EVERSOURCE ENERGY

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November 21, 2017

Robert Stein, Chairman
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: Stepstone to Greenhill Upgrade Project

Dear Chairman Stein:

Attached are an original and fifteen (15) copies of a petition on behalf of The Connecticut Light and Power Company doing business as Eversource Energy ("Eversource" or the "Company") requesting a Declaratory Ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed modifications to the 1508 transmission line in the Towns of Guilford and Madison ("Petition").

Prior to submitting this Petition, representatives from Eversource briefed municipal officials in Guilford and Madison about the Project and Eversource provided written notice of the proposed work to all abutters and the Petition being filed with the Council. Maps and line lists identifying the abutting property owners who were notified of the Project are provided in Attachment A: Stepstone to Greenhill Upgrade Aerial Maps.

A check in the amount of $625 for the required filing fee is also attached.

Sincerely,

Kathleen M. Shanley

Enclosure

cc:

Joseph Mazza, First Selectman of Guilford
Thomas Banisch, First Selectman of Madison

THE CONNECTICUT LIGHT AND POWER COMPANY

doing business as

EVERSOURCE ENERGY

PETITION TO THE CONNECTICUT SITING COUNCIL
FOR A DECLARATORY RULING OF
NO SUBSTANTIAL ADVERSE ENVIRONMENTAL EFFECT
FOR THE PROPOSED MODIFICATIONS TO EXISTING
1508 LINE IN THE TOWNS OF GUILFORD AND MADISON, CONNECTICUT

1. 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 Section 16-50g et seq. of the Connecticut General Statutes for the modifications to the 1508 transmission line within an existing Eversource right-of-way (the "ROW") in Guilford and Madison (the "Project") that are described herein. Eversource submits that no such Certificate is required because the proposed modifications would not have a substantial adverse environmental effect.

2. Purpose of the Project

The purpose of the Project is to replace all but one of the structures along approximately 5.6 miles of the 115-kV 1508 Line, located entirely within the ROW between Stepstone Substation, located at 50 Stepstone Road in Guilford and Green Hill Substation, located at 775 Green Hill Road in Madison.

The 1508 Line was originally constructed in 1982 on 59 single-circuit wood structures with laminated wood arms and two steel structures. Recent inspections found that structure tops and the laminated wood arms of 58 wood monopole structures and one three-pole wood angle structure are in need of replacement due to deterioration.

In addition, during structure and foundation inspection of the 58 wood pole structures and 2 steel monopole structures it was found that the original design load assumptions applied when the line was constructed in 1982 were incorrect and do not meet the design requirements of the 1981 edition of National Electric Safety Code ("NESC"). As a result, Eversource is proposing to also include replacement of the two existing steel monopole structures along with the wood structures for this Project. Structure 5902 (previously a wood structure) was

previously replaced with a steel structure in 2009 (Council Docket No. 326) and would not be replaced. Figure 1 illustrates the general location of the proposed Project.

Figure 1: Project Overview Map

3. Project Description

The proposed Project scope is to replace 59 wood and two steel structures supporting the 1508 Line between Stepstone Substation and Green Hill Substation, which is a distance of approximately 5.6 miles.

Detail of the Project scope would be as follows:

a) Replacement of 58 existing single-circuit wood monopole structures with 58 single-circuit weathering steel monopole structures,
b) Replacement of one existing wood single-circuit three-pole structure (structure 5926) with one three-pole weathering steel structure,
c) Replacement of two existing single-circuit steel monopole structures (painted green) with two single-circuit weathering steel monopole structures,
d) Replacement of the existing 7#8 AIumoweld ground wire with two fiber optic ground wire ("OPGW") along the 1508 Line,
e) Installation of lightning arresters on every third structure, and
f) The existing 115-kV 795 kcmil conductors would be relocated to the new structures.

The heights of the existing 1508 Line structures range between 51 to 101 feet above ground level. Except for 11 of the replacement structures, which would not increase in height, the proposed structures would be approximately 1 to 10 feet taller than the existing monopole structures, with the tallest proposed structure being 108 feet above ground level. The reason for the increase in structure heights is to comply with the most recent (2017) NESC clearance requirements and Company standards.

Direct-embedded structures will be used at nearly all locations, except for structure 5915. A drilled shaft foundation is proposed for structure 5915. The proposed structures would be located in-line with the existing structures, approximately 10-15 feet from the existing structure to be replaced, except for structures 5960 and 5961. Structure 5960 would be located approximately 80 feet to the west from its existing location onto an adjacent property in order to mitigate impacts to a private driveway and a rock wall. Both affected property owners are in agreement with the new location. Structure 5961 would be relocated approximately 35 feet to the east onto Eversource property, due to the proximity of an existing private driveway.

4. Existing Environment, Effects and Mitigation

The proposed transmission line work described above would not have a substantial adverse environmental effect, for the reasons explained more fully below.

The upgrades would be constructed within Eversource's existing ROW. All work within environmentally sensitive areas, such as water resources or habitat areas identified through the National Diversity Data Base ("NDDB") for state-listed species, would be conducted in accordance with required environmental permits and through the implementation of the Company's 2016 *Best Management Practices Manual for Massachusetts and Connecticut* ("BMPs"); the work in these areas would employ measures to avoid, minimize and/or mitigate potential adverse environmental effects.

Existing Right-of-Way

The 1508 Line was originally constructed in 1982. The existing structure types include single-circuit wood monopoles with laminate wood arms, a three-pole wood structure and two steel monopoles (currently painted a light green with significant surface rust) and one galvanized steel monopole. The width of the existing ROW is typically 150 feet, with approximately 80 feet currently maintained. See Attachment B: Existing/Proposed R.O.W. Cross Sections.

Land Use

Land uses adjacent to the Project area consist of a mix of rural, residential, recreational areas (Cockaponset State Forest, Guilford Land Trust and Madison Land Trust), and other undeveloped lands such as forest areas, meadows, and rivers (East River and Neck River). Though the Project would be traversing through some of these areas, it will not impact adjacent land uses. Eversource will work with any affected property owners on restoration upon completion of the Project.

Clearing and Vegetation Removal

Some tree clearing is required within the existing ROW and would result in a total forest conversion (to scrub-shrub or herbaceous habitat) area of approximately 1.70 acres. No tree clearing is proposed in wetlands. Tree clearing, along with vegetation removal, is required to accommodate access road installation and improvements, and for work and pull pad installation. Converting forest (including forested wetland) to shrubland, or emergent vegetation along the transmission line ROW would modify, but not adversely affect, habitat. The creation of additional shrubland and early successional habitat (and the preservation of such existing habitat) along the ROW would represent a long-term benefit for many species of wildlife because shrubland habitat is otherwise declining in New England.

During vegetation removal, construction mats would be used to provide a stable base for equipment across watercourses or within wetlands and may also be utilized in floodplain areas unless dry conditions allow for conventional access for construction. Such temporary support would minimize rutting in wetlands, and the mats would be removed after the activities are complete.

Scenic, Recreational and Cultural Resources

No local or state designated scenic roads were identified within the Project area. The ROW crosses Cockaponset State Forest at several locations in Madison, including east and west of Opening Hill Road and east of Warpas Road to Durham Road. Based on field investigations, an unnamed trail was identified between structures 5935 and 5937. The Project ROW crosses Guilford Land Trust west of Podunk Road and west of Nortontown Road, and crosses Madison Land Trust property east of Warpas Road. No marked trails were identified in the Project ROW on land trust properties; however, passive recreational opportunities exist.

Cultural resources assessments of the Project area are being conducted by Heritage Consultants, LLC ("Heritage"). A Phase 1 (preliminary archaeological and historical resources assessment) was completed in June 2016. No state or National Register of Historic Places ("NRHP") listed properties or historic districts (built or above-ground resources) are located within or adjacent to the Project.

Based on the results of the Phase 1 assessment, a Phase 1B cultural resources reconnaissance survey (shovel testing) was recommended where Project activities are

proposed in areas that were determined by the Phase I to have a moderate/high potential for yielding intact archaeological (below ground) deposits. Tribal Historic Preservation Office(s) ("THPO") of the Mashantucket Pequot Tribal Nation, the Mohegan Tribe of Connecticut Indians, and the Wampanoag Tribe of Gay Head (Aquinnah) were notified of the intent to perform a Phase 1B survey.

To date, Heritage has completed shovel testing at 20 of 30 structures proposed for testing. Eversource representatives are currently coordinating the Connecticut Department of Energy and Environmental Protection ("CTDEEP") to complete shovel testing at the final ten structures, which are located on state land.

No state or NRHP archaeological sites have been identified thus far during the shovel testing. The results of the Phase 1 assessment and in-progress Phase 1B surveys are provided in Attachment C. The final results of the Phase 1B surveys will be provided to the Connecticut State Historic Preservation Office ("SHPO") and THPOs upon completion. In the event that an archeological resource is identified, Eversource would comply with any mitigation requirements requested by the SHPO and/or the THPOs.

Wetlands, Watercourses, Waterbodies and Flood Zones

Eversource contracted with Davison Environmental to identify and delineate water resources in the vicinity of the Project in May and June 2017 (see Attachment D: Wetlands and Watercourses Report). Water resources within the Project area include inland wetlands, watercourses (perennial and intermittent streams), a pond, three vernal pools, and Federal Emergency Management Agency ("FEMA") Flood Zones. All work in or near these areas would be conducted in accordance with the Eversource's BMPs and with the conditions of applicable regulatory permit conditions and approvals. Detail on each of these resource areas is provided below.

Wetlands

Wetlands in the Project area were identified and delineated in accordance with industry standard methodology. A total of 24 wetlands were identified in or proximate to the Project area.

Permanent wetland effects would result from the replacement of two existing monopole structures 5950 and 5955), which would be located in wetlands W22 and

W23. The replacement of these structures would result in approximately 40 square feet of permanent wetland effects. In order to minimize disturbance to the wetland, the existing wood monopole structure will be cut approximately 10 inches above grade and removed and the pole butt left in place.

The Project will result in approximately 1.28 acres of temporary effects to wetlands, which are associated with the temporary use of construction mats for access roads and work pads. All construction mats will be promptly removed upon Project completion and wetland areas will be restored in accordance with Eversource's BMPs.

Watercourses and Waterbodies

A total of 9 watercourses and waterbodies were delineated within the Project area. These include 6 perennial watercourses (three named and three unnamed), 2 intermittent watercourses, and one unnamed pond. Named watercourses include the East River, Neck River, and Oil Mill Brook.

Most of the watercourses within the Project ROW will be avoided altogether. No new access road or work pad watercourse crossings are required. Two existing access road watercourse crossings will be utilized during construction – one stone (hard-bottom) crossing of S3 and one culvert crossing of S4. The following Table W-1 provides a summary of Project effects to wetlands:

Table W-1:Summary of Project Effects to Wetlands

Wetland ID	200 Scale Map Sheet	Wetland Effects (± square feet / acres)	
		Temporary	Permanent
W1	1	493 / 0.01	0
W2	1	869 / 0.02	0
W5	2	23,356 / 0.54	0
W6	3	1,546 / 0.04	0
W11	4	1,618 / 0.04	0
W14	5	3,857 / 0.09	0
W19	6	6,537 / 0.15	0
W21	7	373 / 0.008	0
W22	8	10,373 / 0.24	20
W23	8	5,909 / 0.14	20
W24	8	740 / 0.02	0
TOTAL		55,671 sq. feet / 1.28 acres	40 sq. feet / <0.0009 acre

Vernal Pools

Project wetland areas were previously inspected for potential vernal pool habitat in 2016. Davison Environmental evaluated these potential vernal pools in July 2017 using identified physical and hydrologic characteristics, visual surveys, and dip-netting. All three potential vernal pools were confirmed to be vernal pools based on the presence of vernal pool indicator species (see Attachment E: Vernal Pool Survey). Temporary matting would be utilized for work pad construction within the vernal pool envelopes (within 100 feet) of VP1 and VP3 to avoid permanent alteration of this habitat area. All proposed work within the vernal pool envelopes would occur within the existing maintained ROW. In addition, Project construction is currently scheduled to occur in winter 2017-2018, outside of the active vernal pool season. If work is conducted within the active vernal pool season (March through June), Eversource

would implement measures to facilitate unencumbered amphibian access to and from these vernal pools such as syncopated silt fencing or elevated matting.

FEMA Flood Zones

The Project ROW extends across 100- and 500-year FEMA flood zones associated with the East River in Guilford, the Neck River on the Guilford-Madison town lines, and Oil Mill Brook in Madison. One replacement structure is proposed to be located within a 100-year flood zone, and four replacement structures are proposed to be located within 500-year flood zones. In addition, work activities and materials would be located within 100-year flood zones at proposed structures 5916 and 5935.

Eversource would utilize its BMPs to minimize any impacts in these areas including the use of construction mats for work pads to ensure that hydrology is not adversely affected. All construction mats would be removed after the Project is complete. Areas of disturbance would be promptly stabilized in order to minimize the potential for soil erosion and the discharge of sediment into nearby resource areas. Prior to significant storm events, Eversource will secure the construction mats to impede lateral movement during temporary flooding. In areas where gravel is used for access, grading and soil removal would occur prior to installation, to ensure no net increases in fill. Accordingly, the Project would have a de minimis effect on the flood storage capacity of the affected flood zones.

Water Supply

A review of the most recently (February 2017) updated Aquifer Protection Areas ("APA") mapping maintained by the CT DEEP, indicates that a portion of Stepstone Substation is located within the Pinewood, Level A APA. In addition, based on a review of the Town of Guilford Zoning Map, effective July 2010, portions of the Project ROW in Guilford overlap a town designated Groundwater Protection District. Best practices for the proper storage, secondary containment, and handling of diesel fuel, motor oil, grease and other lubricants, would be used to protect water quality within these areas. Construction activities would conform to Eversource's BMPs, as well as to the requirements of Project-specific plans (e.g., Stormwater Pollution Control Plan; Spill Prevention and Control Plan), which would be prepared prior to the commencement of construction.

The Project is not located within a public water supply watershed and no public supply reservoirs or public water supply wells are located within the Project area. Residences within the Project area are generally served by private water supply wells.

Wildlife and Habitat

The Project would not have a substantial adverse environmental effect on wildlife or wildlife habitat. Eversource has corresponded with the CT DEEP Bureau of Natural Resources – Wildlife Division, NDDB regarding state-listed species within the Project area. The CT DEEP NDDB has provided Eversource with a letter indicated that state-listed species are present within the Project ROW, and provided recommendations for their protection. Eversource will adhere to these recommendations and any additional protection strategies that may be identified by CT DEEP.

Screening using the U.S. Fish & Wildlife Service's Information, Planning, and Consultation Service indicated that two federal-threatened species, the northern long-eared bat ("NLEB") and red knot (a shorebird species), may be present in proximity to the Project area. The NLEB was also state-listed endangered in August 2015. Based on consultation between Eversource and CT DEEP regarding state-listed species, there are no known NLEB species occurrences or hibernacula in the vicinity of the Project area. Red knot utilizes shoreline habitat, which is not present within the Project area.

Visual Effects

All replacement structures will utilize weathering steel and, except for the two painted structures, will look similar to the original wood structures. Except for two structures, all new structures are proposed to be located near existing structure locations and would be of generally comparable heights to the existing structures. Depending on the location, the height of the proposed structures would generally be approximately 1 to 10 feet higher than the existing structures, 11 structures will remain the same height. Structure 5960 would be moved 80 feet and structure 5961 would be moved 35 feet from the existing locations to mitigate impacts to private property. The height differences are not anticipated to result in a significant change to the visual effect of the structures and line.

Air Quality

The potential for short-term, localized effects on air quality may result from the work, primarily from fugitive dust and equipment emissions. To minimize the amount of dust generated by construction activities, the extent of exposed/disturbed areas at any one time would be minimized. Vehicle emissions will be limited by requiring contractors to properly maintain construction equipment and vehicles, and by minimizing the idling time of equipment and vehicles, including diesel construction equipment, in accordance with Connecticut regulatory requirements. Temporary gravel tracking pads would be installed at points of construction vehicle ingress/egress to minimize the potential for equipment to track dirt onto local roads. To further minimize dust, water may be used to wet down disturbed soils or work areas with heavy tracking as needed.

Sound Levels along the Transmission ROW

There would be no changes to the sound levels along the transmission corridor resulting from the transmission line after completion of the Project.

Radio and Television Interference

No radio or television interference would result from the Project.

5. Traffic, Construction Sequence and Methods

Traffic/Traffic Management

Construction vehicles and equipment associated with the work would include pickup trucks, bucket trucks, concrete trucks, drill rigs, front loaders, reel trailers, bulldozers, wood chippers, cranes, forklifts, side booms, dump trucks and cranes. Pullers, tensioners and helicopters will be used for the OPGW installation.

Construction-related vehicular and equipment movements would occur on public roads in the Project area. However, the Project-related traffic is generally expected to be temporary and highly localized in the vicinity of the ROW and staging areas. Due to phasing of construction work, these Project-related traffic movements are not expected to significantly affect transportation patterns or levels of service on public roads.

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

Construction Sequence

Preparation of the ROW would include the following activities:

Establishing Staging Areas

Eversource would be storing equipment and materials at the Stepstone Substation. In addition, temporary staging areas will be selected from available parcels in the vicinity of the Project area and would be used to store construction materials, equipment, tools, and supplies (including conductor, insulators, hardware, poles and construction mats) for the Project. Office trailers may be located at a staging area, and components removed during the work (structures, conductor, hardware and insulators) may be temporarily accumulated and stored at a staging area prior to removal off-site for salvage and/or disposal. The staging areas may also be used by construction crew members for parking personal vehicles as well as for construction vehicles and equipment storage, and for performing minor maintenance, when needed, on construction equipment. An environmental review of each potential staging area location would be completed and erosion and sedimentation ("E&S") controls would be installed and maintained, as needed, until Project completion in accordance with Eversource's BMPs.

Eversource would consult with the local municipal officials and provide notice to the Council when additional staging areas are identified.

Clearing and Vegetation Removal

Some tree clearing and vegetation removal would be required for this Project. A portion of the ROW is currently maintained in accordance with Eversource's ROW vegetation management program and some vegetation and tree removal would be required within

construction areas, including at work pads and access roads. Eversource would conduct tree clearing and vegetation removal activities in accordance with its BMPs.

During tree clearing and vegetation removal, construction mats will be used to provide a stable base for equipment across watercourses or within wetlands. Such temporary support would minimize rutting in wetlands and would be removed after the vegetation removal activities are completed.

Eversource would require the contractor to use low-impact mowing/vegetation removal methods, where possible, to maintain vegetation and to protect wetlands, watercourses, threatened and endangered species and their habitats, and cultural resources. Low-impact mowing/vegetation removal incorporates a variety of approaches, techniques, and equipment to minimize site disturbance. Eversource would require the contractor to use such low-impact methods, depending on site-specific considerations, as:

- Take into consideration soil and weather conditions when scheduling vegetation removal activities such as heavy rainfall.
- Maximize the use of uplands for access routes.
- Use appropriate equipment for the site conditions to minimize impacts to the extent practicable.
- Cut shrubs close to the ground, leaving root systems and stumps, where practical, to provide additional soil stability.

Soil Erosion and Sediment Control Installation

Project construction would conform to best management practices for E&S control, including those provided in the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* ("*Connecticut Guidelines*") and the Eversource's BMPs.

Typical E&S control measures include, but are not limited to, straw blankets, straw bales, silt fencing, check dams, berms, swales, and sediment basins. Silt fence would be installed prior to construction to demarcate the line of construction and prevent migration of sediment or construction materials into wetlands and watercourses. Temporary E&S control measures would be maintained and inspected throughout the Project to ensure their integrity and effectiveness. Following completion of construction, seeding and mulching would be undertaken to permanently stabilize previously disturbed areas. The

temporary E&S control measures would remain in place until the Project work is complete and all disturbed areas have been stabilized.

Access Roads and Work Pads

Access to each proposed transmission structure location is required for Project construction. As a result of the operation and maintenance of the existing transmission lines within this ROW, the access roads are already established and would be used for Project construction. Additionally, off-ROW access roads, some requiring improvement, would also be utilized to access the Project ROW in some locations. Access roads to be used for the proposed Project are illustrated on the maps in Attachment A.

The existing access roads may need to be graded, widened, and/or reinforced with additional material in order to accommodate the safe passage of construction vehicles and equipment. Access road improvements typically include trimming adjacent vegetation and widening roads as needed to provide a minimum travel surface that is approximately 12 to 16 feet wide (additional width may be needed at turning or passing locations). Access roads would typically be graveled; however, where access roads traverse streams or wetlands, construction mats would be used. E&S controls would be installed as necessary before the commencement of any improvements to or development of access roads.

At each transmission structure site, a work pad would be required to stage material for final on-site structure assembly and/or removal, and to provide a safe, level work base for the construction equipment. Typical work pads would be approximately 80 feet by 80 feet and the pulling areas would be approximately 100 feet by 100 feet, as limited by the size of the ROW contours.

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

A typical (upland) installation of a work pad at a structure location involves several steps: (1) removal of vegetation, if necessary; (2) the work pad site would be graded to create a level work area, and; (3) the upper three to six inches of topsoil (which is typically unsuitable to support the necessary construction activities) would be removed. The topsoil would be temporarily stockpiled within the ROW, typically near the work pad. A rock base,

which allows drainage, would be layered on top of filter fabric, if necessary. Additional layers of rock with dirt/rock fines are typically placed over this rock base.

Access roads and work pads located within improved residential, commercial, or industrial areas would typically be removed and restored unless the property owner requests that they remain in place. No new permanent work pads are proposed in wetlands or streams. Excavated soils that are generated during construction activities would not be stored or stockpiled inside of a wetland, or adjacent to a watercourse. Materials that could not be utilized as back fill would be disposed in accordance with CT DEEP regulations.

Foundation Installation

The proposed structures would have direct-embedded foundations, except structure 5915, which would have a drilled shaft foundation. The structure foundation construction would require equipment such as: augers, trucks for hauling reinforcing rebar/rebar cages, drill rigs, cranes, concrete trucks for structures drilled shaft/micro pile foundations and dump trucks for structures that require crushed rock backfill. If groundwater is encountered, pumping (vacuum) trucks or other suitable equipment would be used to pump water from the excavated areas before structure erection. The water would then be discharged in accordance with applicable local, state, and federal requirements.

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

Structure Assembly

Structure sections for the new monopoles, structure components and hardware would be delivered to the individual structure locations using flat-bed trucks and then assembled using cranes and bucket trucks.

Restoration

Once the new structures are erected and the line is energized, the existing 115-kV structures and shield wires would be demolished and removed. The equipment required for these activities would be generally the same as required for installing the new structures and OPGW; which is described above.

Restoration activities within the ROW would include the removal of construction debris, signs, flagging, and temporary fencing, as well as the removal of temporary access roads (construction mats) and work/pull pads. Areas affected by construction would be re-graded as practical and stabilized using revegetation or other measures before removing temporary E&S controls. Eversource will work with affected property owners for the restoration or permanent removal of any stone walls that would be impacted during construction.

Waste Management

Waste materials, such as structure components (i.e., structural steel, shield wire, associated hardware, etc.) and any other construction debris would be disposed of in accordance with Eversource's BMPs, applicable regulations or recycled consistent with applicable rules and regulations and Eversource policies.

Excess soils would be managed in accordance with the *Connecticut Guidelines,* the Company's BMPs, applicable regulations and disposal facility policies.

Dewatering during construction activities would be conducted in accordance with *2002 Connecticut Guidelines for Soil Erosion and Sediment Control,* the Company's BMPs and applicable regulations.

Noise

During construction, any impacts to existing noise levels would be short-term and localized in the vicinity of the work sites. There would be no permanent changes to the noise levels along the transmission ROW from the Project.

Construction Schedule and Work Hours

Normal work hours would be Monday through Saturday from 7:00 AM to 7:00 PM. Sunday work hours may be necessary due to delays caused by inclement weather and/or outage constraints. Multiple crews may work concurrently on different sections of the line.

6. Electric and Magnetic Fields

Electric and magnetic fields ("EMF") are forms of energy that surround an electrical device when it is operable and/or operating. Electric fields ("EF") 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 an 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 the magnetic field 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.

Electric and magnetic field levels along the Project transmission corridor are expected to remain essentially unchanged. Some slight increases of the fields within the ROW will be observed. Changes beyond the edge of the ROW will be negligible. Calculated fields under Average Annual Loading Conditions are summarized in Table E-1 below. See Figure 1 for the calculated magnetic fields and Figure 2 for the calculated electric fields below.

While there are no state or federal guidelines that govern electric and magnetic fields, the scientific community has identified limits for safe exposure. These limits are identified by the International Council on Non-Ionizing Radiation Protection ("ICNIRP") and the International Council on Electromagnetic Safety ("ICES") and are tabulated in Table E-2. It should be noted that the fields from the proposed Project are well below these limits.

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

		North Edge	Max in ROW	South Edge
Electric Field (kV/m)	Pre Construction	0.5	1.0	0.1
	Post Construction	0.6	1.0	0.1
Magnetic Field (mG)	Pre Construction	12.4	30.6	2.6
	Post Construction	12.8	31.3	2.8

Table E-2 - Reference levels for whole body exposure to 60-Hz fields: general public

Organization Recommending Limit	Magnetic Fields (mG)	Electric Fields (kV/m)
ICNIRP Restriction Level	2,000	4.2
ICES Maximum Permissible Exposure	9,040	5 10*

* This is an exception within transmission line ROWs because people do not spend a substantial amount of time at these locations and very specific conditions are needed before a response is likely to occur (i.e. a person must be well-insulated from ground and must contact a grounded conductor) (ICES, 2002, p. 27).

Figure E-1 - Calculated Magnetic Fields

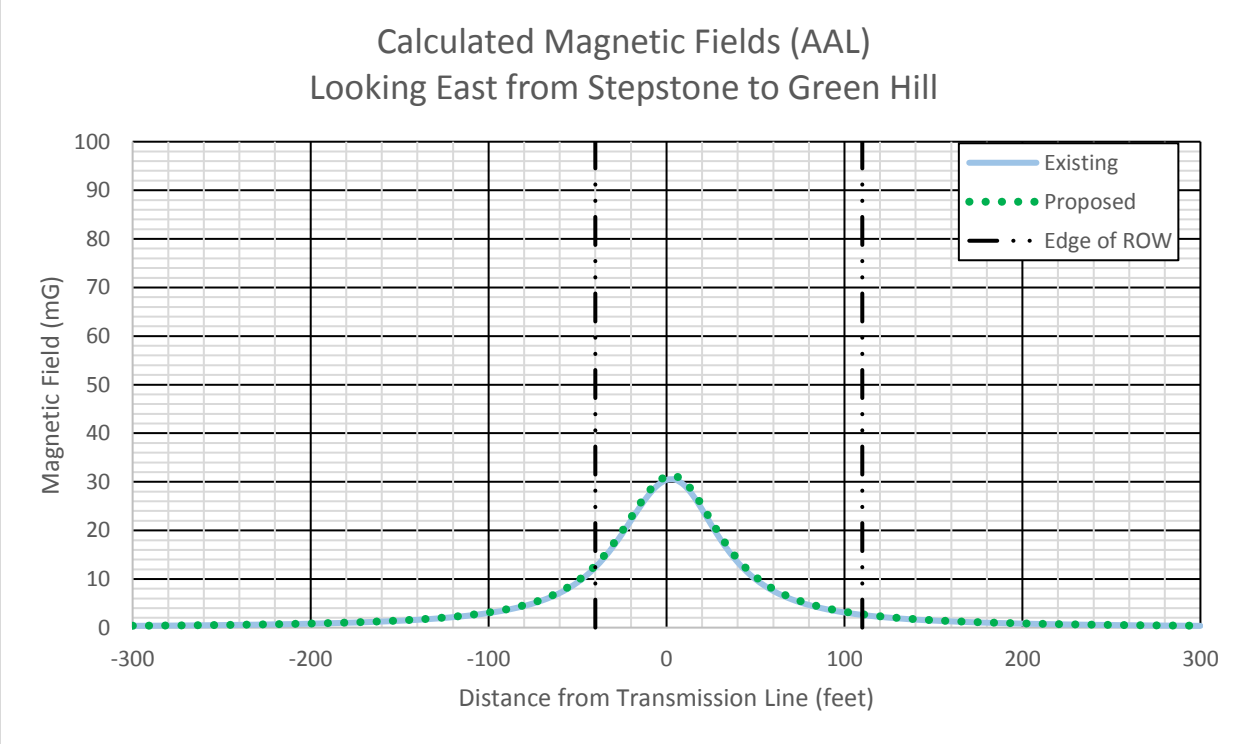
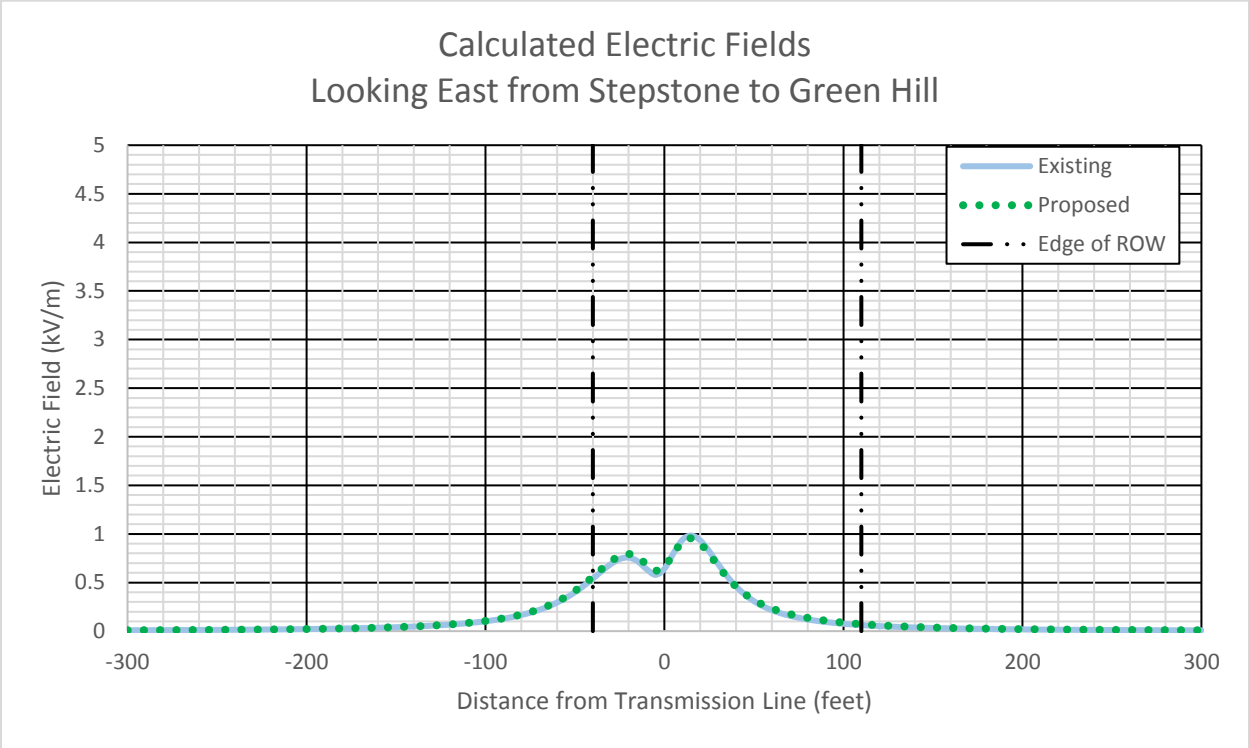


Figure E-2 - Calculated Electric Fields



7. Municipal and Property Owner Outreach

In June 2017, Eversource consulted with the municipal officials in the Towns of Guilford and Madison to brief them on the proposed Project. Eversource also provided representatives of the Towns of Guilford and Madison with written notice of the Petition filing.

In June 2017, Eversource initiated outreach to property owners located along the ROW. In conjunction with the submission of this Petition, all abutting property owners were notified of the filing and provided information on how to obtain additional information on the Project, as well as how to submit comments to the Council.

In June 2017, Eversource met with Guilford Land Trust representatives on site at Guilford Land Trust property, located on Podunk Road in Guilford, to discuss the work and impact on the Guilford Land Trust Property. The land trust representatives appreciated Eversource's concern for the Land Trust.

In addition to the above, Eversource representatives will contact abutters to provide advance notification to them as to the start of construction activities and will continue to update property owners throughout construction and restoration.

8. Section 16-50k(a) of the Connecticut General Statutes provides that a Certificate of Environmental Compatibility and Public Need is needed for proposed modifications of a facility that the Council determines may have a "substantial adverse environmental effect." Eversource respectfully submits that the proposed modifications would not result in a substantial adverse effect on the environment or ecology, nor would they damage existing scenic, historical or recreational values. Accordingly, Eversource requests that the Council issue a declaratory ruling that the proposed modifications would have no substantial adverse environmental effect and, therefore, no Certificate is required.

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

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

By: _____
Kathleen M. Shanley
Manager – Transmission Siting

List of Attachments

Attachment A: Stepstone to Green Hill Substation Upgrade Project – Aerial Map
Attachment B: Existing/Proposed R.O.W. Cross Sections
Attachment C: Cultural Heritage Report
Attachment D: Wetlands and Watercourses Report
Attachment E: Vernal Pool Survey
Attachment F: Letter to the Abutters and Affidavit

ATTACHMENT A

Stepstone to Green Hill Upgrade Project

Towns of Guilford & Madison, Connecticut

Aerial Map

NOVEMBER 2017

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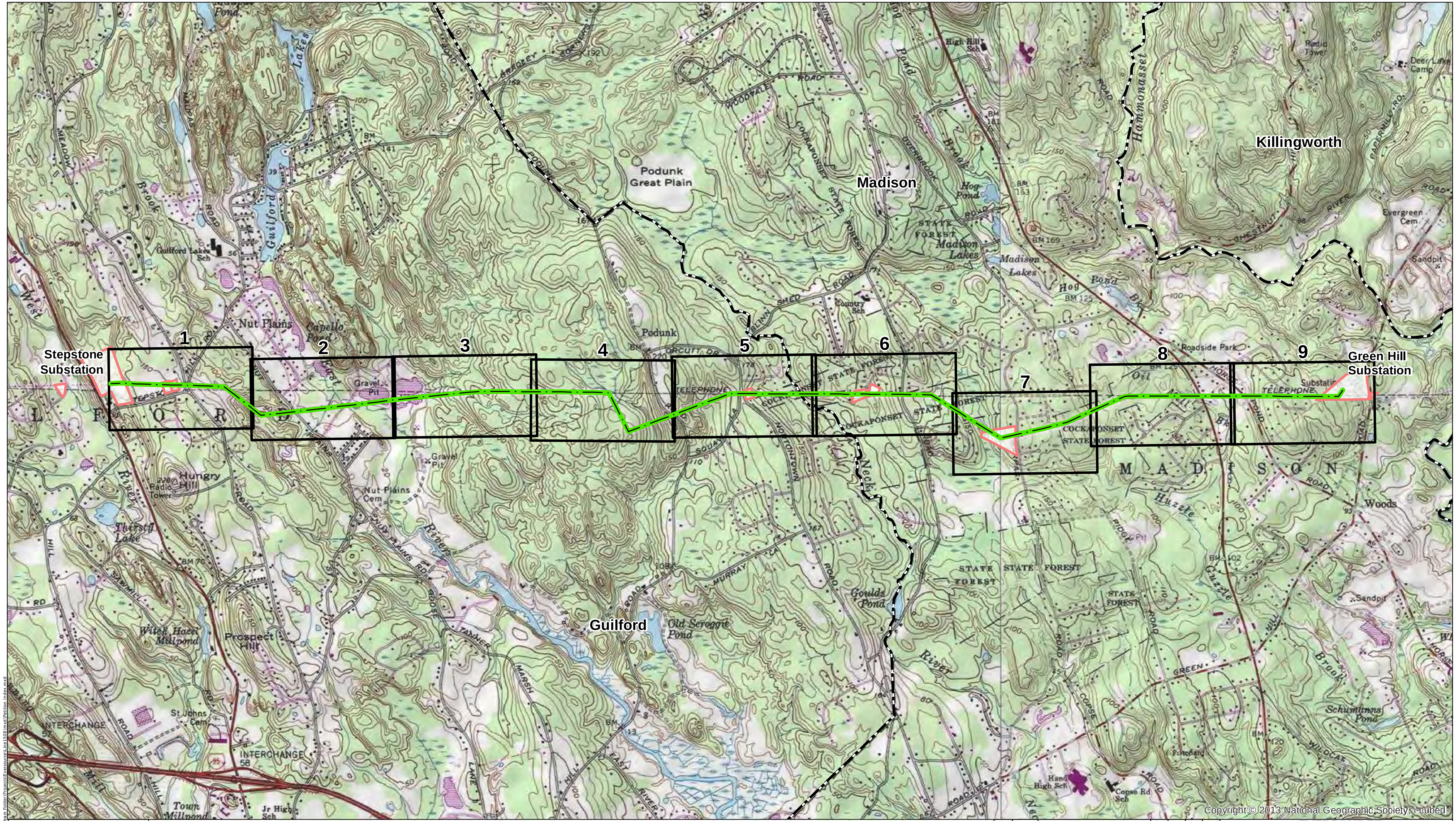
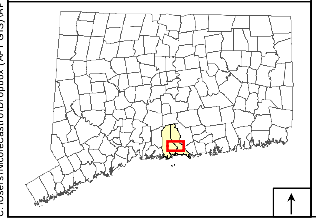


INDEX MAP



Legend

Line 1508

Map Sheet

Eversource Owned Property

Municipal Boundary

1:24,000

0 1,000 2,000 Feet

Base Map Source: ESRI USA Topographic Maps

NO.	DATE	REVISIONS	BY	CHK	APP	APP

EVERSOURCE ENERGY

Stepstone to Green Hill Upgrade Project
Index Map

Guilford and Madison, CT

November, 2017

Map Author: N. Castro

DAVISON ENVIRONMENTAL
ALL-POINTS TECHNOLOGY CORPORATION

MAPSHEET 1 of 9
Stepstone to Green Hill Upgrade Project
Stepstone Substation to Existing Structure 5908
Town of Guilford, Connecticut

AREA DESCRIPTION

Existing Land Use & Resource Areas
- Residential
- Eversource owned property
- Agricultural
- Undeveloped, forest
- Natural Diversity Database Area

RIGHT-OF-WAY DESCRIPTION

Right-of-Way Land Use & Resource Areas
- Maintained ROW
- Residential from structures 5903 to 5906
- Eversource owned property adjacent to structures 5902 and between 5904 and 5905
- Natural Diversity Database Area near Stepstone Substation

Water Resources
- Wetlands – W1, W2
- Wetland Cover Types – PSS, PEM, PFO
- Watercourses – None

Wetland and Watercourse Crossings
- Wetland W1 – construction mats for work pad
- Wetland W2 – construction mats for work pad

Right-of-Way Vegetation
- Scrub-shrub
- Old field
- Meadow
- Forest

Access
- Structure 5902 to 5903: existing access from Stepstone Substation (Stepstone Hill Road)
- Structure 5904 to 5908: proposed access from Stepstone Hill Road

Road Crossings
- Stepstone Hill Road

Existing Maintained Right-of-Way Width / Proposed Right-of-Way Clearing
- 80 feet / 0 feet

ABUTTERS TO THE PROJECT RIGHT-OF-WAY

LLN Number	Parcel Address	Town	Owner Name
3000	50 STEPSTONE HILL ROAD	GUILFORD	THE CONNECTICUT LIGHT AND POWER COMPANY (EVERSOURCE)
3001	STEPSTONE HILL ROAD	GUILFORD	THE CONNECTICUT LIGHT AND POWER COMPANY (EVERSOURCE)
3005	10 STEPSTONE HILL ROAD	GUILFORD	RUSSI T & AVA R SUNTOKE
3006	68 STEPSTONE HILL ROAD	GUILFORD	MARK A MILLETT
3007	70 STEPSTONE HILL ROAD	GUILFORD	JEWETT FAMILY REVOCABLE TRUST
3008	88 STEPSTONE HILL ROAD	GUILFORD	WARREN D & HELEN O GOHSLER
3009	100 STEPSTONE HILL ROAD	GUILFORD	RONALD R & MARGARET B BERUBE
3010	72 STEPSTONE HILL ROAD	GUILFORD	ROBERT A SOLARI
3011	74 STEPSTONE HILL ROAD	GUILFORD	SCOTT W GUILE & KIM MASTIANO
3012	112 STEPSTONE HILL ROAD	GUILFORD	SOUTHERN NEW ENGLAND TELEPHONE COMPANY
3013	126 STEPSTONE HILL ROAD	GUILFORD	LIDIO A AFONSO
3014	STEPSTONE HILL ROAD	GUILFORD	THE CONNECTICUT LIGHT AND POWER COMPANY (EVERSOURCE)
3015	130 STEPSTONE HILL ROAD	GUILFORD	YONGMEI JIN & XUECHUN ZHANG
3016	STEPSTONE HILL ROAD	GUILFORD	THE CONNECTICUT LIGHT AND POWER COMPANY (EVERSOURCE)
3017	822 LITTLE MEADOW ROAD	GUILFORD	PATRICK M & KATHLEEN SINCLAIR REVOCABLE TRUST
3018	721 LITTLE MEADOW ROAD	GUILFORD	JESSA & RYAN FRANCIS
3019	701 LITTLE MEADOW ROAD	GUILFORD	JENNIE M OFFREDI
3020	LITTLE MEADOW ROAD	GUILFORD	JENNIE M, DAVID A, JEANETTE N OFFREDI
3020.01	637 LITTLE MEADOW ROAD	GUILFORD	JENNIE M OFFREDI
3021	655 LITTLE MEADOW ROAD	GUILFORD	DAVID & JEANETTE N OFFREDI
3022	80 VILLAGE POND ROAD	GUILFORD	MICHAEL V & CAROL A MORMILE
3022.01	62 VILLAGE POND ROAD	GUILFORD	DANIEL P & MICHELLE L WIECEK

Stepstone Substation

NDDB Area

POTENTIAL PULL PAD

GRAVEL DRIVE

1508-Line

POTENTIAL PULL PAD

POTENTIAL PULL PAD

ACCESS TO STRUCTURE 5909

W1

W2

5902

5903

5904

5905

5906

5907

5908

LLN 3000

LLN 3006

LLN 3007

LLN 3009

LLN 3010

LLN 3011

LLN 3012

LLN 3013

LLN 3014

LLN 3015

LLN 3016

LLN 3017

LLN 3018

LLN 3019

LLN 3020

LLN 3020.01

STEPSTONE HILL ROAD

STILLMEADOW DRIVE

LITTLE MEADOW ROAD

HOPMEADOW CIRCLE

DURHAM ROAD

VLGE POND ROAD

77

Floodway

Map Sheet 1 ----- Map Sheet 2

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INDEX MAP

Legend

- Proposed Structure
- Existing Structure
- Existing Structure to be Removed
- Existing Right-of-Way (ROW)
- Transmission Line
- 10' Contour Line
- 2' Contour Line
- Railroad (none in mapped extent)
- Stonewall
- Fence
- Guard Rail
- Work Pad
- Potential Pull Pad
- Gate
- Existing Access
- Proposed Access
- Trail
- Culvert
- Culvert
- Watercourse
- Ordinary High Water Mark
- Watercourse (not delineated; CTDEEP)
- Wetland Boundary
- Wetland Area
- Temporary Wetland Matting
- Temporary Upland Matting
- Confirmed Vernal Pool
- 100-Year Flood Zone
- 500-Year Flood Zone
- Floodway
- Critical Habitat (2009; none in mapped extent)
- Natural Diversity Database Area (June 2017)
- Eversource Owned Property
- State-Owned Property
- Parcel Boundary
- Municipal Boundary
- Map Sheet Matchline
- Tree Line
- Proposed Tree Clearing Line

Map Notes:

Not for Construction; Parcel and ROW boundaries are approximate. Repairs to existing access roads within wetlands with permanent fills are exempt discharges under 323.4(a)(2) provided that the limit of fill does not exceed the footprint of the existing fill through wetlands areas. Maintenance repairs do not include modifications that change the character, scope, and size of the original fill design. Temporary impacts associated with construction mats in previously disturbed wetland and upland areas either within vernal pool (VP) depressions or management area (100' of VP's edge) are eligible under the Army Corps of Engineers CT General Permit as a Self-Verification eligible activity. Base Map Source: CTECO 2016 Aerial Imagery

1 inch = 200 feet

0 50 100 200 Feet

NO.	DATE	REVISIONS	BY	CHK	APP	APP

EVERSOURCE ENERGY

Stepstone to Green Hill Upgrade Project

Guilford, CT

Map Sheet 1 of 9

November, 2017

DAVISON ENVIRONMENTAL

ALL-POINTS TECHNOLOGY CORPORATION

MAPSHEET 2 of 9
Stepstone to Green Hill Upgrade Project
Existing Structures 5909 to 5915
Town of Guilford, Connecticut

AREA DESCRIPTION

Existing Land Use & Resource Areas
- Residential
- Undeveloped, forest
- Unnamed Pond
- East River

RIGHT-OF-WAY DESCRIPTION

Right-of-Way Land Use & Resource Areas
- Maintained ROW
- Residential

Water Resources
- Wetlands – W2, W3, W4, W5, W6
- Wetland Cover Types – PSS, PEM, PFO, POW
- Watercourses – S1 (East River), Unnamed Pond
- 100-year floodplain of East River and Unnamed Pond
- 500-year floodplain of East River

Wetland and Watercourse Crossings
- Wetland W5 – construction mats for work pads and access

Right-of-Way Vegetation
- Scrub-shrub
- Forest
- House/yard
- Meadow

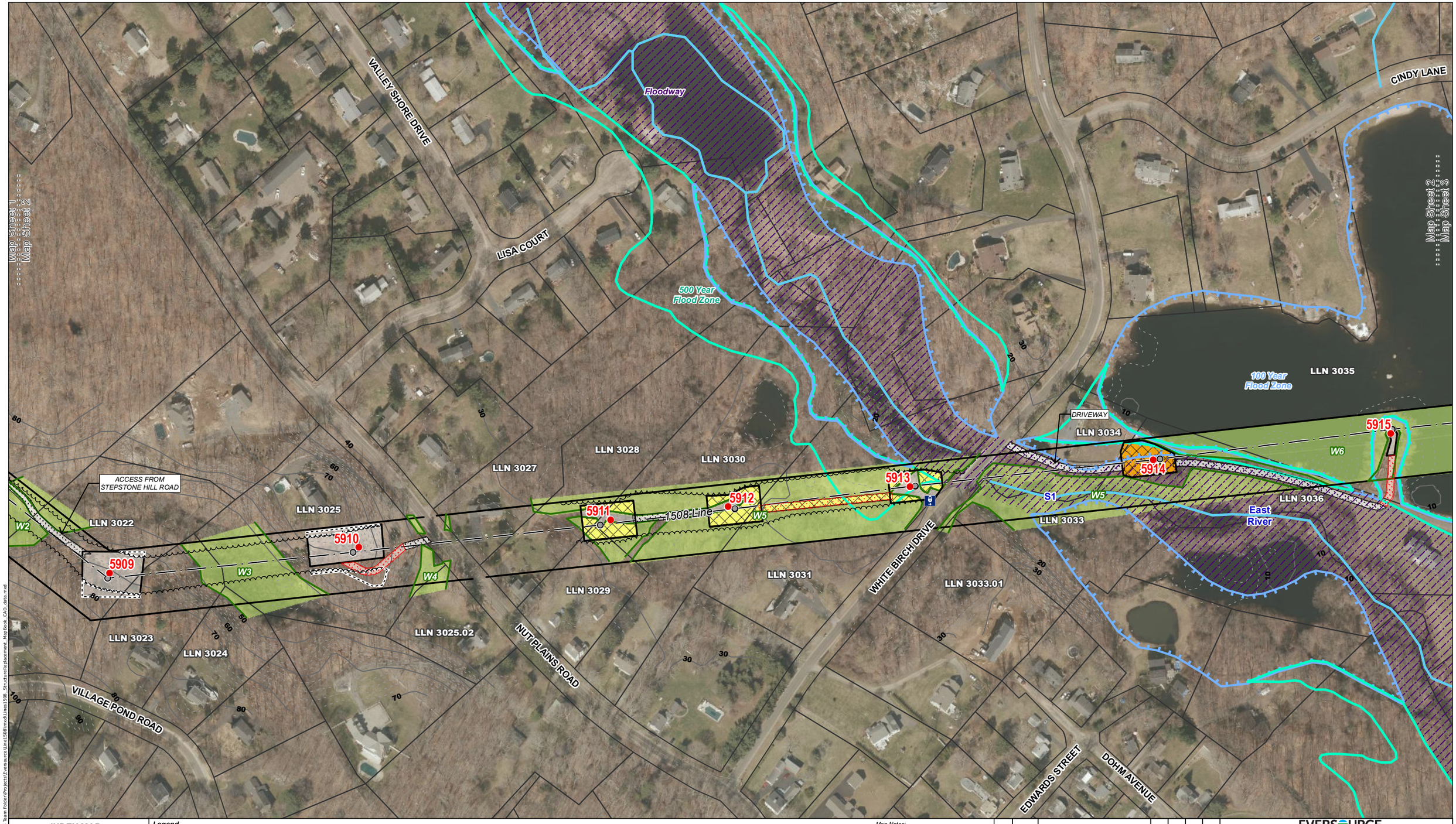
Access
- Structure 5909: proposed access from Stepstone Hill Road
- Structure 5910: existing access from Nut Plains Road
- Structure 5911 to 5913: existing access from White Birch Drive
- Structure 5914 to 5915: existing off-ROW access from White Birch Drive

Road Crossings
- Nut Plains Road
- White Birch Drive

Existing Maintained Right-of-Way Width / Proposed Right-of-Way Clearing
- 80 feet / 0 feet

ABUTTERS TO THE PROJECT RIGHT-OF-WAY

LLN Number	Parcel Address	Town	Owner Name
3020	LITTLE MEADOW ROAD	GUILFORD	JENNIE M, DAVID A, JEANETTE N OFFREDI
3020.01	637 LITTLE MEADOW ROAD	GUILFORD	JENNIE M OFFREDI
3022	80 VILLAGE POND ROAD	GUILFORD	MICHAEL V & CAROL A MORMILE
3023	100 VILLAGE POND ROAD	GUILFORD	CYNTHIA G VOGHELL
3024	110 VILLAGE POND ROAD	GUILFORD	MICHAEL F & LINDA D CLARK
3025	720 NUT PLAINS ROAD	GUILFORD	TIMOTHY J & STACEY A MILLER
3025.02	678 NUT PLAINS ROAD	GUILFORD	SUSAN CLARK & DENISE CASEY
3027	703 NUT PLAINS ROAD	GUILFORD	GERALD T GRANATOWSKI
3028	691 NUT PLAINS ROAD	GUILFORD	MATTHEW T & PHYLISS LAWLOR
3029	663 NUT PLAINS ROAD	GUILFORD	JUDITH A & FRIEND W POND JR
3030	657 NUT PLAINS ROAD	GUILFORD	MAUREEN H O'CONNOR
3031	625 WHITE BIRCH DRIVE	GUILFORD	EMIL J & ROSE R DEVEAU
3033	WHITE BIRCH DRIVE	GUILFORD	GUILFORD LAND CONSERVATION TRUST INC
3033.01	622 WHITE BIRCH ROAD	GUILFORD	BRUCE G FREEMAN & TINA M ROMAN
3034	562 WHITE BIRCH DRIVE	GUILFORD	ROBERT F TILTON JR & KARENS ANDERSON
3035	WHITE BIRCH DRIVE	GUILFORD	FENCE ROCK ASSOCIATION INC C/O WESTGARD
3036	564 WHITE BIRCH DRIVE	GUILFORD	LU CHENG WANG & JI HONG YIN
3037	WHITE BIRCH DRIVE	GUILFORD	TOWN OF GUILFORD



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INDEX MAP

Legend

- Proposed Structure
- Existing Structure
- Existing Structure to be Removed
- Existing Right-of-Way (ROW)
- Transmission Line
- 10' Contour Line
- 2' Contour Line
- Railroad (none in mapped extent)
- Stonewall
- Fence
- Guard Rail
- Work Pad
- Potential Pull Pad
- Gate
- Existing Access
- Proposed Access
- Trail
- Culvert
- Culvert
- Watercourse
- Ordinary High Water Mark
- Watercourse (not delineated; CTDEEP)
- Wetland Boundary
- Wetland Area
- Temporary Wetland Matting
- Temporary Upland Matting
- Confirmed Vernal Pool
- 100-Year Flood Zone
- 500-Year Flood Zone
- Floodway
- Critical Habitat (2009; none in mapped extent)
- Natural Diversity Database Area (June 2017)
- Eversource Owned Property
- State-Owned Property
- Parcel Boundary
- Municipal Boundary
- Map Sheet Matchline
- Tree Line
- Proposed Tree Clearing Line

Map Notes:

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N W E S

1 inch = 200 feet

0 50 100 200 Feet

NO.	DATE	REVISIONS	BY	CHK	APP	APP

EVERSOURCE ENERGY

Stepstone to Green Hill Upgrade Project

Guilford, CT

Map Sheet 2 of 9

November, 2017

DAVISON ENVIRONMENTAL

ALL-POINTS TECHNOLOGY CORPORATION

MAPSHEET 3 of 9
Stepstone to Green Hill Upgrade Project
Existing Structures 5916 to 5920
Town of Guilford, Connecticut

AREA DESCRIPTION

Existing Land Use & Resource Areas
- Undeveloped, forest
- Natural Diversity Database Area
- Unnamed Pond

RIGHT-OF-WAY DESCRIPTION

Right-of-Way Land Use & Resource Areas
- Maintained ROW
- Undeveloped, forest
- Natural Diversity Database Area from structure 5917 to 5920

Water Resources
- Wetlands – W6, W7, W8, W9
- Wetland Cover Types – PSS, PEM, PFO, POW
- Watercourses – S2, Unnamed Pond

Wetland and Watercourse Crossings
- Wetland W6 – construction mats for work pad

Right-of-Way Vegetation
- Scrub-shrub
- Forest

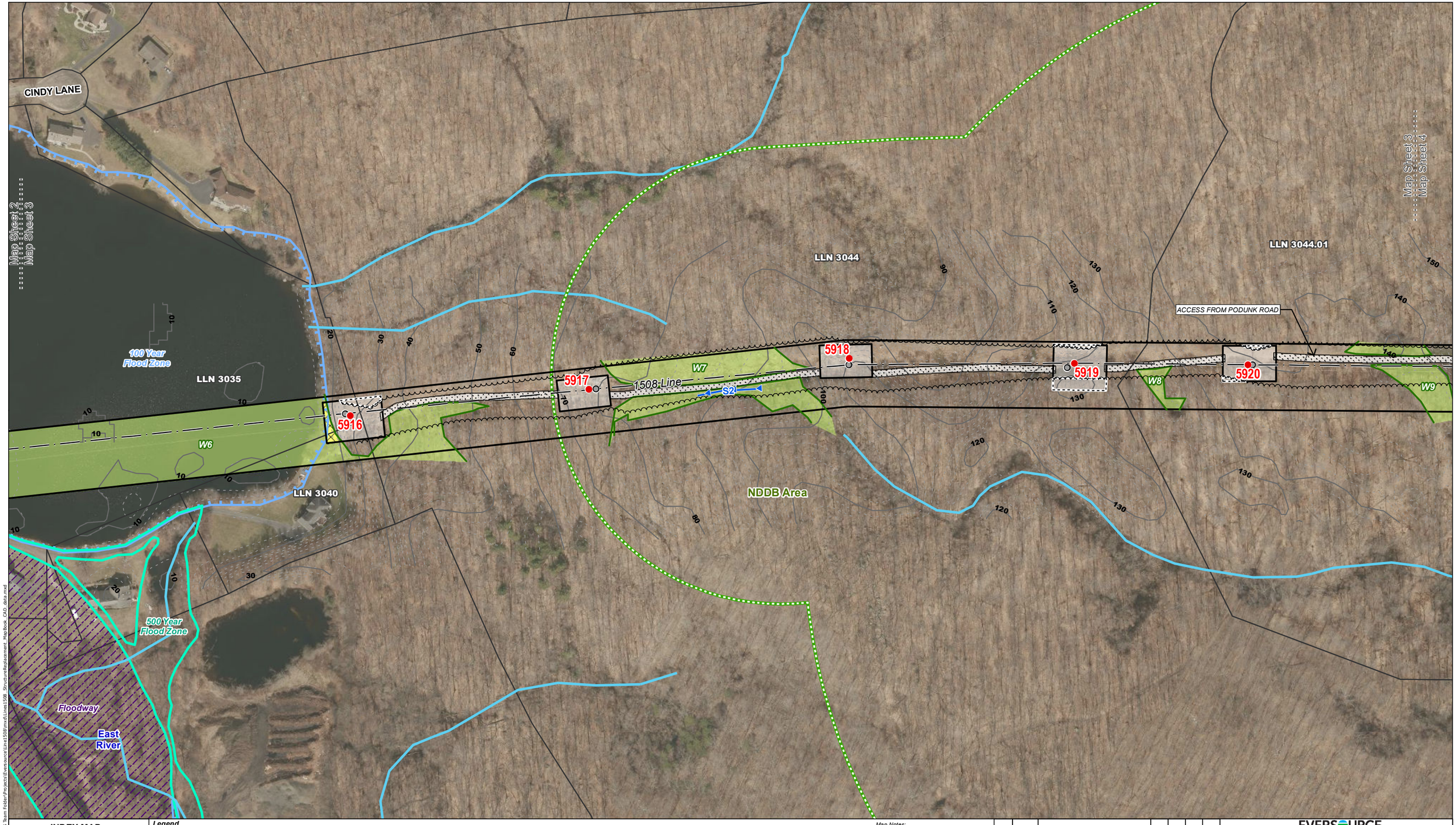
Access
- Structure 5916 to 5920: existing off-ROW access from Podunk Road

Road Crossings
- None

Existing Maintained Right-of-Way Width / Proposed Right-of-Way Clearing
- 80 feet / 0 feet

ABUTTERS TO THE PROJECT RIGHT-OF-WAY

LLN Number	Parcel Address	Town	Owner Name
3035	WHITE BIRCH DRIVE	GUILFORD	FENCE ROCK ASSOCIATION INC C/O WESTGARD
3036	564 WHITE BIRCH DRIVE	GUILFORD	LU CHENG WANG & JI HONG YIN
3040	568 WHITE BIRCH DRIVE	GUILFORD	CARLO & GINA CIOCCA
3044	DUCK HOLE ROAD	GUILFORD	TOWN OF GUILFORD
3044.01	PODUNK ROAD	GUILFORD	TOWN OF GUILFORD



Legend

- Proposed Structure
- Existing Structure
- Existing Structure to be Removed
- Existing Right-of-Way (ROW)
- Transmission Line
- 10' Contour Line
- 2' Contour Line
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- Stonewall
- Fence
- Guard Rail
- Work Pad
- Potential Pull Pad
- Gate
- Existing Access
- Proposed Access
- Trail
- Culvert
- Culvert
- Watercourse
- Ordinary High Water Mark
- Watercourse (not delineated; CTDEEP)
- Wetland Boundary
- Wetland Area
- Temporary Wetland Matting
- Temporary Upland Matting
- Confirmed Vernal Pool
- 100-Year Flood Zone
- 500-Year Flood Zone
- Floodway
- Critical Habitat (2009; none in mapped extent)
- Natural Diversity Database Area (June 2017)
- Eversource Owned Property
- State-Owned Property
- Parcel Boundary
- Municipal Boundary
- Map Sheet Matchline
- Tree Line
- Proposed Tree Clearing Line

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Base Map Source: CTECO 2016 Aerial Imagery

N W E S

1 inch = 200 feet

0 50 100 200 Feet

NO.	DATE	REVISIONS	BY	CHK	APP	APP

EVERSOURCE ENERGY

Stepstone to Green Hill Upgrade Project

Guilford, CT

Map Sheet 3 of 9

November, 2017

DAVISON ENVIRONMENTAL

ALL-POINTS TECHNOLOGY CORPORATION

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MAPSHEET 4 of 9
Stepstone to Green Hill Upgrade Project
Existing Structures 5921 to 5928
Town of New Guilford, Connecticut

AREA DESCRIPTION

Existing Land Use & Resource Areas
- Undeveloped, forest
- Natural Diversity Database Area

RIGHT-OF-WAY DESCRIPTION

Right-of-Way Land Use & Resource Areas
- Maintained ROW
- Undeveloped, forest
- Natural Diversity Database Area from structure 5921 to 5923

Water Resources
- Wetlands – W9, W11, W12, W13
- Wetland Cover Types – PSS, PEM, PFO
- Watercourses – S3, S4

Wetland and Watercourse Crossings
- Wetland W11 – construction mats for work pad

Right-of-Way Vegetation
- Scrub-shrub
- Forest

Access
- Structure 5921 to 5928: existing off-ROW access from Podunk Road

Road Crossings
- Podunk Road

Existing Maintained Right-of-Way Width / Proposed Right-of-Way Clearing
- 80 feet / 0 feet

ABUTTERS TO THE PROJECT RIGHT-OF-WAY

LLN Number	Parcel Address	Town	Owner Name
3044	DUCK HOLE ROAD	GUILFORD	TOWN OF GUILFORD
3044.01	PODUNK ROAD	GUILFORD	TOWN OF GUILFORD
3045	PODUNK ROAD	GUILFORD	GUILFORD LAND CONERVATION TRUST INC
3046	PODUNK ROAD	GUILFORD	CALEB J & WM P ORCUTT, C/O CALEB J ORCUTT

INDEX MAP

Legend

Proposed Structure
Existing Structure
Existing Structure to be Removed
Existing Right-of-Way (ROW)
Transmission Line
10' Contour Line
2' Contour Line
Railroad (none in mapped extent)
Stonewall
Fence
Guard Rail
Work Pad
Potential Pull Pad
Gate
Existing Access
Proposed Access
Trail
Culvert
Culvert
Watercourse
Ordinary High Water Mark
Watercourse (not delineated; CTDEEP)
Wetland Boundary
Wetland Area
Temporary Wetland Matting
Temporary Upland Matting
Confirmed Vernal Pool
100-Year Flood Zone
500-Year Flood Zone
Floodway
Critical Habitat (2009; none in mapped extent)
Natural Diversity Database Area (June 2017)
Eversource Owned Property
State-Owned Property
Parcel Boundary
Municipal Boundary
Map Sheet Matchline
Tree Line
Proposed Tree Clearing Line

Map Notes:

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N S W E

1 inch = 200 feet

0 50 100 200 Feet

NO.	DATE	REVISIONS	BY	CHK	APP	APP

EVERSOURCE ENERGY

Stepstone to Green Hill Upgrade Project

Guilford, CT

Map Sheet 4 of 9

November, 2017

DAVISON ENVIRONMENTAL

ALL-POINTS TECHNOLOGY CORPORATION

MAPSHEET 5 of 9
Stepstone to Green Hill Upgrade Project
Existing Structures 5929 to 5935
Towns of Guilford & Madison, Connecticut

AREA DESCRIPTION

Existing Land Use & Resource Areas
- Residential
- Undeveloped, forest
- State Forest

RIGHT-OF-WAY DESCRIPTION

Right-of-Way Land Use & Resource Areas
- Maintained ROW
- Residential adjacent to structures 5932 to 5933
- State Forest adjacent to structure 5935
- Hiking trail adjacent to structure 5935

Water Resources
- Wetlands – W14, W15
- Wetland Cover Types – PSS, PEM, PFO
- Watercourses – S5 (Neck River)
- Vernal Pools – VP1
- 100-year floodplain of Neck River

Wetland and Watercourse Crossings
- Wetland W14 – construction mats for work pad and access road

Right-of-Way Vegetation
- Scrub-shrub
- Forest

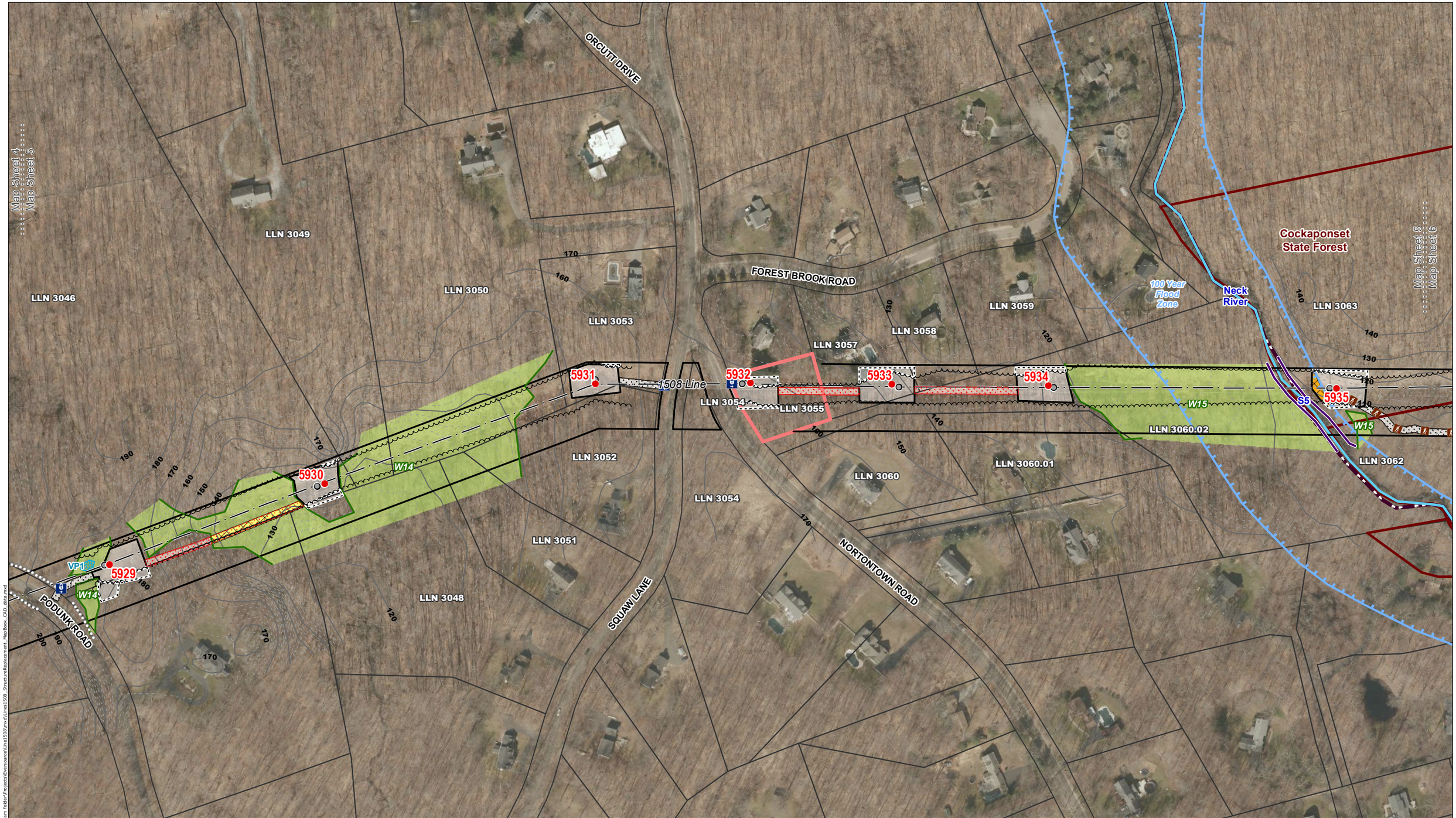
Access
- Structure 5929 to 5930: existing access from Podunk Road
- Structure 5931: existing access from Squaw Lane
- Structure 5932 to 5934: existing access from Nortontown Road
- Structure 5935: existing access from Eastwood Drive

Road Crossings
- Podunk Road
- Squaw Lane
- Nortontown Road

Existing Maintained Right-of-Way Width / Proposed Right-of-Way Clearing
- 80 feet / 0 feet

ABUTTERS TO THE PROJECT RIGHT-OF-WAY

LLN Number	Parcel Address	Town	Owner Name
3044	DUCK HOLE ROAD	GUILFORD	TOWN OF GUILFORD
3044.01	PODUNK ROAD	GUILFORD	TOWN OF GUILFORD
3045	PODUNK ROAD	GUILFORD	GUILFORD LAND CONERVATION TRUST INC
3046	PODUNK ROAD	GUILFORD	CALEB J & WM P ORCUTT, C/O CALEB J ORCUTT
3048	132 SQUAW LANE	GUILFORD	JOHN S & DEBORAH D BALDINO
3049	100 ORCUTT DRIVE	GUILFORD	HUGH H HANSARD
3050	224 SQUAW LANE	GUILFORD	INGRID E HOARE
3051	150 SQUAW LANE	GUILFORD	CHARLENE G BLAKE
3052	178 SQUAW LANE	GUILFORD	GLENN A & KOPKUN S GARDNER
3053	200 SQUAW LANE	GUILFORD	KRISTY LABIB
3054	728 NORTONTOWN ROAD	GUILFORD	VANGO LLC
3055	NORTONTOWN ROAD	GUILFORD	THE CONNECTICUT LIGHT AND POWER COMPANY (EVERSOURCE)
3057	43 FOREST BROOK ROAD	GUILFORD	JACQUELINE J MORGAN
3058	57 FOREST BROOK ROAD	GUILFORD	MICHAEL A & CHERYL A MCDONALD
3059	83 FOREST BROOK ROAD	GUILFORD	MARY LONCHARICH
3059.01	95 FOREST BROOK ROAD	GUILFORD	KEVIN & JORI SMITH
3059.02	FOREST BROOK ROAD	GUILFORD	TOWN OF GUILFORD
3060	725 NORTONTOWN ROAD	GUILFORD	SUSAN & JOSEPH C ADAM
3060.01	713 NORTONTOWN ROAD	GUILFORD	DOUGLAS & SKYE PAYETTE
3060.02	NORTHONTOWN ROAD	GUILFORD	GUILFORD LAND CONSERVATION TRUST INC
3062	OPENING HILL ROAD	MADISON	STATE OF CONNECTICUT DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION
3063	OPENING HILL ROAD	MADISON	STATE OF CONNECTICUT DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION



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INDEX MAP

Legend

- Proposed Structure
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- Existing Structure to be Removed
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- Transmission Line
- 10' Contour Line
- 2' Contour Line
- Railroad (none in mapped extent)
- Stonewall
- Fence
- Guard Rail
- Work Pad
- Potential Pull Pad
- Gate
- Existing Access
- Proposed Access
- Trail
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- Culvert
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- Temporary Upland Matting
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1 inch = 200 feet

0 50 100 200 Feet

NO.	DATE	REVISIONS	BY	CHK	APP	APP

EVERSOURCE ENERGY

Stepstone to Green Hill Upgrade Project

Guilford / Madison, CT

Map Sheet 5 of 9

November, 2017

DAVISON ENVIRONMENTAL

ALL-POINTS TECHNOLOGY CORPORATION

MAPSHEET 6 of 9
Stepstone to Green Hill Upgrade Project
Existing Structures 5936 to 5942
Town of Madison, Connecticut

AREA DESCRIPTION

Existing Land Use & Resource Areas
- Residential
- Undeveloped, forest
- Eversource owned property
- State Forest

RIGHT-OF-WAY DESCRIPTION

Right-of-Way Land Use & Resource Areas
- Maintained ROW
- Undeveloped, forest
- Eversource owned property adjacent to structure 5938
- State Forest adjacent to structure 3936 to 3937, and 5939 to 5942
- Hiking trail from structure 5937 to 5936

Water Resources
- Wetlands – W16, W17, W18, W19
- Wetland Cover Types – PSS, PEM, PFO
- Watercourses – None

Wetland and Watercourse Crossings
- Wetland W19 – construction mats for work pad

Right-of-Way Vegetation
- Scrub-shrub
- Forest

Access
- Structure 5936 to 5938: existing access from Eastwood Drive
- Structure 5939 to 5942: existing access from Opening Hill Road

Road Crossings
- Opening Hill Road

Existing Maintained Right-of-Way Width / Proposed Right-of-Way Clearing
- 80 feet / 0 feet

ABUTTERS TO THE PROJECT RIGHT-OF-WAY

LLN Number	Parcel Address	Town	Owner Name
3060.02	NORTHONTOWN ROAD	GUILFORD	GUILFORD LAND CONSERVATION TRUST INC
3062	OPENING HILL ROAD	MADISON	STATE OF CONNECTICUT DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION
3063	OPENING HILL ROAD	MADISON	STATE OF CONNECTICUT DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION
3065	42 EASTWOOD ROAD	MADISON	THE CONNECTICUT LIGHT AND POWER COMPANY (EVERSOURCE)
3066	35 EASTWOOD ROAD	MADISON	THE CONNECTICUT LIGHT AND POWER COMPANY (EVERSOURCE)
3067.01	247 OPENING HILL ROAD	MADISON	DANIEL & ASTRID THOMPSON
3068	OPENING HILL ROAD	MADISON	STATE OF CONNECTICUT DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION
3069	246 OPENING HILL ROAD	MADISON	CHRISTOPHER S & SHARON E KUHN
3070	COPSE ROAD	MADISON	STATE OF CONNECTICUT DEPARMENT OF ENERGY & ENVIRONMENT PROTECTION
3072	224 OPENING HILL ROAD	MADISON	RICHARD A & ANA MARIA FORSEY II
3073	222 OPENING HILL ROAD	MADISON	KYLE & LAURA FRANCIS

INDEX MAP

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- 2' Contour Line
- Railroad (none in mapped extent)
- Stonewall
- Fence
- Guard Rail
- Work Pad
- Potential Pull Pad
- Gate
- Existing Access
- Proposed Access
- Trail
- Culvert
- Culvert
- Watercourse
- Ordinary High Water Mark
- Watercourse (not delineated; CTDEEP)
- Wetland Boundary
- Wetland Area
- Temporary Wetland Matting
- Temporary Upland Matting
- Confirmed Vernal Pool
- 100-Year Flood Zone
- 500-Year Flood Zone
- Floodway
- Critical Habitat (2009; none in mapped extent)
- Natural Diversity Database Area (June 2017)
- Eversource Owned Property
- State-Owned Property
- Parcel Boundary
- Municipal Boundary
- Map Sheet Matchline
- Tree Line
- Proposed Tree Clearing Line

Map Notes:

Not for Construction: Parcel and ROW boundaries are approximate. Repairs to existing access roads within wetlands with permanent fills are exempt discharges under 323.4(a)(2) provided that the limit of fill does not exceed the footprint of the existing fill through wetlands areas. Maintenance repairs do not include modifications that change the character, scope, and size of the original fill design. Temporary impacts associated with construction mats in previously disturbed wetland and upland areas either within vernal pool (VP) depressions or management area (100' of VP's edge) are eligible under the Army Corps of Engineers CT General Permit as a Self-Verification eligible activity. Base Map Source: CTECO 2016 Aerial Imagery

1 inch = 200 feet

0 50 100 200 Feet

NO.	DATE	REVISIONS	BY	CHK	APP	APP

EVERSOURCE ENERGY

Stepstone to Green Hill Upgrade Project

Madison, CT

Map Sheet 6 of 9

November, 2017

DAVISON ENVIRONMENTAL

ALL-POINTS TECHNOLOGY CORPORATION

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MAPSHEET 7 of 9
Stepstone to Green Hill Upgrade Project
Existing Structures 5943 to 5949
Town of Madison, Connecticut

AREA DESCRIPTION

Existing Land Use & Resource Areas
- Residential
- Undeveloped, forest
- Eversource owned property
- State Forest

RIGHT-OF-WAY DESCRIPTION

Right-of-Way Land Use & Resource Areas
- Maintained ROW
- Eversource owned property adjacent to structure 5945
- State Forest adjacent to structure 5943, and 5948 to 5949

Water Resources
- Wetlands – W20, W21
- Wetland Cover Types – PSS, PEM, PFO
- Watercourses – S6 (unnamed perennial)

Wetland and Watercourse Crossings
- Wetland W21 – construction mats for work pad

Right-of-Way Vegetation
- Scrub-shrub
- Forest

Access
- Structure 5943 to 5944: existing access from Opening Hill Road
- Structure 5945 to 5949: existing access from Warpas Road

Road Crossings
- Warpas Road

Existing Maintained Right-of-Way Width / Proposed Right-of-Way Clearing
- 80 feet / 0 feet

ABUTTERS TO THE PROJECT RIGHT-OF-WAY

LLN Number	Parcel Address	Town	Owner Name
3070	COPSE ROAD	MADISON	STATE OF CONNECTICUT DEPARMENT OF ENERGY & ENVIRONMENT PROTECTION
3072	224 OPENING HILL ROAD	MADISON	RICHARD A & ANA MARIA FORSEY II
3073	222 OPENING HILL ROAD	MADISON	KYLE & LAURA FRANCIS
3074	OPENING HILL ROAD	MADISON	OPENING HILL ROAD (OPEN SPACE)
3075	339 WARPAS ROAD	MADISON	MELISSA L & WAYNE LIPKVICH
3078	WARPAS ROAD	MADISON	THE CONNECTICUT LIGHT AND POWER COMPANY (EVERSOURCE)
3080	6 MONROE LANE	MADISON	EDWARD AVALLONE & KATIE L PROSCO
3081	3 LITTLE HOLLOW ROAD	MADISON	CHRISTOPHER M & KRISTIN C LICARI
3082	9 LITTLE HOLLOW ROAD	MADISON	CLARA C BROGAN
3083	15 LITTLE HOLLOW ROAD	MADISON	JOHN J & JOANNE D IENNACO
3084	12 MONROE LANE	MADISON	LINDA GUZZIO
3085	19 LITTLE HOLLOW ROAD	MADISON	ROBERT M & LINDA B BROWN
3087	COPPERSTONE LANE	MADISON	MADISON LAND CONSERVATION TRUST INC
3090	COPSE ROAD	MADISON	STATE OF CONNECTICUT DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION

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- Potential Pull Pad
- Gate
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- Proposed Access
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- Culvert
- Watercourse
- Ordinary High Water Mark
- Watercourse (not delineated; CTDEEP)
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- Wetland Area
- Temporary Wetland Matting
- Temporary Upland Matting
- Confirmed Vernal Pool
- 100-Year Flood Zone
- 500-Year Flood Zone
- Floodway
- Critical Habitat (2009; none in mapped extent)
- Natural Diversity Database Area (June 2017)
- Eversource Owned Property
- State-Owned Property
- Parcel Boundary
- Municipal Boundary
- Map Sheet Matchline
- Tree Line
- Proposed Tree Clearing Line

Map Notes:

Not for Construction: Parcel and ROW boundaries are approximate. Repairs to existing access roads within wetlands with permanent fills are exempt discharges under 323.4(a)(2) provided that the limit of fill does not exceed the footprint of the existing fill through wetlands areas. Maintenance repairs do not include modifications that change the character, scope, and size of the original fill design. Temporary impacts associated with construction mats in previously disturbed wetland and upland areas either within vernal pool (VP) depressions or management area (100' of VP's edge) are eligible under the Army Corps of Engineers CT General Permit as a Self-Verification eligible activity. Base Map Source: CTECO 2016 Aerial Imagery

1 inch = 200 feet

0 50 100 200 Feet

NO.	DATE	REVISIONS	BY	CHK	APP	APP

EVERSOURCE ENERGY

Stepstone to Green Hill Upgrade Project

Madison, CT

Map Sheet 7 of 9

November, 2017

DAVISON ENVIRONMENTAL
ALL-POINTS TECHNOLOGY CORPORATION

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MAPSHEET 8 of 9
Stepstone to Green Hill Upgrade Project
Existing Structures 5950 to 5956
Town of Madison, Connecticut

AREA DESCRIPTION

Existing Land Use & Resource Areas
- Residential
- Undeveloped, forest
- State Forest

RIGHT-OF-WAY DESCRIPTION

Right-of-Way Land Use & Resource Areas
- Maintained ROW
- Undeveloped, forest
- Residential adjacent to structure 5956
- State Forest adjacent to structure 5950 to 5955

Water Resources
- Wetlands – W22, W23, W24
- Wetland Cover Types – PSS, PEM, PFO
- Watercourses – S7 (Oil Mill Brook), S8
- Vernal Pools – VP2, VP3
- 500-year floodplain of Oil Mill Brook

Wetland and Watercourse Crossings
- Wetland W22 – construction mats for work pad
- Wetland W23 – construction mats for work pad
- Wetland W24 – construction mats for work pad

Right-of-Way Vegetation
- Scrub-shrub
- House/yard
- Forest

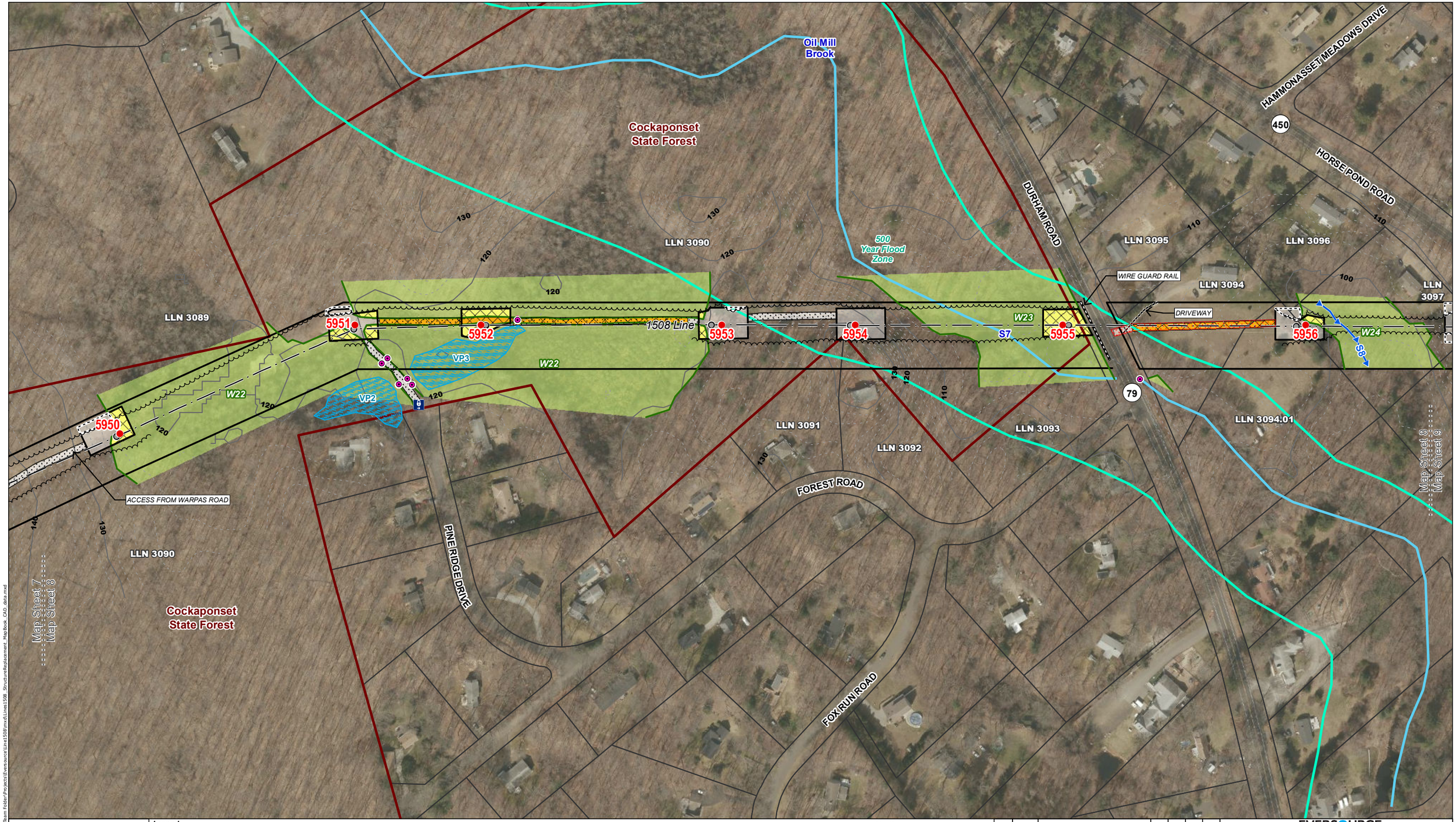
Access
- Structure 5950: existing access from Warpas Road
- Structure 5951 to 5954: existing access from Pine Ridge Drive
- Structure 5955 and 5956: proposed access from Durham Road (Route 79)

Road Crossings
- Durham Road

Existing Maintained Right-of-Way Width / Proposed Right-of-Way Clearing
- 80 feet / 0 feet

ABUTTERS TO PROJECT RIGHT-OF-WAY

LLN Number	Parcel Address	Town	Owner Name
3089	JEFFERSON PARK ROAD	MADISON	MADISON LAND CONSERVATION TRUST INC
3090	COPSE ROAD	MADISON	STATE OF CONNECTICUT DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION
3090.01	27 PINE RIDGE DRIVE	MADISON	MICHAEL E & SUZANNE C LARAGY
3090.02	28 PINE RIDGE DRIVE	MADISON	MARY E MEGARGEE
3091	38 FOREST ROAD	MADISON	RONALD J & BEVERLY B LUNEAU, KEVIN B LUNEAU EXECUTIVE
3092	32 FOREST ROAD	MADISON	DOUBLE BLADE LLC
3093	10 FOREST ROAD	MADISON	MARILYN J CARROLL
3094	588 DURHAM ROAD	MADISON	BRENDA & GEORGE ANASTASIO
3094.01	DURHAM ROAD	MADISON	BRENDA & GEORGE ANASTASIO
3095	598 DURHAM ROAD	MADISON	JOHN & EVELYN MANNING
3096	599 HORSEPOND ROAD	MADISON	GRANT S & CAROL GOULD
3097	589 HORSEPOND ROAD	MADISON	LYNDSEY F HAYDEN
3097.01		MADISON	HORSE POND ROAD STATE HIGHWAY 450
3098	581 HORSEPOND ROAD	MADISON	NICHOLAS J & LAURA N SCHROEDER



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Map Notes:

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1 inch = 200 feet

0 50 100 200 Feet

NO.	DATE	REVISIONS	BY	CHK	APP	APP

EVERSOURCE ENERGY

Stepstone to Green Hill Upgrade Project

Madison, CT

Map Sheet 8 of 9

November, 2017

DAVISON ENVIRONMENTAL

ALL-POINTS TECHNOLOGY CORPORATION

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MAPSHEET 9 of 9
Stepstone to Green Hill Upgrade Project
Existing Structure 5957 to Green Hill Substation
Town of Madison, Connecticut

AREA DESCRIPTION

Existing Land Use & Resource Areas
- Residential
- Eversource owned property
- Undeveloped, forest

RIGHT-OF-WAY DESCRIPTION

Right-of-Way Land Use & Resource Areas
- Maintained ROW
- Residential adjacent to structure 5957 to 5960
- Eversource owned property adjacent to structure 5961 to 5962

Water Resources
- Wetlands – W24
- Wetland Cover Types – PSS, PFO
- Watercourses – None

Wetland and Watercourse Crossings
- None

Right-of-Way Vegetation
- Scrub-shrub
- Forest
- House/yard

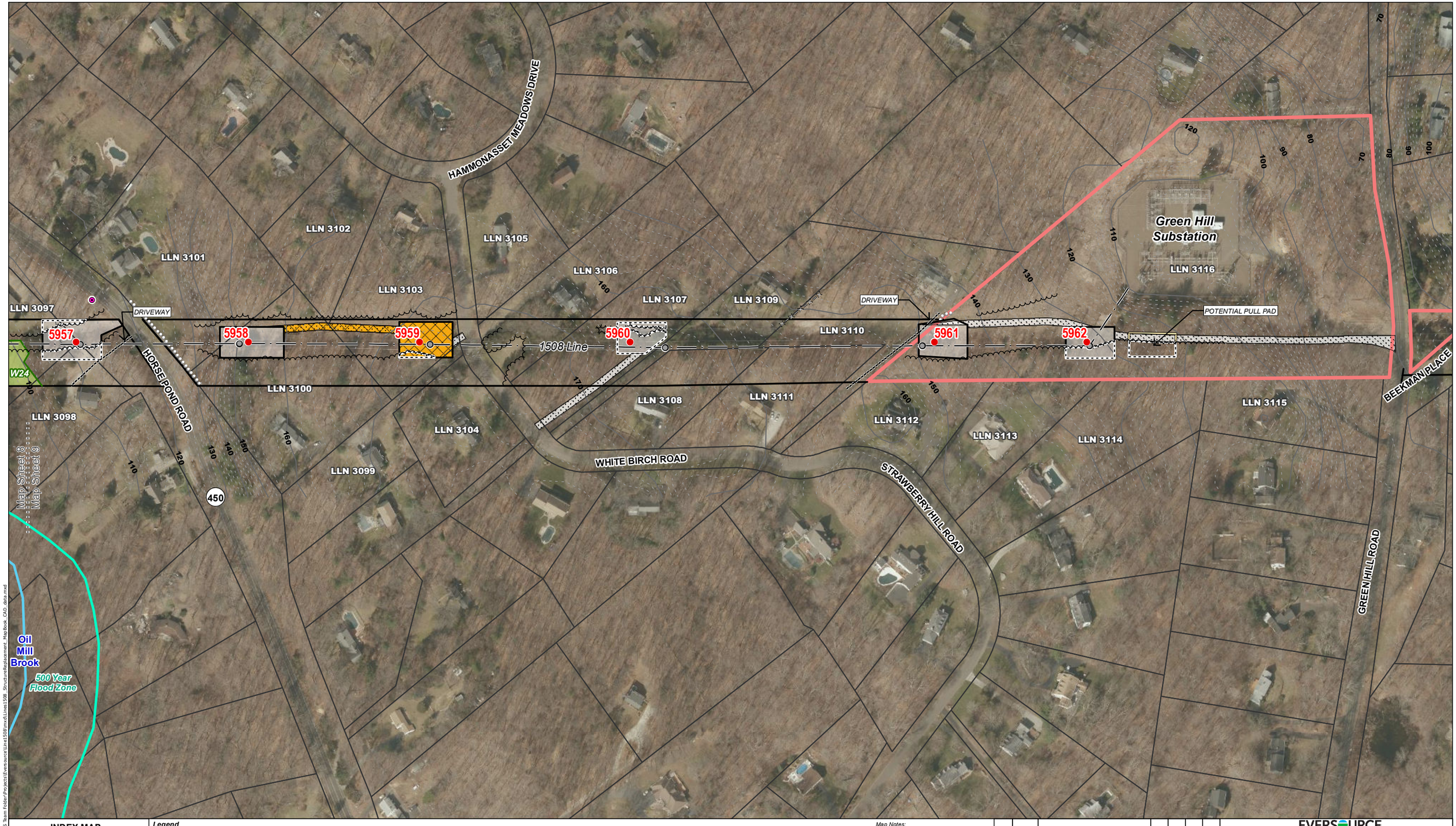
Access
- Structure 5957: existing access from Horse Pond Road
- Structure 5958 to 5960: existing access from White Birch Road
- Structure 5961 to 5962: existing access from Green Hill Road

Road Crossings
- Horse Pond Road
- White Birch Road

Existing Maintained Right-of-Way Width / Proposed Right-of-Way Clearing
- 80 feet / 0 feet

ABUTTERS TO THE PROJECT RIGHT-OF-WAY

LLN Number	Parcel Address	Town	Owner Name
3097	589 HORSEPOND ROAD	MADISON	LYNDSEY F HAYDEN
3098	581 HORSEPOND ROAD	MADISON	NICHOLAS J & LAURA N SCHROEDER
3099	16 WHITE BIRCH ROAD	MADISON	WILLIAM E & SUSAN C WIVELL
3100	14 WHITE BIRCH ROAD	MADISON	VINCENT & LORRAINE PANECCASIO
3101	586 HORSEPOND ROAD	MADISON	MICHAEL J & SUSAN F DONOGHUE
3102	101 HAMMONASSETT MEADOWS ROAD	MADISON	BRAD T & PAULINE M GARBER
3103	97 HAMMONASSETT MEADOWS ROAD	MADISON	ANGELA MACCALLUM
3104	22 WHITE BIRCH ROAD	MADISON	BRUCE M & GERALYN N CALVERT
3105	7 WHITE BIRCH ROAD	MADISON	PAUL J & MARGARET LERNER
3106	19 WHITE BIRCH ROAD	MADISON	BENNETT A & ARLENE S PAUL
3107	23 WHITE BIRCH ROAD	MADISON	CREED E & KIMBERLY A LILLY
3108	29 WHITE BIRCH ROAD	MADISON	LEIF E & MARY P WASHER
3109	25 WHITE BIRCH ROAD	MADISON	KENNETH F & MAXINE F HILL
3110	43 WHITE BIRCH ROAD	MADISON	GEORGE & GIFTY ARTHUR
3111	41 WHITE BIRCH ROAD	MADISON	VINCENT J & ELEANOR V PULEO
3112	78 STRAWBERRY HILL ROAD	MADISON	DAVID & SALLY SULLIVAN
3113	72 STRAWBERRY HILL ROAD	MADISON	PAUL E & ISABELLE M DAVIS
3114	66 STRAWBERRY HILL ROAD	MADISON	TERRY & ROSEANNE STYSLY
3115	761 GREEN HILL ROAD	MADISON	ROGER A FORTIER
3116	775 GREEN HILL ROAD	MADISON	THE CONNECTICUT LIGHT AND POWER COMPANY (EVERSOURCE)



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- 2' Contour Line
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- Potential Pull Pad
- Gate
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- Culvert
- Culvert
- Watercourse
- Ordinary High Water Mark
- Watercourse (not delineated; CTDEEP)
- Wetland Boundary
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- Temporary Upland Matting
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- 500-Year Flood Zone
- Floodway
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- Natural Diversity Database Area (June 2017)
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- State-Owned Property
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- Municipal Boundary
- Map Sheet Matchline
- Tree Line
- Proposed Tree Clearing Line

Map Notes:

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Base Map Source: CTECO 2016 Aerial Imagery

1 inch = 200 feet

0 50 100 200 Feet

NO.	DATE	REVISIONS	BY	CHK	APP	APP

EVERSOURCE ENERGY

Stepstone to Green Hill Upgrade Project

Madison, CT

Map Sheet 9 of 9

November, 2017

DAVISON ENVIRONMENTAL

ALL-POINTS TECHNOLOGY CORPORATION

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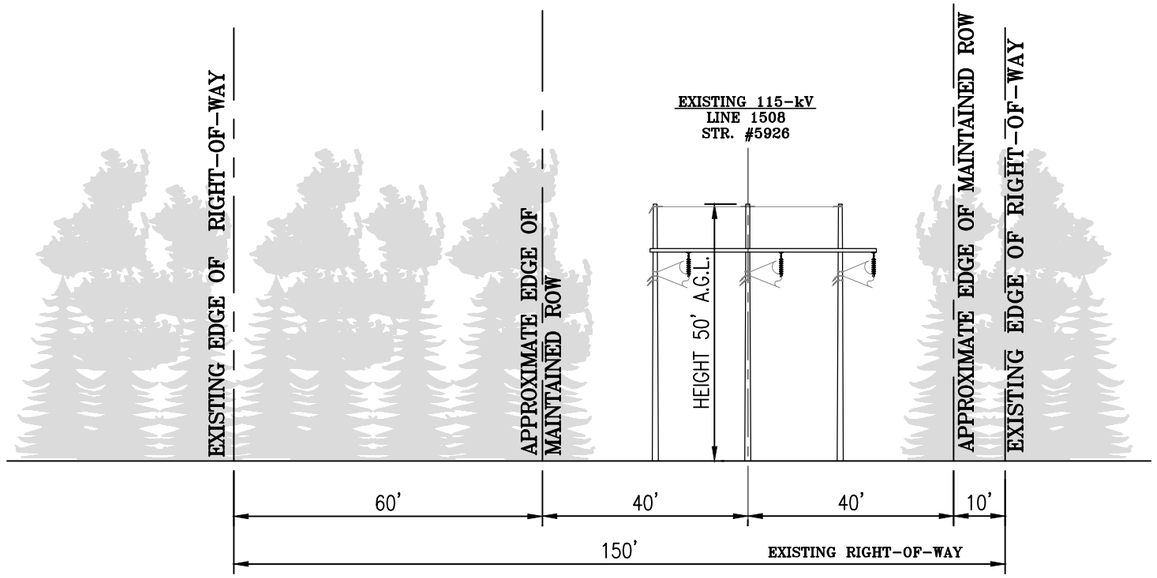
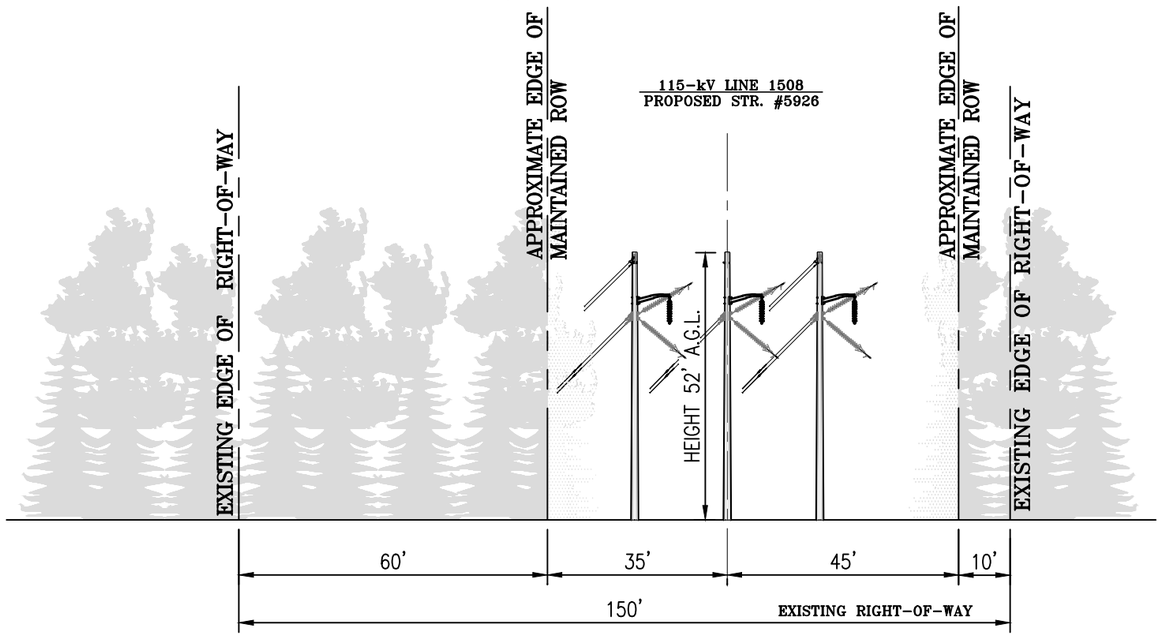
ATTACHMENT B



EXISTING R.O.W.

LOOKING WEST
IN THE TOWNS OF GUILFORD AND MADISION
(EXISTING STRUCTURE 5926)



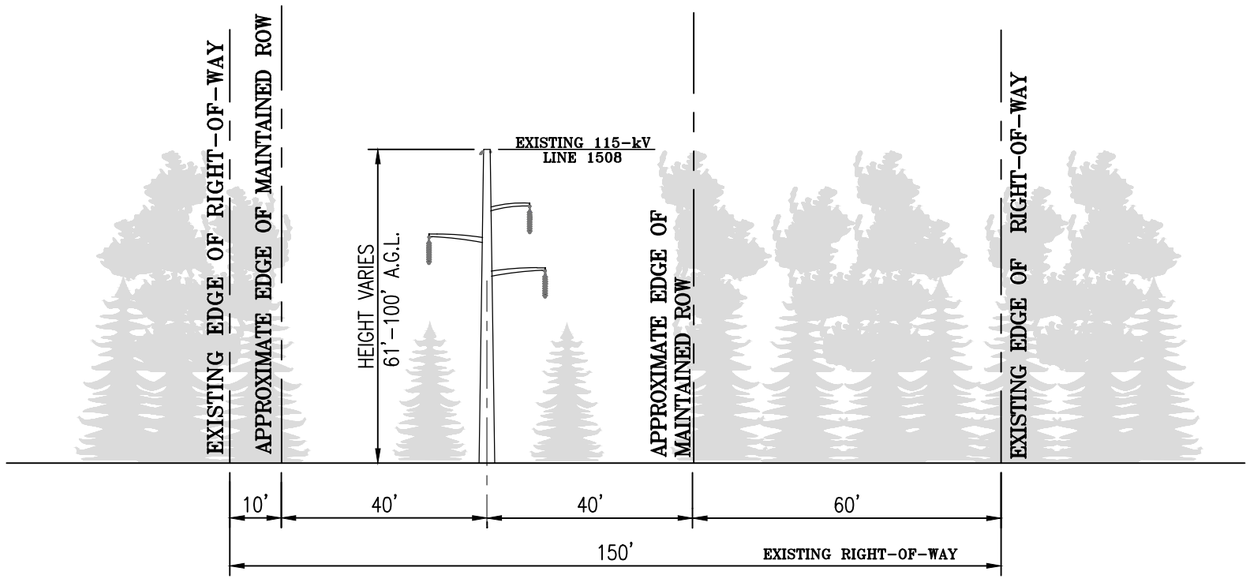
PROPOSED CONFIGURATION

LOOKING WEST
IN THE TOWNS OF GUILFORD AND MADISION
(PROPOSED STRUCTURE 5926)

EVERSOURCE ENERGY

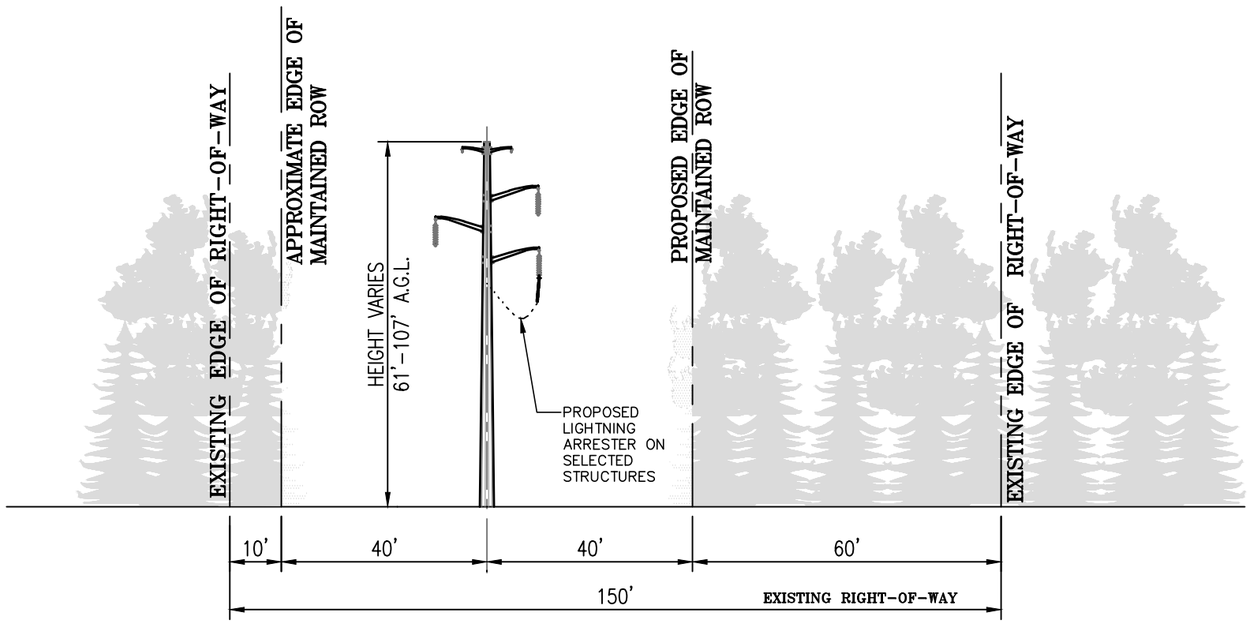
TITLE: STEPSTONE SUBSTATION - GREEN HILL SUBSTATION
LINE 1508
EXISTING/ PROPOSED CROSS SECTION
GUILFORD, CT

BY RRH	CHKD JS	APP EQ	APP
DATE 8/29/17	DATE 8/29/17	DATE 8/29/17	DATE
H-SCALE 1"=30'	SIZE B	FIELD BOOK & PAGES	
V-SCALE 1"=30'	V.S.	R.E. DWG	
R.E. PROJ. NUMBER		DWG NO. XS-2	



EXISTING R.O.W.

LOOKING EAST
IN THE TOWNS OF GUILFORD AND MADISION
(BETWEEN STRUCTURE 5902 AND 5962)



PROPOSED CONFIGURATION.

LOOKING EAST
IN THE TOWNS OF GUILFORD AND MADISION
(BETWEEN STRUCTURE 5902 AND 5962)

EVERSOURCE ENERGY

TITLE: STEPSTONE SUBSTATION - GREEN HILL SUBSTATION
LINE 1508
EXISTING/ PROPOSED CROSS SECTION
GUILFORD, MADISON, CT

BY RRH, JS	CHKD EQ	APP	APP
DATE 11/20/17	DATE 11/20/17	DATE	DATE
H-SCALE 1"=30'	SIZE B	FIELD BOOK & PAGES	
V-SCALE 1"=30'	V.S.	R.E. DWG	
R.E. PROJ. NUMBER		DWG NO.	XS-1

ATTACHMENT C

HERITAGE
CONSULTANTS, LLC

INTEGRATED HISTORIC PRESERVATION PLANNING

July 3, 2017

Ms. Rina Landry
Eversource Energy
107 Selden St.
Berlin, CT 069037

RE: Interim Report: Cultural Resources Investigation of the Line 1508 Project in Guilford and Madison, Connecticut

Ms. Landry:

On June 21, 2016, Heritage Consultants, LLC submitted a report to Eversource Energy outlining the results of a Phase IA cultural resources assessment survey of the above-referenced project. During preparation of that report, Heritage Consultants, LLC completed a review of previously recorded cultural resources on file with the Connecticut State Historic Preservation Office. That review revealed that there are no previously identified archaeological sites or National Register of Historic Places properties located within 152 m (500 ft) of the proposed project corridor centerline. However, it was concluded that this may not reflect an actual absence of cultural resources in the project corridor vicinity but rather may be indicative of a general lack of professional cultural resources investigations having been completed in the region. For example, eight previously identified archaeological sites and six National Register of Historic Places properties exist in the larger project region, which suggested that other undocumented cultural resources may exist in the area. Based on the results Phase IA survey, it was the professional opinion of Heritage Consultants, LLC that, "if possible, ground disturbance should be avoided in areas retaining a moderate/high archaeological sensitivity." It was further recommended that if timber matting of these areas was not to be used, then Phase IB Cultural Reconnaissance Survey of proposed project items that fall within the identified moderate/high sensitivity areas should be conducted prior to construction."

Since the submittal of the above referenced report, Eversource Energy contracted with Heritage Consultants, LLC to conducted a Phase IB cultural resources reconnaissance survey of 20 structures and associated access roads along Line 1508 that were identified as located in the moderate/high sensitivity areas during the above-referenced Phase IA investigation. These include Structures 5906, 5907, 5920-5923, 5934-5937 and 5946-5954. To date, 10 of these structures (5906, 5907, 5920-5923 5934, 5938, 5946, and 5947), as well as access roads leading to the ROW from Orcutt and Podunk Roads, have been surveyed for archaeological deposits. The results of these investigations were negative, and no additional examination of these areas is recommended.

During survey, Heritage Consultants, LLC learned that the remaining 10 structures (5935-5938, 5948-5954) are situated on lands owned by the State of Connecticut. Phase IB survey of these locations could not proceed without Eversource Energy obtaining permission from the State of Connecticut to complete the required survey. That request for that permission is ongoing, and Phase IB survey will be completed as soon as permission is granted.

P.O. Box 310249 • Newington, Connecticut 06131
Phone (860) 667-3001 • Fax (860) 667-3008
Email: info@heritage-consultants.com

If you have any questions regarding this Memorandum, or if we may be of additional assistance with this or any other projects you may have, please do not hesitate to call us at 860-299-6328 or email me at dgeorge@heritage-consultants.com. We are at your service.

Sincerely,

David R. George

David R. George, M.A., R.P.A.
Heritage Consultants, LLC

ATTACHMENT D

DAVISON ENVIRONMENTAL

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

Wetland Inspection

September 5, 2016 **DE Project No.: 2017-39**

Prepared For:	Eversource Energy 56 Prospect Street Hartford, CT 06103 Attn: Mark Pappalardo
Eversource Project Name:	Stepstone to Green Hill Upgrade Project
Project Location:	Guilford & Madison, Connecticut
Date(s) of Investigations:	June & July 2017
Field Conditions:	Weather: sunny**,** 80s to 90s Soil Moisture: dry to moist
Wetland/Watercourse Delineation Methodology[1]:	☒Connecticut Inland Wetlands and Watercourses ☐Connecticut Tidal Wetlands ☐Massachusetts Wetlands ☒U.S. Army Corps of Engineers

The wetlands inspection was performed by[2]:

Davison Environmental, LLC

Matthew Davison
Professional Soil Scientist
Professional Wetland Scientist

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

[2]*Wetlands were delinetead by Tighe & Bond in 2016. Davison Environmental field reviewed the delineated wetland areas, and verified the accuracy of wetland boundaries in June 2017. All established wetlands boundary lines are subject to change until officially adopted by local, state, or federal regulatory agencies.*

Attachments

- Table 1: Delineated Wetlands and Watercourses within the 1508 Line Project Area
- Wetland Delineation Field Forms

Table 1: Delineated Wetlands and Watercourses within the Project Area

Petition Mapsheet No.	Wetland No.[1]	Dominant NWI Class[2]	Other NWI Classes	Dominant Water Regime	Associated Watercourse[3]	Associated Vernal Pool[4]
1	W1	PSS	PEM	Permanently Saturated	---	---
1, 2	W2	PSS	PFO	Permanently Saturated	---	---
2	W3	PSS	PFO	Permanently Saturated	---	---
2	W4	PEM	PSS	Seasonally Saturated-seepage	---	---
2	W5	PSS	PEM	Permanently Saturated	S1 (East River)	---
2, 3	W6	POW	PSS	Permanently Flooded	---	---
2	W7	PEM	PSS	Seasonally Saturated-seepage	S2 (Intermittent)	---
3	W8	PFO	---	Seasonally Saturated-seepage	---	---
3, 4	W9	PSS	PFO	Seasonally Saturated-seepage	---	---
4	W10	PFO	PSS	Seasonally Saturated-seepage		---
4	W11	PFO	PSS	Permanently Saturated	S3, S4 (Unnamed Perennials)	---
4	W12	PFO	---	Seasonally Saturated-seepage	---	---
4	W13	PSS	PFO	Permanently Saturated	S4 (Unnamed Perennial)	---
5	W14	PSS	PEM	Permanently Saturated	---	VP1
5	W15	PSS	PFO	Permanently Saturated	S5 (Neck River)	---
6	W16	PFO	PSS	Seasonally Saturated-seepage	---	---
6	W17	PFO	PSS	Seasonally Saturated-seepage	---	---
6	W18	PSS	PFO	Permanently Saturated	---	---
6	W19	PSS	PEM	Permanently Saturated	---	---

Petition Mapsheet No.	Wetland No.[1]	Dominant NWI Class[2]	Other NWI Classes	Dominant Water Regime	Associated Watercourse[3]	Associated Vernal Pool[4]
7	W20	PSS	PFO	Permanently Saturated	S6 (Unnamed Perennial)	---
7	W21	PSS	PFO	Permanently Saturated	---	---
8	W22	PSS	PFO	Permanently Saturated	---	VP2, VP3
8	W23	PSS	PFO	Permanently Saturated	S7 (Oil Mill Brook)	---
8, 9	W24	PSS	PFO	Permanently Saturated	---	---

[1]Wetland No. refers to the number generated during the 2017 field surveys within the 1508 Line Project Area. This Wetland No. is keyed to those depicted on the 200 scale Petition maps (Attached to the Petition).

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

[3]Associated Watercourse refers to the identification number assigned during the 2017 field surveys to identify watercourses within the 1508 Line Project Area.

[4] Vernal pools were identified in 2017 by Davison Environmental by evaluating potential vernal pools identified by Tighe & Bond in 2016.

Wetland Delineation Field Form

Wetland I.D.:	W1	Stream I.D.:	N/A
Flag Location Method:	Site Sketch ☐	GPS (sub-meter) located ☒	

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☐
Permanently Saturated ☒	Seasonally Saturated – seepage ☐	Seasonally Saturated - perched ☐
Comments: upper fringes of off-ROW pond (not delineated)		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☒	Scrub-shrub ☒	Forested ☐
Open Water ☐	Disturbed ☐	Wet Meadow ☐
Comments: None		

WATERCOURSE TYPE:

Perennial ☐	Intermittent ☐	Tidal ☐
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	
Comments: potential off-ROW habitat not surveyed or delineated	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐

DOMINANT PLANTS:

Sensitive Fern (Onoclea sensibilis)	
Highbush Blueberry (Vaccinium corymbosum)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W2	Stream I.D.:	N/A
Flag Location Method:	Site Sketch ☐	GPS (sub-meter) located ☒	

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☐
Permanently Saturated ☒	Seasonally Saturated – seepage ☐	Seasonally Saturated - perched ☐
Comments: permanently saturated wetland with hydrology influenced by impoundment along historic access road		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☐	Scrub-shrub ☒	Forested ☒
Open Water ☐	Disturbed ☐	Wet Meadow ☐
Comments: off-ROW is forested		

WATERCOURSE TYPE:

Perennial ☐	Intermittent ☐	Tidal ☐
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐

DOMINANT PLANTS:

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W3	Stream I.D.:	N/A
Flag Location Method:	Site Sketch ☐	GPS (sub-meter) located ☒	

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☐
Permanently Saturated ☒	Seasonally Saturated – seepage ☐	Seasonally Saturated - perched ☐
Comments: wetland located in ravine between two bedrock controlled till hills		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☐	Scrub-shrub ☒	Forested ☒
Open Water ☐	Disturbed ☐	Wet Meadow ☐
Comments: forested off-ROW		

WATERCOURSE TYPE:

Perennial ☐	Intermittent ☐	Tidal ☐
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐

DOMINANT PLANTS:

Highbush Blueberry (Vaccinium corymbosum)	
Sweet Pepperbush (Clethera alnifolia)	
Skunk Cabbage (Symplocarpus foetidus)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W4	Stream I.D.:	N/A
Flag Location Method:	Site Sketch ☐	GPS (sub-meter) located ☒	

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☐
Permanently Saturated ☐	Seasonally Saturated – seepage ☒	Seasonally Saturated - perched ☐
Comments: seepage from upgradient areas on the west side of road are collected and conveyed in roadside swales		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☒	Scrub-shrub ☒	Forested ☐
Open Water ☐	Disturbed ☐	Wet Meadow ☐
Comments: None		

WATERCOURSE TYPE:

Perennial ☐	Intermittent ☐	Tidal ☐
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐

DOMINANT PLANTS:

Jewelweed (Impatiens capensis)	
Rough-stemmed goldenrod (Solidago rugosa)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W5	Stream I.D.:	S1 (East River)
Flag Location Method:	Site Sketch ☐	GPS (sub-meter) located ☒	

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☐
Permanently Saturated ☒	Seasonally Saturated – seepage ☐	Seasonally Saturated - perched ☐
Comments: permanently saturated wetlands border East River near structure 5913		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☒	Scrub-shrub ☒	Forested ☒
Open Water ☐	Disturbed ☐	Wet Meadow ☐
Comments: None		

WATERCOURSE TYPE:

Perennial ☒	Intermittent ☐	Tidal ☐
Watercourse Name: East River		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐

DOMINANT PLANTS:

Common Reed* (Phragmites australis)	
Specked Alder (Alnus rugosa)	
Jewelweed (Impatiens capensis)	
Black Willow (Salix nigra)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W6	Stream I.D.:	N/A
Flag Location Method:	Site Sketch ☐	GPS (sub-meter) located ☒	

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☒
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☐
Permanently Saturated ☐	Seasonally Saturated – seepage ☐	Seasonally Saturated - perched ☐
Comments: Unnamed pond		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☐	Scrub-shrub ☒	Forested ☐
Open Water ☒	Disturbed ☐	Wet Meadow ☐
Comments: None		

WATERCOURSE TYPE:

Perennial ☒	Intermittent ☐	Tidal ☐
Watercourse Name: Unnamed Pond		
Comments: Unnamed Pond		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐

DOMINANT PLANTS:

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W7	Stream I.D.:	S2 (Intermittent)
Flag Location Method:	Site Sketch ☐	GPS (sub-meter) located ☒	

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☐
Permanently Saturated ☐	Seasonally Saturated – seepage ☒	Seasonally Saturated - perched ☐
Comments: seepage with contributing watercourse, drains into ROW from south – channelized flow patterns within the wetland have been altered by ROW access road		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☒	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☒	Scrub-shrub ☒	Forested ☐
Open Water ☐	Disturbed ☐	Wet Meadow ☐
Comments: None		

WATERCOURSE TYPE:

Perennial ☐	Intermittent ☒	Tidal ☐
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐

DOMINANT PLANTS:

Sensitive Fern (Onoclea sensibilis)	
Willow Herb (Epilobium sp.)	
Royal Fern (Osmunda regalis)	
Wool Grass (Scirpus cyperinus)	
Meadowsweet (Spiraea latifolia)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W8	Stream I.D.:	N/A
Flag Location Method:	Site Sketch ☐	GPS (sub-meter) located ☒	

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☒
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☐
Permanently Saturated ☐	Seasonally Saturated – seepage ☒	Seasonally Saturated - perched ☐
Comments: forested hillside seepage, drains south, is predominantly off-ROW		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☐	Scrub-shrub ☐	Forested ☒
Open Water ☐	Disturbed ☐	Wet Meadow ☐
Comments: None		

WATERCOURSE TYPE:

Perennial ☐	Intermittent ☐	Tidal ☐
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐

DOMINANT PLANTS:

Red Maple (Acer rubrum)	
Highbush Blueberry (Vaccinium corymbosum)	
Sweet Pepperbush (Clethera alnifolia)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W9	Stream I.D.:	N/A
Flag Location Method:	Site Sketch ☐	GPS (sub-meter) located ☒	

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☐
Permanently Saturated ☐	Seasonally Saturated – seepage ☒	Seasonally Saturated - perched ☐
Comments: None		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☐	Scrub-shrub ☒	Forested ☒
Open Water ☐	Disturbed ☐	Wet Meadow ☐
Comments: None		

WATERCOURSE TYPE:

Perennial ☐	Intermittent ☐	Tidal ☐
Watercourse Name: Unnamed		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐

DOMINANT PLANTS:

Common Reed* (Phragmites australis)	
Sweet Pepperbush (Clethera alnifolia)	
Highbush Blueberry (Vaccinium corymbosum)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W10	Stream I.D.:	Stream: N/A
Flag Location Method:	Site Sketch ☐	GPS (sub-meter) located ☒	

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☒	Temporarily Flooded ☐
Permanently Saturated ☐	Seasonally Saturated – seepage ☒	Seasonally Saturated - perched ☐
Comments: None		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☐	Scrub-shrub ☒	Forested ☒
Open Water ☐	Disturbed ☐	Wet Meadow ☐
Comments: None		

WATERCOURSE TYPE:

Perennial ☐	Intermittent ☐	Tidal ☐
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐

DOMINANT PLANTS:

Cinnamon Fern (Osmunda cinnamomea)	
Highbush Blueberry (Vaccinium corymbosum)	
Common Reed* (Phragmites australis)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W11	Stream I.D.:	S3, S4 (Unnamed Perennials)
Flag Location Method:	Site Sketch ☐	GPS (sub-meter) located ☒	

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☐
Permanently Saturated ☒	Seasonally Saturated – seepage ☐	Seasonally Saturated - perched ☐
Comments: delineated areas are ROW portion of large wooded swamp and associated perennial watercourses located predominantly off-ROW to the north		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☐	Scrub-shrub ☒	Forested ☒
Open Water ☐	Disturbed ☐	Wet Meadow ☒
Comments: None		

WATERCOURSE TYPE:

Perennial ☒	Intermittent ☐	Tidal ☐
Watercourse Name: Unnamed		
Comments: S3 drains across existing access road within existing hard-bottom (stone crossing), and S4 is conveyed beneath existing off-ROW access road in a culvert		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	
Comments: potential off-ROW habitat was not surveyed	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐

DOMINANT PLANTS:

Common Reed* (Phragmites australis)	Red Maple (Acer rubrum)
Sweet Pepperbush (Clethera alnifolia)	Winterberry (Ilex verticillata)
Highbush Blueberry (Vaccinium corymbosum)	Skunk Cabbage (Symplocarpus foetidus)
Jewelweed (Impatiens capensis)	
Spicebush (Lindera benzoin)	

Wetland Delineation Field Form

Wetland I.D.:	W12	Stream I.D.:	N/A
Flag Location Method:	Site Sketch ☐	GPS (sub-meter) located ☒	

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☐
Permanently Saturated ☐	Seasonally Saturated – seepage ☒	Seasonally Saturated - perched ☐
Comments: forested wetland is located predominantly off-ROW		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☐	Scrub-shrub ☐	Forested ☒
Open Water ☐	Disturbed ☐	Wet Meadow ☐
Comments: None		

WATERCOURSE TYPE:

Perennial ☐	Intermittent ☐	Tidal ☐
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐

DOMINANT PLANTS:

Red Maple (Acer rubrum)	
Highbush Blueberry (Vaccinium corymbosum)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W13	Stream I.D.:	S4 (Unnamed Perennial)
Flag Location Method:	Site Sketch ☐	GPS (sub-meter) located ☒	

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☐
Permanently Saturated ☒	Seasonally Saturated – seepage ☐	Seasonally Saturated - perched ☐
Comments: wetland is located within a steep ravine between two intervening bedrock controlled till hills		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments:		

CLASS:

Emergent ☐	Scrub-shrub ☒	Forested ☒
Open Water ☐	Disturbed ☐	Wet Meadow ☐
Comments: None		

WATERCOURSE TYPE:

Perennial ☒	Intermittent ☐	Tidal ☐
Watercourse Name: Unnamed		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐

DOMINANT PLANTS:

Common Reed* (Phragmites australis)	
Sweet Pepperbush (Clethera alnifolia)	
Specked Alder (Alnus rugosa)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W14	Stream I.D.:	N/A
Flag Location Method:	Site Sketch ☒	GPS (sub-meter) located ☒	

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☒
Permanently Saturated ☒	Seasonally Saturated – seepage ☒	Seasonally Saturated - perched ☐
Comments: hydrology varies and is strongly influenced by access road near structure 5929, wetland drains easterly		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☒	Scrub-shrub ☒	Forested ☐
Open Water ☐	Disturbed ☐	Wet Meadow ☐
Comments: None		

WATERCOURSE TYPE:

Perennial ☐	Intermittent ☐	Tidal ☐
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☒ No ☐ Potential ☐	Other ☐
Vernal Pool Habitat Type: VP1	
Comments: hydroperiod appears to be short which likely adversely impacts productivity	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐

DOMINANT PLANTS:

Common Reed* (Phragmites australis)	
Sweet Pepperbush (Clethera alnifolia)	
Rough stemmed goldenrod (Solidago rugosa)	
Tearthumbs (Polygonum spp.)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W15	Stream I.D.:	S5 (Neck River)
Flag Location Method:	Site Sketch ☐	GPS (sub-meter) located ☒	

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☒
Permanently Saturated ☒	Seasonally Saturated – seepage ☐	Seasonally Saturated - perched ☐
Comments: broad bordering wetland system to Neck River		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☐	Scrub-shrub ☒	Forested ☒
Open Water ☐	Disturbed ☒	Wet Meadow ☐
Comments: None		

WATERCOURSE TYPE:

Perennial ☒	Intermittent ☐	Tidal ☐
Watercourse Name: Neck River		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐

DOMINANT PLANTS:

Common Reed* (Phragmites australis)	
Bebb Willow (Salix bebbiana)	
Specked Alder (Alnus rugosa)	
Tearthumbs (Polygonum spp.)	
Poison Sumac (Toxicodendron vernix)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W16	Stream I.D.:	N/A
Flag Location Method:	Site Sketch ☐	GPS (sub-meter) located ☒	

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☒	Temporarily Flooded ☐
Permanently Saturated ☒	Seasonally Saturated – seepage ☒	Seasonally Saturated - perched ☐
Comments: seepage wetlands, predominantly forested, located both on and off-ROW drain towards Neck River		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☐	Scrub-shrub ☒	Forested ☒
Open Water ☐	Disturbed ☐	Wet Meadow ☐
Comments: None		

WATERCOURSE TYPE:

Perennial ☐	Intermittent ☐	Tidal ☐
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐

DOMINANT PLANTS:

Red Maple (Acer rubrum)	
Skunk Cabbage (Symplocarpus foetidus)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W17	Stream I.D.:	N/A
Flag Location Method:	Site Sketch ☐	GPS (sub-meter) located ☒	

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☐
Permanently Saturated ☐	Seasonally Saturated – seepage ☒	Seasonally Saturated - perched ☐
Comments: None		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☐	Scrub-shrub ☒	Forested ☒
Open Water ☐	Disturbed ☐	Wet Meadow ☐
Comments: None		

WATERCOURSE TYPE:

Perennial ☐	Intermittent ☐	Tidal ☐
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐

DOMINANT PLANTS:

Rough-stemmed Goldenrod (Solidago rugosa)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W18	Stream I.D.:	N/A
Flag Location Method:	Site Sketch ☐	GPS (sub-meter) located ☒	

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☐
Permanently Saturated ☒	Seasonally Saturated – seepage ☐	Seasonally Saturated - perched ☐
Comments: None		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☐	Scrub-shrub ☒	Forested ☒
Open Water ☐	Disturbed ☐	Wet Meadow ☐
Comments: None		

WATERCOURSE TYPE:

Perennial ☐	Intermittent ☒	Tidal ☐
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐

DOMINANT PLANTS:

Tearthumbs (Polygonum spp.)	
Red Maple (Acer rubrum)	
Skunk Cabbage (Symplocarpus foetidus)	
Sweet Pepperbush (Clethera alnifolia)	
Joe Pye Weed (Eupatorium maculatum)	
Elderberry (Sambucus canadensis)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W19	Stream I.D.:	N/A
Flag Location Method:	Site Sketch ☐	GPS (sub-meter) located ☒	

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☐
Permanently Saturated ☒	Seasonally Saturated – seepage ☐	Seasonally Saturated - perched ☐
Comments: None		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☐	Scrub-shrub ☒	Forested ☒
Open Water ☐	Disturbed ☐	Wet Meadow ☐
Comments: None		

WATERCOURSE TYPE:

Perennial ☐	Intermittent ☐	Tidal ☐
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐

DOMINANT PLANTS:

Common Reed* (Phragmites australis)	
Red Maple (Acer rubrum)	
Sweet Pepperbush (Clethera alnifolia)	
Highbush Blueberry (Vaccinium corymbosum)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W20	Stream I.D.:	S6 (Unnamed Perennial)
Flag Location Method:	Site Sketch ☐	GPS (sub-meter) located ☒	

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☒
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☐
Permanently Saturated ☒	Seasonally Saturated – seepage ☐	Seasonally Saturated - perched ☐
Comments: None		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☐	Scrub-shrub ☒	Forested ☒
Open Water ☐	Disturbed ☐	Wet Meadow ☐
Comments: None		

WATERCOURSE TYPE:

Perennial ☒	Intermittent ☐	Tidal ☐
Watercourse Name: Unnamed		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐

DOMINANT PLANTS:

Common Reed* (Phragmites australis)	
Sweet Pepperbush (Clethera alnifolia)	
Highbush Blueberry (Vaccinium corymbosum)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W21	Stream I.D.:	N/A
Flag Location Method:	Site Sketch ☐	GPS (sub-meter) located ☒	

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☐
Permanently Saturated ☒	Seasonally Saturated – seepage ☐	Seasonally Saturated - perched ☐
Comments: None		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☐	Scrub-shrub ☒	Forested ☒
Open Water ☐	Disturbed ☐	Wet Meadow ☐
Comments: None		

WATERCOURSE TYPE:

Perennial ☐	Intermittent ☐	Tidal ☐
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐

DOMINANT PLANTS:

Common Reed* (Phragmites australis)	
Rough-stemmed Goldenrod (Solidago rugosa)	
Sensitive Fern (Onoclea sensibilis)	
Sweet Pepperbush (Clethera alnifolia)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W22	Stream I.D.:	N/A
Flag Location Method:	Site Sketch ☐	GPS (sub-meter) located ☒	

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☒
Permanently Saturated ☒	Seasonally Saturated – seepage ☐	Seasonally Saturated - perched ☐
Comments: large wetland complex includes off-ROW wooded swamp		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☐	Scrub-shrub ☒	Forested ☐
Open Water ☐	Disturbed ☐	Wet Meadow ☐
Comments: None		

WATERCOURSE TYPE:

Perennial ☐	Intermittent ☐	Tidal ☐
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☒ No ☐ Potential ☐	Other ☐
Vernal Pool Habitat Type: 'Cryptic'	
Comments: VP1 and VP2 located predominantly off-ROW but also extending into the maintained ROW towards structure 5952	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐

DOMINANT PLANTS:

Common Reed* (Phragmites australis)	
Highbush Blueberry (Vaccinium corymbosum)	
Red Maple (Acer rubrum)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W23	Stream I.D.:	S7 (Oil Mill Brook)
Flag Location Method:	Site Sketch ☐	GPS (sub-meter) located ☒	

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☐
Permanently Saturated ☒	Seasonally Saturated – seepage ☐	Seasonally Saturated - perched ☐
Comments: None		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☐	Scrub-shrub ☒	Forested ☒
Open Water ☐	Disturbed ☐	Wet Meadow ☐
Comments: None		

WATERCOURSE TYPE:

Perennial ☐	Intermittent ☐	Tidal ☐
Watercourse Name: Oil Mill Brook		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐

DOMINANT PLANTS:

Specked Alder (Alnus rugosa)	
Common Reed* (Phragmites australis)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland Delineation Field Form

Wetland I.D.:	W24	Stream I.D.:	S8 (Intermittent)
Flag Location Method:	Site Sketch ☐	GPS (sub-meter) located ☒	

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☐
Permanently Saturated ☒	Seasonally Saturated – seepage ☐	Seasonally Saturated - perched ☐
Comments: None		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☐	Scrub-shrub ☒	Forested ☒
Open Water ☐	Disturbed ☒	Wet Meadow ☐
Comments: None		

WATERCOURSE TYPE:

Perennial ☐	Intermittent ☐	Tidal ☐
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐

DOMINANT PLANTS:

Japanese Knotweed* (Polygonum cuspidatum)	

* denotes Connecticut Invasive Species Council invasive plant species

ATTACHMENT E

DAVISON ENVIRONMENTAL

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

Vernal Pool Survey

September 5, 2017 **DE Project No.: 2017-39**

Prepared For:	Eversource Energy 56 Prospect Street Hartford, CT 06103 Attn: Mark Pappalardo
Eversource Project Name:	Stepstone to Green Hill Upgrade Project
Project Location:	Guilford & Madison, Connecticut
Date(s) of Investigations[1]:	March & July 2017
Survey Methodology[2]:	Visual & Audial Survey, Dip Netting

The vernal pool survey was performed by:

Davison Environmental, LLC

Matthew Davison
Professional Soil Scientist
Professional Wetland Scientist

[1] Potential vernal pools were identified by Tighe & Bond coincident to wetland delineations conducted in 2016
[2] Surveys were limited to previously identified potential vernal pools and right-of-way proximate to proposed project work pads

INTRODUCTION

The following details vernal pool surveys conducted by Davison Environmental in support of The Connecticut Light and Power Company doing business as Eversource Energy's ("Eversource") petition to the Connecticut Siting Council for upgrades within an existing right-of-way ("ROW") in Guilford and Madison, Connecticut (the "Project").

VERNAL POOL DEFINITION

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

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

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

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

Several species of amphibians depend on vernal pools for reproduction and development. These species are referred to as indicator[3] vernal pool species, and their presence in a temporary wetland during the breeding season helps to identify that area as a vernal pool. Indicator species present in Connecticut include the following:

[3] Calhoun and Klemens (2002) argue that "indicator" species is a better word than the commonly used "obligate" species, as they will occasionally breed in roadside ditches and small ponds that are not vernal pools.

- Blue-spotted salamander (Ambystoma laterale);
- Wood frog (Rana sylvatica);
- Spotted salamander (Ambystoma maculatum);
- Jefferson salamander (Ambystoma jeffersonianum);
- Eastern spadefoot toad (Scaphiopus holbrookii);
- Marbled salamander (Ambystoma opacum); and
- Fairy shrimp (Branchiopoda anostraca).

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

EXISTING WETLANDS ALONG THE PROJECT ROW

Project wetlands are predominantly characterized by wetlands with a "saturated" hydrology. Mitsch and Gosselink (2007)[4] defines a saturated hydrology as a wetland with a substrate that is saturated for extended periods during the growing season, but standing water is rarely present. Wetlands with a saturated hydrology are not capable of supporting breeding by vernal pool indicator species, as they lack prolonged standing water. In order for successful breeding by vernal pool amphibians to occur, a wetland must have standing water from approximately March through June for most indicator species[5]. Such wetlands, referred to as seasonally flooded wetlands, provide optimal habitat for vernal pool indicator species. Additionally, while seasonally flooded conditions are optimal, permanently (or semi-permanently) flooded wetlands can also provide suitable breeding habitat, particularly if they occur in a forested landscape and contain shallow water with emergent and/or submergent vegetation.

VERNAL POOL SURVEY

Potential vernal pool surveys were conducted within the Project area in 2016 by Tighe & Bond as a part of wetland delineation field work. Two potential vernal pools were identified in Wetland 22 based on their physical and hydrologic characteristics. Davison Environmental evaluated these potential vernal pools in July 2017 using visual surveys and dip-netting, and confirmed the presence of indicator species. Each confirmed vernal pool ("VP") is described herein and depicted on Project mapping.

Vernal Pool 1 (VP1) is located in Wetland 14 near Structure 5929 in Guilford (Map Sheet 5). It was confirmed on March 2, 2017 coincident to a construction field review when wood frogs (*Lithobates sylvaticus*) were observed in, and heard chorusing from this pool. It is located within

[4] Mitsch, W.J. and Gosselink, J.G. 2007. Wetlands, fourth edition. John Wiley and Sons, Inc.
[5] The indicator species marbled salamander (*Ambystoma opacum*) breeds in late-summer and fall, with larval development throughout the winter and spring.

a wetland that has been subject to historic disturbance associated with ROW access road construction, which has altered its hydrology and likely contributed conditions which are suitable for vernal pool indicator species.

Vernal Pools 2 and 3 (VP2 & VP3) are located near Structures 5951 and 5952 in Madison (Map Sheet 8). These pools are cryptic and located within Wetland 22, a seasonally flooded wetland located within both the maintained ROW, and adjacent forested areas. VP2 is located off-ROW within forested portions of the wetland where it is impounded along an access road. VP3 is located both in and off-ROW, with a portion located within the maintained ROW (adjacent to Structure 5952), and a portion within forested portions of the wetland off-ROW. The pool is characterized by dense shrub, herbaceous and submergent aquatic vegetation within the maintained portion of the ROW. The off ROW portion of the pool consists of classic red maple-dominated forested wetland. On July 8, 2017, the pool contained abundant spotted salamander (*Ambystoma maculatum*) larvae, and recently metamorphosed wood frog (*Lithobates sylvaticus*) were found around the margins of the pool.

Other species observed included toad tadpoles (presumed *Bufo americanus*), green frog (*Lithobates clamitans*), spring peeper (*Pseudacris crucifer*) and northern water snake (*Nerodia sipedon*).

RECOMMENDED BEST MANAGEMENT PRACTICES

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

A. During construction, work within vernal pool depressions will be avoided;

B. No new permanent access roads or work pads shall be constructed or gravel fill deposited within the vernal pool envelope (0-100 feet);

C. Except in areas where a work pad must be installed, existing scrub-shrub vegetation within 25 feet of the vernal pool will be maintained, consistent with ROW vegetation management requirements. If low growing (scrub-shrub) vegetation must be removed adjacent to the vernal pool, the cut vegetation (slash) will be left in place to serve as recruitment for leaf litter and coarse woody debris;

D. If necessary, erosion and sedimentation controls will be installed and maintained along the adjacent existing access road and around the adjacent work pads as necessary to protect water quality and to limit the potential for soil deposition into the vernal pool. Erosion control measures should be designed in a manner that allows unencumbered amphibian access to the vernal pool. Such measures may include, but not be limited to; syncopated silt fencing and/or straw wattles, and aligning erosion and sedimentation controls to avoid bifurcating vernal pool habitat;

E. Plastic netting, which may be found in a variety of erosion control products (e.g., erosion control blankets, straw wattles, and reinforced silt fence), will not be used. Erosion and sedimentation control devices will be promptly removed upon final revegetation and stabilization of the ROW.

Attachment:

Photographs of Vernal Pool 3

Photo 1: broad view of wetland within maintained ROW. Note dense shrub and herbaceous vegetation.

Photo 2: close-up view of the vernal pool showing dense emergent and submergent vegetation. Note the long hydroperiod, remaining ponded into July.

ATTACHMENT E

DAVISON ENVIRONMENTAL

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

Vernal Pool Survey

September 5, 2017 **DE Project No.: 2017-39**

Prepared For:	Eversource Energy 56 Prospect Street Hartford, CT 06103 Attn: Mark Pappalardo
Eversource Project Name:	Stepstone to Green Hill Upgrade Project
Project Location:	Guilford & Madison, Connecticut
Date(s) of Investigations[1]:	March & July 2017
Survey Methodology[2]:	Visual & Audial Survey, Dip Netting

The vernal pool survey was performed by:

Davison Environmental, LLC

Matthew Davison
Professional Soil Scientist
Professional Wetland Scientist

[1] Potential vernal pools were identified by Tighe & Bond coincident to wetland delineations conducted in 2016
[2] Surveys were limited to previously identified potential vernal pools and right-of-way proximate to proposed project work pads

INTRODUCTION

The following details vernal pool surveys conducted by Davison Environmental in support of The Connecticut Light and Power Company doing business as Eversource Energy's ("Eversource") petition to the Connecticut Siting Council for upgrades within an existing right-of-way ("ROW") in Guilford and Madison, Connecticut (the "Project").

VERNAL POOL DEFINITION

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

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

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

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

Several species of amphibians depend on vernal pools for reproduction and development. These species are referred to as indicator[3] vernal pool species, and their presence in a temporary wetland during the breeding season helps to identify that area as a vernal pool. Indicator species present in Connecticut include the following:

[3] Calhoun and Klemens (2002) argue that "indicator" species is a better word than the commonly used "obligate" species, as they will occasionally breed in roadside ditches and small ponds that are not vernal pools.

- Blue-spotted salamander (Ambystoma laterale);
- Wood frog (Rana sylvatica);
- Spotted salamander (Ambystoma maculatum);
- Jefferson salamander (Ambystoma jeffersonianum);
- Eastern spadefoot toad (Scaphiopus holbrookii);
- Marbled salamander (Ambystoma opacum); and
- Fairy shrimp (Branchiopoda anostraca).

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

EXISTING WETLANDS ALONG THE PROJECT ROW

Project wetlands are predominantly characterized by wetlands with a "saturated" hydrology. Mitsch and Gosselink (2007)[4] defines a saturated hydrology as a wetland with a substrate that is saturated for extended periods during the growing season, but standing water is rarely present. Wetlands with a saturated hydrology are not capable of supporting breeding by vernal pool indicator species, as they lack prolonged standing water. In order for successful breeding by vernal pool amphibians to occur, a wetland must have standing water from approximately March through June for most indicator species[5]. Such wetlands, referred to as seasonally flooded wetlands, provide optimal habitat for vernal pool indicator species. Additionally, while seasonally flooded conditions are optimal, permanently (or semi-permanently) flooded wetlands can also provide suitable breeding habitat, particularly if they occur in a forested landscape and contain shallow water with emergent and/or submergent vegetation.

VERNAL POOL SURVEY

Potential vernal pool surveys were conducted within the Project area in 2016 by Tighe & Bond as a part of wetland delineation field work. Two potential vernal pools were identified in Wetland 22 based on their physical and hydrologic characteristics. Davison Environmental evaluated these potential vernal pools in July 2017 using visual surveys and dip-netting, and confirmed the presence of indicator species. Each confirmed vernal pool ("VP") is described herein and depicted on Project mapping.

Vernal Pool 1 (VP1) is located in Wetland 14 near Structure 5929 in Guilford (Map Sheet 5). It was confirmed on March 2, 2017 coincident to a construction field review when wood frogs (*Lithobates sylvaticus*) were observed in, and heard chorusing from this pool. It is located within

[4] Mitsch, W.J. and Gosselink, J.G. 2007. Wetlands, fourth edition. John Wiley and Sons, Inc.
[5] The indicator species marbled salamander (*Ambystoma opacum*) breeds in late-summer and fall, with larval development throughout the winter and spring.

a wetland that has been subject to historic disturbance associated with ROW access road construction, which has altered its hydrology and likely contributed conditions which are suitable for vernal pool indicator species.

Vernal Pools 2 and 3 (VP2 & VP3) are located near Structures 5951 and 5952 in Madison (Map Sheet 8). These pools are cryptic and located within Wetland 22, a seasonally flooded wetland located within both the maintained ROW, and adjacent forested areas. VP2 is located off-ROW within forested portions of the wetland where it is impounded along an access road. VP3 is located both in and off-ROW, with a portion located within the maintained ROW (adjacent to Structure 5952), and a portion within forested portions of the wetland off-ROW. The pool is characterized by dense shrub, herbaceous and submergent aquatic vegetation within the maintained portion of the ROW. The off ROW portion of the pool consists of classic red maple-dominated forested wetland. On July 8, 2017, the pool contained abundant spotted salamander (*Ambystoma maculatum*) larvae, and recently metamorphosed wood frog (*Lithobates sylvaticus*) were found around the margins of the pool.

Other species observed included toad tadpoles (presumed *Bufo americanus*), green frog (*Lithobates clamitans*), spring peeper (*Pseudacris crucifer*) and northern water snake (*Nerodia sipedon*).

RECOMMENDED BEST MANAGEMENT PRACTICES

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

A. During construction, work within vernal pool depressions will be avoided;

B. No new permanent access roads or work pads shall be constructed or gravel fill deposited within the vernal pool envelope (0-100 feet);

C. Except in areas where a work pad must be installed, existing scrub-shrub vegetation within 25 feet of the vernal pool will be maintained, consistent with ROW vegetation management requirements. If low growing (scrub-shrub) vegetation must be removed adjacent to the vernal pool, the cut vegetation (slash) will be left in place to serve as recruitment for leaf litter and coarse woody debris;

D. If necessary, erosion and sedimentation controls will be installed and maintained along the adjacent existing access road and around the adjacent work pads as necessary to protect water quality and to limit the potential for soil deposition into the vernal pool. Erosion control measures should be designed in a manner that allows unencumbered amphibian access to the vernal pool. Such measures may include, but not be limited to; syncopated silt fencing and/or straw wattles, and aligning erosion and sedimentation controls to avoid bifurcating vernal pool habitat;

E. Plastic netting, which may be found in a variety of erosion control products (e.g., erosion control blankets, straw wattles, and reinforced silt fence), will not be used. Erosion and sedimentation control devices will be promptly removed upon final revegetation and stabilization of the ROW.

Attachment:

Photographs of Vernal Pool 3

Photo 1: broad view of wetland within maintained ROW. Note dense shrub and herbaceous vegetation.

Photo 2: close-up view of the vernal pool showing dense emergent and submergent vegetation. Note the long hydroperiod, remaining ponded into July.

ATTACHMENT F

EVERSOURCE

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

November 21, 2017

Dear Neighbor,

Maintaining the power line infrastructure is one of the ways Eversource supports the safe and secure transmission of electricity throughout the region. As part of its everyday effort to deliver reliable energy to its customers, Eversource is submitting a petition to the Connecticut Siting Council (CSC) for a proposed transmission upgrade project in your area.

You're receiving this letter because we will be doing the proposed work within the right of way (power line corridor) on or near your property.

About This Electric System Improvement
This project, called the Stepstone to Green Hill Upgrade Project, involves replacing existing wood and steel structures with new weathering steel structures (finish will darken over time). These new structures will provide continued reliability of the transmission line and maintain the integrity of the electric system. Most of the new structures will have increased height, by up to 10 feet. We're also proposing to install new wire from the Stepstone Substation to the Green Hill Substation, for improved communications and reliability.

What You Can Expect
We're proposing to do the work on Eversource property or within the existing right of way that connects the Stepstone Substation in Guilford and the Green Hill Substation in Madison.

Depending on receipt of all project approvals, construction is expected to begin in early 2018. We expect to complete restoration of affected areas by mid-2018.

Connecticut Siting Council Process and Timing
With this letter, Eversource is providing notice to you of our proposed work activity. If you have any comments or concerns about the project, please send them to the CSC at the following address: Melanie Bachman, Acting Executive Director, Connecticut Siting Council, Ten Franklin Square, New Britain, CT, 06051. You may also email them to siting.council@ct.gov.

Our Commitment to You
We are committed to being a good neighbor and doing our work with respect for you and your property. Pending project approvals, an Eversource representative will be in touch with you closer to the start of construction to discuss the schedule in more detail. In the meantime, for more information about this work, please call 1-800-793-2202, or send an email to TransmissionInfo@eversource.com. Thank you.

Sincerely,

Elizabeth Hale
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 proposed modifications of The Connecticut Light and Power Company doing business as Eversource Energy to be served by mail or courier upon the following municipal officials:

Municipal Officials:

Town of Guilford
First Selectman Joseph Mazza
31 Park Street
Guilford, CT 06437

Town of Madison
First Selectman Thomas Banisch
8 Campus Drive
Madison, CT 06443

I also certify that I caused notice of the proposed modifications to be served by mail or courier upon 93 owners of abutting properties shown on the maps in Attachment A to the Petition.

Elizabeth Hale
Project Manager

On this the 21st day of November, 2017, before me, the undersigned representative, personally appeared, Elizabeth Hale, known to me (or satisfactorily proven) to be the person whose name is subscribed to the foregoing instrument and acknowledged that she executed the same for the purposes therein contained.

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

Gina M. Leo

Notary Public
My Commission expires:

GINA M. LEO
NOTARY PUBLIC
COMMISSION EXPIRES FEB. 28, 2021