, before interconnecting back into the corridor (Structure 535WS – 1146 Line and Structure 534ES – 1028 Line).

Access and Work Areas

The majority of the Project would be located within City streets. However, access to City and privately-owned areas would be required for the modifications to existing overhead structures, construction of new overhead structures, and installation of portions of the underground lines. These locations include municipal properties at the Police Department (1 Monroe Street) and private properties at 15 Madison Street, 90 Water Street, and 25 Van Zant Street. The relocation of the transmission facilities would also require designated work areas at these properties, as well as in portions of Veteran's Memorial Park. Eversource has had several meetings with the City and the owners of the above private properties. As a result, it has acquired, or has reached agreements to acquire, the temporary and permanent land use and property rights necessary to complete the Project.

Relocation of the line sections would require safe and level work areas. Work areas associated with the installations of new infrastructure (including new overhead/transition poles and splice vaults) would vary in size based on physical constraints and site-specific construction needs.

Trenching in City streets would require traffic control, including the temporary re-routing and/or closure of travel lanes. Traffic management plans would be developed and closely coordinated with the City and CDOT.

The HDD would also require dedicated, temporary work areas on each side of the River to accommodate the drilling, sending and receiving pits, necessary to facilitate the HDD, as well as the laying out and pulling through of conduits and, later, the transmission cables.

Once work is complete and the Project work areas stabilized, Eversource intends to restore these temporary work areas to pre-construction conditions, to the extent feasible and in accordance with landowner agreements, where applicable.

Project Effects

No permanent adverse environmental effects would result from this Project. No significant changes in land use along the Project route would result nor would the Project negatively impact water and air quality, or scenic or cultural resources; wetlands, water courses or coastal resources; surface or groundwater resources; public drinking water supply/private wells; or rare, threatened, or endangered species.

The Project would be located in an urban environment and, with the exception of the installation of the new structure at 15 Madison Street, the overhead/transition structures at the Police Department (1 Monroe Street) and 25 Van Zant Street properties, and the River crossing (which includes portions of CDOT-owned property at 90 Water Street), the Project would be located within existing streets. As a result, some vegetation removal and tree trimming would be required.

Short term effects related to the Project would be limited to Project construction work and, to the extent possible, would be avoided, minimized, or mitigated. Construction activities will result in temporary impacts to traffic, air quality, lighting for night work and noise, as well as within a recreational area, Veteran's Memorial Park, for cable laydown.

Schedule

Construction activities are planned to commence in the fourth quarter of 2023 and be completed by the third quarter of 2025.

Conclusion

Each of Eversource's existing 115-kV lines is a "facility" as defined in Conn. Gen. Stat. §16-50i(a) and the Project involves a "modification" of those facilities as defined in Conn. Gen. Stat. §16-50i(d). Based on the information provided in this Petition, Eversource believes that the Project will not have a "substantial adverse environmental effect in the state" and, therefore, does not require a Certificate of Environmental Compatibility and Public Need pursuant to Conn. Gen. Stat. §16-50k(a).

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

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SUPPLEMENTAL REPORT

EVERSOURCE ENERGY
NORWALK BRIDGE TRANSMISSION RELOCATION PROJECT
SUPPLEMENTAL REPORT
IN SUPPORT OF THE PETITION FOR A DECLARATORY RULING

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A. PROJECT BACKGROUND AND TECHNICAL PROJECT DESCRIPTION

The Connecticut Department of Transportation ("CDOT") is proposing to replace its existing 120+ year old Walk Bridge (or "Bridge") crossing the Norwalk River ("River") in Norwalk, Connecticut. CDOT has determined that the 564-foot long four-span railroad swing bridge is deteriorated and vulnerable to storm surge or a high wind event, as well as operational failures, and must be replaced. The Bridge carries four (4) railroad tracks over the River, which are owned by CDOT and used by Metro-North Railroad ("MNR") and Amtrak for transporting passengers, and by CSX for transporting freight (the "railroad corridor"). The railroad corridor is also used for railroad signaling and communications and carries two (2) 115-kilovolt ("kV") overhead electrical transmission circuits owned by The Connecticut Light and Power Company dba Eversource Energy ("Eversource" or "Company"). The circuits are attached to structures within the railroad corridor and on railroad catenary structures, including those located on the Bridge crossing. CDOT's bridge replacement project requires the decommissioning of the existing steel lattice structures at either end of the Bridge. As a result, Eversource's transmission lines (the 1028 and 1146 lines) must be re-routed prior to the demolition and replacement of the existing Bridge. CDOT's selected replacement design for the Bridge cannot accommodate the collocation of Eversource's transmission lines, so the permanent relocation of Eversource's transmission lines is necessary.

In advance of CDOT's project, Eversource would permanently relocate a section of the two (2) 115-kV overhead transmission lines, converting the design from an overhead configuration to an underground configuration for an approximate length of 3,500 feet (0.66 mile), with interconnections back to the existing overhead transmission lines, which follow the railroad corridor (the "Project"). The re-routing would include a combination of trenching in local streets and on private properties and a trenchless underground crossing of the River.

Eversource proposes to employ a horizontal directional drill ("HDD"), a steerable trenchless installation method, to route the cables beneath the riverbed. The HDD crossing methodology requires a surface-launched drilling rig and the use of drilling fluid to facilitate the removal of cuttings, stabilize the bore hole, cool the cutting head, and lubricate the passage of the conduits. Sending and receiving pits would be located on either side of the Norwalk River to allow the drilling fluid to be collected and reclaimed. The proposed HDD crossing route would be located

below (underneath) the riverbed and coastal resource areas. All land-based, surficial work[1] associated with the HDD would occur outside of the limits of the Connecticut Department of Energy and Environmental Protection's ("DEEP") Coastal Jurisdiction Line("CJL").

The HDD crossing has been designed with input from the City and City Commissions, to avoid and minimize environmental impacts and would not adversely affect existing water-dependent uses, or future water-dependent use opportunities. Further, the HDD crossing design is consistent with the Norwalk Harbor Management Plan 2009, as amended (The Harbor Management Plan documents are available for review at https://www.norwalkct.org/963/Harbor-Management-Plan).

No permanent above-ground transmission facilities are planned to be located in, or adjacent to, any tidal resources. The transmission lines would be installed at depths ranging from approximately 30 to 50 feet below the riverbed and thus would have no adverse effect on the Norwalk River, tidal wetlands, intertidal flats, or other marine resources. No submerged aquatic vegetation is present within the Norwalk River in the vicinity of the HDD crossing. A benthic macroinvertebrate study of the area indicates low species diversity, which suggests the River at this location is in a highly disturbed, stressed condition[2].

The depth of the HDD crossing promotes unimpeded future dredging activities in the Norwalk River to maintain the current authorized federal navigation channel depth without disturbing the transmission lines. The location of the transmission lines as they approach the east bank of the River, north of the Veteran's Memorial Park finger dock pilings, has been designed to provide sufficient separating distances to avoid conflict with the existing dock facilities. The HDD crossing route mitigates potential conflicts with any future expansion of the dock or any other improvements proximate to the transmission lines. Any such future expansions and/or improvements would be coordinated with the City so as not to impede development of future water-dependent uses. Similarly, development of future water-dependent uses on the west side of the Norwalk River would not be affected by the installation of the transmission cables.

[1] Temporary sending/receiving pits and associated work areas, as well as permanent vault locations.

[2] *Kleinschmidt Associates, Norwalk River Benthic Macroinvertebrate and Submerged Aquatic Vegetation Surveys, August 2018*, prepared for Eversource Energy. Based on average Shannon index values of 1.20 over the Project area (values lower than 1.5 are indicative of a highly stressed community).

The HDD crossing would be completed in accordance with applicable permit conditions and would follow procedures designed to minimize adverse environmental impacts. Eversource's HDD contractor would comply with a Project-specific Operations and Monitoring Plan and an Inadvertent Release Contingency Plan for Horizontal Directional Drilling, each of which has been developed as part of the environmental permitting process. These plans establish early detection and notification procedures to respond to an inadvertent release during HDD construction, and outline steps to manage, control and minimize impacts should an event occur. Eversource contractors would also comply as applicable with a Stormwater Pollution Control Plan, subject to the review and approval by the Connecticut Department of Energy and Environmental Protection ("CT DEEP"), for the Project's *General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities*. Dewatering would be performed in accordance with authorizations from applicable regulatory agencies and may involve discharge to catch basins, temporary settling basins, temporary holding (frac) tanks, or vacuum trucks. Dewatering wastewaters would not be discharged directly to surface waters. Since the temporary HDD entry and exit pits would be located within a 100-year flood zone, Eversource would develop a flood contingency plan detailing protocols for protecting the HDD entry and exit pits if a flooding event were to occur.

The HDD would require a work area encompassing portions of the 90 Water Street property[3] for the initial drill, which is located on the west side of the River. The receiving area would be located on the east side of the River within Fort Point Street, generally at its intersection with Goldstein Place. Additional work areas are necessary on the east side of the River[4] to lay out and assemble the high-density polyethylene ("HDPE") conduits (and later, the transmission cables after the conduits are in place) prior to installation. Once the HDD is completed, two (2) splice vaults (each measuring approximately nine (9) feet high by nine (9) feet wide by 24 feet long) would be installed on the west side of the Norwalk River to connect the in-street trenched lines to the cables extending underneath the River. Two (2) additional pull-through vaults of similar dimensions would be installed on the east side of the River to allow access for cable replacement of a shorter piece of cable, should the cable be damaged.

[3] CDOT has acquired a number of private properties for the Bridge replacement project and, as of this submittal, has acquired or is acquiring the properties on the west side of the River along Water Street where one side of the HDD crossing is proposed to be located. CDOT has confirmed, in writing, its intention to grant Eversource the necessary easement.

[4] Eversource would use the northern portion of Veteran's Memorial Park for these temporary activities.

A.1. PROJECT AREA

The Project would include installation of permanent infrastructure on portions of the private property at 15 Madison Street, the Norwalk Police Department (1 Monroe Street), Elizabeth Street, CDOT property on Water Street, the River (south of the Stroffolino Bridge), Fort Point Street (CT-136), and private property at 25 Van Zant Street (collectively, the "Project Area", refer to Figure A-1, below).

The existing 115-kV electric transmission facilities at or near the River crossing that are proposed to be relocated are currently within the railroad corridor and supported by a combination of both independent transmission structures and the railroad's catenary structures (overbuilt with vertical extensions to support the conductors). The relocated segment of the transmission line will be approximately 0.66 mile in length (for each circuit).

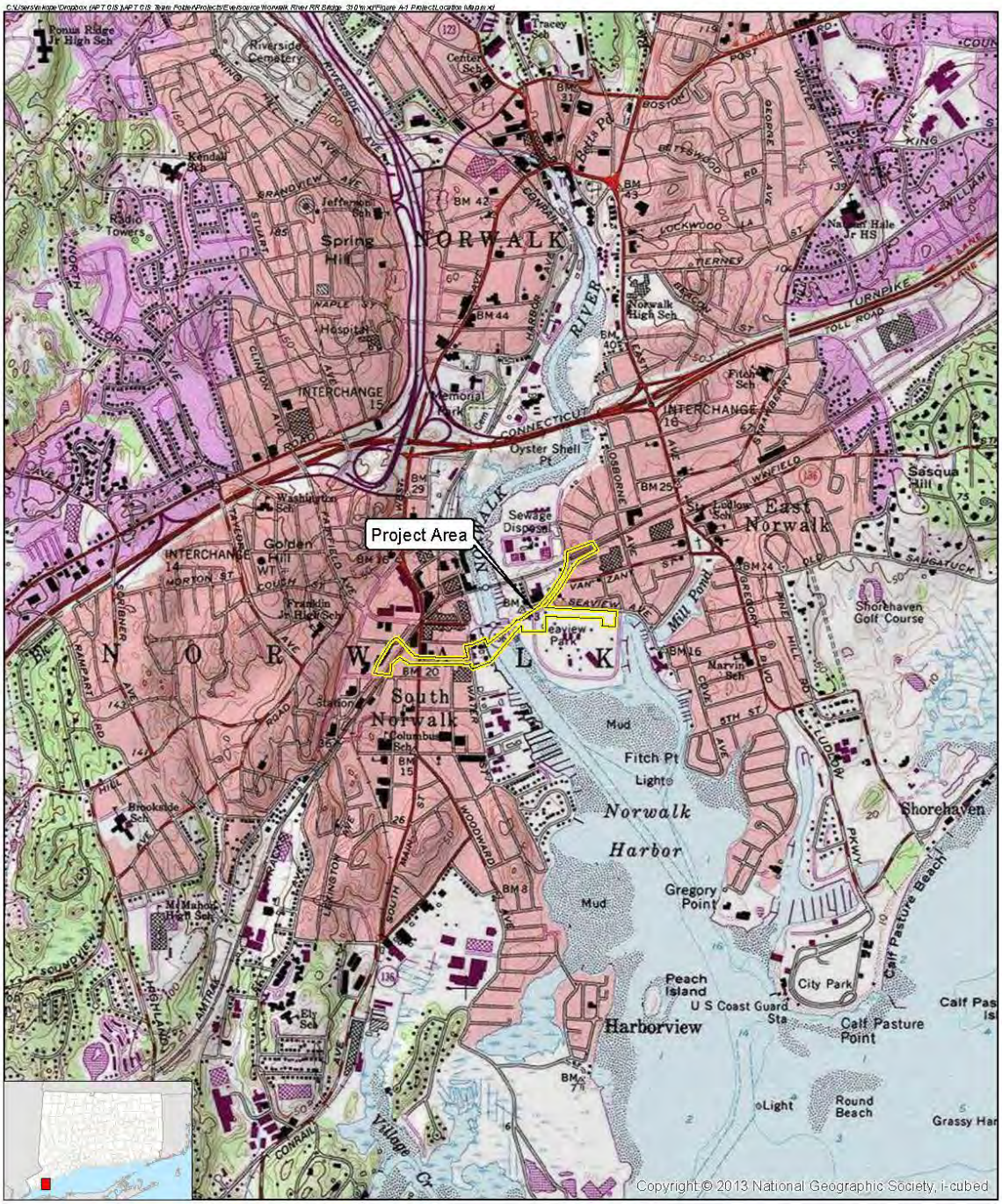
A.2. ROUTING AND DESIGN

Following the determination by CDOT that the existing Eversource transmission lines on the Bridge could not be incorporated into the new bridge design and needed to be permanently relocated, a number of potential overhead and underground routes were evaluated.

Routing Analysis and Stakeholder Engagement

Evaluation criteria included, but were not limited to, environmental and social impacts, constructability, and cost. The Project Area is located within a densely developed urban area, with commercial and residential buildings, roadways and the railroad corridor, marinas, Veteran's Memorial Park, and substantial utility infrastructure. In recognition of the need to be outside CDOT's Bridge replacement work areas, and to minimize the extent of the relocation and impacts to the community, Eversource sought and received input from CDOT and several stakeholders within the City in evaluating potential routes for the new line relocation.

Figure A-1 – Project Location Map



Legend

Project Area

FIGURE A-1 PROJECT LOCATION MAP

EVERSOURCE NORWALK BRIDGE
TRANSMISSION RELOCATION PROJECT
CIRCUITS 1028 AND 1146 REROUTE
NORWALK, CONNECTICUT

Map Notes:
Base Map Source: USGS 7.5 Minute Topographic Quadrangle Map: Norwalk South, CT (1994)
Map Scale: 1:24,000
Map Date: October 2021

2,000 1,000 0 2,000 Feet

EVERSOURCE ENERGY

ALL-POINTS TECHNOLOGY CORPORATION

Development of Route Options

Initially, Eversource analyzed several possible route options presented by CDOT, located both north and south of the existing Walk Bridge, consisting of underground, overhead and hybrid (overhead and underground combination) configurations. As a result of this initial evaluation, a majority of the developed options were eliminated from further consideration, primarily due to constructability issues (e.g., insufficient right-of-way ["ROW"] or clearance from existing buildings, conflict with City development plans and insufficient workspace to construct the line).[5] Eversource continued to engage in consultations with CDOT, the City and local interested parties throughout the route development process, refining the routing options, and relying on a list of significant selection criteria, including:

- Targeting the shortest and straightest route possible to disconnect from the existing transmission facilities within the railroad corridor on the west side of the River and reconnect to the facilities within the railroad corridor on the east side of the River to reduce cost and community impacts;
- Reducing construction constraints;
- Avoiding direct impacts to coastal resources;
- Avoiding direct and visual impacts to historic districts and structures;
- Minimizing impacts to residential and commercial properties;
- Avoiding conflicts with the CDOT's Bridge reconstruction activities; and,
- Minimizing the encumbrance to future shoreline development.

Eversource selected its Proposed Route (described below) as the most viable option for the construction of the relocation. Eversource asserts that the Proposed Route and design selected represents, on balance, the best option in consideration of the evaluation criteria and the input received from its consultations with stakeholders. Moreover, this option would not have a "substantial adverse environmental effect". The Proposed Route and each of the short-listed alternatives are summarized below.

[5] Nearly all of the initial alternate routing options, whether overhead or underground, would have required removal of buildings and/or substantial property acquisitions (or significant encumbrances of property) in order to facilitate construction and operation of the lines.

Proposed Route Summary

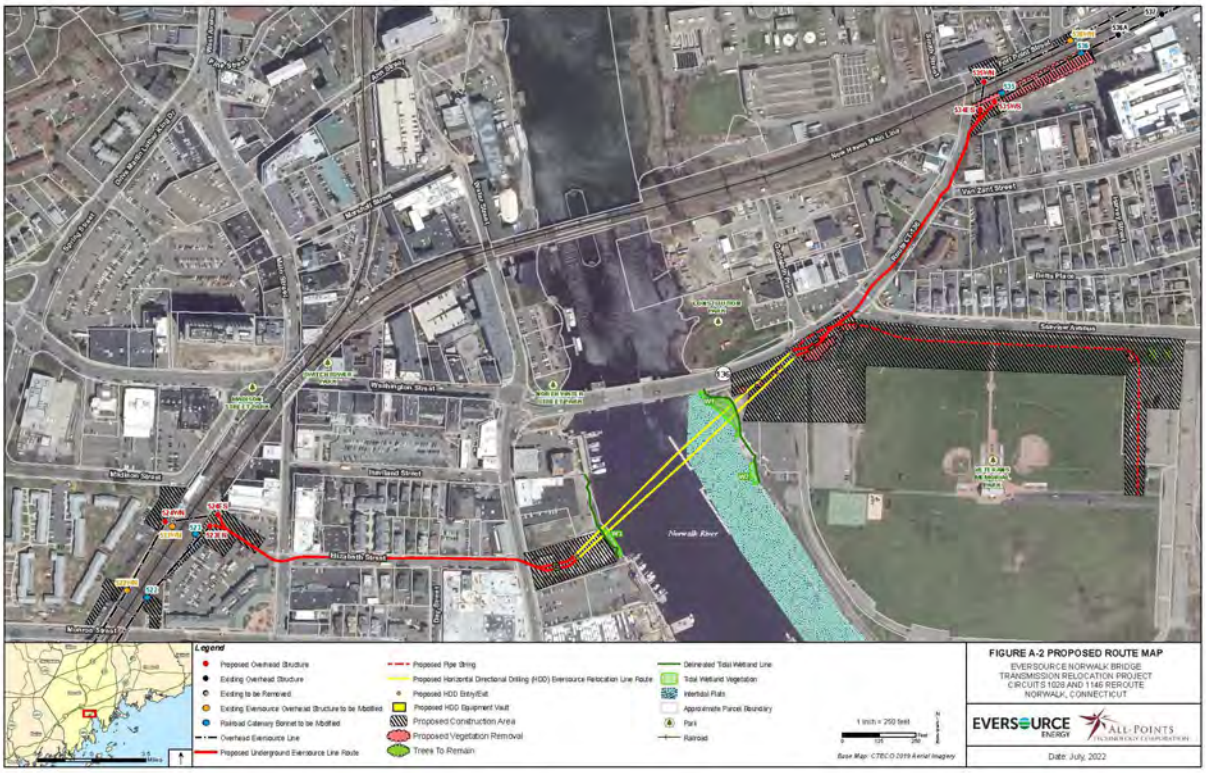
The Proposed Route for the transmission line relocation would begin with the 1028 Line shifting from existing structure 522WN to connect with a new structure 524WN, to be located on private property at 15 Madison Street, immediately west of the railroad corridor and roughly opposite the City's Police Department at 1 Monroe Street. From the new structure 524WN, the 1028 Line would cross over the railroad corridor at an angle to the east to new transition structure 524ES, to be located in the Police Department parking lot (refer to Attachment 2 – Cross Sections of Overhead Structures). Line 1146 would be separated from the railroad catenary system at catenary extension 522[6] and connected to a new transition structure 523EN, also to be located in the Police Department parking lot.

Following the transition of both overhead circuits to an underground design, the lines would connect into and be located within a common duct bank and extend east beneath Elizabeth Street (crossing West Main Street and Water Street) to 90 Water Street.[7] The transmission lines would then extend beneath the River in conduits installed via HDD to Fort Point Street on the east side of the River. The route would then turn northeast and follow Fort Point Street toward the railroad overpass, where the underground circuits would transition back to overhead Structure 535WS (1146 Line) and Structure 534ES (1028 Line) within the railroad corridor north of 25 Van Zant Street (refer to Attachment 3 – Cross Sections of Underground Elements).

The Proposed Route and associated structure locations and catenary bonnet modifications are depicted on Figure A-2, *Proposed Route Map* and in Attachment 1, *100-scale Segment Maps*.

[6] The catenary bonnet would be modified to support the angle of the 1146 Line's connection to the new transition structure. Catenary bonnet 523 would no longer be needed to support the 1146 Line; it would be cut and capped.
[7] Pursuant to an easement from CDOT.

Figure A-2 – Proposed Route Map



The Proposed Route and underground configuration were selected for the following reasons:

- It represents a short, primarily straight route to disconnect from the railroad corridor on the west side of the River and reconnect on the east side;
- It has limited construction constraints by requiring few bends or utility relocations; it uses HDD technology that can place the transmission lines deeper under the River than other installation techniques; and it substantially reduces the number of requested outages for construction;
- It avoids direct impacts to coastal resources;
- It limits viewshed impacts to surrounding historic districts/properties, the River and Veteran's Memorial Park as the proposed new above-ground structures would be constructed within areas where transmission infrastructure already exists;
- It limits impacts to residential and commercial properties;
- It does not create a conflict with the CDOT's Bridge reconstruction activities; and,
- It would not interfere with future shoreline development on either side of the River.

Design and Route Alternatives Considered

During the initial search for a viable route, Eversource was provided routing options for consideration by CDOT's consultant. Most of these options were not technically feasible, had multiple constructability challenges and/or were too expensive, as most of these route options traversed well outside the vicinity of the Bridge. More feasible alternatives were developed by Eversource and reviewed with the City and CDOT, ultimately resulting in the current route and design. Overall challenges of the many design options that were considered included:

- Identifying where the transmission lines could disconnect/connect to the railroad catenary structures and separate transmission line structures within the railroad corridor. Given the reconstruction of the Fort Point Street Bridge, the transmission lines must reconnect to the east of the current road and bridge alignment, so that the Fort Point Street Bridge work is not taking place around energized high voltage lines, as requested by CDOT;
- Locating adequate space to construct new transmission structures, especially given the density of the development in the area;
- Minimizing traffic flow interruptions during construction;

- Minimizing impacts on critical City facilities, like the water treatment plant and recreational facilities, including Veteran's Memorial Park;
- Minimizing permanent impacts to businesses and residential property, including currently undeveloped property; and
- Locating adequate space to set up construction staging on both the west and east sides of the River and the railroad corridor.

All-underground, all-overhead and hybrid (overhead and underground combination) configurations were considered along the Proposed Route. The specific alignment presented herein has undergone several iterations based on input from the City and CDOT. A point of emphasis during discussions with the City was to avoid, to the extent feasible, direct impacts to businesses, residents, and Veteran's Memorial Park. As a result, an all-overhead design was determined to be the least desirable due to additional property encumbrances/acquisitions that would be required, especially along Elizabeth Street, and associated adverse visual impacts to the community, as well as physical and operational constraints. Based on the extent of these impacts, an all-overhead option was subsequently removed from further consideration.

Proposed Route Hybrid Alternates

A hybrid design of the Proposed Route was considered, incorporating underground facilities on the east and west ends of the Project, and replacing the HDD with an overhead River crossing. Two (2) overhead River crossing alternatives were evaluated, with both options leaving the west side of the Norwalk River from 90 Water Street and landing on the east side of the River, either south or north of the Stroffolino Bridge, using a portion of Constitution Park, Veteran's Memorial Park, or the City's water treatment facility property, respectively.

An overhead River crossing would require the installation of four (4) approximately 160-foot-tall transition structures to meet federal clearance requirements over the navigation channel and the Stroffolino Bridge. Either of these options would require four (4) new overhead structures outside of the railroad corridor and would create a significant visual impact to South Norwalk, Veteran's Memorial Park, surrounding historic districts and other public use areas. Because of the visual impact of such a crossing, Eversource and the City continued to focus on an all-underground design.

CDOT Collocation Alternates

Recognizing that CDOT's Bridge project also requires crossing the River with submerged conduits, Eversource coordinated with CDOT to determine if a common location could be shared immediately south of the existing Walk Bridge.[8] To accommodate all the necessary conduits for both projects, a collocation within a single trench was considered, as well as the use of different installation technologies. However, collocation in this area resulted in significant added cost and schedule impacts due to the necessary staging and sequencing of both crossings that would be required as well as the need to secure additional property for the larger installation to include the Eversource cables at this location. Two collocation alternatives were evaluated, as discussed below.

Collocation Alternates 1 Route Summary

Similar to the Proposed Route, the existing transmission lines would leave the railroad corridor and transition to an underground duct bank at the Police Department and extend southeast, crossing South Main Street and into Elizabeth Street. The route would continue for the length of Elizabeth Street before turning north on Water Street and then northeast, crossing Washington Street, into the North Water Street Park and Maritime Aquarium IMAX theater properties at 4 and 10 North Water Street, respectively. The route would then continue east and cross the Norwalk River using a cut and cover trenching technique or micro-tunneling to the eastern shore and continue east through 1 and 9 Goldstein Place. The route would then turn south down Goldstein Place and then northwest, continuing along Fort Point Street (CT136) and into 25 Van Zant Street where the circuits would transition back to overhead structures and connect to the existing system located within the railroad corridor.

This option was not selected due primarily to construction schedule and workspace conflicts with CDOT, but also due to the substantial subsurface utility congestion within North Water Street that would shift the location of the cables and duct bank into the sidewalk or even onto private property. Additionally, there would be substantial traffic interruptions to highly traveled

[8] CDOT is proceeding with its installation at this location and its permit application with CT DEEP is currently under review.

[9] The cut and cover trenching method is a traditional form of tunneling that involves opening up the ground surface and excavating to the required depth. Once the construction is complete, the excavation is backfilled.

[10] Microtunneling is a trenchless construction method that uses a microtunnel boring machine (MTBM) mounted on a jacking frame which is moved forward using jacks. The MTBN is located within a shaft constructed at the desired depth of the crossing. These shafts are placed on either side of the crossing.

City streets such as the intersection of Water Street, Washington Street and Fort Point Street. River navigation would also be disrupted by the use of coffer dams, barges and excavation equipment if cut and cover trenching were utilized for the installation. This method is also limited in that its maximum installation depth is relatively shallow at the shorelines, restricting potential future development near and around the boat docks at 1 Goldstein Place.

Given the above reasons, as well the additional cost for the equipment and coffer dams required for this option, this alternative for a collocation with CDOT was determined to be infeasible.

Collocation Alternate 2 Route Summary

The Collocation Alternate 2 Route is very similar to the Collocation Alternate 1 route with two exceptions. First, the Project's River crossing would be shifted slightly farther to the south, requiring Eversource to use its own dedicated crossing independent from CDOT. Secondly, on the eastern shore of the Norwalk River this route option would continue east underground, crossing Goldstein Place and 10 Goldstein Place before turning north into the railroad corridor. The route would continue east within the railroad corridor, cross Fort Point Street (CT136) and enter 25 Van Zant Street, where the circuits would transition back to overhead structures and connect to the existing transmission system. The remainder of this route option would follow the same alignment as Collocation Alternate 1 within City streets, leaving and reconnecting to the existing transmission system from similar locations.

Although the use of a separate trench to cross the Norwalk River could allow Eversource more flexibility with respect to schedule, and would reduce potential conflicts with CDOT construction activities, the similar substantial constructability issues along North Water Street and need for additional property resulted in a determination by Eversource that this alternative was less feasible than the Proposed Route.

Routing/Design Summary

Eversource asserts that the Proposed Route represents the most direct route for the transmission line relocation. Moreover, its design best limits environmental, cultural and community impacts, while avoiding CDOT's Bridge replacement work conflicts and added costs associated with lengthier routing and related construction impediments in a highly urban environment. Physical impacts associated with the construction along the Proposed Route would be temporary in nature and, once complete, visual evidence of the transmission lines' new location would be limited to the new structure locations immediately adjacent to or within the railroad corridor and the new structure at 15 Madison Street. Work associated with the Proposed Route impacting public areas like Veteran's Memorial Park would be completed during the off-peak season, while work within public road ROWs have been optimized based on consultations with the City and CDOT to minimize traffic congestion and delays as well as conflicts with existing utilities.

The use of an HDD crossing of the Norwalk River allows for greater installation depths that would not affect future dredging and shoreline improvements and would prevent interruptions to River traffic to during construction. The HDD crossing would be completed in accordance with applicable permit conditions and would follow procedures designed to minimize adverse environmental impacts. Eversource's HDD contractor would comply with Project-specific Operations and Monitoring and Inadvertent Release Contingency plans, each of which has been developed to establish early detection and notification procedures for response to an inadvertent release during HDD construction; and to outline steps to manage, control and minimize impacts should an event occur.

The use of HDD technology for the River crossing was deemed, on balance, to be the most feasible solution for the Project. Once construction is complete, there would be minimal visible evidence of the transmission line re-routing.

A.3. DETAILED PROJECT DESCRIPTION

Overhead Segments

The proposed overhead 115-kV transmission line segments, composed of two (2) circuits, would consist of three (3) phase conductors per circuit. Each phase conductor would comprise one (1) 1,590,000 circular mil (1590-kcmil) Aluminum Conductor Steel Supported (ACSS).

The re-routed transmission lines would continue to be protected by optical ground wires (or "OPGW"), a shield wire containing optical glass fibers (144 fibers) for communication purposes.

New overhead segments would be limited to the eastern and western termini of the Project and consist of the following elements:

- Four (4) overhead-to-underground transition structures; two (2) each within the Police Department parking lot and north of the 25 Van Zant Street property, within the railroad corridor.
- Two (2) new dead-end structures: one (1) new structure would be located on private property at 15 Madison Street, west of the railroad corridor; the second structure would be located north of 25 Van Zant Street within the railroad corridor off Fort Point Street, where it would replace an existing similar structure in that area.
- Modifications to four (4) existing Eversource transmission structures, involving the addition of post brace insulators on each of the phases.
- Modifications to two (2) existing bonnets on CDOT catenary structures that support Eversource's conductors. The top (transmission) portions of these bonnets would be removed and capped, leaving the lower sections in place.

The new transmission structures would be galvanized steel monopoles varying in height ranging from 95 feet to 125 feet.

Attachment 2, *Cross Sections of Overhead Elements*, depict the proposed overhead components of the Project. Once the Project is complete, CDOT would be responsible for removing the de-energized section of the transmission facilities within the railroad corridor and existing Bridge crossing.

Underground Segment

The Project's underground 115-kV transmission lines would consist of 5000-kcmil copper conductor cross-linked polyethylene cable ("XLPE") cables. Portions not completed by the HDD would have cables contained within concrete-encased duct banks (consisting of several polyvinyl chloride [PVC] conduits), as well as concrete pull-through and splice vaults. The vaults are required for pulling in the transmission cable through conduits, for the splicing of each cable length, and ultimately to provide access to portions of the cable system to perform maintenance

and repair activities. Four (4) vaults would be buried, two (2) on each side of the Norwalk River. In addition, two (2) fiber optic cables per circuit would be installed in the duct bank. One fiber optic cable is required for remote protection and control of the cable system and associated equipment, and the other fiber optic cable is for monitoring the operating temperature of the cables. Precast handholes located near the cable splice vaults on the west and east sides of the River would be installed to provide access for future splices of the fiber optic cables, if necessary. For each circuit, a ground continuity conductor would also be installed for grounding the cable sheaths and equipment within the proposed vaults.

The underground segment includes crossing the Norwalk River, which will be completed using HDD technology. The HDD crossing would require two (2) separate bore holes spaced approximately 20 feet apart. Sending and receiving pits would need to be established on both sides of the River to facilitate the crossing, with the sending pits on the west side, and the receiving pits on the east side. The cables in this segment would be contained in high-density polyethylene (HDPE) conduits.

Attachment 3, *Cross Sections of Underground Elements*, provides details depicting the main components of the Project, including:

1. Typical single-circuit duct bank;
2. Typical double-circuit duct bank; and
3. Typical trenchless HDD.

Design details of the Project are included in Attachment 4, *Project Plans*.

A.4. MAJOR ACTIVITIES PRIOR TO FACILITY CONSTRUCTION

Staging

Construction staging and laydown areas would be established in Veteran's Memorial Park, on Eversource-owned properties at 319 Wilson Avenue and the Norwalk Harbor Substation at 3 Longshore Avenue, as well as on private property at 90 Water Street and 85 Dr. Martin Luther King Drive. In addition, the selected Contractor may acquire additional laydown areas.

Vegetation Removal

The Project is located in a highly urbanized environment and, with the exception of the Norwalk River crossing, would consist of work primarily within existing streets or other previously developed areas, including municipal and private properties. As a result, minimal vegetation removal is required. Select vegetation would need to be removed in the Norwalk Police Department parking lot, near the entrance to Veteran's Memorial Park, and within the railroad corridor on private property at 25 Van Zant Street. In addition, tree trimming, and vegetation removal would be required at 90 Water Street. Eversource would minimize vegetation removal activities to the extent practicable and restore temporarily disturbed areas in accordance with Eversource's standard best management practices and any applicable statutes or regulations.

Installation of Erosion and Sedimentation Controls

Most of the work associated with the relocation of the transmission lines would not be in close proximity to wetlands or coastal resources, except for the River.

To minimize the potential for erosion and sediment ("E&S") migration during construction, temporary E&S control measures would be installed, as necessary, prior to the initiation of soil disturbing activities and would typically be inspected on a daily basis. Such controls would be maintained and replaced, as needed, throughout the construction process. Temporary E&S controls would be left in place until the areas disturbed by construction activities are permanently stabilized. Permanent stabilization would consist of the application of pavement for areas within existing road ROWs or otherwise currently paved. In Veteran's Memorial Park, where a temporary material laydown area is necessary, Eversource would reseed turf to restore disturbed soils. After final stabilization is achieved, all temporary E&S controls would be removed and disposed of properly.

As part of the E&S controls deployed along the Proposed Route, catch basin filter protection would be utilized to prevent sediments from entering the municipal storm water system. These filters would be regularly inspected and replaced, as needed.

In addition to these measures, all E&S control practices would be in accordance with the following:

- 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended;
- General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (December 31, 2020);
- Eversource's Best Management Practices Manual for Massachusetts and Connecticut (Construction and Maintenance Environmental Requirements), September 2016 (Referred to herein as "BMPs" and provided in Attachment 5, *Eversource Best Management Practices*); and,
- CT DEEP Contaminated Soil Transfer and Staging General Permit (if necessary).

Access to Construction Areas

Most of the Project Area would be accessed from City streets or parking lots and no new access road construction would be required.

At the 15 Madison Street property, the existing paved parking lot would be used for construction in accordance with a landowner agreement. At the 25 Van Zant Street property, the existing paved parking area would be used to the extent feasible to remove vegetation in the railroad corridor and modify two (2) existing transmission structures (535 and 536). However, additional access may be required off the pavement.

Construction of Work Areas

Temporary work areas are required to create safe and level work areas. The size of these areas may vary based on physical constraints and construction needs. The work areas would be underlain by a combination of construction mats and/or gravel.

B. EXISTING ENVIRONMENT, ENVIRONMENTAL EFFECTS AND MITIGATION

Construction and operation of the proposed modifications to the associated 115-kV electric transmission facilities are not expected to result in substantial environmental adverse effects for the reasons set forth below.

B.1. LAND USE

Land uses abutting the Proposed Route are primarily commercial with some residential (including SoNo Gardens, a residential community located at 15 Madison Street) and mixed-use commercial and residential properties along Elizabeth Street. Municipal properties (Veteran's Memorial Park and the City's Police Department) are located on the east and west sides of the Project. Construction of the Project would require permanent land use and property rights from the City and private landowners. The only other permanent impact to off-ROW land use would occur at the Police Department property, where the installation of new transmission structures may eliminate a few existing parking spots. Temporary construction-related impacts include traffic control measures, temporary work areas and rights of access.

B.2. WETLANDS, WATERCOURSES AND FLOODPLAINS

The Project would not result in any permanent impacts to environmentally sensitive areas, including wetlands, coastal resources, watercourses, and floodplains.

Wetlands

No inland wetlands or vernal pools are located proximate to the Project. Tidal wetland resources are located along the immediate shorelines of the Norwalk River where the proposed HDD crossing would traverse at depths well beneath these resources. However, no land-based work would be conducted within tidal wetlands.

Coastal Resources

The Project is located entirely within the Coastal Boundary and thus subject to review by CT DEEP for consistency with CT DEEP's 2000 Connecticut Coastal Management Manual ("CMM"). A variety of Coastal Resources, as defined in Section 2 of the CCM are present within or proximate to the Project. These include Coastal Hazard Area (Flood Zones); Coastal Waters and Estuarine Embayments; Developed Shorefront; Intertidal Flats; Shellfish Concentration Areas; and Tidal Wetlands. While Project construction would occur proximate to Coastal Resources, the Project is not anticipated to have an adverse impact on these resources. Norwalk River

Norwalk River

The Project Area crosses the Norwalk River, which flows into Long Island Sound approximately 1.5 miles to the south. Commercial development exists on the west side of the River within the Project Area; Veteran's Memorial Park lies on the east shore. Further, commercial development and the Stroffolino Bridge, which carries Fort Point Street (Route 136) across the Norwalk River, are located immediately to the north. At this location, the River includes a federal navigation channel.

Benthic macroinvertebrate and submerged aquatic vegetation surveys[13] were completed in June 2018 to collect information on the local benthic and vegetative communities within the Norwalk River. The benthic data indicates that the vicinity of the proposed HDD paths is subject to environmental stress. The dominant species in this area are opportunistic, short-lived and flourish after pollution-induced stress episodes. No submerged aquatic vegetation was present in the area. A few groups of marine macro algae were observed. Additional information can be found in Attachment 6, *Benthic Study*.

A shellfish survey was also completed in August 2019 to evaluate the River bottom within and around the HDD paths. Twelve (12) live Eastern Oysters and six (6) Quahogs were observed within the area surveyed, all in shallow near-shore habitat. Ribbed Mussels were observed along the shore edge exposed at low tide. The substrate throughout the survey area was composed of soft organic muck, with some scattered cobble and gravel at the River edges. Additional information can be found in Attachment 7, *Shellfish Survey Norwalk River*.

[13] Conducted by Kleinschmidt of Essex, Connecticut.

The HDD would extend down from the sending/receiving pits at an approximate 15-degree angle to a maximum depth of approximately 30 to 50 feet beneath the channel bottom and above bedrock. An Inadvertent Release Contingency Plan for Horizontal Directional Drilling has been developed to reduce the likelihood of an inadvertent release of fluids during construction and to establish protocols to control and minimize impacts in the unlikely event of a release.

The HDD crossing would require a Structures and Dredging Permit through the CT DEEP Land and Water Resources Division as well as U.S. Army Corp of Engineers' Sections 10 and 408 permits. The Project would adhere to the conditions of all Project permit and regulatory approvals and further minimize effects throughout construction through the utilization of the BMPs.

Floodplains

The vaults and portions of the relocated transmission lines would be located in areas within the 100-year flood zone, which extends from just north of the Fort Point Street/Seaview Avenue intersection to a point west of the Elizabeth Street/Day Street intersection. All Project facilities within these areas would be installed underground and would have no effect on the flood zone. Equipment and structures within the 100-year flood zone would not be adversely affected as they would be designed for protection from water infiltration.

B.3. WILDLIFE

The Project Area's urban setting provides minimal wildlife habitat. Installation of Project-related infrastructure would occur in previously developed or disturbed locations, including local roads, vacant lots and paved parking areas, and areas within or immediately adjacent to the active rail corridor. Human activity, traffic, lighting, and noise are prevalent today. Therefore, the proposed construction activities would not adversely affect wildlife within the Project Area.

Endangered Species

Digitally available CT DEEP Natural Diversity Database ("NDDB") mapping depicts an NDDB polygon over the Project area. As such, a NDDB Review Request Form and supporting materials were completed and submitted to the CT DEEP Bureau of Natural Resources, Wildlife Division. The resulting NDDB Determination (202107899) letter (dated June 24, 2021)

indicated that the agency does not anticipate negative impacts to State-listed species (RCSA Sec. 26-306) resulting from the Project.

Agency correspondence is provided in Attachment 8, *CT DEEP NDDB Determination Letter*.

The Company also completed consultations with the U.S. Fish and Wildlife Service ("FWS"), in accordance with Section 7 of the Endangered Species Act ("ESA") through its Information, Planning, and Conservation ("IPaC") system to determine if any federally listed or proposed, critical habitats or threatened/endangered species exist in proximity to the Project. The IPaC system identified four (4) species potentially occurring in the region, including: Monarch Butterfly (*Danaus plexippus*), a candidate species proposed for listing [14]; endangered species Northern Long-Eared Bat ("NLEB", *Myotis septentrionalis*); threatened species Red Knot (*Calidris canutus*); and endangered species Roseate Tern (*Sterna dougallii dougallii*). A Biological Assessment generated through IPaC determined that the Project Area is dominated by existing developed and disturbed areas, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscape trees, which do not provide habitat for any of the listed or candidate species Therefore, the proposed action will have no effect on listed or candidate species. f

The IPaC-generated Biological Assessment and *Official Species List* are provided in Attachment 9.

B.4. SURFACE WATERS AND GROUNDWATER

Based on the current design, the Project is not expected to affect any water resources and would utilize appropriate protection measures for the control of construction dewatering and stormwater discharges from Project work areas.

The majority of the Project route is covered by impervious surfaces and, in several locations along the route, stormwater runoff is captured at multiple catch basins/storm drains. Minimal

[14] Candidate species are plants and animals for which the FWS has sufficient information on their biological status and threats to propose them as endangered or threatened under the ESA, but for which development of a proposed listing regulation is precluded by other higher priority listing activities. Candidate species receive no statutory protection under the ESA. The FWS encourages cooperative conservation efforts for these species because they are, by definition, species that may warrant future protection under the ESA.

grading is proposed, and the Project would generally maintain consistency with existing conditions.

B.5. AIR QUALITY

No permanent installations associated with the Project would affect air quality. Temporary potential construction-related effects to air quality are anticipated to be minor and of short duration. These effects are expected to result primarily from construction vehicle exhaust and from the potential for fugitive dust generated by ground disturbance and vehicle movements.

Unnecessary construction equipment and vehicle idling[15] expends fuel, increases costs, and causes air pollution. Vehicle emissions would be limited by Eversource requiring that contractors properly maintain construction equipment and vehicles and minimize the idling time of construction vehicles and equipment, in accordance with applicable regulatory standards.

Pursuant to Connecticut regulations (RCSA 22a-174-18), the allowable idling time for vehicles of all kinds, including diesel construction equipment, is three (3) minutes. However, under winter work conditions (when the ambient temperature is below 20 degrees Fahrenheit) the following apply:

- Construction equipment may require longer periods to warm up after overnight shut down or other extended periods of inactivity. Such "warm up" periods, as required to bring the equipment up to a safe operating temperature (as defined by the equipment manufacturer), are exempt from the idling time limit.
- Construction equipment may have to idle for longer periods to operate defrosting or heating equipment to ensure the safety or health of the driver.

To further minimize short-term adverse effects to air quality during construction, any excess soil that cannot be re-used from excavations would be live loaded, covered, and transported to one of the Project staging areas, or directly to a disposal facility, for proper characterizations and disposal. Watering for dust suppression would be utilized, where necessary. Paved roads would be periodically swept as necessary to remove any excess dirt tracked onto the pavement. Anti-tracking pads would be installed as necessary to minimize tracking of soil onto public roadways.

[15] "Idling" is defined as the period when mobile construction equipment is not in motion or is not otherwise actively performing its designated function. Thus, "idling" does not apply to the use of certain types of mobile construction equipment (e.g., cranes, cement mixers) that may be stationary, but are actively operating, at a work site.

Eversource would apply dust-suppression techniques, as appropriate, to mitigate fugitive dust emissions, including, but not limited to, the wetting of work areas requiring pavement cutting.

B.6. LIGHTING AND NOISE

The Project would not include installation of any new permanent light sources. As some of the work is anticipated to be performed during non-daylight hours and winter months, in coordination with MNR, temporary lighting may be required to accommodate work that occurs after nightfall or during other low light conditions. Temporary lighting would be focused on the targeted work areas and result in a short-term, localized effect.

Similarly, the Project's modifications of the transmission lines and associated replacement facilities would not increase existing noise levels. As a result, once construction is completed, the Project would not contribute any additional noise sources to the community. Construction activities would result in localized and short-term increases in ambient noise levels in the vicinity of work zones. Construction-related noise would result from the operation of equipment and vehicles, including vegetation removal equipment, jackhammers, drilling rigs, cranes, and excavation equipment. Because noise attenuates with distance, the effects of construction-generated noise would depend on the noise source location in relation to noise receptors.

B.7. SCENIC, CULTURAL AND RECREATIONAL VALUES

Scenic Resources

The Norwalk River is not designated as a Wild and Scenic River[16] nor are there any state or federal scenic resources within the Project Area. Though not formally identified as a scenic resource, scenic attributes of coastal areas are highly valued. As currently designed, the Project would not impact the scenic attributes of the Norwalk Harbor area.

Cultural Resources

Cultural (archeological and historical) resources were evaluated for the Project Area. The western portion of the Project traverses Haviland and Elizabeth Streets in the Hanford Place Historic District. All permanent Project-related infrastructure within the Historic District would be below grade. The existing transmission structures proposed for modifications, as well as the

[16] Wild and Scenic Rivers Act, as amended, 16 U.S.C. 1271 et seq.

proposed new above-ground structures, within and adjacent to the railroad ROW lie immediately southwest of the South Main and Washington Street Historic Districts. These Historic Districts are listed on the National Register of Historic Places.[17]

No archaeological resources are documented directly within the Project Area. The Fort Point Indian Fortress was historically located south of the railroad ROW and potentially extending as far south as Fort Point Street and Veteran's Memorial Park. No submerged cultural resources have been identified within the Norwalk River proximate to the proposed HDD path.

Eversource has consulted with the Connecticut State Historic Preservation Office (SHPO) with respect to the Proposed Route. Initial consultations regarding the Project (July 2018, before the Proposed Route was identified) resulted in SHPO expressing no concerns relative to above-ground historic resources and anticipated no adverse effect to the Historic Districts. However, the southern extent of the Fort Point Indian Fortress has been documented within close proximity to properties immediately north of Fort Point Street near its intersection with Goldstein Place. SHPO requested construction monitoring be implemented by Eversource in that general area to evaluate the potential presence of cultural artifacts. Eversource recently provided SHPO with revised plans depicting the Proposed Route. In email correspondence dated November 3, 2021, the SHPO acknowledged the minor modifications proposed and determined that they would not materially change the agency's prior determination, recommendations, and technical guidance. Eversource is committed to placing a qualified monitor for cultural resources when construction occurs within Fort Point Street east of the Stroffolino Bridge. A copy of the *SHPO Correspondence* is provided in Attachment 10.

Parks and Recreational Areas

No permanent effects to Veteran's Memorial Park and its recreational areas would occur. Temporary impacts to the park would occur during construction. Timber mats would be used to protect recreational fields and lawns. Those areas disturbed during construction would be restored to previous conditions (re-paving and re-establishment of turf as necessary). In addition, Eversource is coordinating with the City to rehabilitate the park entrance onto Fort Point Street in conformance with the Veteran's Memorial Park Master Plan (dated August 2012).

[17] National Park Service's National Register of Historic Places, as authorized by the National Historic Preservation Act of 1966.

B.8. VISUAL EFFECTS

The Project would not have an adverse visual effect on the community as the new overhead replacement structures are proposed to be located within and/or in close proximity to the railroad ROW, where similar infrastructure exists today. The transmission line rerouting requires the installation of six (6) new, galvanized steel replacement structures to complete the transitions from overhead to underground and underground to overhead. This includes two (2) dead-end structures (one of which is a replacement of an existing, similar structure) and four (4) transition structures. Three (3) existing overhead steel structures within the railroad ROW would be modified to continue to carry Eversource overhead transmission lines. Four (4) catenary extensions, currently supporting Eversource's overhead transmission lines, would be modified by removing the top portions (bonnets) and leaving the lower sections of the catenary for continued railroad operations. In addition, as part of CDOT's Bridge replacement project, additional structures and extensions currently carrying Eversource's transmission lines, including the high bridge crossing catenaries, would be removed from the railroad ROW by CDOT.

Upon completion, the Project would result in a reduction of structures and extensions within that portion of the railroad ROW from which the transmission line section would be removed following completion of construction and energization of the relocated line sections. The new above-ground structures required to re-route the transmission line would generally be of similar character to existing Eversource structures within the railroad ROW. The heights of all replacement structures were checked using the Federal Aviation Administration's ("FAA") "Notice Criteria Tool", which determined that notice would not be required for any of the proposed replacement structures. Accordingly, marking and/or lights for the replacement structures is not required.

B.9. EROSION, SEDIMENTATION AND STORMWATER CONTROL

No significant negative effects are anticipated from erosion and sedimentation, based on the proposed scope of work and the implementation of BMPs.

BMPs for E&S controls would be in accordance with the CT DEEP's 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, all applicable permit conditions, and the Project's storm water and pollution control plan ("SWPCP") and E&S plans.

Catch basins located near work zones would be protected by drain guard filters to prevent sediments from entering the municipal storm water system. These filters would be routinely inspected during work activities and replaced, as needed.

Practices to prevent/control erosion and sedimentation that would be employed at off-ROW locations include, but are not limited to, the following:

- Minimizing areas to be cleared and grubbed;
- Protecting steep slopes and limiting work in these areas to the extent feasible;
- Phasing construction to limit the amount of disturbed area at any one time where practicable;
- Stabilizing exposed soils as soon as construction ceases in an area, rather than waiting until the end of construction for the entire Project;
- Installing and maintaining perimeter BMP controls that prevent migration of, or filter out, sediment;
- Inspecting BMP controls and implementation of additional BMPs throughout construction, as needed;
- Reviewing and assessing BMP controls prior to storm events; and
- Inspecting BMP controls immediately after significant storm events.

Controls would be maintained until final stabilization is achieved at each location and restored to pre-construction conditions. In the case of the entrance to Veteran's Memorial Park, conditions would be restored to be consistent with the City's master plan.

B.10. PERMITTING SUMMARY

Based on the proposed Project design, Eversource anticipates that the following permits will be required for this Project:

- CT DEEP Land and Water Resources Division ("LWRD") Individual Permit – Structures, Dredging and Fill, and Tidal Wetlands Permit, and 401 Water Quality Certification;
- US Army Corp of Engineers ("ACOE") Section 10 of the Rivers and Harbors Act Permit;
- US ACOE Section 408 Permit;

- CT DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (“General Permit”) and/or CT DEEP General Permit for Groundwater Remediation Wastewater; and
- CT DEEP General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer).

C. CONSTRUCTION

The Project facilities would be constructed in accordance with established electric utility practices and regulatory requirements, applicable best management practices, final engineering plans, and Eversource's specifications and conditions set out in approvals and permits obtained for the Project.

The Project consists of three major construction components:

- Construction of the 115-kV overhead line segments to facilitate exiting/reconnecting to the railroad ROW;
- Construction of the 115-kV underground line segment; and
- HDD beneath the River.

C.1. CONSTRUCTION PROCEDURES AND SEQUENCE

Eversource would conduct the Project in stages, with some overlapping work activities. The timing and sequence of work may vary, based on site-specific conditions, final Project design, outage availabilities (for both Eversource and MNR), and regulatory approval requirements. To avoid or minimize the potential for disruption to railroad service, Eversource anticipates that some construction activities, such as structure erection and conductor installation, would be limited to timeframes coordinated with MNR. Eversource would complete pre-construction planning activities and consult with MNR, the City, CDOT and affected stakeholders.

Construction equipment utilized during the execution of the work may include backhoes, excavators, front loaders, reel trailers, bulldozers, cranes, forklifts, pickup trucks, concrete trucks, bucket trucks, dump trucks and HDD excavators, vacuum excavators, and water trucks, as needed, along with smaller equipment (pumps, hand tools, etc.). Some activities may occur simultaneously by different crews.

115-kV Overhead Line Configuration

New transition and support structures, as well as existing overhead pole modifications associated with the rerouted 115-kV transmission line, would be located within or immediately adjacent to the railroad ROW, including, but not limited to: on private property at 15 Madison Street, on the Police Department property (One Monroe Street); and adjacent to Fort Point Street (north of the property at 25 Van Zant Street). The locations of the new structures have

been coordinated with CDOT, MNR and the City, as well as with SoNo Gardens Condominiums on Madison Street.

Some private property easements are required to facilitate construction and occupancy of new overhead lines and support structures. In addition, permanent and temporary land use agreements have been obtained from the City.

The overhead line portion of the Project would include the installation of six (6) new structures, consisting of four (4) transition structures[18] and two (2) termination structures.

All of the proposed new structures would be drilled shaft-self-supported (reinforced concrete caisson foundations) tubular galvanized steel monopoles. The new structures would vary in height, ranging from 95 feet to 125 feet. The proposed height of each structure is dictated by vertical clearances required from the railroad's parallel catenaries and required horizontal clearances from the railroad's power feeders and signal feeders. Adequate clearance is required for CDOT/MNR to maintain power and communication systems without an outage of the Eversource transmission lines. In addition, individual structure placement was evaluated with respect to potential impacts to properties and to avoid excessive modifications to existing facilities.

As part of this Project, modifications are also required to two (2) existing Eversource structures and four (4) catenary bonnets/extensions that currently carry Eversource conductors. These extensions are all located within the railroad ROW. The two (2) existing Eversource structures and two (2) railroad catenary bonnets would be modified by adding post brace insulators so that Eversource can maintain its overhead transmission system within the ROW. One (1) existing Eversource structure and two (2) catenary bonnets would no longer be necessary to support the Eversource transmission lines and would be modified by removing their top portions, leaving the lower sections to support other existing infrastructure for continued railroad operations.

The table below summarizes the proposed new overhead structure installations and modifications to existing structures.

[18] At each overhead-to-underground transition location, one (1) single-circuit monopole would be utilized for the transition of each line.

Line 1028		Line 1146	
Structure ID	**Proposed Scope**	**Structure ID**	**Proposed Scope**
522WN	Add three (3) insulator struts (one at each suspension conductor attachment) to existing single steel pole.	522 Catenary Bonnet	Replace three (3) existing 115-kV arms and insulator assemblies with post insulator assemblies.
523WN	This existing monopole is currently supporting Eversource's 1028 line and MNR catenary wires. The transmission portion of the pole will be removed and capped, leaving the remainder of the structure with the MNR catenary wires in place.	523 Catenary Bonnet	Remove transmission overbuild on existing CDOT catenary rail structure. Line 1146 will now bypass this catenary structure and connect to new transition structure 523EN from catenary bonnet 522.
524WN	Install one new single steel monopole dead-end structure, approximately 25 feet northwest of existing catenary bonnet 523WN. The new structure would be supported by a reinforced concrete caisson foundation.		
524ES	Install one new OH to UG transition structure in the police department parking lot. The transition structure will be a new single steel monopole supporting Line 1028 Line crossing over the rails. The transition structure will be supported by a reinforced concrete caisson foundation.	523EN	Install one new OH to UG transition structure in the police department parking lot. The transition structure will be a new single steel monopole supporting Line 1146 crossing over a section of the parking lot. The transition structure will be supported by a reinforced concrete caisson foundation.
534ES	Install one new OH to UG transition structure on CDOT property (within railroad corridor) just south of the tracks. Structure will be a new single steel monopole supporting Line 1028 crossing over the rails. The transition structure will be supported by a reinforced concrete caisson foundation.	535WS	Install one new OH to UG transition structure on CDOT property (within railroad corridor) just south of the tracks. The transition structure will be a new single steel monopole supporting Line 1146 within railroad corridor. The transition structure will be supported by a reinforced concrete caisson foundation.
535WN	Replace existing single steel monopole with one new single steel monopole dead-end structure approximately 13 feet to the south-west. New monopole will connect OH Line 1028 from transition structure 534ES. New structure 535WN will be supported by reinforced concrete caisson foundation.	535 Catenary Bonnet	Remove transmission overbuild on existing CDOT catenary rail structure. Transmission line 1146 will be attached from new transition structure 535WS to catenary bonnet 536.
536WN	Add three (3) insulator struts (one at each suspension conductor attachment) to existing single steel pole within railroad corridor.	536 Catenary Bonnet	Replace three (3) existing 115-kV arms and insulator assemblies with post insulator assemblies

Note: CDOT is responsible for the removal of existing Eversource infrastructure (structures, bonnets, wires, insulators, and associated hardware) from the section of Eversource's transmission lines currently located in the railroad ROW that the proposed Project will relocate. CDOT's removal of the existing Eversource infrastructure will occur in parallel with demolition of the existing Walk Bridge. To facilitate CDOT's removal of this infrastructure, Eversource will be terminating conductors and undertaking other minor modifications to enable the infrastructure to safely remain in place until CDOT completes the removals.

Any construction work that takes place along the railroad ROW would also require the presence of MNR flagmen who are designated to direct or restrict the movement of trains past a point on a track and to provide on-track protection for construction workers. Outages on the railroad tracks may be required for all wire stringing activities and any activities that would be within 15 feet of the CDOT/MNR catenary power cables. Construction activities, such as foundation drilling and structure setting that are outside of this 15-foot requirement would only require a flagman(s).

Overhead Line Construction Sequence

Overhead construction activities would include:

- Mobilizing
- Implementing Traffic Control & Parking Management Measures
- Removing vegetation
- Establishing access and work area surfaces
- Installing E&S controls
- Excavating and installing structure foundations
- Erecting new structures
- Installing new conductors, OPGW and shield wire on the new structures
- Removing work area surfaces and E&S controls
- Demobilization and restoration

115-kV Underground Line Segment

The proposed method for installing the underground transmission circuits in the roadways is by open cut trenching. Typically, mechanical excavation is required to remove the concrete or asphalt road surface (for roadways), topsoil, and sub-grade material to the desired depth. Removed material is relocated to an appropriate off-site location for disposal or reused as backfill.

Once a length of trench is opened and shoring installed, where required, the assorted conduits are assembled in the trench. The area around the conduits is filled with high strength thermal concrete. After the concrete is allowed to set, the trench is then backfilled and the site restored. Backfill materials would be clean excavated material, thermal sand and/or a low strength thermal concrete mix often referred to as fluidized thermal backfill.

The installation of transmission conduit within public roads would require, at a minimum, the temporary closure and re-routing of traffic lanes to accommodate the excavation of the cable trench, equipment, and temporary storage of equipment, as well as to maintain traffic flow. Installation of the conduit system within public roads would require coordination with other underground and overhead utilities.

For off-road construction, a new underground duct bank would require a dedicated area for construction, consisting of a permanent occupation for future maintenance and repair activities and an additional temporary occupation during the initial construction for equipment and temporary storage of materials. The actual width of the area required to accommodate the construction equipment needed to excavate the trench and to install the duct system would depend on the final engineered depth of the duct bank, site-specific topographic conditions, and environmental and land use characteristics.

Pull-through and splice vaults would be installed on the east and west sides of the Norwalk River, respectively. The outside dimensions of each vault are approximately nine (9) feet wide by nine (9) feet high and up to 24 feet long. The installation of each vault requires an excavation area of approximately 13 feet wide, 13 feet deep and 30 feet long. The actual burial depth of each vault would vary, based on site-specific topographic conditions and on the depth of the adjacent cable sections that must interconnect within the vault (the depth of the cables at any location would be based on factors such as the required clearance dimensions to avoid other buried utilities).

Underground Line Construction Sequence

Underground Construction Activities would generally include, but may not be limited to:

- Mark out utilities
- Set up traffic control
- Install E&S controls
- Saw cut pavement
- Relocate existing utilities, where necessary
- Excavate for duct bank and vaults
- Install conduits

- Backfill excavation
- Restoration

115-kV Horizontal Directional Drill Beneath Norwalk River

HDD is a steerable trenchless method of installation for underground pipes, conduits, and lines in a shallow arc along a prescribed bore path by use of a surface-launched drilling rig. HDD is used when open trench excavation is not practical, such as under rivers, highways, or areas of congested development.

The HDD installation would consist of two (2) individual bore holes, approximately 36 to 48 inches in diameter, spaced approximately 20 feet apart. HDD crossings require pits for both sending and receiving. The excavation areas of the HDD sending and receiving pits would be approximately 30 feet by 15 feet (about 450 square feet). The sending area typically measures approximately 100 feet by 150 feet (about 15,000 square feet), although in some instances a modified (slightly reduced) area can be arranged to meet the specific conditions of a site. Receiving areas require an area measuring approximately 750 feet long by 75 feet wide. This area is used to string out and assemble the HDPE pipe prior to being pulled through the bore hole. The HDD installation would have an entry and exit angle of approximately 15 degrees and a minimum bending radius of 850 feet. Depending upon the soil characteristics, a casing may be needed temporarily at both the entrance and exit of the HDD to prevent the bore from collapsing, which would be removed after installation of the HDPE pipe. After a bore hole has been drilled and reamed to the required diameter, four (4) 10-inch HDPE pipes and four (4) 2- to 4-inch HDPE pipes would be pulled together through each bore hole.

Horizontal Directional Drill Construction Sequence

- Mark out utilities
- Develop construction work pad
- Install E&S controls
- Excavate bore pit
- Install contingency measures to mitigate inadvertent release of fluids
- Set-up and stage equipment and material
- Establish shoring sending and receiving pits

- Bore pilot hole under the Norwalk River[19]
- Attach and pull back reamer through pilot hole
- Assemble and fuse HDPE pipe
- Pull HDPE pipe through ream hole
- Connect HDPE pipe from HDD entry/exit to vaults
- Proof and mandrel ducts to ensure proper installation
- Restore work pad areas

C.2. XLPE CABLE INSTALLATION AND SPLICING

After the conduits have been tested successfully, the transmission cables, fiber optic cables, and ground continuity conductors would be installed, spliced, and terminated. Transmission cable reels would be delivered by special tractor trailers to each termination structure location, where the cable would be pulled into the conduit using a truck-mounted winch and special cable handling equipment. A single cable would be pulled into place within each conduit (except for the spare conduit).

To install each transmission cable, the large cable reel would be set up at the termination structure locations, and a winch would be set up at one of the adjacent vault locations. The cables would then be inserted in the conduits by winching a pull rope attached to the ends of each cable. The termination structure locations would also be used as points for installing the fiber optic cables and ground continuity conductor under a separate pulling operation. The communications fiber optic cables would be spliced and pulled between the termination structures through the intermediate handholes, and the ground continuity conductor would be pulled between the termination structures through the intermediate transmission cable splice and pull through vaults.

After the transmission cables are pulled through the conduit, the fiber optic cables would be spliced into the fiber optic cables above ground on the termination structures. The ground continuity conductor would be bonded into the termination structure and the vault grounding loops. The splicing of XLPE cables involves a precise and complex procedure that requires a

[19] Two (2) separate bore holes are required for the Project. The bores would not be done concurrently. One (1) bore hole would be completed and the conduit installed, then the HDD equipment would be moved into position for the second bore hole and conduit installation.

controlled atmosphere. This operation is time-consuming and reflects the sensitivity of the cables to moisture (which reduces cable life) and the need to maintain a clean working environment. This controlled atmosphere would be provided by an enclosure or vehicle that must be located over the manhole access points during the splicing process. Approximately five (5) to seven (7) days would be required to complete the splices in each splice vault (three (3) XLPE 115-kV cable splices in each vault). Each cable and associated splice would be stacked vertically and supported on the wall of the splice vault on a racking system.

C.3. TRAFFIC CONSIDERATIONS AND CONTROL

During construction, vehicular and equipment movements would occur on public roads and adjacent to the railroad ROW in the Project Area. This includes the west end of the Project, where construction activities would occur within the northern portion of the Police Department parking lot and, as a result, would require temporary alternative parking options. Eversource has leased property at 85 Dr. Martin Luther King Drive to allow for temporary Police Department parking and shuttle service for the duration of construction. This arrangement would accommodate up to 80 secured parking spots within a one (1)-minute drive from the Police Department. In addition, should it be needed, any on-street metered parking fees incurred by Police Department personnel would be paid by Eversource. Further, Eversource would construct a new entrance to the public portion of the parking lot off South Main Street and upon completion of the Project, the lot would be restored to its original condition.

The Project-related traffic effects along state and City roads are generally expected to be temporary and highly localized to the roads where the underground conduit installation work will be done and in the vicinity of the railroad ROW, contractor yards, and staging area(s). In addition, the construction activities occurring on these roads would not affect the railroad service.

Special consideration would be given, however, to work in roads that would require temporary lane closures. Specifically, one (1) lane at a minimum would have to be temporarily closed to facilitate trench excavations and installation of the transmission line conduits and vaults.

During the Project construction phase, vehicles and equipment would enter and exit designated work areas from various public roads. To safely move construction vehicles and equipment while minimizing disruptions to vehicular traffic along public roads, Eversource or its construction contractor would, as appropriate, work with representatives of the City and CDOT.

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 required by permit conditions or when deemed necessary.

The conductor/OPGW pulling across the railroad corridor would be closely coordinated with CDOT and MNR to identify appropriate work schedules and procedures designed for track closures to be as short as possible in duration.

C.4. SOIL HANDLING AND DEWATERING

Handling, intermediate storage, transport, and disposal of excavated material would be in accordance with the BMPs (Attachment 5). Any excavated soil suitable for reuse would be temporarily stockpiled at a nearby staging area.

Excess soil would be live-loaded and transported to an Eversource pre-approved facility, for temporary stockpiling and characterization to determine disposal options. Spoils from the new transmission line support structures would also be handled in this manner. All transport and disposal activities would be conducted in accordance with applicable regulations and the BMPs.

If potentially polluted or contaminated soil is encountered (i.e., visual, or olfactory evidence of petroleum or chemicals), the impacted soil would be live-loaded and transported off-site for proper characterization and disposal by an Eversource-approved contractor.

Where groundwater or stormwater generated from rain events is present, water from excavated areas would be pumped into nearby storm sewer catch basins. The wastewater would be discharged through a filter bag before being directed to the catch basin[20]. Eversource would conduct pre- and post-construction inspections of each affected catch basin. Where required, catch basins would be cleared of significant debris prior to discharges. Once excavation activities are complete, the catch basin(s) would be cleaned of excess sediment with a vacuum truck and the sediment disposed of at an appropriate facility.

[20] Catch basins proximate to work areas would be protected with E&S control measures.

If there is suspicion (e.g., based on sheening or odor) that ground/stormwater is contaminated, water would either be pumped directly into a vacuum truck, or temporarily into a holding tank (e.g., frac tank) for characterization and disposal by an Eversource-approved contractor.

C.5. RESTORATION

After completion of the work, any areas of disturbance would be promptly stabilized on an interim basis to minimize the potential for soil erosion or sediment releases and inspected until stabilization is complete and E&S controls are removed.

Those work areas that are currently paved would be repaved. Initial restoration of paved areas would typically consist of restoring the affected areas to grade (by backfilling with approved material) and restoration in accordance with municipal or CDOT requirements, or property owner agreements. Similarly, final restoration would be completed in accordance with municipal/agency permits or property owner agreements and may include asphalt milling and re-paving of a larger area (i.e., edge of pavement to center line, or full road width).

Restoration activities would include reseeding or sodding of turf, where needed, replanting trees and landscaping, and relocating the Veteran's Memorial Park's entrance consistent with the City's master plan.

C.6. CONSTRUCTION SCHEDULE AND WORK HOURS

The planned in-service date for the Project is scheduled for August 2025. Construction activities are currently planned to commence in the third quarter of 2023.

Construction work hours for the Project would typically be between 7:00 AM and 7:00 PM, six (6) days per week (Monday through Saturday). Construction workers may arrive early and leave the laydown areas outside of these times. In addition, during winter, snow-plowing and de-icing activities may commence, when necessary, prior to 7:00 AM to promote a safe environment for construction personnel prior to the start of the workday. On occasion, Sunday work hours are anticipated to be required from 9:00 AM to 6:00 PM.

For work within ROWs, these hours would vary in accordance with schedules defined in various approvals/permits (Council, CDOT, MNR, City of Norwalk). These typical work hours could also vary depending on the construction phase, weather, and season. Certain activities would

involve work during non-typical hours, in some cases on a continuous basis (24 hours). In those instances where work during non-typical hours is required, construction activities would be completed as expeditiously as possible. For example, the HDD pipe pullback installation would require continuous and uninterrupted operations. Other activities that could necessitate employing non-typical work hours include, but may not be limited to, cable installations; cable splicing; performing work during Connecticut Valley Electric Exchange (CONVEX) or MNR approved outages; and switching, testing, and commissioning. Additionally, non-typical work hours may be implemented in specific locations to mitigate interruptions to business operations or residential properties.

Eversource is coordinating with the City regarding seasonal restrictions in Veteran's Memorial Park to avoid disturbances during the active, summer season. In general, construction-related activities within the park are planned to occur from early October through late March. Should specific and limited activities need to take place outside this window, Eversource would work with the City to establish mutually acceptable times.

Details of construction work hours, access plans and other areas of restoration are being coordinated with individual private property owners.

C.7. ENVIRONMENTAL MONITORING

Environmental monitoring for the Project construction would be conducted by qualified Eversource staff and/or contractors at the onset of construction and in accordance with Project permits and approvals.

The CT DEEP General Permit has requirements for monitoring/inspections, based on project size. Any additional monitoring requirements imposed by Eversource's permits would be followed for the duration of the Project until final compliance is achieved.

D. ELECTRIC AND MAGNETIC FIELDS

Electric fields ("EF") and magnetic fields ("MF"), collectively known as EMF, are forms of energy that surround an electrical device.

Electric fields are produced within the area surrounding a conducting object (e.g., a wire) when a voltage is applied to it and are measured in units of kilovolts per meter ("kV/m"). The level of EF near an energized power line depends on the applied voltage, the distance between the conductors, and the distance to the measurement location.

Magnetic fields are produced within the area surrounding a conductor or device that is carrying an electric current and are measured in units of milligauss ("mG"). The level of an MF near line conductors carrying current depends on the magnitude of the current, the distance between conductors, and the distance from the conductors to the measurement location.

Both electric and magnetic fields decrease rapidly as the distance from the source increases, and even more rapidly from electric equipment in comparison to overhead line conductors. EF levels are further weakened by obstructions such as trees, buildings, or walls, while MF can pass through most materials. In the case of parallel lines of circuit conductors, the levels of EF and MF are also dependent on the phasing of the circuits.

Calculations of Project-Related EMF

Eversource prepared calculations of the post-Project EMF[21]. The calculations were based on average annual loading conditions, as these are most representative of typical conditions. The calculations are made relative to the centerline of the proposed, relocated transmission lines. The calculations apply at one (1) meter (3.28 feet) above grade and assume that the shallowest cable for each 115-kV circuit is at depths summarized in Table D-1.

Because the relocated section of the transmission lines would consist of underground cables, no electric field calculations have been performed. The cables would not be a source of electric fields due to the shielding effects of the cable, sheath, conduit, and the ground. In areas where overhead transmission lines would remain, changes to electric field would be negligible, even with the proposed modifications.

[21] There are no transmission sources along the proposed route, so no existing conditions values were calculated.

Table D-1 – Top Cable Depth Assumptions

Configuration	Cable Depth (inches)
Trench	44
Vault	48
HDD	120

Eversource's proposed design for the Project employs a double-circuit underground trench of six (6) phase cables (three (3) cables per circuit) in PVC conduits. Eversource would incorporate optimized circuit phasing (a "no-cost" measure) to minimize magnetic fields away from the transmission line.

Table D-2 summarizes the calculated magnetic fields at a point directly above the cable conduit and at points that are a distance of 25 feet away from the point above the conduit on each side of conduit after the proposed modifications.

Table D-2 - Summary of Calculated Magnetic Fields[22]

Summary of Fields	Magnetic Field Calculations (mG)		
	25 feet N	Max	25 feet S
Trench	0.6	36.6	1.7
Vault	21.3	128.4	24.9
HDD	8.2	14.6	8.7

The results of the calculations show that the proposed modifications would not substantially increase magnetic fields near the transmission line. See Attachment 11, *EMF Graphs*.

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 magnetic fields. Specifically, these limits are identified by

[22] Because of shielding as a result of the cable sheath and the burial, there would be no electric fields produced by the underground cables. Electric field values presented are limited to the overhead portion of the Project.

the International Council on Electromagnetic Safety (“ICES”) and the International Council on Non-Ionizing Radiation Protection (“ICNIRP”).

These standards are summarized below in Table D-3.

Table D-3 - International Guidelines for EMF Exposure

	MF(mG)
ICES	9,040
ICNIRP	2,000

E. MUNICIPAL AND COMMUNITY OUTREACH

For more than six (6) years, Eversource has worked closely with the City, local stakeholders and commissions, CDOT and regulatory authorities to solicit input, hear concerns, and accommodate, where possible, modifications to the Project design in order to meet those concerns.

Beginning in October of 2016, Eversource initiated meetings with City officials regarding the need for Eversource to relocate its existing transmission lines crossing the Norwalk River on the Walk Bridge. The meetings were primarily focused on the route of the transmission lines relocation.

During these early meetings, the City requested that the relocation (1) utilize underground construction and avoid placing new overhead structures through South Norwalk (SoNo); (2) minimize the permanent footprint on any undeveloped parcels Eversource uses during construction to allow for the least impediment to future development of the land once the Project is complete; and (3) minimize the impact to Veteran's Memorial Park. The City, CDOT, and Eversource agreed to an acceptable route in April 2017. Subsequent to that agreement, Eversource was notified that CDOT planned to replace the Fort Point Street Bridge, an activity that would conflict with reconnecting the transmission lines to the railroad ROW at the end of Goldstein Place. CDOT requested that Eversource reconnect with the railroad ROW farther east, beyond the Fort Point Street Bridge, so the work on this bridge could take place outside of the area with energized transmission lines.

Eversource redesigned this portion of the route to accommodate CDOT's request by rejoining the railroad ROW just east of Fort Point Street and the bridge. Eversource appeared before the Harbor Management Commission's Application Review Committee on May 24, 2017, September 27, 2017, and November 16, 2022, to present information and answer questions about the Project's proposed HDD under the Norwalk River. In February of 2018, the City, in response to concerns from the Harbor Management Commission, asked Eversource to install the cables under the Norwalk River with sufficient clearances from the pilings on the north visitor's dock at Veteran's Memorial Park to not interfere with any future work on the docks or any potential future expansion of the docks. Eversource accommodated this request and redesigned the HDD to ensure the cables would be eight (8) feet below the bottom of the existing

dock pilings and over 11 feet radially away from the pilings. Eversource appeared before the Harbor Management Commission's Application Review Committee again on January 23, 2019, to present this new information.

To further facilitate community outreach in the City, Eversource held an Open House on November 13, 2018, to allow the public an opportunity to learn about the Project and related siting and permitting processes. The Open House was held in the Community Room of the Norwalk City Hall. The 22 members of the community in attendance were most interested in discussing potential disruptions to businesses during construction. Prior to the Open House, advertisements were placed in the Norwalk Hour and El Sol (Spanish language publication). Project information was also added to the Eversource webpage. Since the Open House, Eversource has continued to work with residents and businesses along the proposed route to answer any questions they may have relating to the Project. Beginning in Fall 2021, Eversource conducted door-to-door outreach to property owners located along the proposed Project route. In conjunction with the submission of this Petition, all abutting property owners were notified of the filing and provided details on how to obtain additional information on the Project, as well as how to submit comments to the Council. Eversource will continue to work with property owners to address any concerns that arise and provide reasonable mitigation options when feasible.

Eversource representatives will continue to be in contact with abutting property owners to provide advance notification of start of construction activities and will update property owners throughout the phases of construction and restoration.

In March of 2019, the City asked Eversource to investigate collocating the transmission lines with CDOT's communication cables within a common trench (using cut and cover construction) north of the Stroffolino Bridge. This request was based upon a letter Eversource received from the Norwalk Shellfish Commission. In October of 2019, Eversource presented the results of its evaluation, as presented in section A.2 (Routing and Design) above. The City and CDOT subsequently agreed with Eversource to move forward with the independent route.

In September of 2020, the City asked Eversource to redesign the route so the splice vaults on the east side of the Norwalk River would be located within Route 136/Fort Point Street and not within Veteran's Memorial Park.

In May of 2021, the City, CDOT, and Eversource agreed to a final proposed route which places the vaults within Route 136/Fort Point Street. The consensus design relocated the vaults out of Veteran's Memorial Park, as described above, eliminating this permanent feature within the park. It also addresses the concerns raised by the Harbor Commission that the proposed cables were located too close to the existing dock pilings and might conflict with future expansion. The relocated cables were no longer designed to be located beneath the docks and would be located farther north.

On September 22, 2021, Eversource received written confirmation from CDOT regarding the agency's commitment to grant Eversource the necessary easements on the 68, 70 and 90 Water Street properties, which CDOT intended to acquire.

However, subsequent to this notice CDOT later notified Eversource that, rather than acquire 68 and 70 Water Street, CDOT had reached an agreement with the property owner and obtained all the rights CDOT needed for the replacement of the Walk Bridge Therefore, CDOT was unable to meet its commitment to Eversource for the use of the 68 and 70 Water Street properties and Eversource would need to enter into its own agreement with the property owner for any easements Eversource required for the relocation of the transmission lines. Eversource entered into negotiations with the property owner to place the two lines underground as they traversed from the vaults located on the 90 Water Street property and headed under the River. These negotiations were not successful and so required Eversource to go back to a design that places the cables solely on the 90 Water Street property, previously acquired by CDOT, and under the Veteran's Park visitor's dock. CDOT issued a second commitment letter to Eversource in November 2022 (refer to Attachment 12 – CDOT Commitment Letter).

On November 22, 2022, the Norwalk Common Council, with concurrence from the Mayor's office, gave unanimous support for the proposed route and design as submitted herein.

In February 2023, Eversource provided written notice to City and abutting property owners informing them of the Petition filing to the Council on or about February 17, 2023. A copy of the letter and the affidavit of service of notice are included in Attachment 13, *Letter to Abutters* and *Affidavit of Service of Notice*.

F. CONCLUSION

Based on the information provided herein, Eversource respectfully submits that the proposed Project to permanently relocate a section of its transmission lines to accommodate the needed replacement of the Walk Bridge by CDOT in the City of Norwalk provides, on balance, the best solution and does not require a Certificate of Environmental Compatibility and Public Need because the Project would not have a "substantial adverse environmental effect".

G. LIST OF ATTACHMENTS

ATTACHMENT 1: 100-SCALE SEGMENT MAPS

ATTACHMENT 2: CROSS SECTIONS OF OVERHEAD ELEMENTS

ATTACHMENT 3: CROSS SECTIONS OF UNDERGROUND ELEMENTS

ATTACHMENT 4: PROJECT PLANS

ATTACHMENT 5: EVERSOURCE'S BEST MANAGEMENT PRACTICES

ATTACHMENT 6: BENTHIC STUDY

ATTACHMENT 7: SHELLFISH SURVEY NORWALK RIVER

ATTACHMENT 8: CT DEEP NDDB DETERMINATION LETTER

ATTACHMENT 9: BIOLOGICAL ASSESSMENT AND OFFICIAL SPECIES LIST

ATTACHMENT 10: SHPO CORRESPONDENCE

ATTACHMENT 11: EMF GRAPHS

ATTACHMENT 12: CDOT COMMITMENT LETTER

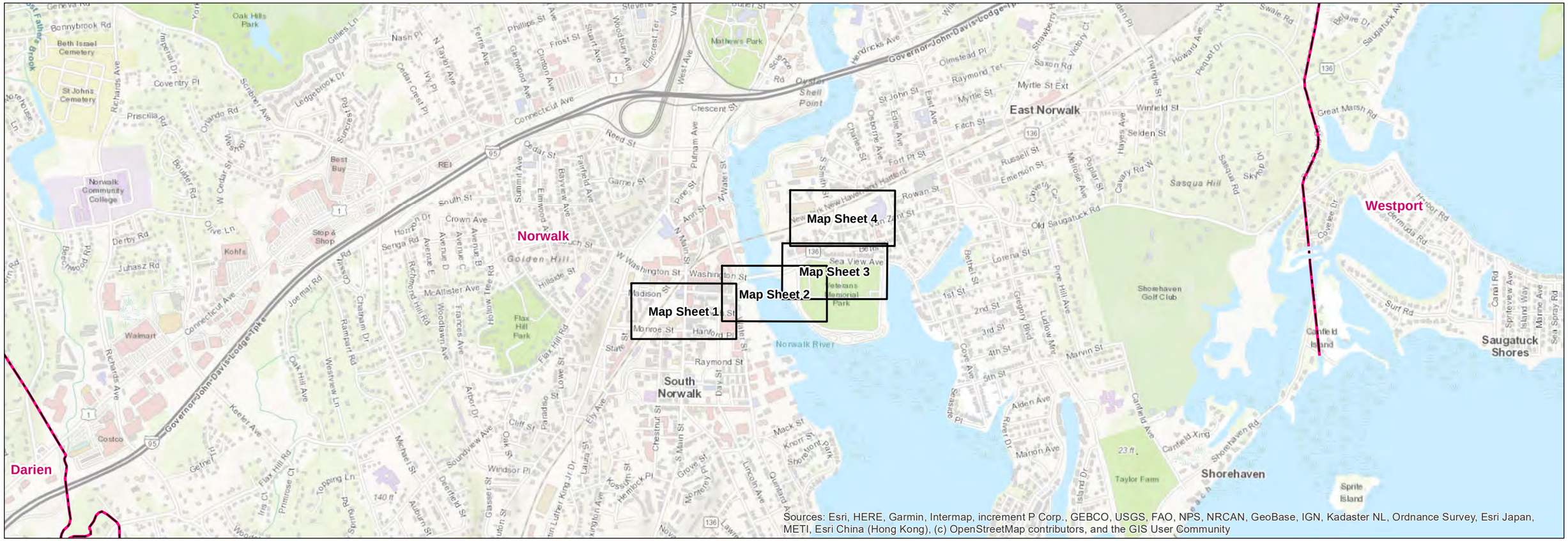
ATTACHMENT 13: LETTER TO ABUTTERS AND AFFIDAVIT OF SERVICE OF NOTICE

ATTACHMENT 1:

100-SCALE SEGMENT MAPS

EVERSOURCE NORWALK BRIDGE TRANSMISSION RELOCATION PROJECT
Circuits 1028 and 1146 Reroute

Norwalk, CT
Aerial Maps
Date: February 08, 2023



Legend

Map Sheet — Municipal Boundary

N

0 0.125 0.25 0.5 Miles

PREPARED FOR:

EVERSOURCE ENERGY

107 Selden Street
Berlin, CT 06037

INDEX OF FIGURES

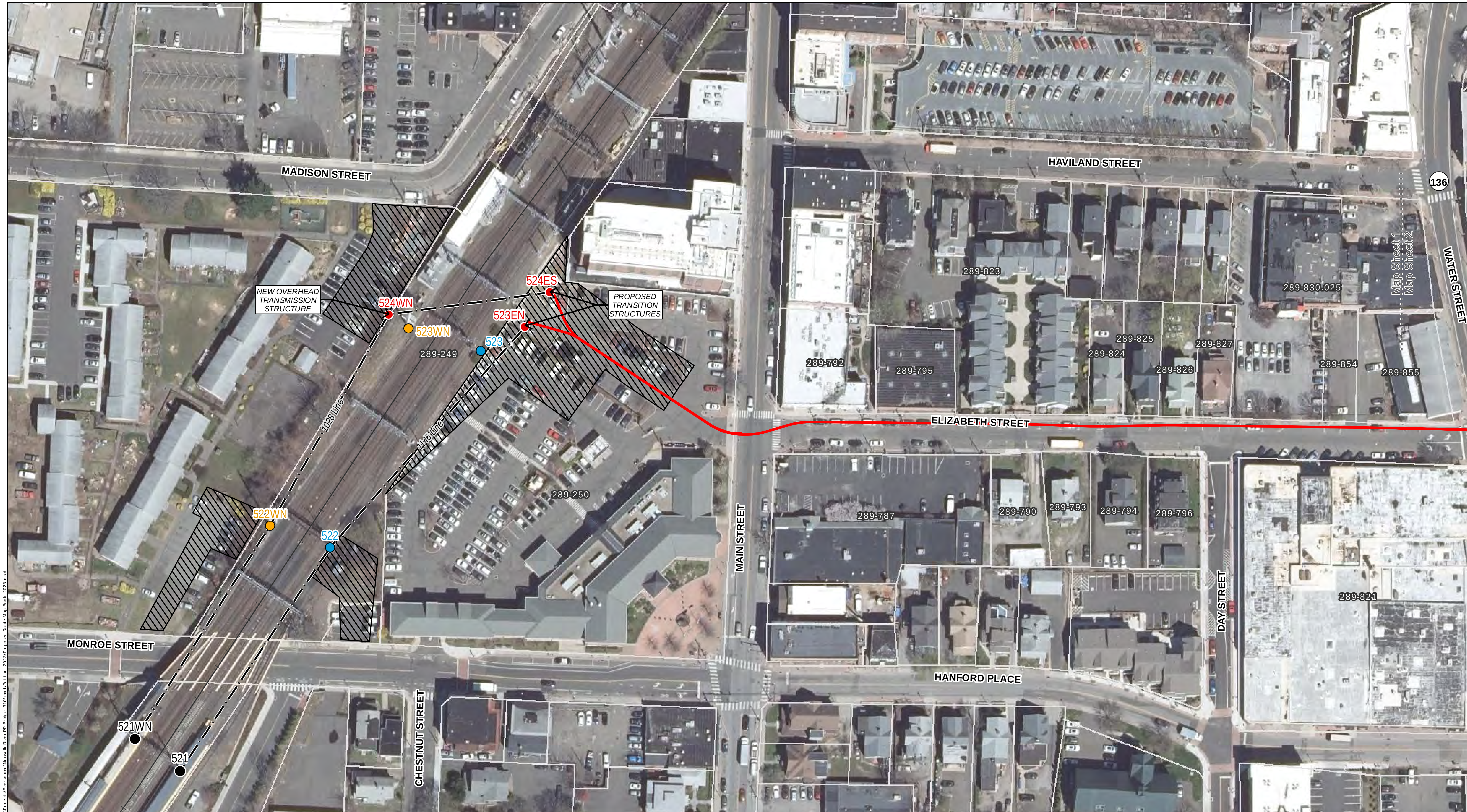
PREPARED BY:

ALL-POINTS TECHNOLOGY CORPORATION

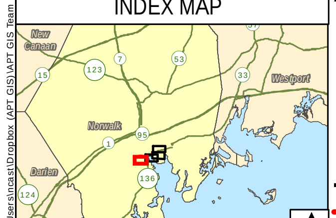
567 Vauxhall Street Extension – Suite 311
Waterford, CT 06385

MAP SHEET 1 OF 4
EVERSOURCE NORWALK BRIDGE
TRANSMISSION RELOCATION PROJECT
CIRCUITS 1028 AND 1146 REROUTE
ABUTTERS LIST

Line List Number	Parcel Address	City	State	Owner Name
289-249	RAILROAD	NORWALK	CT	RAILROAD
289-250	2 MONROE ST	NORWALK	CT	CITY OF NORWALK
289-787	64 SOUTH MAIN ST	NORWALK	CT	CLARKE CAPITAL LLC
289-790	ELIZABETH ST	NORWALK	CT	N/A
289-792	54-62 SOUTH MAIN ST	NORWALK	CT	C.E. SOUTH MAIN AVENUE LLC C/O CAPITAL CONSTRUCTION MGT LLC
289-793	ELIZABETH ST	NORWALK	CT	N/A
289-794	ELIZABETH ST	NORWALK	CT	N/A
289-795	1 ELIZABETH ST	NORWALK	CT	ONE ELIZABETH STREET LLC C/O ROBERT HALMI JR
289-796	ELIZABETH ST	NORWALK	CT	N/A
289-821	85-99 WATER ST	NORWALK	CT	SONO SQUARE ASSOCIATES LLC C/O DP 120 LLC
289-823	8 HAVILAND ST	NORWALK	CT	MICHAEL LAUB CO LLC
289-824	11 ELIZABETH ST	NORWALK	CT	BANSIT & ROMONA CHANHOM
289-825	13 ELIZABETH ST	NORWALK	CT	SYLVIA COHEN & JACOB PAPPOLLA
289-826	15 ELIZABETH ST	NORWALK	CT	LTB PROPERTIES LLC
289-827	17 ELIZABETH ST	NORWALK	CT	17 ELIZABETH STREET LLC
289-830	32 HAVILAND ST	NORWALK	CT	COACH WORKS CONDO (24 UNITS-21 RES / 3 COMM - SEE INDIVIDUAL UNIT LISTING)
289-854	25 ELIZABETH ST	NORWALK	CT	RAY LO REALTY INC
289-855	71 WATER ST	NORWALK	CT	RAY LO REALTY CO INC



INDEX MAP



Legend

- Proposed Overhead Structure
- Existing Overhead Structure
- Existing Structure to be Removed
- Existing Eversource Overhead Structure to be Modified
- Railroad Catenary Bonnet to be Modified
- Overhead Eversource Line Route
- Proposed Underground Eversource Line Route
- Proposed Pipe String
- Proposed Horizontal Directional Drilling (HDD) Eversource Relocation Line Route
- Proposed HDD Entry/Exit
- Proposed HDD Equipment Vault
- Proposed Construction Area
- Proposed Vegetation Removal
- Trees To Remain
- Delineated Tidal Wetland Boundary Outline
- Tidal Wetland Vegetation
- Intertidal Flats
- Railroad
- Parcel Boundary

Note:The project map set is located within CT DEEP Costal Boundary Area.

Map Notes:
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, provided by Eversource in Oct. 2021. Wetlands delineated by APT/DE in 2017.

Aerial Base Map Source: CTECO 2019

N

1 inch = 100 feet

0 50 100 Feet

NO.	DATE	REVISIONS

EVERSOURCE ENERGY

AERIAL MAPS
EVERSOURCE NORWALK BRIDGE
TRANSMISSION RELOCATION PROJECT
CIRCUITS 1028 AND 1146 REROUTE

Norwalk, CT

Map Sheet 1 of 4

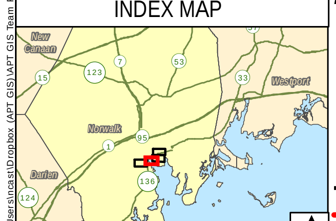
Date: February, 2023

ALL-POINTS TECHNOLOGY CORPORATION

MAP SHEET 2 OF 4
EVERSOURCE NORWALK BRIDGE
TRANSMISSION RELOCATION PROJECT
CIRCUITS 1028 AND 1146 REROUTE
ABUTTERS LIST

Line List Number	Parcel Address	City	State	Owner Name
289-821	85-99 WATER ST	NORWALK	CT	SONO SQUARE ASSOCIATES LLC C/O DP 120 LLC
289-830	32 HAVILAND ST	NORWALK	CT	COACH WORKS CONDO (24 UNITS-21 RES / 3 COMM - SEE INDIVIDUAL UNIT LISTING)
289-854	25 ELIZABETH ST	NORWALK	CT	RAY LO REALTY INC
289-855	71 WATER ST	NORWALK	CT	RAY LO REALTY CO INC
289-863	70 WATER ST	NORWALK	CT	FCNW LLC
289-864	90 WATER ST	NORWALK	CT	STATE OF CONNECTICUT C/O DOT DIVISION OF RIGHTS OF WAY - UNIT 0403
289-865	68 WATER ST	NORWALK	CT	70 WATER STREET ASSOCIATES LLC
289-874	185 LIBERTY SQ	NORWALK	CT	THIRD TAXING DISTRICT (PARK - LIBERTY SQUARE)
289-892	10 SEAVIEW AVE	NORWALK	CT	CITY OF NORWALK (PARK - VETERANS)

INDEX MAP



Legend

- Proposed Overhead Structure
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- Overhead Eversource Line Route
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- Proposed HDD Equipment Vault
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- Trees To Remain
- Delineated Tidal Wetland Boundary Outline
- Tidal Wetland Vegetation
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NO.	DATE	REVISIONS

EVERSOURCE ENERGY

AERIAL MAPS
EVERSOURCE NORWALK BRIDGE
TRANSMISSION RELOCATION PROJECT
CIRCUITS 1028 AND 1146 REROUTE

Norwalk, CT

Map Sheet 2 of 4

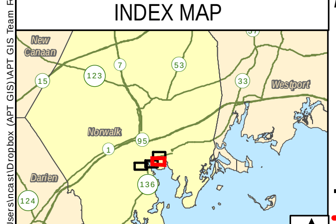
Date: February, 2023

ALL-POINTS TECHNOLOGY CORPORATION

MAP SHEET 3 OF 4
EVERSOURCE NORWALK BRIDGE
TRANSMISSION RELOCATION PROJECT
CIRCUITS 1028 AND 1146 REROUTE
ABUTTERS LIST

Line List Number	Parcel Address	City	State	Owner Name
289-222	15 FORT POINT ST	NORWALK	CT	CITY OF NORWALK (HOUSING AUTHORITY-FT PT)
289-874	185 LIBERTY SQ	NORWALK	CT	THIRD TAXING DISTRICT (PARK - LIBERTY SQUARE)
289-881	SOUTH SMITH ST	NORWALK	CT	CITY OF NORWALK (PARK - LIBERTY SQUARE)
289-888	2 FORT POINT ST	NORWALK	CT	VINCENT J MOLA EST & RICHARD CHARLES MOLA
289-890	10 FORT POINT ST	NORWALK	CT	10 FORT POINT STREET CONDOS (22 UNITS - SEE INDIVIDUAL UNIT LISTING)
289-892	10 SEAVIEW AVE	NORWALK	CT	CITY OF NORWALK (PARK - VETERANS)

INDEX MAP



Legend

- Proposed Overhead Structure
- Existing Overhead Structure
- Existing Structure to be Removed
- Existing Eversource Overhead Structure to be Modified
- Railroad Catenary Bonnet to be Modified
- Overhead Eversource Line Route
- Proposed Underground Eversource Line Route
- Proposed Pipe String
- Proposed Horizontal Directional Drilling (HDD) Eversource Relocation Line Route
- Proposed HDD Entry/Exit
- Proposed HDD Equipment Vault
- Proposed Construction Area
- Proposed Vegetation Removal
- Trees To Remain
- Delineated Tidal Wetland Boundary Outline
- Tidal Wetland Vegetation
- Intertidal Flats
- Railroad
- Parcel Boundary

Note: The project map set is located within CT DEEP Costal Boundary Area.

Map Notes:
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, provided by Eversource in Oct. 2021. Wetlands delineated by APT/DE in 2017.

Aerial Base Map Source: CTECO 2019

N

1 inch = 100 feet
0 50 100 Feet

NO.	DATE	REVISIONS

EVERSOURCE ENERGY

AERIAL MAPS
EVERSOURCE NORWALK BRIDGE
TRANSMISSION RELOCATION PROJECT
CIRCUITS 1028 AND 1146 REROUTE

Norwalk, CT — Map Sheet 3 of 4

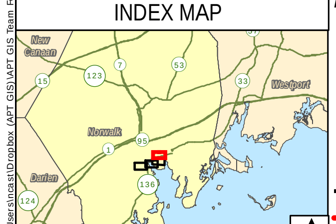
Date: February, 2023

ALL-POINTS TECHNOLOGY CORPORATION

MAP SHEET 4 OF 4
EVERSOURCE NORWALK BRIDGE
TRANSMISSION RELOCATION PROJECT
CIRCUITS 1028 AND 1146 REROUTE
ABUTTERS LIST

Line List Number	Parcel Address	City	State	Owner Name
289-214	25 VAN ZANT ST	NORWALK	CT	TWENTY-FIVE VAN ZANT ST CONDO (68 UNITS - SEE INDIVIDUAL UNIT LISTING)
289-216	RAILROAD	NORWALK	CT	RAILROAD
289-219	2 SOUTH SMITH ST	NORWALK	CT	CITY OF NORWALK (WALLACE BELL GARAGE)
289-220	21 FORT POINT ST	NORWALK	CT	STATE OF CONNECTICUT
289-221	19 FORT POINT ST	NORWALK	CT	NINETEEN FORT POINT STREET LLC
289-222	15 FORT POINT ST	NORWALK	CT	CITY OF NORWALK (HOUSING AUTHORITY-FT PT)
289-225	RAILROAD	NORWALK	CT	RAILROAD
289-890	10 FORT POINT ST	NORWALK	CT	10 FORT POINT STREET CONDOS (22 UNITS - SEE INDIVIDUAL UNIT LISTING)
289-917	12 FORT POINT ST	NORWALK	CT	NEPER OPERATING MANAGEMENT LLC
289-918	14 FORT POINT ST	NORWALK	CT	SHAFIQUL ISLAM
289-957	1 VAN ZANT ST	NORWALK	CT	TURTLE CREEK LLC

INDEX MAP



Legend

- Proposed Overhead Structure
- Existing Overhead Structure
- Existing Structure to be Removed
- Existing Eversource Overhead Structure to be Modified
- Railroad Catenary Bonnet to be Modified
- Overhead Eversource Line Route
- Proposed Underground Eversource Line Route
- Proposed Pipe String
- Proposed Horizontal Directional Drilling (HDD) Eversource Relocation Line Route
- Proposed HDD Entry/Exit
- Proposed HDD Equipment Vault
- Proposed Construction Area
- Proposed Vegetation Removal
- Trees To Remain
- Delineated Tidal Wetland Boundary Outline
- Tidal Wetland Vegetation
- Intertidal Flats
- Railroad
- Parcel Boundary

Note: The project map set is located within CT DEEP Costal Boundary Area.

Map Notes:
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, provided by Eversource in Oct. 2021. Wetlands delineated by APT/DE in 2017.

Aerial Base Map Source: CTECO 2019

N

1 inch = 100 feet

0 50 100 Feet

NO.	DATE	REVISIONS

EVERSOURCE ENERGY

AERIAL MAPS
EVERSOURCE NORWALK BRIDGE
TRANSMISSION RELOCATION PROJECT
CIRCUITS 1028 AND 1146 REROUTE

Norwalk, CT

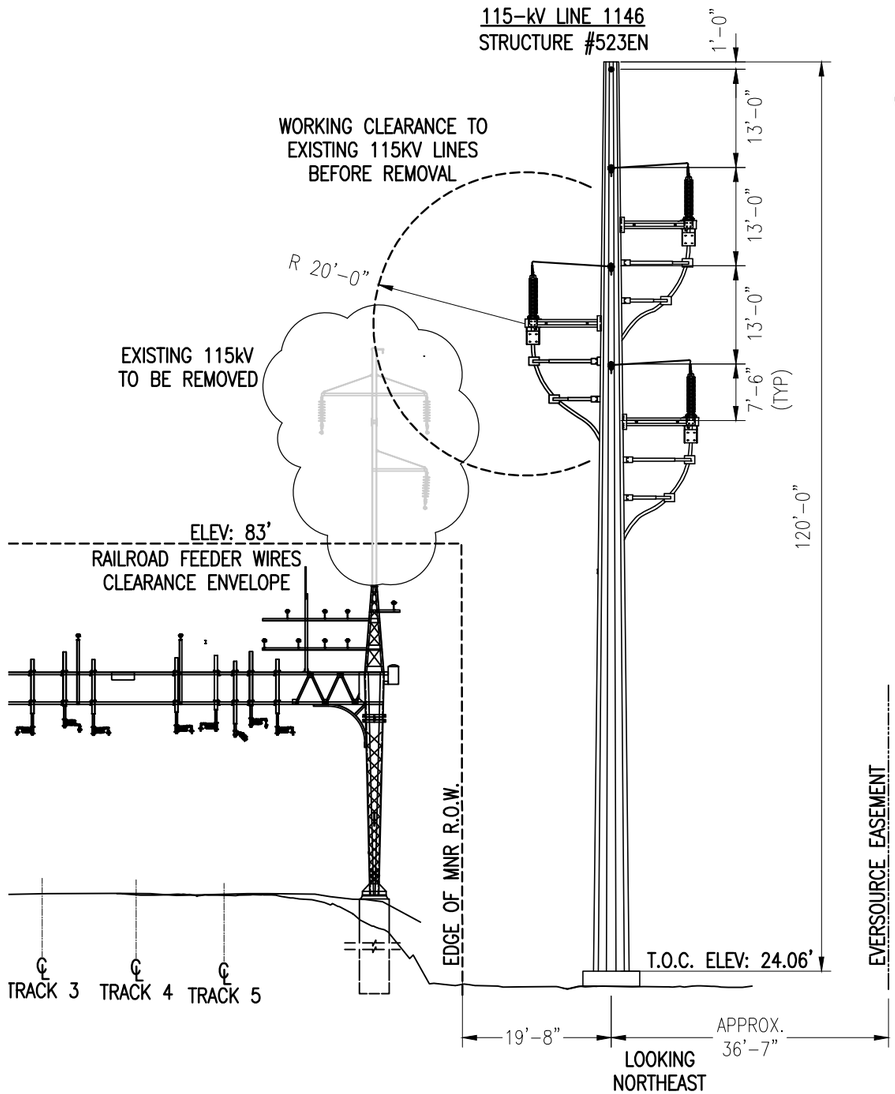
Map Sheet 4 of 4

Date: February, 2023

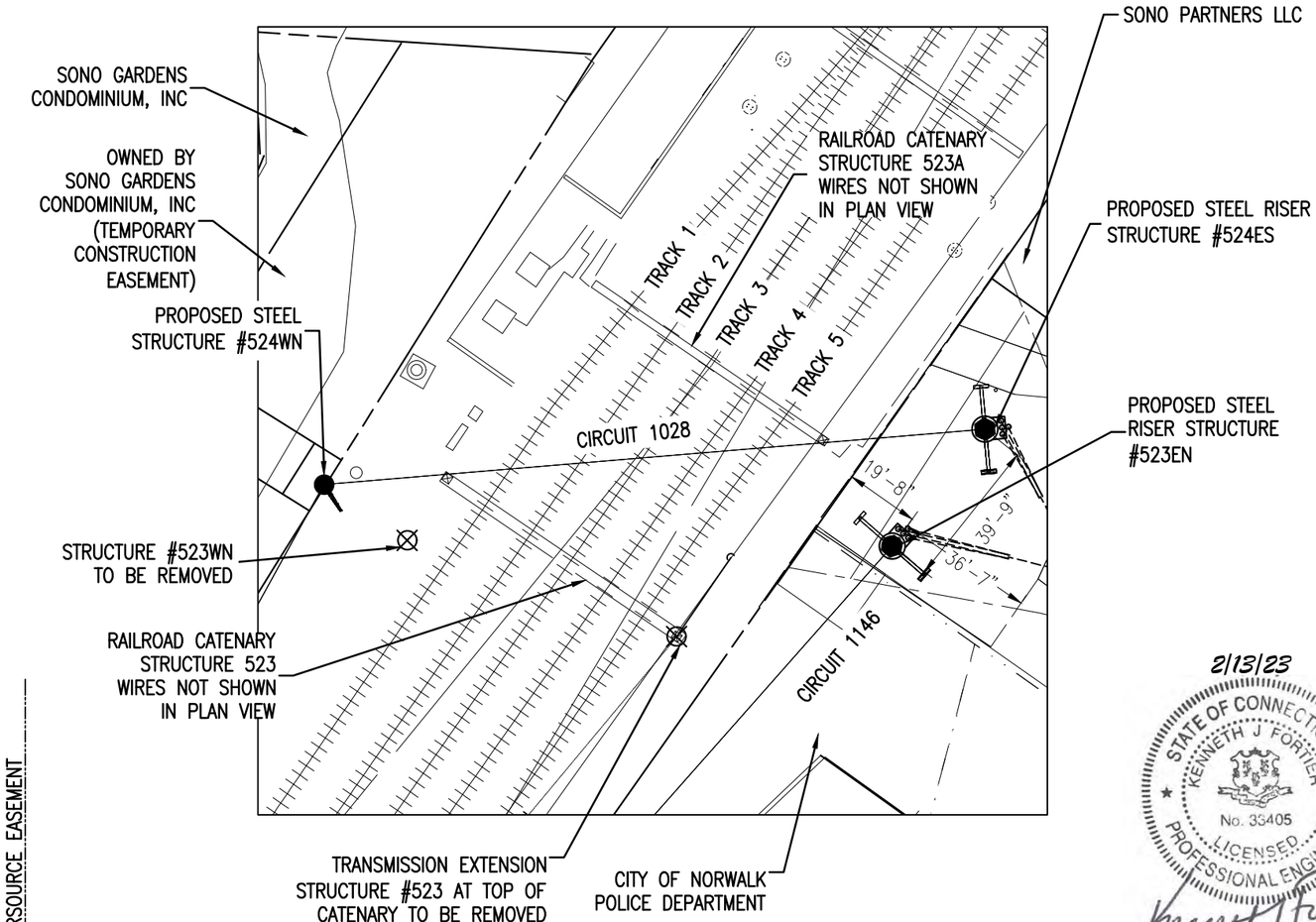
ALL-POINTS TECHNOLOGY CORPORATION

ATTACHMENT 2:

CROSS SECTIONS OF OVERHEAD ELEMENTS



ELEVATION VIEW
SCALE: 1"=20'



PLAN VIEW
SCALE: 1"=40'

PLAN VIEW LEGEND
- PROPOSED TRANSMISSION CENTERLINE
- ROW AND PARCEL BOUNDARY
- UNDERGROUND TRANSMISSION
- RAIL CENTERLINE
- CURB

2/13/23

STATE OF CONNECTICUT
KENNETH J FORTIER
No. 33405
LICENSED PROFESSIONAL ENGINEER

0 20 40 80
SCALE: 1" = 40'

REV	DESCRIPTION	ENG/PE#	DATE	DRN	CHKD	APPR
C	REISSUED FOR PERMITTING		02/13/23	RWP	AJS	KJF
B	RELEASED FOR PERMITTING	.	11/12/21	EAF	AJS	KJF

DWG REV	EPN/DESCRIPTION	CONT/PE#	DATE	DRN	CHKD	APPR
.	.	.	.	.	.	.

CONTRACT SERVICES

EVERSOURCE ENERGY

NORWALK, CONNECTICUT

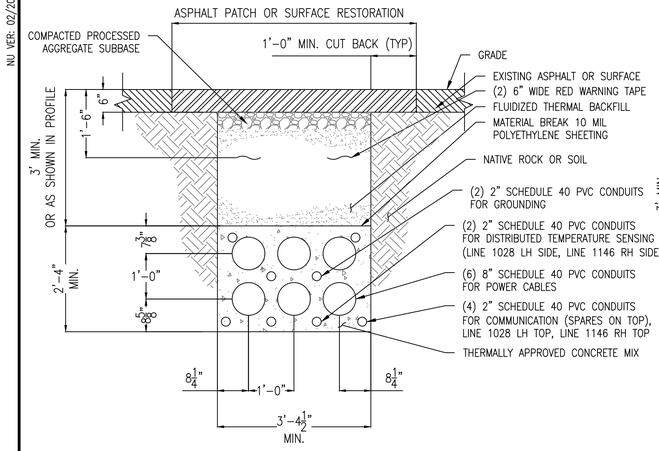
SONO–SHERWOOD
METRO–NORTH MILEPOST 41.2
NEW HAVEN LINE CROSS SECTION

T	C

DRAWN: EAF/PEI
ENGINEER: DFS/PEI
CHECKED: AJS/PEI
APPROVED: KJF/PEI
DATE: 11/12/2021
SCALE: AS NOTED
FILE:
IMAGE:
DRAWING NO.: 01153–85007P001

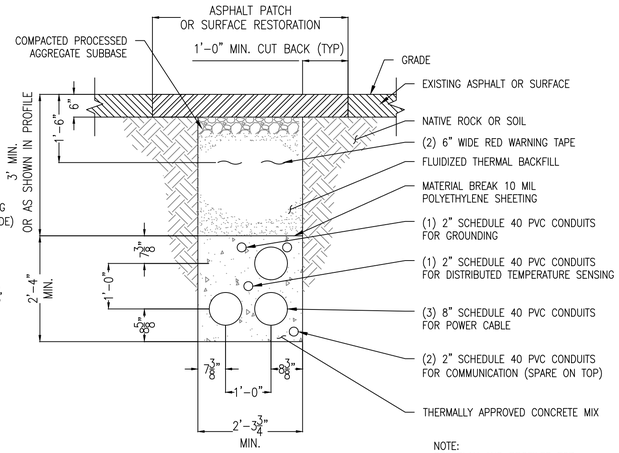
ATTACHMENT 3:

CROSS SECTIONS OF UNDERGROUND ELEMENTS



NOTE:
SEE PLAN AND PROFILES FOR CIRCUIT PHASING.

TYPICAL DOUBLE CIRCUIT 2X3 DUCT BANK DETAIL
DETAIL 1 48001P001
SCALE N.T.S.



NOTE:
SEE PLAN AND PROFILES FOR CIRCUIT PHASING.

TYPICAL SINGLE CIRCUIT 2X2 DUCT BANK WITH PVC DETAIL
DETAIL 2 48001P001
SCALE N.T.S.

POWER ENGINEERS
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PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	AS BUILT REVISIONS	BY	CHK	APP	APP
–	–	–	–	–	–	–

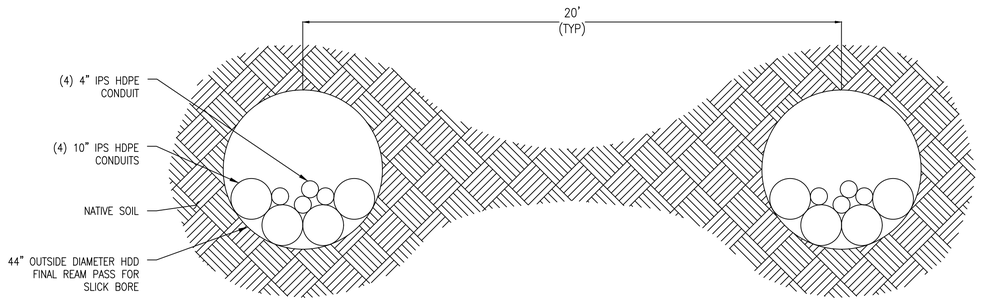
REVISIONS DURING CONSTRUCTION					
A	6/29/21	ISSUED FOR REVIEW – 70%	ES	MM	DM

EVERSOURCE ENERGY

TITLE
DARIEN-FITCH AND SONO-SHERWOOD
2–115–kV UNDERGROUND TRANSMISSION
DUCTBANK DETAILS
NORWALK, CONNECTICUT

BY ERS	CHKD MM	APP DM	APP
DATE 06/29/2021	DATE 06/29/2021	DATE 06/29/2021	DATE
H-SCALE N.T.S.	SIZE D	FIELD BOOK & PAGES	
V-SCALE N.T.S.	V.S.	R.E. DWG	
R.E. PROJ. NUMBER 168624		NUSCO 01191-48001P001	

NU VER: 02/2012



HDD SLICK BORE DETAIL
DETAIL 5
SCALE N.T.S. 48001P002

PRELIMINARY
NOT FOR CONSTRUCTION

REVISIONS DURING CONSTRUCTION					
A	6/29/21	ISSUED FOR REVIEW – 70%	ES	MM	DM

NO.	DATE	AS BUILT REVISIONS	BY	CHK	APP	APP
–	–	–	–	–	–	–

POWER ENGINEERS
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EVERSOURCE ENERGY

TITLE
DARIEN-FITCH AND SONO-SHERWOOD
2–115–kV UNDERGROUND TRANSMISSION
MISCELLANEOUS DETAILS
NORWALK, CONNECTICUT

BY ERS	CHKD MM	APP DM	APP
DATE 06/29/2021	DATE 06/29/2021	DATE 06/29/2021	DATE
H-SCALE N.T.S. / V-SCALE N.T.S.	SIZE D / V.S.	FIELD BOOK & PAGES / R.E. DWG	
R.E. PROJ. NUMBER 168624		NUSCO 01191-48001P002	

"FOR CURRENT EVERSOURCE PROPERTY RIGHTS REFER TO PROPERTY RECORD MAPPING – LOCATED IN TRANSMISSION SURVEY ENGINEERING/ROW DEPARTMENT"

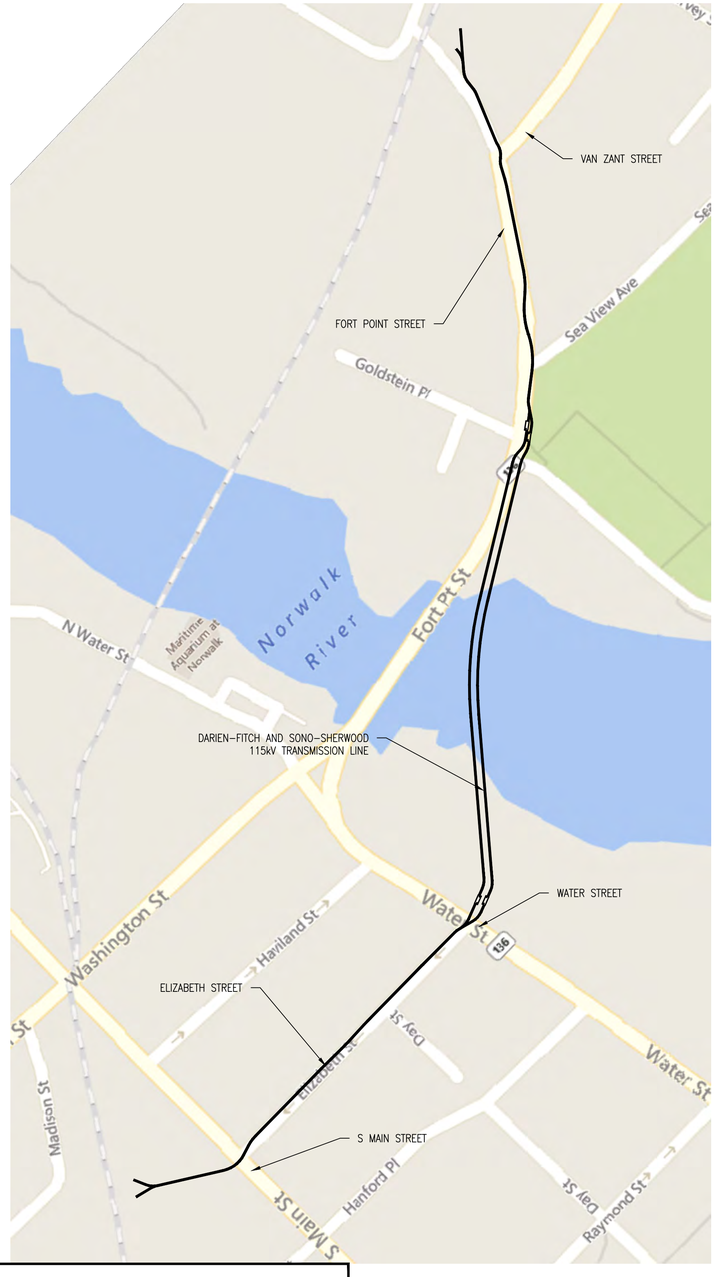
7/7/2021 12:22 PM – eschocht – C:\pw_working\powereng_gmorlan\pw_prod_pw01\d3614864\01191-48001P002.dwg – Miscellaneous Details

ATTACHMENT 4

PROJECT PLANS

LINE 1028 & 1146 DARIEN-FITCH AND SONO-SHERWOOD 115-kV UNDERGROUND TRANSMISSION LINE FOR EVERSOURCE ENERGY

VICINITY MAP



"FOR CURRENT NUSCO PROPERTY RIGHTS REFER TO PROPERTY RECORD MAPPING – LOCATED IN TRANSMISSION SURVEY ENGINEERING/ROW DEPARTMENT"

GENERAL NOTES

1. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES OR GOVERNMENTAL AGENCIES, FROM PAROL TESTIMONY AND FROM OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO EVERSOURCE ENERGY. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL BEFORE YOU DIG: 1.800.922.4455
2. HORIZONTAL DATUM: NAD 83 CONNECTICUT, US SURVEY FOOT. CT STATE PLANE FIPS CODE: 0600. VERTICAL DATUM NAVD 88.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING THE COMPLETE 115-kV CABLE SYSTEM FROM TERMINATOR TO TERMINATOR.
4. ALL VERTICAL RADII ARE 400' UNLESS OTHERWISE NOTED. NO DEVIATIONS ALLOWED FROM DESIGNED HORIZONTAL AND VERTICAL BENDING RADII UNLESS PRIOR APPROVAL FROM THE ENGINEER.
5. DUCT BANK SHALL MAINTAIN MINIMUM HORIZONTAL CLEARANCE OF 3'-0" AND A MINIMUM VERTICAL CLEARANCE OF 2'-6" OVER OR UNDER EXISTING UTILITIES, UNLESS OTHERWISE SHOWN ON DRAWINGS. NOTIFY ENGINEERING OF ALL UNDOCUMENTED UTILITIES DISCOVERED DURING CONSTRUCTION THAT INFRINGE ON THE REQUIRED CLEARANCES.
6. DUCT BANK SHALL MAINTAIN A MINIMUM OF 3 FT. COVER OF DEPTH UNLESS SHOWN ON DRAWINGS OR APPROVED BY THE ENGINEER
7. FOR ANY AREAS DISTURBED BY CONSTRUCTION, AT COMPLETION OF CONSTRUCTION ACTIVITIES, THESE AREAS WILL BE SUBSTANTIALLY RESTORED TO THEIR PRECONSTRUCTION CONDITIONS.
8. CONTRACTOR SHALL HAUL AWAY ALL UNUSED EXCAVATED MATERIAL TO PERMITTED SOIL DISPOSAL SITE.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING, REPAIRING, AND STRIPING ALL PAVEMENT, DRIVEWAYS, CURBS, AND SIDEWALKS, DISTURBED DUE TO CONSTRUCTION, IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS. ALL REPLACEMENTS AND REPAIRS SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF NORWALK AND CONNDOT STANDARDS AND SPECIFICATIONS.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY & ALL UTILITIES AND FACILITIES DAMAGED DURING CONSTRUCTION IN ACCORDANCE WITH THE APPLICABLE UTILITY SPECIFICATION, LOCAL AND/OR STATE REQUIREMENTS.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ABANDONED CONDUIT AS REQUIRED IN ACCORDANCE WITH THE APPLICABLE LOCAL AND/OR STATE REQUIREMENTS. CUT AND CAP ABANDONED UTILITIES (DO NOT CUT GAS LINES).
12. DEPTH OF CROSSING UTILITY LATERALS HAVE NOT BEEN VERIFIED ON ALL UTILITIES.
13. DEPTHS OF UTILITIES IDENTIFIED AS ABANDONED WERE NOT VERIFIED AND ARE ASSUMED IN DRAWINGS.
14. CONTRACTOR SHALL PLUG ALL CONDUIT SYSTEMS DAILY WHEN WORK IS CEASED. ALL CONDUIT INSTALLATION WORK SHALL BE PERFORMED BY A VALIDATED, LICENSED ELECTRICAL CONTRACTOR, TO BE APPROVED BY EVERSOURCE.
15. UNDERGROUND TRANSMISSION LINE CABLES ARE 5000 KCMIL ENAMELED COPPER CABLES.
16. REQURIED CABLE RATINGS:
    - STEADY STATE REQUIREMENT: 1,471 A (293 MVA)
    - SUMMER LONG TERM EMERGENCY (12 HOUR) : 1,900 A (378 MVA)
    - SUMMER SHORT TERM EMERGENCY (15 MINS): 2,171 A (432 MVA)
17. 1028 LINE IS A 4.93-MILES TOTAL SINGLE CIRCUIT, 0.633 MILES UNDERGROUND & 4.30 MILES OVERHEAD, 115-kV LINE CONNECTING DARIEN SUBSTATION WITH FITCH SUBSTATION.
18. 1146 LINE IS A 6.39-MILES TOTAL SINGLE CIRCUIT, 0.644 MILES UNDERGROUND & 5.75 MILES OVERHEAD, 115-kV LINE CONNECTING SONO SUBSTATION WITH SHERWOOD SUBSTATION.
19. SEE DRAWINGS 01191-10001P001 – 01191-10001P012 LINE UNDERGROUND PLAN AND PROFILES.
20. 1028 LINE STRUCTURES:
    - SPLICE VAULT #4201 AT STA: 21+64
    - PULL THROUGH VAULT #4202 AT STA: 33+70
21. 1146 LINE STRUCTURES:
    - SPLICE VAULT #5301 AT STA: 61+77
    - PULL THROUGH VAULT #5302 AT STA: 73+53
22. CSC DOCKET: TBD DATE: TBD
    CSC PETITION: TBD DATE: TBD
    DPUC DOCKET 4-T: TBD DATE: TBD
    ACOE GP: TBD DATE: TBD
    FAA DET. SIGNATURE: TBD DATE: TBD

EVERSOURCE ENERGY PROJECT NUMBER: 404243	POWER ENGINEERS PROJECT NUMBER: 168624
EVERSOURCE ENERGY PROJECT ENGINEER: RICHARD COPPA (860) 728-4696	POWER ENGINEERS PROJECT ENGINEER: DANE MCGRADY (208) 288-6195

THREE BUSINESS DAYS BEFORE YOU DIG CALL CONNECTICUT CALL BEFORE YOU DIG TOLL FREE 1-800-922-4455

LEGEND

- CATCH BASIN
- CATCH BASIN
- ROUND CATCH BASIN
- CATCH BASIN AS DEPICTED BY AERIAL
- MB — MAIL BOX
- ELECTRIC HANDHOLE
- DRAIN MANHOLE
- MANHOLE
- MH — MANHOLE AS DEPICTED BY AERIAL
- SEWER MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- WATER MANHOLE
- WATER GATE
- FIRE HYDRANT
- GAS GATE
- STREET SIGN
- EDGE OF PAVEMENT
- CURB
- STEEL GUARD RAIL
- FENCE
- TREE LINE
- RETAINING WALL
- E(B) — UNDERGROUND ELECTRIC LINE (SUE-B)
- E(C) — UNDERGROUND ELECTRIC LINE (SUE-C)
- E(D) — UNDERGROUND ELECTRIC LINE (SUE-D)
- G(B) — UNDERGROUND GAS LINE (SUE-B)
- G(C) — UNDERGROUND GAS LINE (SUE-C)
- G(D) — UNDERGROUND GAS LINE (SUE-D)
- W(B) — UNDERGROUND WATER LINE (SUE-B)
- W(C) — UNDERGROUND WATER LINE (SUE-C)
- W(D) — UNDERGROUND WATER LINE (SUE-D)
- T(B) — UNDERGROUND TELEPHONE LINE (SUE-B)
- T(C) — UNDERGROUND TELEPHONE LINE (SUE-C)
- T(D) — UNDERGROUND TELEPHONE LINE (SUE-D)
- FM(D) — UNDERGROUND FORCE MAIN
- FO(B) — UNDERGROUND FIBER OPTIC (SUE-B)
- FO(C) — UNDERGROUND FIBER OPTIC (SUE-C)
- FO(D) — UNDERGROUND FIBER OPTIC (SUE-D)
- TV(C) — UNDERGROUND TELEVISION LINE (SUE-C)
- TV(D) — UNDERGROUND TELEVISION LINE (SUE-D)
- SS(D) — UNDERGROUND SEWER LINE
- SD(D) — UNDERGROUND DRAIN LINE
- BOLLARD
- A.C.C.M.P. — ASPHALT COATED CORRUGATED METAL PIPE
- C.I. — CENTER INVERT
- RCP — REINFORCED CONCRETE PIPE
- PVC — POLYVINYL CHLORIDE PIPE
- DIP — DUCTILE IRON PIPE
- CMP — CORRUGATED METAL PIPE
- CPP — CORRUGATED PLASTIC PIPE
- VC — VITRIFIED CLAY PIPE
- CB — CATCH BASIN
- MH — MANHOLE
- DMH — DRAIN MANHOLE
- SMH — SEWER MANHOLE
- RIM= — RIM ELEVATION
- INV= — INVERT ELEVATION
- TYP. — TYPICAL
- GM — GAS METER
- HAND HOLE
- WM — WATER METER
- T — TRANSFORMER
- STEEL SPAN POLE
- TRAFFIC CONTROL BOX
- BILLBOARD
- TREE
- SHRUB
- UNKNOWN FEATURE AS DEPICTED BY AERIAL
- UTILITY POLE AS DEPICTED BY AERIAL
- UTILITY POLE W/LIGHT AS DEPICTED BY AERIAL
- UTILITY POLE W/LIGHT AS DEPICTED BY AERIAL
- LIGHT POLE AS DEPICTED BY AERIAL
- GUY POLE AS DEPICTED BY AERIAL
- GUY WIRE AS DEPICTED BY AERIAL
- TRAFFIC SIGNAL AS DEPICTED BY AERIAL
- BORING
- MONITORING WELL
- 19.4 — SPOT ELEVATION
- POTHOLE
- PROPERTY LINE
- EASEMENT LINE
- STATE HIGHWAY LINE
- CITY/TOWN LAYOUT LINE
- -20- — CONTOUR INDEX
- DEPRESSED AREA
- RAILROAD TRACKS
- UG TRANSMISSION LINE (DUCT BANK)
- PROPOSED VAULT

LEGEND/UTILITY CONTACTS

T(B), T(C), T(D) — UNDERGROUND TELEPHONE LINE
FRONTIER
JAN POSSIDENTE-RUSSO
JAN.POSSIDENTE-RUSSO@FTR.COM

FM(D), SS(D) — UNDERGROUND SANITARY LINES
WATER POLLUTION CONTROL AUTHORITY
CHRISTOPHER CAVLIERE
CCAVLIERE@NORWALKCT.ORG
203-854-3235

TV(C), TV(D) — UNDERGROUND CABLE TELEVISION LINE
CABLEVISION
CRAIG MCLEOD
CMCLEOD@CABLEVISION.COM
732-243-6277

SD(D) — UNDERGROUND DRAINAGE LINE
WATER POLLUTION CONTROL AUTHORITY
CHRISTOPHER CAVLIERE
CCAVLIERE@NORWALKCT.ORG
203-854-3235

E(B), E(C), E(D) — UNDERGROUND ELECTRIC LINE
SOUTH NORWALK ELECTRIC & WATER
WALTER MASHECK
WMASHECK@SNEW.COM
203-354-1974

W(B), W(C), W(D) — UNDERGROUND WATER LINE
SOUTH NORWALK ELECTRIC AND WATER
THOMAS VILLA
TVILLA@SNEW.COM
203-762-7884 (EXTENSION 430)

G(B), G(C), G(D) — UNDERGROUND GAS LINE
EVERSOURCE GAS
ERIC ANDERSON
ERIC.ANDERSON@EVERSOURCE.COM
203-317-4489

FO(B), FO(C), FO(D) — UNDERGROUND FIBER OPTICS LINE
FRONTIER
JAN POSSIDENTE-RUSSO
JAN.POSSIDENTE-RUSSO@FTR.COM

PRELIMINARY
NOT FOR CONSTRUCTION

POWER ENGINEERS
www.powereng.com

NO.	DATE	REVISION DESCRIPTION	BY	CHK	APP	APP
–	–	–	–	–	–	–

REVISIONS DURING CONSTRUCTION

A	6/29/21	ISSUED FOR REVIEW – 70%	ERS	MM	DM

EVERSOURCE ENERGY

TITLE
DARIEN-FITCH AND SONO-SHERWOOD
2-115-kV UNDERGROUND TRANSMISSION
COVER SHEET
NORWALK, CONNECTICUT

BY ERS	CHKD MM	APP DM	APP
DATE 06/29/2021	DATE 06/29/2021	DATE 06/29/2021	DATE
H-SCALE N.T.S.	SIZE D	SURVEY JOB #	
V-SCALE N.T.S.	V.S.	R.E. DWG	
R.E. PROJ. NUMBER 168624		NUSCO 01191-10000P001	

NU VER: 02/2012

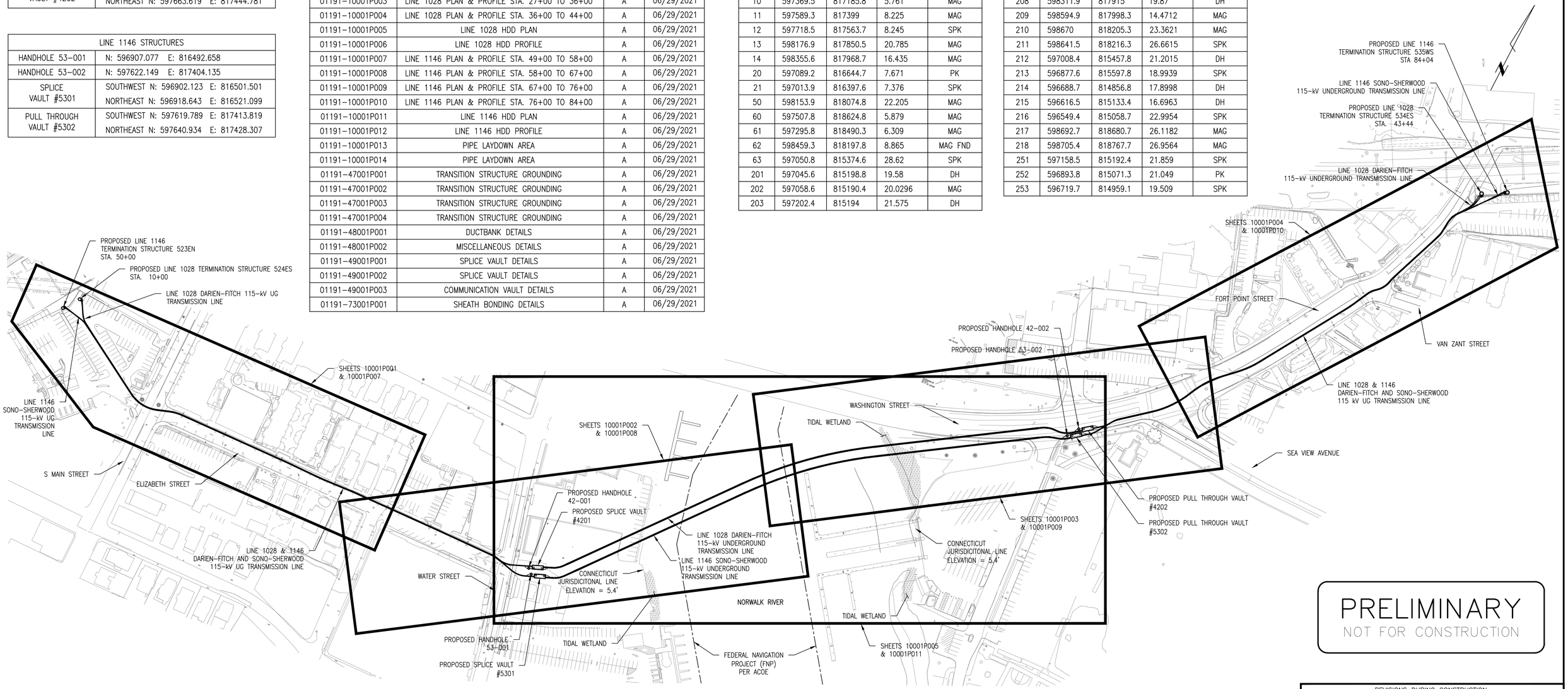
LINE 1028 STRUCTURES	
HANDHOLE 42–001	N: 596916.261 E: 816483.285
HANDHOLE 42–002	N: 597644.937 E: 817420.416
SPLICE VAULT #4201	SOUTHWEST N: 596917.206 E: 816490.031
	NORTHEAST N: 596933.726 E: 816509.629
PULL THROUGH VAULT #4202	SOUTHWEST N: 597642.501 E: 817430.255
	NORTHEAST N: 597663.619 E: 817444.781

LINE 1146 STRUCTURES	
HANDHOLE 53–001	N: 596907.077 E: 816492.658
HANDHOLE 53–002	N: 597622.149 E: 817404.135
SPLICE VAULT #5301	SOUTHWEST N: 596902.123 E: 816501.501
	NORTHEAST N: 596918.643 E: 816521.099
PULL THROUGH VAULT #5302	SOUTHWEST N: 597619.789 E: 817413.819
	NORTHEAST N: 597640.934 E: 817428.307

DRAWING MANIFEST			
DRAWING NO.	TITLE/DESCRIPTION	REVISION	DATE
01191–10000P001	COVER SHEET	A	06/29/2021
01191–10000P002	MANIFEST & ROUTE MAP	A	06/29/2021
01191–10001P001	LINE 1028 PLAN & PROFILE STA. 9+00 TO 18+00	A	06/29/2021
01191–10001P002	LINE 1028 PLAN & PROFILE STA. 18+00 TO 27+00	A	06/29/2021
01191–10001P003	LINE 1028 PLAN & PROFILE STA. 27+00 TO 36+00	A	06/29/2021
01191–10001P004	LINE 1028 PLAN & PROFILE STA. 36+00 TO 44+00	A	06/29/2021
01191–10001P005	LINE 1028 HDD PLAN	A	06/29/2021
01191–10001P006	LINE 1028 HDD PROFILE	A	06/29/2021
01191–10001P007	LINE 1146 PLAN & PROFILE STA. 49+00 TO 58+00	A	06/29/2021
01191–10001P008	LINE 1146 PLAN & PROFILE STA. 58+00 TO 67+00	A	06/29/2021
01191–10001P009	LINE 1146 PLAN & PROFILE STA. 67+00 TO 76+00	A	06/29/2021
01191–10001P010	LINE 1146 PLAN & PROFILE STA. 76+00 TO 84+00	A	06/29/2021
01191–10001P011	LINE 1146 HDD PLAN	A	06/29/2021
01191–10001P012	LINE 1146 HDD PROFILE	A	06/29/2021
01191–10001P013	PIPE LAYDOWN AREA	A	06/29/2021
01191–10001P014	PIPE LAYDOWN AREA	A	06/29/2021
01191–47001P001	TRANSITION STRUCTURE GROUNDING	A	06/29/2021
01191–47001P002	TRANSITION STRUCTURE GROUNDING	A	06/29/2021
01191–47001P003	TRANSITION STRUCTURE GROUNDING	A	06/29/2021
01191–47001P004	TRANSITION STRUCTURE GROUNDING	A	06/29/2021
01191–48001P001	DUCTBANK DETAILS	A	06/29/2021
01191–48001P002	MISCELLANEOUS DETAILS	A	06/29/2021
01191–49001P001	SPLICE VAULT DETAILS	A	06/29/2021
01191–49001P002	SPLICE VAULT DETAILS	A	06/29/2021
01191–49001P003	COMMUNICATION VAULT DETAILS	A	06/29/2021
01191–73001P001	SHEATH BONDING DETAILS	A	06/29/2021

CONTROL POINTS				
#	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	597032.5	815421.7	21.79	MAG
2	596928.7	815570.2	19.974	MAG
8	596892.5	816463.8	6.911	MAG
9	596996.3	816680.8	7.841	SPK
10	597369.5	817185.8	5.761	MAG
11	597589.3	817399	8.225	MAG
12	597718.5	817563.7	8.245	SPK
13	598176.9	817850.5	20.785	MAG
14	598355.6	817968.7	16.435	MAG
20	597089.2	816644.7	7.671	PK
21	597013.9	816397.6	7.376	SPK
50	598153.9	818074.8	22.205	MAG
60	597507.8	818624.8	5.879	MAG
61	597295.8	818490.3	6.309	MAG
62	598459.3	818197.8	8.865	MAG FND
63	597050.8	815374.6	28.62	SPK
201	597045.6	815198.8	19.58	DH
202	597058.6	815190.4	20.0296	MAG
203	597202.4	815194	21.575	DH

CONTROL POINTS CONTINUED				
#	NORTHING	EASTING	ELEVATION	DESCRIPTION
204	598619.5	818097.3	19.3171	MAG
205	598718.2	818350.1	25.804	SPK
206	598748.4	818272.9	25.6279	MAG
207	598977.1	818244.9	26.4682	DH
208	598311.9	817915	19.87	DH
209	598594.9	817998.3	14.4712	MAG
210	598670	818205.3	23.3621	MAG
211	598641.5	818216.3	26.6615	SPK
212	597008.4	815457.8	21.2015	DH
213	596877.6	815597.8	18.9939	SPK
214	596688.7	814856.8	17.8998	DH
215	596616.5	815133.4	16.6963	DH
216	596549.4	815058.7	22.9954	SPK
217	598692.7	818680.7	26.1182	MAG
218	598705.4	818767.7	26.9564	MAG
251	597158.5	815192.4	21.859	SPK
252	596893.8	815071.3	21.049	PK
253	596719.7	814959.1	19.509	SPK



PRELIMINARY
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NOTES:

1. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES OR GOVERNMENTAL AGENCIES, FROM PAROL TESTIMONY AND FROM OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO EVERSOURCE ENERGY. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL BEFORE YOU DIG: 1.800.922.4455.
2. PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL BE REQUIRED TO SUBMIT A DETAILED DRILLING PROCEDURE FOR INSTALLATION OF THE CROSSING, A DRILL SITE LAYOUT AND A BAR CHART DETAILING THE PROPOSED WORK SCHEDULE.
3. CONTRACTOR SHALL MONITOR DRILLING PRESSURES DURING PILOT OPERATIONS.
4. CONTRACTOR SHALL COMPLETE ALL ITEMS IN CHECKLIST FOUND IN THE PROJECT SPECIFICATION PRIOR TO MOBILIZATION.
5. PROVIDE A PLAN FOR INADVERTENT RETURN DETECTION, RESPONSE, AND MITIGATION TO INCLUDE ANY AREA ALONG THE DRILL PATH:
   SURFACE LOCATIONS
   WATER–BASED CLEANUP.

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A	6/29/21	ISSUED FOR REVIEW – 70%	ERS	MM	DM

NO.	DATE	AS BUILT REVISIONS	BY	CHK	APP	APP
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EVERSOURCE ENERGY

TITLE
DARIEN-FITCH AND SONO-SHERWOOD
2–115–kV UNDERGROUND TRANSMISSION
MANIFEST & ROUTE MAP
NORWALK, CONNECTICUT

BY	GM	CHKD	MM	APP	DM	APP
DATE	06/29/2021	DATE	06/29/2021	DATE	06/29/2021	DATE
H-SCALE	N.T.S.	SIZE	D	FIELD BOOK & PAGES		
V-SCALE	N.T.S.	V.S.		R.E. DWG		
R.E. PROJ. NUMBER		168624		NUSCO	01191-10000P002	

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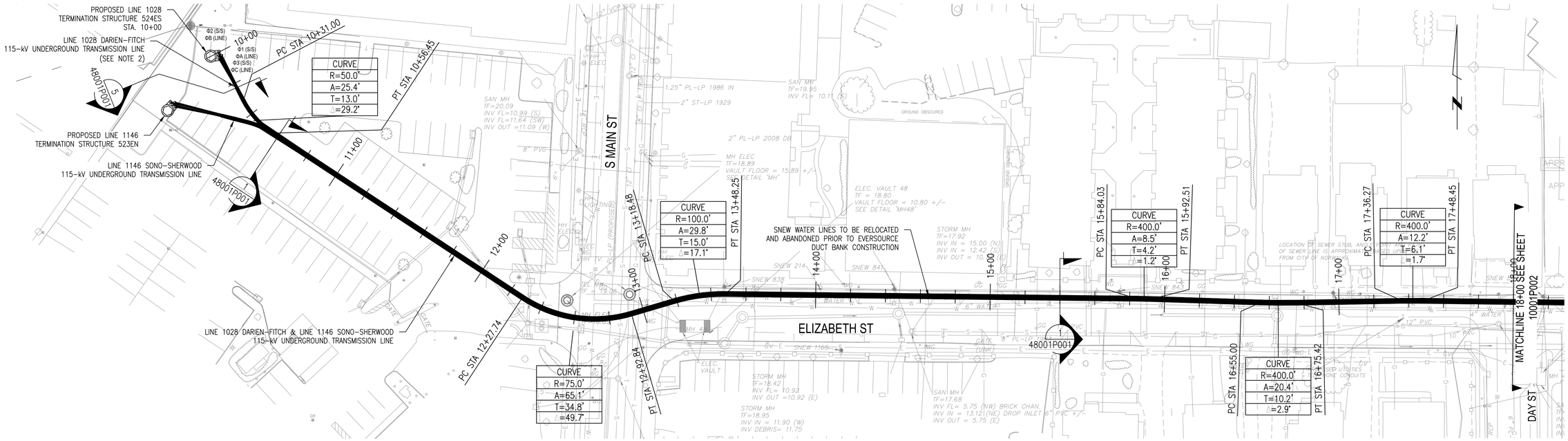
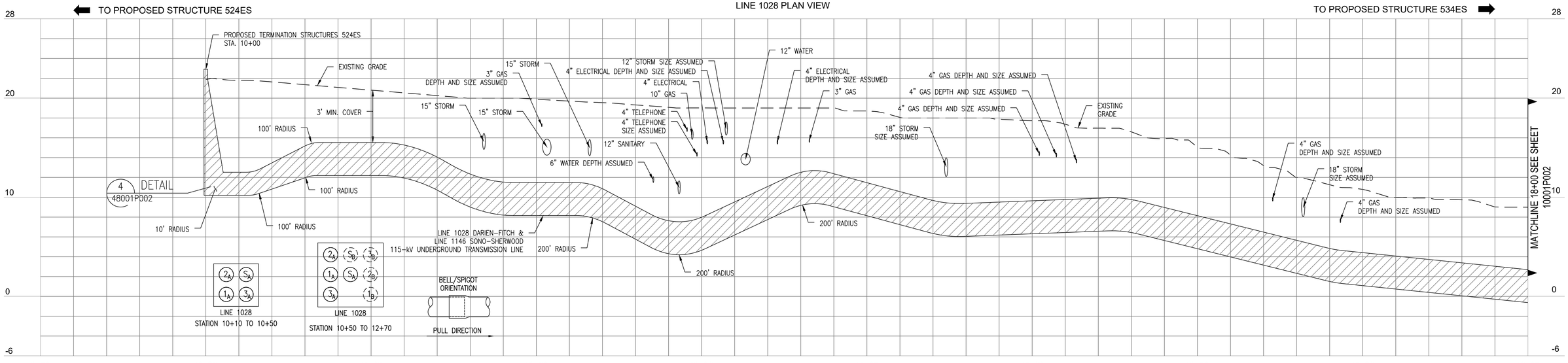
NU VER: 02/2012



LINE 1028 PLAN VIEW



LINE 1028 PROFILE VIEW

0 15 30 60 90 FEET
HORIZONTAL SCALE: 1"= 30'

0 2.5 5 10 15 FEET
VERTICAL SCALE: 1"= 5'

NOTE

1. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES OR GOVERNMENTAL AGENCIES, FROM PAROL TESTIMONY AND FROM OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO EVERSOURCE ENERGY. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL BEFORE YOU DIG: 1.800.922.4455.
2. 2" DTS CONDUIT TO BE DIRECTED TOWARDS LINE 1028 PROPOSED TERMINATION STRUCTURE.

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REVISIONS DURING CONSTRUCTION				
A	6/29/21	ISSUED FOR REVIEW – 70%	ERS	MM	DM

EVERSOURCE ENERGY

TITLE
DARIEN-FITCH AND SONO-SHERWOOD
2–115–kV UNDERGROUND TRANSMISSION
LINE 1028 PLAN & PROFILE STA. 9+00 TO STA. 18+00
NORWALK, CONNECTICUT

BY	CHKD	APP	APP
ERS	MM	DM	
DATE 06/29/2021	DATE 06/29/2021	DATE 06/29/2021	DATE
H-SCALE 1" = 30' V-SCALE 1" = 5'	SIZE D	FIELD BOOK & PAGES	
	V.S.	R.E. DWG	
R.E. PROJ. NUMBER 168624		NUSCO 01191-10001P001	

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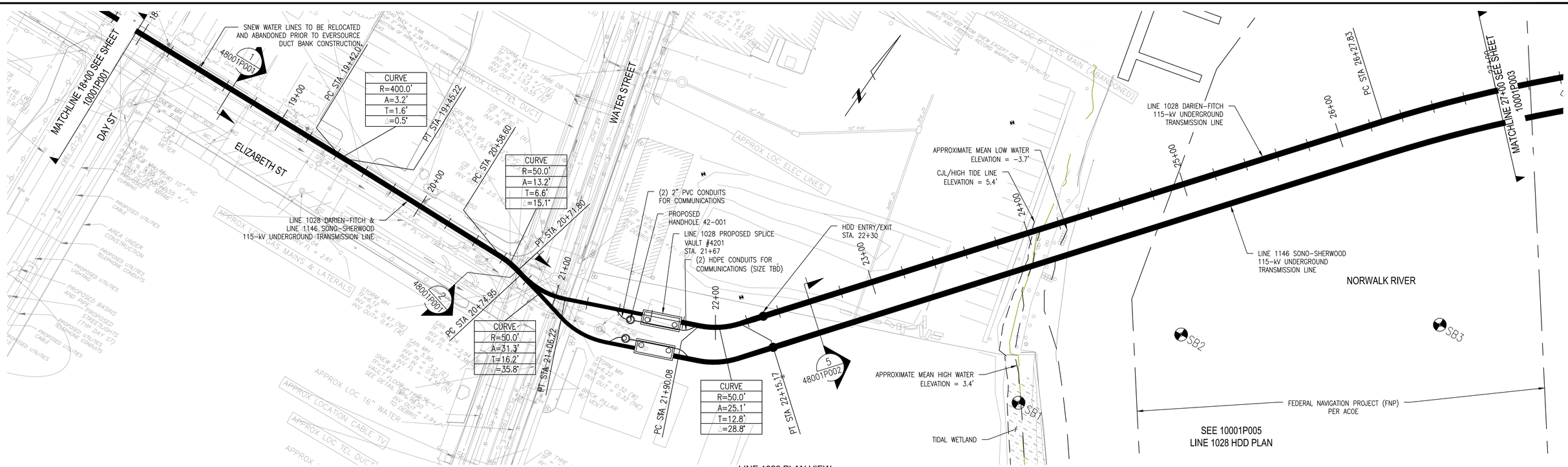
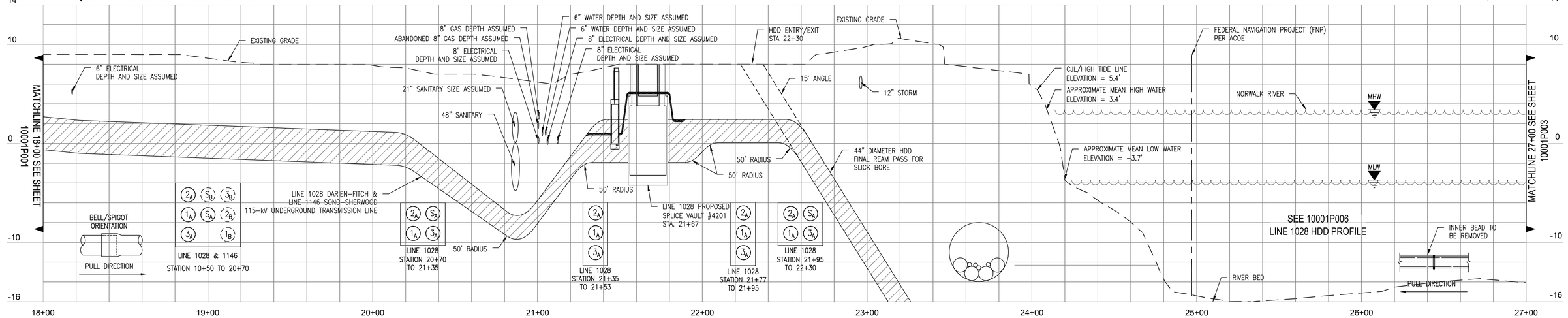


LINE 1028 PLAN VIEW



LINE 1028 PROFILE VIEW

0 15 30 60 90 FEET
HORIZONTAL SCALE: 1"= 30'

0 2.5 5 10 15 FEET
VERTICAL SCALE: 1"= 5'

NOTE

1. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES OR GOVERNMENTAL AGENCIES, FROM PAROL TESTIMONY AND FROM OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO EVERSOURCE ENERGY. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL BEFORE YOU DIG: 1.800.922.4455.
2. ALL DUCT BANK SECTION VIEWS ARE LOOKING AHEAD STATIONING. STATIONING IS APPROXIMATE AND DOES NOT ACCOUNT FOR CONFIGURATION TRANSITIONS.
3. ALL CONDUIT BETWEEN VAULTS AND HANDHOLES UNDER THE NORWALK RIVER SHALL BE HDPE. ALL OTHER DUCT SECTIONS SHALL BE SCHEDULE 40 PVC.

"FOR CURRENT EVERSOURCE PROPERTY RIGHTS REFER TO PROPERTY RECORD MAPPING – LOCATED IN TRANSMISSION SURVEY ENGINEERING/ROW DEPARTMENT"

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REVISIONS DURING CONSTRUCTION

A	6/29/21	ISSUED FOR REVIEW – 70%	ERS	MM	DM

EVERSOURCE ENERGY

TITLE
DARIEN-FITCH AND SONO-SHERWOOD
2–115–kV UNDERGROUND TRANSMISSION
LINE 1028 PLAN & PROFILE STA. 18+00 TO STA. 27+00
NORWALK, CONNECTICUT

BY ERS	CHKD MM	APP DM	APP
DATE 06/29/2021	DATE 06/29/2021	DATE 06/29/2021	DATE
H-SCALE 1" = 30'	SIZE D	FIELD BOOK & PAGES	
V-SCALE 1" = 5'	V.S.	R.E. DWG	
R.E. PROJ. NUMBER 168624		NUSCO 01191-10001P002	

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NU VER: 02/2012

LINE 1028 PLAN VIEW

LINE 1028 PROFILE VIEW

0 15 30 60 90 FEET
HORIZONTAL SCALE: 1"= 30'

0 2.5 5 10 15 FEET
VERTICAL SCALE: 1"= 5'

NOTE

1. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES OR GOVERNMENTAL AGENCIES, FROM PAROL TESTIMONY AND FROM OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO EVERSOURCE ENERGY. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL BEFORE YOU DIG: 1.800.922.4455.
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3. ALL CONDUIT BETWEEN VAULTS AND HANDHOLES UNDER THE NORWALK RIVER SHALL BE HDPE. ALL OTHER DUCT SECTIONS SHALL BE SCHEDULE 40 PVC.

"FOR CURRENT EVERSOURCE PROPERTY RIGHTS REFER TO PROPERTY RECORD MAPPING – LOCATED IN TRANSMISSION SURVEY ENGINEERING/ROW DEPARTMENT"

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EVERSOURCE ENERGY

TITLE DARIEN-FITCH AND SONO-SHERWOOD
2-115-kV UNDERGROUND TRANSMISSION
LINE 1028 PLAN & PROFILE STA. 27+00 TO STA. 36+00
NORWALK, CONNECTICUT

BY ERS	CHKD MM	APP DM	APP
DATE 06/29/2021	DATE 06/29/2021	DATE 06/29/2021	DATE
H-SCALE 1" = 30'	SIZE D	FIELD BOOK & PAGES	
V-SCALE 1" = 5'	V.S.	R.E. DWG	
R.E. PROJ. NUMBER	168624	NUSCO	01191-10001P003

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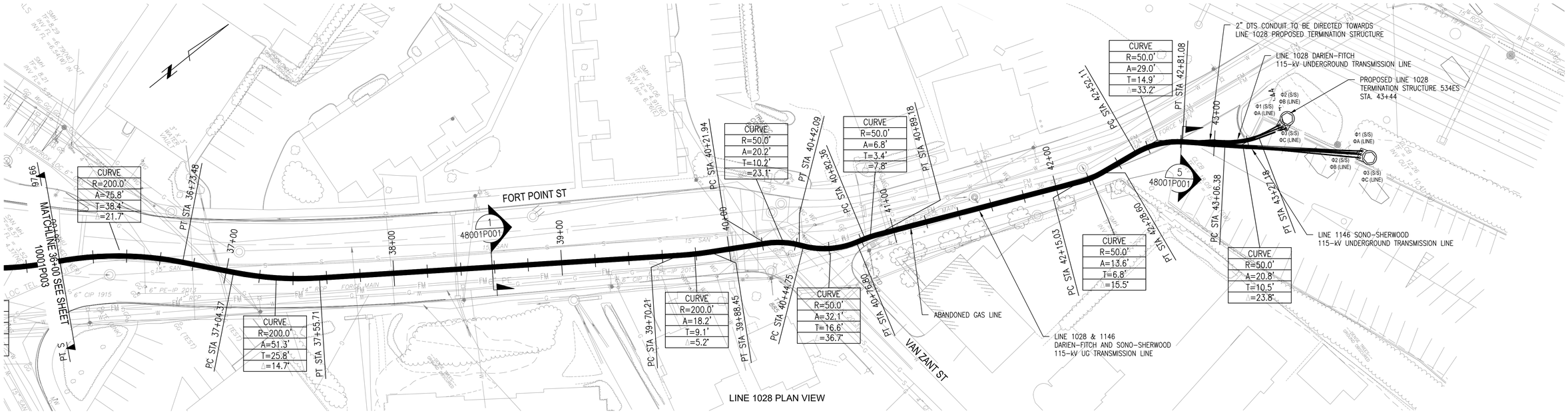
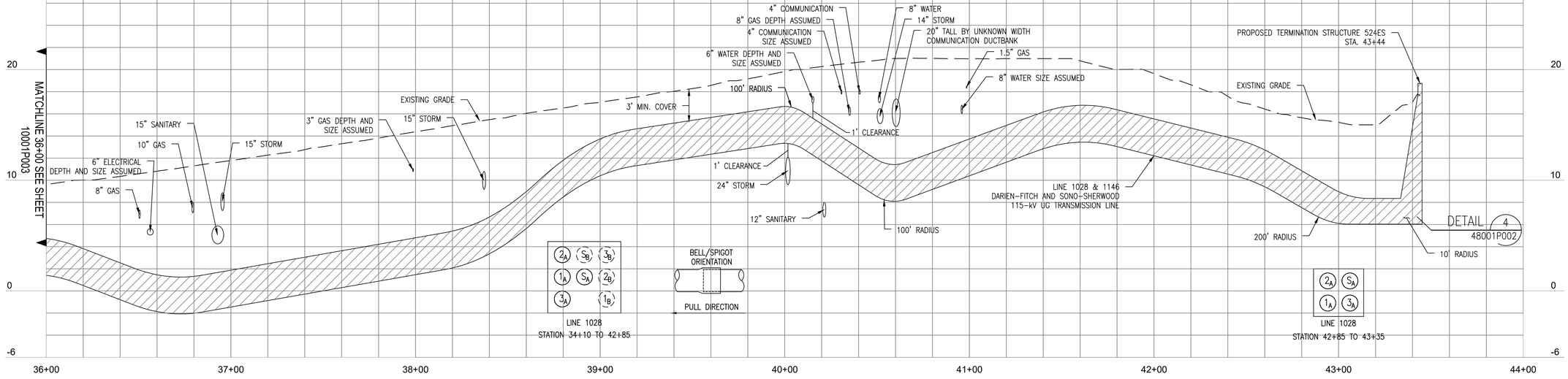
NU VER: 02/2012



LINE 1028 PLAN VIEW

28 ← TO PROPOSED STRUCTURE 524ES

TO PROPOSED STRUCTURE 534ES → 28



LINE 1028 PROFILE VIEW

0 15 30 60 90 FEET
HORIZONTAL SCALE: 1"= 30'

0 2.5 5 10 15 FEET
VERTICAL SCALE: 1"= 5'

NOTE

1. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES OR GOVERNMENTAL AGENCIES, FROM PAROL TESTIMONY AND FROM OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO EVERSOURCE ENERGY. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL BEFORE YOU DIG: 1.800.922.4455.

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REVISIONS DURING CONSTRUCTION

A	6/29/21	ISSUED FOR REVIEW – 70%	ERS	MM	DM

EVERSOURCE ENERGY

TITLE
DARIEN-FITCH AND SONO-SHERWOOD
2-115-kV UNDERGROUND TRANSMISSION
LINE 1028 PLAN & PROFILE STA. 36+00 TO STA. 44+00
NORWALK, CONNECTICUT

BY	ERS	CHKD	MM	APP	DM	APP	
DATE	06/29/2021	DATE	06/29/2021	DATE	06/29/2021	DATE	
H-SCALE	1" = 30'	SIZE	D	FIELD BOOK & PAGES			
V-SCALE	1" = 5'	V.S.		R.E. DWG			
R.E. PROJ. NUMBER		168624		NUSCO	01191-10001P004		

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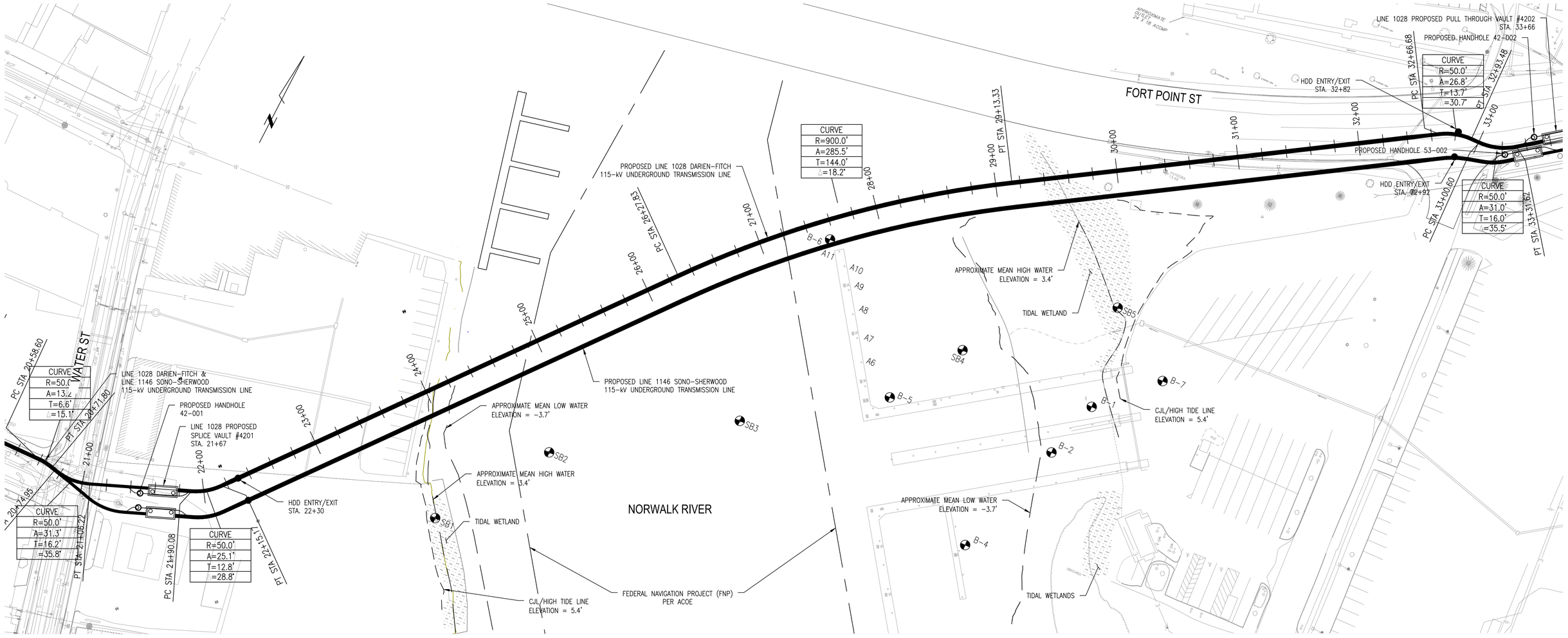

LINE 1028 HDD PLAN VIEW

0 20 40 80 120 FEET

HORIZONTAL SCALE: 1"= 40'

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NOTES:

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2. HORIZONTAL DATUM: NAD 83 CONNECTICUT, US SURVEY FOOT. CT STATE PLANE FIPS CODE: 0600. VERTICAL DATUM NAVD 88.
3. ALL CONDUIT BETWEEN VAULTS AND HANDHOLES UNDER THE NORWALK RIVER SHALL BE HDPE. ALL OTHER DUCT SECTIONS SHALL BE SCHEDULE 40 PVC.

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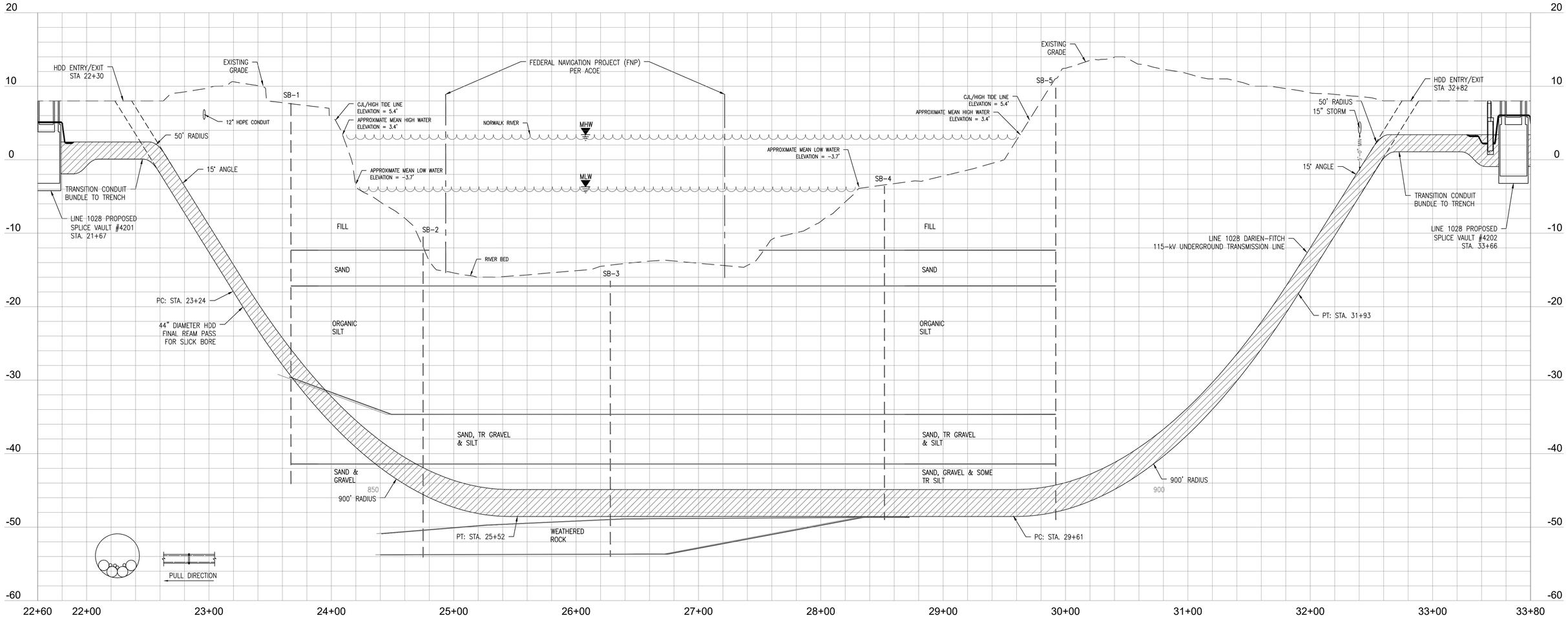
A	6/29/21	ISSUED FOR REVIEW – 70%	ERS	MM	DM

EVERSOURCE ENERGY

TITLE
DARIEN-FITCH AND SONO-SHERWOOD
2–115–kV UNDERGROUND TRANSMISSION
LINE 1028 HDD PLAN
NORWALK, CONNECTICUT

BY	ERS	CHKD	MM	APP	DM	APP	
DATE	06/29/2021	DATE	06/29/2021	DATE	06/29/2021	DATE	
H–SCALE	1" = 40'	SIZE	D	FIELD BOOK & PAGES			
V–SCALE	NONE	V.S.		R.E. DWG			
R.E. PROJ. NUMBER		168624		NUSCO	01191-10001P005		



LINE 1028 HDD PROFILE VIEW

0 20 40 80 120 FEET
HORIZONTAL SCALE: 1"= 40'

0 2.5 5 10 15 FEET
VERTICAL SCALE: 1"= 5'

NOTES:

1. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES OR GOVERNMENTAL AGENCIES, FROM PAROL TESTIMONY AND FROM OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO EVERSOURCE ENERGY. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL BEFORE YOU DIG: 1.800.922.4455.
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REVISIONS DURING CONSTRUCTION					
A	6/29/21	ISSUED FOR REVIEW – 70%	ERS	MM	DM

EVERSOURCE ENERGY

TITLE
DARIEN-FITCH AND SONO-SHERWOOD
2-115-kV UNDERGROUND TRANSMISSION
LINE 1028 HDD PROFILE
NORWALK, CONNECTICUT

BY ERS	CHKD MM	APP DM	APP
DATE 06/29/2021	DATE 06/29/2021	DATE 06/29/2021	DATE
H-SCALE NONE V-SCALE 1" = 5'	SIZE D V.S.	FIELD BOOK & PAGES R.E. DWG	
R.E. PROJ. NUMBER 168624		NUSCO 01191-10001P006	

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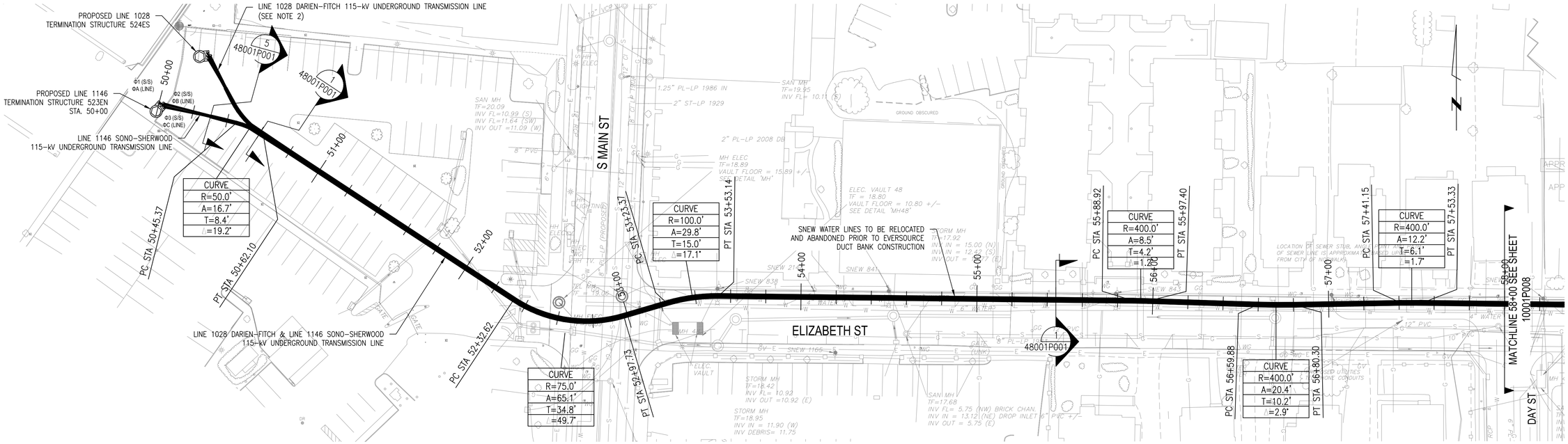
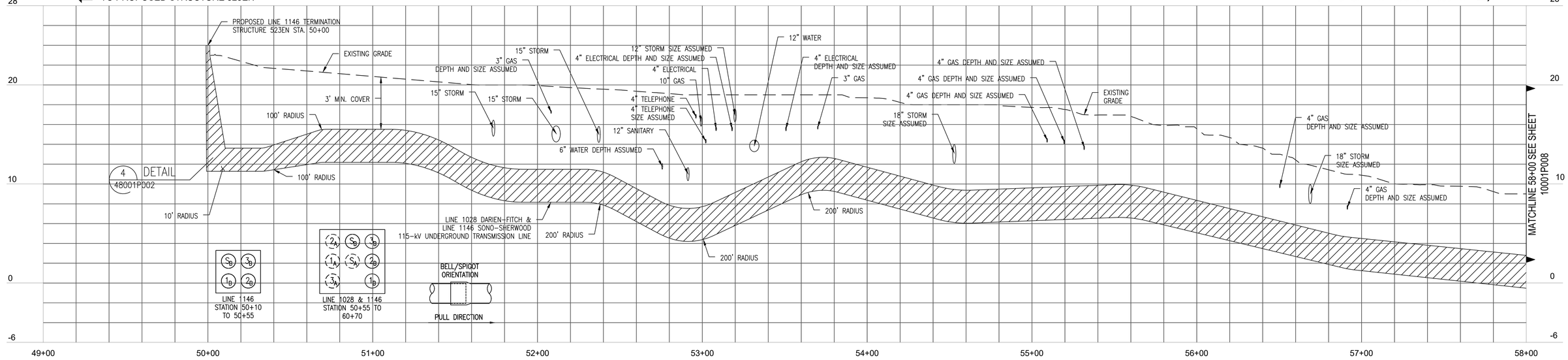


28 ← TO PROPOSED STRUCTURE 523EN

LINE 1146 PLAN VIEW

TO PROPOSED STRUCTURE 535WS → 28



LINE 1146 PROFILE VIEW

0 15 30 60 90 FEET
HORIZONTAL SCALE: 1"= 30'

0 2.5 5 10 15 FEET
VERTICAL SCALE: 1"= 5'

NOTE

1. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES OR GOVERNMENTAL AGENCIES, FROM PAROL TESTIMONY AND FROM OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO EVERSOURCE ENERGY. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL BEFORE YOU DIG: 1.800.922.4455.
2. 2" DTS CONDUIT TO BE DIRECTED TOWARDS LINE 1028 PROPOSED TERMINATION STRUCTURE.

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REVISIONS DURING CONSTRUCTION

A	6/29/21	ISSUED FOR REVIEW – 70%	ERS	MM	DM

EVERSOURCE ENERGY

TITLE
DARIEN-FITCH AND SONO-SHERWOOD
2–115–kV UNDERGROUND TRANSMISSION
LINE 1146 PLAN & PROFILE STA. 49+00 TO STA. 58+00
NORWALK, CONNECTICUT

BY	CHKD	APP	APP
ERS	MM	DM	
DATE 06/29/2021	DATE 06/29/2021	DATE 06/29/2021	DATE
H-SCALE 1" = 30'	SIZE D	FIELD BOOK & PAGES	
V-SCALE 1" = 5'	V.S.	R.E. DWG	
R.E. PROJ. NUMBER 168624		NUSCO 01191-10001P007	

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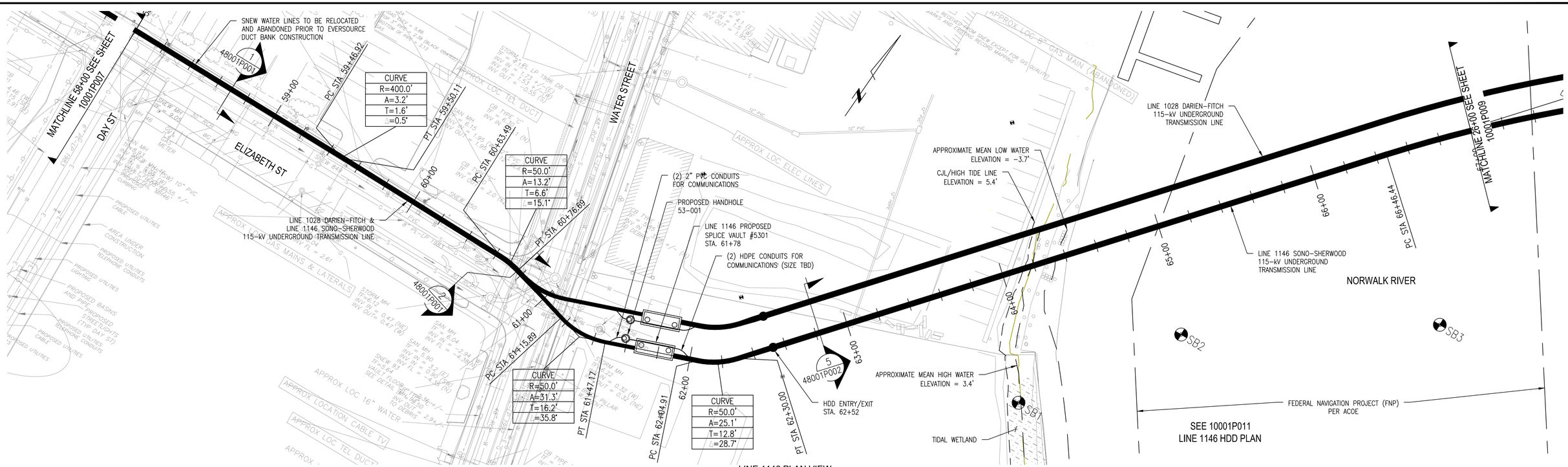
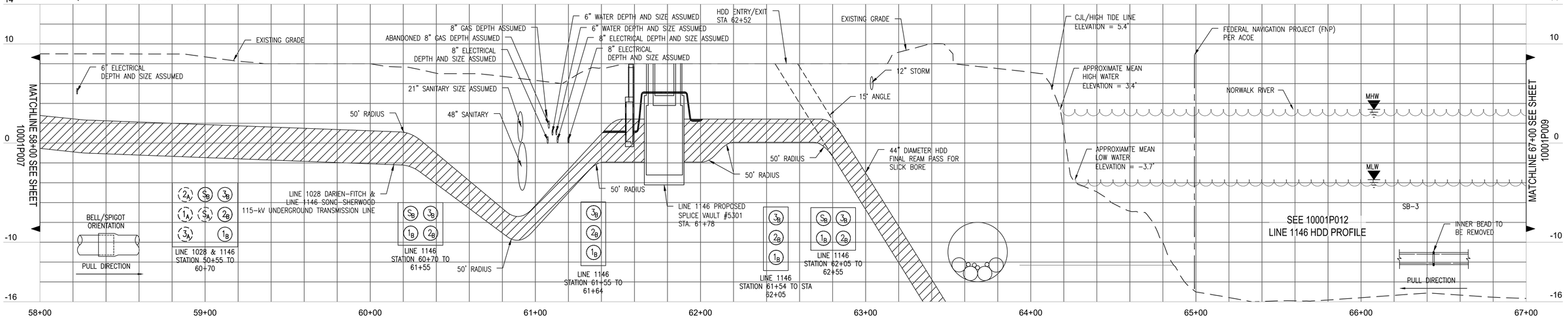
NU VER: 02/2012



LINE 1146 PLAN VIEW

TO PROPOSED STRUCTURE 523EN

TO PROPOSED STRUCTURE 535WS



LINE 1146 PROFILE VIEW

0 15 30 60 90 FEET
HORIZONTAL SCALE: 1"= 30'

0 2.5 5 10 15 FEET
VERTICAL SCALE: 1"= 5'

NOTE

1. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES OR GOVERNMENTAL AGENCIES, FROM PAROL TESTIMONY AND FROM OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO EVERSOURCE ENERGY. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL BEFORE YOU DIG: 1.800.922.4455.
2. ALL DUCT BANK SECTION VIEWS ARE LOOKING AHEAD STATIONING. STATIONING IS APPROXIMATE AND DOES NOT ACCOUNT FOR CONFIGURATION TRANSITIONS.
3. ALL CONDUIT BETWEEN VAULTS AND HANDHOLES UNDER THE NORWALK RIVER SHALL BE HDPE. ALL OTHER DUCT SECTIONS SHALL BE SCHEDULE 40 PVC.

"FOR CURRENT EVERSOURCE PROPERTY RIGHTS REFER TO PROPERTY RECORD MAPPING – LOCATED IN TRANSMISSION SURVEY ENGINEERING/ROW DEPARTMENT"

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NO.	DATE	AS BUILT REVISIONS	BY	CHK	APP	APP
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REVISIONS DURING CONSTRUCTION

A	6/29/21	ISSUED FOR REVIEW – 70%	ERS	MM	DM

EVERSOURCE ENERGY

TITLE
DARIEN-FITCH AND SONO-SHERWOOD
2–115–kV UNDERGROUND TRANSMISSION
LINE 1146 PLAN & PROFILE STA. 58+00 TO STA. 67+00
NORWALK, CONNECTICUT

BY	CHKD	APP	APP
ERS	MM	DM	
DATE 06/29/2021	DATE 06/29/2021	DATE 06/29/2021	DATE
H-SCALE 1" = 30'	SIZE D	FIELD BOOK & PAGES	
V-SCALE 1" = 5'	V.S.	R.E. DWG	
R.E. PROJ. NUMBER 168624		NUSCO 01191-10001P008	

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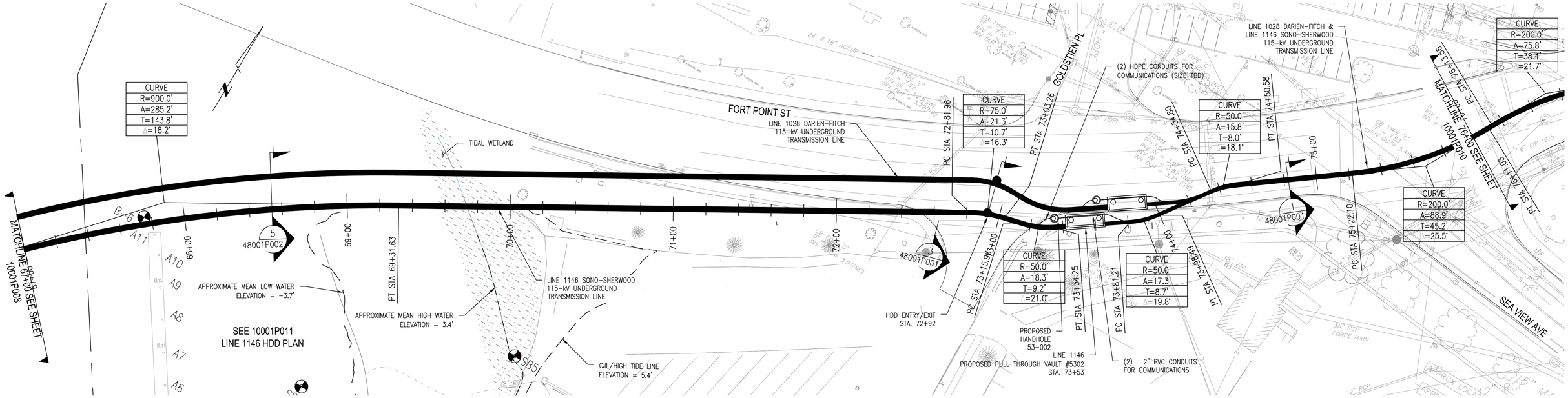
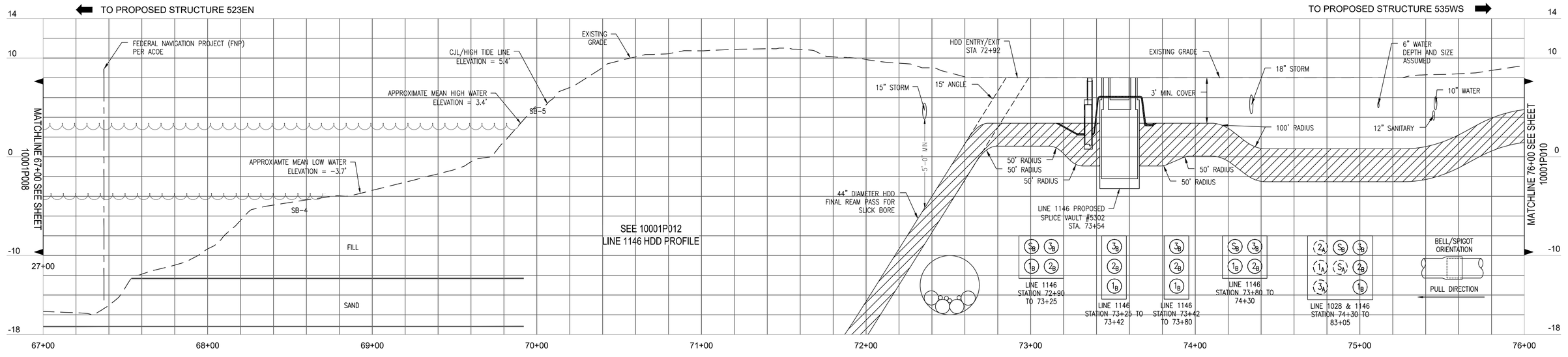


LINE 1146 PLAN VIEW



LINE 1146 PROFILE VIEW

0 15 30 60 90 FEET
HORIZONTAL SCALE: 1"= 30'

0 2.5 5 10 15 FEET
VERTICAL SCALE: 1"= 5'

NOTE

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NO.	DATE	AS BUILT REVISIONS	BY	CHK	APP	APP
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REVISIONS DURING CONSTRUCTION

A	6/29/21	ISSUED FOR REVIEW – 70%	ERS	MM	DM

EVERSOURCE ENERGY

TITLE
DARIEN-FITCH AND SONO-SHERWOOD
2–115–kV UNDERGROUND TRANSMISSION
LINE 1146 PLAN & PROFILE STA. 67+00 TO STA. 76+00
NORWALK, CONNECTICUT

BY	ERS	CHKD	MM	APP	DM	APP	
DATE	06/29/2021	DATE	06/29/2021	DATE	06/29/2021	DATE	
H–SCALE	1" = 30'	SIZE	D	FIELD BOOK & PAGES			
V–SCALE	1" = 5'	V.S.		R.E. DWG			
R.E. PROJ. NUMBER		168624		NUSCO	01191-10001P009		

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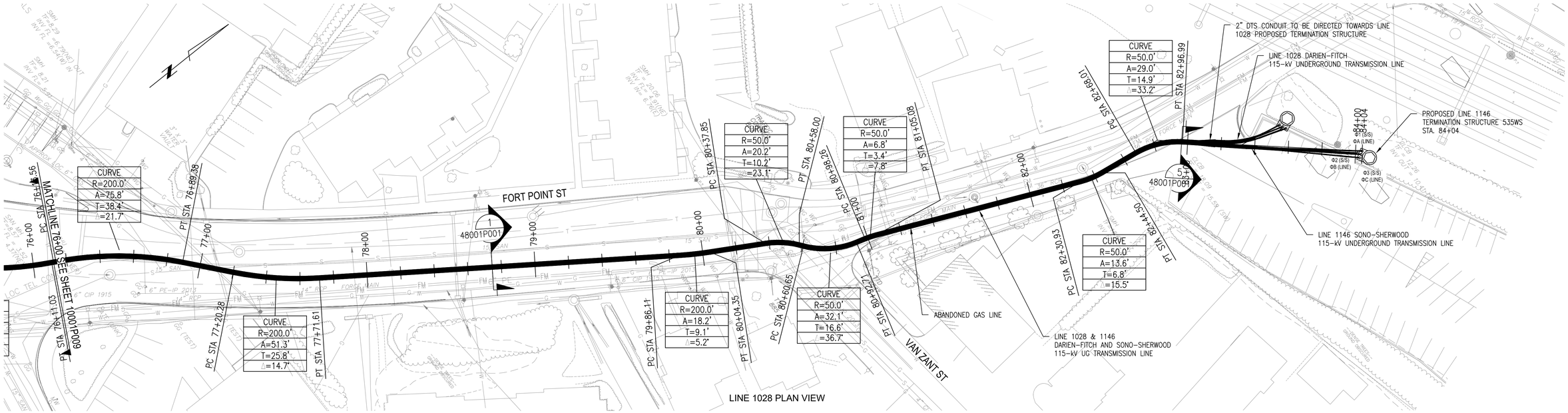
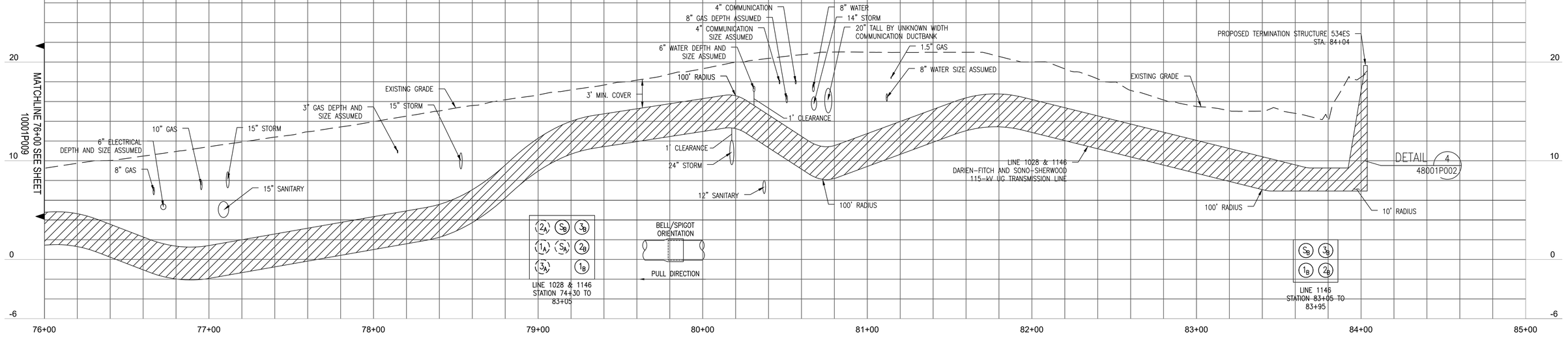


LINE 1028 PLAN VIEW

28 ← TO PROPOSED STRUCTURE 523EN

TO PROPOSED STRUCTURE 535WS → 28



LINE 1028 PROFILE VIEW

0 15 30 60 90 FEET
HORIZONTAL SCALE: 1"= 30'

0 2.5 5 10 15 FEET
VERTICAL SCALE: 1"= 5'

NOTE

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REVISIONS DURING CONSTRUCTION

A	6/29/21	ISSUED FOR REVIEW – 70%	ERS	MM	DM

EVERSOURCE ENERGY

TITLE
DARIEN-FITCH AND SONO-SHERWOOD
2–115–kV UNDERGROUND TRANSMISSION
LINE 1146 PLAN & PROFILE STA. 76+00 TO STA. 84+00
NORWALK, CONNECTICUT

BY	ERS	CHKD	MM	APP	DM	APP	
DATE	06/29/2021	DATE	06/29/2021	DATE	06/29/2021	DATE	
H–SCALE	1" = 30'	SIZE	D	FIELD BOOK & PAGES			
V–SCALE	1" = 5'	V.S.		R.E. DWG			
R.E. PROJ. NUMBER		168624		NUSCO	01191-10001P010		

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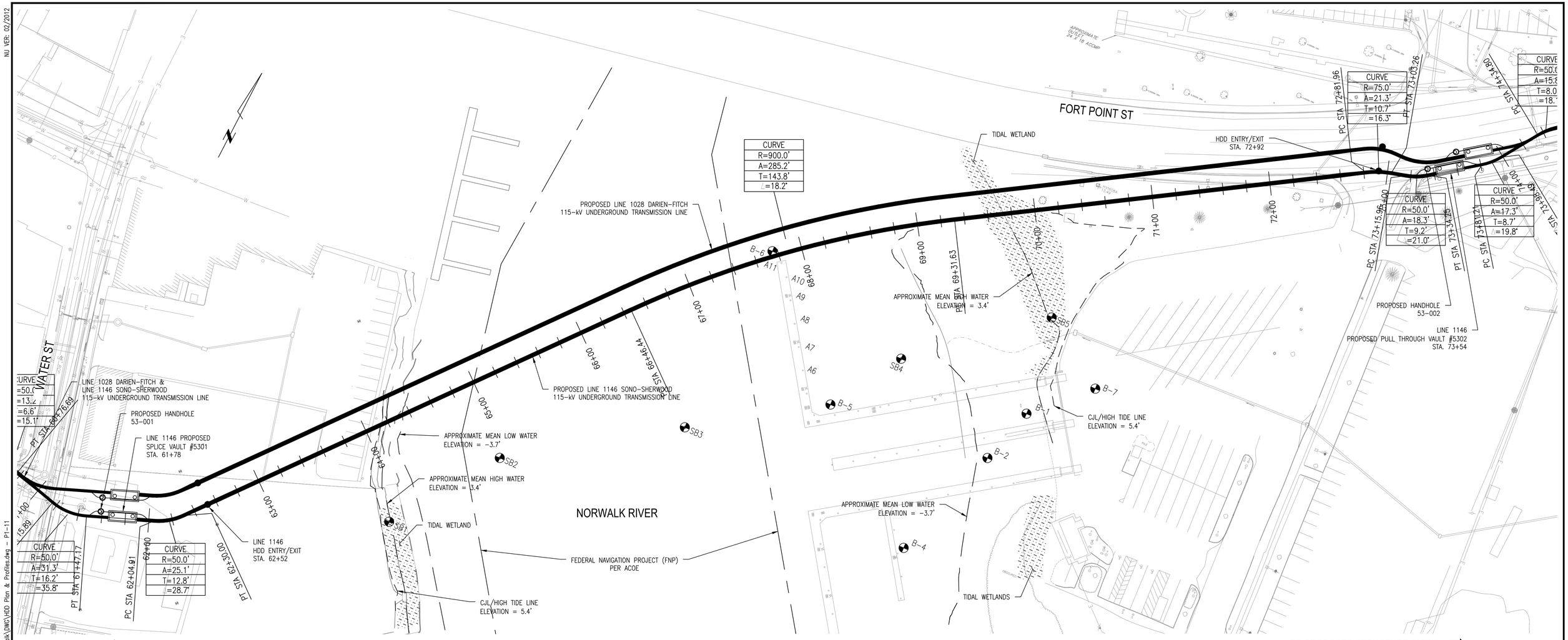

← TO PROPOSED STRUCTURE 523EN

TO PROPOSED STRUCTURE 535WS →

LINE 1146 HDD PLAN VIEW

0 20 40 80 120 FEET

HORIZONTAL SCALE: 1"= 40'

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TOLL FREE
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NOTES:

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2. HORIZONTAL DATUM: NAD 83 CONNECTICUT, US SURVEY FOOT. CT STATE PLANE FIPS CODE: 0600. VERTICAL DATUM NAVD 88.
3. ALL CONDUIT BETWEEN VAULTS AND HANDHOLES UNDER THE NORWALK RIVER SHALL BE HDPE. ALL OTHER DUCT SECTIONS SHALL BE SCHEDULE 40 PVC.

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NO.	DATE	AS BUILT REVISIONS	BY	CHK	APP	APP
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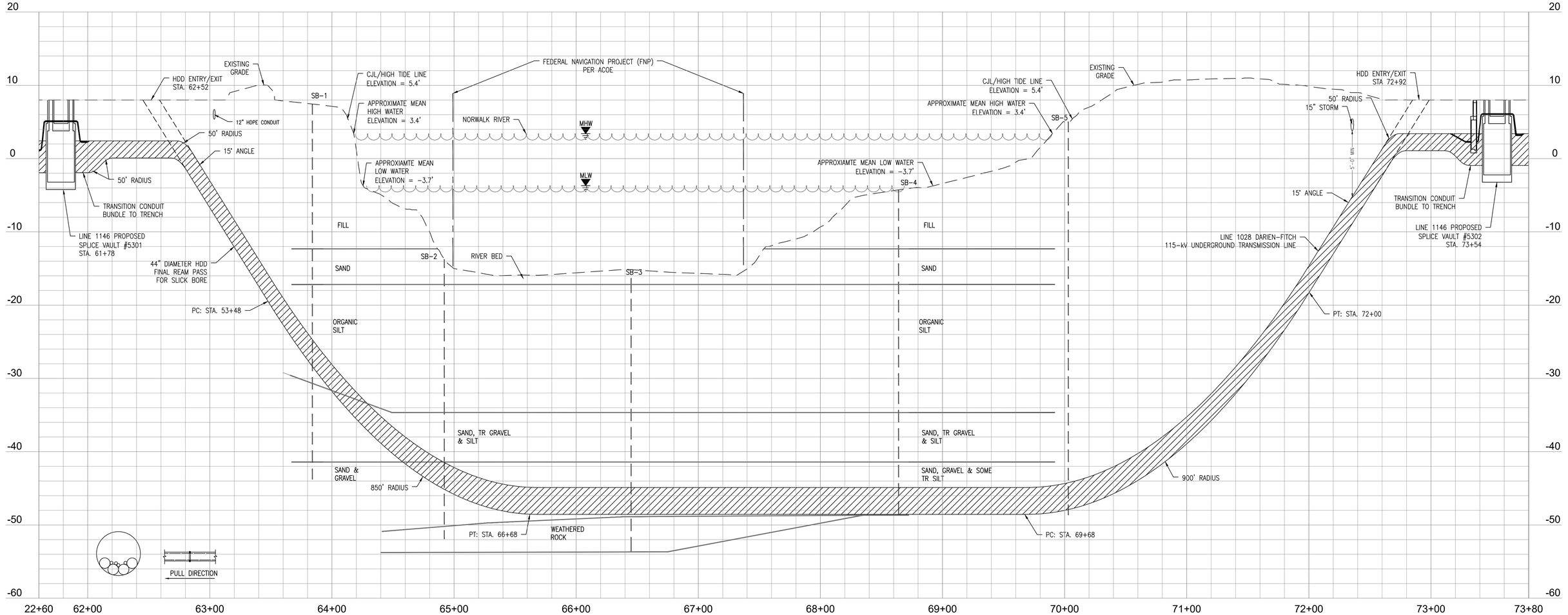
REVISIONS DURING CONSTRUCTION					
A	6/29/21	ISSUED FOR REVIEW – 70%	ERS	MM	DM

EVERSOURCE ENERGY

TITLE
DARIEN-FITCH AND SONO-SHERWOOD
2–115–kV UNDERGROUND TRANSMISSION
LINE 1146 HDD PLAN
NORWALK, CONNECTICUT

BY ERS	CHKD MM	APP DM	APP
DATE 06/29/2021	DATE 06/29/2021	DATE 06/29/2021	DATE
H-SCALE 1" = 40'	SIZE D	FIELD BOOK & PAGES	
V-SCALE NONE	V.S.	R.E. DWG	
R.E. PROJ. NUMBER 168624		NUSCO 01191-10001P011	



LINE 1146 HDD PROFILE VIEW

0 20 40 80 120 FEET
HORIZONTAL SCALE: 1"= 40'

0 2.5 5 10 15 FEET
VERTICAL SCALE: 1"= 5'

NOTE

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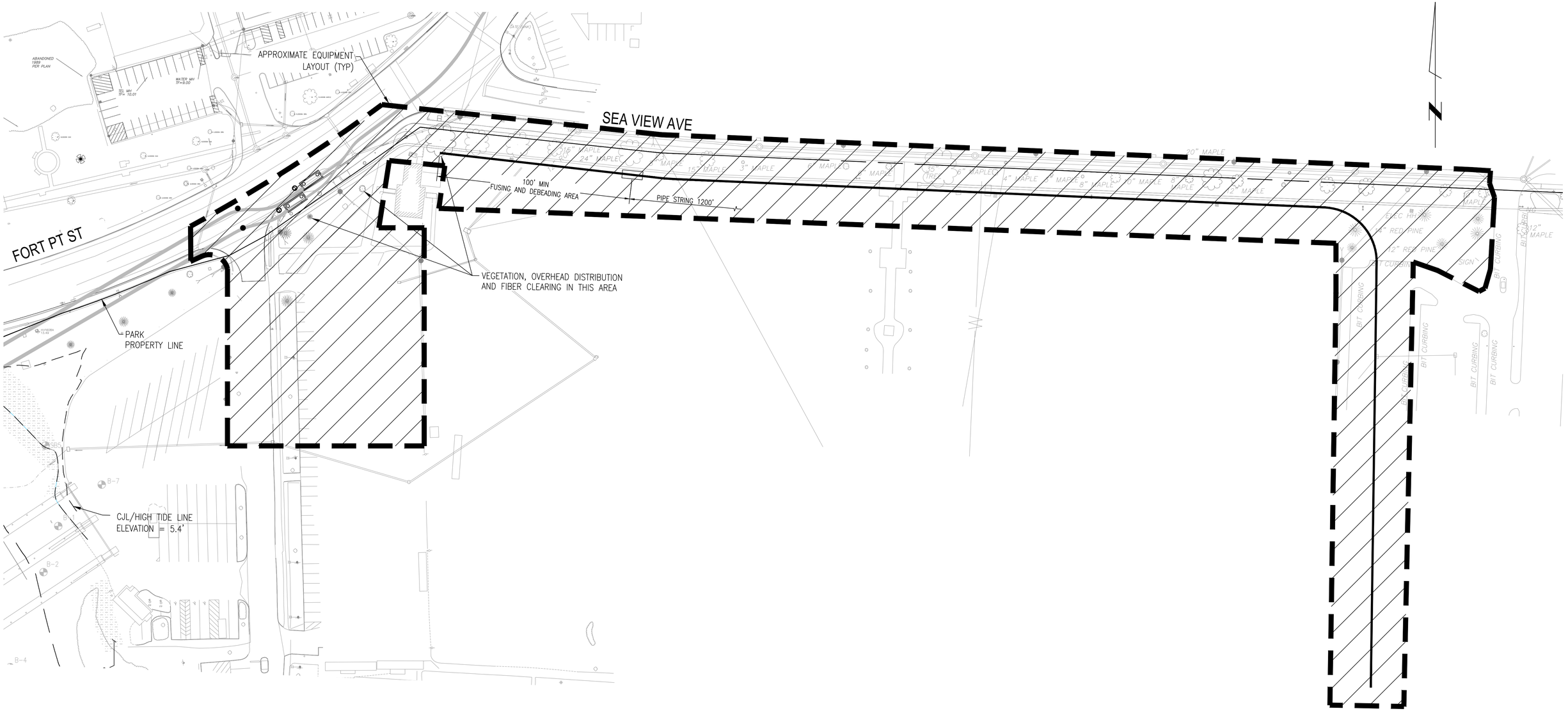
REVISIONS DURING CONSTRUCTION					
A	6/29/21	ISSUED FOR REVIEW – 70%	ERS	MM	DM

EVERSOURCE ENERGY

TITLE
DARIEN-FITCH AND SONO-SHERWOOD
2-115-kV UNDERGROUND TRANSMISSION
LINE 1146 HDD PROFILE
NORWALK, CONNECTICUT

BY	ERS	CHKD	MM	APP	DM	APP	
DATE	06/29/2021	DATE	06/29/2021	DATE	06/29/2021	DATE	
H-SCALE	1" = 30'	SIZE	D	FIELD BOOK & PAGES			
V-SCALE	1" = 5'	V.S.		R.E. DWG			
R.E. PROJ. NUMBER		168624		NUSCO	01191-10001P012		



WORK AREA DURING DRILLING AND FUSING ACTIVITIES 3 TO 4 MONTHS

0 50 100 150 FEET

HORIZONTAL SCALE 1"= 50'

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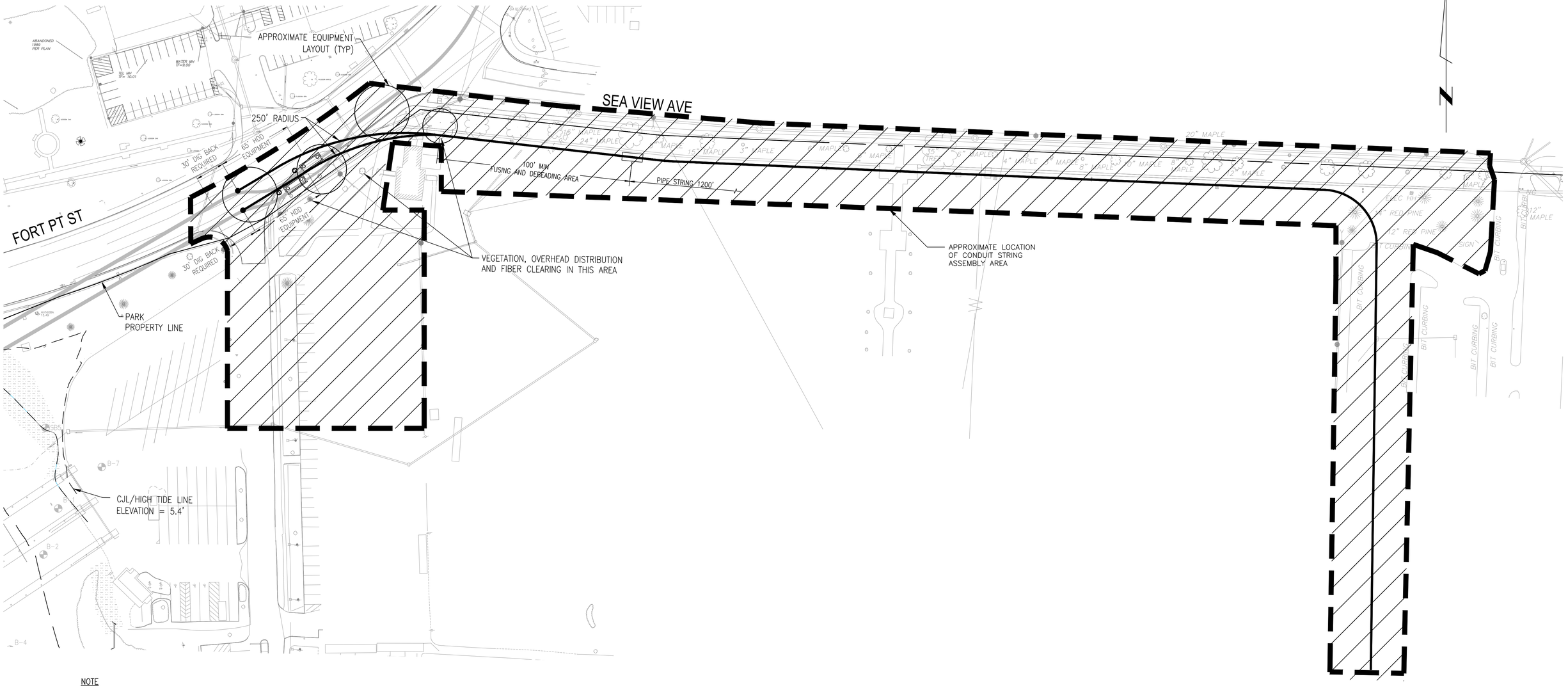
REVISIONS DURING CONSTRUCTION

A	6/29/21	ISSUED FOR REVIEW – 70%	ERS	MM	DM

EVERSOURCE ENERGY

TITLE
DARIEN-FITCH AND SONO-SHERWOOD
2–115–kV UNDERGROUND TRANSMISSION
PIPE LAYDOWN AREA
NORWALK, CONNECTICUT

BY ERS	CHKD MM	APP DM	APP
DATE 06/29/2021	DATE 06/29/2021	DATE 06/29/2021	DATE
H-SCALE 1" = 50'	SIZE D	FIELD BOOK & PAGES	
V-SCALE NONE	V.S.	R.E. DWG	
R.E. PROJ. NUMBER 168624		NUSCO 01191-10001P013	



NOTE

1. CIRCLES REPRESENT APPROXIMATE EQUIPMENT LAYOUT AREAS

WORK AREA DURING PULLBACK
2 DAYS FOR EACH HDD

0 50 100 150 FEET

HORIZONTAL SCALE 1"= 50'

"FOR CURRENT EVERSOURCE PROPERTY RIGHTS REFER TO PROPERTY RECORD MAPPING – LOCATED IN TRANSMISSION SURVEY ENGINEERING/ROW DEPARTMENT"

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NO.	DATE	AS BUILT REVISIONS	BY	CHK	APP	APP
–	–		–	–	–	–

REVISIONS DURING CONSTRUCTION

A	6/29/21	ISSUED FOR REVIEW – 70%	ERS	MM	DM

EVERSOURCE ENERGY

TITLE
DARIEN-FITCH AND SONO-SHERWOOD
2-115-kV UNDERGROUND TRANSMISSION
PIPE LAYDOWN AREA
NORWALK, CONNECTICUT

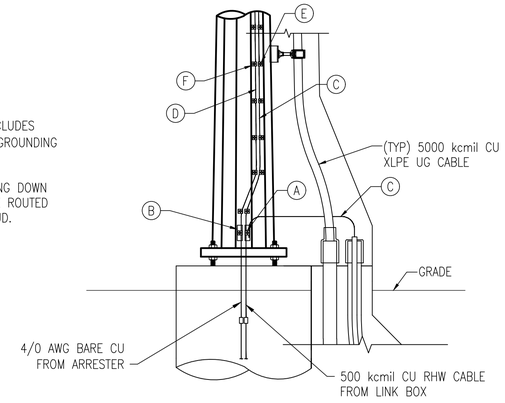
BY ERS	CHKD MM	APP DM	APP
DATE 06/29/2021	DATE 06/29/2021	DATE 06/29/2021	DATE
H-SCALE 1" = 50'	SIZE D	FIELD BOOK & PAGES	
V-SCALE NONE	V.S.	R.E. DWG	
R.E. PROJ. NUMBER 168624		NUSCO 01191-10001P014	

DETAIL 1 – GROUNDING DETAIL					
ITEM	VENDOR	CATALOG NUMBER	DESCRIPTION	UNIT	QTY
A	BURNDY		BURNDY GB3434	EA	1
B	BURNDY		BURNDY GB2929	EA	1
C	CABLE MANUFACTURER		500 kcmil CU RHW CABLE	FT	*
D	CABLE MANUFACTURER		4/0 AWG BARE CU	FT	*
E	BURNDY	GC34	MAX SPACING 5 FT. ON CENTER – BURNDY GB34	EA	*
F	BURNDY	GC29	MAX SPACING 5 FT. ON CENTER – BURNDY GB29	EA	*

* DENOTES QUANTITY AS NEEDED

NOTE:

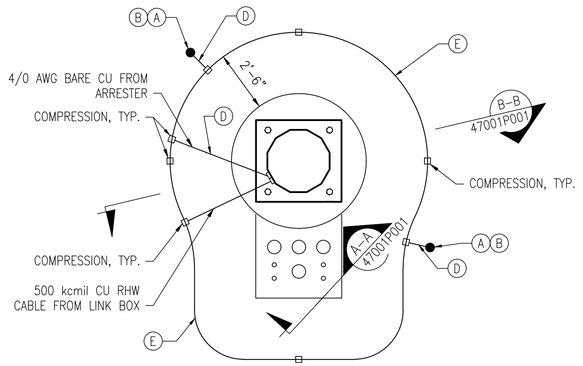
1. BILL OF MATERIAL INCLUDES QUANTITIES FOR (1) GROUNDING ASSEMBLY.
2. ALL GROUNDS RUNNING DOWN STRUCTURE SHALL BE ROUTED BEHIND CABLE SHROUD.



GROUNDING DETAIL
DETAIL 1 47001P001
SCALE N.T.S.

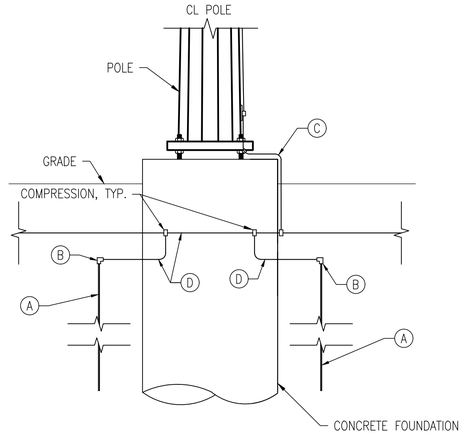
DETAIL 2 – GROUND RING DETAIL (SEE NOTE 1)					
ITEM	VENDOR	CATALOG NUMBER	DESCRIPTION	UNIT	QTY
A	HUBBELL		3/4" COPPER BONDED GROUND ROD	EA	2
B	HUBBELL		CONNECTOR, GROUND, CABLE TO 3/4" ROD	EA	*
C	CABLE MANUFACTURER		500 kcmil CU RHW CABLE	EA	*
D	CABLE MANUFACTURER		4/0 AWG BARE CU	EA	*
E	CABLE MANUFACTURER		500 kcmil BARE CU	EA	*

* DENOTES QUANTITY AS NEEDED



SEE NOTE 1

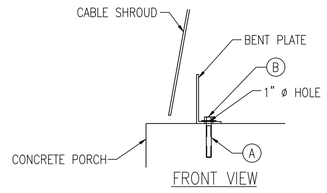
LINK GROUND RING DETAIL
DETAIL 2 47001P001
SCALE N.T.S.



SECTION B-B 47001P001
SCALE N.T.S.

DETAIL A–A – BENT PLATE ANCHOR					
ITEM	VENDOR	CATALOG NUMBER	DESCRIPTION	UNIT	QTY
A	HILTI	HLC–HX 3/4 X 4 1/4	MECHANICAL CONCRETE ANCHOR 5/8" HEX	EA	*
B	FASTENAL	33185	FLAT WASHER 5/8" ID 1.75" OD GALV.	EA	*

* DENOTES QUANTITY AS NEEDED



FRONT VIEW

BENT PLATE ANCHOR DETAIL A-A 47001P001
SCALE N.T.S.

NOTE

1. GROUND RING IS IN ADDITION TO OVERHEAD LINE STRUCTURE COUNTERPOISE. EMBEDMENT OF THIS GROUND RING SHOULD BE COORDINATED WITH EMBEDMENT DEPTH OF COUNTERPOISE.

PRELIMINARY
NOT FOR CONSTRUCTION

REVISIONS DURING CONSTRUCTION					
A	6/29/21	ISSUED FOR REVIEW – 70%	ES	MM	DM

NO.	DATE	REVISION DESCRIPTION	BY	CHK	APP	APP

EVERSOURCE ENERGY

TITLE
DARIEN-FITCH AND SONO SHERWOOD
2–115–kV UNDERGROUND TRANSMISSION
TRANSITION STRUCTURE GROUNDING
NORWALK, CONNECTICUT

BY	ERS	CHKD	MM	APP	DM	APP	
DATE	06/29/2021	DATE	06/29/2021	DATE	06/29/2021	DATE	
H-SCALE	N.T.S.	SIZE	D	SURVEY JOB #			
V-SCALE	N.T.S.	V.S.		R.E. DWG			
R.E. PROJ. NUMBER		168624		NUSCO	01191-47001P001		

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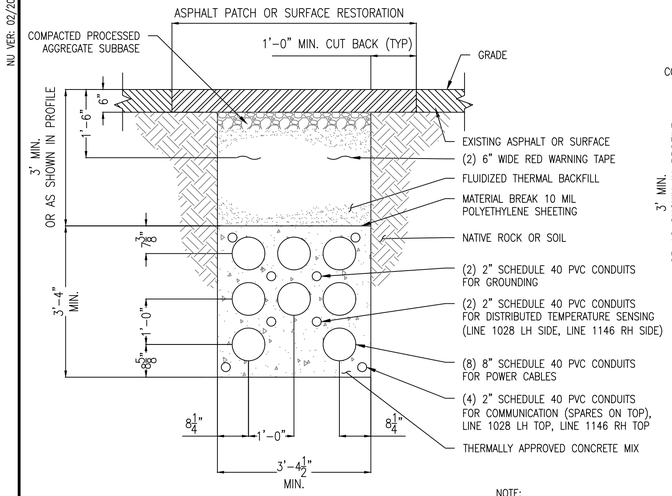
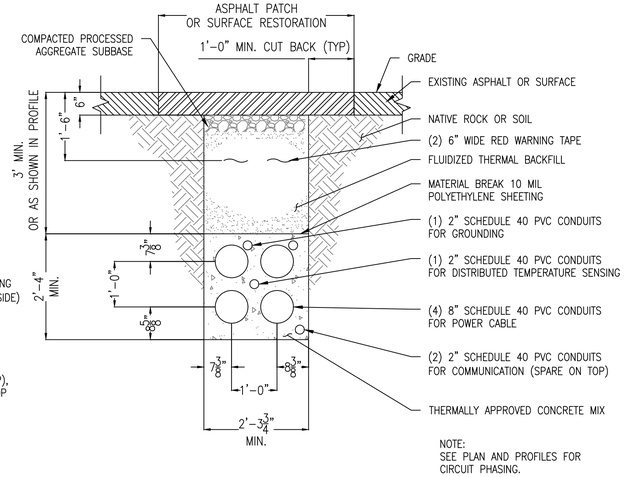


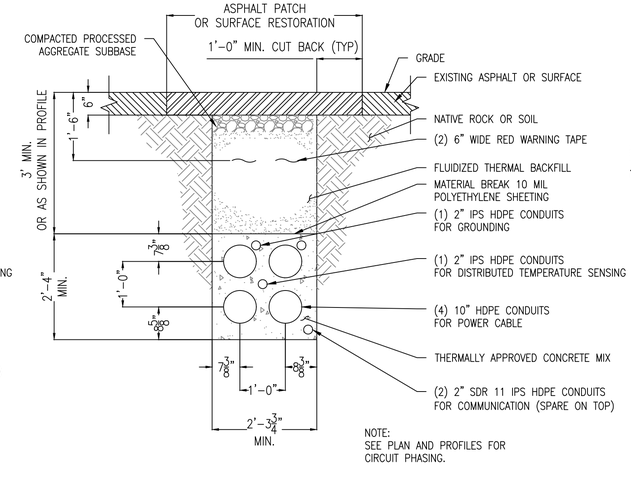
NOTE:
SEE PLAN AND PROFILES FOR CIRCUIT PHASING.

TYPICAL DOUBLE CIRCUIT 3X3 DUCT BANK DETAIL
DETAIL 1 48001P001
SCALE N.T.S.



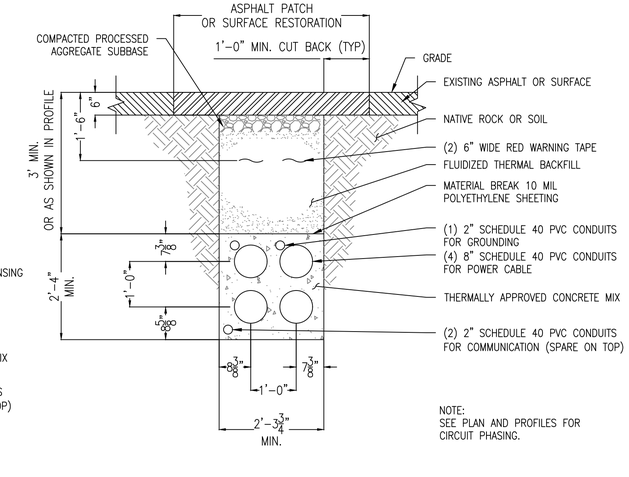
NOTE:
SEE PLAN AND PROFILES FOR CIRCUIT PHASING.

TYPICAL SINGLE CIRCUIT 2X2 DUCT BANK WITH PVC DETAIL
DETAIL 2 48001P001
SCALE N.T.S.



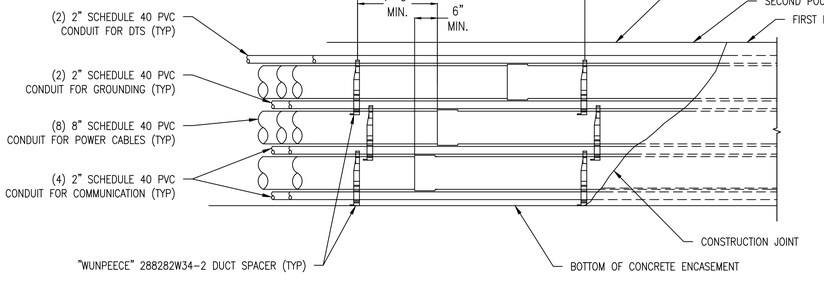
NOTE:
SEE PLAN AND PROFILES FOR CIRCUIT PHASING.

TYPICAL SINGLE CIRCUIT 2X2 DUCT BANK WITH HDPE DETAIL
DETAIL 3 48001P001
SCALE N.T.S.

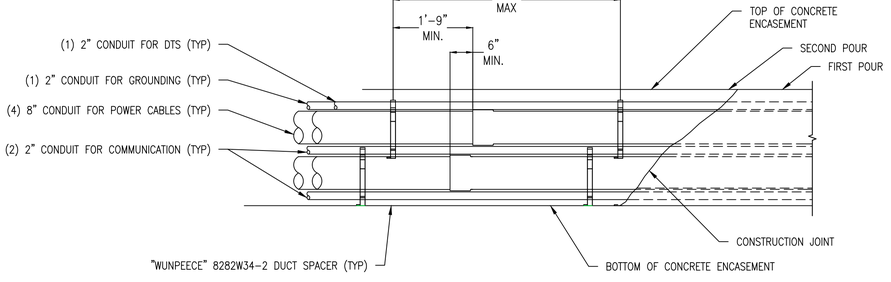


NOTE:
SEE PLAN AND PROFILES FOR CIRCUIT PHASING.

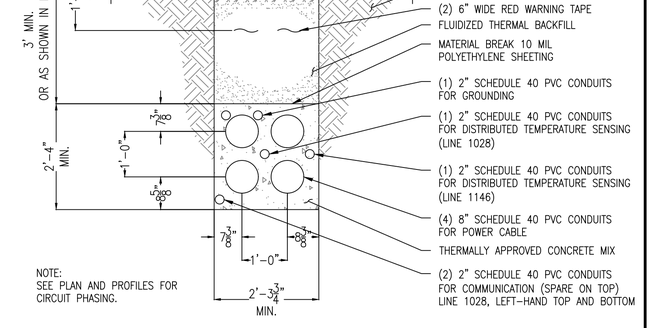
TYPICAL SINGLE CIRCUIT 2X2 DUCT BANK WITHOUT DTS DETAIL
DETAIL 4 48001P001
SCALE N.T.S.



TYPICAL 3X3 DUCT ELEVATION DETAIL
SCALE: N.T.S.

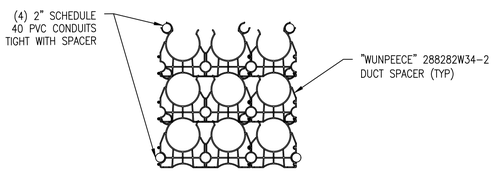


TYPICAL 2X2 DUCT ELEVATION DETAIL
SCALE: N.T.S.

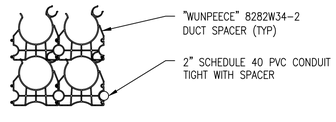


NOTE:
SEE PLAN AND PROFILES FOR CIRCUIT PHASING.

TYPICAL SINGLE CIRCUIT LINE 1028 2X2 DUCT BANK WITH BOTH DTS DETAIL
DETAIL 5 48001P001
SCALE N.T.S.



TYPICAL 3X3 DUCT SPACER ARRANGEMENT
SCALE: N.T.S.



TYPICAL 2X2 DUCT SPACER ARRANGEMENT
SCALE: N.T.S.

NOTES:

1. STAGGER BELL ENDS.
2. ANCHOR SPACERS WITH #14 STEEL TIE WIRE AND #4 REINFORCING BARS.
3. CEMENT ALL JOINTS IN ACCORDANCE WITH CONDUIT MANUFACTURER'S SPECIFICATIONS.
4. AVOID STANDING ON CONDUIT.
5. BELL ENDS SHALL BE ORIENTED SUCH THAT THE CABLE PULL DIRECTION WILL ENTER BELL END OF ALL CONDUITS FIRST.
6. ALL DUCT SPACERS ARE UNDERGROUND DEVICES "WUNPEECE" SPACERS, OR APPROVED EQUIVALENT.
7. THESE DETAILS ARE FOR DEMONSTRATION PURPOSES ONLY. THE CONTRACTOR SHALL COMPLETE STREET RESTORATION IN COMPLIANCE WITH THE APPROPRIATE SPECIFICATION AS REFERENCED IN THE STREET OPENING PERMIT OR CTDOT STANDARD DRAWINGS AND SPECIFICATIONS.
8. THE 1' CUT BACK OF PAVEMENT SHALL BE MADE AT TIME OF REPAIRING AND NOT WHEN TRENCH IS EXCAVATED.
9. BELL ENDS SHALL BE INSTALLED ALL IN THE SAME DIRECTION BETWEEN MANHOLES AND RISER STRUCTURES.

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A	6/29/21	ISSUED FOR REVIEW – 70%	ES	MM	DM

EVERSOURCE ENERGY

TITLE
DARIEN-FITCH AND SONO-SHERWOOD
2–115–kV UNDERGROUND TRANSMISSION
DUCTBANK DETAILS
NORWALK, CONNECTICUT

BY	ERS	CHKD	MM	APP	DM	APP	
DATE	06/29/2021	DATE	06/29/2021	DATE	06/29/2021	DATE	
H-SCALE	N.T.S.	SIZE	D	FIELD BOOK & PAGES			
V-SCALE	N.T.S.	V.S.		R.E. DWG			
R.E. PROJ. NUMBER	168624	NUSCO	01191-48001P001				

NU VER: 02/2012

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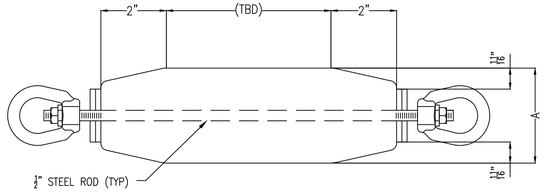
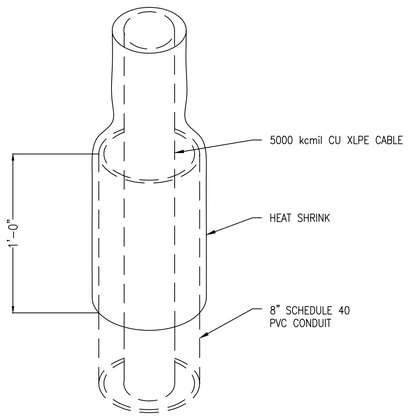


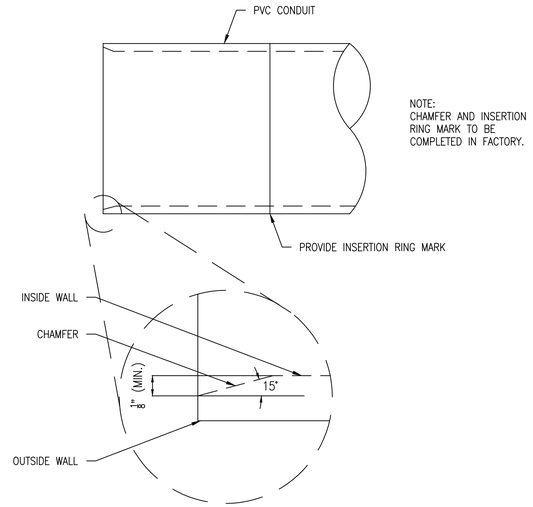
DIMENSION "A" TO BE ½" LESS THAN THE INSIDE DIAMETER OF SPECIFIED SIZE CONDUIT.

NOTE:
CABLE SUPPLIER SHALL DETERMINE FINAL DIMENSIONS OF MANDREL.

TYPICAL MANDREL DETAIL
DETAIL 1
SCALE N.T.S. 48001P002

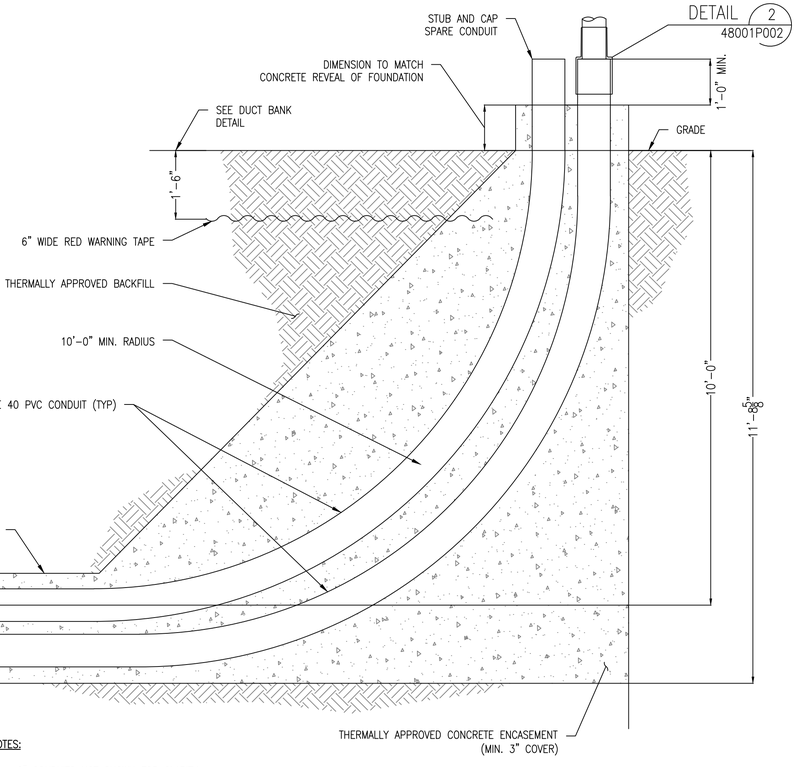


TYPICAL RISER STRUCTURE HEAT SHRINK DETAIL
DETAIL 2
SCALE N.T.S. 48001P002



NOTE:
CHAMFER AND INSERTION RING MARK TO BE COMPLETED IN FACTORY.

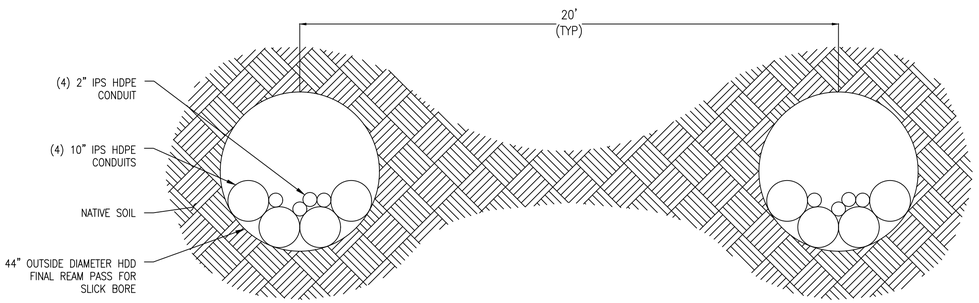
TYPICAL PVC DUCT CHAMFER DETAIL
DETAIL 3
SCALE N.T.S. 48001P002



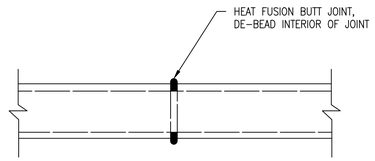
NOTES:

1. 2" CONDUITS NOT SHOWN FOR CLARITY.
2. CONTRACTOR TO VERIFY PHASING OF CONDUIT PRIOR TO BACKFILLING.

PVC DUCT AT RISER SWEEP DETAIL
DETAIL 4
SCALE N.T.S. 48001P002



HDD SLICK BORE DETAIL
DETAIL 5
SCALE N.T.S. 48001P002



HDPE HEAT FUSION BUTT JOINT
DETAIL 6
SCALE N.T.S. 48001P002

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EVERSOURCE ENERGY

TITLE
DARIEN-FITCH AND SONO-SHERWOOD
2–115–kV UNDERGROUND TRANSMISSION
MISCELLANEOUS DETAILS
NORWALK, CONNECTICUT

BY	CHKD	APP	APP
ERS	MM	DM	
DATE 06/29/2021	DATE 06/29/2021	DATE 06/29/2021	DATE
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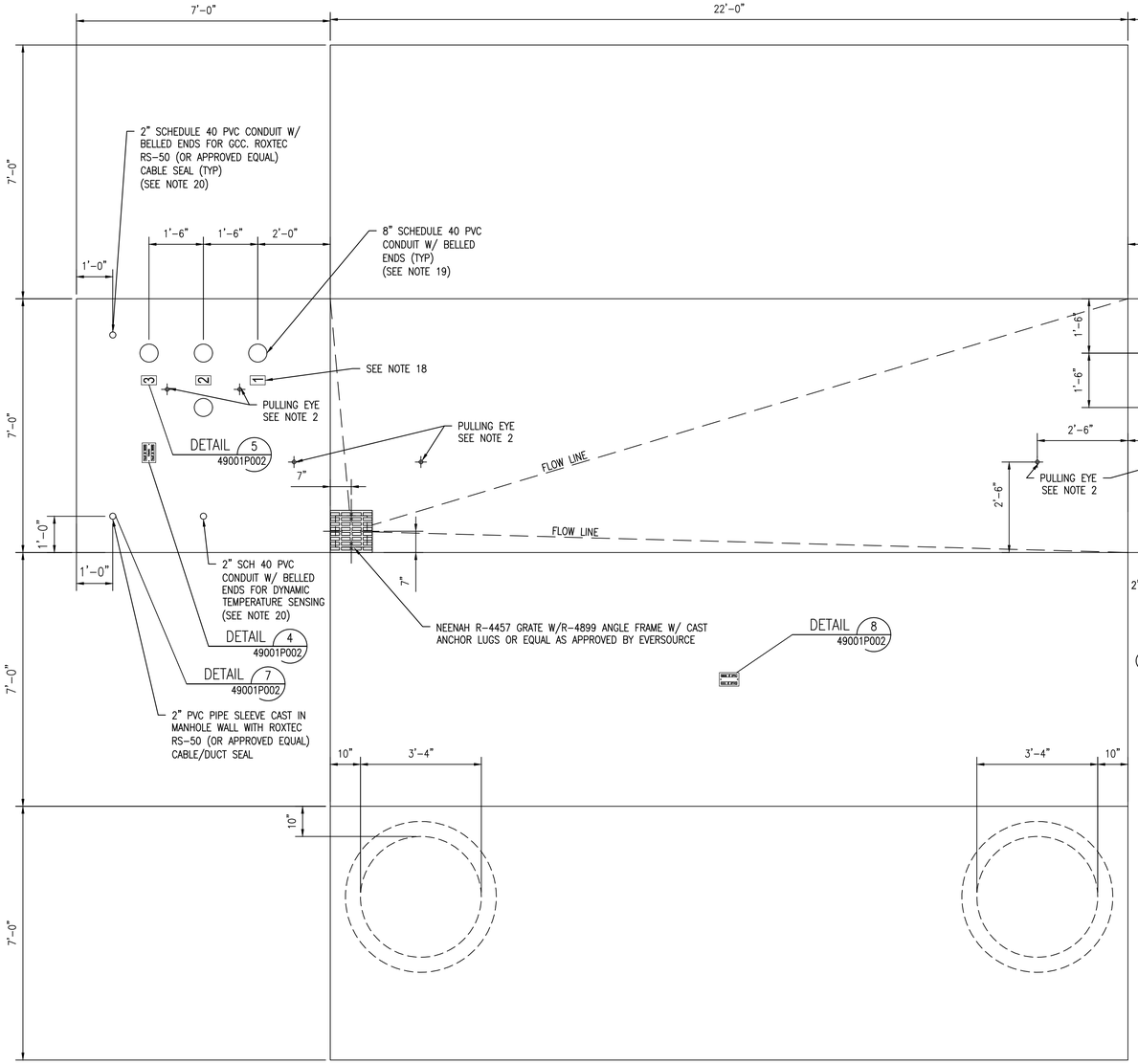
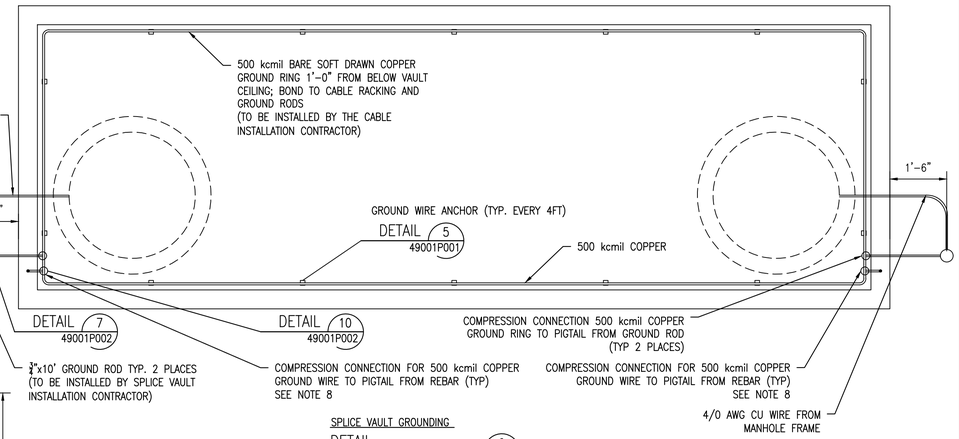
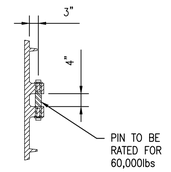
R.E. PROJ. NUMBER 168624		NUSCO 01191-48001P002	

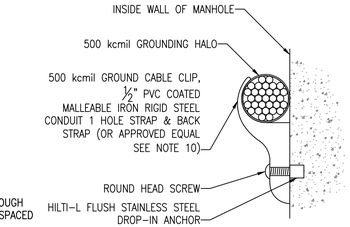


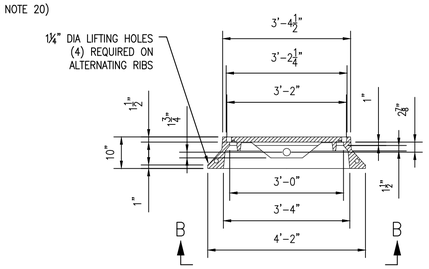
SPLICE VAULT DEVELOPMENT PLAN
DETAIL 1 49001P001
SCALE N.T.S.



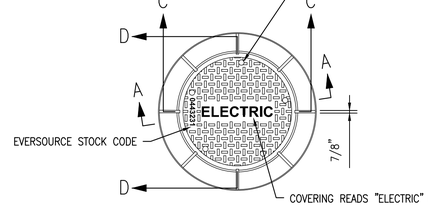
SPLICE VAULT GROUNDING
DETAIL 2 49001P001
SCALE N.T.S.



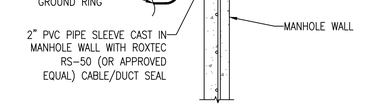


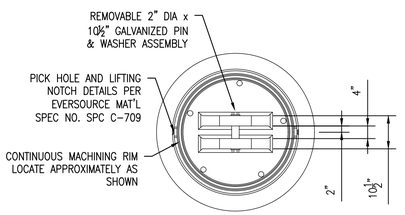


SECTION A-A

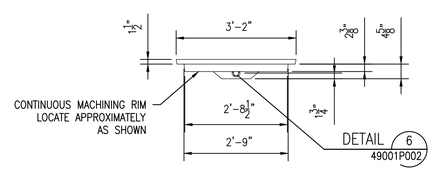


GROUND WIRE ANCHOR
DETAIL 5 49001P001
SCALE NTS





SECTION B-B
AASHTO HS 25 LOAD RATED



SECTION C-C
AASHTO HS 25 LOAD RATED

DUCTBANK GROUND WIRE ATTACHMENT
DETAIL 6 49001P001
NTS

NOTE:
4/0 AWG COPPER WIRE FROM 1-HOLE GROUNDING LUG ON FRAME TO GROUND ROD SEE DETAIL 7 ON 49001P002

TETHERED SPLICE VAULT LID
DETAIL 4 49001P001
SCALE N.T.S.

SPLICE VAULT FRAME
DETAIL 3 49001P001
SCALE N.T.S.

NOTES:

1. ALL DIMENSIONS ARE INSIDE DIMENSIONS.
2. PULLING HARDWARE SHALL BE GOOD FOR 50,000lbs OF TENSION, MINIMUM WITHOUT OVERLOAD SAFETY FACTORS.
3. SUMP SHALL BE CAPABLE OF HANDLING SUMP PUMP, MINIMUM 4" DEEP.
4. CONDUITS MUST ALWAYS BE INSTALLED IN THE SAME DIRECTION (BELL END FLUSH WITH INTERIOR WALL OF VAULT).
5. CABLE & ACCESSORIES CONTRACTOR TO FIELD VERIFY ACTUAL SPLICE VAULT DEPTHS. CONTRACTOR IS RESPONSIBLE FOR ALL SAFETY & ENTRY/EXIT REQUIREMENTS.
6. ALL CHIMNEY RINGS SHALL BE MORTARED OR OTHERWISE "KEYED" TO PREVENT HORIZONTAL DISPLACEMENT AND SHALL BE SECURELY MORTARED TO SPLICE VAULT ROOF.
7. MANHOLE RING SHALL BE SECURELY FASTENED TO THE SPLICE VAULT ROOF OR CHIMNEY USING INSERTS AND BOLTS OR OTHER MEANS WITH PRIOR APPROVAL.
8. ALL SECTIONS OF THE MANHOLE'S REINFORCING STEEL SHALL BE BONDED TO 500 kcmil SOFT DRAWN BARE COPPER BONDING JUMPERS.
9. MULTISECTION SPLICE VAULTS SHALL INCORPORATE EITHER SHIPLAP OR TONGUE AND GROOVE JOINTS UTILIZING APPROPRIATE SILICONE, POLYMERIC OR ELASTOMERIC SEALANTS.
10. ALL CABLE RACKING COMPONENTS AND HARDWARE ARE TO BE GROUNDED AND MADE FROM 304 STAINLESS STEEL.
11. ALL EXTERNAL SURFACES OF VAULT SHALL BE SEALED USING SONNEDORN HYDROCIDE 700 OR OWNER APPROVED EQUIVALENT.
12. NO STEEL REINFORCING BAR MAY ENCAPSULATE ANY INDIVIDUAL CONDUIT.
13. INSTALL CIRCUIT IDENTIFICATION LABELS ON VAULT WALL AND INSTALL DANGER WARNING SIGN IN CHIMNEY.
14. CONTRACTOR SHALL PROVIDE RACKING FOR 50' OF DYNAMIC TEMPERATURE SENSING CABLE TO BE COILED ON THE WALL OPPOSITE THE CABLE SPLICES.
15. MANHOLE COVERS SHALL BE WATERTIGHT.
16. ALL GROUND CONNECTIONS SHALL BE COMPRESSION CONNECTIONS PER SUB 14 AND EVERSOURCE GROUNDING STANDARD DRAWING 30000-33023 PG15.
17. SEE EVERSOURCE TECHNICAL SPECIFICATION UTRM 292 AND PROJECT SPECIFICATION FOR MATERIAL AND FABRICATION REQUIREMENTS.
18. LINE 1146 PHASING SHOWN. FOR LINE 1028 USE 2-1-3 TOP TO BOTTOM.
19. EAST WALL OF VAULTS #4201 AND #5301 AND WEST WALL OF VAULTS #4202 AND #5302 SHALL BE (4) CENTURY-LINE HDPE SLEEVE CS-12-12 OR APPROVED EQUAL TO ACCOMMODATE 8" SDR 11 IPS HDPE CONDUITS. LINK SEAL, OR APPROVED EQUAL, SHALL BE USED TO SEAL CONDUITS.
20. EAST WALL OF VAULTS #4201 AND #5301 AND WEST WALL OF VAULTS #4202 AND #5302 WILL BE 2" SDR 11 IPS HDPE CONDUITS.

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EVERSOURCE ENERGY

TITLE
DARIEN-FITCH AND SONO SHERWOOD
2-115-kV UNDERGROUND TRANSMISSION
SPLICE VAULT DETAILS
NORWALK, CONNECTICUT

BY	CHKD	APP	APP
ERS	MM	DM	
DATE 06/29/2021	DATE 06/29/2021	DATE 06/29/2021	DATE
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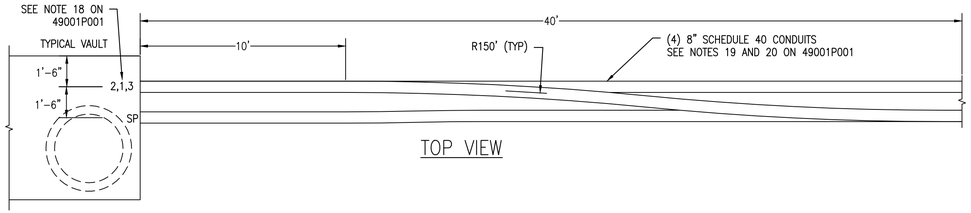
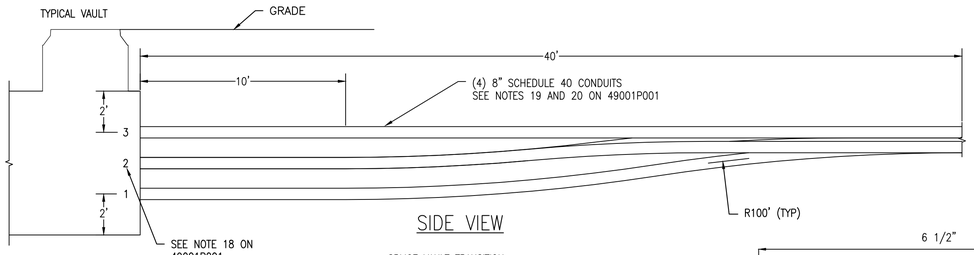
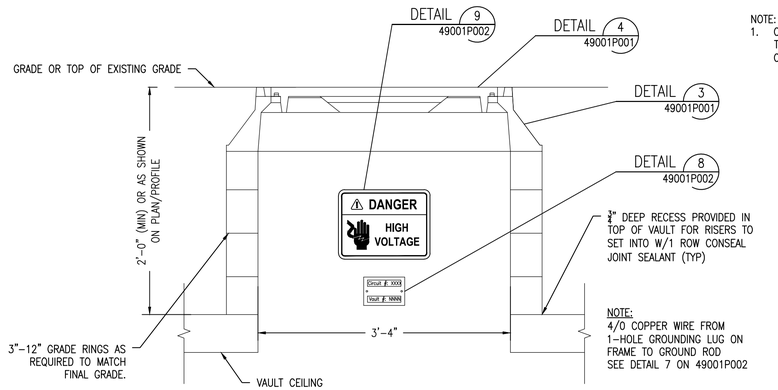


TOP VIEW



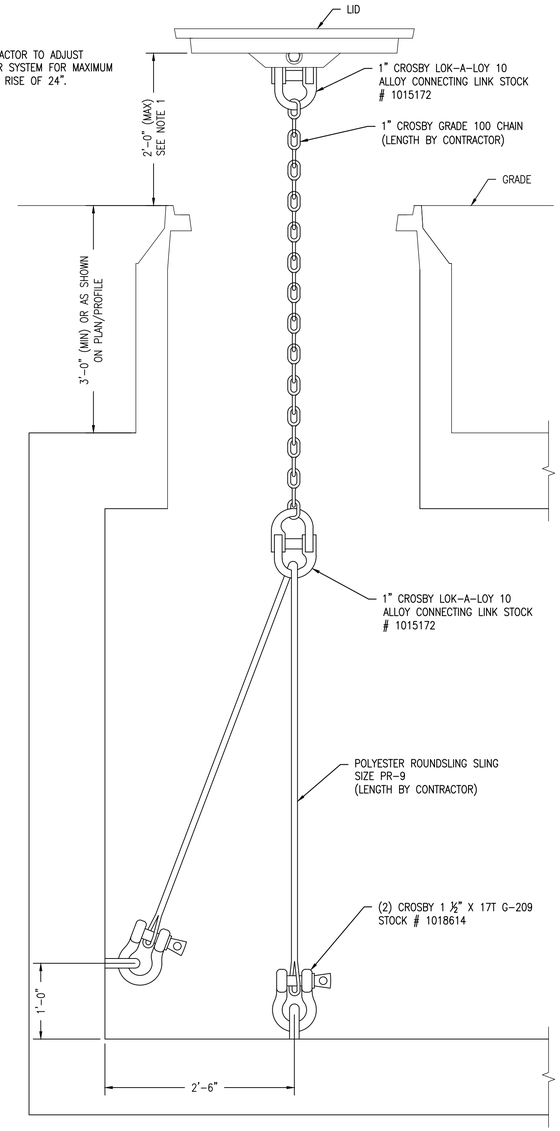
SIDE VIEW

SPLICE VAULT TRANSITION DETAIL — SCALE N.T.S. — 1 / 49001P002

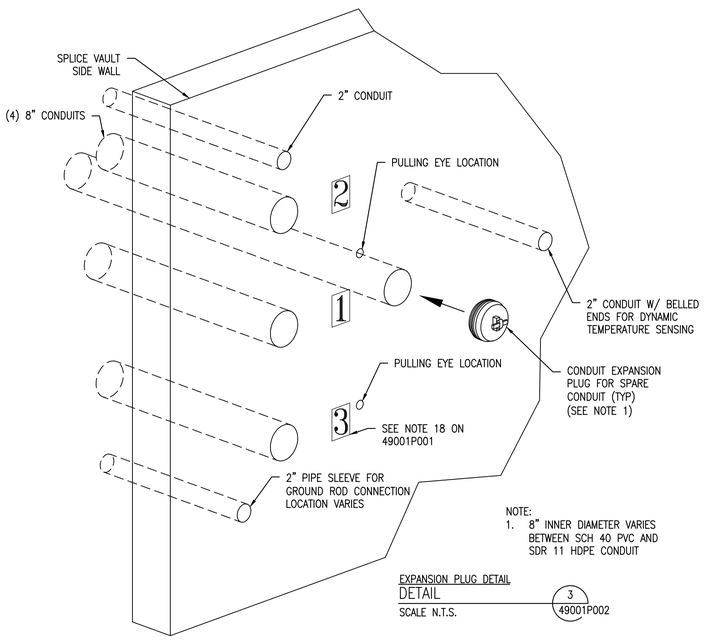


SPLICE VAULT RISER DETAIL — SCALE N.T.S. — 2 / 49001P002

NOTE:
1. CONTRACTOR TO ADJUST TETHER SYSTEM FOR MAXIMUM COVER RISE OF 24".

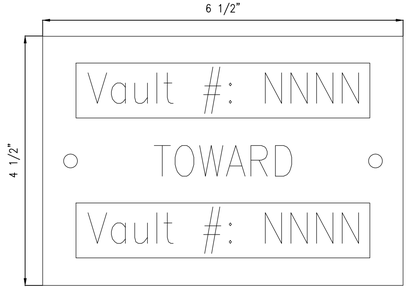


MANHOLE TETHER DETAIL — SCALE N.T.S. — 6 / 49001P002

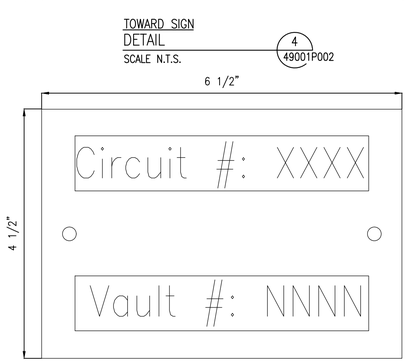


NOTE:
1. 8" INNER DIAMETER VARIES BETWEEN SCH 40 PVC AND SDR 11 HDPE CONDUIT

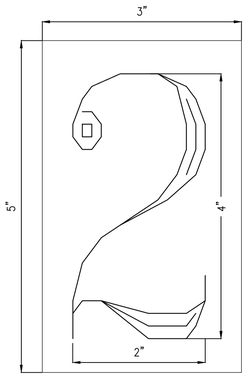
EXPANSION PLUG DETAIL — SCALE N.T.S. — 3 / 49001P002



TOWARD SIGN DETAIL — SCALE N.T.S. — 4 / 49001P002

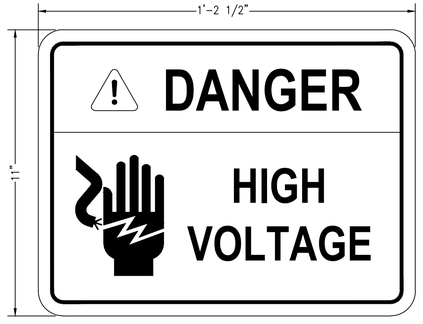


CIRCUIT IDENTIFICATION TAG DETAIL — SCALE N.T.S. — 8 / 49001P002

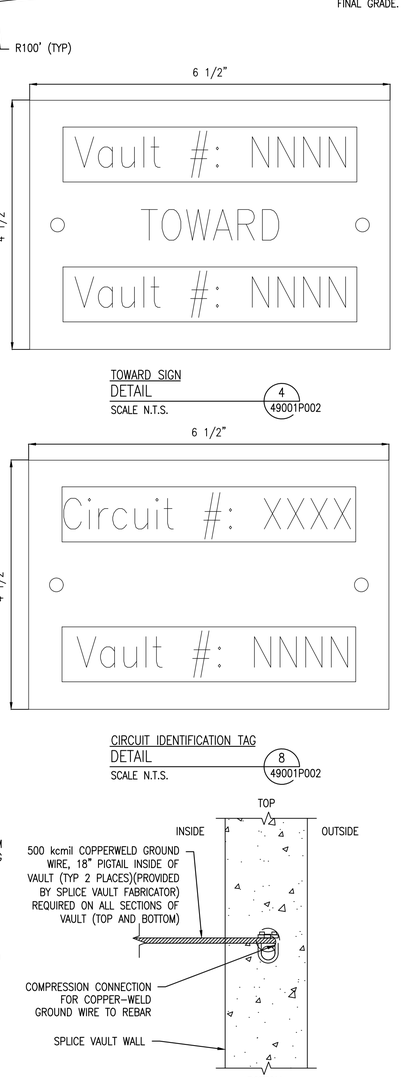


PHASE IDENTIFICATION TAG DETAIL — SCALE N.T.S. — 5 / 49001P002

NOTES
1. CHARACTER SHALL BE 4" HIGH BOLD TYPE.
2. CHARACTER SHALL BE CENTERED ON SIGN.
3. BACKGROUND: WHITE
   LETTERING: BLACK
   CHARACTERS: A, B & C AS SHOWN



DANGER WARNING SIGN DETAIL — SCALE N.T.S. — 9 / 49001P002



GROUND WIRE DETAIL — SCALE N.T.S. — 7 / 49001P002

GROUND WIRE DETAIL — SCALE N.T.S. — 10 / 49001P002

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EVERSOURCE ENERGY

TITLE
DARIEN-FITCH AND SONO SHERWOOD
2-115-kV UNDERGROUND TRANSMISSION
SPLICE VAULT DETAILS
NORWALK, CONNECTICUT

BY	CHKD	APP	APP
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DATE 06/29/2021	DATE 06/29/2021	DATE 06/29/2021	DATE
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R.E. PROJ. NUMBER 168624			NUSCO 01191-49001P002

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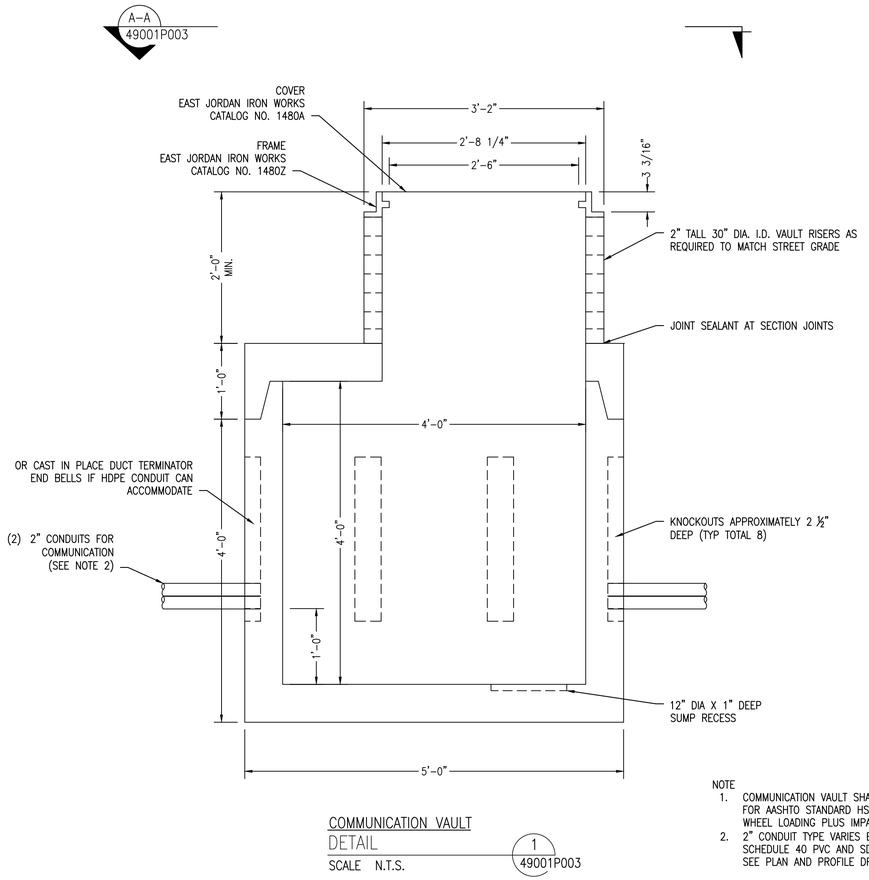
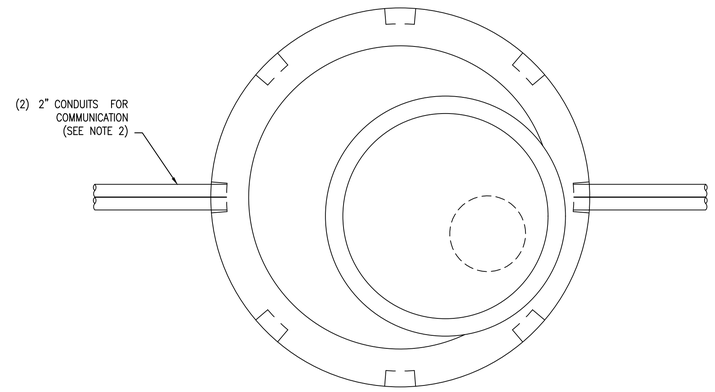


COMMUNICATION VAULT
DETAIL (1 / 49001P003)
SCALE N.T.S.

NOTE
1. COMMUNICATION VAULT SHALL BE RATED FOR AASHTO STANDARD HS–25 DIRECT WHEEL LOADING PLUS IMPACT LOADING
2. 2" CONDUIT TYPE VARIES BETWEEN SCHEDULE 40 PVC AND SDR 11 HDPE, SEE PLAN AND PROFILE DRAWINGS.



SECTION (A–A / 49001P003)
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NO.	DATE	AS BUILT REVISIONS	BY	CHK	APP	APP

REVISIONS DURING CONSTRUCTION					
A	6/29/21	ISSUED FOR REVIEW – 70%	ES	MM	DM

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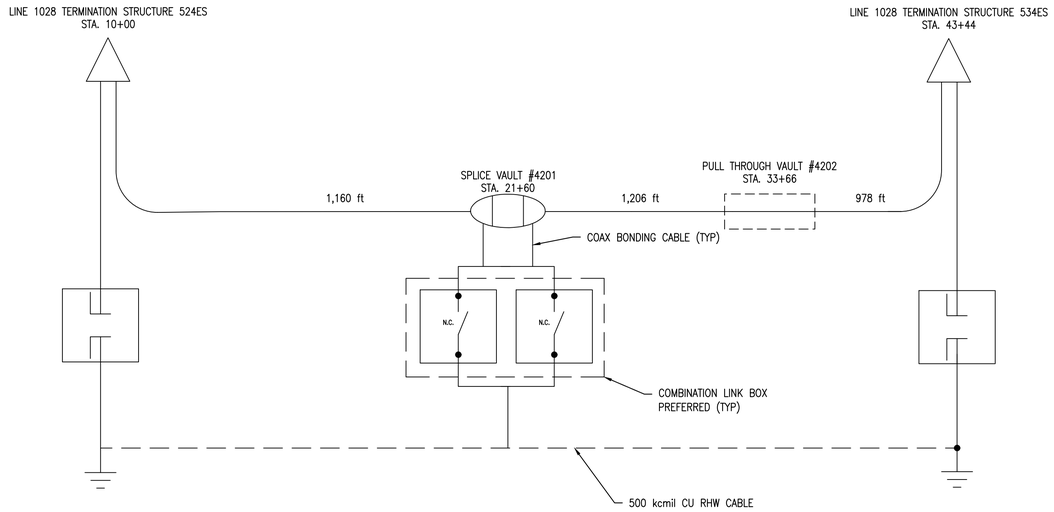
EVERSOURCE ENERGY

TITLE
DARIEN-FITCH AND SONO SHERWOOD
2–115–kV UNDERGROUND TRANSMISSION
COMMUNICATION VAULT DETAILS
NORWALK, CONNECTICUT

BY ERS	CHKD MM	APP DM	APP
DATE 06/29/2021	DATE 06/29/2021	DATE 06/29/2021	DATE
H–SCALE N.T.S. / V–SCALE N.T.S.	SIZE D	V.S.	FIELD BOOK & PAGES
			R.E. DWG
R.E. PROJ. NUMBER	168624		NUSCO 01191-49001P003



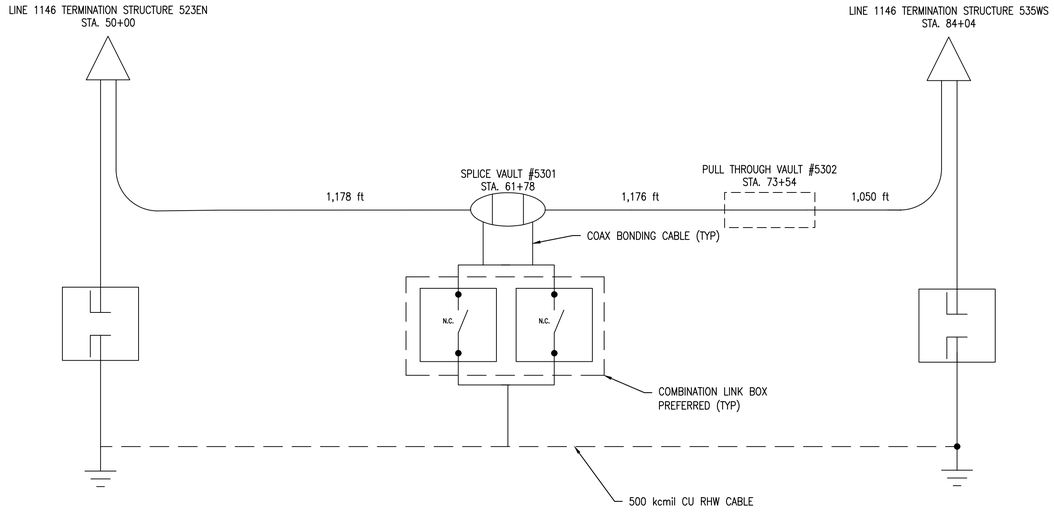
LINE 1028 DARIEN–FITCH – SHEATH BOUNDING SCHEMATIC

SCALE – N.T.S.

LEGEND

- TERMINATOR
- SHEATH BREAK SPLICE
- PULL THROUGH VAULT
- NON–SHEATH BREAK SPLICE
- PARALLEL GROUND CONDUCTOR
- GROUND ROD
- SHEATH VOLTAGE LIMITER (SVL) LINK BOX
- GROUNDING LINK BOX (N.C.)
- CROSS BONDING LINK BOX, WITH SVL'S

NOTE:
ALL LINK BOXES ARE 3–PHASE



LINE 1146 SONO–SHERWOOD – SHEATH BOUNDING SCHEMATIC

SCALE – N.T.S.

"FOR CURRENT EVERSOURCE PROPERTY RIGHTS REFER TO PROPERTY RECORD MAPPING – LOCATED IN TRANSMISSION SURVEY ENGINEERING/ROW DEPARTMENT"

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NO.	DATE	AS BUILT REVISIONS	BY	CHK	APP	APP

REVISIONS DURING CONSTRUCTION				
A	6/29/21	ISSUED FOR REVIEW – 70%	ES	MM	DM

EVERSOURCE ENERGY

TITLE
DARIEN-FITCH AND SONO SHERWOOD
2–115–kV UNDERGROUND TRANSMISSION
SHEATH BONDING SCHEMATIC
NORWALK, CONNECTICUT

BY	ERS	CHKD	MM	APP	DM	APP	
DATE	06/29/2021	DATE	06/29/2021	DATE	06/29/2021	DATE	
H–SCALE	N.T.S.	SIZE	D	FIELD BOOK & PAGES			
V–SCALE	N.T.S.	V.S.		R.E. DWG			
R.E. PROJ. NUMBER		168624		NUSCO	01191-73001P001		

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ATTACHMENT 5

EVERSOURCE'S BEST MANAGEMENT PRACTICES

The link to the Best Management Practices Manual for Massachusetts and Connecticut, dated April 2022 can be found at the following link:

https://www.eversource.com/content/docs/default-source/builders-contractors/bmp-manual.pdf?sfvrsn=fb6bd12a_1

ATTACHMENT 6

BENTHIC STUDY

NORWALK RIVER BENTHIC MACROINVERTEBRATE AND SUBMERGED AQUATIC VEGETATION SURVEYS

Prepared for:

Eversource Energy
Berlin, Connecticut

Prepared by:

Kleinschmidt
Essex, Connecticut
www.KleinschmidtGroup.com

Project No. 4238031.01
August 2018

NORWALK RIVER BENTHIC MACROINVERTEBRATE AND SUBMERGED AQUATIC VEGETATION SURVEYS

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NORWALK RIVER BENTHIC MACROINVERTEBRATE AND SUBMERGED AQUATIC VEGETATION SURVEYS

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NORWALK RIVER BENTHIC MACROINVERTEBRATE AND SUBMERGED AQUATIC VEGETATION SURVEYS

1.0 INTRODUCTION

The Connecticut Light and Power Company doing business as Eversource Energy ("Eversource") plans to reroute two,115-kilovolt overhead transmission circuits, specifically Nos. 1028 and 1146, in conjunction with the Connecticut Department of Transportation's proposal to replace the Walk Bridge that spans the Norwalk River in Norwalk, CT. A portion of the new route includes transitioning the Norwalk River crossing from its existing overhead configuration along Walk Bridge (adjacent to and parallel with Amtrak's New Haven Main Line railway) to an underground configuration beneath the bed of the river. The horizontal directional drill (HDD) method has been identified as the preferred means for the substratum transmission line installation. Figure 1 indicates the location of the proposed HDD paths across the Norwalk River.

The benthic macroinvertebrate and submerged aquatic vegetation (SAV) surveys were designed to collect ecological information on the local benthic and vegetative communities within the location of the proposed transmission line crossing beneath the Norwalk River. The surveys were performed in June, which coincides with the optimal viewing period for SAV identification and benthic infauna diversity.

1.1 STUDY SITE

The study site is limited to the two proposed HDD pathways and the immediate buffer detailed further in Section 2 below. The proposed HDD pathways are situated approximately 160 feet south of the Washington Street Bridge on the eastern shore of the Norwalk River and approximately 385 feet south of this same bridge on the western shore of the River. The upland eastern shore is adjacent to a paved parking lot with a boat launch servicing Veterans Memorial Park. The western shore is occupied by commercial development and paved parking.

The National Oceanic and Atmospheric Administration (Chart 12368) survey (April 2013) indicates that the tidal fluctuation (North American Datum 1983) in South Norwalk ranges by 7.1 feet (elevation of 7.4 feet at mean high water and 0.3 feet at mean low water).

A federal navigation channel is maintained to support marine traffic. Just downstream of the Route 136 bridge, the channel is maintained at 12 feet deep and 150 feet wide. Maintenance dredging was most recently performed by the U.S. Army Corps of Engineers in January 2014 (U.S. Army Corps of Engineers 2014). Based on soil borings, the channel substrate consists of a 15-foot deep organic silt layer, which at the river margins, is overlain by fill and sand (Clarence Welti Associates, Inc. 2016).

Harbor Watch, a water quality research program based in Fairfield County, has monitored bacteria content (Escherichia coli) and dissolved oxygen levels in various watersheds in south western Connecticut since 1986. In its most recent annual report, results for the downstream most monitoring station in the Norwalk River (located near Cross Street) indicated that bacteria levels exceeded the CTDEEP maximum criterion, which suggests a sewage pollution issue (Crosby et al. 2017). Despite the high bacteria levels, the dissolved oxygen readings consistently exceeded the CTDEEP's minimum criterion of 5 milligrams per liter (mg/L) and ranged from 7 to 11 mg/L throughout the 2017 monitoring season (Crosby et al. 2017). Water temperature in Norwalk River generally ranges from 14 to 21 °C (57 to 70 °F) in June, with a monthly mean of 18 °C.

In accordance with Connecticut's Water Quality Standards, the Connecticut Department of Energy and Environmental Protection (CTDEEP) has designated the lower portion of the Norwalk River as Class SB coastal and marine surface waters. The designated uses for Class SB waters include marine fish, shellfish, and wildlife habitat; shellfish harvesting for transfer to approved areas for purification prior to human consumption; and recreation, industrial, and other legitimate uses such as navigation.

Legend

- Proposed Transmission Structure
- Proposed Overhead Transmission Line Route
- Proposed Underground Transmission Line Route
- Horizontal Directional Drilling (HDD) Line Route
- Proposed HDD Equipment Pad/Vault
- Proposed Temporary Construction Easement
- Coastal Jurisdiction Line (CJL)
- Federal Channel Line
- Railroad
- Delineated Tidal Wetland Boundary
- Tidal Wetland Vegetation
- Park
- Parcel Boundary (CTDEEP GIS; 2010)

Base Map: CTECO 2016 Aerial Imagery

1 inch = 250 feet

0 125 250 Feet

PRELIMINARY NOT FOR CONSTRUCTION

UNDERGROUND ROUTE MAP
EVERSOURCE ENERGY

CP-241 WALK BRIDGE REPLACEMENT PROJECT
CIRCUITS 1028 AND 1146 REROUTE
NORWALK, CONNECTICUT

EVERSOURCE ENERGY

ALL-POINTS TECHNOLOGY CORPORATION

Date: November, 2017

2.0 METHODS

The field survey occurred on June 19, 2018, with the SAV portion of the survey performed first, followed by collection of benthic grab samples. Methods employed for the field effort, laboratory processing of benthic grab samples, and data analyses are described below.

2.1 BENTHIC MACROINVERTEBRATE SURVEY

2.1.1 SAMPLE COLLECTION AND PROCESSING

Sampling of benthic infauna communities consisted of deploying a Ponar-type grab sampler (effective sampling area of 0.25 feet^2) to collect sediments along three transects: one transect directly above the centerline of the two HDD paths; one transect located approximately 100 feet upstream from the proposed HDD paths; and the final transect located approximately 100 feet downstream of the HDD paths. Five samples were collected along each of the three transects, for a total of 15 benthic grab samples. Global Positioning System (GPS) coordinates were collected at each sampling location with a handheld Trimble GPS unit capable of submeter accuracy.

Following retrieval, each sample was photographed to document the appearance and general sediment type. Next, the contents of each sediment sample were sieved through 0.5 mm mesh, with the screen contents fixed in 10% formaldehyde solution and allowed to settle for 48 hours. The samples were then decanted and rinsed of the formalin prior to staining with Rose Bengal and preservation with 70% ethanol. In the laboratory, samples were examined through a microscope, and individual organisms were removed, enumerated, and identified to the lowest practical taxon.

2.1.2 DATA ANALYSES

Species diversity is an expression of benthic community structure, which varies with both taxa richness and evenness. For example, a community with many equally distributed species will exhibit high species diversity, whereas a community dominated by one or a few species will have low species diversity. For the purposes of discussing overall patterns in invertebrate community diversity, the Shannon diversity index (H_s) (Shannon 1948) and an assessment of community equitability using Pielou's (j) index were used (Pielou 1966). The Shannon diversity index is appropriate when dealing with a random sample. The Shannon information function is

represented by a single number that describes the diversity of a given community and is calculated as:

$$H_s = -\sum_{i=1}^{S} p_i \ln p_i$$

where: p_i represents the fraction of the total sample represented by species i; $\ln p_i$ represents the natural log of the species fraction p_i; and S represents the total number of species (species richness). The Shannon diversity index is appropriate when dealing with a random sample. Equitability is represented by Pielou's community evenness index (j), whereby j represents the proportion of the maximum possible value H would assume (H_{max}) if individuals were completely evenly distributed within the community and is calculated as:

$$j = \frac{H_S}{H_{max}}$$

where H_s represents the Shannon information function; and H_{max} represents the theoretical maximum value for H_s if all species in the sample were equally abundant (H_{max}= lnS) (Pielou 1966).

2.2 SAV Survey

2.2.1 SAV Tier 1 Survey Method

Kleinschmidt conducted a survey for SAV in the open water portion of the proposed project, limited in extent to the approximately 525-linear feet footprint of the proposed HDD Line Route as depicted in Figure 1. The survey area included a 100-foot buffer on either side of the two HDD paths depicted, encompassing a total survey area of 118,125-square feet (2.7 acres).

Two publicly-available Geographic Information System (GIS) mapping resources were assessed pre-survey as part of a preliminary desktop assessment. Four-band (also identified as false color) aerial imagery prepared by Connecticut Department of Energy and Environmental Protection (CTDEEP) and the University of Connecticut's Center for Land Use Education and Research was assessed for the project survey area. In these images, vegetation (at or near surface) is easily discernable from the built environment and water based on color schemes, in which a false color image consisting of the infrared (band 4), red (band 1), and blue (band 2) bands is used. If present, SAV at or near the surface can be easily identified from this imagery and will be visible

as bright red. Kleinschmidt used this pre-screening tool to identify potential locations of SAV beds within the proposed project area prior to the field survey.

Data provided by CTDEEP depicting the most currently-mapped eel grass beds (2012 survey created by the Conservation Management Institute, Virginia Tech University for the U.S. Fish and Wildlife Service National Wetlands Inventory, Region 5) was also used in the pre-screening preparations for this SAV survey. These data include all coastal embayments and nearshore waters (i.e., to a depth of -15 feet at mean low water) bordering Long Island Sound from Clinton Harbor to the border of Rhode Island.

The SAV survey was conducted in accordance with the Joint Federal Agency Submerged Aquatic Vegetation Survey Guidance for the New England Region (updated August 11, 2016) following the Tier 1 survey protocol, which is applicable to transmission cables and pipelines. The Tier 1 survey protocol seeks to capture basic information such as SAV presence/absence and if present, the following data are recorded: SAV bed spatial distribution, approximation of coverage area, qualitative density, and maximum and minimum depth distribution. Method 3 (of the Tier 1 protocol) was implemented because snorkeling and diving was not deemed safe or practical within this active channelized waterway. Method 3 includes following a detailed grid pattern over the project area, using an underwater drop camera or a viewing box. GPS coordinates and water depth of each identified SAV bed are recorded. SAV cover between GPS points is inferred with this method.

A form was created to capture relevant data (grid cell, water depth, sediment type, SAV species, relative cover, and other biological observations). In addition to the use of a GPS and underwater drop camera, Kleinschmidt scientists used a motorized boat to conduct this survey and a double-headed rake for grab sampling to identify vegetative species and distribution, when present.

2.2.2 Data Analyses

Quantitative analysis of SAV was not deemed applicable due to the lack of such vegetation within the study area.

3.0 RESULTS

The field effort was conducted on June 19, 2018. The survey boat was launched from the town dock at Veteran's Memorial Park at approximately 9:30 a.m., with data collection extending until approximately 5:00 p.m. Figure 2 below depicts the tide chart for South Norwalk, CT. The SAV survey spanned the ebb and low tide period, while the benthic grab collections occurred during a flooding tide stage.

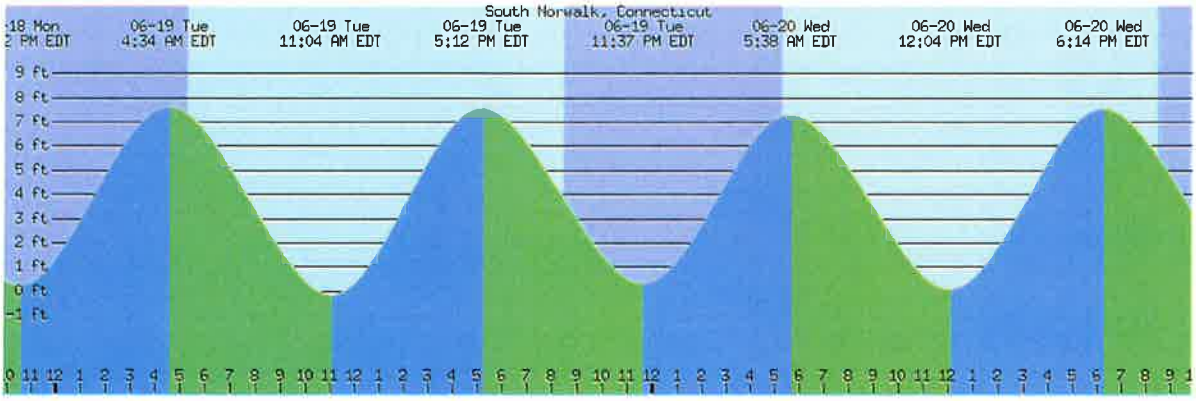

FIGURE 2. TIDE CHART FOR SOUTH NORWALK, CT ON JUNE 19-20, 2018

3.1 SEDIMENTARY ENVIRONMENT

Figure 3 depicts the locations of each of the benthic grab sampling stations and Appendix A contains representative photos of the 15 sediment samples collected for benthic macroinvertebrate processing. All samples, except for Station 11, appeared similar in nature and consisted of dark, fine organic silt. The contents of the sediment sample from Station 11 were much coarser, consisting of small pebbles and rocks, and virtually no organic material. Station 11 was situated just downstream from a heavily used docking area and is likely routinely subjected to "prop washing", such that finer sediments are washed away by propeller forces.

3.2 BENTHIC MACROINVERTEBRATES

3.2.1 OVERALL COMMUNITY COMPOSITION

Total numbers of individual taxa and sample richness are presented in Table 1. The number of organisms identified in a single benthic sample ranged from 3 to 851 individuals, and the number of taxa occurring in a sample ranged from 2 to 18. Station 1 exhibited the greatest number of

individuals (n=851) and taxa (n=18), while Stations 4 and 7 contained the least number of individuals and taxa, with the number of individuals ranging from 3 to 6, and the number of taxa ranging from 2 to 3. Overall diversity values ranged from 0.42 (Station 14) to 1.78 (Station 15), with an average of 1.15 for all samples (Table 2).

The 15 samples collected contained 2,063 individual organisms representing 25 taxa. Four taxa accounted for slightly over 85 percent of the total individuals collected: *Ampelisca abdita*, *Leitoscoloplos* spp. (*L. fragilis* and *L. robustus*), *Streblospio benedicti*, and Oligochaeta. *A. abdita* was numerically dominant and accounted for more than 36 percent of the total organisms collected. *A. abdita* was observed in 10 of the 15 samples, while *Leitoscoloplos* spp., the second numerically dominant taxa, was identified in all 15 samples. *S. benedicti* and Oligochaeta were the third and fourth most abundant species, respectively, and each accounted for approximately 16 percent of the total organisms collected. The remaining 21 taxa combined accounted for 15 percent of the catch. Nematoda spp., *Eteone heteropoda*, *Capitella* spp., and *Ilyanassa obsoleta* each accounted for between 1 and 4 percent of the total organisms, while the remaining taxa each contributed less than 1 percent of the total individuals collected in the Norwalk River.

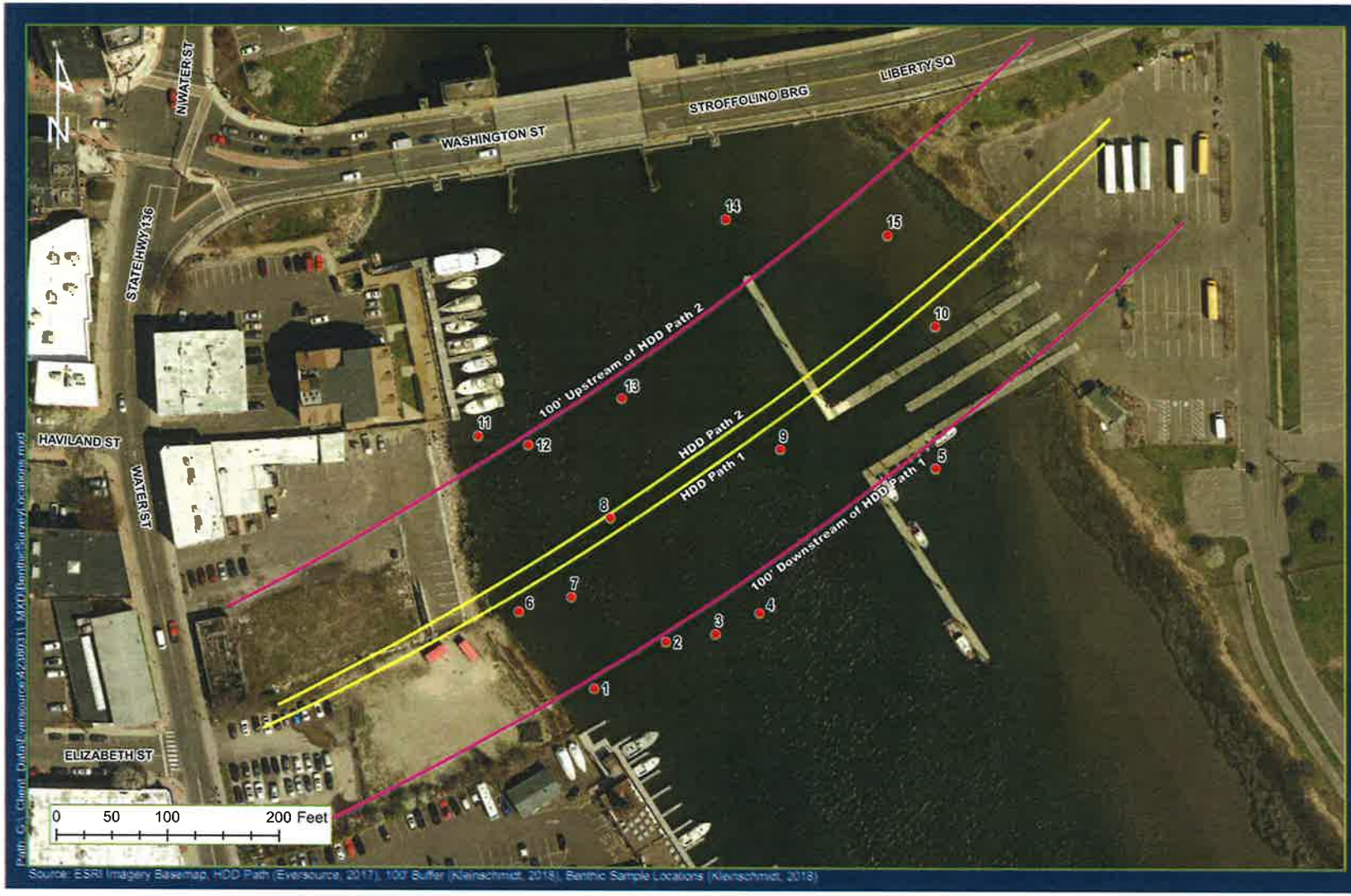

Figure 3
Benthic Survey Locations

Legend

- Benthic Sample Locations
- HDD Path
- 100' Buffer

EVERSOURCE ENERGY

EVERSOURCE ENERGY - CP - 241
WALK BRIDGE REPLACEMENT PROJECT

Drawn By:	Date Drawn:	Checked By:	Date Checked:
MRG	06-21-2018	KPN	06-22-2018

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Date Printed: 7/24/2018

PN: 4238031.01

TABLE 1. SUMMARY OF BENTHIC MACROINVERTEBRATE COMPOSITION OF SEDIMENT GRAB SAMPLES FROM NORWALK RIVER.

Taxa	Station ID															Taxa Total	% of Total Collected
ARTHROPOPDA (Phylum)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
Amphipoda (Order)																	
Ampelisca abdita	694	-	8	1	9	5	-	4	-	4	1	-	6	-	22	754	36.5
Elasmopis levis	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.0
Grandidierella spp.	10	-	-	-	-	-	-	-	-	-	1	-	-	1	2	14	0.7
Microdeutopus gryllotalpa	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	0.6
Cumacea (Order)																	
Leucon americanus	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	<1
Mysidacea (Order)																	
Neomysis americana	1	3	-	-	1	-	-	-	-	-	-	-	-	-	-	5	<1
MOLLUSKA (Phylum)																	
Gastropoda (Class)																	
Ilyanassa obsoleta	-	-	-	-	-	-	-	-	-	6	9	2	1	1	4	23	1.1
ANNELIDA (Phylum)																	
Oligochaeta (Class)																	
Oligochaeta spp	4	-	1	-	-	130	-	1	4	74	4	3	3	1	103	328	15.9
Polychaeta (Class)																	
Capitella spp.	-	41	-	1	2	-	-	-	-	1	-	-	-	-	-	45	2.2
Cossura longocirrata	4	-	-	-	-	1	-	-	-	-	-	-	-	-	-	5	<1
Eteone heteropoda	5	-	-	-	-	-	-	-	-	11	-	-	-	-	40	56	2.7
Eteone lactea	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	<1
Goniadella gracilis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	<1
Heteromastus filiformis	2	-	-	-	-	4	-	-	3	14	-	-	-	-	1	24	1.2
Leitoscoloplos spp. (*L.fragilis, L. robustus*)	22	35	19	1	1	33	5	2	6	59	3	11	18	96	29	340	16.5
Lumbrineris impatiens	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	<1
Marenzelleria viridis	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	<1
Mediomastus spp.	4	-	-	-	-	-	-	-	-	-	-	-	-	-	3	7	<1
Nephtys incisa	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	<1
Nereis succinea	3	-	1	-	-	-	-	1	1	1	-	-	1	2	3	13	<1
Polydora cornuta	1	-	-	-	-	4	-	-	-	3	3	1	-	-	3	15	<1
Streblospio benedicti	43	-	2	-	-	46	1	-	-	128	3	1	1	1	107	333	16.1
Tharyx acutus	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	<1
OTHER (PHYLUM)																	
NEMERTEA: *Cerebratulus lacteus*	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	<1
NEMATODA: Nematoda spp.	38	-	-	-	-	6	-	4	-	8	-	-	-	-	20	76	3.7
Organism Count	851	79	31	3	14	229	6	12	14	310	24	18	30	104	338	2,063	100
Taxa Richness	18	3	5	3	5	8	2	5	4	12	7	5	6	8	13	25*	

* Total number of taxa observed overall rather than sum of richness at each site

TABLE 2. SHANNON DIVERSITY INDEX AND PIELOU'S EVENNESS VALUES FOR BENTHIC GRAB SAMPLES COLLECTED IN NORWALK RIVER.

Sample ID	Shannon Diversity Index	Evenness
1	0.87	0.30
2	0.83	0.75
3	1.05	0.65
4	1.10	1.00
5	1.13	0.70
6	1.27	0.61
7	0.45	0.65
8	1.45	0.90
9	1.24	0.89
10	1.61	0.65
11	1.71	0.88
12	1.16	0.72
13	1.20	0.67
14	0.42	0.20
15	1.78	0.69
Average	1.15	0.68

3.2.2 COMMUNITY COMPOSITION BY TRANSECT

Three transects were established to determine if the benthic environment in the vicinity of the proposed HDD paths was unique as compared to areas upstream and downstream of the crossing.

Downstream Transect (Stations 1-5)

The community composition of the downstream transect is heavily skewed by the dominance of *Ampelisca abdita* at Station 1. This station is located outside the navigation channel, and therefore, is not exposed to the direct impacts of the maintenance dredging. While Station 5 is also beyond the margin of the navigation channel, its location inside of the town dock suggests that is it subjected to impacts from the marina activities. Overall, *A. abdita* accounted for nearly 73 percent of the individuals observed in the downstream samples, followed by *Leitoscoloplos* spp., which accounted for 8 percent. Compared to the other two transects, the downstream transect exhibited the greatest taxa richness (n=20) and the greatest number of individuals observed (n=978); however, due to the influence of Station 1, the downstream transect had the lowest average diversity index value of 0.99.

HDD Transect (Stations 6-10)

Stations 6-10 were dominated by Oligochaeta species (36.6 percent), *Streblospio benedicti* (30.6 percent), and *Leitoscolopos* spp. (18.4 percent). Overall, 571 individuals representing 12 taxa were observed in the samples. Stations 6 and 10, both outside the margins of the navigation channel, contained the greatest number of individuals and diversity of taxa. The diversity index ranged from 0.45 (Station 7) to 1.61 (Station 10), with an overall average score of 1.2.

Upstream Transect (Stations 11-15)

The upstream transect stations were dominated by *Leitoscolopos* spp. (30.5 percent), followed by Oligochaeta species (22.2 percent), and *Streblospio benedicti* (22.0 percent). Overall, 514 individuals representing 15 taxa were observed in the samples. The greatest number of individuals and taxa were observed at Station 15, which was located outside of the navigation channel in a shoal area on the east side of the river. Station 14 exhibited the second greatest number of organisms and taxa, although the dominance of *Leitoscolopos* spp. (92.3 percent) lowered the diversity index of this site to 0.42. The maximum diversity index of 1.78 was observed at Station 15, and the overall diversity index for the entire transect was 1.25.

3.3 SAV ENVIRONMENT

SAV, as defined by the University of Connecticut[1] "*...are rooted, vascular (having veins to transport fluids) plants that grow underwater or just up to the water's surface, often forming large stands or "beds." There are over a dozen SAV species occurring in the salt, brackish and fresh tidal waters of Connecticut. These plants lack structural support tissues, relying instead on the surrounding water for support. In addition, the stems and leaves have specialized thin-walled cells with large intercellular air spaces that provide buoyancy and support. Light penetration, water temperature and quality, substrate, and salinity are several of the major factors affecting SAV distribution and abundance.*"

The Tier 1 methods provided by the Joint Federal Agency apply to eelgrass (*Zostera marina*) but can also be used for surveying other SAV species such as widgeon grass (*Ruppia maritima*) and wild celery (*Vallisneria americana*). These species provide important habitat for fish and other aquatic life as well as forage for waterfowl.

[1] Website source: https://climate.uconn.edu/coastal-resources/sav/

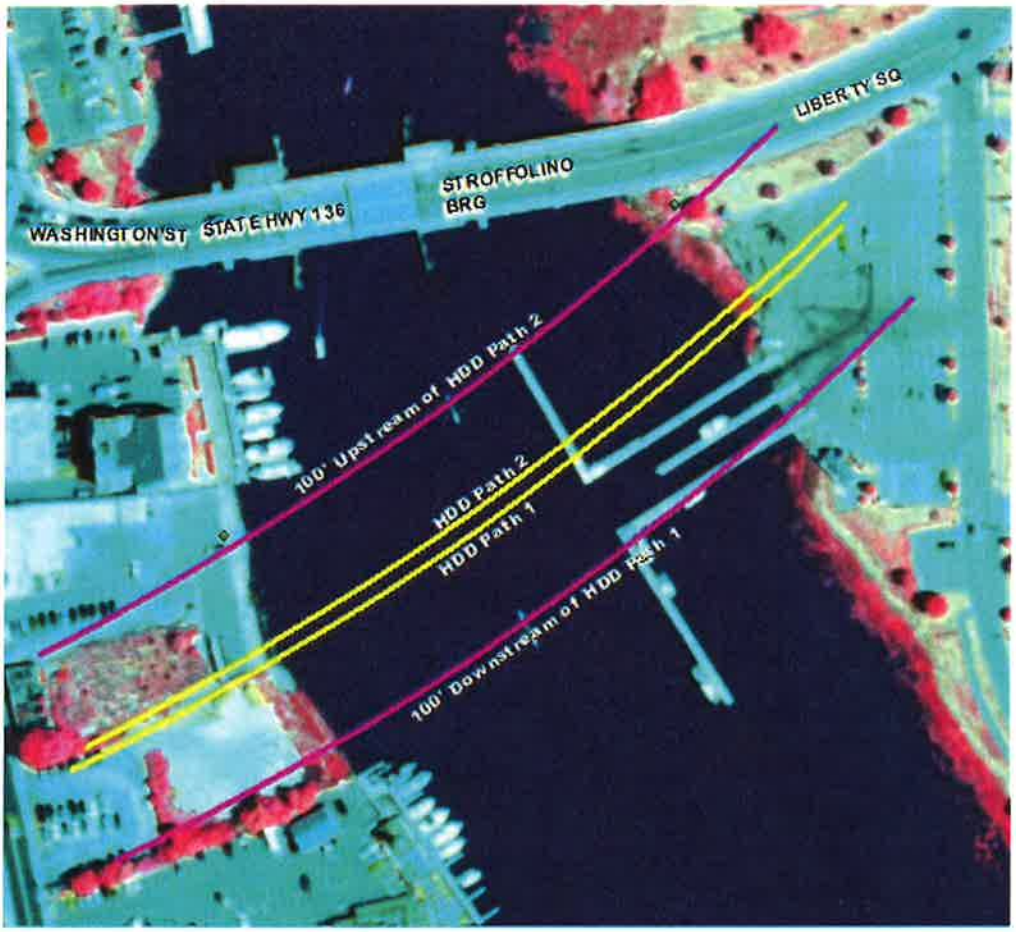

FIGURE 4. FALSE COLOR IMAGE OF NORWALK RIVER STUDY AREA

False color aerial imagery and historically mapped eel grass data, prepared by CTDEEP, were visually assessed for potential presence of SAV within the survey area. "*Because healthy green vegetation will appear to be bright red, a (color infrared) image is also known as a "false color" image.*"[2] As depicted in Figure 4, the only bright red signature of vegetative cover is located along the shoreline of the Norwalk River. Emergent wetland vegetation within the low marsh (eastern shoreline) was dominated by smooth cordgrass (*Spartina alterniflora*).

The presence of mapped eel grass was not depicted within the study area based on the most current eel grass bed data set (2012 study created by the Conservation Management Institute). Consistent with pre-screened mapping data, the field survey confirmed that SAV was not present within the study area.

[2] U.S. Department of Agriculture "Four Band Imagery Information Sheet" April 2017.

Appendix B provides the SAV data collection form populated in the field that documents the observations at surveyed grid cells within the study area. Fifty-eight (58) grid cells were set up to define the study area (Figure 5), extending the assessment beyond the proposed path of the HDD installation lines. Approximately 35 of these cells (60 percent of the study area) are assumed unsuitable for rooting vegetation/SAV because these cells are within either the dredged channel boundaries or the active boat launch servicing Veterans Memorial Park. Thirty percent of these cells were surveyed for verification, confirming the absence of SAV. Eighty percent, or 19 out of 24 viable cells, were also surveyed and determined to be devoid of SAV.

Additional biological observations included a low to moderate cover of sea lettuce (*Ulva lactuca*) within eight cells and sparsely interspersed assemblages of various red macroalgae (*Sphaerotrichia divaricata, Agardhiella tenera,* and *Cystoclonium purpureum*) in three cells. All surveyed cells contained a mucky (organic silt) substrate and some gravel/riprap was observed along the western shoreline. The reinforced pilings found along the river's downstream western shoreline contained attached barnacles (*Semibalanus balanoides*), mussels (*Mytilis edulis*), and oysters (*Crassostrea* spp.). Most of these bivalves were in poor condition (open shells without living organisms).

Figure 5
SAV Survey Locations

Legend

- HDD Path
- Sample Grid

EVERSOURCE ENERGY

EVERSOURCE ENERGY - CP - 241
WALK BRIDGE REPLACEMENT PROJECT

Drawn By:	Date Drawn:	Checked By:	Date Checked:
MRG	06-21-2018	KPN	06-22-2018

Kleinschmidt

Source: ESRI Imagery Basemap, HDD Path (Eversource, 2017), Sample Grid (Kleinschmidt, 2018)

PN: 4238031.01

4.0 DISCUSSION

The benthic data indicate that the Norwalk River in the vicinity of the proposed HDD paths is subjected to environmental stress. The area is dominated by stress tolerant opportunistic species, Oligochaetes (36.6%), *Streblospio benedicti* (30.6%), and *Leitoscoloplos* spp. (18.4%). These are all opportunistic, short-lived species that flourish after pollution-induced stress episodes. Any habitat dominated by opportunists is generally considered to be in a degraded condition.

SAV was not present within the study area as determined by a review of publicly-available GIS data and field survey. A few assemblages of marine macroalgae were observed in portions of the study site and emergent low marsh wetland vegetation was also observed along the eastern shoreline of the Norwalk River in the vicinity of the HDD paths.

Ampelisca abdita, the dominant species observed, is a four-eyed amphipod that is abundant in the lower intertidal zone on soft muddy and sandy bottoms. This species can grow up to 20 mm in length and tends to build parchment-like tubes from which individuals feed on suspended particles and surface deposits (Weiss 1995). Overall, species in the genus *Ampelisca* are well-adapted to environmental stress and often abundant in polluted environments (Grizzle 1984); however, several species are sensitive to pollution and used in sediment toxicity testing (Nichols and Thompson 1985).

The genus *Leitoscoloplos,* represented by both *L. fragilis* and *L. robustus*, contains polychaeta worms that are common in soft muddy or sandy bottoms of the intertidal region (Weiss 1995). *L. fragilis* tends to be more common and grows up to 15 cm in length, whereas *L. robustus* is the largest species in the genus, growing up to 37 cm in length (Weiss 1995). These organisms are considered indicators of polluted environments due to their ability to slowly metabolize hydrocarbons, which get stored in their tissues (Dean 2008). *Leitoscoloplos* spp. dominated the upstream transect and represented one of the top 3 dominant species at the other two transects.

Streblospio benedicti is an "r-selected" with a life history strategy that is adapted to colonizing stressed or disturbed habitats. Typically, "r-selected" species exploit empty niches, have high fecundity, and short generation times, which contribute to their ability to dominate in unstable environments. *S. benedicti* is a small, opportunistic polychaete that typically grows to 6 mm in length. They are commonly found in fine sands and silty sediments along the entire Atlantic

coast. They are classified as deposit feeders, which extract detritus from the benthic by sweeping its tentacles across the sediments. Detritus is typically comprised of dead and decaying plant material, soluble compounds excreted by plants, animals and dead animal remains, and materials from dying phytoplankton blooms. As such, detritus is largely comprised of organic material that includes both particulate organic matter and dissolved organic matter. Deposit feeders, particularly epibenthic feeders, can be especially tolerant of organic pollution. *S. benedicti* was one of the top 3 dominant taxa at the upstream and HDD transects.

Oligochaetes include three recognized families of annelids: Naididae, Megascolecidae, and Enchytraeidae. In the marine environment, oligochaetes are found in the intertidal and subtidal zones along most coasts. They are deposit feeders consuming detritus and algae from benthic sediments. Similar to both *S. benedicti* and *Leitoscoloplos* spp., oligochaetes are pollution indicators due to their tolerance of organic enrichment and oxygen deficient areas (Cook and Brinkhurst 1973). Oligochaetes were the dominant taxa observed in samples collected along the HDD transect.

The Shannon index of species diversity was used to assess the overall health of the environment. The Shannon index is based on the concept that a non-polluted environment should be composed of a stable community of a variety of species. Most Shannon diversity indices fall between 1.5 and 3.5, with those lower than 1.5 indicative of a highly stressed community. In general, it is thought that more disturbed and less stable environments should have lower Shannon Index values. The overall average diversity index for the 15 sites in the Norwalk River was 1.15 with an average evenness of 0.68. For the sites directly above the HDD paths (Sites 6-10), the average diversity index was 1.20 and average evenness was 0.74, which suggests the river in the vicinity of the proposed HDD crossing is in a highly disturbed, stressed condition.

5.0 LITERATURE CITED

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APPENDIX A

REPRESENTATIVE PHOTOGRAPHS OF BENTHIC GRAB SAMPLES

Photo 1. Benthic sediment grab collected at Station 1 in Norwalk River.

Photo 2. Benthic sediment grab collected at Station 2 in Norwalk River.

Photo 3. Benthic sediment grab collected at Station 3 in Norwalk River.

Photo 4. Benthic sediment grab collected at Station 4 in Norwalk River.

Photo 5. Benthic sediment grab collected at Station 5 in Norwalk River.

Photo 6. Benthic sediment grab collected at Station 6 in Norwalk River.

Photo 7. Benthic sediment grab collected at Station 7 in Norwalk River.

Photo 8. Benthic sediment grab collected at Station 8 in the Norwalk River.

Photo 9. Benthic sediment grab collected at Station 9 in Norwalk River.

Photo 10. Benthic sediment grab collected at Station 10 in Norwalk River.

Photo 11. Benthic sediment grab collected at Station 11 in Norwalk River.

Photo 12. Benthic sediment grab collected at Station 12 in Norwalk River.

Photo 13. Benthic sediment grab collected at Station 13 in Norwalk River.

Photo 14. Benthic sediment grab collected at Station 14 in Norwalk River

Photo 15. Benthic sediment grab collected at Station 15 in Norwalk River.

APPENDIX B

COMPLETED SAV DATA COLLECTION FORM

Submerged Aquatic Vegetation Survey

Project Name: Eversource CP-241 Walk Bridge
Observers: Tony Federici, Tracy Maynard, Matt Goclowski
Date: June 19, 2018
Location: Norwalk River, Norwalk, Connecticut

Grid ID	Water Depth (ft)	Sediment Type	SAV species	Relative Cover	Other Biological Observations
57	0.0	Muck	Not applicable (NA)	NA	Smooth cordgrass, mussels, blue crab
58	0.0	Muck	NA	NA	NA
51	0.0	Muck	NA	NA	NA
52	0.0	Muck	NA	NA	NA
53	0.0	Muck	NA	NA	NA
54	0.0	Muck	NA	NA	Boat launch (active boat trailer traffic location)
49	6.2	Muck	NA	NA	Boat launch (active boat trailer traffic location)
2	2.0	Muck	NA	NA	Oysters and barnacles on pilings, sea lettuce
3	1.8	Muck	NA	NA	Oysters and barnacles on pilings, sea lettuce
4	2.0	Muck	NA	NA	Oysters and barnacles on pilings, sea lettuce
5	2.0	Muck	NA	NA	Oysters and barnacles on pilings, sea lettuce
10	10.9	Muck	NA	NA	Sea lettuce & Agardh's red weed
8	11.2	Muck	NA	NA	NA
12	11.4	Muck	NA	NA	Sea lettuce & Agardh's red weed
7	10.3	Muck	NA	NA	NA
6	9.9	Muck	NA	NA	NA
14	11.7	Muck	NA	NA	NA
15	12.0	Muck	NA	NA	Sea lettuce
16	11.5	Muck	NA	NA	NA
23	11.5	Muck	NA	NA	NA

Notes:

1. NA: Not Applicable
2. Data collection and form based upon *Joint Federal Agency Submerged Aquatic Vegetation Survey Guidance for the New England Region* (Updated August 11, 2016) Tier-1 Survey
3. Relative Cover: Sparse (1-10%), Low (11-25%), Moderate (26-50%), High (>50%)
4. Other biological observation examples: shellfish, algal beds, crabs, lobster, fish.

Submerged Aquatic Vegetation Survey

Project Name: Eversource CP-241 Walk Bridge
Observers: Tony Federici, Tracy Maynard, Matt Goclowski
Date: June 19, 2018
Location: Norwalk River, Norwalk, Connecticut

Grid ID	Water Depth (ft)	Sediment Type	SAV species	Relative Cover	Other Biological Observations
25	11.5	Muck	NA	NA	Sea lettuce
22	11.3	Muck	NA	NA	Sea lettuce, mud crab
34	11.5	Muck	NA	NA	NA
32	11.5	Muck	NA	NA	NA
46	6.8	Muck	NA	NA	NA
47	6.8	Muck	NA	NA	NA
48	6.8	Muck	NA	NA	NA
43	5.1	Muck	NA	NA	NA
36	5.3	Muck	NA	NA	Sea lettuce
41	5.1	Muck	NA	NA	NA

Notes:

1. NA: Not Applicable
2. Data collection and form based upon *Joint Federal Agency Submerged Aquatic Vegetation Survey Guidance for the New England Region* (Updated August 11, 2016) Tier-1 Survey
3. Relative Cover: Sparse (1-10%), Low (11-25%), Moderate (26-50%), High (>50%)
4. Other biological observation examples: shellfish, algal beds, crabs, lobster, fish.

ATTACHMENT 7

SHELLFISH SURVEY NORWALK RIVER

SWCA®
ENVIRONMENTAL CONSULTANTS
Sound Science. Creative Solutions.®

Amherst Office
15 Research Drive
Amherst, Massachusetts 01002
Tel 413.256.0202 Fax 413.256.1092

August 30, 2019

Mr. Ian Cole
Senior Licensing and Permitting Specialist
Environmental Affairs Department
Eversource Energy
107 Selden Street
Berlin, CT 06037
Via email: ian.cole@eversource.com
SWCA Project No.: 56367

Re: Shellfish Survey Norwalk River
Norwalk River, Norwalk, Connecticut
SWCA Project No.: 56367

Dear Mr. Cole:

SWCA Environmental Consultants (SWCA) is pleased to provide you with this **DRAFT** report summarizing the results of our August 23, 2019 shellfish survey of a portion of the lower Norwalk River in Norwalk, Connecticut. The survey encompassed the portion of river bottom above two proposed pathways for relocated transmission lines, extending across the entire width of the river and extending out approximately 50 feet up and 100 feet downstream of the pathways.

Please feel free to contact me with any questions you may have.

Sincerely,

SWCA Environmental Consultants

Steve Johnson, Ph.D.
Senior Ecologist

OBJECTIVES AND METHODS

Eversource is proposing to relocate a transmission line currently connected to the railroad bridge over the Norwalk River located approximately 750 feet upstream of the proposed relocation site. It is SWCA's understanding that the proposed future pathway of the transmission lines will be located approximately 200 feet downstream (south) of the Washington Street Bridge, approximately 30 feet below the river bottom, and will be installed using horizontal directional drilling (HDD). The two pathways will each be five feet wide and ten feet apart for a total width of 20 feet. While the proposed work should not in theory disturb the river bottom, there is some concern that the work could impact shellfish located in the immediate vicinity. Kleinschmidt or Essex, Connecticut conducted a benthic macroinvertebrate and submerged aquatic vegetation survey of the project area in June of 2018. The benthic macroinvertebrate survey utilized a Ponar-type grab sampler to collect sediments along three transect lines. In total, 15 grab samples were taken. The benthic survey indicated that the majority of the river bottom in this area consisted of soft dark fine organic silt, while one sample contained only small pebbles and rocks. Only one mollusk species was collected during the study: Eastern Mudsnail (*Ilyanassa obsoleta*), accounting for 1.1% of the total number of macroinvertebrates collected. While this study did not document any shellfish species within the project area, it does not preclude the potential for shellfish to be present within unsampled areas.

The objectives of the shellfish survey reported here was to determine presence/absence and distribution of shellfish within the section of river associated with the transmission line relocation. The Survey Area was approximately 63,000 square feet (1.45 acres) in size, and approximately 525 feet in length, extending across the entire width of the river above the proposed HDD pathways (Figure 1). The width of the Survey Area included the distance between the two HDD pathways and a 50-foot buffer to each side of the pathways for a total width of approximately 120 feet.

Two SWCA aquatic biologists conducted a meander survey throughout the Survey Area on August 23, 2019. The survey began just prior to low tide and continued to within approximately 1 hour of high tide. The two biologists used SCUBA equipment to examine the substrate of the river bottom, making multiple passes across the river while scanning for changes in substrate or the presence of shellfish. The divers conducted both visual and tactile searches for shellfish. During tactile searches the two divers raked their fingers through the soft substrate to depths of five to eight inches.

The divers took underwater photographs and videos to document substrate and habitat types observed, as well as any shellfish found within the Survey Area. The divers were in communication with a support crew in a motorboat above the divers. The divers conveyed observation information to the support boat regarding any observed beds of shellfish, individual shellfish, and changes in substrate or habitat. The boat crew was tasked with collecting GPS location data for all observations communicated by the divers.

SURVEY RESULTS

The substrate observed throughout the Survey Area consisted almost entirely of soft organic muck. Divers could typically reach their hands at least 16 inches below the substrate surface. Some scattered cobble and gravel was observed along the shorelines exposed during low tide. The eastern end of the Survey Area contained more shallow water habitat (Photo 1) than the western end, where the bottom sloped off more rapidly. Three species of shellfish were observed during the survey: Eastern Oyster (*Crassostrea virginica*), Quahog or Hard Clam (*Mercenaria mercenaria*), and Ribbed Mussel (*Geukensia demissa*). In addition, SWCA biologists observed two American

Horseshoe Crabs (*Limulus Polyphemus*), several small hermit crabs (likely *Pagurus longicarpus*) and thousands of snails, primarily Eastern Mudsnail (*Tritia obsoleta*, formerly known as *Ilyanassa obsoleta*). Live mudsnails were observed throughout the entire survey area.

No significant concentrations of shellfish were observed within the Survey Area. SWCA observed ten to twelve live oysters and six live Quahog scattered within near-shore habitat in 2 to 4.5 feet of water during the survey period on both sides of the river. The majority of live shellfish observed where in water too shallow for the boat crew to take location coordinates. Oysters were either embedded (singularly) in the soft substrate or attached to 2-3 other oysters lying on the substrate. Ribbed Mussels were observed primarily in association with Marsh Cordgrass (*Spartina alterniflora*) observed along the eastern shoreline. No live shellfish were observed throughout most of the Survey Area, where depths were greater than 4.5 feet. Shells of oysters, Quahogs, and mussels were observed scattered throughout the Survey Area. The greatest densities of oysters were observed outside the Survey Area, on the hard surfaces of the near-by boat ramps.

SUMMARY

On August 23, 2019, SWCA conducted a one-day shellfish survey of a segment of the Norwalk River in Norwalk, Connecticut centered on the proposed pathway for the relocation of transmission lines crossing the river. Very few live shellfish were observed within the Survey Area. Ten to twelve live Eastern Oysters and six Quahogs were observed within the Survey Area, all in shallow near-shore habitat. Ribbed Mussels were observed along the shore edge exposed at low tide. The substrate throughout the Survey Area was composed of soft organic muck, with some scattered cobble and gravel at the river edges. It is our opinion that the proposed directional drilling will not have a significant impact on local shellfish populations.

SWCA ENVIRONMENTAL CONSULTANTS

BRIDGE REPLACEMENT

FIGURE 1. SHELLFISH SURVEY AREA

NORWALK, CT

Survey Area

1:2,000

Created By: L. Johnson
Project Number: 56367
Date: 8/27/2019
GCS WGS 1984

0 50 100 Feet

0 10 20 30 Meters

Photo 1. Substrate of organic muck, cobble and gravel on east end of Survey Area exposed during low tide August 23, 2019.

Photo 2. Live Eastern Oyster (*Crassostrea virginica*) observed filtering in shallow near-shore habitat August 23, 2019.

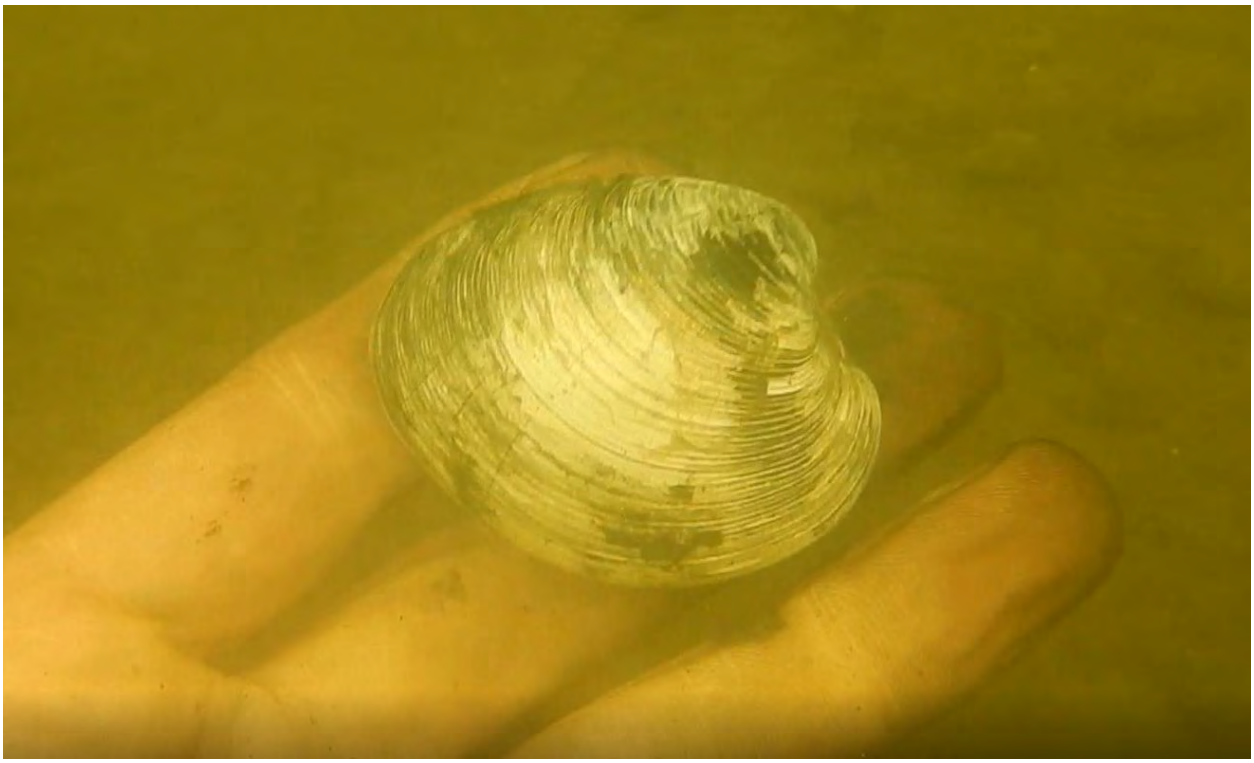


Photo 3. Live Quahog (*Mercenaria mercenaria*) observed in shallow near-shore habitat. Video captured frame August 23, 2019.

Photo 4. Shell of Ribbed Mussel (*Geukensia demissa*), observed in Survey Area. Video capture frame August 23, 2019.

Photo 5. Eastern Mudsnails (*Tritia obsoleta*) observed throughout the Survey Area, August 23, 2019.

Photo 6. Eastern Oysters observed on nearby boat ramp August 23, 2019.

ATTACHMENT 8

CT DEEP NDDB DETERMINATION LETTER

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

June 24, 2021

Michelle Ford
Eversource Energy Service Company
107 Seldon Street
Berlin, CT 06037
Michelle.ford@eversource.com

Project: Eversource Energy Service Company, Norwalk Bridge Transmission Relocation Project From Metro-North Street to 68, 70 and 90 Water Street in Norwalk
NDDB Determination No.: 202107899 (Previous NDDB No. 201901473)

Dear Michelle Ford,

I have re-reviewed Natural Diversity Data Base (NDDB) maps and files regarding the area delineated on the map provided for the proposed Eversource Energy Service Company, Norwalk Bridge Transmission Relocation Project From Metro-North Street to 68, 70 and 90 Water Street in Norwalk, Connecticut. I do not anticipate negative impacts to State-listed species (RCSA Sec. 26-306) resulting from your proposed activity at the site based upon the information contained within the NDDB. The result of this review does not preclude the possibility that listed species may be encountered on site and that additional action may be necessary to remain in compliance with certain state permits. This determination is good for two years. Please re-submit a new NDDB Request for Review if the scope of work changes or if work has not begun on this project by June 24, 2023.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Please contact me if you have further questions at (860) 424-3592, or dawn.mckay@ct.gov . Thank you for consulting the Natural Diversity Data Base.

Sincerely,

Dawn M. McKay

Dawn M. McKay
Environmental Analyst 3

ATTACHMENT 9

BIOLOGIC ASSESSMENT AND OFFICIAL SPECIES LIST

Eversource Energy Norwalk Bridge T-Line By Pass Project

Biological Assessment

Prepared using IPaC

Generated by Deborah Gustafson (dleonardo@allpointstech.com)

September 19, 2021

The purpose of this Biological Assessment (BA) is to assess the effects of the proposed project and determine whether the project may affect any Federally threatened, endangered, proposed or candidate species. This BA is prepared in accordance with legal requirements set forth under Section 7 of the Endangered Species Act (16 U.S.C. 1536 (c)).

In this document, any data provided by U.S. Fish and Wildlife Service is based on data as of September 18, 2021.

Prepared using IPaC version 5.64.1

Eversource Energy Norwalk Bridge T-Line By Pass Project Biological Assessment

Table Of Contents

1 Description Of The Action

1.1 Project Name

Eversource Energy Norwalk Bridge T-Line By Pass Project

1.2 Executive Summary

The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, which does not provide habitat for any of the listed or candidate species.

Therefore, the proposed action will have no effect on listed or candidate species.

Effect determination summary

1.3 Project Description

1.3.1 Location

LOCATION
Fairfield County, Connecticut

1.3.2 Description of project habitat

The Connecticut Department of Transportation (CDOT) is proposing to replace its existing, 120+ years old Walk Bridge crossing the Norwalk River in Norwalk, Connecticut. The 564-foot long four-span swing bridge is in deteriorated condition and vulnerable to a storm surge or high wind event. The Walk Bridge carries four railroad tracks over the River, as well as overhead electrical transmission circuits owned by Eversource Energy (Eversource) and Metro-North Railroad (MNR) communications. CDOT's bridge replacement project requires the decommissioning of the existing steel lattice structures at either end of the Walk Bridge that support Eversource's 115-Kilovolt transmission lines. As a result, Eversource's transmission lines must be re-routed prior to the demolition/rebuild of the existing Walk Bridge. CDOTs bridge replacement design cannot accommodate the colocation of Eversource's transmission lines so the relocation of Eversource's transmission lines must be permanent.

Habitat supported by Eversource's project action area associated with new overhead transmission lines and support structures consists of developed and disturbed urbanized areas and maintained lawn and landscaping associated with Veterans Memorial Park. Transmission lines will be routed underground in proximity to and under the Norwalk River using horizontal directional drill (HDD) techniques to avoid impacts to the river and associated coastal resources (e.g., tidal wetlands, intertidal flats, estuary waters, etc.). No areas of native vegetation or areas that could potentially support wildlife habitat will be impacted by the proposed Eversource project.

Relevant documentation

- Option1_NDDBAttB

1.3.3 Project proponent information

Provide information regarding who is proposing to conduct the project, and their contact information. Please provide details on whether there is a Federal nexus.

Requesting Agency
All-Points Technology Corporation, P.C.

FULL NAME
Deborah Gustafson

STREET ADDRESS
567 Vauxhall Street Extension

Suite 311

CITY	STATE	ZIP
Waterford	CT	06235

PHONE NUMBER	E-MAIL ADDRESS
(860) 984-9514	dleonardo@allpointstech.com

Lead agency
CT Siting Council

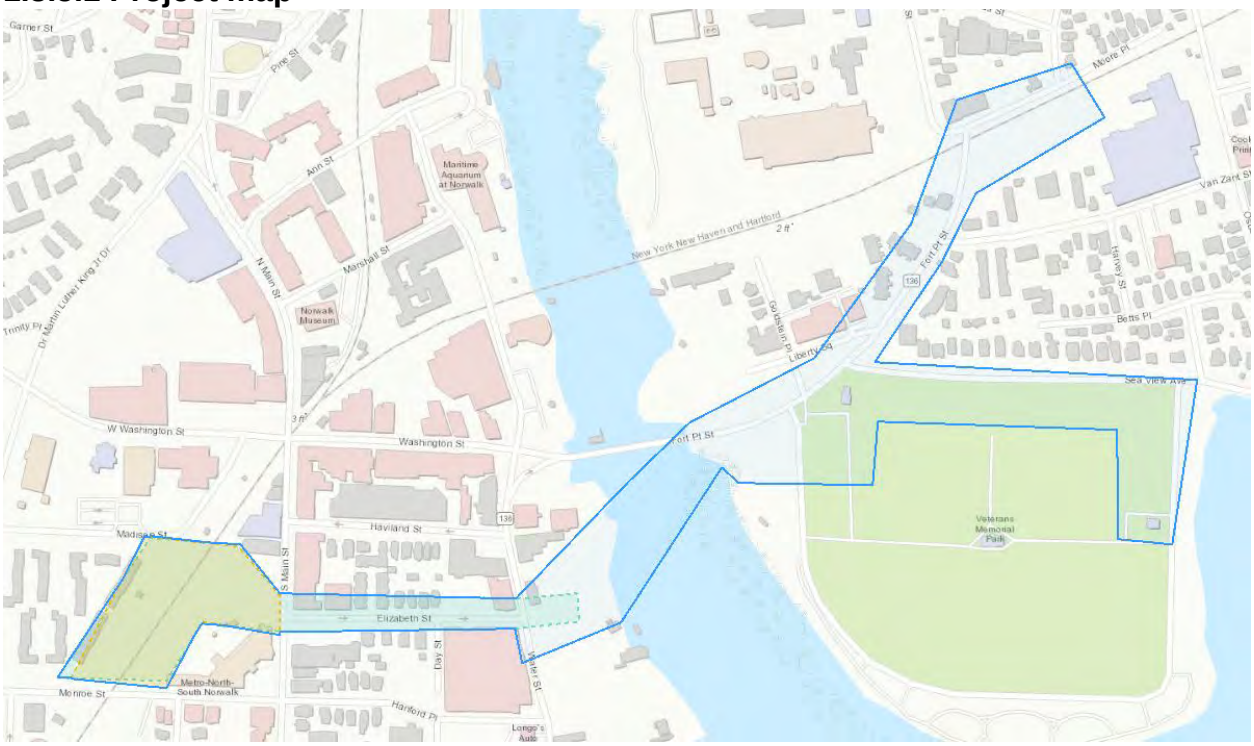
1.3.4 Project purpose

The Connecticut Department of Transportation (CDOT) is proposing to replace its existing, 120+ years old Walk Bridge crossing the Norwalk River in Norwalk, Connecticut. The 564-foot long four-span swing bridge is in deteriorated condition and vulnerable to a storm surge or high wind event. The Walk Bridge carries four railroad tracks over the River, as well as overhead electrical transmission circuits owned by Eversource Energy (Eversource) and Metro-North Railroad (MNR) communications. CDOT's bridge replacement project requires the decommissioning of the existing steel lattice structures at either end of the Walk Bridge that support Eversource's 115-Kilovolt transmission lines. As a result, Eversource's transmission lines must be re-routed prior to the demolition/rebuild of the existing Walk Bridge. CDOTs bridge replacement design cannot accommodate the colocation of Eversource's transmission lines so the relocation of Eversource's transmission lines must be permanent.

1.3.5 Project type and deconstruction

This project is a overhead transmission line construction project.

1.3.5.1 Project map



LEGEND

Project footprint

Construction/Stagging Areas: Staging area construction

Towers & Overhead Conductors: String overhead conductor lines, tower installation

1.3.5.2 staging area construction

Activity start date
December 31, 2021

Activity end date
December 31, 2023

Stressors

PLANT FEATURES

- Change in vegetation structure
- Decrease in trees

HUMAN ACTIVITIES

- Increase in human presence
- Increase in noise
- Increase in vehicle traffic

Description
Staging areas will include the storage of various electrical equipment, tower sections, conductors and support equipment used in the construction of the new electrical transmission line.

1.3.5.3 string overhead conductor lines

Activity start date
December 31, 2021

Activity end date
December 31, 2023

Stressors

HUMAN ACTIVITIES

- Increase in human presence
- Increase in noise

Description
New overhead electrical conductors will be attached to new structures using various equipment and pull pads.

1.3.5.4 tower installation

Activity start date
December 31, 2021

Activity end date
December 31, 2023

Stressors

ANIMAL FEATURES

- Increase in raptor/predator perches

SOIL AND SEDIMENT

- Increase in soil compaction

HUMAN ACTIVITIES

- Increase in ground vibrations
- Increase in human presence
- Increase in noise
- Increase in soil disturbance
- Increase in vehicle traffic

Description
Various equipment will be used to construct tower foundations and erect tower structures within the existing developed urbanized setting.

1.3.6 Anticipated environmental stressors

Describe the anticipated effects of your proposed project on the aspects of the land, air and water that will occur due to the activities above. These should be based on the activity deconstructions done in the previous section and will be used to inform the action area.

1.3.6.1 Animal Features

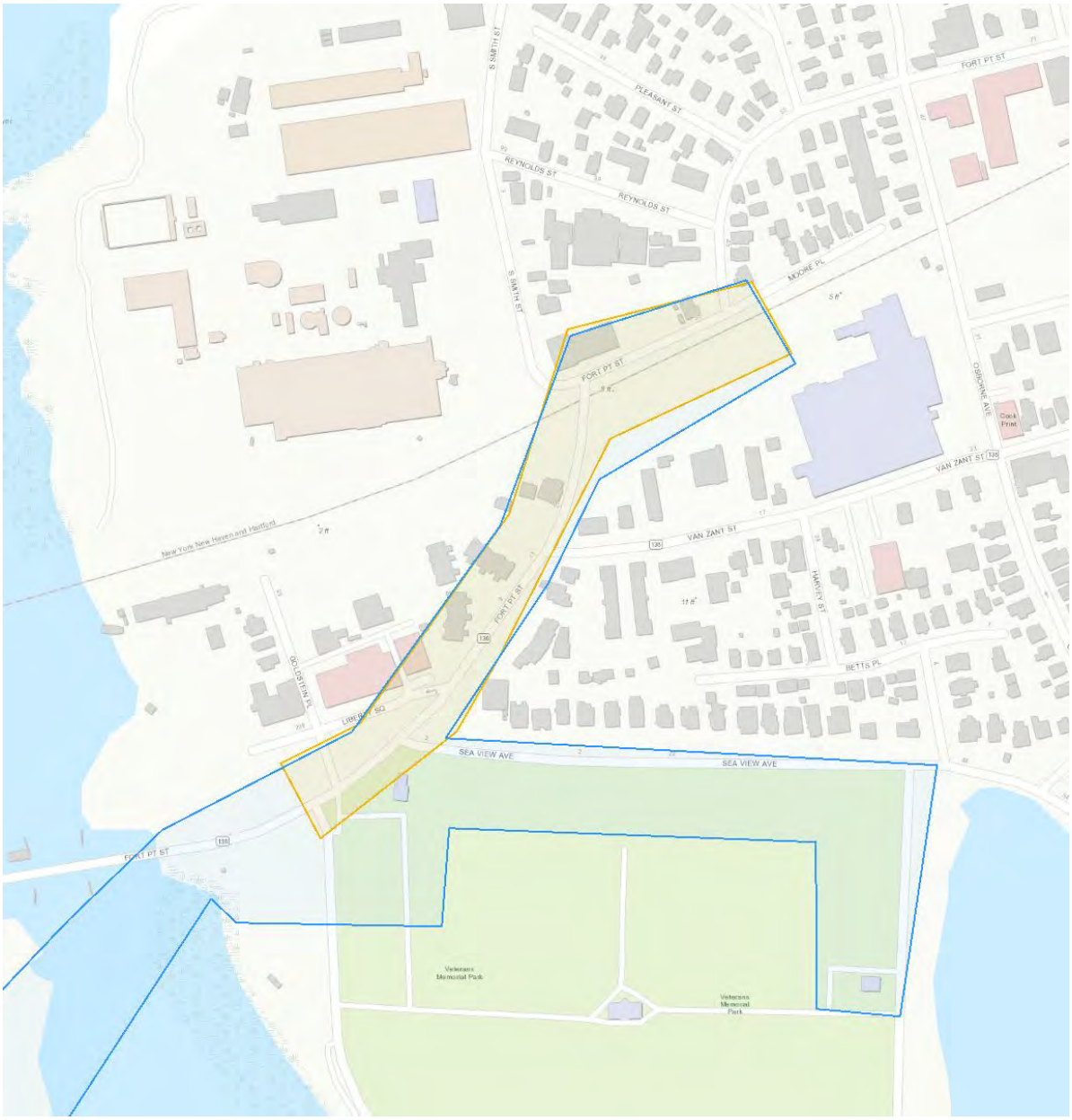
Individuals from the Animalia kingdom, such as raptors, mollusks, and fish. This feature also includes byproducts and remains of animals (e.g., carrion, feathers, scat, etc.), and animal-related structures (e.g., dens, nests, hibernacula, etc.).

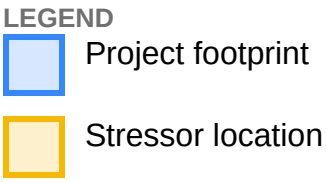
1.3.6.1.1 Increase in raptor/predator perches

ANTICIPATED MAGNITUDE

Due to the location of new electrical transmission structures in proximity to coastal waters, perching by raptors, particularly by ospreys is anticipated.

STRESSOR LOCATION




LEGEND
Project footprint
Stressor location

CONSERVATION MEASURES

No conservation measures for this stressor

STRUCTURES AND ACTIVITIES

- Tower installation

1.3.6.2 Plant Features

Individuals from the Plantae kingdom, such as trees, shrubs, herbs, grasses, ferns, and mosses. This feature also includes products of plants (e.g., nectar, flowers, seeds, etc.).

1.3.6.2.1 Change in vegetation structure

ANTICIPATED MAGNITUDE

This stressor is not expected to occur; the following explanation has been provided:

Areas of existing vegetation impact by the proposed project action activities will be restored with the exception of trees located within the clearance zone of the new electrical conductors.

CONSERVATION MEASURES

- Vegetation restoration

STRUCTURES AND ACTIVITIES

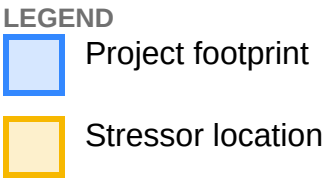
- Staging area construction

1.3.6.2.2 Decrease in trees

ANTICIPATED MAGNITUDE

The project will only result in the removal of 0.64 acre of trees.

STRESSOR LOCATION


LEGEND
Project footprint
Stressor location

CONSERVATION MEASURES

No conservation measures for this stressor

STRUCTURES AND ACTIVITIES

- Staging area construction

1.3.6.3 Aquatic Features

Bodies of water on the landscape, such as streams, rivers, ponds, wetlands, etc., and their physical characteristics (e.g., depth, current, etc.). This feature includes the groundwater and its characteristics. Water quality attributes (e.g., turbidity, pH, temperature, DO, nutrients, etc.) should be placed in the Environmental Quality Features.

1.3.6.4 Landform (topographic) Features

Topographic (landform) features that typically occur naturally on the landscape (e.g., cliffs, terraces, ridges, etc.). This feature does not include aquatic landscape features or man-made structures.

1.3.6.5 Soil and Sediment

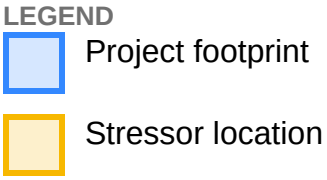
The topmost layer of earth on the landscape and its components (e.g., rock, sand, gravel, silt, etc.). This feature includes the physical characteristics of soil, such as depth, compaction, etc. Soil quality attributes (e.g, temperature, pH, etc.) should be placed in the Environmental Quality Features.

1.3.6.5.1 Increase in soil compaction

ANTICIPATED MAGNITUDE

Soil compaction would be associated with new electrical transmission structures that would be located within existing developed urbanized areas and therefore will not result in an adverse impact to native soils.

STRESSOR LOCATION


LEGEND
Project footprint
Stressor location

CONSERVATION MEASURES

No conservation measures for this stressor

STRUCTURES AND ACTIVITIES

- Tower installation

1.3.6.6 Human Activities

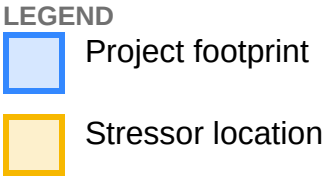
Human actions in the environment (e.g., fishing, hunting, farming, walking, etc.).

1.3.6.6.1 Increase in ground vibrations

ANTICIPATED MAGNITUDE

Ground vibrations are expected during drilling activities associated with the installation of new tower structures and also during HDD activities under the Norwalk River. Ground vibrations are not anticipated to significantly affect wildlife and will be generally of short duration over a few of days at each structure location.

STRESSOR LOCATION


LEGEND
Project footprint
Stressor location

CONSERVATION MEASURES

No conservation measures for this stressor

STRUCTURES AND ACTIVITIES

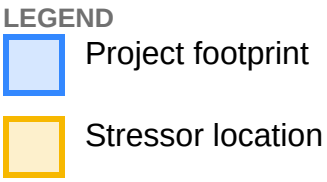
- Tower installation

1.3.6.6.2 Increase in human presence

ANTICIPATED MAGNITUDE

Construction activities will occur within an urbanized area that currently contains a high level of human activity associated with the surrounding land use, Norwalk River marinas, and roadways including State Route 136. The comparatively minimal increase in human presence associated with construction activities in the action area are not considered to result in a significant stressor to wildlife due to the existing urbanized nature of the action area.

STRESSOR LOCATION


LEGEND
Project footprint
Stressor location

CONSERVATION MEASURES

No conservation measures for this stressor

STRUCTURES AND ACTIVITIES

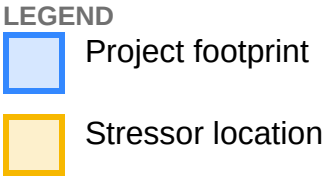
- String overhead conductor lines
- Staging area construction
- Tower installation

1.3.6.6.3 Increase in noise

ANTICIPATED MAGNITUDE

Construction activities will occur within an urbanized area that currently contains a high level of background noise from human activity associated with the surrounding land use, Norwalk River marinas, and roadways including State Route 136. The comparatively minimal increase in noise associated with construction activities in the action area are not considered to result in a significant stressor to wildlife due to the existing background noise within the action area.

STRESSOR LOCATION


LEGEND
Project footprint
Stressor location

CONSERVATION MEASURES

No conservation measures for this stressor

STRUCTURES AND ACTIVITIES

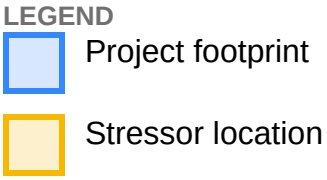
- String overhead conductor lines
- Staging area construction
- Tower installation

1.3.6.6.4 Increase in soil disturbance

ANTICIPATED MAGNITUDE

Construction activities will occur within an urbanized area that currently contains anthropogenic soils disturbed from existing and historic development. The comparatively minimal increase in soil disturbance associated with construction activities in the action area are not considered to result in a significant stressor to wildlife due to the existing developed and disturbed nature of soils within the action area.

STRESSOR LOCATION


LEGEND
Project footprint
Stressor location

CONSERVATION MEASURES

No conservation measures for this stressor

STRUCTURES AND ACTIVITIES

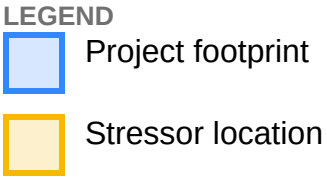
- Tower installation

1.3.6.6.5 Increase in vehicle traffic

ANTICIPATED MAGNITUDE

Construction activities will occur within an urbanized area that currently contains a high level of traffic associated with the surrounding land use, Norwalk River marinas, and roadways including State Route 136. The comparatively minimal increase in traffic associated with construction activities in the action area are not considered to result in a significant stressor to wildlife due to the existing high level of traffic in the action area.

STRESSOR LOCATION


LEGEND
Project footprint
Stressor location

CONSERVATION MEASURES

No conservation measures for this stressor

STRUCTURES AND ACTIVITIES

- Staging area construction
- Tower installation

1.3.6.7 Miscellaneous

Miscellaneous should only be used if the created feature does not fit into one of the other categories or if the creator is not sure in which category it should be placed.

1.4 Action Area

1.5 Conservation Measures

1.5.1 vegetation restoration

Description
Area of existing maintained soils disturbed by the proposed action activities will be restored with cool season grass mix and mulch. Proper erosion and sedimentation controls will be installed and maintained during construction until permanent vegetation is established.

Stressors
- Change in vegetation structure

1.6 Prior Consultation History
APT is not aware of previous consultations with the USFWS for this project action.

1.7 Other Agency Partners And Interested Parties
The project requires authorizations from the following agencies:

- U.S. Army Corps of Engineers New England District
- Connecticut Department of Energy & Environmental Protection
- Connecticut Siting Council

1.8 Other Reports And Helpful Information
Not applicable.

2 Species Effects Analysis

This section describes, species by species, the effects of the proposed action on listed, proposed, and candidate species, and the habitat on which they depend. In this document, effects are broken down as direct interactions (something happening directly to the species) or indirect interactions (something happening to the environment on which a species depends that could then result in effects to the species).

These interactions encompass effects that occur both during project construction and those which could be ongoing after the project is finished. All effects, however, should be considered, including effects from direct and indirect interactions and cumulative effects.

2.1 Monarch Butterfly

2.1.1 Status of the species

This section should provide information on the species' background, its biology and life history that is relevant to the proposed project within the action area that will inform the effects analysis.

2.1.1.1 Legal status

The Monarch Butterfly is federally listed as 'Candidate' and additional information regarding its legal status can be found on the ECOS species profile.

2.1.1.2 Recovery plans

Available recovery plans for the Monarch Butterfly can be found on the ECOS species profile.

2.1.1.3 Life history information

Note - the monarch is a candidate species and not yet listed or proposed for listing. There are generally no section 7 requirements for candidate species (see our Section 7 Questions and Answers on the monarch here - https://www.fws.gov/savethemonarch/FAQ-Section7.html), but we encourage all agencies to take advantage of any opportunity they may have to conserve the species.

For information on monarch conservation, visit https://www.fws.gov/savethemonarch/, http://www.mafwa.org/?page_id=2347, and, for the West, https://wafwa.org/committees-working-groups/monarch-working-group/.

Adult monarch butterflies are large and conspicuous, with bright orange wings surrounded by a black border and covered with black veins. The black border has a double row of white spots, present on the upper side of the wings. Adult monarchs are sexually dimorphic, with males having narrower wing venation and scent patches. The bright coloring of a monarch serves as a warning to predators that eating them can be toxic.

During the breeding season, monarchs lay their eggs on their obligate milkweed host plant (primarily Asclepias spp.), and larvae emerge after two to five days. Larvae develop through five larval instars (intervals between molts) over a period of 9 to 18 days, feeding on milkweed and sequestering toxic chemicals (cardenolides) as a defense against predators. The larva then pupates into a chrysalis before emerging 6 to 14 days later as an adult butterfly. There are multiple generations of monarchs produced during the breeding season, with most adult butterflies living approximately two to five weeks; overwintering adults enter into reproductive diapause (suspended reproduction) and live six to nine months.

In many regions where monarchs are present, monarchs breed year-round. Individual monarchs in temperate climates, such as eastern and western North America, undergo long-distance migration, and live for an extended period of time. In the fall, in both eastern and western North America, monarchs begin migrating to their respective overwintering sites. This migration can take monarchs distances of over 3,000 km and last for over two months. In early spring (February-March), surviving monarchs break diapause and mate at the overwintering sites before dispersing. The same individuals that undertook the initial southward migration begin flying back through the breeding grounds and their offspring start the cycle of generational migration over again.

Identified resource needs

Herbaceous vegetation

Monarchs require obligate milkweed host plant (primarily asclepias spp.) for breeding habitat. adults require sufficient quality and quantity of nectar from flowers for feeding throughout the breeding and migration seasons.

2.1.1.4 Conservation needs

The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, providing little of any significant habitat for the Monarch Butterfly. As a result, no conservation measures are provided for this project.

2.1.2 Environmental baseline

The environmental baseline describes the species' health ***within the action area only*** *at the time of the consultation, and does not include the effects of the action under review. Unlike the species information provided above, the environmental baseline is at the scale of the Action area.*

2.1.2.1 Species presence and use

Usage of the project action area by the Monarch Butterfly is not anticipated due to the developed urbanized nature of the portion of the project located above ground.

Relevant documentation

2.1.2.2 Species conservation needs within the action area

The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, providing little of any significant habitat for the Monarch Butterfly. As a result, no conservation measures are provided for this project.

2.1.2.3 Habitat condition (general)

herbaceous vegetation (Monarchs require obligate milkweed host plant (primarily Asclepias spp.) for breeding habitat. Adults require sufficient quality and quantity of nectar from flowers for feeding throughout the breeding and migration seasons.)

The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, providing little of any significant habitat for the Monarch Butterfly. As a result, no conservation measures are provided for this project.

2.1.2.4 Influences
The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, providing little of any significant habitat for the Monarch Butterfly. As a result, the proposed action does not represent a threat to this species.

2.1.2.5 Additional baseline information
Not applicable.

2.1.3 Effects of the action
This section considers and discusses all effects on the listed species that are caused by the proposed action and are reasonably certain to occur, including the effects of other activities that would not occur but for the proposed action.

2.1.3.1 Indirect interactions

RESOURCE NEED	STRESSORS	CONSERVATION MEASURES	AMOUNT OF RESOURCE IMPACTED	INDIVIDUALS AFFECTED
Herbaceous vegetation (monarchs require obligate milkweed host plant (primarily asclepias spp.) for breeding habitat. adults require sufficient quality and quantity of nectar from flowers for feeding throughout the breeding and migration seasons.)	No exposure path			***There will be no impacts to this resource, so no individuals will be affected.***

2.1.3.2 Direct interactions
No direct interactions leading to effects on species are expected to occur from the proposed project.

2.1.4 Cumulative effects
The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, providing little of any significant habitat for the Monarch Butterfly. As a result, no cumulative effects to this species would occur.

2.1.5 Discussion and conclusion

Determination: NE

2.2 Northern Long-Eared Bat

2.2.1 Status of the species

This section should provide information on the species' background, its biology and life history that is relevant to the proposed project within the action area that will inform the effects analysis.

2.2.1.1 Legal status

The Northern Long-eared Bat is federally listed as 'Threatened' and additional information regarding its legal status can be found on the ECOS species profile.

2.2.1.2 Recovery plans

Available recovery plans for the Northern Long-eared Bat can be found on the ECOS species profile.

2.2.1.3 Life history information

The northern long-eared bat is a medium-sized bat about 3 to 3.7 inches in length but with a wingspan of 9 to 10 inches. As its name suggests, this bat is distinguished by its long ears, particularly as compared to other bats in its genus, Myotis, which are actually bats noted for their small ears (Myotis means mouse-eared). The northern long-eared bat is found across much of the eastern and north central United States and all Canadian provinces from the Atlantic coast west to the southern Northwest Territories and eastern British Columbia. The species range includes 37 states. White-nose syndrome, a fungal disease known to affect bats, is currently the predominant threat to this bat, especially throughout the Northeast where the species has declined by up to 99 percent from pre-white-nose syndrome levels at many hibernation sites. Although the disease has not yet spread throughout the northern long-eared bats entire range (white-nose syndrome is currently found in at least 25 of 37 states where the northern long-eared bat occurs), it continues to spread. Experts expect that where it spreads, it will have the same impact as seen in the Northeast.

Identified resource needs

Hibernacula

Humidity: high, noise: low, with minimal distrubance, temperature: 0-9 degrees celsius, time of year: august through april, type: caves, mines, sewers and spillways

Insects

Type: lepidoptera (moths and butterflies), coleoptera (beetles), trichoptera (caddisflies), diptera (flies), spiders and lepidopterous larvae

Open water

Type: streams, rivers, ponds, wetlands, lakes and road ruts

Travel corridors

Location: between forest patches, type: riparian corridors, wooded paths, hedgerows and fence rows

Trees

Size: > or equal to 3 inch dbh, spatial arrangement: within 1000 feet of forest, structure: cracks, crevices, cavities, exfoliating bark, time of year: april through august, type: dead, nearly dead, living tree with dead parts and living with appropriate structure

2.2.1.4 Conservation needs

The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, providing little of any significant habitat for NLEB. As a result, no conservation measures are provided for this project.

2.2.2 Environmental baseline

*The environmental baseline describes the species' health **within the action area only** at the time of the consultation, and does not include the effects of the action under*

review. Unlike the species information provided above, the environmental baseline is at the scale of the Action area.

2.2.2.1 Species presence and use

Limited tree removal (0.65 acre) within a developed urbanized area is associated with the project action area. Understanding that trees potentially provide habitat for NLEB, considering the urbanized setting and lack of high quality mature trees that could potentially provide optimal NLEB habitat, usage of the project action area by NLEB is not anticipated.

Relevant documentation

- MA Documentation Letter_ Northern Long-Eared Bat NLEB Consultation and 4d Rule Consistency 2021-09-16

2.2.2.2 Species conservation needs within the action area

The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, providing little if any significant habitat for NLEB. As a result, no conservation measures are provided for this project.

2.2.2.3 Habitat condition (general)

open water (type: streams, rivers, ponds, wetlands, lakes and road ruts)

The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, providing little if any significant habitat for insects. The Norwalk River will not be impacted by the proposed action.

2.2.2.4 Influences

The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, providing little if any significant habitat for NLEB. As a result, the proposed action activities will not affect NLEB.

2.2.2.5 Additional baseline information

Not applicable.

2.2.3 Effects of the action

This section considers and discusses all effects on the listed species that are caused by the proposed action and are reasonably certain to occur, including the effects of other activities that would not occur but for the proposed action.

2.2.3.1 Indirect interactions

RESOURCE NEED	STRESSORS	CONSERVATION MEASURES	AMOUNT OF RESOURCE IMPACTED	INDIVIDUALS AFFECTED
Hibernacula (humidity: high, noise: low, with minimal distrubance, temperature: 0-9 degrees celsius, time of year: august through april, type: caves, mines, sewers and spillways)			***This resource is not present in the action area*** The nearest hibernacula to the project action area is 11 miles to the west in Greenwich, CT.	***There will be no impacts to this resource, so no individuals will be affected.***
Insects (type: lepidoptera (moths and butterflies), coleoptera (beetles), trichoptera (caddisflies), diptera (flies), spiders and lepidopterous larvae)			***This resource is not present in the action area*** The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, providing little if any significant habitat for insects. The Norwalk River does provide habitat for insects, which will not be impacted by the proposed action.	***There will be no impacts to this resource, so no individuals will be affected.***

RESOURCE NEED	STRESSORS	CONSERVATION MEASURES	AMOUNT OF RESOURCE IMPACTED	INDIVIDUALS AFFECTED
Open water (type: streams, rivers, ponds, wetlands, lakes and road ruts)	Increase in vehicle traffic Increase in soil compaction Increase in soil disturbance		***There will be no impacts to this resource*** The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, providing little if any significant habitat for insects. The Norwalk River will not be impacted by the proposed action.	***There will be no impacts to this resource, so no individuals will be affected.***
Travel corridors (location: between forest patches, type: riparian corridors, wooded paths, hedgerows and fence rows)			***This resource is not present in the action area*** The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, providing no opportunities for terrestrial travel corridors. The Norwalk River does provide a riparian corridor limited by the developed banks, which will not be impact by the proposed action.	***There will be no impacts to this resource, so no individuals will be affected.***

RESOURCE NEED	STRESSORS	CONSERVATION MEASURES	AMOUNT OF RESOURCE IMPACTED	INDIVIDUALS AFFECTED
Trees (size: > or equal to 3 inch dbh, spatial arrangement: within 1000 feet of forest, structure: cracks, crevices, cavities, exfoliating bark, time of year: april through august, type: dead, nearly dead, living tree with dead parts and living with appropriate structure)			***This resource is not present in the action area*** The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, providing little if any significant resource trees habitat.	***There will be no impacts to this resource, so no individuals will be affected.***

2.2.3.2 Direct interactions

No direct interactions leading to effects on species are expected to occur from the proposed project.

2.2.4 Cumulative effects

Not applicable.

2.2.5 Discussion and conclusion

Determination: NLAA

Compensation measures

No compensation measures are required due to the urbanized setting of the project action area.

2.3 Red Knot

2.3.1 Status of the species

This section should provide information on the species' background, its biology and life history that is relevant to the proposed project within the action area that will inform the effects analysis.

2.3.1.1 Legal status

The Red Knot is federally listed as 'Threatened' and additional information regarding its legal status can be found on the ECOS species profile.

2.3.1.2 Recovery plans

Available recovery plans for the Red Knot can be found on the ECOS species profile.

2.3.1.3 Life history information

Length: 25-28 cm. Adults in spring: Above finely mottled with grays, black and light ochre, running into stripes on crown; throat, breast and sides of head cinnamon-brown; dark gray line through eye; abdomen and undertail coverts white; uppertail coverts white, barred with black. Adults in winter: Pale ashy gray above, from crown to rump, with feathers on back narrowly edged with white; underparts white, the breast lightly streaked and speckled, and the flanks narrowly barred with gray. Adults in autumn: Underparts of some individuals show traces of the "red" of spring.

Identified resource needs

Beaches

Type: barrier island beaches and type: sandy beaches

Coastal shore

Type: flat, sandy, type: sandbar, tidal sand flat, beach and shoal

Horseshoe crabs

Mass: 30 and000 horseshoe crab eggs/per day/per red knot

Invertebrates

Type: freshwater, marine and and terrestrial invertebrates

Mollusks

Small islands

Type: marsh islands

Vegetation

2.3.1.4 Conservation needs

The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, which does not provide habitat for Red Knot. The Norwalk River will not be impacted by the proposed action.

2.3.2 Environmental baseline

*The environmental baseline describes the species' health **within the action area only** at the time of the consultation, and does not include the effects of the action under review. Unlike the species information provided above, the environmental baseline is at the scale of the Action area.*

2.3.2.1 Species presence and use

The red knot is a shorebird typically found along the Connecticut coastline during northbound and southbound migration. These birds spend most of their time foraging along the waterline within the intertidal zone. Not known to occur at inland locations, red knots can be found on Connecticut's barrier beaches from mid-April to the end of May, and then again from July through mid-September. Sometimes non-breeding individuals may linger along Connecticut barrier beaches between migratory periods, and late individuals may pass through on southbound migration well into November.

Coastal habitats used by red knots in migration and wintering areas are similar in character, generally coastal marine and estuarine (partially enclosed tidal area where fresh and salt water mixes) habitats with large areas of exposed intertidal sediments. Migration habitats include both high-energy ocean- or bay-front areas, as well as tidal flats in more sheltered bays and lagoons. Preferred migration microhabitats are muddy or sandy coastal areas, specifically, the mouths of bays and estuaries, unimproved tidal inlets and tidal flats free from excessive human disturbance.

The Project Area offers minimal habitat preferred by red knot. Veteran's Memorial Park, located on the east bank of the Norwalk River was developed on the City's former landfill. It currently includes a mix of recreational fields, natural vegetation and lawn areas, all sub-optimal conditions for red knot.

2.3.2.2 Species conservation needs within the action area

Not applicable.

2.3.2.3 Habitat condition (general)

invertebrates (type: freshwater, marine and and terrestrial invertebrates)
The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, which does not provide significant invertebrate habitat. The Norwalk River will not be impacted by the proposed action.

vegetation
The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, which does not provide significant vegetation habitat.

2.3.2.4 Influences
Not applicable.

2.3.2.5 Additional baseline information
Not applicable.

2.3.3 Effects of the action
This section considers and discusses all effects on the listed species that are caused by the proposed action and are reasonably certain to occur, including the effects of other activities that would not occur but for the proposed action.

2.3.3.1 Indirect interactions

RESOURCE NEED	STRESSORS	CONSERVATION MEASURES	AMOUNT OF RESOURCE IMPACTED	INDIVIDUALS AFFECTED
Beaches (type: barrier island beaches and type: sandy beaches)			***This resource is not present in the action area*** The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, which does	***There will be no impacts to this resource, so no individuals will be affected.***

RESOURCE NEED	STRESSORS	CONSERVATION MEASURES	AMOUNT OF RESOURCE IMPACTED	INDIVIDUALS AFFECTED
			not provide Red Knot habitat. The Norwalk River will not be impacted by the proposed action.	
Coastal shore (type: flat, sandy, type: sandbar, tidal sand flat, beach and shoal)			***This resource is not present in the action area*** The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, which does not provide Red Knot habitat. The Norwalk River will not be impacted by the proposed action.	***There will be no impacts to this resource, so no individuals will be affected.***

RESOURCE NEED	STRESSORS	CONSERVATION MEASURES	AMOUNT OF RESOURCE IMPACTED	INDIVIDUALS AFFECTED
Horseshoe crabs (mass: 30 and000 horseshoe crab eggs/ per day/per red knot)			***This resource is not present in the action area*** The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, which does not provide Red Knot habitat. The Norwalk River will not be impacted by the proposed action.	***There will be no impacts to this resource, so no individuals will be affected.***
Invertebrates (type: freshwater, marine and and terrestrial invertebrates)	Increase in vehicle traffic Increase in human presence Increase in soil disturbance		***There will be no impacts to this resource*** The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, which does not provide significant invertebrate habitat. The Norwalk River will not be impacted by the proposed action.	***There will be no impacts to this resource, so no individuals will be affected.***

RESOURCE NEED	STRESSORS	CONSERVATION MEASURES	AMOUNT OF RESOURCE IMPACTED	INDIVIDUALS AFFECTED
Mollusks			***This resource is not present in the action area*** The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, which does not provide mollusks habitat. The Norwalk River will not be impacted by the proposed action.	***There will be no impacts to this resource, so no individuals will be affected.***
Small islands (type: marsh islands)			***This resource is not present in the action area*** The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, which does not include marsh islands habitat. The Norwalk River will not be impacted by the proposed action.	***There will be no impacts to this resource, so no individuals will be affected.***

RESOURCE NEED	STRESSORS	CONSERVATION MEASURES	AMOUNT OF RESOURCE IMPACTED	INDIVIDUALS AFFECTED
Vegetation	No exposure path			***There will be no impacts to this resource, so no individuals will be affected.***

2.3.3.2 Direct interactions

No direct interactions leading to effects on species are expected to occur from the proposed project.

2.3.4 Cumulative effects

The proposed action activities will not have a cumulative effect on Red Knot.

2.3.5 Discussion and conclusion

Determination: NE

2.4 Roseate Tern

2.4.1 Status of the species

This section should provide information on the species' background, its biology and life history that is relevant to the proposed project within the action area that will inform the effects analysis.

2.4.1.1 Legal status

The Roseate Tern is federally listed as 'Endangered' and additional information regarding its legal status can be found on the ECOS species profile.

2.4.1.2 Recovery plans

Available recovery plans for the Roseate Tern can be found on the ECOS species profile.

2.4.1.3 Life history information

The roseate tern is about 40 centimeters in length, with light-gray wings and back. Its first three or four primaries are black and so is its cap. The rest of the body is white, with a rosy tinge on the chest and belly during the breeding season. The tail is deeply forked, and the outermost streamers extend beyond the folded wings when perched. During the breeding season the basal three-fourths of the otherwise entirely black bill and legs turn orange-red.

Identified resource needs

Coastal islands

Time of year: april-september and type: active common tern breeding colony

Coastal shore

Type: flat, sandy, type: sandbar, tidal sand flat, beach and shoal

Coastal tidal zone

Type: intertidal zone, subtidal zone, type: shallow water area (<10m), submerged sandbar, submerged shoal and submerged mudflat

Common tern flock

Time of year: april-september and type: active common tern breeding colony

Fish

Species: american sand lance (ammodytes americanus) and other small schooling marine fish

Sandbar

Type: sandbar, tidal sand flat, beach and shoal

Substrate structure and characteristics

Location: coastal island breeding colony, substrate size: coarse, time of year: april-september, type: rocks, boulders, driftwood, wooden boards, revetments, nest boxes, tires, drebris, type: sand, sand and shell and gravel

Vegetation density

Density: 80%, location: coastal island breeding colony, spatial arrangement: clumped, species: native coastal and time of year: april - september

Vegetation structure

Density: 80% vegetation cover, location: coastal island breeding colony, spatial arrangement: clumped, species: native coastal and time of year: april-september

Vegetation structure

Density: 80%, location: coastal island breeding colony, spatial arrangement: clumped, species: native coastal and time of year: april-september

2.4.1.4 Conservation needs

The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, which does not provide habitat for Roseate Tern. The Norwalk River will not be impacted by the proposed action.

2.4.2 Environmental baseline

*The environmental baseline describes the species' health **within the action area only** at the time of the consultation, and does not include the effects of the action under review. Unlike the species information provided above, the environmental baseline is at the scale of the Action area.*

2.4.2.1 Species presence and use

The Roseate Tern is a shorebird that nests on island beaches of sand, pebbles, or shells, often near low vegetation.

Roseate Terns are exclusively marine and typically nest with Common Terns in various habitats on offshore islands or mainland beaches. Roseate Terns prefer sandy, gravelly, or rocky areas with shelter provided by vegetation, debris or rocks.

The Project Area offers minimal habitat preferred by Roseate Terns since it does not contain nor is it located near any coastal sandy beaches or offshore islands. Veteran's Memorial Park, located on the east bank of the Norwalk River was developed on the City's former landfill. It currently includes a mix of recreational fields, natural vegetation and lawn areas, all sub-optimal conditions for Roseate Terns.

2.4.2.2 Species conservation needs within the action area

The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, which does not provide habitat for Roseate Tern. The Norwalk River will not be impacted by the proposed action.

2.4.2.3 Habitat condition (general)

coastal tidal zone (type: intertidal zone, subtidal zone, type: shallow water area (<10m), submerged sandbar, submerged shoal and submerged mudflat)
The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, which does not provide habitat for Roseate Tern. The Norwalk River and associated tidal wetlands and intertidal mud flats will not be impacted by the proposed action.

fish (species: american sand lance (ammodytes americanus) and other small schooling marine fish)
The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, which does not provide habitat for Roseate Tern. The Norwalk River which supports various fish species will not be impacted by the proposed action.

2.4.2.4 Influences
Not applicable.

2.4.2.5 Additional baseline information
Not applicable.

2.4.3 Effects of the action
This section considers and discusses all effects on the listed species that are caused by the proposed action and are reasonably certain to occur, including the effects of other activities that would not occur but for the proposed action.

2.4.3.1 Indirect interactions

RESOURCE NEED	STRESSORS	CONSERVATION MEASURES	AMOUNT OF RESOURCE IMPACTED	INDIVIDUALS AFFECTED
Coastal islands (time of year: april-september and type: active common tern breeding colony)			***This resource is not present in the action area*** The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of	***There will be no impacts to this resource, so no individuals will be affected.***

RESOURCE NEED	STRESSORS	CONSERVATION MEASURES	AMOUNT OF RESOURCE IMPACTED	INDIVIDUALS AFFECTED
			impervious surfaces with a portion consisting of maintained lawn and landscaped trees, which does not provide habitat for Roseate Tern. The Norwalk River will not be impacted by the proposed action.	
Coastal shore (type: flat, sandy, type: sandbar, tidal sand flat, beach and shoal)			***This resource is not present in the action area*** The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, which does not provide habitat for Roseate Tern. The Norwalk River will not be impacted by the proposed action.	***There will be no impacts to this resource, so no individuals will be affected.***

RESOURCE NEED	STRESSORS	CONSERVATION MEASURES	AMOUNT OF RESOURCE IMPACTED	INDIVIDUALS AFFECTED
Coastal tidal zone (type: intertidal zone, subtidal zone, type: shallow water area (<10m), submerged sandbar, submerged shoal and submerged mudflat)	No exposure path			***There will be no impacts to this resource, so no individuals will be affected.***
Common tern flock (time of year: april-september and type: active common tern breeding colony)			***This resource is not present in the action area*** The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, which does not provide habitat for Roseate Tern. The Norwalk River will not be impacted by the proposed action.	***There will be no impacts to this resource, so no individuals will be affected.***

RESOURCE NEED	STRESSORS	CONSERVATION MEASURES	AMOUNT OF RESOURCE IMPACTED	INDIVIDUALS AFFECTED
Fish (species: american sand lance (ammodytes americanus) and other small schooling marine fish)	Increase in vehicle traffic		***There will be no impacts to this resource*** The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, which does not provide habitat for Roseate Tern. The Norwalk River which supports various fish species will not be impacted by the proposed action.	***There will be no impacts to this resource, so no individuals will be affected.***
Sandbar (type: sandbar, tidal sand flat, beach and shoal)			***This resource is not present in the action area*** The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, which does not provide habitat for Roseate Tern. The Norwalk River which does not contain sandbar habitat within the project action area will not be impacted by the proposed action.	***There will be no impacts to this resource, so no individuals will be affected.***

RESOURCE NEED	STRESSORS	CONSERVATION MEASURES	AMOUNT OF RESOURCE IMPACTED	INDIVIDUALS AFFECTED
Substrate structure and characteristics (location: coastal island breeding colony, substrate size: coarse, time of year: april-september, type: rocks, boulders, driftwood, wooden boards, revetments, nest boxes, tires, drebris, type: sand, sand and shell and gravel)			***This resource is not present in the action area*** The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, which does not provide habitat for Roseate Tern. No coastal island breeding colony is located within or proximate to the proposed action area.	***There will be no impacts to this resource, so no individuals will be affected.***
Vegetation density (density: 80%, location: coastal island breeding colony, spatial arrangement: clumped, species: native coastal and time of year: april - september)			***This resource is not present in the action area*** The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, which does not provide habitat for Roseate Tern. The project action area or its vicinity does not contain any coastal island breeding colony.	***There will be no impacts to this resource, so no individuals will be affected.***

RESOURCE NEED	STRESSORS	CONSERVATION MEASURES	AMOUNT OF RESOURCE IMPACTED	INDIVIDUALS AFFECTED
Vegetation structure (density: 80% vegetation cover, location: coastal island breeding colony, spatial arrangement: clumped, species: native coastal and time of year: april-september)			***This resource is not present in the action area*** The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, which does not provide habitat for Roseate Tern. The project action area or its vicinity does not contain any coastal island breeding colony.	***There will be no impacts to this resource, so no individuals will be affected.***
Vegetation structure (density: 80%, location: coastal island breeding colony, spatial arrangement: clumped, species: native coastal and time of year: april-september)			***This resource is not present in the action area*** The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, which does not provide habitat for Roseate Tern. The project action area or its vicinity does not contain any coastal island breeding colony.	***There will be no impacts to this resource, so no individuals will be affected.***

2.4.3.2 Direct interactions

No direct interactions leading to effects on species are expected to occur from the proposed project.

2.4.4 Cumulative effects

The proposed action activities will have no cumulative effect on Roseate Tern.

2.4.5 Discussion and conclusion

Determination: NE

3 Critical Habitat Effects Analysis

No critical habitats intersect with the project action area.

4 Summary Discussion, Conclusion, And Effect Determinations

4.1 Effect Determination Summary

SPECIES (COMMON NAME)	SCIENTIFIC NAME	LISTING STATUS	PRESENT IN ACTION AREA	EFFECT DETERMINATION
Monarch Butterfly	Danaus plexippus	Candidate	Yes	NE
Northern Long-eared Bat	Myotis septentrionalis	Threatened	Yes	NLAA
Red Knot	Calidris canutus rufa	Threatened	Yes	NE
Roseate Tern	Sterna dougallii dougallii	Endangered	Yes	NE

4.2 Summary Discussion

No critical habitat is present within or proximate to the proposed action area for any of the reviewed listed and candidate species. As a result, the proposed action will not effect these listed species.

4.3 Conclusion

The proposed action area is dominated by existing developed and disturbed area, the majority of which is comprised of impervious surfaces with a portion consisting of maintained lawn and landscaped trees, which does not provide habitat for any of the listed or candidate species.

Therefore, the proposed action will have no effect on listed or candidate species.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

In Reply Refer To: September 10, 2021
Consultation Code: 05E1NE00-2021-SLI-4723
Event Code: 05E1NE00-2021-E-14493
Project Name: Eversource Energy Norwalk Bridge T-Line By Pass Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

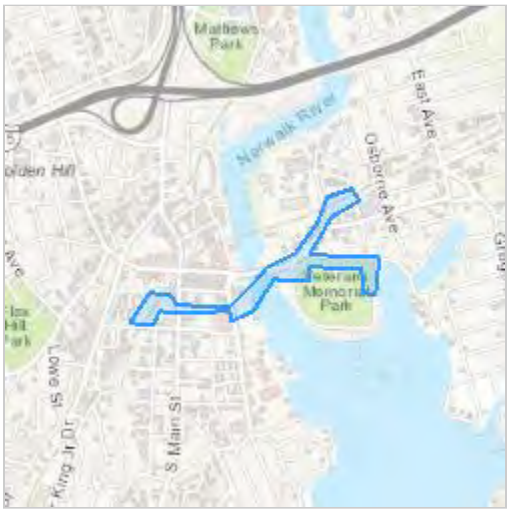
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2021-SLI-4723
Event Code: Some(05E1NE00-2021-E-14493)
Project Name: Eversource Energy Norwalk Bridge T-Line By Pass Project
Project Type: POWER GENERATION
Project Description: The Connecticut Department of Transportation (CDOT) is proposing to replace its existing, 120+ years old Walk Bridge crossing the Norwalk River in Norwalk, Connecticut. The 564-foot long four-span swing bridge is in deteriorated condition and vulnerable to a storm surge or high wind event. The Walk Bridge carries four railroad tracks over the River, as well as overhead electrical transmission circuits owned by Eversource Energy (Eversource) and Metro-North Railroad (MNR) communications. CDOT's bridge replacement project requires the decommissioning of the existing steel lattice structures at either end of the Walk Bridge that support Eversource's 115-Kilovolt transmission lines. As a result, Eversource's 115-kilovolt transmission lines. As a result, Eversource's transmission lines must be re-routed prior to the demolition/rebuild of the existing Walk Bridge. CDOTs bridge replacement design cannot accommodate the colocation of Eversource's transmission lines so the relocation of Eversource's transmission lines must be permanent.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.09960685,-73.41096718815416,14z



Counties: Fairfield County, Connecticut

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Roseate Tern *Sterna dougallii dougallii* Population: Northeast U.S. nesting population No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2083	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

ATTACHMENT 10

SHPO CORRESPONDENCE

Connecticut
still revolutionary

Department of Economic and Community Development

State Historic Preservation Office

July 27, 2018

Mr. David R. George
Heritage Consultants, LLC
PO Box 310249
Newington, CT 06131

Subject: Phase IA Cultural Resources Assessment Addendum
Norwalk Bridge Cable Relocation
Norwalk, Connecticut

Dear Mr. George:

The State Historic Preservation Office (SHPO) has reviewed the addendum to the Phase IA Cultural Resources Assessments Survey prepared by Heritage Consultants, LLC (Heritage) for the referenced energy cable relocation project in support of a Section 408 permit issued by the Army Corps of Engineers. SHPO understands that the proposed project includes removing Eversource Energy (Eversource) cables for Circuits 1028 and 1146 from the soon-to-be-replaced Norwalk River Railroad Bridge and relocating them beneath the Norwalk River through horizontal direction drilling (HDD), south of the Washington Street Bridge. Connections to either side of the river are proposed to be accomplished through open cut trenches along Fort Point and Elizabeth Streets. The HDD will utilize two drill pads; the western bank pad is proposed to be located at the intersection of Elizabeth and Water Streets, while the eastern bank pad is proposed to be located below the Washington Street Bridge. A temporary cable laydown area is to be located within Veteran's Park on the eastern side of the river.

Though the limited undertaking described in the addendum, which considers solely the laying of underwater cable in a federal navigable channel that has been subject to routine dredging, would not adversely effect any historic properties, and would have a low potential to disturb intact, archaeological deposits, this section of project could not be completed without the rest of the project, and therefore, cannot be considered in isolation. Therefore, the entre undertaking must be considered when evaluating direct and indirect effects to historic properties, pursuant to implementing the regulations of the National Hisoitrc Preservation Act, Section 106, as amended. .

Considering the undertaking as a whole, the project area contains numerous above ground features, including the National Register of Historic Places (NR) listed Haviland and Elizabeth Streets–Hanford Place Historic District (NR# 88000664), South Main & Washington Street Historic District (NR# 77001393, increase 1 #85003505, increase 2# 99000449), the former Norwalk City Hall (NR# 95000282), and the Norwalk River Railroad Bridge itself (NR# 87000844).

Though the area has been subject to numerous ground disturbance activities, there is still the potential to identify intact archaeological deposits, as evidenced by the recent artifacts recovered as part of the cultural resource reconnaissance survey undertaken in concert with the Connecticut Department of Transportation's replacement of the Norwalk River Bridge.

In regards to the east pad, the location is directly south of what was historically Fort Point Island, a contact period Native American fortification. Accordingly, an archaeological monitor should be present at all times during construction, unless it is able to be demonstrated, through soil probes or cores, that the soil indeed has been compromised, and no further archaeological work is warranted. A monitoring plan should be crafted in consultation with SHPO before the commencement of any work.

On the west bank, the area also appears to have been built up with fill, resulting in soft soils. What is more, it also appears to have been the location of both the Raymond Furnace Company and the Richardson and Morgan Company Manufactory, and would have the potential to yield historical era artifacts. As construction is also anticipated to involve substantial ground disturbance along Elizabeth Street, located within the Haviland and Elizabeth Streets–Hanford Place Historic District (NR# 88000664), a historic building protection plan should be formulated and implemented during construction. Guidance of the type of plan recommended can be referenced in the Connecticut Department of Transportation's *Walk Bridge Replacement Project Historic Building Protection Plan*, which will be implemented during the replacement of the Walk Bridge, located just north of the Project Site.

This office appreciates the opportunity to review and comment upon this project. These comments are provided in accordance with the Connecticut Environmental Policy Act and Section 106 of the National Historic Preservation Act. For additional information, please contact Marena Wisniewski, Environmental Reviewer, at (860) 500-2357 or marena.wisniewski@ct.gov.

Sincerely,

Mary B. Dunne
Deputy State Historic Preservation Officer

Subject: Re: Eversource Energy Norwalk River Crossing Project - Request for Review

Date: Wed, 3 Nov 2021 14:41:18 +0000
From: Labadia, Catherine <Catherine.Labadia@ct.gov>
To: David George <dgeorge@heritage-consultants.com>

Good Morning Mr. George,
SHPO appreciates the submitted additional information and we understand the minor modifications needed to complete the project. These modifications do not materially change our prior recommendations and technical guidance. We look forward to additional consultation, as needed. Do not hesitate to contact me if you have additional questions or require this response as a formal letter.
Thank you,
Cathy

From: David George <dgeorge@heritage-consultants.com>
Sent: Friday, October 15, 2021 8:51 AM
To: Labadia, Catherine <Catherine.Labadia@ct.gov>
Subject: Eversource Energy Norwalk River Crossing Project - Request for Review

Ms. Labadia,

Please find attached a request for an updated review of the Everource Energy Norwalk River Crossing Project. Attached is a letter describing the project and recent changes in construction plans, as well as a copy of a 2018 letter issued by your office regarding the previous project plans. Please let me know if you have any questions about the enclosed materials.

Thank you.

David

David R. George
Heritage Consultants, LLC
55 East Cedar Street
Newington, Connecticut 06111
860.299.6328
dgeorge@heritage-consultants.com

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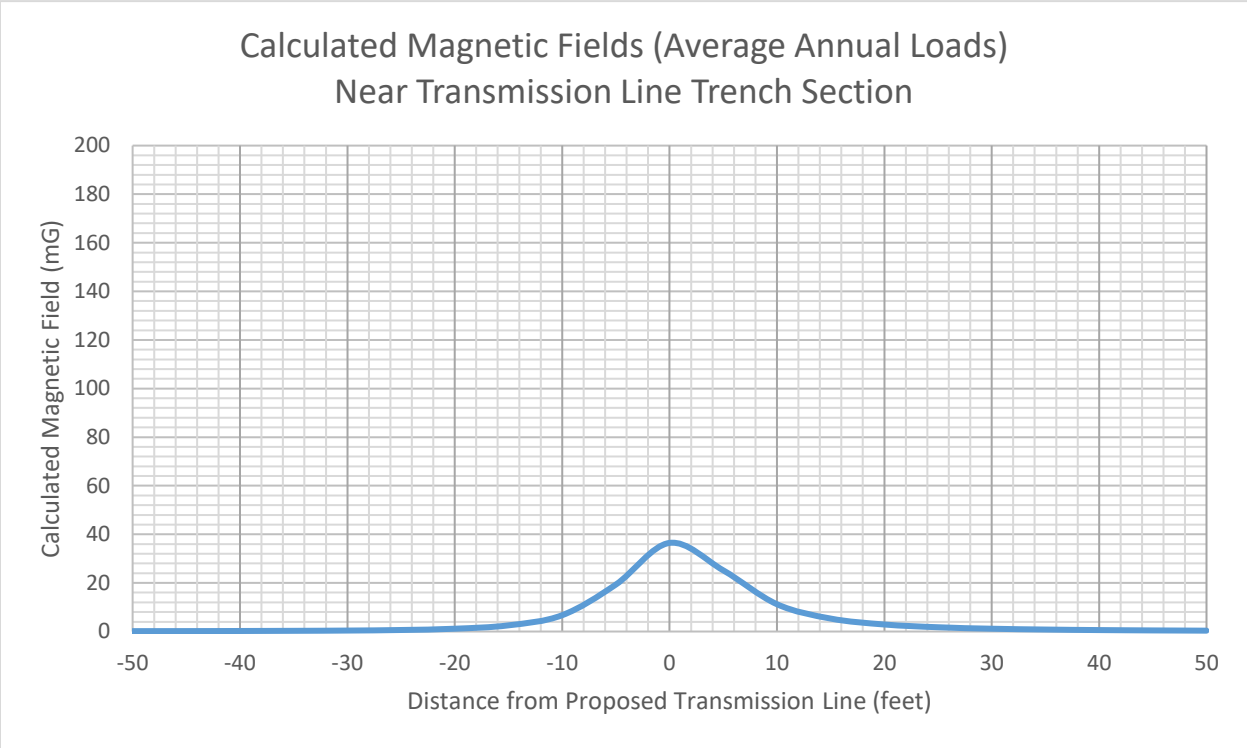
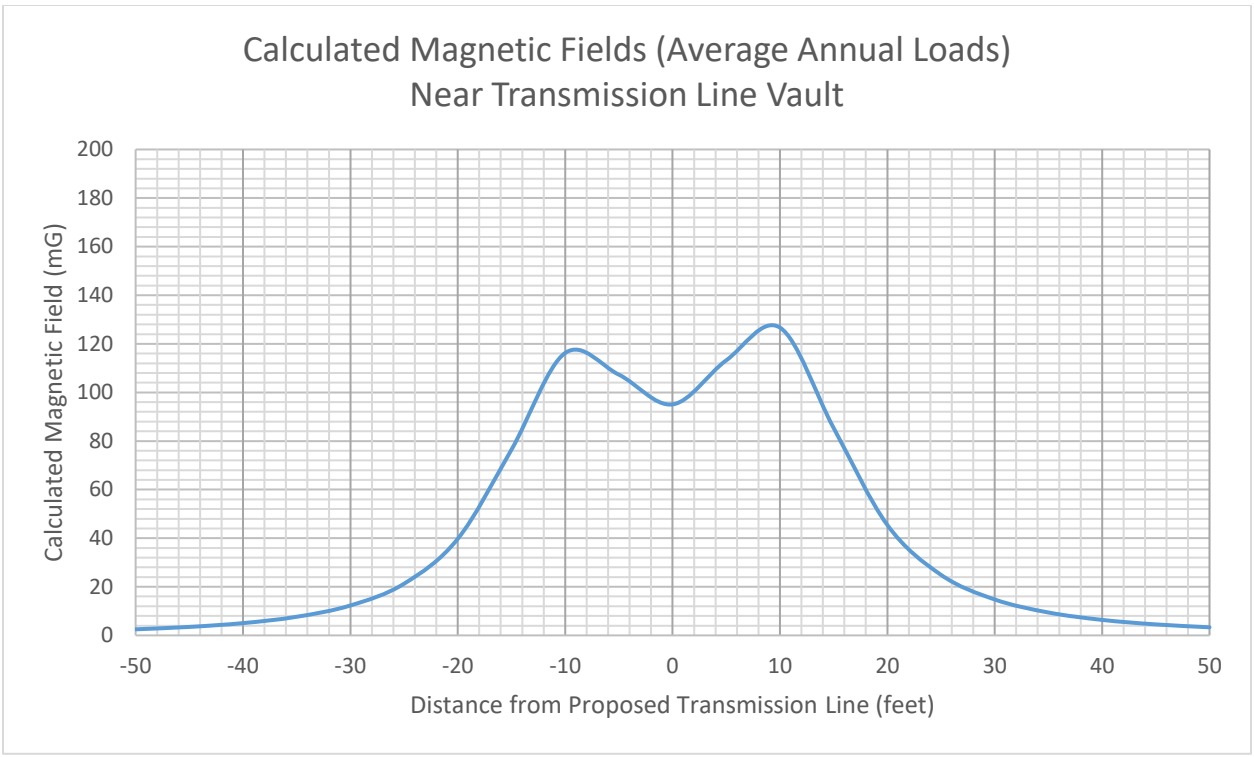
ATTACHMENT 11:

EMF GRAPHS


Calculated Magnetic Fields (Average Annual Loads)
Near Transmission Line Trench Section
Calculated Magnetic Field (mG)
200
180
160
140
120
100
80
60
40
20
0
-50
-40
-30
-20
-10
0
10
20
30
40
50
Distance from Proposed Transmission Line (feet)


Calculated Magnetic Fields (Average Annual Loads)
Near Transmission Line Vault
Calculated Magnetic Field (mG)
200
180
160
140
120
100
80
60
40
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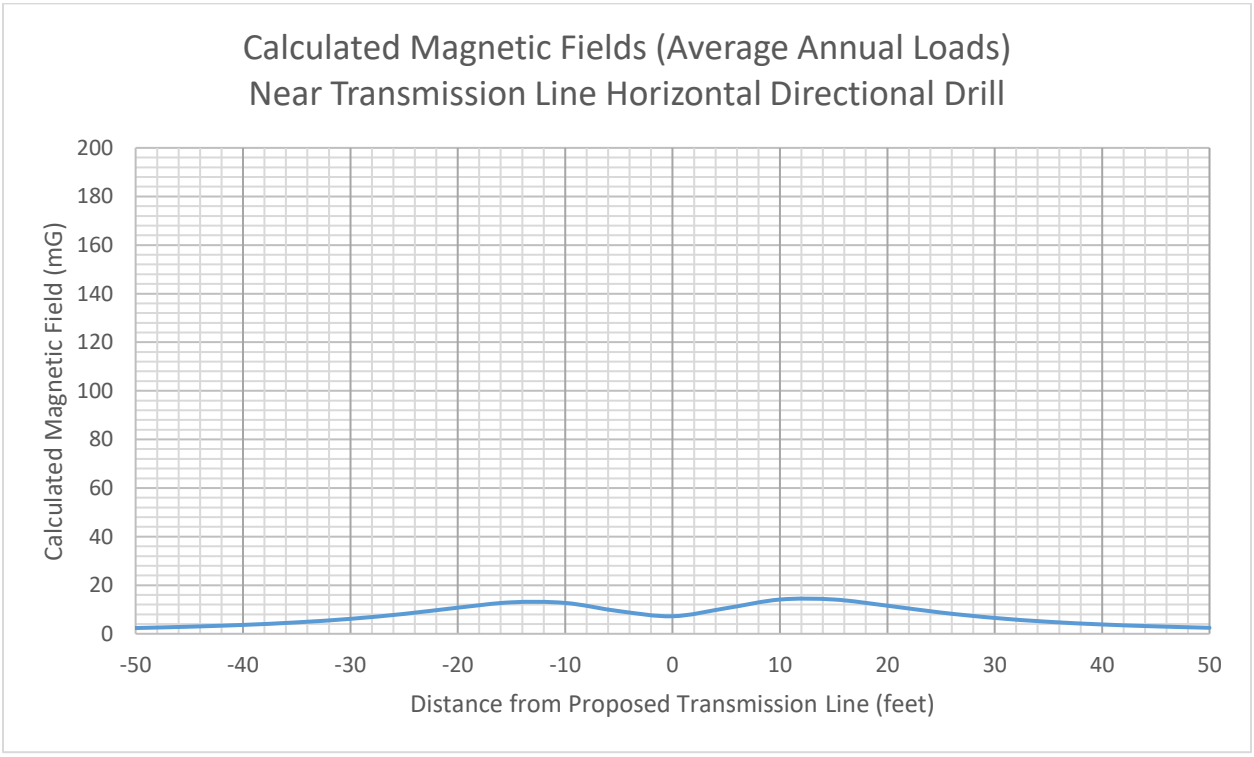
-40
-30
-20
-10
0
10
20
30
40
50
Distance from Proposed Transmission Line (feet)


Calculated Magnetic Fields (Average Annual Loads)
Near Transmission Line Horizontal Directional Drill
Calculated Magnetic Field (mG)
200
180
160
140
120
100
80
60
40
20
0
-50
-40
-30
-20
-10
0
10
20
30
40
50
Distance from Proposed Transmission Line (feet)

Tabulated MF Calculations			
Distance from T-Line	**Trench**	**Vault**	**HDD**
-300	0.0	0.0	0.1
-275	0.0	0.0	0.1
-250	0.0	0.0	0.1
-225	0.0	0.0	0.1
-200	0.0	0.0	0.1
-175	0.0	0.0	0.2
-150	0.0	0.1	0.3
-125	0.0	0.1	0.4
-100	0.0	0.3	0.6
-75	0.1	0.7	1.1
-50	0.1	2.5	2.4
-25	0.6	21.3	8.2
0	36.5	95.1	7.2
25	1.7	24.9	8.7
50	0.4	3.3	2.5
75	0.1	1.0	1.1
100	0.1	0.5	0.6
125	0.0	0.2	0.4
150	0.0	0.2	0.3
175	0.0	0.1	0.2
200	0.0	0.1	0.2
225	0.0	0.1	0.1
250	0.0	0.0	0.1
275	0.0	0.0	0.1
300	0.0	0.0	0.1

ATTACHMENT 12:

CDOT COMMITMENT LETTER

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546

Office of the
Commissioner

An Equal Opportunity Employer

November 9, 2022

Ms. Kathleen M. Shanley Manager – Transmission Siting
Eversource Energy
56 Prospect Street
P.O. Box 270 Hartford, CT 06103

Dear Ms. Shanley:

Subject: Project No.: 301-176 (Walk Bridget Replacement Project)
Owner(s): Eversource Energy
Norwalk, Norwalk Bridge Transmission Relocation Project Consent Letter

This letter will serve to provide notice to Eversource Energy (Eversource) that the Department of Transportation (Department), as owner of 90 Water Street in Norwalk, takes no exception to the alignment proposed by Eversource for a trenchless crossing of the Norwalk River via horizontal directional drill. It is understood that the alignment will extend through the above-referenced property and portions of Route 136 east of the river as shown on the attached drawings. Furthermore, the Department is willing to sell pertinent property rights at 90 Water Street, Norwalk and grant a highway encroachment permit within Route 136 to support the proposed alignment.

If you have any questions, please contact Mr. Terrence J. Obey, Director of Rights of Way at (860) 594-2462 or Terry.Obey@ct.gov.

Sincerely,

Mark D. Rolfe
Deputy Commissioner

Enclosure

Terrence J. Obey/rc
bcc: Comr. Giulietti-Dep. Comr. Rolfe- Dep. Comr. Eucalitto
Kafi Rouse
Carolyn Caggiano
Scott A. Hill
James A. Fallon
Mark F. Carlino
Terrence J. Obey
Becky Rozanski
Workflow

ATTACHMENT 13:

LETTER TO ABUTTERS AND AFFIDAVIT OF SERVICE OF NOTICE

EVERSOURCE

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

February 17, 2023

Dear Neighbor,

As part of the Connecticut Department of Transportations (CDOT) rebuild of the Walk Bridge in Norwalk, Eversource must relocate two existing transmission lines that span the top of the bridge. We are submitting a petition to the Connecticut Siting Council (CSC) for the proposed relocation scope of work.

Proposed Project Information

The relocation, called the Norwalk Walk Bridge Transmission Relocation Project (Project), is necessary to enable the continued reliability of the transmission system as CDOT replaces the bridge. The proposed relocation includes:

- Transition the existing overhead transmission lines off the railroad corridor in the area of the Norwalk Police Department parking lot, including building new transmission structures on both the east and west sides of the railroad tracks. The new transmission structures within the parking lot will allow for the overhead transmission lines to be moved underground.
- Continue underground out of the Police Station parking lot, under South Main Street, under Elizabeth Street, and under Water Street.
- On the east side of Water Street, the Project proposes to perform a horizontal directional drill (HDD) under the Norwalk River.
- The HDD will continue under Veteran's Memorial Park to vaults located just outside of the park within Fort Point Street.
- From the vaults, the lines would continue underground and transition back to the railroad corridor in the vicinity of the Fort Point Street Bridge.
- In total the route is approximately .8 miles long.

What You Can Expect

Pending receipt of the necessary approvals for this proposed work, construction is expected to begin in the fourth quarter of 2023. We anticipate to complete construction, including restoration of affected areas, in Summer of 2025.

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,

Evan Piacente

Evan Piacente
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 Harry W. Rilling
City of Norwalk
125 East Avenue
Norwalk, CT 06851

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 Attachment 1 to the Petition.

Evan Piacente
Project Manager

On this the 17th day of February 2023, before me, the undersigned representative, personally appeared, Evan Piacente, 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. Lo 413393