A UIL HOLDINGS COMPANY
The United Illuminating Company
180 Marsh Hill Road, Orange, CT 06477-3629
203-499-2000

July 7, 2014

Attorney Melanie Bachman
Acting Executive Director/Staff Attorney
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Dear Attorney Bachman:

Enclosed please find an original plus twenty copies of the petition to the Connecticut Siting Council requesting a determination that no Certificate of Environmental Compatibility and Public Need is necessary for The United Illuminating Company's ("UI") proposed Milford 115-kV Transmission Line Upgrade Project (the "Project"). The Project will replace transmission structures on two line sections from Milvon Substation to Devon Tie Switching Station in Milford, CT. All of the new structures will be located within the Connecticut Department of Transportation's ("CDOT") existing right-of-way.

Prior to the submittal of this Petition, UI representatives presented the Project to the City of Milford. A letter of support was issued by the City and is included in the Petition.[1] In addition, all adjacent property owners are being notified concurrent to this submittal.

Should you have any questions, please contact Mr. Bohdan Katreczko, Manager – Environmental and Real Estate Services (203-926-4737).

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

Very truly yours,

Richard J. Reed, PMP
Vice President – Engineering & Project Excellence
The United Illuminating Company

Enclosures

[1] See "Milford 115-kV Transmission Line Upgrade Project Supplemental Report in Support of the Petition for Declaratory Ruling" Attachment F.

PETITION TO THE
CONNECTICUT SITING COUNCIL FOR DECLARATORY RULING

FOR THE UPGRADE OF
THE 115-kV TRANSMISION LINES BETWEEN MILVON SUBSTATION AND DEVON TIE SWITCHING STATION IN
MILFORD, CONNECTICUT

SUBMITTED BY

THE UNITED ILLUMINATING COMPANY

July 7, 2014

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

PETITION OF THE UNITED ILLUMINATING COMPANY FOR A DECLARATORY RULING THAT NO CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED IS REQUIRED REGARDING UPGRADES TO 115-kV TRANSMISSION LINES IN MILFORD, CONNECTICUT	:	PETITION NO. _____ JULY 7, 2014

PETITION FOR DECLARATORY RULING

This petition is filed pursuant to Section 16-50k of the Connecticut General Statutes and Section 16-50j-39 of the Regulations of Connecticut State Agencies requesting a determination from the Connecticut Siting Council (the "Council") that no Certificate of Environmental Compatibility and Public Need ("Certificate") is necessary for The United Illuminating Company's ("UI") proposed Milford 115-kV Transmission Line Upgrade Project (the "Project"). The 88005A and 89005B lines connect the Milvon Substation and Devon-Tie Switching Station in the City of Milford. These lines are currently supported on bonnets that are attached on top of the MNR's lattice catenary structures. Originally built in the early 1900s, some of these catenary structures are over one hundred years old and UI attached to the structures in the 1940s. The Project will replace the existing bonnets with new tubular steel monopoles for both lines between the two stations, for a total distance of approximately 1.3 miles. All of the new structures will be located within the Connecticut Department of Transportation's ("CDOT") existing right-of-way. UI submits that a Certificate is not required because the Project, although it encompasses "modifications" of a "facility", will not have substantial adverse environmental effect.

As result of the 2011 Southwest Connecticut ("SWCT") Needs Assessment report, the 115-kV overhead lines between Milvon Substation in Milford and Devon Tie Switching Station in Milford

require increased thermal capability. In the event local generation is unavailable, the loss of one of the Milvon to Devon Tie 115-kV transmission lines (88005A or 889005B) followed by the loss of the 387 345-kV line into East Shore Substation can result in a thermal overload on the adjacent Milvon to Devon Tie 115-kV transmission line. Due to the physical limitations of the structural support system for the 115-kV lines (Metro-North Railroad catenary system), new transmission structures (galvanized steel monopoles) and new 1590 kcmil ACSS conductor are needed for both lines along this 1.3 mile transmission line corridor. All of these structures will be within the existing CDOT ROW. The Project will result in safer conditions for UI maintenance crews and improve the reliability of the electric transmission system by replacing all of the original structures.

The Project is in two sections: 1) from Milvon Substation in Milford to Devon Tie Switching Station also in Milford, where the 88005A (North Section) line extends for approximately 1.3 miles east to west and 2) from Milvon Substation in Milford to Devon Tie Switching Station also in Milford, where the 89005B (South Section) line extends east to west for approximately 1.3 miles (see Figures 1 and 2).

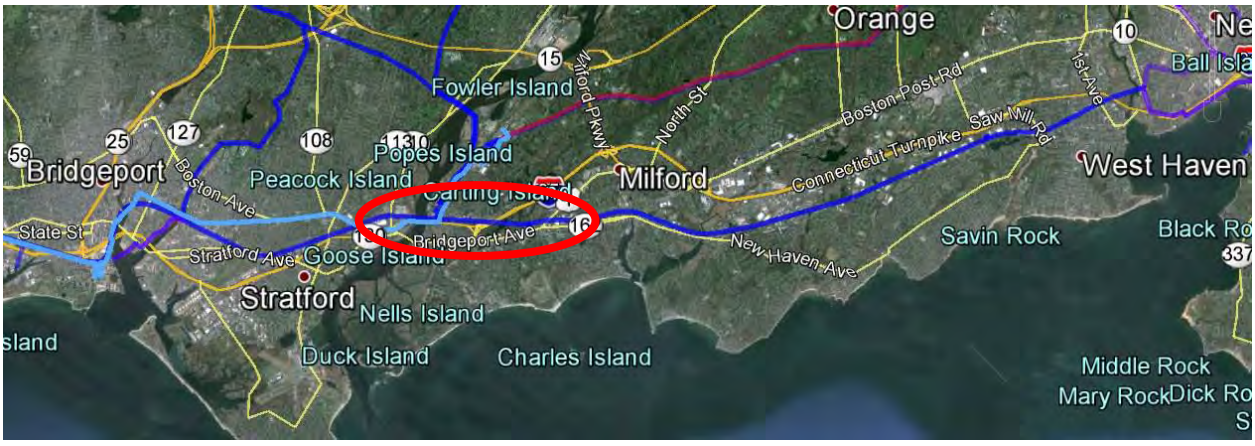


Figure 1: Overview map of Milford 115-kV Transmission Lines

Figure 2: Devon-Tie Switching Station to Milvon Substation

UI is proposing to upgrade the 115-kV transmission lines by relocating its facilities off of 68 steel columns (commonly referred to as "bonnets") on Metro-North Railroad ("MNR") catenary structures onto 44 new tubular steel monopole structures as follows:

1. For the North Section, all existing structures are within the MNR ROW. The 88005A line is currently constructed as a single circuit, with one conductor per phase on the northern side of the existing steel lattice catenary structures. The existing 34 115-kV steel bonnets that are attached to the top of the MNR catenary structures and the associated conductors will be replaced by a single set of conductors in a delta and vertical orientation supported by 21 115-kV tubular steel monopoles.

2. For the South Section, the 89005B line, all existing structures are within the MNR ROW. The existing 34 115-kV steel bonnets that are attached to the top of the MNR catenary structures and the associated conductors will be replaced by 23 115-kV tubular steel monopoles.

While the above-referenced work constitutes a "modification" of the existing facility, as set forth in the attached report entitled "Milford 115-kV Transmission Line Upgrade Project Supplemental Report in Support of the Petition for Declaratory Ruling" (the "Supplemental Report") UI believes that there will be no substantial adverse environmental impact associated with the proposed Project for the following reasons:

- Only CDOT's existing right-of-way ("ROW") will be used for the replacement structures.
- There will be no permanent effects on wetlands and watercourses from the installation of the new structures.
- There will be no permanent effects on wetlands from access roads.
- Tree clearing along the Milford Reservoir will cause minimal disturbance.
- The Eastern box turtle and Peregrine Falcon will be protected via established protocols and communication through the CT DEEP Wildlife Division.
- No effects will occur to fisheries, groundwater and surface water resources; no work is planned in an aquifer protection area or within stream channel encroachment lines.
- The visual character of the ROW will not adversely change because there will be no significant impact to the visual character. In addition the total number of structures will be reduced from 68 to 44.
- EMF levels will remain similar.

Based on the above and as more fully described in the Supplemental Report, UI respectfully submits that the proposed Project will not have a substantial adverse environmental impact and does not warrant submission of a full Certificate application to the Council. Accordingly, UI requests that the Council declare that the proposed Project described herein will not have a substantial adverse

environmental effect and, therefore, that no Certificate of Environmental Compatibility and Public Need is required.

The name, title, address and telephone number of the person to whom correspondence and communication in regard to this petition are to be addressed is:

Richard J. Reed, PMP
Vice President – Engineering & Project Excellence
The United Illuminating Company
180 Marsh Hill Road
Orange, CT 06477
Telephone: 203.926.4500
Email: rich.reed@uinet.com

The name, address, and telephone of the petitioner's attorney is:

Bruce L. McDermott
Managing Counsel - Operations
UIL Holdings Corporation
157 Church Street
P.O. Box 1564
New Haven, CT 06506-0901
Telephone: 203.499.2422
Email: bruce.mcdermott@uinet.com

Very truly yours,

THE UNITED ILLUMINATING COMPANY

By: _____
Richard J. Reed, PMP

MILFORD 115-kV TRANSMISSION LINE UPGRADE PROJECT
SUPPLEMENTAL REPORT
IN SUPPORT OF THE PETITION FOR A DECLARATORY RULING

CONTENTS

ATTACHMENTS:

EXECUTIVE SUMMARY

The Milford 115-kV Transmission Line Upgrade Project ("Project") will not result in any substantial adverse environmental effect for the following reasons (references in parentheses are to the Sections in this Supplemental Report):

1. Only Connecticut Department of Transportation's ("CDOT") existing right-of-way ("ROW") will be used for the replacement structures. (A)
2. There will be no permanent effects on wetlands and watercourses from the installation of the new structures. (C)
3. There will be no permanent effects on wetlands from access roads. (C)
4. Tree clearing along the Milford Reservoir will cause minimal disturbance. (C)
5. The Eastern box turtle and Peregrine Falcon will be protected via established protocols and communication through the Connecticut Department of Energy and Environmental Protection ("CT DEEP") Wildlife Division. (C)
6. No effects will occur to fisheries, groundwater and surface water resources; no work is planned in an aquifer protection area or within stream channel encroachment lines. (C)
7. The visual character of the right-of-way ("ROW") will not adversely change because (a) although structure heights are increasing there will be no significant impact to the visual character. In addition the total number of structures will be reduced from 68 to 44.
8. EMF levels will remain similar. (D)

A. PROJECT BACKGROUND

UI's Milford 115-kV Transmission Line Upgrade Project fulfills UI's obligation to provide reliable service to its customers and to meet the reliability standards mandated by national and regional authorities responsible for the reliability of the transmission system, i.e., the North American Electric Reliability Corporation ("NERC"), the Northeast Power Coordinating Council ("NPCC") and Independent System Operator of New England ("ISO-NE").

Transmission Planning – National and Regional Reliability Standards

In 2006, the Federal Energy Regulatory Commission ("FERC") designated NERC as the nation's Electric Reliability Organization ("ERO"). FERC approved mandatory reliability standards developed by NERC in 2007. These mandatory reliability standards apply to UI as a transmission owner ("TO") and as a transmission planner ("TP") of the bulk power system, as designated by NERC through its compliance registry procedures. In addition to satisfying NERC reliability standards, UI must also satisfy NPCC and ISO-NE reliability standards. Both monetary and non-monetary penalties may be imposed for violations of the NERC, NPCC, and ISO-NE Reliability Standards.

Transmission Planning Process

ISO-NE, as the registered NERC reliability authority, along with UI and The Connecticut Light & Power Company ("CL&P"), as the TOs in Connecticut, must comply with NERC and NPCC planning standards by performing reliability assessment studies of the transmission system. UI, along with ISO-NE and CL&P, completed a long-term (2018) reliability Needs Assessment of the Southwest Connecticut ("SWCT") area. This assessment's objective is to evaluate the reliability performance of SWCT in meeting NERC, NPCC, ISO-NE, CL&P and UI standards and criteria. The study was conducted in accordance with the regional planning process as outlined in the ISO-NE Open Access Transmission Tariff ("OATT"). This study identified reliability transmission needs in the greater New Haven, greater Bridgeport, and Naugatuck Valley areas of UI's service territory related to capacity limitations, unacceptable voltage performance, and high short circuit current levels. Additional details of specific reliability concerns/needs are provided in the SWCT Needs Assessment report, dated July 13, 2011, which is posted on the ISO-NE website[2].

Milford 115-kV Transmission Line Upgrade - Need

As result of the 2011 SWCT Needs Assessment report, the 115-kV overhead lines between Milvon Substation in Milford and Devon Tie Switching Station in Milford require increased thermal capability. If local generation is unavailable, the loss of one of the Milvon to Devon Tie 115-kV transmission lines (88005A or 889005B) followed by the loss of the 387 345-kV line into East Shore Substation causes a thermal overload on the remaining adjacent Milvon to Devon Tie 115-kV transmission line. Due to the physical limitations of the structural support system for the 115-kV lines (Metro-North Railroad catenary system), new transmission structures (galvanized steel monopoles) and new 1590 kcmil ACSS conductor are recommended along this 1.3 mile transmission line corridor.

[2]https://smd.iso-ne.com/committees/comm_wkgrps/prtcpnts_comm/pac/ceii/reports/2011/final_swct_needs_report.pdf

B. TECHNICAL DESCRIPTION

B.1. EXISTING TRANSMISSION LINES

The 88005A and 89005B lines connect the Milvon Substation and Devon-Tie Switching Station in the City of Milford. These lines are currently supported on bonnets that are attached on top of the MNR's lattice catenary structures. Originally built in the early 1900s some of these catenary structures are over one hundred years old. However, UI did not attach to these structures until the 1940s. This Project will replace the existing bonnets with new tubular steel monopoles for both lines between the two stations, for a total distance of approximately 1.3 miles.

The existing CDOT ROW is generally 100 feet wide but can vary significantly depending on location. Single 795-kcmil conductor plus a 4/0 Cu shield wire are used for both circuits. The existing catenary structures have a typical height of 57 feet (ranging between 55 feet and 102 feet). The 88005A line is on the northern side of the MNR catenary system and the 89005B line is on the southern side. A cross-section of the existing and proposed ROW conditions is depicted in Figure B-1.

B.2. PROPOSED TRANSMISSION LINE UPGRADE

Due to the required increased thermal capability, as described in the Project Background section, and the physical limitations of the existing structures, UI plans to replace the existing bonnets using galvanized tubular steel monopoles to support 1590-kcmil ACSS conductors for both circuits. The details of the proposed Project are as follows:

B.2.1. 88005A LINE

The 88005A line occupies the northern side of the ROW, and will be offset from the existing structure centerline by 15 to 25 feet. The new structures will have a typical height of 100 feet (ranging from 80 to 120 feet). Generally the ROW is 100 feet wide but varies from location to location. A cross-section of the existing and proposed ROW conditions is depicted in Figure B-1.

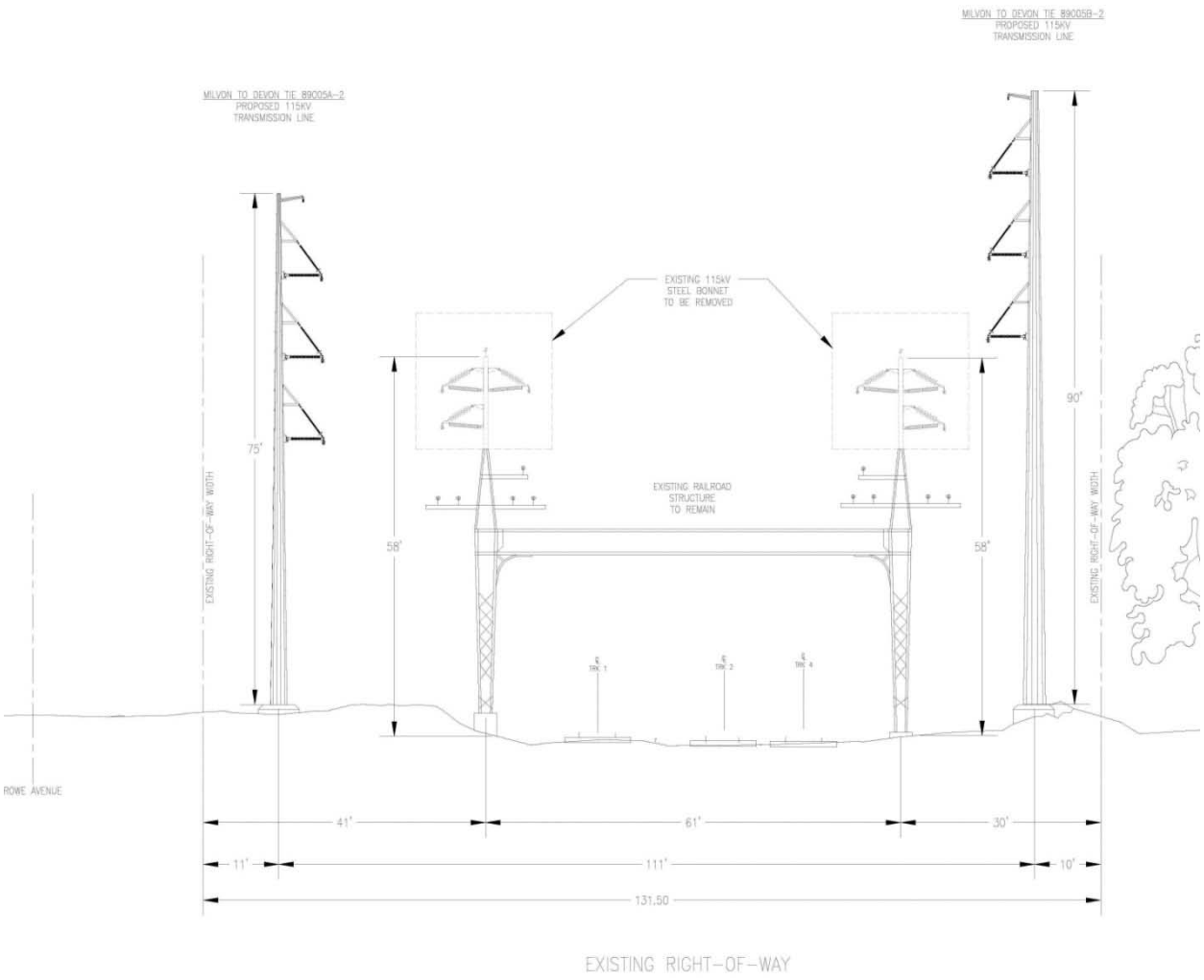


Figure B-1: Cross-Section – Existing & Proposed Conditions

B.2.2. 89005B LINE

The 89005B line occupies the northern side of the ROW, and will be offset from the existing structure centerline by 15 to 25 feet. The new structures will have a typical height of 100 feet (ranging from 80 to 120 feet). Generally the ROW is 100 feet wide but varies from location to location. A cross-section of the existing and proposed ROW conditions is depicted in Figure B-1.

Both Milvon Substation and Devon-Tie Switching Station have alternative power supplies delivered via transmission lines other than the 88005A and 89005B lines. During project construction these two stations will remain in service even though lines will be de-energized for a portion of the work. Specifically, lines will be de-energized during the cutover, when the new conductor is installed going into both stations. The cutover will occur one line at a time. After the new conductor is energized, construction on the other circuit will begin. Accordingly, continuity of service to UI's customers will be maintained during Project Construction. Following their removal, the original bonnets, conductors, and hardware from both lines will be disposed of in accordance with UI's best management practices.

The Project key map, aerial segment maps and descriptions are included in Attachment B.

C. ENVIRONMENTAL EFFECTS

Based on a review of the proposed Project, there will be no substantial environmental impact as a result of the Project. The Project will be performed within the existing Metro North/UI right-of-way. Based on the proposed current design of the Project, there will not be expansion to the existing right-of-way.

The Metro North/UI right-of-way is approximately 100 feet wide. The right-of-way is primarily occupied by Metro North assets accompanied by UI's transmission 115-kV infrastructure. Two 115-kV transmission lines (*88005A and 89005B)* sit within the right-of-way, one to the north and one to the south. Small shrubs and low growing vegetation grow on the boundaries of the right-of-way, which is maintained by cutting the vegetation back in order to meet the necessary Federal and State clearance requirements.

UI intends on submitting a Section 404, Category I Permit to the Army Corp of Engineers and a Section 401, Water Quality Certification to the CT DEEP based on the anticipated temporary impact to jurisdictional wetlands and waterways.

At the close of the Project, all areas which were impacted due to construction will be restored as best as possible to their original state. Restoration includes but is not limited to seeding (*upland or wetland*), mulching and the stabilization of soils.

C.1. AIR QUALITY AND NOISE

Based upon UI's review of the proposed Project, there will not be any significant concerns or risks as it relates to air quality or noise.

Since the duration of the Project is minimal the air quality effects will be extremely minor. The effects will be a result of fugitive dust emissions from vehicle traffic, construction activities and exhaust from vehicles. UI will maintain a high level of compliance and should fugitive dust become an issue, dust suppression techniques such as water or the chemical application of "Top-Seal" will be implemented to the affected area.

The City of Milford does not have a noise ordinance in place. Therefore, UI will comply with the general guidelines outlined by the Connecticut General Statutes Section 22a-69.1 through 22a-69.7.

C.2. INLAND WETLANDS/WATERCOURSES AND FLOODPLAINS

UI screened the existing CDOT/Metro North right-of-way and a 50 foot radius to the north and south of the existing property line for the presence of inland and tidal wetlands, waterways, vernal pools and floodplains/ways. The following methods were used to determine the presence of inland/tidal wetlands, vernal pools, waterways and floodplains/ways:

a) United States Department of Agriculture (USDA) Soil Survey Manual (1993),
b) Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeastern Region (Version 2.0, January 2012), and

c) CT DEEP Inland Wetlands and Watercourse Act (Connecticut General Statutes Section 22a-36 through 45).

The Project will have only temporary wetlands impact at three locations. Listed below is a table of the type of impact and the cumulative value of the temporary impact for each activity.

Work Activity	Temporary Impact(s)*	Permanent Impact(s)	Secondary Impact(s)
Construction Pad	2600	0	N/A
Access Road	0	0	N/A
Structure Installation	0	0	N/A

**swamp mats will be used as the method for temporary impact to wetlands*

Delineation of these areas began in July 2013. A total of six certified wetlands and two intermittent waterways were recorded within the Project area.

C.3. SOIL AND SEDIMENT EROSION CONTROL APPLICATIONS AND TECHNIQUES

Based on the proposed scope of the Project, UI intends on performing certain types of earth work such as the development of access roads, work pads and the installation of foundations for the monopole structures. During these construction activities UI will ensure the necessary techniques derived from the "CT DEEP: 2002 Connecticut Guidelines for Soil Erosion and Sediment Control" are implemented. Certain areas along the Project corridor will have permanent access roads. These areas will be outlined on the construction maps. The need for permanent access roads will be derived from such factors as constructability, frequency of access and feasibility. Some sediment and erosion control techniques for permanent access roads supporting the long-term stabilization of the area are drainage swales, culverts and check dams. These sediment and erosion control techniques will assist UI in managing the potential for sediment in water pathways or bordering wetlands. Some of the control measures and preventive maintenance UI intends to implement during pre, present and post construction are listed below:

Control Measures:

a) Installation of silt fence, hay bales, silt blankets, check dams, drainage swales, coffer dams, culverts, etc. (*i.e., CT DEEP: 2002 Connecticut Guidelines for Soil Erosion and Sediment Control*),
b) Monitor and perform inspections regularly along Project corridor during construction and post-construction,
c) Consistently maintain effective sediment and erosion control measures (*inspect after each storm event*)

Techniques:

a) Minimize width of roadways and work pad/construction areas,
b) Use of heavy equipment to compact soils in large areas,
c) Vehicles will exit in same location they entered from.

All sediment and erosion controls will be maintained and monitored throughout the duration of the Project. Once the Project has been completed a final visual inspection and review of the logged inspections will take place. This task will generate locations where certain sediment and

erosion control measures will be removed and/or addressed for post-construction stabilization. Areas that need to be addressed post-construction will either have their sediment and erosion control measures left in place or replaced due to the need for additional measures to be implemented until the area has been stabilized. Inspections of these areas will follow the same format as those inspections during the construction of the Project.

C.4. SPECIES AND VEGETATION

Based on a thorough review of the Project area, there will not be any negative impacts to either species or vegetation. Based on the historic use of the Metro North right-of-way, typically there is low growth vegetation which is maintained by both Metro North Railroad and UI due to Federal and State standards. Any invasive trees growing off right-of-way breaching onto the corridor are also maintained by both Metro North and UI and trimmed to the Federal and State standards.

On November 20, 2013 UI submitted a National Diversity Database (NDDB) request to the CT DEEP Wildlife Division. Based on the CT DEEP's response two species are recognized within the proposed Project footprint. The species that is recognized within the Project area is the Peregrine Falcon (*Falco peregrinus*) and Eastern Box Turtle (*Terrapene carolina carolina*). The peregrine falcon is identified as a "Threatened Species" and the eastern box turtle is identified as a "Species of Special Concern." The term "Threatened Species" is defined as the following: any species which are vulnerable to endangerment in the near future. The term "Species of Special Concern" is defined as a species which has a naturally restricted range or habitat or to be at a low population level. Based on correspondence with CT DEEP staff dated 1/28/2014 UI intends to perform the following (see Attachment C):

Peregrine Falcon

a. Hire a subject matter expert to monitor the falcon when performing construction around the identified habitat during the noted breeding season (March 1 through July 31),
b. Minimize to the best of UI's abilities the noise during construction activities.

Eastern Box Turtle

a. Provide training techniques to UI and contract personnel when encountering a turtle,
b. Install signage ("SENSATIVE SPECIES AREA") around work area,
c. Install silt fence around work area,
d. Perform work area sweeps looking for turtles prior to beginning work.

UI intends to maintain the species' natural habitat and cause no adverse impact to its surroundings.

C.4.1 VERNAL POOL AND AMPHIBIAN HABITAT BREEDING AREAS

In July 2013 UI performed a field review of the proposed Project corridor for certified vernal pools and amphibian breeding habitats. There are no certified vernal pools or amphibian breeding habitats within the proposed Project corridor.

C.5. SURFACE AND STORM WATER

Based on the surface area of impact, UI has submitted a registration to the CT DEEP Stormwater Group for the approval of a Stormwater Pollution Control Plan (SWPCP) for Construction Activities. Based on the development of temporary access roads and temporary construction pads, the total area of impact will be approximately 12.18 acres. UI is currently waiting for approval from the CT DEEP on this registration/plan.

C.6. GROUNDWATER

Construction activities will not negatively impact groundwater. However, during the geotechnical investigation UI took a sample at each of the proposed structures to clearly characterize the groundwater and identify management strategies during construction. Based on the analysis of the groundwater, multiple locations will need groundwater management. UI has submitted a registration to the CT DEEP Water Division in order to discharge any groundwater exceeding the criteria set in the CT DEEP General Permit (i.e., DEP-WD-GP-007) and is working with the City of Milford to identify to proper location for discharge.

C.7. VISUAL

The view shed in the vicinity of the Project will not change significantly because the new structures will be installed entirely within the existing CDOT ROW (See Attachment A). Looking along the corridor today both line sections are supported on double-circuit lattice structures with steel columns. These steel columns will be removed and replaced with single-circuit steel monopoles.

C.8. CULTURAL REVIEW AND STUDY

UI hired Heritage Consultants Inc. to perform a thorough Cultural Resource Review/Study of the proposed Project. The study was conducted using the Connecticut State Historic Preservation Office and the National Register of Historic Places. The study was performed in March 2014 looking at the following:

1. Gather data regarding the identification of cultural resources situated within the vicinity of the Area of Potential Impact,
2. Investigate the proposed Project area for natural and historical characteristics,
3. Identify culturally sensitive resources.

Based on both Heritage's reports (Attachment D) and SHPO's response letter (Attachment D), no areas of historic impact were noted on the proposed construction activities.

C.9. ENVIRONMENTAL SUMMARY

UI has taken every step when planning and designing the Milvon to Devon Structure Installation Project to minimize the environmental impact to sensitive areas. These sensitive areas include Endangered, Threatened and Special Concern Species (CT NDDB), wetlands, waterways and vernal pools, soil and groundwater management and the implementation of multiple sediment and erosion controls at work and access road locations. Based on these components, the environmental impacts on the Project as a whole and during construction will be non-existent.

C.10. ACCESS ROADS

Due to the existing land use on the Metro North right-of-way, UI faces challenges when attempting to obtain access to each structure. However, based on the current land use, UI is able to reduce its footprint to the corridor for the construction of access roads. There will, however, be certain locations where abutting properties along the existing right-of-way will need to be used in order to gain safe and efficient access to the structure locations. UI will work with the property owners in order to gain permissible and safe access.

Based on the constructability at each location, minor grading and excavation activities may take place. Typically, roads will be built using 4-8 inch angular stone and in certain locations construction mats may be needed due to the presence of wetlands. Based on the safety protocols for CDOT/Metro North, UI intends on constructing roads in upland areas approximately 16-20 feet wide and 12-14 feet wide in wetland/sensitive areas. Also, in order to maintain compliance with certain best management practices and construction standards while working within the vicinity of sensitive areas, UI will implement the necessary techniques from the “CT DEEP: 2002 Connecticut Guidelines for Soil Erosion and Sediment Control.”

When it is possible, UI will attempt to avoid any environmental impacts to sensitive areas such as: wetlands, vernal pools, and species habitats. However, based on circumstances outside of UI’s control, avoidance to these areas may not be possible. Therefore, in these situations, UI will use the placement of temporary swamp mats and certain best management techniques in order to reduce the impact to these areas.

D. CONSTRUCTION

D.1. OVERVIEW OF CONSTRUCTION

UI will construct the Project in several stages, some overlapping in time. Certain work activities and sequences may vary, based on factors such as site-specific conditions, the final Project design, the availability of circuit outages, and the requirements of regulatory approvals. UI will complete pre-construction planning activities and continue consulting with the affected municipalities and State and federal agencies to avoid adverse effects to the environment and to the public.

D.2. CONSTRUCTION PROCEDURES

The Project will be constructed in accordance with UI specifications, established industry practices, UI's *Best Management Practices Manual Construction & Maintenance Environmental Requirements Connecticut*, and any conditions of the decision issued by the Connecticut Siting Council ("Council"). A typical construction sequence will be as follows:

D.2.1. Pre-construction activities include the following:

- Survey and stake the monumented line of corridor, ROW boundaries, and future structure locations, and
- Mark wetland and watercourse boundaries, cultural resource areas of concern where avoidance or special procedures are required and sensitive environmental resource areas that are to be avoided.

D.2.2. Construction activities include the following:

- Establish field construction areas and prepare staging and lay-down areas;
- Prepare the ROW (including the installation of erosion and sediment ("E&S") controls, removal of vegetation as needed, and access road improvement/installation);
- Prepare work areas (pads) at structure sites;
- Excavate and install foundations, erect new structures, and, if necessary, install guy lines and anchors;
- Install conductors and wires;
- Remove existing transmission line structures and associated conductors and wires; and
- Clean-up and restore, including planting vegetation in disturbed sites.

Construction equipment such as pickup trucks, bucket trucks, front loaders, reel trailers, bulldozers, wood chippers, cranes, forklifts, side booms and dump trucks are anticipated to be involved in the overhead transmission lines within the existing ROW.

D.3. RIGHT-OF-WAY VEGETATION CLEARING

No ROW expansion is needed for the Milvon to Devon Tie Section; however, additional clearing will be necessary within UI's existing ROW. Some vegetation will be removed within the existing ROW as follows:

- to clear overgrowth from the locations for the new structures, providing unobstructed access;
- to remove off-ROW hazard trees;
- to provide access between existing access roads and new structure locations; and
- to maintain required North American Electric Reliability Corporation clearances.

Some vegetation will be removed outside the existing ROW as follows:

- to remove off-ROW hazard trees;
- to provide access between new access locations and new structure locations; and
- to maintain required North American Electric Reliability Corporation clearances.

UI will minimize vegetation clearing activities to the extent possible and stabilize disturbed areas as soon as possible.

D.4. CONSTRUCTION SCHEDULE

The planned in-service date for the Project is End of the Year of 2016. Construction activities are planned to commence the second quarter of 2015 with access road preparation and ROW vegetation clearing, assuming all required regulatory approvals have been obtained by that time.

E. ELECTRIC AND MAGNETIC FIELDS

Electric and magnetic fields (EMF) levels following the proposed line modifications are expected to increase relative to those produced by the existing transmission lines. *See* Attachment E for the full EMF report. Two loading scenarios were used to calculate EMF, peak load level at the time of the application filing and at the projected maximum 24-hour average load level (average daily peak). Values for these two loading levels can be seen in Table 1 below. These increases are due to a lower conductor height at mid-span and a closer proximity to both the northern and southern ROW edges. However, the resulting EMF are far below international safety-based and health-based standards for EMF levels.

Table E-1. Projected transmission line loading (Amperes)

				Current Magnitude			
				Pre-Project		Post-Project	
Line #	**kV**	**From**	**To**	**Average**	**Peak**	**Average**	**Peak**
88005A-2	115	Milvon	Devon Tie	329	445	333	450
89005B-2	115	Milvon	Devon Tie	330	446	334	451

Both line sections will have a vertical phase configuration. To calculate the electric and magnetic fields the ROW has been considered in three sections: the first section comprises of catenary structures 865 to 868, the second structures 870 to 884 and the third structures 884 to 888. This section is depicted in figure E-1.

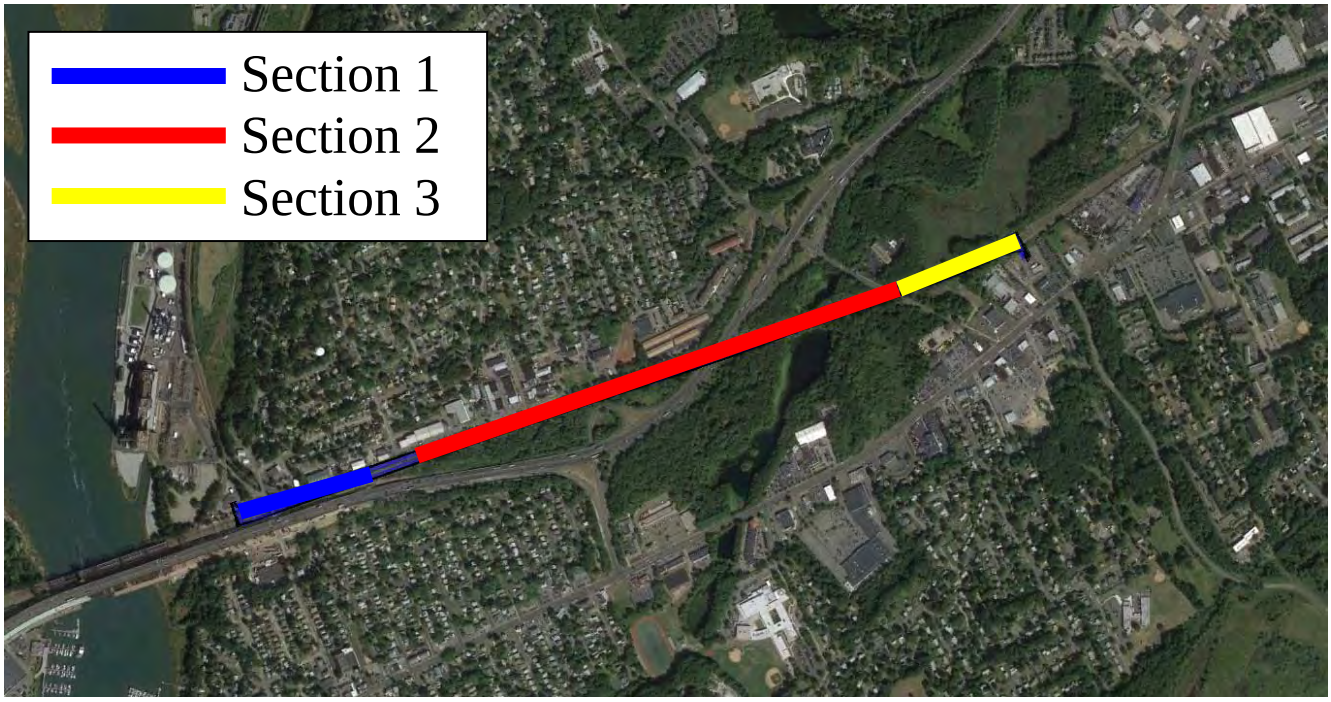


Figure E-1. Key Map

UI's proposed design for the Project is a vertical configuration of three phase conductors supported on galvanized steel monopoles, see Figure E-2. Calculated electric and magnetic fields for the loading conditions are summarized in Tables E-2 thru E-4 below. The calculations reflect 2013 system conditions for the existing case and projected 2022 system conditions for the proposed case.

Consequently, the 2022 magnetic field calculation results, by comparison with the 2013 results, primarily reflect the changed line design, and to a lesser extent 5 years of load growth.

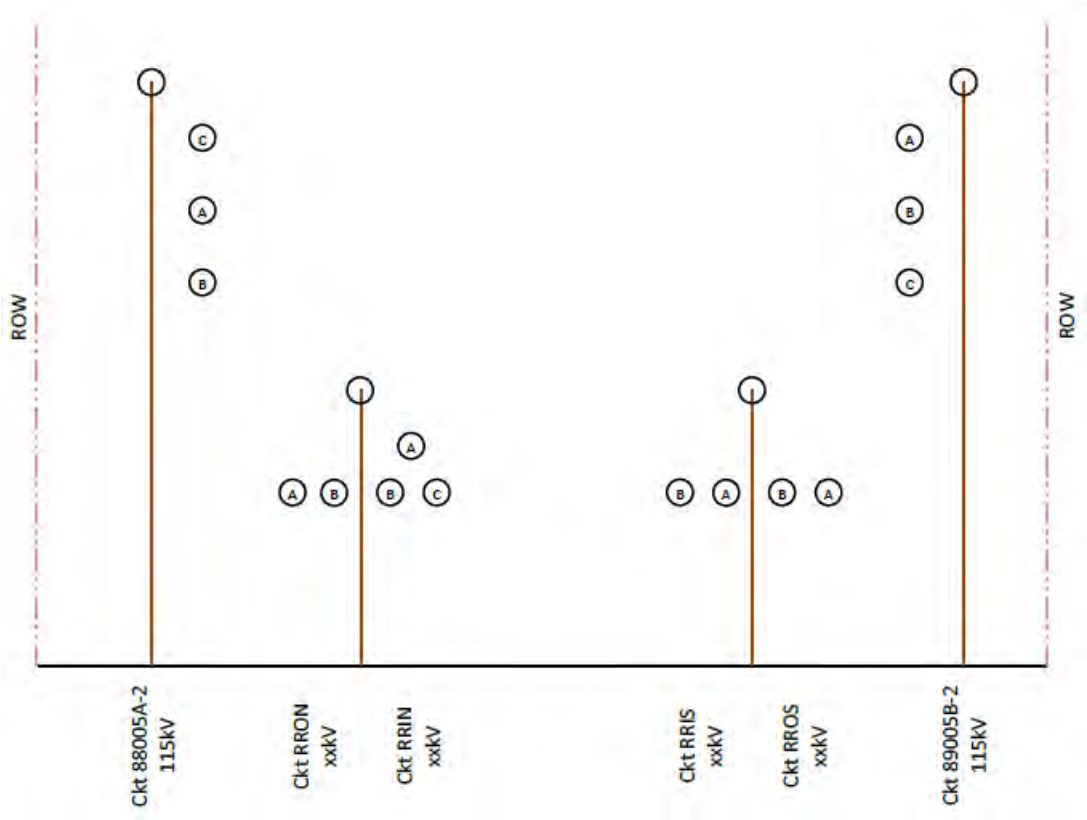


Figure E-2. Proposed conductor configuration

Inputs for all of the magnetic field calculations included voltage, current flow, phasing, and conductor configurations. The values of the magnetic fields associated with the transmission lines were calculated along profiles perpendicular to the transmission lines at the point of lowest conductor sag (mid-span), i.e., closest to the ground. For existing conductors the typical mid-span height is approximately 40 feet above ground. The typical mid-span height for proposed conductors is approximately 39 feet above ground. Away from mid-span locations where all of the line conductors are higher than the mid-span heights, EMF levels will be lower than values determined for a 39-foot bottom conductor height. Electric fields were also calculated assuming a relatively high voltage on each circuit 121 kV (1.05 per unit) to yield conservatively higher results. The electric and magnetic fields were calculated as the resultant of x, y, and z field vectors taken at 1 meter above ground.

Table E-2 Calculated electric-field levels				
Cross Section	Configuration	Electric Field (kV/m)		
		North Edge of ROW	Max on ROW	South Edge of ROW
MD-1	Existing	0.18	0.41	0.24
	Proposed	0.6	0.81	0.54
MD-2	Existing	0.26	0.77	0.43
	Proposed	0.93	1.46	1.11
MD-3	Existing	0.11	0.56	0.37
	Proposed	0.73	1.04	0.6

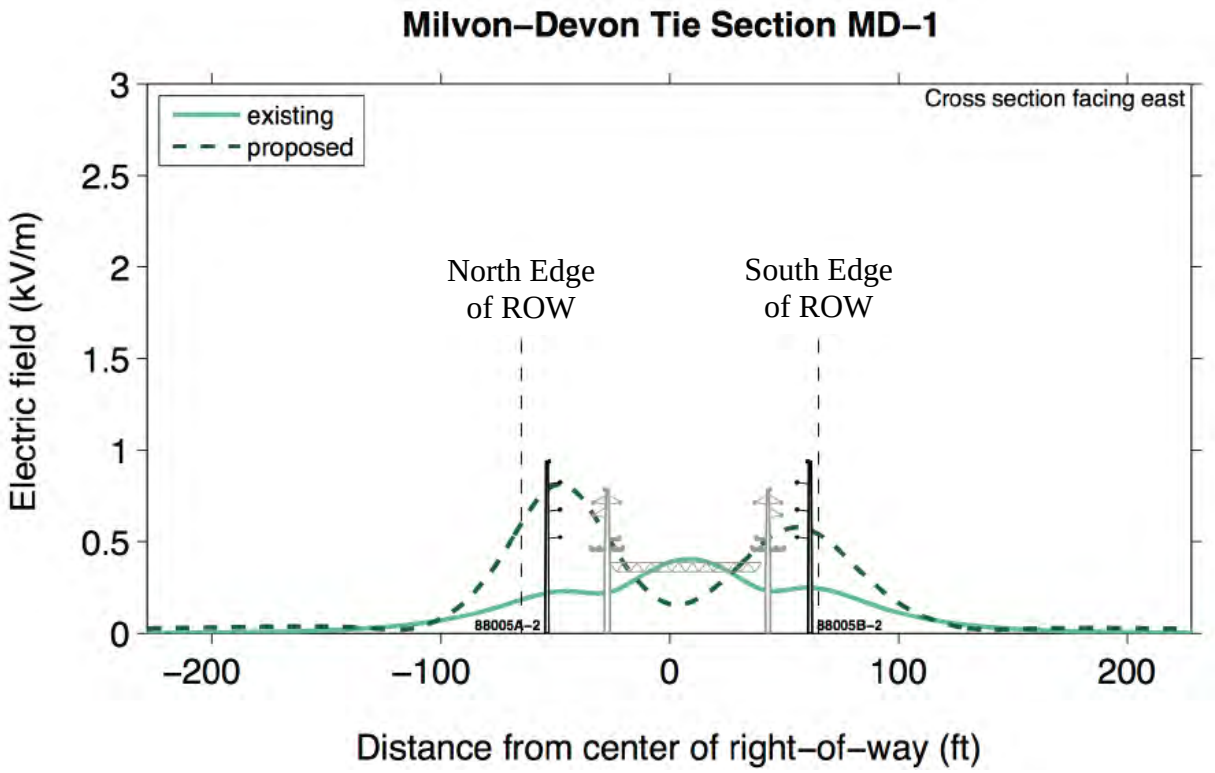


Figure E-3. Calculated electric filed profile for existing and proposed configurations

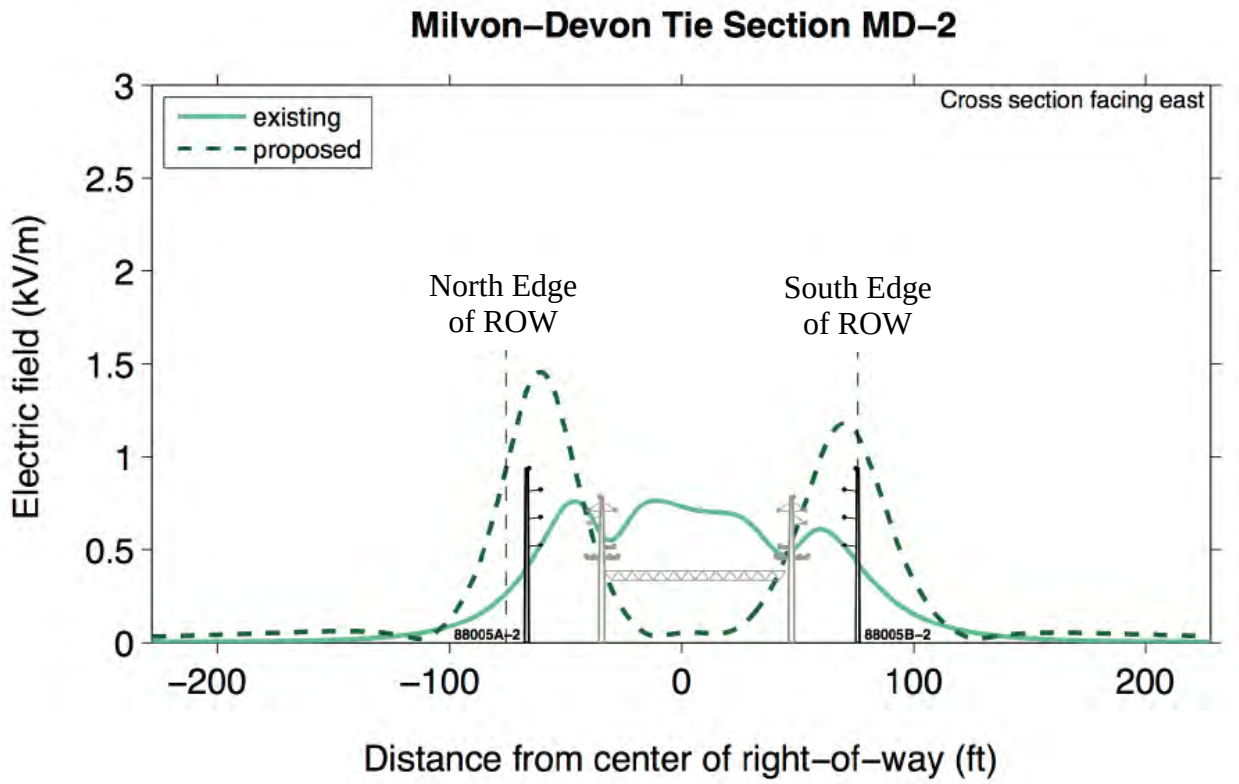


Figure E-4. Calculated electric filed profile for existing and proposed configurations

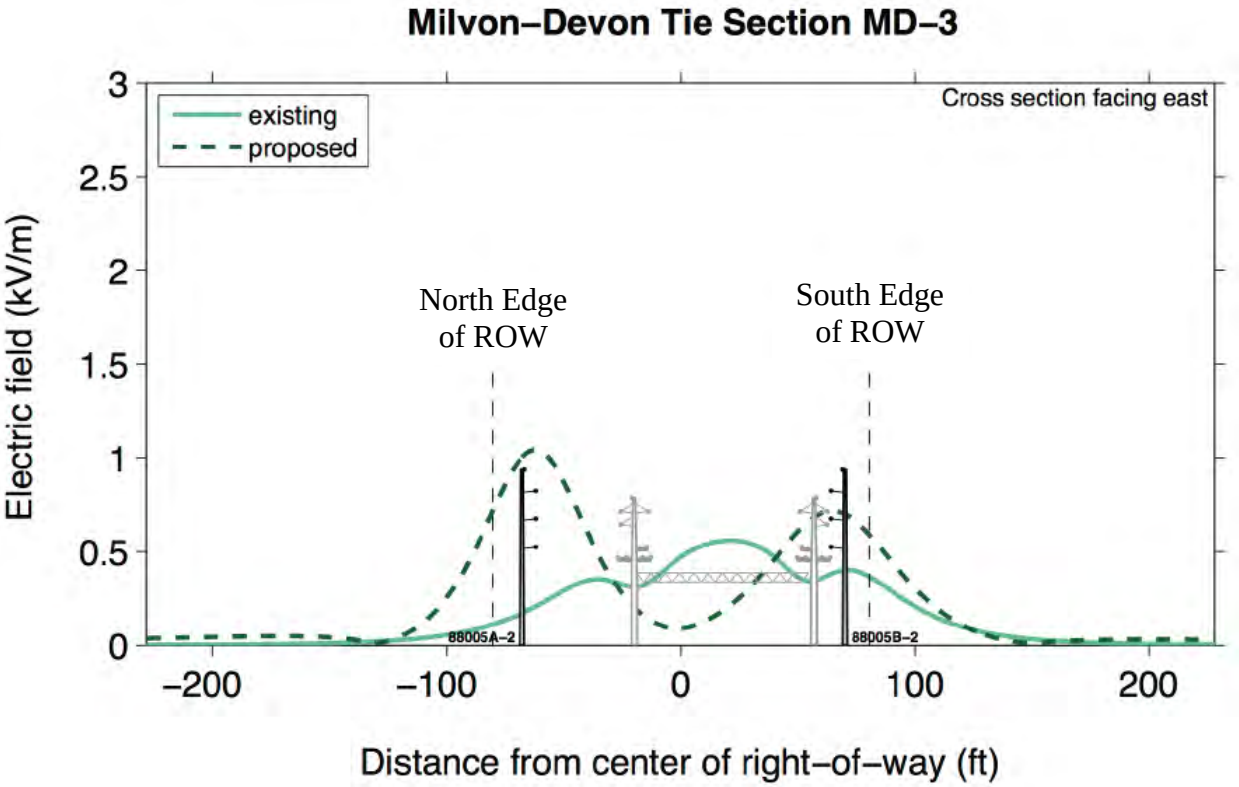


Figure E-5. Calculated electric filed profile for existing and proposed configurations

Table E-3 Calculated magnetic-field levels, average load case				
Cross Section	Configuration	Magnetic Field (mG)		
		North Edge of ROW	Max on ROW	South Edge of ROW
MD-1	Existing	6.1	13.7	9.2
	Proposed	18.1	20.3	13.8
MD-2	Existing	10.4	35.9	15
	Proposed	31.3	38.1	29.6
MD-3	Existing	4.3	20.4	13.2
	Proposed	24	27.6	17.1

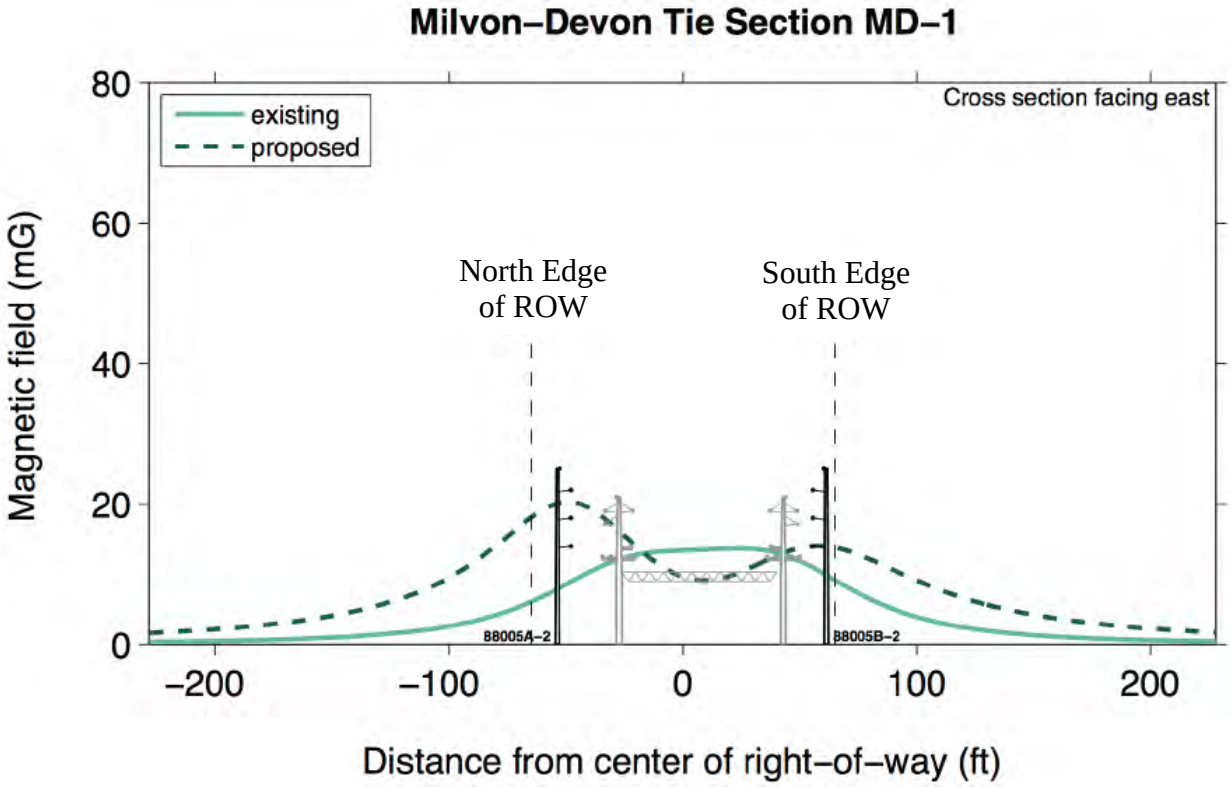


Figure E-6. Calculated magnetic field profile for existing and proposed configurations, average load case

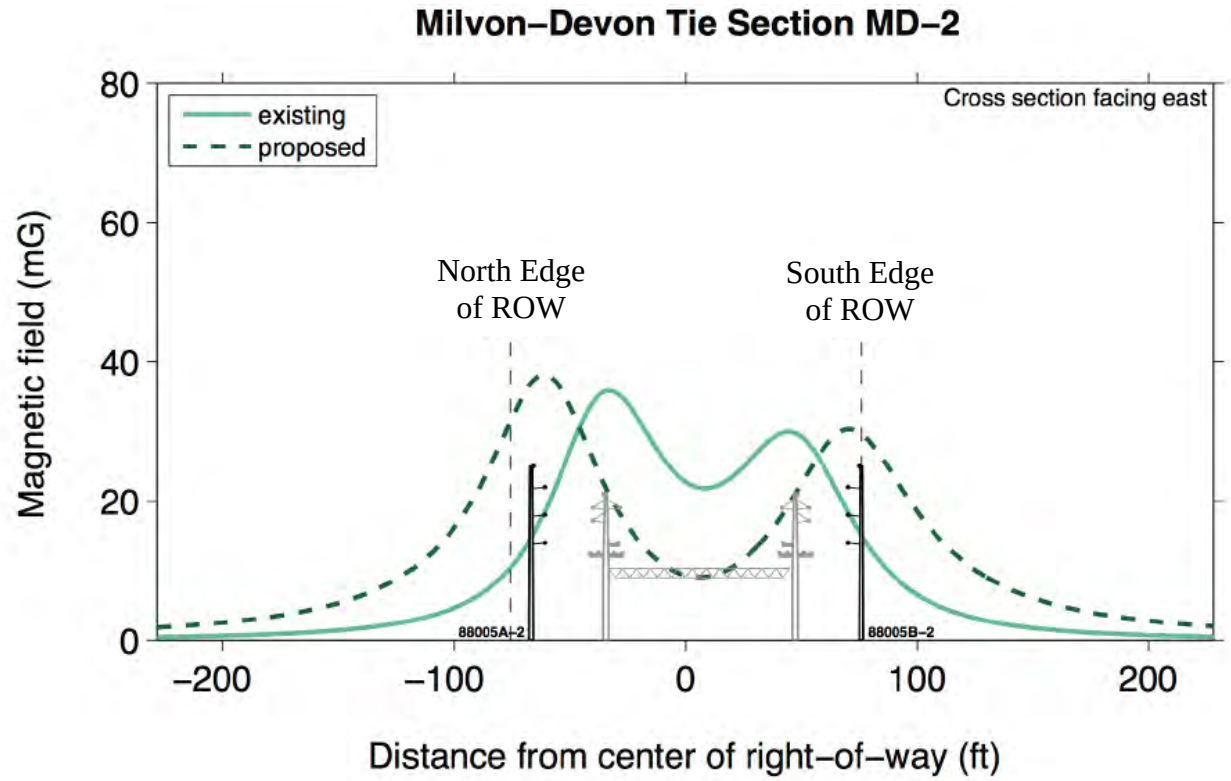


Figure E-7. Calculated magnetic field profile for existing and proposed configurations, average load case

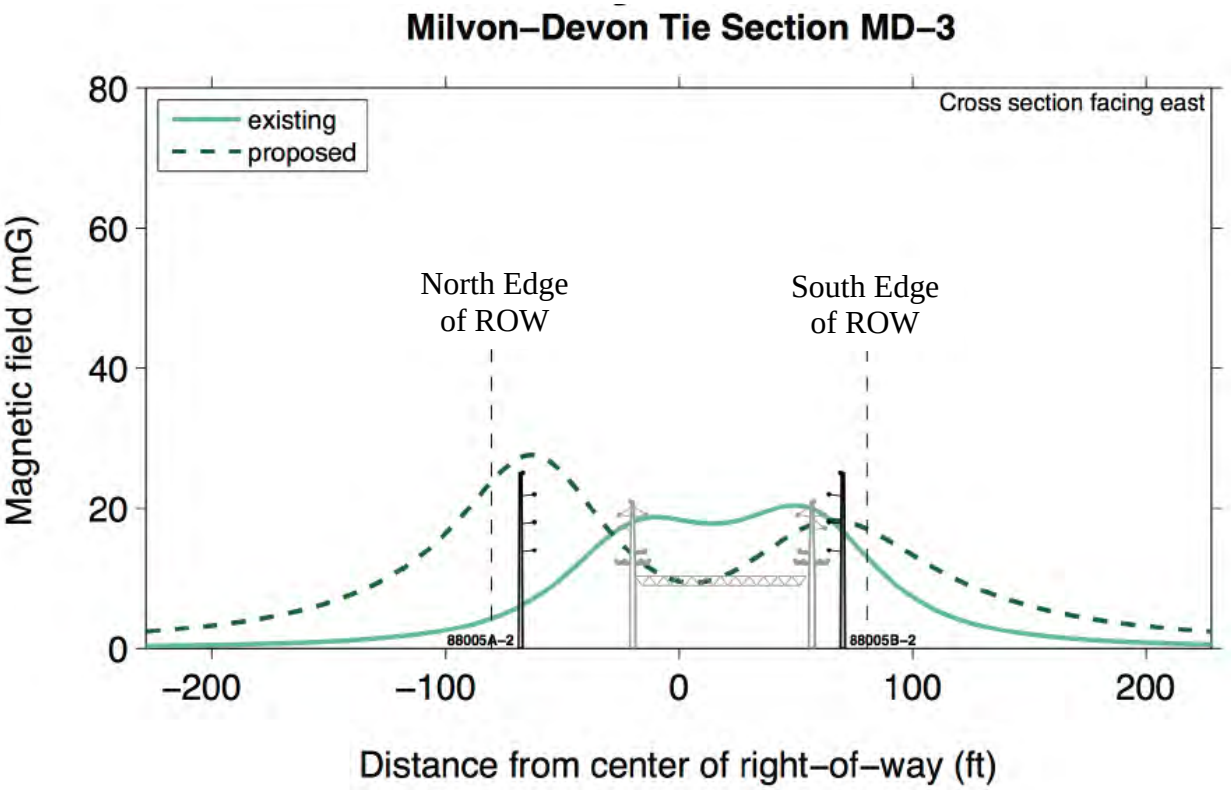


Figure E-8. Calculated magnetic field profile for existing and proposed configurations, average load case

Table E-4 Calculated magnetic-field levels, peak load case				
Cross Section	Configuration	Magnetic Field (mG)		
		North Edge of ROW	Max on ROW	South Edge of ROW
MD-1	Existing	8.2	18.5	12.4
	Proposed	24.5	27.4	18.6
MD-2	Existing	14.1	48.5	20.3
	Proposed	42.3	51.5	40
MD-3	Existing	5.9	27.6	17.8
	Proposed	32.4	37.3	23.1

For both line sections, north and south, the calculated values of the electric and magnetic fields showed an increase above existing levels. UI examined additional options to mitigate EMF. UI considered rolling the phases to optimize the phasing. However, that will push the monopoles closer to the railroad tracks and increase structure heights. Increasing structure heights will have an adverse impact on the visual characteristic of the lines. In addition, being closer to the railroad introduces numerous construction difficulties. For the southern line section there are no sensitive areas within 300 feet for the proposed conductor locations. For the northern line section there is one residential building 100 feet away and fourteen that are 150 feet away from the proposed conductor locations. Because the resulting EMF are far below international safety-based and health-based standards and the drop in EMF at distances over 100', design alternatives to reduce EMF were not examined further.

F. MUNICIPAL AND COMMUNITY OUTREACH

On March 5, 2014, UI met with the chief elected official in Milford. Project personnel initially briefed Milford's Assistant Mayor, Steven Fournier, City Engineer, Gary W. Wassmer, and Executive Director Henry D. Jadach of the Milford Transit District. UI presented an overview of the Project, answered questions, and provided a point of contact to obtain additional information. Subsequent to this meeting, Project personnel have been in contact with a number of municipal department heads to discuss potential wetland mitigation areas, access to and across city-owned land.

Due to the limited impact to Milford, none of the municipal officials that UI consulted with have express any concerns with the Project. Letters from municipal officials are included in Attachment F.

In conjunction with the filing of this Petition, UI has mailed notifications to property owners along the Project route. The letter included a copy of this petition and an invitation to provide comments or concerns to the Council within 30 days of receipt. (See Attachment G.)

A copy of the Petition was provided to the CEO of the City of Milford by courier on July 7, 2014. (See Attachment G.)

G. CONCLUSION

Based on the foregoing, UI respectfully submits that the Project will not have a substantial adverse environmental effect and, therefore, does not require a Certificate of Environmental Compatibility and Public Need pursuant to Conn. Gen. Stat. § 16-50k(a).

Attachment A
Representative Photos

VISIBILITY ANALYSIS

Date: June 24, 2014

To: The United Illuminating Company
180 Marsh Hill Road
Orange, CT 06477

From: Michael Libertine

Re: Proposed Milford-Devon Line Modifications
Milford, Connecticut

At the request of United Illuminating Company ("UI"), All-Points Technology Corporation, P.C. ("APT") completed an evaluation of the visibility associated with the proposed reconfiguration of existing overhead transmission lines extending along a portion of the MetroNorth railroad corridor in Milford, Connecticut (the "Project").

To conduct this assessment, three-dimensional computer models were developed of the existing circuits and support structures, as well as the proposed modifications. Information used in the models included 3D files created by the photo-voltaic panel manufacturer, LiDAR[1]-based digital elevation data and customized land use data layers developed specifically for this Project. The LiDAR-based Digital Elevation Model represents information for the Project area that was derived through the spatial interpolation of airborne LiDAR-based data collected in the year 2011. In addition, multiple land use data layers were created from National Agricultural Imagery Program (USDA) aerial photography (1-foot resolution, flown in 2012) using IDRISI image processing tools. The IDRISI tools develop light reflective classes defined by statistical analysis of individual pixels, which are then grouped based on common reflective values such that distinctions can be made automatically between deciduous and coniferous tree species, as well as grassland, impervious surface areas, surface water and other distinct land use features. This information is manually cross-checked with the recent USGS topographic land characteristics to quality assure the imaging analysis.

The model was queried to determine where at least portions of the Project may be visible to the human eye without the aid of magnification, based on a viewer eye-height of 5 feet above the ground and the combination of intervening topography, the tree canopy (year-round) and tree trunks (seasonally, when the leaves are off the deciduous trees), buildings and other infrastructure. The computer model outputs shaded areas of predicted visibility that identify

[1] LiDAR is an acronym for Light Detection and Ranging. It is a technology that utilized lasers to determine the distance to an object or surface. LiDAR is similar to radar, but incorporates laser pulses rather than sound waves. It measures the time delay between transmission and reflection of the laser pulse.

locations where the Project may potentially be visible. The Project however may not necessarily be visible from all locations within those shaded areas.[2]

Information obtained during the field reconnaissance was incorporated into the mapping data layers, including general observations of the building and its surroundings, the photo locations, and areas that experienced recent land use changes. Heights of existing buildings, structures and trees are embedded within the LiDAR data and incorporated into the DEM. Once the data layers were integrated into the model, image processing tools were applied and overlaid onto an aerial photograph to achieve an estimate of locations where the Project might be visible. Results of this analysis are graphically displayed on the viewshed maps provided in the attachments. The maps include a photolog that depicts the photo locations, discussed below.

APT personnel then conducted a reconnaissance of the Project area by driving along local roads and other publicly accessible locations to document and inventory where existing structures and circuits could be seen above/through the tree canopy, buildings/homes and other infrastructure. Photographs were obtained from several vantage points to document the views of the Project. The geographic coordinates of the camera's position at each photo location were logged via GPS. Photographs were taken with a Canon EOS 6D digital camera body and Canon EF 24 to 105 millimeter ("mm") zoom lens, with lens settings ranging from 24 mm to 50 mm. Focal lengths ranging from 24 mm to 50 mm approximate views similar to that achieved by the human eye. However, two key aspects of an image can be directly affected by the specific focal length that is selected: field of view and relation of sizes between objects in the frame. A 24 mm focal length provides a wider field of view, representative of the extent the human eyes may see (including some peripheral vision), but the relation of sizes between objects at the edges of the photos can become minimally skewed. A 50 mm focal length has a narrower field of view than the human eye but the relation of sizes between objects is represented similar to what the human eye might perceive[3]. When taking photographs for these analyses, APT prefers a focal length of 50 mm; however there are times when wider views (requiring the use of alternate lens settings) can better reflect "real world" viewing conditions by providing greater context to the scene. Regardless of the lens setting, the scale of the subjects in the photograph and corresponding simulation remains proportional to its surroundings.

[2] It is important to note that the computer model cannot account for mass density, the height, diameter and branching variability of individual trees, or the degradation of views that occur with distance. In addition, each point – or pixel - represents about one square meter in area, and thus cannot predict visibility from all viewpoints through all possible obstacles. Although large portions of the predicted viewshed may theoretically offer visibility of the Project, because of these unavoidable limitations the quality of those views may not be sufficient for the human eye to recognize portions of the Project or discriminate it from other surrounding objects.

[3] *"The lens that most closely approximates the view of the unaided human eye is known as the normal focal-length lens. For the 35 mm camera format, which gives a 24x36 mm image, the normal focal length is about 50 mm."* - Warren, Bruce. Photography, West Publishing Company, Eagan, MN, c. 1993, (page 70).

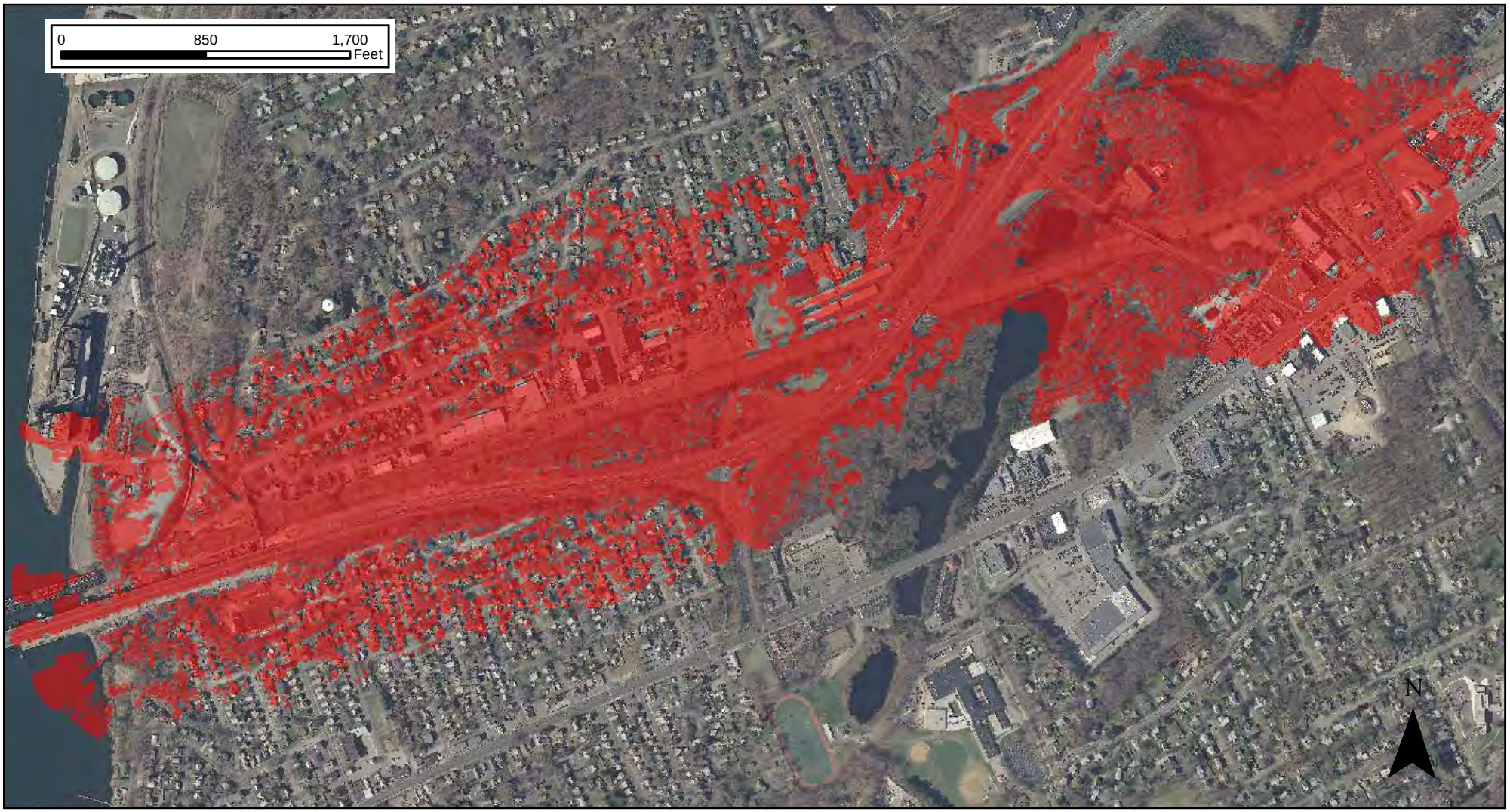
Photographic simulations were generated to portray scaled renderings of the Project from seven (7) representative locations where the Project would be visible either on a year-round or seasonal basis. Using field data, site plan information and 3-dimension (3D) modeling software, spatially referenced models of the Project area and proposed modifications were generated and merged. The geographic coordinates obtained in the field for the photograph locations were incorporated into the model to produce virtual camera positions within the spatial 3D model by linking the Project photography with the 3D computer model using existing structures so their global position can be verified. The information recorded by the photographer was used to set up a virtual camera within the 3D computer model replicating the exact position of the camera when in the field. Photo simulations were then created using a combination of renderings generated in the 3D model and photo rendering software programs. For presentation purposes in this report, all of the photographs were produced in an approximate 7-inch by 10.5-inch format[4].

The photo-simulations are intended to provide the reader with a general understanding of the variety of views that might be achieved of the Project. It is important to consider that the publicly-accessible locations selected are typically representative of a "worst case" scenario. They were chosen to present unobstructed view lines (wherever possible), are static in nature and do not necessarily fairly characterize the prevailing views from all locations within a given area. The simulations provide a representation of the Project under similar settings as those encountered during the balloon float and reconnaissance. Views of the Project can change substantially throughout the season and are dependent on environmental conditions, including but not necessarily limited to weather, light conditions, seasons, time of day, and the viewer location.

Based on the results of the field reconnaissance, viewshed mapping and photo-simulations, APT determined that views of the Project would be limited primarily to those areas where the existing infrastructure is visible, generally within approximately 0.25 mile to the north and west of the corridor. Limited views of the upper portion of some new structures may extend slightly beyond the existing viewshed, perhaps up to 0.4 mile away. The characteristics of the existing views would change because of the addition of new structures, the removal or reduction in heights of several current structures, and the new circuit configurations. Overall, the Project does not appear to represent a substantial change in visibility over what exists today.

Attachments

[4] When viewing in this format size, we believe it is important to provide the largest representational image while maintaining an accurate relation of sizes between objects within the frame of the photograph and depicting the subject (the Project) in a way similar to what an observer might see, to the greatest extent possible.



Composite Viewshed Analysis – Existing Conditions

MILVON-DEVON RAILROAD UPGRADE
Milford, CT

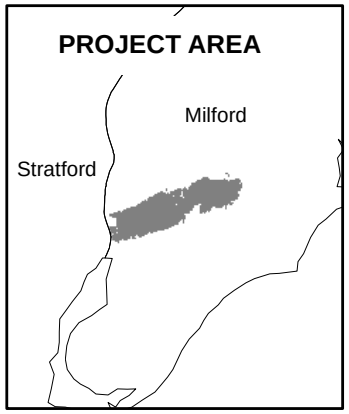
Legend

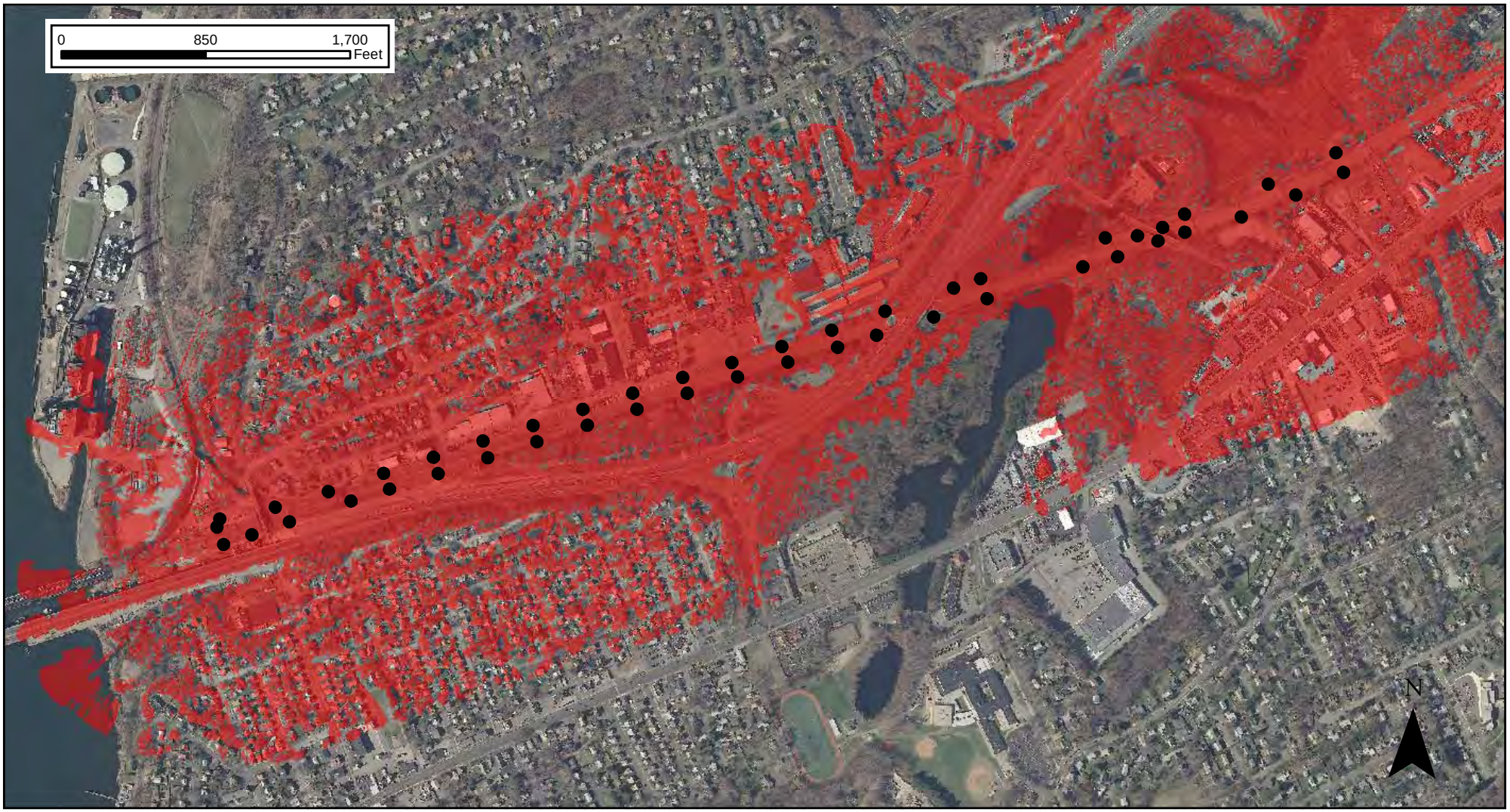
Predicted Visibility

This Visibility Analysis map relies on a combination of computer modeling, interpretation of aerial photographs and topographic maps, and field observations.

NOTES
- Viewshed analysis conducted using ESRI's ArcGIS 10.
- Areas of potential visibility are calculated based on structure locations and heights and LiDAR data.

DATA SOURCES
- Digital elevation model (DEM) derived from NOAA LiDAR data (2011).
- Aerial photographs from CLEAR (2012).





Composite Viewshed Analysis – Proposed Conditions

MILVON-DEVON RAILROAD UPGRADE
Milford, CT

Legend

- Proposed Structure
- Predicted Visibility

This Visibility Analysis map relies on a combination of computer modeling, and interpretation of aerial photographs and topographic maps.

NOTES

- Viewshed analysis conducted using ESRI's ArcGIS 10.
- Areas of potential visibility are calculated based on structure locations and heights and Study Area LiDAR data.
- 47 proposed structures of heights between 60 and 124 feet AGL are included.

DATA SOURCES

- Digital elevation model (DEM) derived from NOAA LiDAR data (2011).
- Aerial photographs from CLEAR (2012).

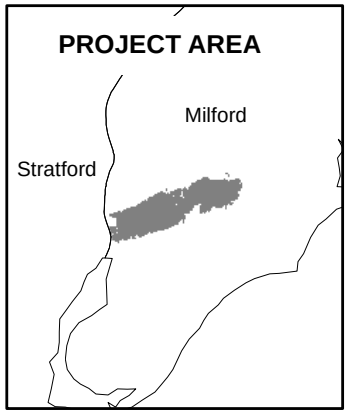


PHOTO LOG

Legend

● Photo Point ⊠ Proposed Tower Location

MILVON - DEVON LINE

N W E S

250 125 0 250 Feet

ALL-POINTS TECHNOLOGY CORPORATION

EXISTING

PHOTO	LOCATION	ORIENTATION
1	**ROWE AVENUE**	**SOUTHWEST**

ALL-POINTS TECHNOLOGY CORPORATION

The United Illuminating Company

PROPOSED

PHOTO	LOCATION	ORIENTATION
1	**ROWE AVENUE**	**SOUTHWEST**

ALL-POINTS TECHNOLOGY CORPORATION

The United Illuminating Company

EXISTING

PHOTO	LOCATION	ORIENTATION
2	**ROWE AVENUE (35mm Focal Length)**	**SOUTHWEST**

PROPOSED

PHOTO	LOCATION	ORIENTATION
2	**ROWE AVENUE (35mm Focal Length)**	**SOUTHWEST**

ALL-POINTS TECHNOLOGY CORPORATION

The United Illuminating Company

EXISTING

PHOTO	LOCATION	ORIENTATION
3	**SHADY STREET (35mm Focal Length)**	**SOUTHEAST**

PROPOSED

PHOTO	LOCATION	ORIENTATION
3	**SHADY STREET (35mm Focal Length)**	**SOUTHEAST**

ALL-POINTS TECHNOLOGY CORPORATION

The United Illuminating Company

EXISTING

PHOTO	LOCATION	ORIENTATION
4	**UTICA STREET (35mm Focal Length)**	**SOUTHWEST**

ALL-POINTS TECHNOLOGY CORPORATION

The United Illuminating Company

PROPOSED

PHOTO	LOCATION	ORIENTATION
4	**UTICA STREET (35mm Focal Length)**	**SOUTHWEST**

ALL-POINTS TECHNOLOGY CORPORATION

The United Illuminating Company

EXISTING

PHOTO	LOCATION	ORIENTATION
5	**RIVERSIDE DRIVE AT NAUGATUCK AVENUE**	**NORTHWEST**

PROPOSED

PHOTO	LOCATION	ORIENTATION
5	**RIVERSIDE DRIVE AT NAUGATUCK AVENUE**	**NORTHWEST**

EXISTING

PHOTO	LOCATION	ORIENTATION
6	**SCHOOLHOUSE ROAD (24mm Focal Length)**	**SOUTHWEST**

ALL-POINTS TECHNOLOGY CORPORATION

The United Illuminating Company

PROPOSED

PHOTO	LOCATION	ORIENTATION
6	**SCHOOLHOUSE ROAD (24mm Focal Length)**	**SOUTHWEST**

EXISTING

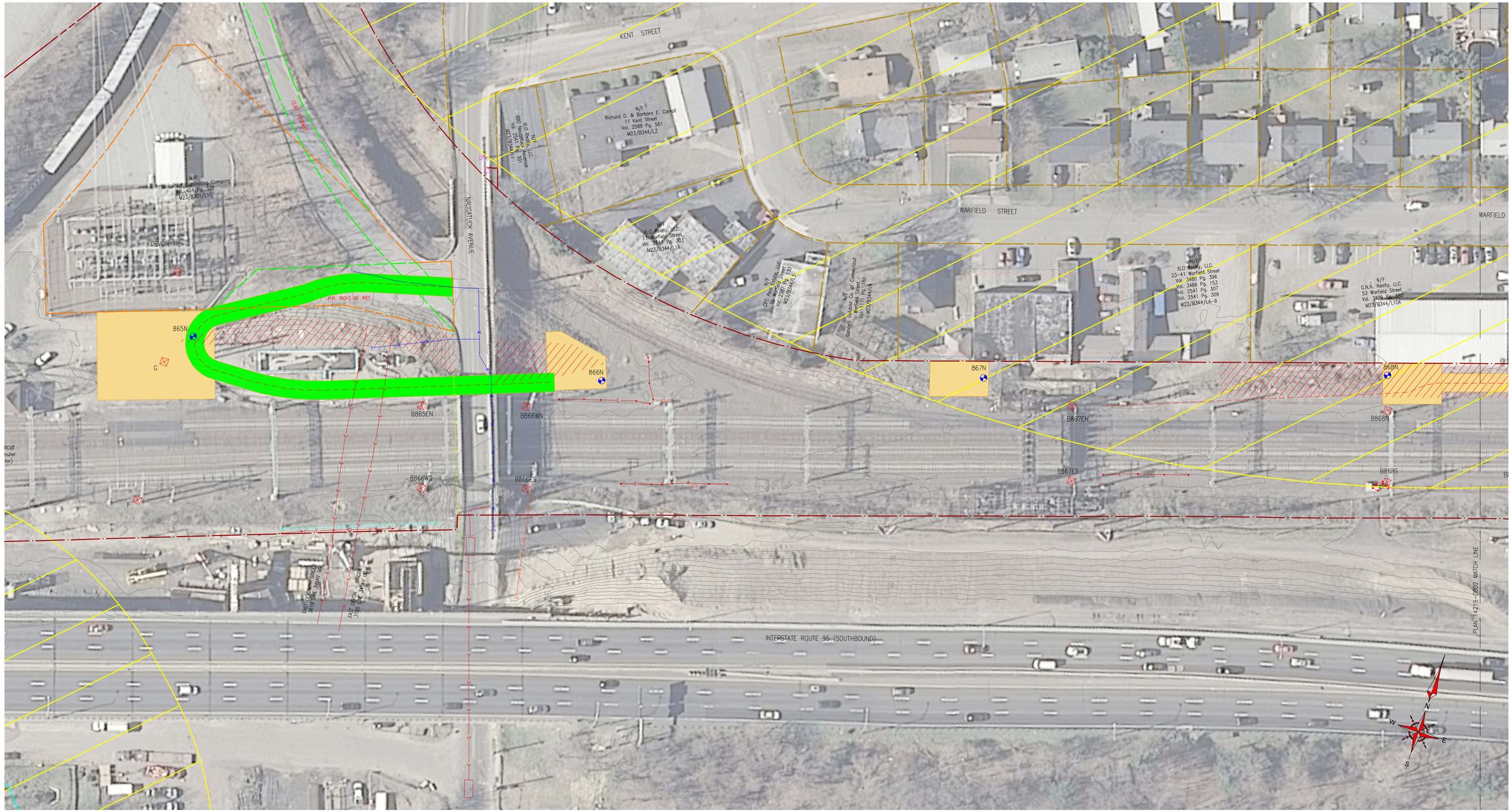
PHOTO	LOCATION	ORIENTATION
7	**SCHOOLHOUSE ROAD**	**NORTH**

PROPOSED

PHOTO	LOCATION	ORIENTATION
7	**SCHOOLHOUSE ROAD**	**NORTH**

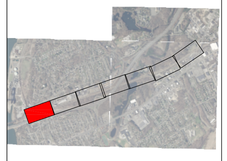
Attachment B

Key Map, Aerial Segment Maps and Descriptions



CONTEXT MAP

INDEX MAP



LEGEND:

- ALL CONSTRUCTION TRAFFIC
- TOWN LINE
- UI PROPERTY LINE
- PROPERTY LINE
- RAILROAD EDGE OF RIGHT-OF-WAY
- EASEMENT
- E — E UNDERGROUND ELECTRIC LINE
- G — G GAS LINE
- S — S SANITARY SEWER
- STORM SEWER
- FO — FO FIBER OPTIC TELECOMMUNICATIONS LINE
- W — W WATER LINE
- SURVEY CONTROL POINT
- WATERCOURSE
- LIMIT OF WETLANDS
- FEMA 100 YEAR
- WETLANDS/MARSH
- VERNAL POOL
- EXISTING STRUCTURE
- PROPOSED STRUCTURE
- FEMA SPECIAL FLOOD HAZARD AREAS
- NATURAL DIVERSITY DATABASE (NDDB) AREA
- EXISTING ACCESS ROAD
- CONSTRUCTION AREA
- OCCUPATION AREA
- VEGETATION CLEARANCE
- WETLAND IMPACT AREA

40' 20' 0 40' 80'

PRELIMINARY

NOT TO BE USED FOR CONSTRUCTION

BLACK & VEATCH
Building a world of difference®

DESIGNER	MAP	DRAWN	EJJ
CHECKED	–	DATE	04/07/2014

PROJECT # 178472

NO	DATE	REVISION	DRN	CHKD	DESN	SUPR
C	06/24/2014	ISSUE FOR REVISIONS – PROJECT 178472	EJJ	–	MAP	–
B	06/03/2014	ISSUE FOR UI 90% REVIEW – PROJECT 178472	EJJ	–	MAP	–
A	04/07/2014	ISSUE FOR UI 70% REVIEW – PROJECT 178472	EJJ	–	MAP	–

REFERENCE DRAWINGS:

DRAWING INDEX: 14219–0002

No	Date	Revision	By	Chkd.	Engr.	Supv.

The United Illuminating Company

Drawn _____ Date _____ Scale: 1"=40'
Chkd. _____ Design Engr._____ Design Supv._____

MILVON TO DEVON TIE 88005A-2
115KV TRANSMISSION LINE
GENERAL ACCESS PLAN
DEVON TIE TO 868N

CAD FILE NAME	SEQUENCE No.	DRAWING NUMBER
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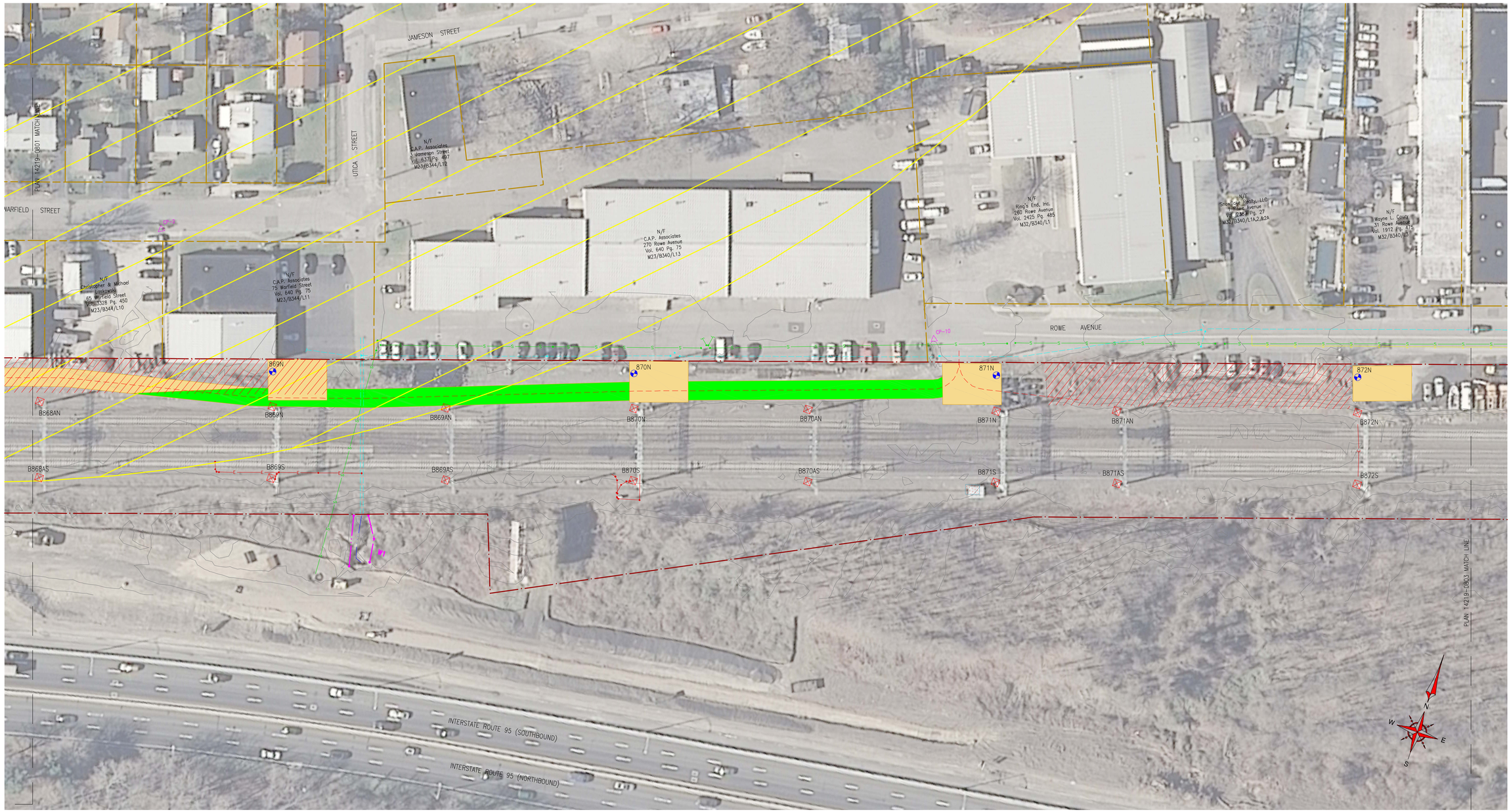
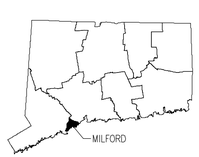


CONTEXT MAP



INDEX MAP

LEGEND:

- ALL CONSTRUCTION TRAFFIC
- TOWN LINE
- UI PROPERTY LINE
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- RAILROAD EDGE OF RIGHT-OF-WAY
- EASEMENT
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- STORM SEWER
- FIBER OPTIC TELECOMMUNICATIONS LINE
- WATER LINE
- SURVEY CONTROL POINT
- WATERCOURSE
- LIMIT OF WETLANDS
- FEMA 100 YEAR
- WETLANDS/MARSH
- VERNAL POOL
- EXISTING STRUCTURE
- PROPOSED STRUCTURE
- FEMA SPECIAL FLOOD HAZARD AREAS
- NATURAL DIVERSITY DATABASE (NDDB) AREA
- EXISTING ACCESS ROAD
- CONSTRUCTION AREA
- OCCUPATION AREA
- VEGETATION CLEARANCE
- WETLAND IMPACT AREA

40' 20' 0 40' 80'

PRELIMINARY

NOT TO BE USED FOR CONSTRUCTION

BLACK & VEATCH
Building a world of difference®

DESIGNER	MAP	DRAWN	EJJ
CHECKED	–	DATE	04/07/2014

PROJECT # 178472

NO	DATE	REVISION	DRN	CHKD	DESN	SUPR
C	06/24/2014	ISSUE FOR REVISIONS – PROJECT 178472	EJJ	–	MAP	–
B	06/03/2014	ISSUE FOR UI 90% REVIEW – PROJECT 178472	EJJ	–	MAP	–
A	04/07/2014	ISSUE FOR UI 70% REVIEW – PROJECT 178472	EJJ	–	MAP	–

REFERENCE DRAWINGS:

DRAWING INDEX: 14219-0002

No	Date	Revision	By	Chkd.	Engr.	Supv.

The United Illuminating Company

Drawn _____ Date _____ Scale: 1"=40'
Chkd. _____ Design Engr. _____ Design Supv. _____

MILVON TO DEVON TIE 88005A-2
115KV TRANSMISSION LINE
GENERAL ACCESS PLAN
869N TO 872N

CAD FILE NAME	SEQUENCE No.	DRAWING NUMBER
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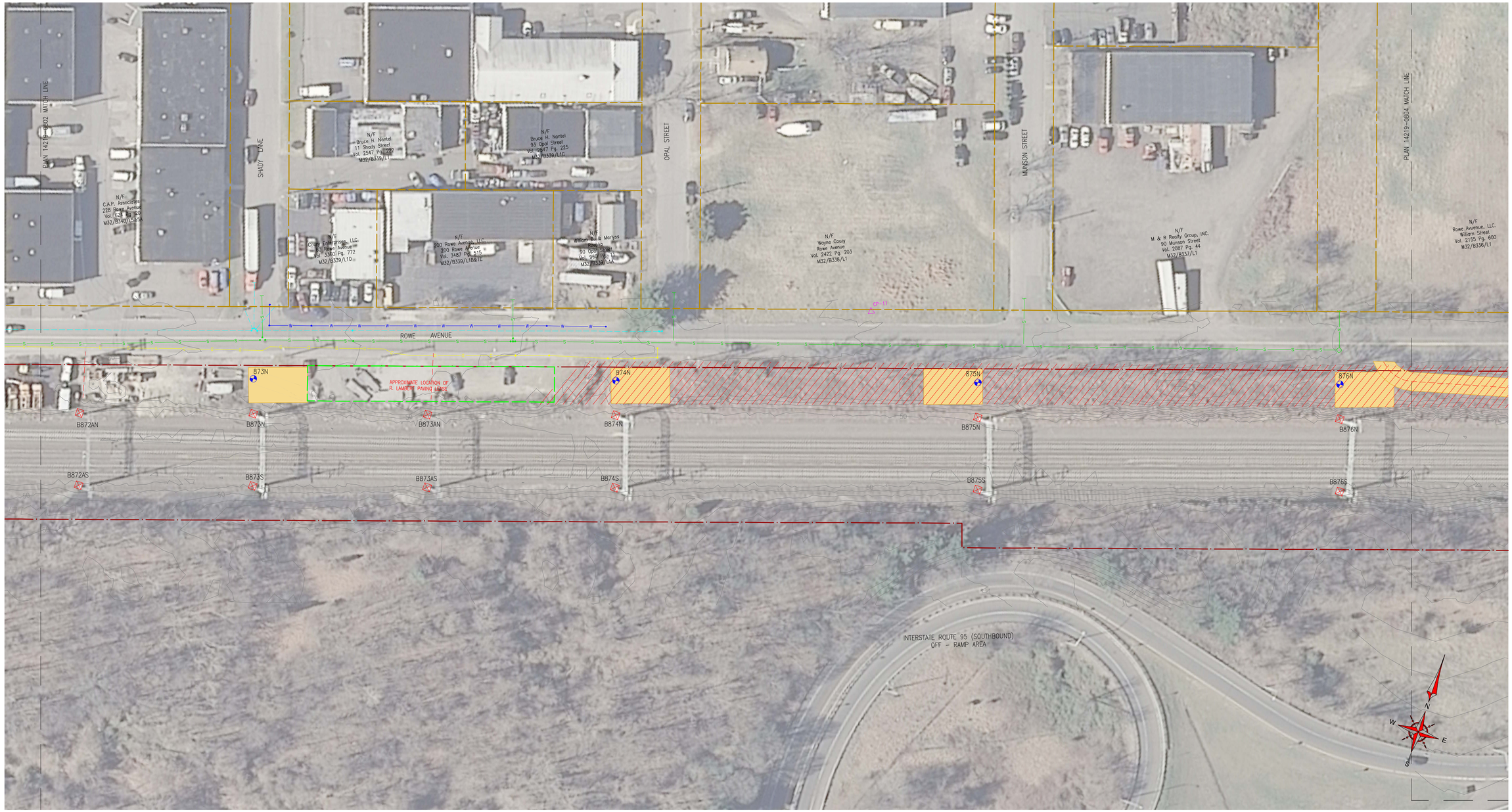

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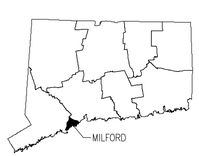
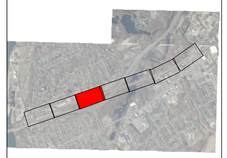


INDEX MAP



LEGEND:

- ALL CONSTRUCTION TRAFFIC
- TOWN LINE
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- PROPERTY LINE
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- EASEMENT
- UNDERGROUND ELECTRIC LINE
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- FEMA 100 YEAR
- WETLANDS/MARSH
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- VEGETATION CLEARANCE
- WETLAND IMPACT AREA

40' 20' 0 40' 80'

PRELIMINARY

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DESIGNER	MAP
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PROJECT #	178472

NO	DATE	REVISION	DRN	CHKD	DESN	SUPR
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REFERENCE DRAWINGS:

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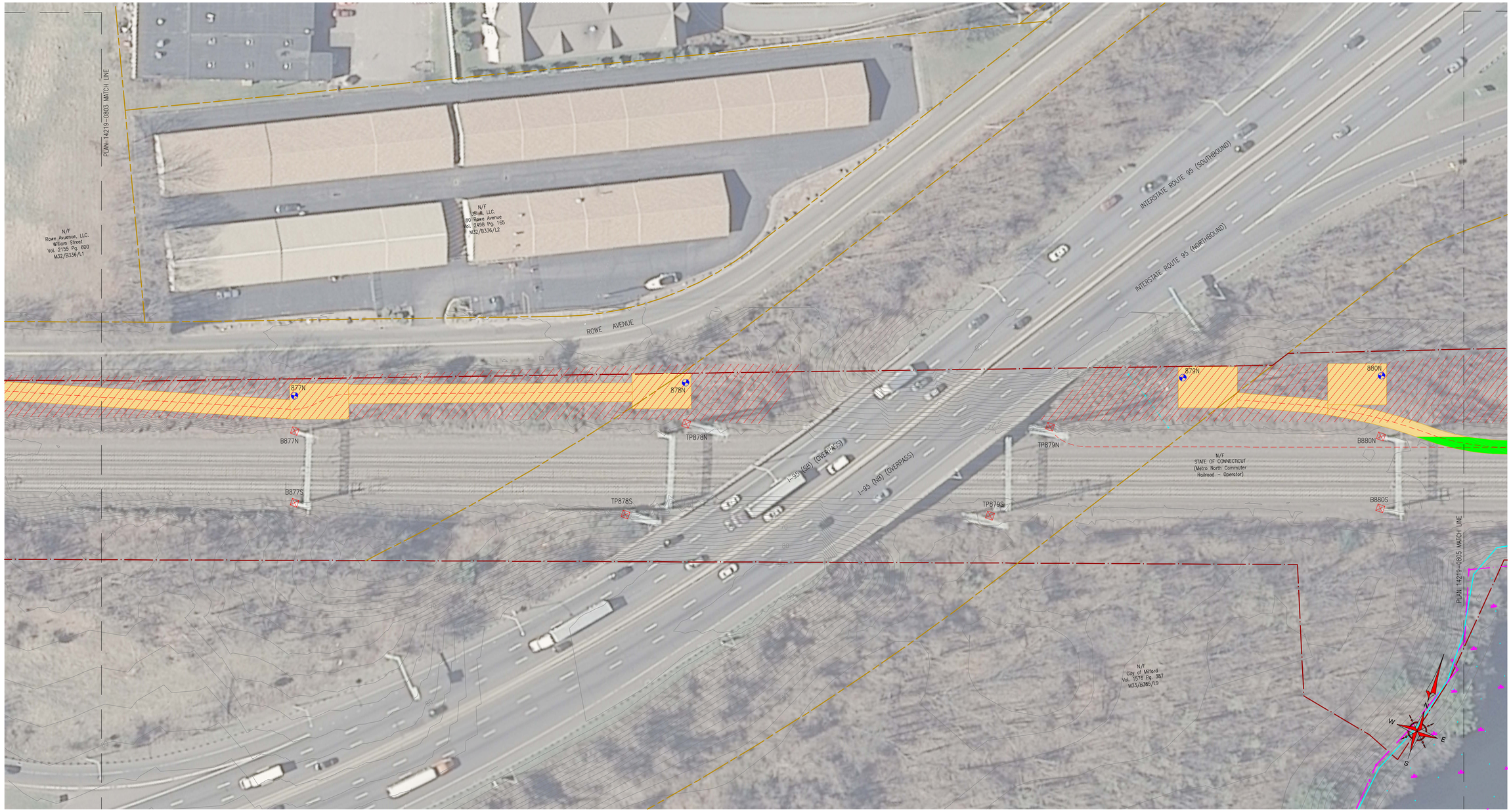
MILVON TO DEVON TIE 88005A-2
115KV TRANSMISSION LINE
GENERAL ACCESS PLAN
873N TO 876N

CAD FILE NAME	SEQUENCE No.	DRAWING NUMBER
		14219-0803



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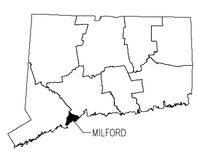
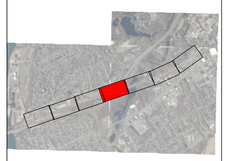


INDEX MAP



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- WETLAND IMPACT AREA

40' 20' 0 40' 80'

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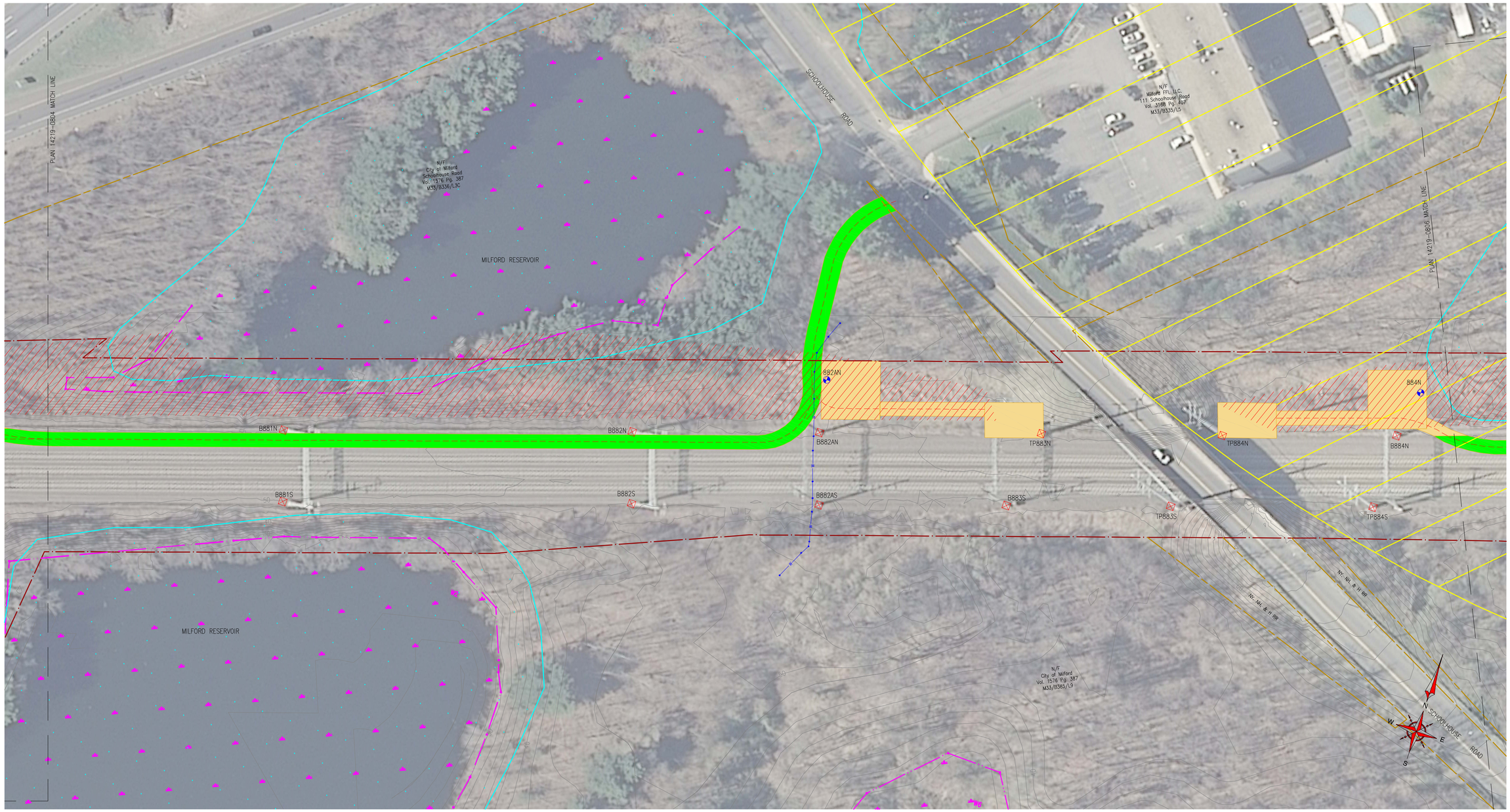
MILVON TO DEVON TIE 88005A-2
115KV TRANSMISSION LINE
GENERAL ACCESS PLAN
877N TO 880N

CAD FILE NAME	SEQUENCE No.	DRAWING NUMBER
		14219-0804



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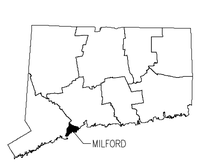

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40' 20' 0 40' 80'

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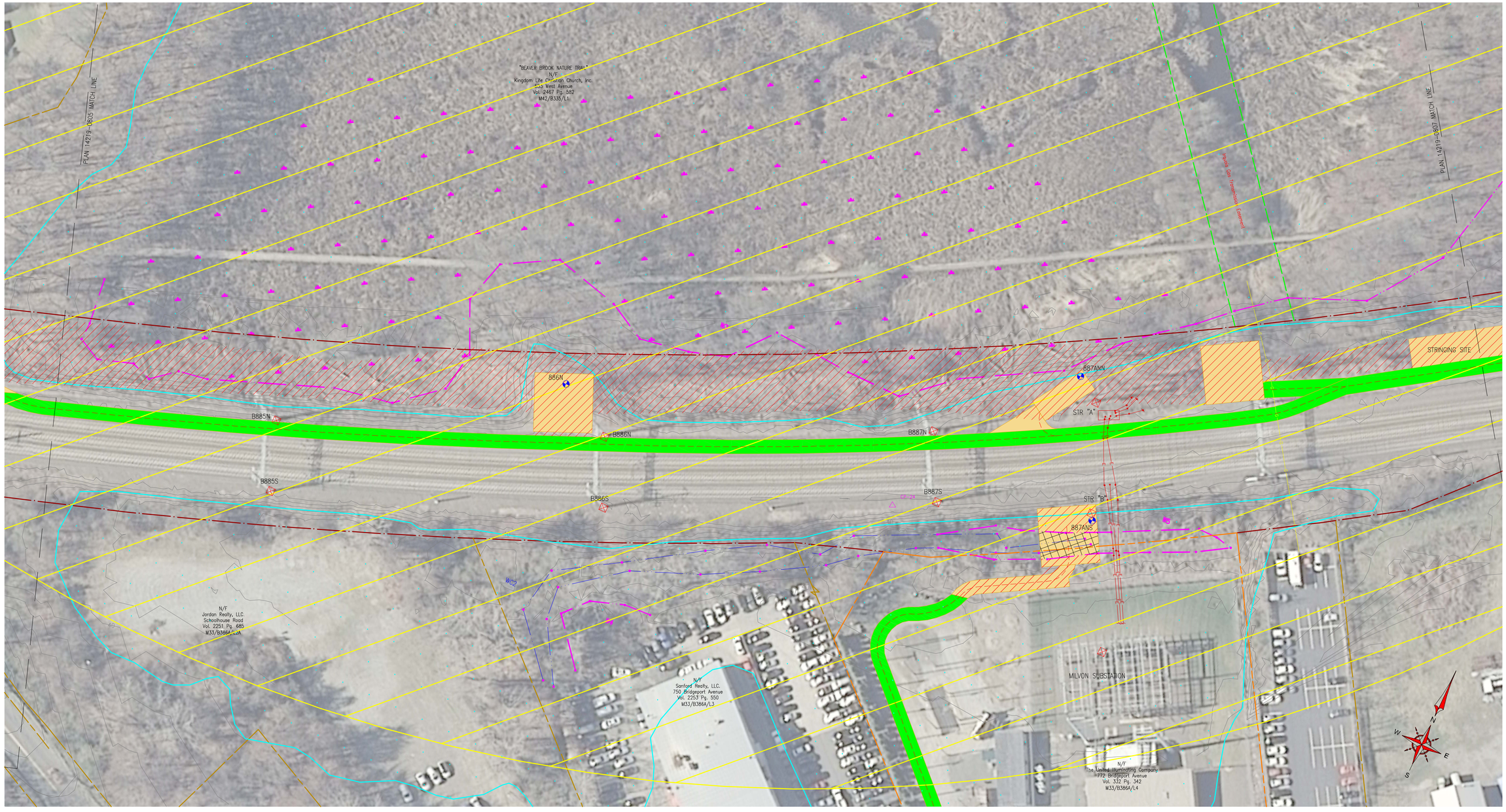
MILVON TO DEVON TIE 88005A-2
115KV TRANSMISSION LINE
GENERAL ACCESS PLAN
882AN TO 884N

CAD FILE NAME	SEQUENCE No.	DRAWING NUMBER
		14219-0805



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MILVON TO DEVON TIE 88005A-2
115KV TRANSMISSION LINE
GENERAL ACCESS PLAN
886N TO MILVON

CAD FILE NAME	SEQUENCE No.	DRAWING NUMBER
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CONTEXT MAP

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The United Illuminating Company

Drawn	Date	Scale: 1"=40'
Chkd.	Design Engr.	Design Supv.

MILVON TO DEVON TIE 88005A-2
115KV TRANSMISSION LINE
GENERAL ACCESS PLAN
887ANN ACCESS ROAD

CAD FILE NAME	SEQUENCE No.	DRAWING NUMBER
		14219-0807

DRAWING #:14219-0801

Structure Locations 865 to 868
694 Naugatuck Avenue
Milford

General Work Description:
New steel monopoles will be installed at 865N, 866N, 867N, and 868N. The following construction activities will occur with the stated durations, but may not occur on consecutive dates and may occur concurrently.

- Installation of access road/clearing – 10 Days
- Installation of foundation – 12 Days
- Installation of steel pole – 16 Days
- Installation of wire – 12 Days

See reference drawings below for details.

Special Provisions:
Permit #s
NDDB area: Y (867N & 868N)
Environmentally Sensitive Area: N
Night work: Y
Feeder/Signal Outages: Y
Track Outages: Y

Reference Drawings:
14219-100 – Plan & Profile
14219-300 – Drilled Pier Foundations
14219-504 – 865N Structure Loading
14219-501 – 866N Structure Loading
14219-500 – 867N, 868N Structure Loading

Right-of-way Description:
Wetlands, Watercourses and Waterways
NA
Access

- 694 Naugatuck Ave., Milford, CT 06461 – UI owned
  - 865N and 866N
- TBD
  - 867N
- Rowe Ave., Milford, CT 06461
  - 868N

Construction Footprint

- Occupation Area = xx square feet (694 Naugatuck Ave.)

Structure 865N:

- Vegetation/Land clearing = 3,700 square feet (MNR ROW)
- Access road = 0 square feet (694 Naugatuck Ave.)
- Work pad = 7,500 square feet 75’ X 100’(MNR ROW)

Structure 866N:

- Vegetation/Land clearing = 3,600 square feet (MNR ROW)
- Access road = 0 square feet (694 Naugatuck Ave.)
- Work pad = 2,500 square feet 50’ X 50’(MNR ROW)

Structure 867N:

- Vegetation/Land clearing = 2,000 square feet (MNR ROW)
- Access road = xx square feet (TBD)
- Work pad = 1,860 square feet 30’ X 62’(MNR ROW)

Structure 868N:

- Vegetation/Land clearing = 8,700 square feet (MNR ROW)
- Access road = 3,000 square feet (MNR ROW)
- Work pad = 1,750 square feet 35’ X 50’(MNR ROW)

Road crossings

- Naugatuck Ave.

Aerial Imagery

- USGS 18txl585630 dated March 18, 2012

DRAWING #:14219-0802

Structure Locations 869 to 872
Rowe Avenue
Milford

General Work Description:
New steel monopoles will be installed at 869N, 870N, 871N, and 872N. The following construction activities will occur with the stated durations, but may not occur on consecutive dates and may occur concurrently.

- Installation of access road/clearing – 5 Days
- Installation of foundation – 12 Days
- Installation of steel pole – 16 Days
- Installation of wire – 12 Days

See reference drawings below for details.

Special Provisions:
Permit #s
NDDB area: Y (869N)
Environmentally Sensitive Area: N
Night work: Y
Feeder/Signal Outages: Y
Track Outages: Y

Reference Drawings:
14219-100 – Plan & Profile
14219-300 – Drilled Pier Foundations
14219-500 – 869N, 870N, 871N, 872N Structure Loading

Right-of-way Description:
Wetlands, Watercourses and Waterways
NA
Access

- Rowe Ave., Milford, CT 06461
  - 869N through 872N

Construction Footprint

- Occupation Area = xx square feet (Rowe Ave.)

Structure 869N:

- Vegetation/Land clearing = 6,000 square feet (MNR ROW)
- Access road = 0 square feet (MNR ROW)
- Work pad = 1,750 square feet 35’ X 50’(MNR ROW)

Structure 870N:

- Vegetation/Land clearing = 0 square feet (MNR ROW)
- Access road = 0 square feet (MNR ROW)
- Work pad = 1,750 square feet 35’ X 50’(MNR ROW)

Structure 871N:

- Vegetation/Land clearing = 4,100 square feet (MNR ROW)
- Access road = 0 square feet (MNR ROW)
- Work pad = 1,750 square feet 35’ X 50’(MNR ROW)

Structure 872N:

- Vegetation/Land clearing = 5,600 square feet (MNR ROW)
- Access road = 0 square feet (MNR ROW)
- Work pad = 1,500 square feet 30’ X 50’(MNR ROW)

Road crossings

- None

Aerial Imagery

- USGS 18txl585630 dated March 18, 2012

DRAWING #:14219-0803

Structure Locations 873 to 876
Rowe Avenue
Milford

General Work Description:
New steel monopoles will be installed at 873N, 874N, 875N, and 876N. The following construction activities will occur with the stated durations, but may not occur on consecutive dates and may occur concurrently.

- Vegetation clearing – 10 Days
- Installation of foundation – 12 Days
- Installation of steel pole – 16 Days
- Installation of wire – 12 Days

See reference drawings below for details.

Special Provisions:
Permit #s
NDDB area: N
Environmentally Sensitive Area: N
Night work: Y
Feeder/Signal Outages: Y
Track Outages: Y

Reference Drawings:
14219-100 & 14219-101 – Plan & Profile
14219-300 – Drilled Pier Foundations
14219-500 – 873N, 874N, 875N, 876N Structure Loading

Right-of-way Description:
Wetlands, Watercourses and Waterways
NA
Access

- Rowe Ave., Milford, CT 06461
  - 873N through 876N

Construction Footprint

- Occupation Area = xx square feet (MNR ROW)

Structure 873N:

- Vegetation/Land clearing = 0 square feet (MNR ROW)
- Access road = 0 square feet (MNR ROW)
- Work pad = 1,500 square feet 30’ X 50’(MNR ROW)

Structure 874N:

- Vegetation/Land clearing = 7,400 square feet (MNR ROW)
- Access road = 0 square feet (MNR ROW)
- Work pad = 1,500 square feet 30’ X 50’(MNR ROW)

Structure 875N:

- Vegetation/Land clearing = 10,800 square feet (MNR ROW)
- Access road = 0 square feet (MNR ROW)
- Work pad = 1,500 square feet 30’ X 50’(MNR ROW)

Structure 876N:

- Vegetation/Land clearing = 11,000 square feet (MNR ROW)
- Access road = 0 square feet (MNR ROW)
- Work pad = 1,500 square feet 30’ X 50’(MNR ROW)

Road crossings

- None

Aerial Imagery

- USGS 18txl585630 dated March 18, 2012

DRAWING #:14219-0804

Structure Locations 877 to 880
Rowe Avenue & Schoolhouse Road
Milford

General Work Description:
New steel monopoles will be installed at 877N, 878N, 879N, and 880N. The following construction activities will occur with the stated durations, but may not occur on consecutive dates and may occur concurrently.

- Installation of access road/clearing – 15 Days
- Installation of foundation – 12 Days
- Installation of steel pole – 16 Days
- Installation of wire – 12 Days

See reference drawings below for details.

Special Provisions:
Permit #s
NDDB area: N
Environmentally Sensitive Area: N
Night work: Y
Feeder/Signal Outages: Y
Track Outages: Y

Reference Drawings:
14219-101 – Plan & Profile
14219-300 – Drilled Pier Foundations
14219-500 – 877N, 878N, 879N Structure Loading
14219-502 – 880N Structure Loading

Right-of-way Description:
Wetlands, Watercourses and Waterways
NA
Access

- Rowe Ave., Milford, CT 06461
  - 877N and 878N
- Schoolhouse Rd., Milford, CT 06460
  - 879N and 880N

Construction Footprint

- Occupation Area = xx square feet (MNR ROW)

Structure 877N:

- Vegetation/Land clearing = 12,000 square feet (MNR ROW)
- Access road = 4,400 square feet (MNR ROW)
- Work pad = 1,500 square feet 30’ X 50’(MNR ROW)

Structure 878N:

- Vegetation/Land clearing = 11,700 square feet (MNR ROW)
- Access road = 3,900 square feet (MNR ROW)
- Work pad = 1,500 square feet 30’ X 50’(MNR ROW)

Structure 879N:

- Vegetation/Land clearing = 8,800 square feet (MNR ROW)
- Access road = 950 square feet (MNR ROW)
- Work pad = 1,750 square feet 35’ X 50’(MNR ROW)

Structure 880N:

- Vegetation/Land clearing = 1,600 square feet (Milford Reservoir)
  = 22,200 square feet (MNR ROW)
- Access road = 750 square feet (MNR ROW)
- Work pad = 1,750 square feet 35’ X 50’(MNR ROW)

Road crossings

- Interstate 95

Aerial Imagery

- USGS 18txl585630 dated March 18, 2012
- USGS 18txl600630 dated March 18, 2012

DRAWING #:14219-0805

Structure Locations 879 to 884
Schoolhouse Road
Milford

General Work Description:
New steel monopoles will be installed at 882AN and 884N. New hardware and wire will be installed at TP883N and TP884N. The following construction activities will occur with the stated durations, but may not occur on consecutive dates and may occur concurrently.

- Installation of access road/clearing – 20 Days
- Installation of foundation – 6 Days
- Installation of steel pole – 8 Days
- Installation of wire – 15 Days

See reference drawings below for details.

Special Provisions:
Permit #s
NDDB area: Y (TP884N & 884N)
Environmentally Sensitive Area: N
Night work: Y
Feeder/Signal Outages: Y
Track Outages: Y

Reference Drawings:
14219-101 – Plan & Profile
14219-300 – Drilled Pier Foundations
14219-503 – 882AN, 884N Structure Loading

Right-of-way Description:

Wetlands, Watercourses and Waterways

- Wetland 2: Milford Reservoir

Access

- Schoolhouse Rd., Milford, CT 06460
  - 882AN and TP883N
- 675 West Ave., Milford, CT 06461
  - TP884N and 884N

Construction Footprint

- Occupation Area = xx square feet (MNR ROW)

Structure 882AN:

- Vegetation/Land clearing = 5,000 square feet (Milford Reservoir)
  = 24,400 square feet (MNR ROW)
- Access road = 0 square feet (MNR ROW)
- Work pad = 2,500 square feet 50’ X 50’(MNR ROW)

Structure TP883N:

- Access road = 1,800 square feet (MNR ROW)
- Work pad = 1,500 square feet 30’ X 50’(MNR ROW)

Structure TP884N:

- Access road = 1,800 square feet (MNR ROW)
- Work pad = 1,500 square feet 30’ X 50’(MNR ROW)

Structure 884N:

- Vegetation/Land clearing = 18,600 square feet (MNR ROW)
- Access road = 0 square feet (MNR ROW)
- Work pad = 2,500 square feet 50’ X 50’(MNR ROW)

Road crossings

- Schoolhouse Road

Aerial Imagery

- USGS 18txl600630 dated March 18, 2012

DRAWING #:14219-0806

Structure Locations 886 to Milvon
675 West Avenue
Milford

General Work Description:
New steel monopoles will be installed at 886N, 887ANN, and 887ANS. STR "A" and STR "B" will be removed. The following construction activities will occur with the stated durations, but may not occur on consecutive dates and may occur concurrently.

- Installation of access road/clearing – 25 Days
- Installation of foundation – 6 Days
- Installation of steel pole – 8 Days
- Installation of wire – 15 Days

See reference drawings below for details.

Special Provisions:
Permit #s
NDDB area: Y
Environmentally Sensitive Area: N
Night work: Y
Feeder/Signal Outages: Y
Track Outages: Y

Reference Drawings:
14219-102 – Plan & Profile
14219-300 – Drilled Pier Foundations
14219-501 – 886N Structure Loading
14219-505 – 887ANN Structure Loading
14219-506 – 887ANS Structure Loading

Right-of-way Description:
Wetlands, Watercourses and Waterways

- Wetland 3: Beaver Brook Marsh
- Wetland 5
- Watercourse 2

Access

- 675 West Ave., Milford, CT 06461
  - 886N, 887ANN, STR "A"
- 772 Bridgeport Ave., Milford, CT 06460
  - 887ANS, STR "B", Milvon Substation

Construction Footprint

- Occupation Area = xx square feet (MNR ROW)

Structure 886N:

- Vegetation/Land clearing = 23,700 square feet (MNR ROW)
- Access road = 0 square feet (MNR ROW)
- Work pad = 2,500 square feet 50' X 50'(MNR ROW)

Structure 887ANN:

- Vegetation/Land clearing = 20,600 square feet (MNR ROW)
- Access road = 600 square feet (MNR ROW)
- Work pad = 3,500 square feet 20' X 50' & 50' X 50' (MNR ROW)

Structure "A":

- Work pad = 1,000 square feet 20' X 50'(MNR ROW)

Structure 887ANS & Structure "B":

- Vegetation/Land clearing = 2,900 square feet (MNR ROW)
- Access road = 0 square feet (MNR ROW)
- Work pad = 2,500 square feet 50' X 50'(MNR ROW)
- Wetland Impact = 1,100 square feet (MNR ROW & UI Property)

Road crossings

- None

Aerial Imagery

- USGS 18txl600630 dated March 18, 2012

DRAWING #:14219-0807

Stringing Site Location
675 West Avenue
Milford

General Work Description:
Existing access road use and maintenance for construction access to structures TP884N, 884N, 886N, 887ANN, and STR “A”, and the stringing site. The following construction activities will occur with the stated durations, but may not occur on consecutive dates and may occur concurrently.

- Installation of access road/clearing – 10 Days

See reference drawings below for details.

Special Provisions:
Permit #s
NDDB area: N
Environmentally Sensitive Area: N
Night work: Y
Feeder/Signal Outages: Y
Track Outages: Y

Reference Drawings:

Right-of-way Description:

Wetlands, Watercourses and Waterways

- Wetland 3: Beaver Brook Marsh

Access

- 675 West Ave., Milford, CT 06461
    - TP884N, 884N, 886N, 887ANN, STR “A”

Construction Footprint

- Occupation Area = xx square feet (MNR ROW)

Stringing Site:

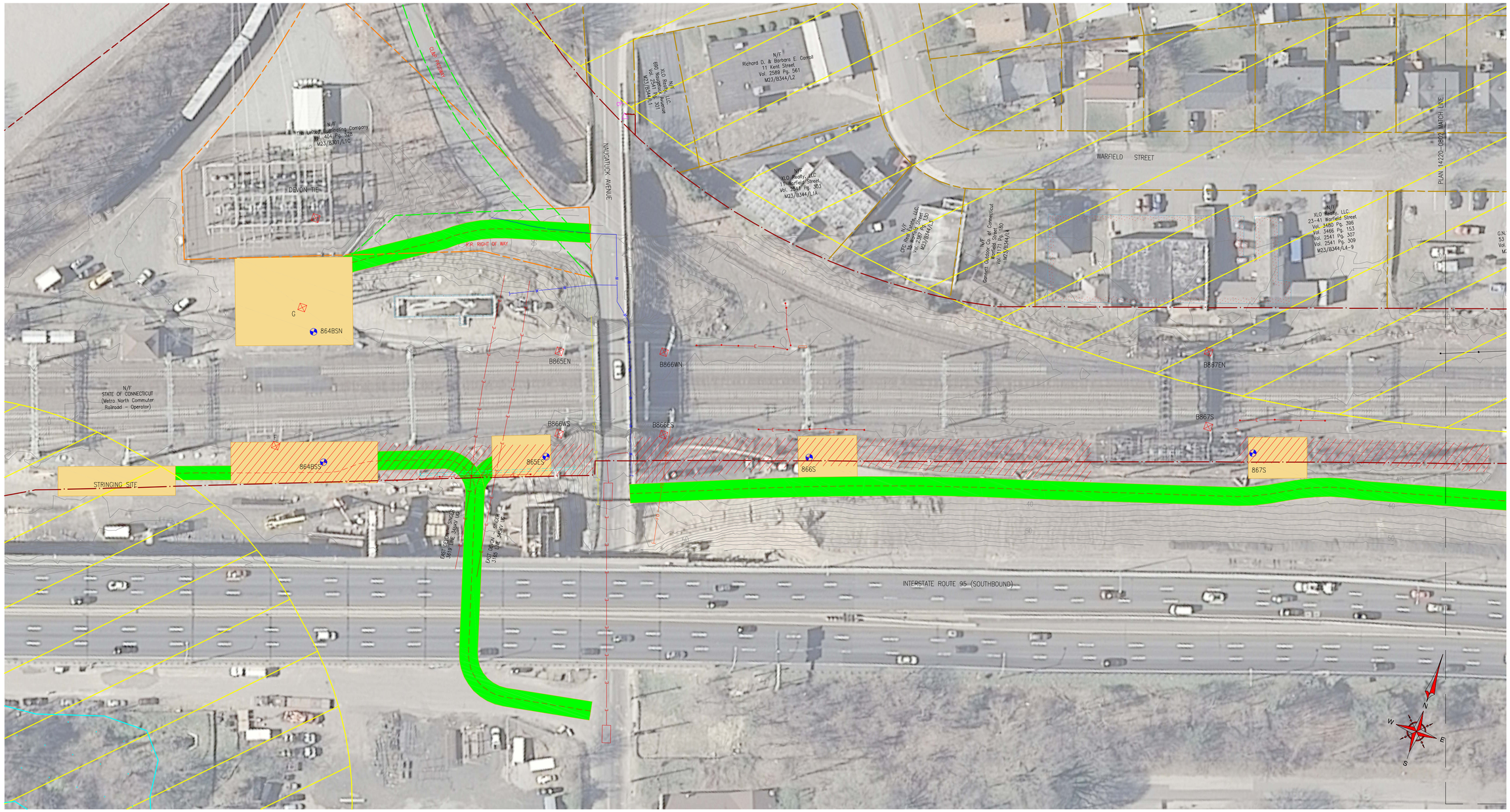
- Vegetation/Land clearing = 5,300 square feet (MNR ROW)
- Access road = 0 square feet (MNR ROW)
- Work pad = 2,500 square feet 25’ X 100’(MNR ROW)

Road crossings

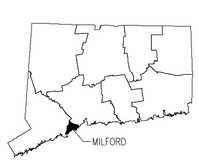
- None

Aerial Imagery

- USGS 18txl600630 dated March 18, 2012
- USGS 18txl600645 dated March 18, 2012



CONTEXT MAP



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- OCCUPATION AREA
- VEGETATION CLEARANCE
- WETLAND IMPACT AREA

40' 20' 0 40' 80'

PRELIMINARY

NOT TO BE USED FOR CONSTRUCTION

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PROJECT # 178472

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REFERENCE DRAWINGS:

DRAWING INDEX: 14220-0002

No	Date	Revision	By	Chkd.	Engr.	Supv.

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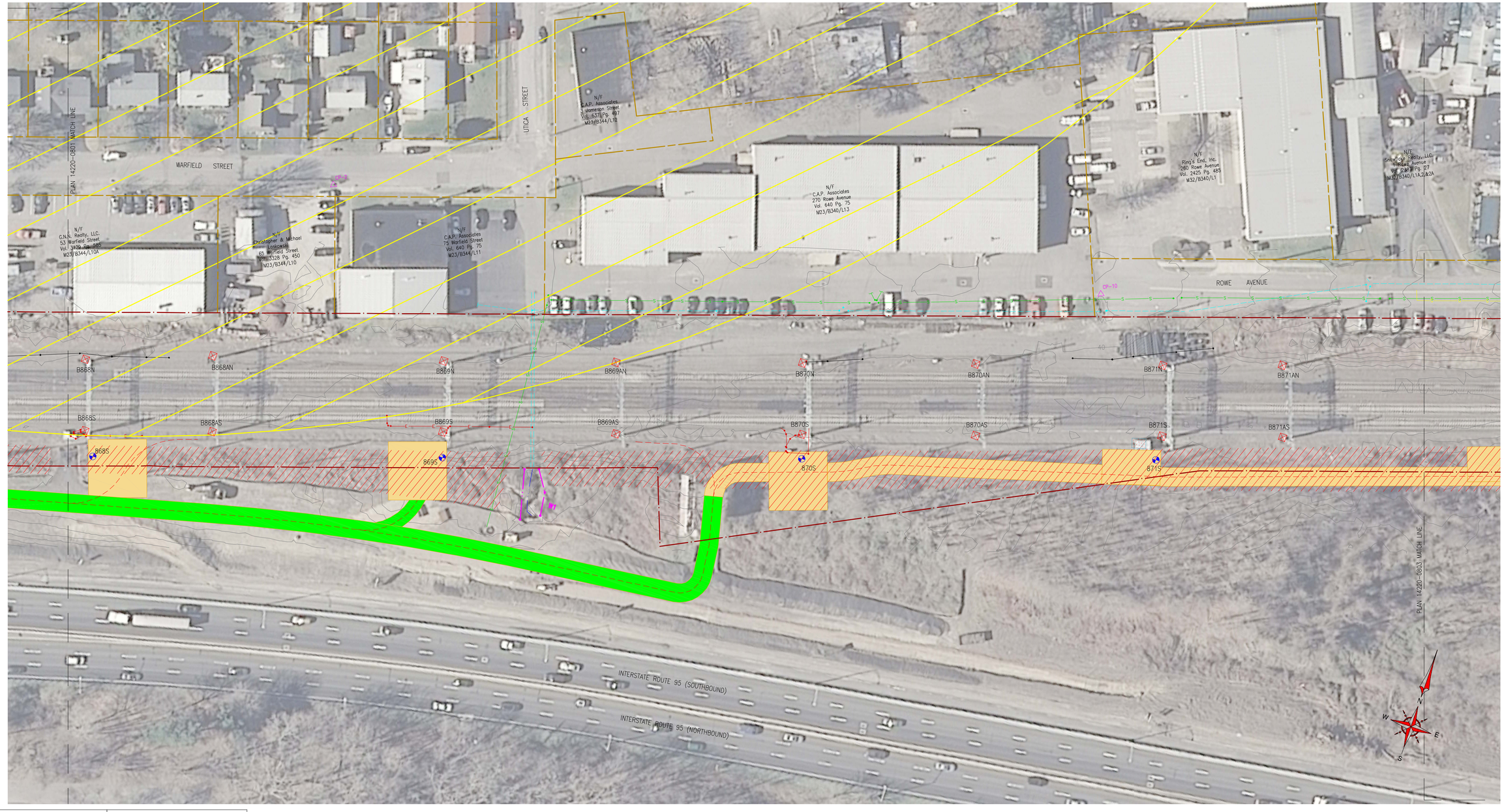
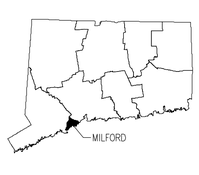
MILVON TO DEVON TIE 89005B-2
115KV TRANSMISSION LINE
GENERAL ACCESS PLAN
DEVON TIE TO 867S

CAD FILE NAME	SEQUENCE No.	DRAWING NUMBER
		14220-0801



CONTEXT MAP



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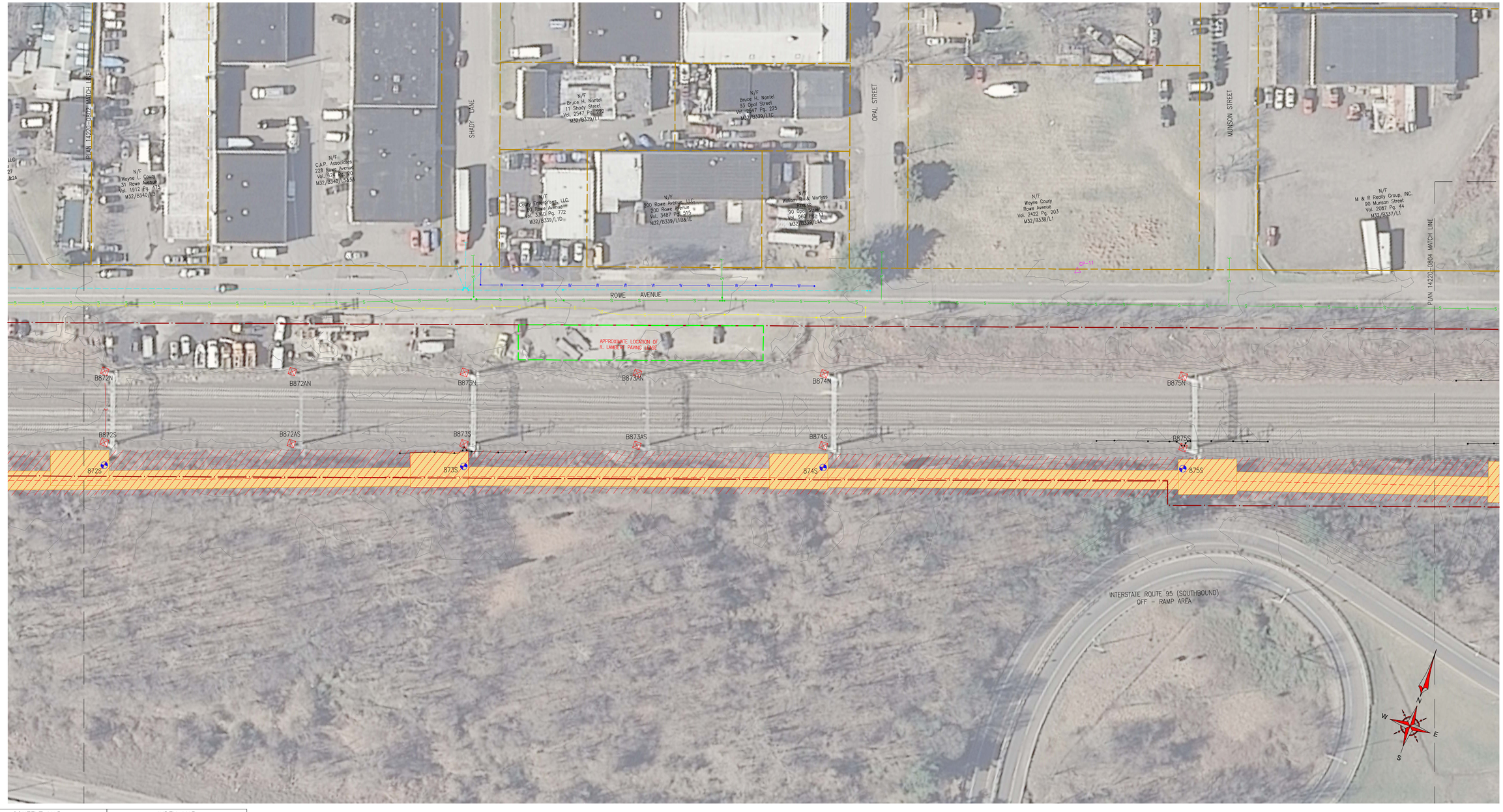
MILVON TO DEVON TIE 89005B-2
115KV TRANSMISSION LINE
GENERAL ACCESS PLAN
868S TO 871S

CAD FILE NAME	SEQUENCE No.	DRAWING NUMBER
		14220-0802



CONTEXT MAP

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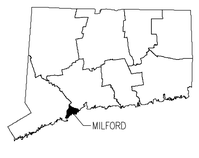
MILVON TO DEVON TIE 89005B-2
115KV TRANSMISSION LINE
GENERAL ACCESS PLAN
872S TO 875S

CAD FILE NAME	SEQUENCE No.	DRAWING NUMBER
		14220-0803

CONTEXT MAP



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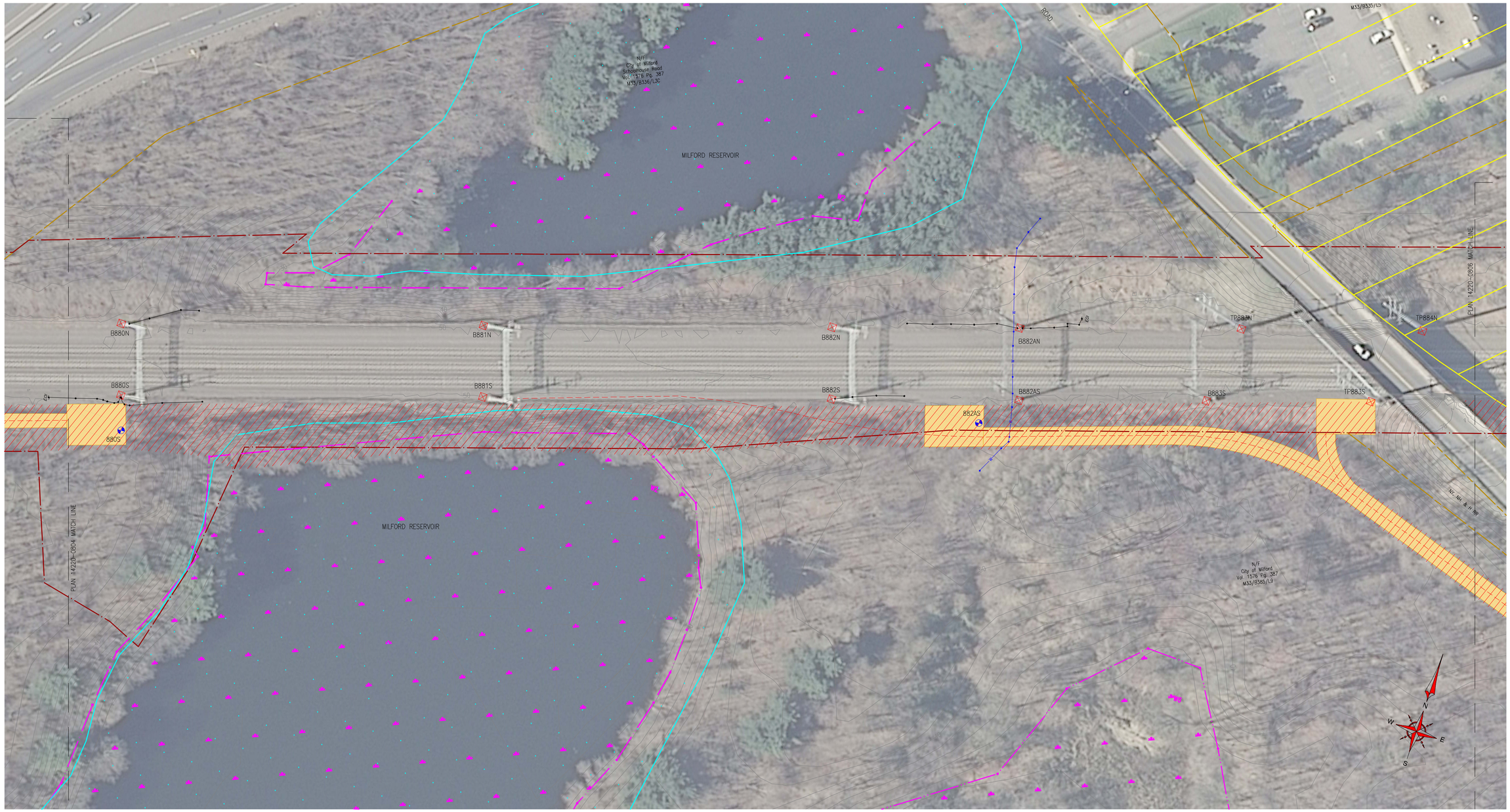
MILVON TO DEVON TIE 89005B-2
115KV TRANSMISSION LINE
GENERAL ACCESS PLAN
876S TO 879S

CAD FILE NAME	SEQUENCE No.	DRAWING NUMBER
		14220-0804



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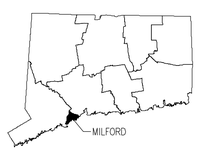

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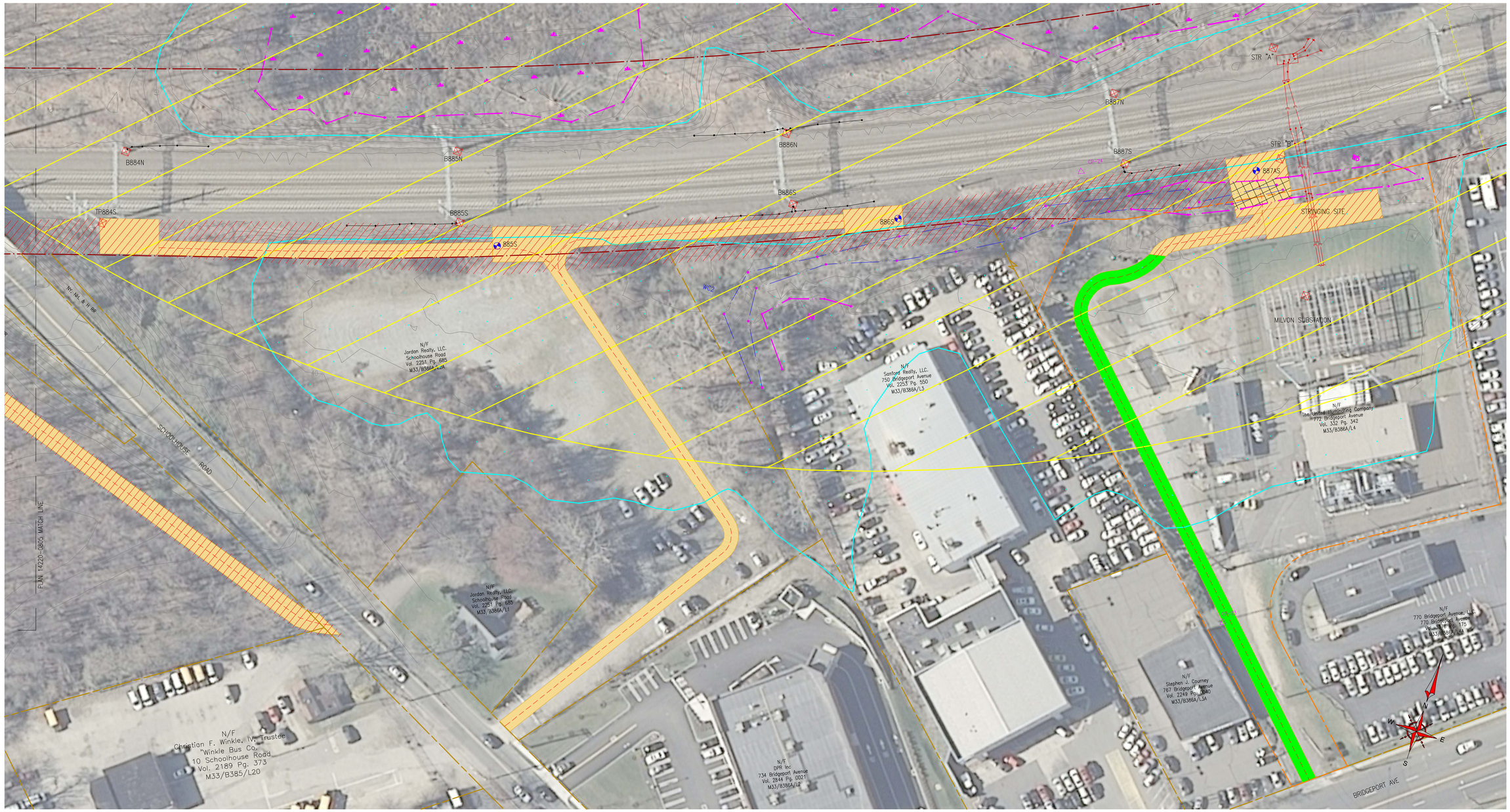
MILVON TO DEVON TIE 89005B-2
115KV TRANSMISSION LINE
GENERAL ACCESS PLAN
880S TO TP883S

CAD FILE NAME	SEQUENCE No.	DRAWING NUMBER
		14220-0805



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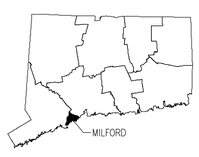

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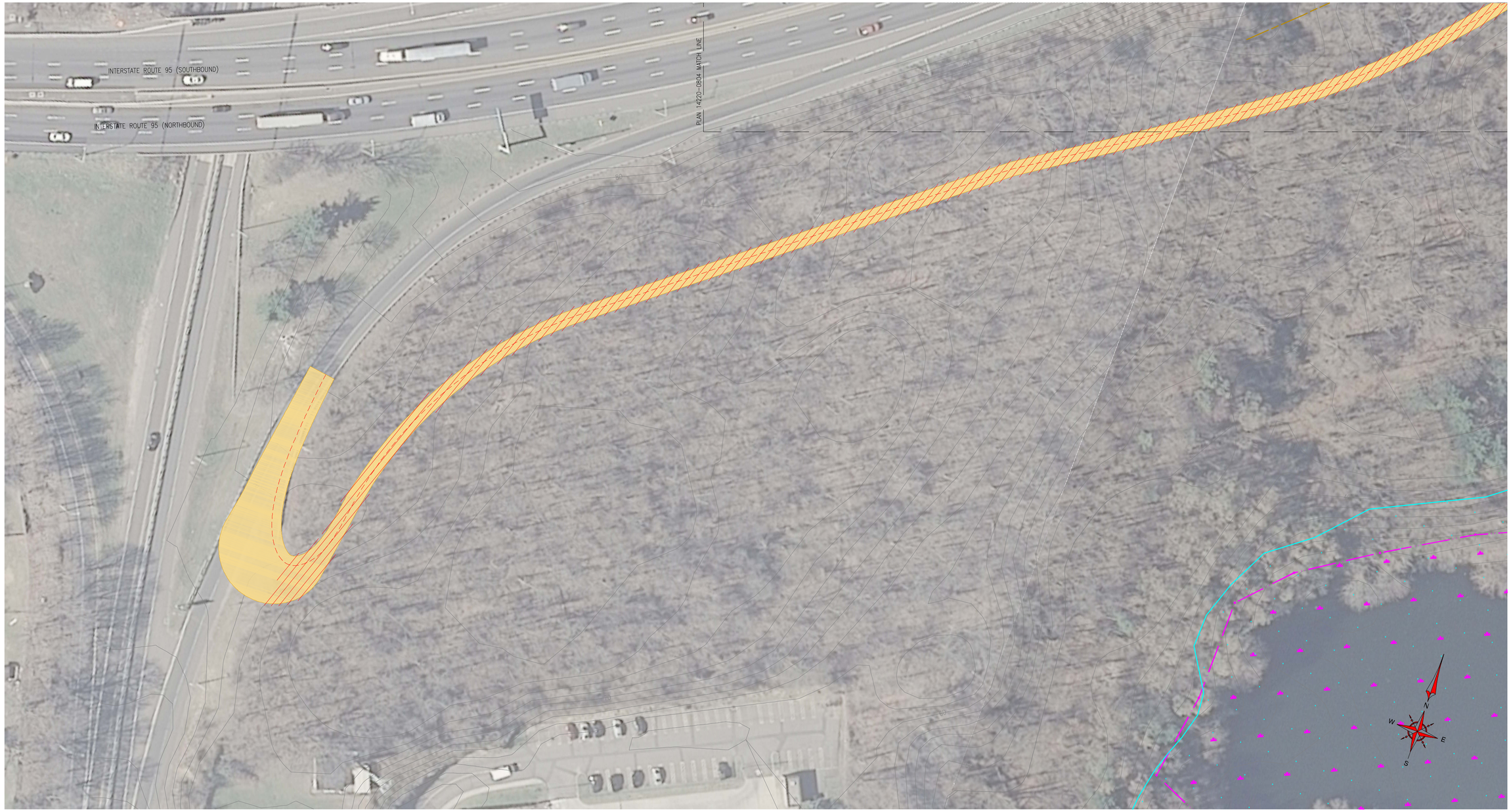
MILVON TO DEVON TIE 89005B-2
115KV TRANSMISSION LINE
GENERAL ACCESS PLAN
TP884S TO MILVON

CAD FILE NAME	SEQUENCE No.	DRAWING NUMBER
		14220-0806



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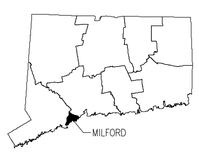

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MILVON TO DEVON TIE 89005B-2
115KV TRANSMISSION LINE
GENERAL ACCESS PLAN
879S TO 880S ACCESS ROAD

CAD FILE NAME	SEQUENCE No.	DRAWING NUMBER
		14220-0807

DRAWING #:14220-0801

Structure Locations 865 to 867
694 Naugatuck Avenue
Milford

General Work Description:
New steel monopoles will be installed at 864BSN, 864BSS, 865ES, 866S, and 867S. The following construction activities will occur with the stated durations, but may not occur on consecutive dates and may occur concurrently.

- Installation of access road/clearing – 10 Days
- Installation of foundation – 15 Days
- Installation of steel pole – 20 Days
- Installation of wire – 15 Days

See reference drawings below for details.

Special Provisions:
Permit #s
NDDB area: Y (Stringing Site)
Environmentally Sensitive Area: N
Night work: Y
Feeder/Signal Outages: Y
Track Outages: Y

Reference Drawings:
14220-100 – Plan & Profile
14220-300 – Drilled Pier Foundations
14220-503 – 864BSN Structure Loading
14220-504 – 864BSS Structure Loading
14220-500 – 865ES, 866S, 867S Structure Loading

Right-of-way Description:
Wetlands, Watercourses and Waterways
NA
Access

- 694 Naugatuck Ave., Milford, CT 06461 – UI owned
  - 864BSN
- Naugatuck Ave., Milford, CT 06461 – State owned
  - 864BSS, 865ES, 866S, and 867S

Construction Footprint

- Occupation Area = xx square feet (694 Naugatuck Ave.)
- Occupation Area = xx square feet (Naugatuck Ave.)

Structure 864BSN:

- Access road = 0 square feet (694 Naugatuck Ave.)
- Work pad = 7,500 square feet 75’ X 100’(MNR ROW)

Structure 864BSS:

- Vegetation/Land clearing = 5,700 square feet (MNR ROW)
- Access road = 0 square feet (Naugatuck Ave.)
- Work pad = 4,375 square feet 35’ X 125’(MNR ROW)

Structure 865ES:

- Vegetation/Land clearing = 4,000 square feet (MNR ROW)
- Access road = 0 square feet (Naugatuck Ave.)
- Work pad = 1,750 square feet 35’ X 50’(MNR ROW)

Structure 866S:

- Vegetation/Land clearing = 11,600 square feet (MNR ROW)
- Access road = 0 square feet (Naugatuck Ave.)
- Work pad = 1,750 square feet 35’ X 50’(MNR ROW)

Structure 867S:

- Vegetation/Land clearing = 3,100 square feet (MNR ROW)
- Access road = 0 square feet (Naugatuck Ave.)
- Work pad = 1,750 square feet 35’ X 50’(MNR ROW)

Road crossings

- Naugatuck Ave.

Aerial Imagery

- USGS 18txl585630 dated March 18, 2012

DRAWING #:14220-0802

Structure Locations 868 to 871
Naugatuck Avenue
Milford

General Work Description:
New steel monopoles will be installed at 868S, 869S, 870S, and 871S. The following construction activities will occur with the stated durations, but may not occur on consecutive dates and may occur concurrently.

- Installation of access road/clearing – 10 Days
- Installation of foundation – 12 Days
- Installation of steel pole – 16 Days
- Installation of wire – 12 Days

See reference drawings below for details.

Special Provisions:
Permit #s
NDDB area: N
Environmentally Sensitive Area: N
Night work: Y
Feeder/Signal Outages: Y
Track Outages: Y

Reference Drawings:
14220-100 – Plan & Profile
14220-300 – Drilled Pier Foundations
14220-500 – 868S, 869S, 870S, 871S Structure Loading

Right-of-way Description:
Wetlands, Watercourses and Waterways
Wetland 1
Watercourse 1
Access

- Naugatuck Ave., Milford, CT 06461
  - 868S through 871S

Construction Footprint

- Occupation Area = xx square feet (Naugatuck Ave.)

Structure 868S:

- Vegetation/Land clearing = 5,600 square feet (MNR ROW)
- Access road = 0 square feet (MNR ROW)
- Work pad = 2,500 square feet 50’ X 50’(MNR ROW & State ROW)

Structure 869S:

- Vegetation/Land clearing = 9,700 square feet (MNR ROW)
- Access road = 0 square feet (MNR ROW)
- Work pad = 2,500 square feet 50’ X 50’(MNR ROW & State ROW)

Structure 870S:

- Vegetation/Land clearing = 10,500 square feet (MNR ROW)
- Access road = 950 square feet (MNR ROW)
- Work pad = 2,500 square feet 50’ X 50’(MNR ROW & State ROW)

Structure 871S:

- Vegetation/Land clearing = 11,000 square feet (MNR ROW)
- Access road = 3800 square feet (MNR ROW)
- Work pad = 1,500 square feet 30’ X 50’(MNR ROW)

Road crossings

- None

Aerial Imagery

- USGS 18txl585630 dated March 18, 2012

DRAWING #:14220-0803

Structure Locations 872 to 875
Rowe Avenue
Milford

General Work Description:
New steel monopoles will be installed at 872S, 873S, 874S, and 875S. The following construction activities will occur with the stated durations, but may not occur on consecutive dates and may occur concurrently.

- Vegetation clearing – 15 Days
- Installation of foundation – 12 Days
- Installation of steel pole – 16 Days
- Installation of wire – 12 Days

See reference drawings below for details.

Special Provisions:
Permit #s
NDDB area: N
Environmentally Sensitive Area: N
Night work: Y
Feeder/Signal Outages: Y
Track Outages: Y

Reference Drawings:
14220-100 & 14220-101 – Plan & Profile
14220-300 – Drilled Pier Foundations
14220-500 – 872S, 873S, 874S, 875S Structure Loading

Right-of-way Description:
Wetlands, Watercourses and Waterways
NA
Access

- Naugatuck Ave., Milford, CT 06461
  - 872S through 875S

Construction Footprint

- Occupation Area = xx square feet (MNR ROW)

Structure 872S:

- Vegetation/Land clearing = 12,300 square feet (MNR ROW)
- Access road = 4,300 square feet (MNR ROW)
- Work pad = 1,500 square feet 30’ X 50’(MNR ROW)

Structure 873S:

- Vegetation/Land clearing = 11,300 square feet (MNR ROW)
- Access road = 4,300 square feet (MNR ROW)
- Work pad = 1,500 square feet 30’ X 50’(MNR ROW)

Structure 874S:

- Vegetation/Land clearing = 11,300 square feet (MNR ROW)
- Access road = 4,300 square feet (MNR ROW)
- Work pad = 1,500 square feet 30’ X 50’(MNR ROW)

Structure 875S:

- Vegetation/Land clearing = 11,300 square feet (MNR ROW)
- Access road = 4,800 square feet (MNR ROW)
- Work pad = 1,500 square feet 30’ X 50’(MNR ROW)

Road crossings

- None

Aerial Imagery

- USGS 18txl585630 dated March 18, 2012

DRAWING #:14220-0804

Structure Locations 876 to 879
Naugatuck Avenue & I-95 Ramp 34 North Entrance
Milford

General Work Description:
New steel monopoles will be installed at 876S, 877S, 878S, and 879S. The following construction activities will occur with the stated durations, but may not occur on consecutive dates and may occur concurrently.

- Installation of access road/clearing – 25 Days
- Installation of foundation – 12 Days
- Installation of steel pole – 16 Days
- Installation of wire – 12 Days

See reference drawings below for details.

Special Provisions:
Permit #s
NDDB area: N
Environmentally Sensitive Area: N
Night work: Y
Feeder/Signal Outages: Y
Track Outages: Y

Reference Drawings:
14220-101 – Plan & Profile
14220-300 – Drilled Pier Foundations
14220-500 – 876S, 877S, 878S, 879S Structure Loading

Right-of-way Description:
Wetlands, Watercourses and Waterways
NA
Access

- Naugatuck Ave., Milford, CT 06461
  - 876S through 878S
- I-95 Ramp 34 North Entrance, Milford, CT 06460
  - 879S

Construction Footprint

- Occupation Area = xx square feet (MNR ROW)

Structure 876S:

- Vegetation/Land clearing = 11,300 square feet (MNR ROW)
- Access road = 3,500 square feet (MNR ROW)
- Work pad = 1,750 square feet 35’ X 50’(MNR ROW)

Structure 877S:

- Vegetation/Land clearing = 10,300 square feet (MNR ROW)
- Access road = 4,200 square feet (MNR ROW)
- Work pad = 1,750 square feet 35’ X 50’(MNR ROW)

Structure 878S:

- Vegetation/Land clearing = 8,300 square feet (MNR ROW)
- Access road = 3,100 square feet (MNR ROW)
- Work pad = 1,750 square feet 35’ X 50’(MNR ROW)

Structure 879S:

- Vegetation/Land clearing = 8,700 square feet (Milford Reservoir)
  = 9,700 square feet (MNR ROW)
- Access road = 5,500 square feet (Milford Reservoir)
- Work pad = 1,750 square feet 35’ X 50’(MNR ROW)

Road crossings

- Interstate 95

Aerial Imagery

- USGS 18txl585630 dated March 18, 2012
- USGS 18txl600630 dated March 18, 2012

DRAWING #:14220-0805

Structure Locations 880 to 883
Schoolhouse Road
Milford

General Work Description:
New steel monopoles will be installed at 880S and 882AS. New hardware and wire will be installed at TP883N. The following construction activities will occur with the stated durations, but may not occur on consecutive dates and may occur concurrently.

- Installation of access road/clearing – 25 Days
- Installation of foundation – 6 Days
- Installation of steel pole – 9 Days
- Installation of wire – 9 Days

See reference drawings below for details.

Special Provisions:
Permit #s
NDDB area: N
Environmentally Sensitive Area: N
Night work: Y
Feeder/Signal Outages: Y
Track Outages: Y

Reference Drawings:
14220-101 – Plan & Profile
14220-300 – Drilled Pier Foundations
14220-502 – 880S, 882AS Structure Loading

Right-of-way Description:

Wetlands, Watercourses and Waterways

- Wetland 2: Milford Reservoir

Access

- I-95 Ramp 34 North Entrance, Milford, CT 06460
  - 880S
- Schoolhouse Rd., Milford, CT 06460
  - 882AS and TP883S

Construction Footprint

- Occupation Area = xx square feet (MNR ROW)

Structure 880S:

- Vegetation/Land clearing = 1,700 square feet (Milford Reservoir)
  = 19,100 square feet (MNR ROW)
- Access road = 3,000 square feet (MNR ROW)
- Work pad = 1,750 square feet 35’ X 50’(MNR ROW)

Structure 882AS:

- Vegetation/Land clearing = 17,600 square feet (Milford Reservoir)
  = 18,300 square feet (MNR ROW)
- Access road = 12,800 square feet (Milford Reservoir)
- Work pad = 1,750 square feet 35’ X 50’(MNR ROW)

Structure TP883S:

- Vegetation/Land clearing = 1,400 square feet (Milford Reservoir)
  = 3,400 square feet (MNR ROW)
- Access road = 600 square feet (Milford Reservoir)
- Work pad = 1,500 square feet 30’ X 50’(MNR ROW)

Road crossings

- Schoolhouse Road

Aerial Imagery

- USGS 18txl600630 dated March 18, 2012

DRAWING #:14220-0806

Structure Locations 884 to Milvon
Schoolhouse Rd & 772 Bridgeport Ave
Milford

General Work Description:
New steel monopoles will be installed at 885S, 886S, and 887AS. New hardware and wire will be installed at TP884S. The following construction activities will occur with the stated durations, but may not occur on consecutive dates and may occur concurrently.

- Installation of access road/clearing – 25 Days
- Installation of foundation – 9 Days
- Installation of steel pole – 12 Days
- Installation of wire – 15 Days

See reference drawings below for details.

Special Provisions:
Permit #s
NDDB area: Y
Environmentally Sensitive Area: N
Night work: Y
Feeder/Signal Outages: Y
Track Outages: Y

Reference Drawings:
14220-102 – Plan & Profile
14220-300 – Drilled Pier Foundations
14220-501 – 885S, 886S Structure Loading
14220-505 – 887AS Structure Loading

Right-of-way Description:

Wetlands, Watercourses and Waterways

- Wetland 5
- Watercourse 2

Access

- Schoolhouse Rd., Milford, CT 06460
  - TP884S, 885S, 886S
- 772 Bridgeport Ave., Milford, CT 06460
  - 887AS, Milvon Substation

Construction Footprint

- Occupation Area = xx square feet (MNR ROW)

Structure TP884S:

- Vegetation/Land clearing = 400 square feet (Schoolhouse Rd)
  = 7,500 square feet (MNR ROW)
- Access road = 3,500 square feet (MNR ROW)
- Work pad = 1,500 square feet 30’ X 50’(MNR ROW)

Structure 885S:

- Vegetation/Land clearing = 4,200 square feet (Schoolhouse Rd)
  = 9,200 square feet (MNR ROW)
- Access road = 6,500 square feet (Schoolhouse Rd)
- Work pad = 1,500 square feet 30’ X 50’(MNR ROW)

Structure 886S:

- Vegetation/Land clearing = 3,800 square feet (750 Bridgeport Ave)
  = 7,800 square feet (MNR ROW)
- Access road = 3,100 square feet (MNR ROW)
- Work pad = 1,000 square feet 20’ X 50’ (MNR ROW)
- Wetland Impact = 400 square feet (750 Bridgeport Ave)

Structure 887AS:

- Vegetation/Land clearing = 6,400 square feet (MNR ROW)
- Access road = 0 square feet (MNR ROW)
- Work pad = 2,500 square feet 50’ X 50’(MNR ROW)
- Wetland Impact = 1,100 square feet (MNR ROW)

Road crossings

- Schoolhouse Rd

Aerial Imagery

- USGS 18txl600630 dated March 18, 2012

DRAWING #:14220-0807

Access Road to 879 & 880
I-95 Ramp 34 North Entrance
Milford

General Work Description:
New access road to be built for construction access to structures 879S and 880S. The following construction activities will occur with the stated durations, but may not occur on consecutive dates and may occur concurrently.

- Installation of access road/clearing –20 Days

See reference drawings below for details.

Special Provisions:
Permit #s
NDDB area: N
Environmentally Sensitive Area: N
Night work: N
Feeder/Signal Outages: N
Track Outages: N

Reference Drawings:

Right-of-way Description:

Wetlands, Watercourses and Waterways

- NA

Access

- I-95 Ramp 34 North Entrance, Milford, CT 06460
    - 879S, 880S

Construction Footprint

- Occupation Area = xx square feet (Milford Reservoir)

Stringing Site:

- Vegetation/Land clearing = 20,100 square feet (Milford Reservoir)
- Access road = 13,500 square feet (Milford Reservoir)

Road crossings

- None

Aerial Imagery

- USGS 18txl585630 dated March 18, 2012
- USGS 18txl600630 dated March 18, 2012

Attachment C

Correspondence with Connecticut Department of Energy & Environmental Protection

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

Bureau of Natural Resources
Wildlife Division
Natural History Survey – Natural Diversity Data Base

January 13, 2014

Mr. Shawn C. Crosbie
The United Illuminating Company
180 Marsh Hill Road
Orange, CT 06477
Shawn.crosbe@uinet.com

Regarding: Milvon-Devon, Milford – installation of 115 kva transmission towers
Natural Diversity Data Base 201306481

Dear Mr. Crosbie:

In response to your request for a Natural Diversity Data Base (NDDB) Review of State Listed Species for Milvon-Devon in Milford, our records indicate the following extant populations of species on or within the vicinity of the site:

Peregrine Falcon (*Falco peregrinus*) Protection Status: Threatened Species

A pair of peregrine falcons is known to nest north of the Interstate 95 Bridge. Though somewhat tolerable of human disturbance, peregrine falcons will be negatively affected if work occurs during their nesting season and is too close to the nest.

Recommendation: Preferably work should be conducted work outside of the breeding season (July 31 – March 1) to protect nesting peregrine falcons. If work is conduct during the breeding season, activity should be a minimum of 600' from the nest.

The Natural Diversity Data Base includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available. If the project is not implemented within 12 months, then another Natural Diversity Data Base review should be requested for up-to-date information.

Please be advised that this is a preliminary review and not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEEP for the proposed site.

Thank you for consulting the Natural Diversity Data Base. If you have any additional questions, please feel free to contact me at Elaine.Hinsch@po.state.ct.us.

Sincerely,
/s/
Elaine Hinsch
Program Specialist II
Wildlife Division

Connecticut Department of

ENERGY &
ENVIRONMENTAL
PROTECTION

April 2, 2014

Mr. Shawn Crosbie
The United Illuminating Company
180 Marsh Hill Road
Orange, CT 06477
shawn.crosbe@uinet.com

Project: Splice of a 115 kva Transmission Conductor within an Existing Utility Right-of-Way at 772 Bridgeport Ave. in Milford, Connecticut
NDDB Determination No.: 201402926

Dear Shawn,

I have reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map provided for the proposed splice of a 115 kva transmission conductor within an existing utility right of way at 772 Bridgeport Ave. in Milford, Connecticut. According to our information there are extant populations of State Special Concern *Terrapene carolina carolina* (eastern box turtle) in the area where this work will occur. I would recommend the following protection strategies be implemented in order to protect these turtles:

- Silt fencing should be installed around the work area prior to construction;
- After silt fencing is installed and prior to construction, a sweep of the work area should be conducted to look for turtles;
- Workers should be apprised of the possible presence of turtles, and provided a description of the species (http://www.ct.gov/dep/cwp/view.asp?a=2723&q=473472&depNav_GID=1655);
- Any turtles that are discovered should be moved, unharmed, to an area immediately outside of the fenced area, and position in the same direction that it was walking;

- No vehicles or heavy machinery should be parked in any turtle habitat;
- Work conducted during early morning and evening hours should occur with special care not to harm basking or foraging individuals; and
- All silt fencing should be removed after work is completed and soils are stable so that reptile and amphibian movement between uplands and wetlands is not restricted.

Thank you for implementing these protection measures for box turtle. I have attached a "Box Turtle" fact sheet for your files. This determination is good for one year. Please re-submit an NDDB Request for Review if the scope of work changes or if work has not begun on this project by April 2, 2014.

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

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

Sincerely,

Dawn M. McKay

Dawn M. McKay
Environmental Analyst 3

WILDLIFE IN CONNECTICUT

STATE SPECIES OF SPECIAL CONCERN

Eastern Box Turtle

Terrapene carolina carolina

Description

The eastern box turtle is probably the most familiar of the 8 species of turtles found in Connecticut's landscape. It is known for its high-domed carapace (top shell). The carapace has irregular yellow or orange blotches on a brown to black background that mimic sunlight dappling on the forest floor. The plastron (under shell) may be brown or black and may have an irregular pattern of cream or yellow. The length of the carapace usually ranges from 4.5 to 6.5 inches, but can measure up to 8 inches long. The shell is made up of a combination of scales and bones, and it includes the ribs and much of the backbone.

Each individual turtle has distinctive head markings. Males usually have red eyes and a concave plastron, while females have brown eyes and a flat plastron. Box turtles also have a horny beak, stout limbs, and feet that are webbed at the base. This turtle gets its name from its ability to completely withdraw into its shell, closing itself in with a hinged plastron. Box turtles are the only Connecticut turtle with this ability.

Range

Eastern box turtles are found throughout Connecticut, except at the highest elevations. They range from southeastern Maine to southeastern New York, west to central Illinois, and south to northern Florida.

Habitat and Diet

In Connecticut, this terrestrial turtle inhabits a variety of habitats, including woodlands, field edges, thickets, marshes, bogs, and stream banks. Typically, however, box turtles are found in well-drained forest bottomlands and open deciduous forests. They will use wetland areas at various times during the season. During the hottest part of a summer day, they will wander to find springs and seepages where they can burrow into the moist soil. Activity is restricted to mornings and evenings during summer, with little to no nighttime activity, except for egg-laying females. Box turtles have a limited home range where they spend their entire life, ranging from 0.5 to 10 acres (usually less than 2 acres).

Box turtles are omnivorous and will feed on a variety of food items, including earthworms, slugs, snails, insects, frogs, toads, small snakes, carrion, leaves, grass, berries, fruits, and fungi.

Life History

From October to April, box turtles hibernate by burrowing into loose soil, decaying vegetation, and mud. They tend to hibernate in woodlands, on the edge of woodlands, and sometimes near closed canopy wetlands in the forest. Box turtles may return to the same place to hibernate year after year. As soon as they come out of hibernation, box turtles begin feeding and searching for mates.

The breeding season begins in April and may continue through fall. Box turtles usually do not breed until they are about 10 years old. This late maturity is a result of their long lifespan, which can range up to 50 to even over 100 years of age. The females do not have to mate every year to lay eggs as they can store sperm for up

to 4 years. In mid-May to late June, the females will travel from a few feet to more than a mile within their home range to find a location to dig a nest and lay their eggs. The 3 to 8 eggs are covered with dirt and left to be warmed by the sun. During this vulnerable time, skunks, foxes, snakes, crows, and raccoons often raid nests. Sometimes, entire nests are destroyed. If the eggs survive, they will hatch in late summer to early fall (about 2 months after being laid). If they hatch in the fall, the young turtles may spend the winter in the nest and come out the following spring.

As soon as the young turtles hatch, they are on their own and receive no care from the adults. This is a dangerous time for young box turtles because they do not develop the hinge for closing into their shell until they are about 4 to 5 years old. Until then, they cannot entirely retreat into their shells. Raccoons, skunks, foxes, dogs, and some birds will prey on young turtles.

Conservation Concerns

The eastern box turtle was once common throughout the state, mostly in the central Connecticut lowlands. However, its distribution is now spotty, although where found, turtles may be locally abundant. Because of the population decline in Connecticut, the box turtle was added to the state's List of Endangered, Threatened, and Special Concern Species when it was revised in 1998. It is currently listed as a species of special concern. The box turtle also is protected from international trade by the 1994 CITES treaty. It is of conservation concern in all the states where it occurs at its northeastern range limit, which includes southern New England and southeastern New York.

Many states have laws that protect box turtles and prohibit their collection. In Connecticut, eastern box turtles **cannot** be collected from the wild (DEP regulations 26-66-14A). Another regulation (DEP regulations 26-55-3D) "grandfathers" those who have a **box turtle collected before 1998.** This regulation limits possession to a single turtle collected before 1998. These regulations provide some protection for the turtles, but not enough to combat some of the even bigger threats these animals face. The main threats in Connecticut (and other states) are loss and fragmentation of habitat due to deforestation and spreading suburban development; vehicle strikes on the busy roads that bisect the landscape; and indiscriminate (and now illegal) collection of individuals for pets.

Loss of habitat is probably the greatest threat to turtles. Some turtles may be killed directly by construction activities, but many more are lost when important habitat areas for shelter, feeding, hibernation, or nesting are destroyed. As remaining habitat is fragmented into smaller pieces, turtle populations can become small and isolated.

Adult box turtles are relatively free from predators due to their unique shells. The shell of a box turtle is extremely hard. However, the shell is not hard enough to survive being run over by a vehicle. Roads bisecting turtle habitat can seriously deplete the local population. Most vehicle fatalities are pregnant females searching for a nest site.

How You Can Help

- *Leave turtles in the wild. They should never be kept as pets. Whether collected singly or for the pet trade, turtles that are removed from the wild are no longer able to be a reproducing member of a population. Every turtle removed reduces the ability of the population to maintain itself.*
- *Never release a captive turtle into the wild. It probably would not survive, may not be native to the area, and could introduce diseases to wild populations.*
- *Do not disturb turtles nesting in yards or gardens.*
- *As you drive, watch out for turtles crossing the road. Turtles found crossing roads in June and July are often pregnant females and they should be helped on their way and not collected. Without creating a traffic hazard or compromising safety, drivers are encouraged to avoid running over turtles that are crossing roads. Also, still keeping safety precautions in mind, you may elect to pick up turtles from the road and move them onto the side they are headed. Never relocate a turtle to another area that is far from where you found it.*
- *Learn more about turtles and their conservation concerns. Spread the word to others on how they can help Connecticut's box turtle population.*

State of Connecticut
Department of Environmental Protection
Bureau of Natural Resources
Wildlife Division
www.ct.gov/dep

The production of this Endangered and Threatened Species Fact Sheet is made possible by donations to the Connecticut Endangered Species/Wildlife Income Tax Checkoff Fund.

5/2008

Attachment D
CULTURAL REVIEW AND STUDY

May 27, 2014

Shawn C. Crosbie
Environmental Analyst
UIL Holdings Corporation
180 Marsh Hill Road
Orange, Connecticut 06477

Subject: Comments on the Preliminary Archeological Assessment of the Proposed United Illuminating Milvon-Devon Upgrade Project in Milford, Connecticut

Dear Mr. Crosbie,

The State Historic Preservation Office (SHPO) is responding to your request for our review of the above-referenced project and an archaeological assessment prepared by Heritage Consultants, LLC (Heritage). United Illuminating (UI) proposes the separation of utility lines from the existing overhead catenary system on Metro North's rail line system to free-standing monopoles constructed along the margins of the rail line. Heritage completed a review of SHPO historic resource inventories and background research to assess the potential for the project to affect know archaeological sites and/or areas where archaeological resources can be anticipated (i.e. "archaeologically sensitive areas"). Based on the materials submitted to our office, SHPO believes the Heritage investigations were conducted in accordance with our *Environmental Review Primer for Connecticut's Archaeological Resources* and provide a sound basis for evaluating the project's potential impacts to buried historic properties.

As noted by Heritage, the proposed installation of new poles will be largely confined to previously developed and now disturbed areas. Historic cartographic sources, soil mapping, existing underground utility installations, and pedestrian survey of the Areas of Potential Effects (APE) for this undertaking all support Heritage's opinion that intact and potentially significant archaeological resources are unlikely to be present within the areas of anticipated ground disturbance.

> *"[I]t is the professional opinion of Heritage Consultants, LLC that no further archeological investigations of the tower locations associated with the proposed United Illuminating Milvon-Devon Upgrade Project in Milford, Connecticut are warranted.." (Heritage Technical Memorandum dated 3/20/14).*

Although several of the proposed tower (monopole) structures will be constructed near the mapped extant of intact natural soils bordering the railroad right-of-way, it appears the previous earth moving activities, including cutting of the original landforms to maintain the grade of the rail lines has likely destroyed any archaeological deposits, even in these locations. SHPO therefore concurs with Heritage's recommendation that further archaeological surveys or other investigations are not warranted with respect to this project. Prior ground disturbance appears to have affected the soils and sediments which may once have contained archaeological deposits. SHPO notes that the existing railroad right-of-way and corridor, in general, contains a high density of utility lines, including above ground electrical service. As such, the proposed addition of new poles and lines as part of this project appears to have a limited potential to diminish the integrity of the historic viewsheds and settings of adjacent historic buildings and districts. Based on the materials provided to our office, it is SHPO's opinion that this undertaking will have no adverse effects to historic properties.

The State Historic Preservation Office appreciates the opportunity to review and comment on this proposal and the CT Siting Council's consideration of historic resources in the exercise of its jurisdiction. We look forward to

working with you and your clients on this important project. If you have any questions concerning our comments please contact me at (860) 256-2761 or Daniel.Forrest@CT.gov.

Sincerely,

Daniel T. Forrest
State Historic Preservation Officer

CC: Bellantoni/OSA

HERITAGE
CONSULTANTS, LLC

INTEGRATED HISTORIC PRESERVATION PLANNING

March 20, 2014

Shawn C. Crosbie
Environmental Analyst
UIL Holdings Corporation
180 Marsh Hill Road
Orange, Connecticut 06477

RE: Preliminary Archeological Assessment of the Proposed United Illuminating Milvon-Devon Upgrade Project in Milford, Connecticut

Mr. Crosbie:

Heritage Consultants, LLC, is pleased to have this opportunity to provide United Illuminating, with the following preliminary archeological assessment of the proposed United Illuminating Milvon-Devon Upgrade Project in Milford, Connecticut. The currently proposed project plans for the separation of the existing utility lines from the overhead catenary system along Metro North's rail line system to a series of free-standing poles near the edge of the existing railroad corridor (Figure 1). The current project entailed completion of an existing conditions cultural resources summary based on the examination of GIS data obtained from the Connecticut State Historic Preservation Office, as well as historic maps, aerial photographs, and topographic quadrangles maintained by Heritage Consultants, LLC. This investigation did not consider the effects of the proposed construction upon built resources, and it is based upon project location information provided to Heritage Consultants, LLC by United Illuminating. The objectives of this study were: 1) to gather and present data regarding previously identified cultural resources situated within the vicinity of the Areas of Potential Effect; 2) to investigate the proposed project areas in terms of their natural and historical characteristics; and 3) to evaluate the need for completing additional cultural resources investigations.

Brief Contextual History of the New York and New Haven Railroad (Metro North)

In order to evaluate possible impacts the construction project may have cultural resource in the region, it was necessary to produce a historical context of the area. Railroad history in Fairfield and New Haven began in the 1840s, when the state's third railroad, the New York and New Haven Railroad, was incorporated. Its line from New Haven into New York State was completed in 1849, and it featured a single 69 mile iron track designed mainly for passenger traffic. During the 1860s, the line's economic situation improved, allowing for replacement of the rails with steel, the construction of new stations, and the expansion of maintenance facilities. The railroad also began to take more of an interest in freight shipping at that time. In 1872, the New York and New Haven Railroad merged with the Hartford and New Haven Railroad. Together they were the largest transportation company in Connecticut, and was renamed the New York, New Haven, and Hartford Railroad. Over the succeeding three decades, company leaders carried out a series of acquisitions and long-term leases, through which the rail line became a near-monopoly on transportation in the state. The company owned railroads (including almost 1,000 steam engines by 1904), steamboats, and electric trolley lines (Turner and Jacobus 1987). In the process it also purchased a number of electricity generation facilities (Campbell 1950). The company was an early

P.O. Box 310249 • Newington, Connecticut 06131
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Email: info@heritage-consultants.com

experimenter with electric engines, first moving the route between New Haven and New York to that mode of propulsion. The choice of overhead wire systems was made because the third-rail system was demonstrably unsafe on open tracks (Turner and Jacobus 1987).

In 1907, the rail line participated in fiscal overreach and shady dealings in the opening years of the twentieth century which led to a 1907 exposé and a series of investigations, fiscal retrenchment, and a series of fatal accidents. The president of the company resigned in 1913 and a series of prosecutions under the Sherman Anti-Trust Act led to some divestments. This anti-trust process was interrupted by the federal takeover of the railroads during World War I, and in 1920 a partially revived company began adding buses and trucking companies to its portfolio. Old debts from the pre-war era caught up to it during the Great Depression, however, and in 1935 it entered bankruptcy and a 12 year long period of reorganization that carried the company through World War II. In 1947, however, it was taken over by a corporate profiteer, and the combination of persistently deferred maintenance, cost-cutting, and competition from Interstate 95 (opened in 1958 as the Connecticut Turnpike) led to a new bankruptcy in 1961. This bankruptcy led to its forced merger – and consequent disappearance as a corporate entity – into the new Penn Central Transportation Company in 1968. That poorly-run company went into bankruptcy in by 1970, and in 1985, the Connecticut Department of Transportation bought much of the track and facilities. It now operates as Metro North.

Electrical Generation and Transmission along the Railroad Corridor

The process of using electricity to power New York, New Haven and Hartford Railroad trains began in 1904, when the process of electrifying the track between Woodlawn, New York, and Stamford, Connecticut was begun. Opened for use in 1907, it was the country's first trunk line electrification and used alternating current, which was a break with the less efficient direct current systems that had been in common use up to that point. Much of the system was designed and built by Westinghouse Electric and Manufacturing Company, which was pioneering commercial use of alternating current at the time. Between 1911 and 1914, the electrification was continued an additional 45 miles to New Haven. Power generation was at first handled by a plant in Cos Cob, Greenwich, which was the first facility for generating 11,000 volts of alternating current at 25 cycles for railroad use. This later became the standard for railroad electrification in the United States. The plant included a monitoring and control system, and transmission was along an overhead catenary and trolley wire system. Electricity was also provided to stations and maintenance facilities. Finally, a signaling and communications system was also added. Various components of the system were improved while in service between 1907 and 1924. By 1912, further extension of electrification on other lines required the company to begin buying power from a Consolidated Edison predecessor company, in addition to that provided by the expanded Cos Cob plant (Stewart 2000).

Regardless of where the power came from, the railroad developed two different systems for transmitting it to the trains. There is an unusual section within a small area in Stamford, near the Darien line, which contains three wires above the track spaced by hangars, forming a downward-pointing triangle. The powered trolley wire comprises the lower point. Use of this type of system, however, showed that the hangers caused too much wear on the contact wire. As a result, flexible clips were installed to hold a new trolley wire below the original one, and no more of the triangular suspension system was built. The remainder of the electrical line uses a simpler system, with the catenary line suspended from "hanger beams" between "bridges." The powered trolley line is suspended by hangers from those. The four trolley wires (for the four tracks) were insulated from one another and a system of separate powered sections and circuit breakers helped make operation and repair safer. The system also called for steel open truss bridges over the tracks about 300 feet apart to support the complex of wires. It also includes "anchor

bridges" about every two miles, which are much stronger structures that help support the weight of the wires and also carry transformers, access walkways, and other necessary items (Stewart 2000). This system has remained in place and in operation for over 100 years; however, the proposed project calls for the separation of the existing utility lines from the overhead catenary system to free-standing poles.

Results of the Current Investigation

As the historical discussion above suggests, the portions of Milford containing the proposed project tower locations were settled by the middle of the nineteenth century. This is confirmed by Figures 2 and 3, historic maps from 1852 and 1867, respectively, which demonstrate that these areas contained a well-developed system of roads and residential homes, as well as the tracks associated with the New York and New Haven Railroad (now Metro North). The area also contained many parcels of open land that were likely use for agricultural purposes. Thus, the area could be described as somewhat rural in nature as of the 1860s. Figure 4, an aerial image taken in 1934, confirms the interpretation of the historic mapping of the project region. That is, the railroad was fully built and in operation by the early twentieth century, and its path crossed through a moderately developed portion of Milford as witnessed by the increased number or residences within the west end of the proposed project area. Figure 5 shows continued development of the area surrounding the proposed tower locations and the associated railroad corridor as of 1963. These additional developments include housing subdivisions, a limited number of large commercial facilities, and the newly created Interstate 95 corridor. Figure 6, an aerial image captured in 1990, shows continued growth in the region, with a large build out of the area adjacent of the eastern portion of the study area. Finally, Figures 7 and 8, aerial images dating from 2006 and 2012, respectively, show the areas encompassing the proposed tower locations in their essentially modern state. It confirms the highly developed nature of the proposed project areas and their proximity to the Metro North rail line.

During the current investigation, Heritage Consultants, LLC also collected data relating to previously completed cultural resources investigations within the vicinity of the proposed project areas. The survey files of the Connecticut State Historic Preservation Office and Heritage Consultants, LLC revealed that these portions of Milford, Connecticut have been subjected to three large scale cultural resources studies (CHPC 234, 820, and 1283) (Figure 9). CHPC 234 is particularly important for the current investigation since was specific to the existing railroad corridor containing the currently proposed project items. During the 1980s, De Leuw, Cather completed CHPC234, which resulted in the identification of three National Register eligible structures, one historic railroad station, and one other historic bridge in Milford, Connecticut. Since the results of this investigation simply represent an inventory of what cultural resources present in the area as of 1980, there were no recommendations concerning additional recordation of these cultural resources. Finally, Heritage Consultants, LLC also completed a review of previously recorded archaeological sites and National Register of Historic Places Properties on file with the Connecticut State Historic Preservation Office (Figures 10 and 11). This review failed to identify any previously identified archaeological sites or National Register of Historic Places Properties within 0.4 km (0.25 mi) of the proposed tower locations.

In addition to a review of historic maps, aerial images, previously completed cultural resources investigations, and previously recorded cultural resources, Heritage Consultants, LLC reviewed, environmental characteristics that frequently are used to predict the location of yet-to-be-identified archeological sites. Typically distance to water, slope, and soil types are included as part of these predictive models. Favorable conditions are characterized by gently sloping, well-drained, undisturbed soils in close proximity to fresh water. While some of the proposed towers are situated in proximity to gently sloping areas and fresh water sources, it is clear in Figure 12 that the soils situated along the entirety of the railroad corridor have been substantially impacted by development over the last 150 years

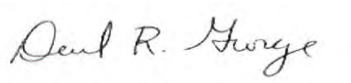
or more. That is, all the proposed tower locations are situated within soil series designated as either Udorthents or Urban Land. While Udorthents are characterized by soils that have been substantially disturbed through cutting and filling activities, Urban Land is described as a land surface where at least 85 percent of it is covered by streets, parking lots, buildings and other impervious surfaces. Generally, the original soils within these series have been so significantly altered through excavating or filling that no other soil designation is possible. Udorthents and Urban Land soil types retain little, if any, potential to yield intact cultural deposits. Finally, pedestrian survey of the areas encompassing each of the proposed project items also was completed, the result of which clearly demonstrated the disturbed nature of each areas, as well as the presence of additional underground facilities (Photos 1 through 20).

Summary and Recommendations

A review of environmental characteristics, historic maps and aerial images, and previously recorded cultural resources was used to assess the potential for the proposed project areas to contain intact subsurface deposits. Given the substantial amount of development within the proposed areas and the large number of previous disturbances, it is highly unlikely that intact soil deposits remain. Therefore, it is the professional opinion of Heritage Consultants, LLC that no further archeological investigations of the tower locations associated with the proposed United Illuminating Milvon-Devon Upgrade Project in Milford, Connecticut are warranted.

If you have any questions regarding this Technical 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 860-667-3001 or email us info@heritage-consultants.com. We are at your service.

Sincerely,



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Heritage Consultants, LLC

REFERENCES CITED

Campbell, C. L.
1950 *Progress and Change: A Brief History of Connecticut's Largest Electric & Gas Utility*. NY: The Newcomen Society in North America.

Connecticut, State of
1932 *State Register and Manual*. Hartford, CT: The State.

Cunningham, Janice P.
1992 *Western Coastal Slope: Historical and Architectural Overview and Management Guide*. Historic Preservation in Connecticut, Volume I. Hartford, CT: Connecticut Historical Commission, State Historic Preservation Office.

De Leuw, Cather
1980 *CHPC 234: Historic and Archeological Resources of the Northeast Corridor: Connecticut.* Northeast Corridor Improvement Project. Washington, DC: U.S. Department of Transportation, Federal Railroad Administration.

Grant, Tina, and Pederson, Jay P.
1998 "The United Illuminating Company." *International Directory of Company Histories*, Vol. 21. Online resource: Funding Universe, < http://www.fundinguniverse.com/company-histories/the-united-illuminating-company-history/>, accessed March 19, 2014.

Stewart, Robert C.
2000 *New York, New Haven & Hartford Railroad Catenary Systems*. West Suffield, CT Historical Technologies; Newington, CT: Connecticut Department of Transportation.

Turner, G. M., and M. W. Jacobus
1989 *Connecticut Railroads: An Illustrated History*. Hartford, CT: Connecticut Historical Society.

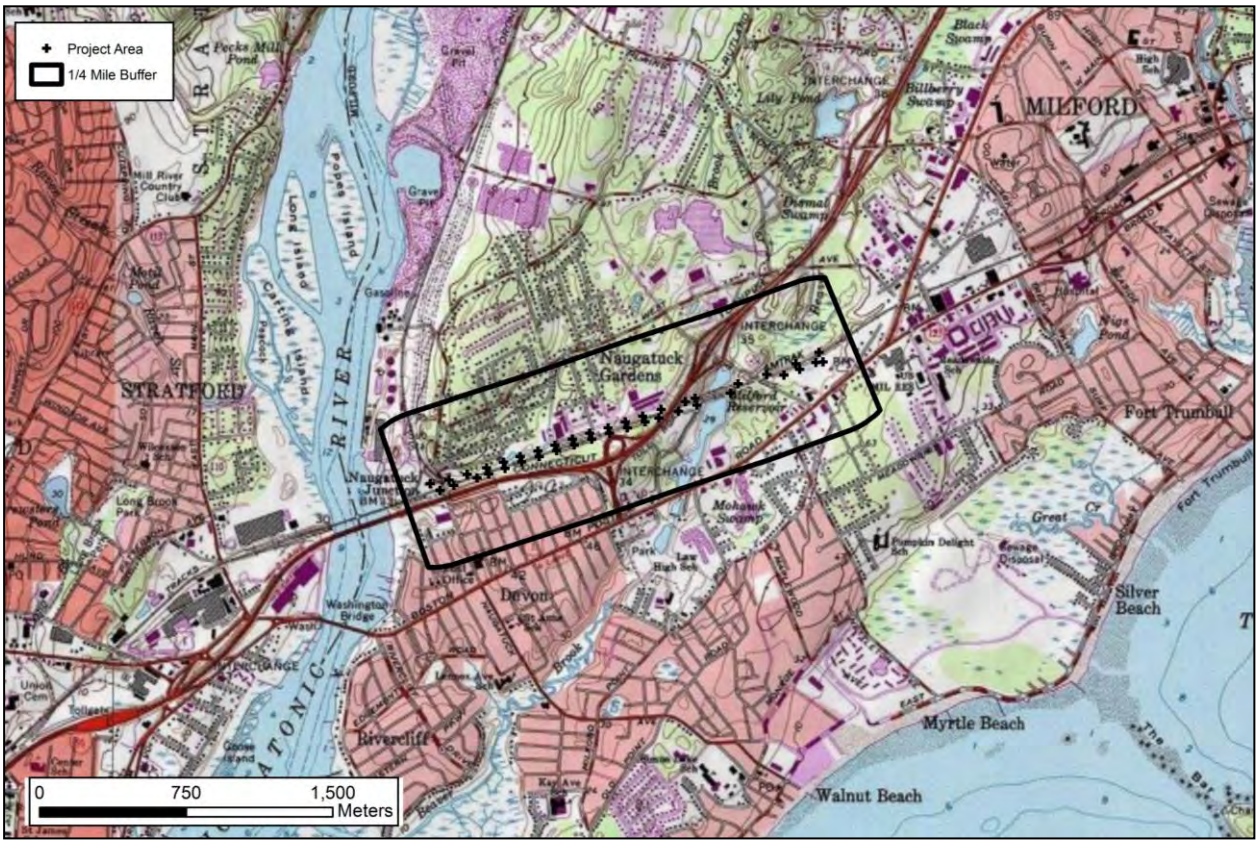

Figure 1. Excerpt from recent USGS topographic quadrangle map, depicting the proposed Milvon-Devon Project Area.

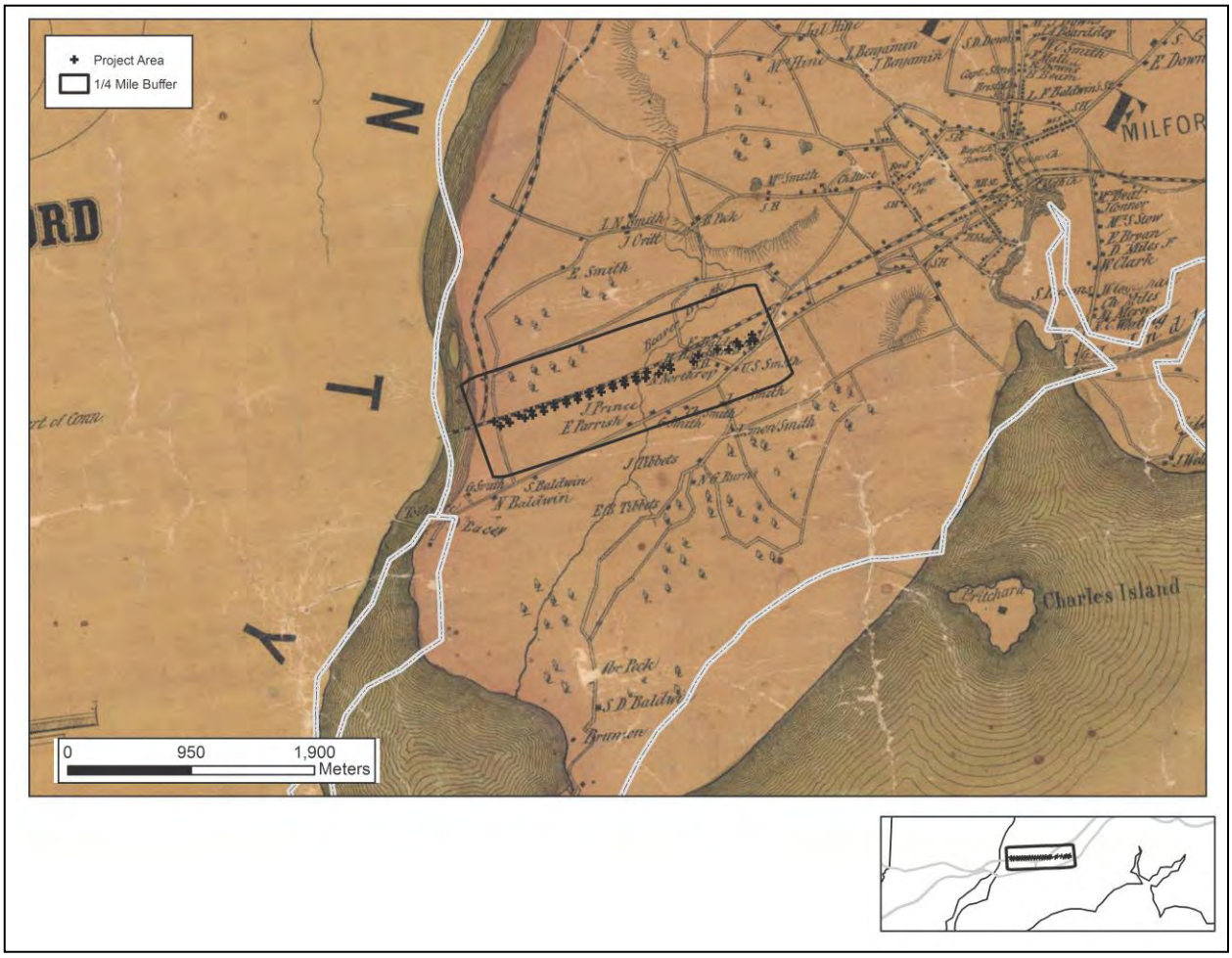

Figure 2. Excerpt from a 1852 historic map depicting the proposed Milvon-Devon Project Area.

Figure 3. Excerpt from a 1867 historic map depicting the proposed Milvon-Devon Project Area.

Figure 4. Excerpt from a 1934 aerial image depicting the proposed Milvon-Devon Project Area.

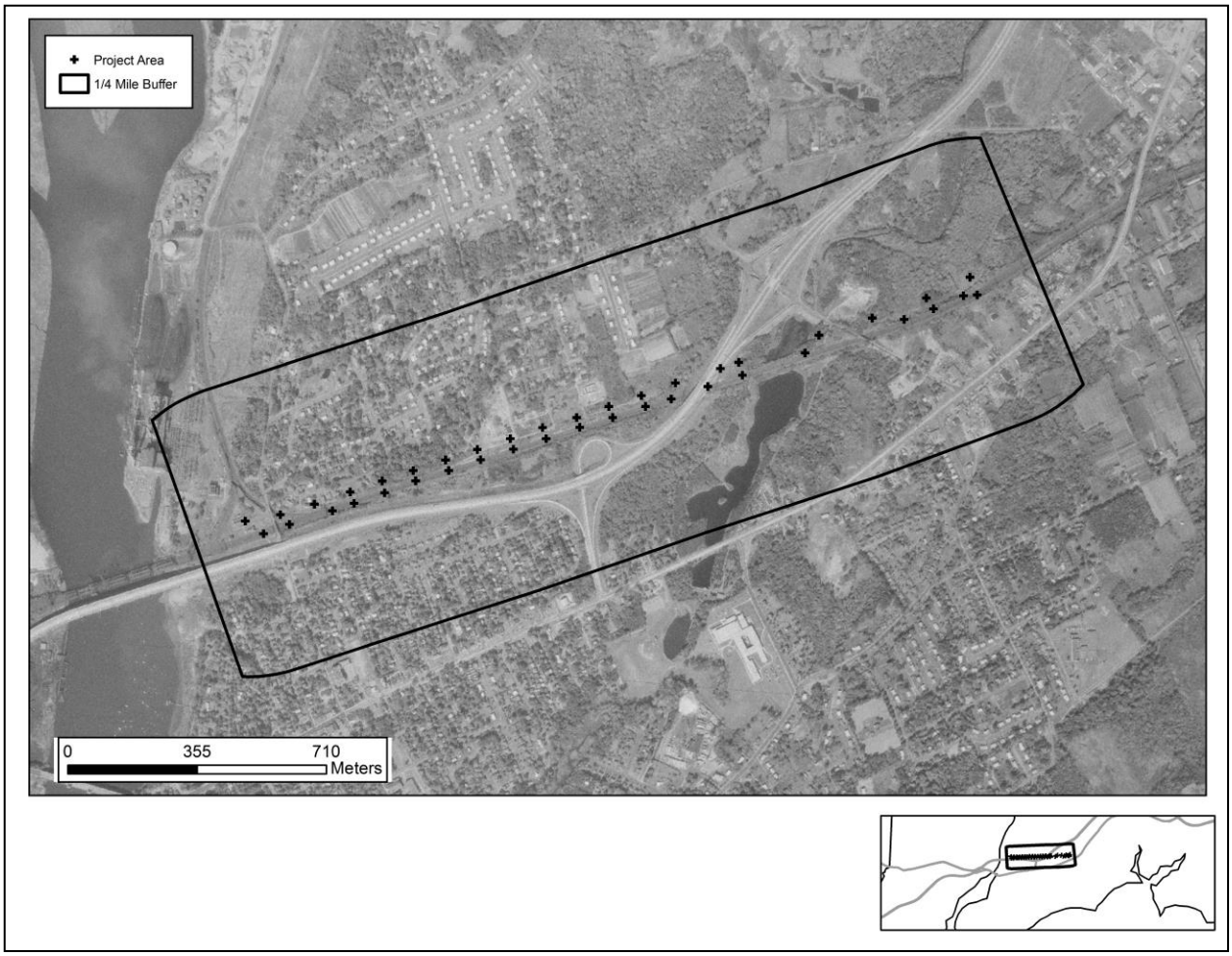

Figure 5. Excerpt from a 1963 aerial image depicting the proposed Milvon-Devon Project Area.

Figure 6. Excerpt from a 1990 aerial image depicting the proposed Milvon-Devon Project Area.

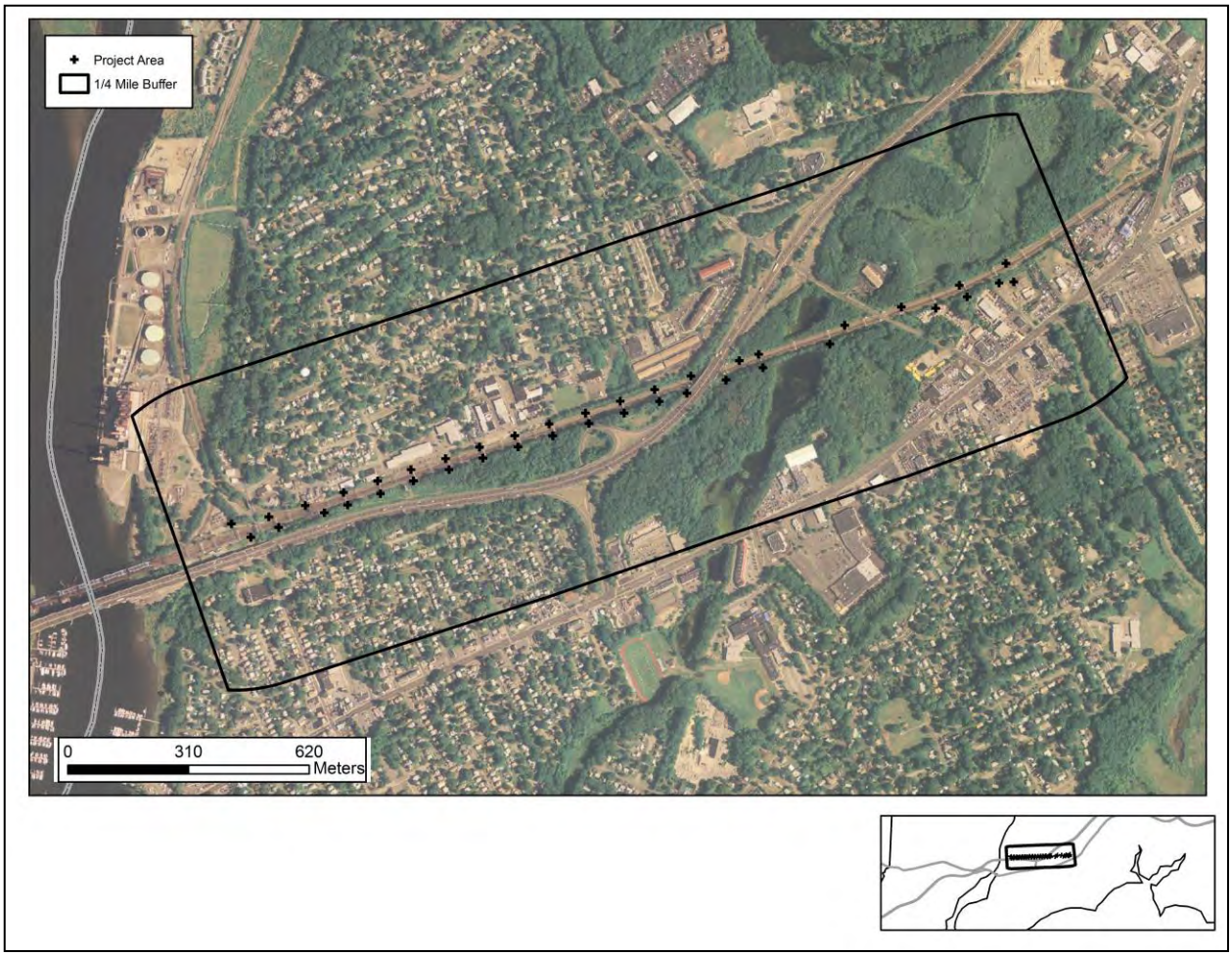

Figure 7. Excerpt from a 2006 aerial image depicting the proposed Milvon-Devon Project Area.

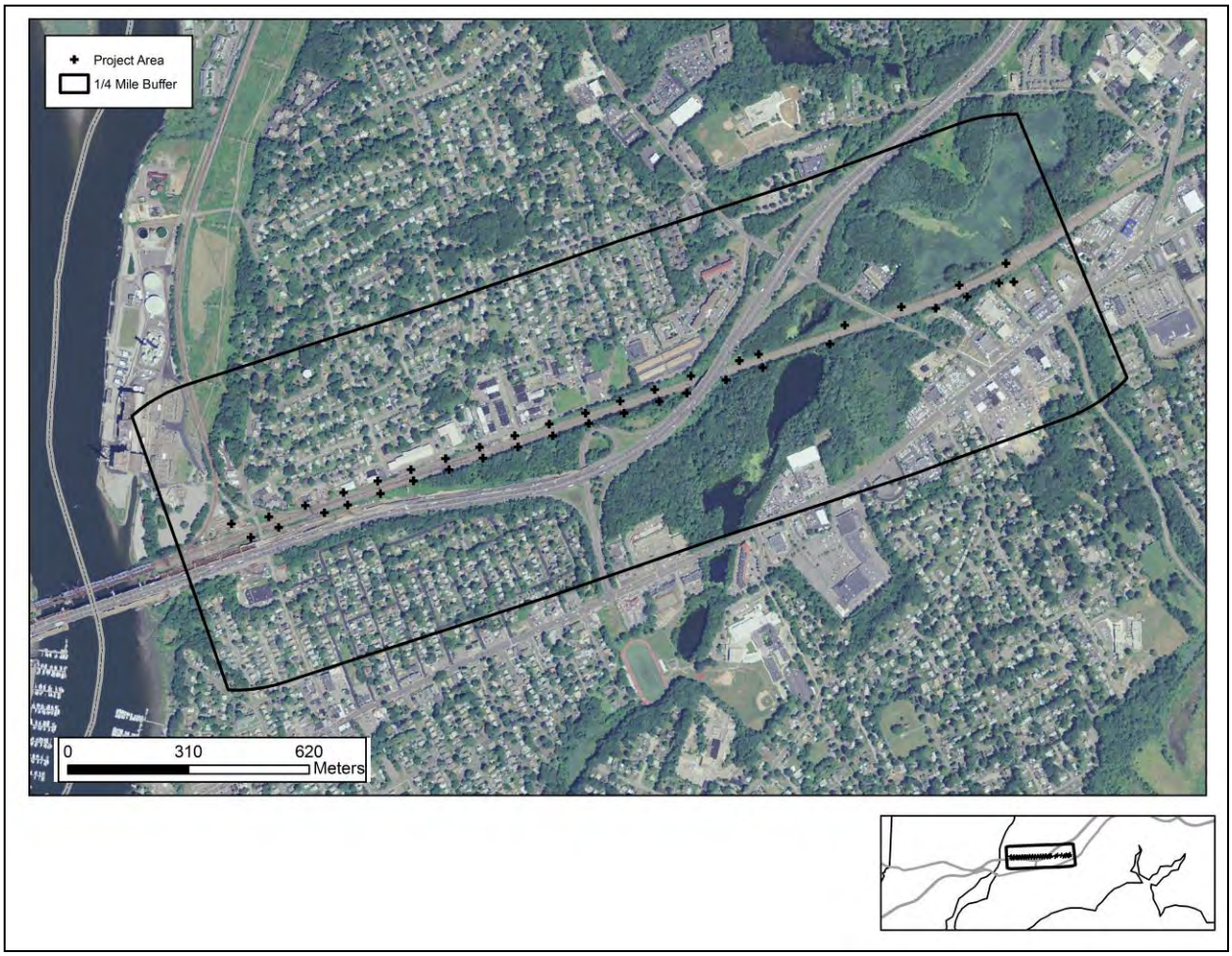

Figure 8. Excerpt from a 2012 aerial image depicting the proposed Milvon-Devon Project Area.

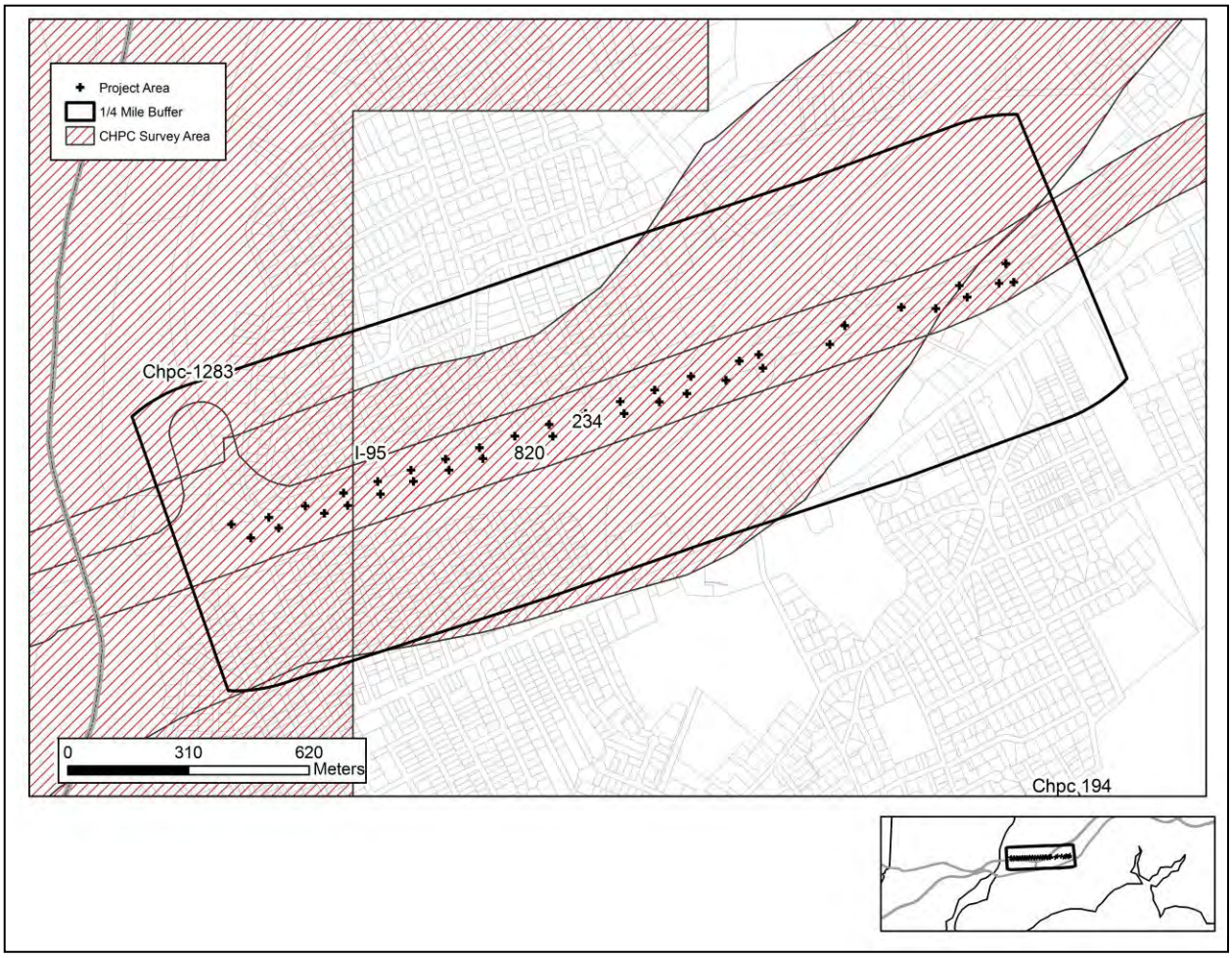

Figure 9. Digital map depicting the locations of previously completred cultural resources surveys in the vicinity of the proposed Milvon-Devon Project Area.

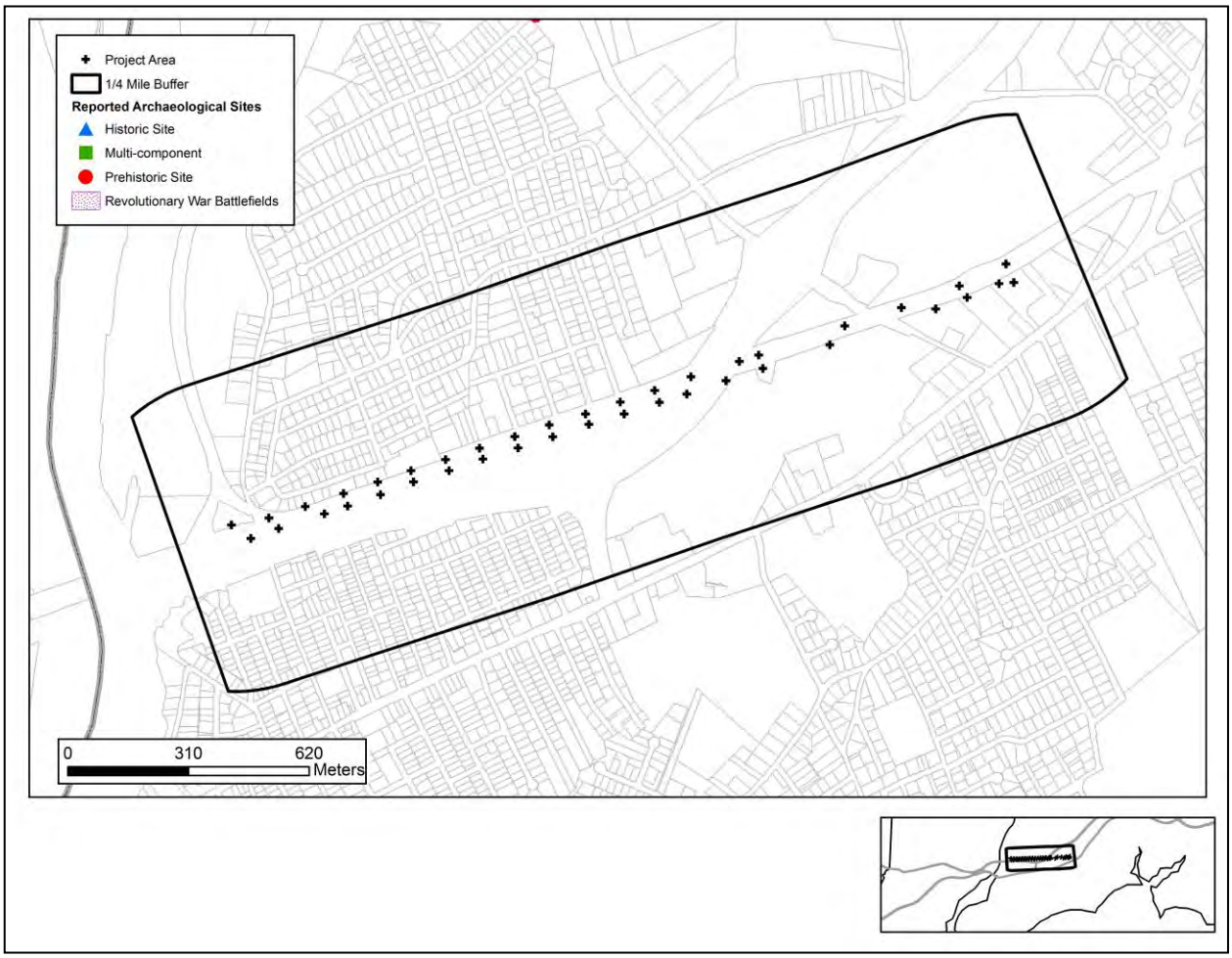

Figure 10. Digital map depicting the locations of previously recorded archaeological sites in the vicinity of the proposed Milvon-Devon Project Area.

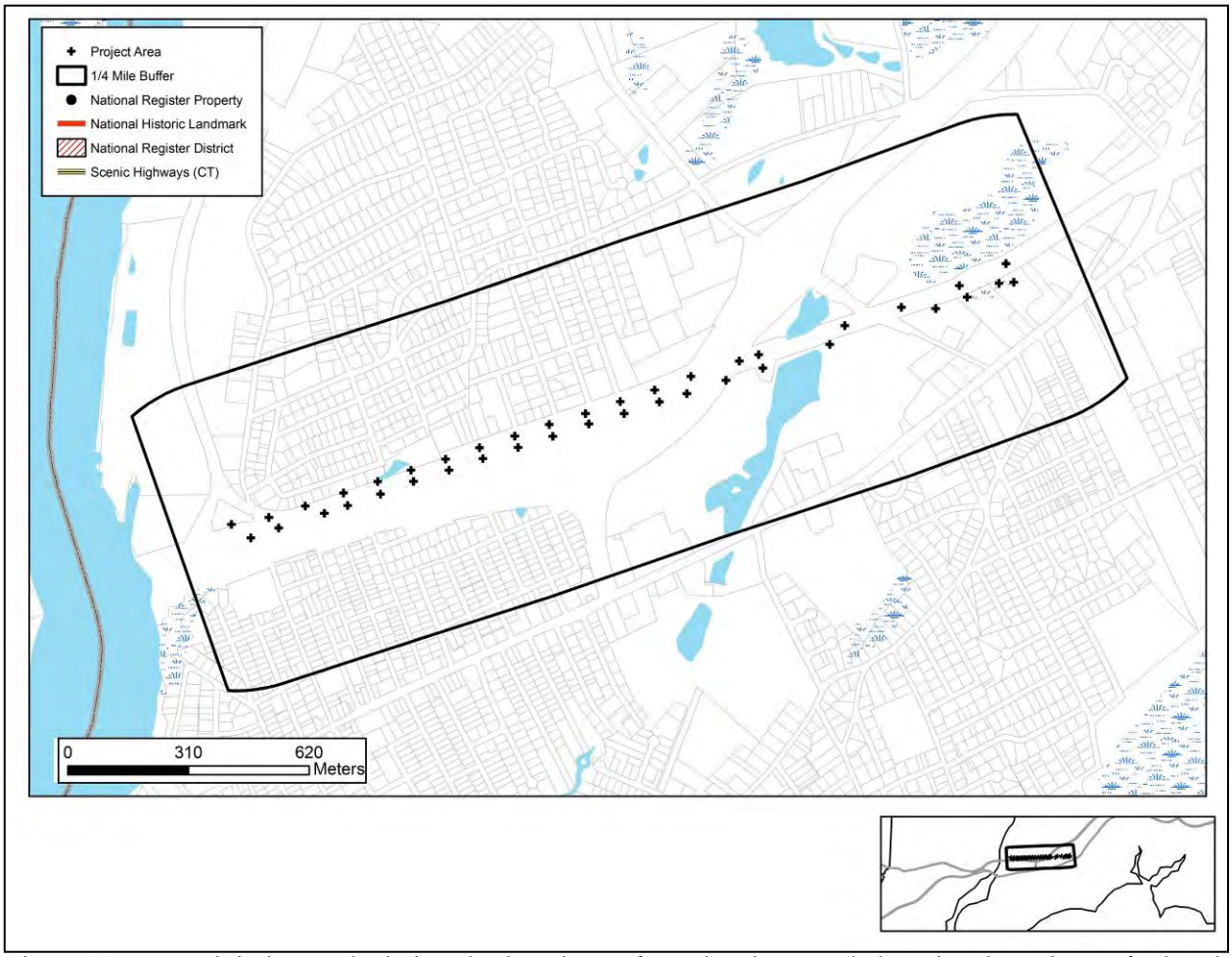

Figure 11. Digital map depicting the locations of previously recorded National Register of Historic Places properties in the vicinity of the proposed Milvon-Devon Project Area.

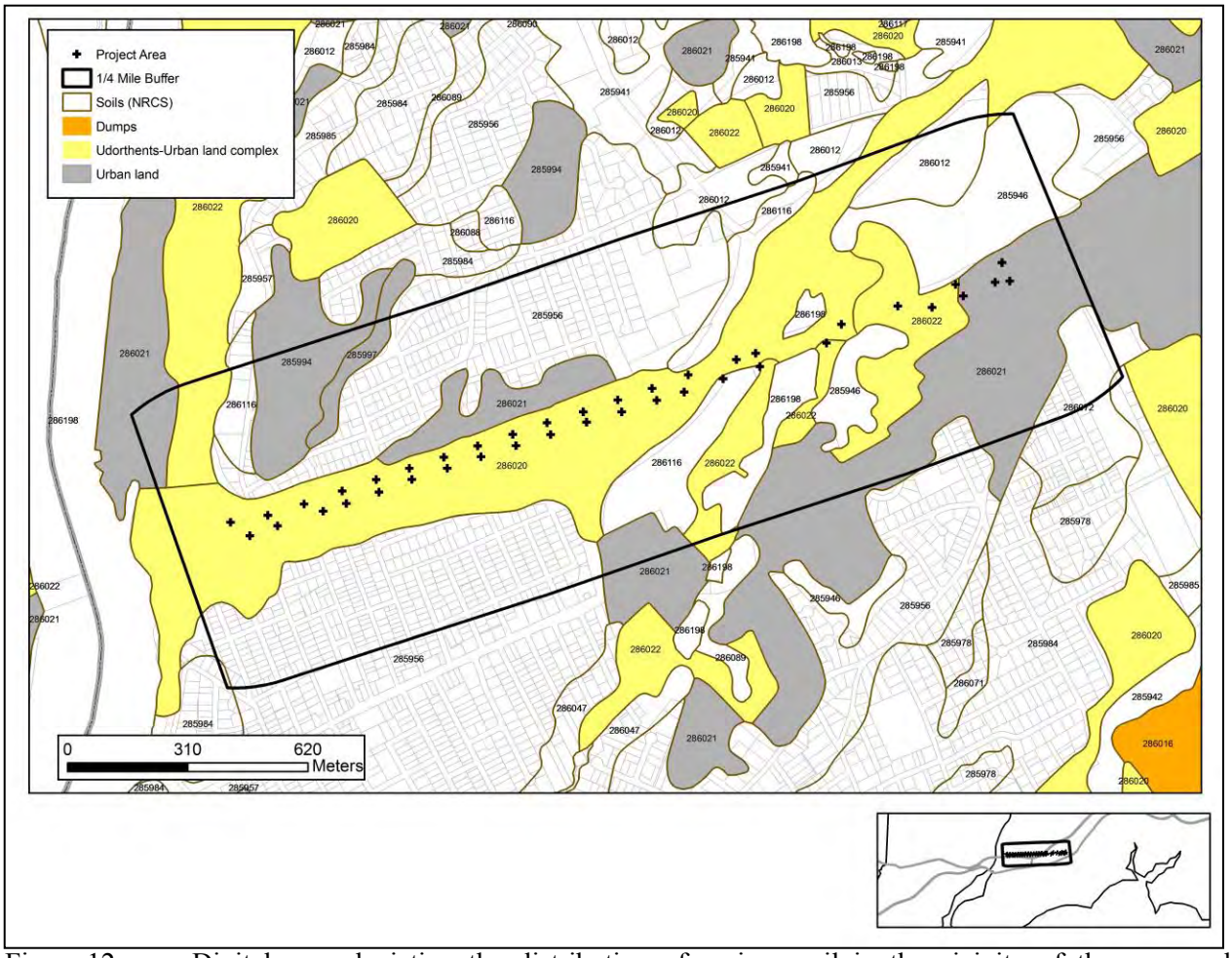

Figure 12. Digital map depicting the distribution of various soil in the vicinity of the proposed Milvon-Devon Project Area.

Photo 1. Overview photo of the locations of Tower MD01 and associated access road facing southeast.

Photo 2. Overview photo of access area leading to Tower MD08 facing south.

Photo 3. Overview photo showing the locations of Towers MDP02, MDP15, MD09, and MDP03 facing east

Photo 4. Overview photo of access to Tower MDP02 facing southeast.

Photo 5. Overview photo of the locations of Towers MD02, MDP03, MD09, and MDP15, as well as access to Towers MDP02 and MDP03 facing west.

Photo 6. Overview photo of the locations of Towers MDP05, MDP06, MD10, and MDP18, as well as access to MD10 and MDP18 facing west.

Photo 7. Overview photo of the locations of Towers MD03 and MDP19, as well as access to MDP19 facing west.

Photo 8. Overview photo of the locations of Towers MDP19, MD03, and access to MDP19 facing west.

Photo 9. Overview photo of the locations of MDP07 and MDP20, as well as access to MDP20 facing east.

Photo 10. Overview photo of the locations of Towers MDP07, MDP20, MDP08, and MDP21, as well as access to MDP07 and MDP08 facing east.

Photo 11. Overview photo of the locations of Towers MDP09, MDP11`, MDP08, and MDP10, as well as access to MDP08 and MDP08 facing west.

Photo 12. Overview photo of the locations of Towers MDP10, MDP11, MDP23 and MDP24, as well as access to MDP10 and MDP11 facing east

Photo 13. Overview photo of the Towers MDP12 and MD12, as well as access to MDPO12 facing east.

Photo 14. Overview photo of the locations of Tower MD13 facing west.

Photo 15. Overview photo of the locations of Tower MD05 and access to MD05 facing north.

Photo 16. Overview photo of the locations of access to Towers MD05 and MD13 facing east.

Photo 17. Overview photo of the locations of Towers MD06, MDP13, MDP25, and MDP26, as well as access to MDP13 facing west.

Photo 18. Overview photo of the locations of Towers MDP27, MD14, and MD07, as well as access to MD07 facing east.

Photo 19. Overview photo of access to Tower MD07 facing east.

Photo 20. Overview photo of access to Tower MD07 facing north along West Avenue

Attachment E
EMF

Electric and Magnetic Fields

UI seeks to rebuild an approximate 1.3-mile section of the 115 kilovolt (kV) double-circuit overhead transmission lines, circuit numbers 88005A-2 and 89005B-2, between the Milvon Substation and the Devon Tie Switching Station. At the northern and southern edges of the right-of-way (ROW), electric and magnetic fields (EMF) following the proposed line modifications are expected to increase relative to those produced by the existing transmission lines. The anticipated increase in EMF is due to the lower height of the repositioned conductors and the closer proximity to the ROW edges.

In the majority of spans between Utica Street and Schoolhouse Road, operation of the project is anticipated to increase the electric field by approximately 0.2 kilovolts per meter (kV/m) (pre-construction) to 0.7 kV/m (post-construction) at the ROW edges. Likewise, under average loading conditions, operation of the project is anticipated to increases the calculated magnetic field by approximately 12-21 milligauss (mG) at the northern ROW edge, and by 4-15 mG at the southern ROW edge. The anticipated increase in calculated magnetic fields is somewhat higher under peak load conditions, as much as 28.2 mG at the northern ROW edge and 19.7 mG at the southern ROW edge. Although the distribution and catenary conductors of the Metro North Railroad were not included in the magnetic field models under average and peak load conditions, the increases noted above are a conservative upper bound on project-related changes in the calculated magnetic field.

The resulting fields associated with the project are far below international safety-based and health-based standards for EMF levels.

Background

EMF are produced by any source that generates, transmits, or uses electricity. Electricity travels as current from distant generating sources on high-voltage transmission lines, to substations, then on to local distribution lines, and finally to our homes and workplaces for consumption. All things connected to our electrical system—power lines; wiring in our homes, businesses, and schools; and all electric appliances and machines—are a source of EMF. In North America, the vast majority of electricity is transmitted as alternating current (AC) at a frequency of 60

cycles per second measured in Hertz (Hz), i.e., 60 Hz. The EMF from these AC sources is commonly referred to as power-frequency or extremely low frequency (ELF) EMF.

Both electric fields and magnetic fields are properties of the space near all electrical sources. Electric fields exert a force on electrically charged objects, while magnetic fields exert a force on moving electrical charges. Although commonly referred to together as EMF, they each have different properties.

Electric fields are produced by voltage applied to electrical conductors and equipment. The electric field is expressed in measurement units of volts per meter (V/m) or kV/m, where 1 kV/m is equal to 1,000 V/m. The electric-field level increases as the voltage increases. Electric fields are present even when an appliance is turned off if it is still connected to the power source.

Since conducting objects such as buildings, fences, and trees easily block electric fields, the major sources of exposure to electric fields indoors are appliances, equipment, and machines within homes, office, and factories. Transmission lines, distribution lines, and other power-related infrastructure are the major source of electric fields outdoors.

Transmission line electric fields emanate radially outward from the charged conductor and terminate at any other conducting object such as trees, fences, vehicles, people, or transmission line towers. Electric fields are vector quantities meaning that they have both a magnitude and direction.

Magnetic fields are the result of the flow of electric currents through wires and electrical devices. The strength of a magnetic field is expressed as magnetic flux density in units called gauss (G) or mG, where 1 G = 1,000 mG.[1] In general, the strength of a magnetic field increases as the current increases, but also depends on characteristics of the source, including the arrangement of and separation of the conductors. Unlike electric fields, magnetic fields are not easily blocked by conducting objects. In addition, a time-varying magnetic field (such as is used in power transmission systems) induces an electric field and currents in nearby conducting

[1] Scientists also refer to magnetic flux density at these levels in units of microtesla (μT). Magnetic flux density in mG units can be converted to μT by dividing by 10, i.e., 1 mG = 0.1 μT.

objects. Like electric fields, magnetic fields are vector quantities described by both their magnitude and direction.

The intensity of both electric fields and magnetic fields diminishes with increasing distance from the source. In the case of transmission lines, electric and magnetic fields generally decrease with distance from the conductors in proportion to the square of the distance. Since line voltage is quite stable and does not change very much over time, electric-field levels are also stable. Magnetic-field levels, however, can vary depending on load conditions (i.e., the currents flowing in a conductor).

EMF Guidance

After more than 30 years of research that includes hundreds of studies, none of the scientific organizations conducting reviews of scientific and medical research has concluded that exposure to ELF EMF is a demonstrated cause of any long-term adverse health effect.

The evidence in support of a causal relationship is weak because it is founded largely, if not entirely, on some epidemiology studies that reported statistical associations between magnetic field exposure (or some proxy of exposure) and a disease. Scientists have placed less weight on these associations because they are weak, often inconsistent between studies, and possibly due to errors in the way the study was designed or conducted. Overall, animal studies have not reported an increase in cancer among animals exposed to high levels of electric or magnetic fields, and no mechanism has been discovered in laboratory studies that would explain how electric or magnetic fields could initiate disease.

Most notably, a weak association has been reported between childhood leukemia and estimates of long-term exposure to high, average magnetic field levels (IARC, 2002). Combined with the limitations of epidemiology and the lack of consistent findings from animal and laboratory studies, however, the overall body of research does not indicate that this association, or any other, is causal in nature.

More relevant EMF assessment criteria are the exposure limits recommended by scientific organizations. These exposure limits were developed to protect health and safety and are based

on reviews and evaluations of relevant health research. These guidelines include exposure limits for the general public recommended by the International Committee on Electromagnetic Safety (ICES) and the International Commission on Non-Ionizing Radiation Protection (ICNIRP) to address health and safety issues (ICES 2002; ICNIRP 2010).

The only confirmed relationship between electric fields or magnetic fields and an adverse biological or health effect is when electric currents, at very high levels of exposure, are experienced in the body as a shock-like effect. The levels at which these short-term effects occur are typically much higher than levels found under transmission lines, and higher than levels found in most homes or commercial establishments. As mentioned, ICES and ICNIRP have recommended exposure limits to protect against the occurrence of these acute adverse effects from short-term exposures. Table 1 summarizes the recommended exposure limits.

Table 1. Reference levels for whole body exposure to 60-Hz fields: general public.

Organization	Magnetic fields	Electric fields[2]
ICNIRP, reference level	2,000 mG	4.2 kV/m
ICES, maximum permissible exposure (MPE)	9,040 mG	5 kV/m 10 kV/m[3]

The World Health Organization (WHO) established the International EMF Project in 1996, in response to public concerns about exposures to EMF and possible adverse health effects. The Project's membership includes 8 international organizations, 8 collaborating institutions and over 54 national authorities. The overall purpose of the Project is to assess any possible health and environmental effects of exposure to static and time-varying EMF. A key objective is to evaluate the scientific literature and make a status report on health effects, to be used as the basis for a coherent international response. The review was prepared by 21 scientists from around the world with expertise in a wide range of disciplines and published in June 2007 as part of WHO's Environmental Health Criteria (EHC) Programme.

[2] Both organizations judged that evidence for effects from long-term exposure was insufficient for setting exposure standards.

[3] Exception within a transmission line ROW.

The WHO concluded the following:

> Acute biological effects have been established for exposure to ELF electric and magnetic fields in the frequency range up to 100 kHz that may have adverse consequences on health. Therefore, exposure limits are needed. International guidelines exist that have addressed this issue. Compliance with these guidelines provides adequate protection. Consistent epidemiological evidence suggests that chronic low-intensity ELF magnetic field exposure is associated with an increased risk of childhood leukaemia. However, the evidence for a causal relationship is limited, therefore exposure limits based upon epidemiological evidence are not recommended, but some precautionary measures are warranted. (p. 355)

The absence of clear evidence for adverse effects after continued research and testing increases the certainty that there is not an adverse effect, or that any risk associated with the exposure is small. Because of the inherent limitations of scientific investigation, no review panel can ever completely rule out the possibility that EMF in our communities and workplaces might have some adverse effect. However, given the amount and quality of research that has been conducted thus far, the opinion is strong that there is not a cause-and-effect relationship between ELF EMF and long-term, adverse health effects.

EMF Modeling

UI seeks to rebuild an approximate 1.3-mile section of the 115 kV double-circuit overhead transmission lines, circuit numbers 88005A-2 and 89005B-2, between the Milvon Substation and the Devon Tie Switching Station. In most spans along the Metro-North Railroad Corridor, the existing circuits are mounted on metal support “bonnets” that are attached to railroad structures, which also support the distribution conductors and catenaries of the New Haven Line. The project would extend from structure B865 to structure B888, both in Milford, affecting a total of 50 structures. The proposed project would reposition the 88005A-2 circuit to new steel monopoles to the north of the existing structures, and reposition the 88005B-2 circuit to new steel monopoles to the south of the existing structures.

UI retained Exponent to model the EMF levels associated with the rebuild of the 88005A-2 and 89005B-2 transmission lines. Exponent modeled the electric and magnetic fields with existing and proposed configurations in three cross sections:

- ***Cross section MD-1*** represents the existing and proposed configuration east of the Devon Tie Switching Station, between structures B865 and B868. Circuit 88005A-2 is rebuilt on a steel monopole approximately 26 feet north of the existing centerline, and circuit 89005B-2 is moved approximately 19 feet south of its existing centerline. The width of the ROW in section MD-1 is 130 feet. The rebuilt circuits are single-circuit monopoles with 12-foot vertical conductor spacing.
- ***Cross section MD-2*** includes the majority of the route west of Schoolhouse Road, and extends from structure B870 to B884. The ROW in section MD-2 is 152 feet wide. Circuit 88005A-2 is moved approximately 32 feet north of its existing centerline, and circuit 89005B-2 is rebuilt approximately 29 feet to the south. The rebuilt circuits are single-circuit monopoles with 12-foot vertical conductor spacing.
- ***Cross section MD-3*** includes spans between the Schoolhouse Road crossing and the Milvon Substation, between structures B884 and B888. Circuit 88005A-2 is rebuilt on a vertical steel monopole approximately 48 feet north of its existing centerline, with 16-foot vertical conductor spacing. Circuit 89005B-2 is rebuilt on a vertical steel monopole also with 16-foot conductor spacing approximately 14 feet south of its existing centerline. The ROW width in section MD-3 is 161 feet.

In the proposed configurations of Sections MD-1, MD-2, and MD-3, circuits 88005A-2 and 89005B-2 are supported on single-circuit vertical monopoles having ABC phasing, top to bottom.

Calculation Assumptions

Existing and proposed levels of EMF were calculated using computer algorithms developed by the Bonneville Power Administration (BPA), an agency of the U.S. Department of Energy (BPA, 1991). These algorithms have been shown to accurately predict EMF levels measured near transmission lines. The electric fields and magnetic fields were calculated as the resultant

of x, y, and z field vectors. Exponent calculated electric- and magnetic-field levels at 1 meter (3.28 feet) above ground, in accordance with IEEE Std. C95.3.1-2010 and IEEE Std. 0644-1994, as the root-mean-square value of the field ellipse at each location along a transect perpendicular to the transmission centerlines.

The inputs to the program are data regarding voltage, current flow, phasing, and conductor configurations. UI Transmission & Substation Engineering provided Exponent with data regarding the conductor position, size, voltage, and phasing of the existing and proposed circuits. The values of EMF associated with the transmission lines were calculated along profiles perpendicular to the transmission lines at the point of lowest conductor sag (mid-span), i.e., closest to the ground. The transmission line conductors were assumed to be positioned at maximum sag for the entire distance between structures and over flat terrain. An overvoltage condition of 5% was used for all 115-kV circuits in calculating electric fields from the transmission lines. These modeling assumptions are made to ensure that the calculated values represent the maximum expected EMF values for the cases analyzed. Distribution and catenary conductors operated by Metro North Railroad were not included in the model in order to reflect project-related changes in EMF, rather than the time-varying EMF associated with the passage of trains on the New Haven Line. A further discussion of the EMF from the Metro North Railroad conductors is included in the Measurements section, below.

Projected operational data for the 88005A-2 and 89005B-2 transmission lines was provided by UI Transmission Planning, and is summarized in Table 2, below.

Table 2. Projected transmission line loading (Amperes)

				Current Magnitude			
				Pre-Project		Post-Project	
Line	kV	From	To	Average	Peak	Average	Peak
88005-2A	115	Milvon	Devon Tie	329	445	333	450
88005-2B	115	Milvon	Devon Tie	330	446	334	451

Results

Calculated electric-field profiles are depicted in Figures 1-3 for Sections MD-1 through MD-3, respectively. Table 4 summarizes the calculated electric-field levels on the ROW and ROW edges. Calculated magnetic field profiles for average loading conditions are depicted in Figures 4-6 for Sections MD-1 through MD-3, respectively. Table 5 summarizes the calculated magnetic-field levels on the ROW and ROW edges for average-load conditions, and Table 6 includes the calculated magnetic-field levels at the same reporting locations for peak-load conditions.

In all modeled sections, calculated electric-field profiles are quite low, less than 1.5 kV/m at all locations. Operation of the project is expected to increase the calculated electric field at the north and south edges of the ROW in all sections, since the conductors of the repositioned circuits are lower to the ground and closer to the ROW edges.[4] In section MD-1, for instance, the northernmost conductor of circuit 88005A-2 is repositioned from 31.3 feet away from the northern ROW edge (pre-construction) to 17.0 feet from the northern ROW edge (post-construction). The height of the repositioned conductor is lower as well, 40.1 feet (post-construction) versus 49.9 feet (pre-construction). Table 3, below, summarizes the positions of the outermost phase conductors in each section that are closest to the ground.

[4] An exception is in the southern ROW edge in section MD-3, in which the 89005B-2 lower phase is moved inward toward the center of the ROW, but lowered by about 13 feet at midspan.

Table 3. Conductor positions before and after proposed construction

		Conductor Position (feet)			
		Northern ROW edge		Southern ROW edge	
Sectionn	Configuration	Distance from ROW edge	Height	Distance from ROW edge	Height
MD-1	Existing	31.3	49.9	15.9	48.1
	Proposed	17.0	40.1	9.5	49.2
MD-2	Existing	34.9	28.4	22.4	31.7
	Proposed	15.0	27.9	6.0	31.8
MD-3	Existing	53.9	41.2	17.5	38.7
	Proposed	18.0	36.9	16.0	46.9

At the northern ROW edge in section MD-1, operation of the project increases the calculated electric field from approximately 0.18 kV/m (pre-construction) to 0.60 kV/m (post-construction), with a smaller increase at the southern ROW edge. The largest increase in the calculated electric field is in section MD-2, where operation of the project increases the calculated electric field from approximately 0.26 kV/m (pre-construction) to 0.93 kV/m (post-construction) at the northern ROW edge. The lowered position of the 89005B-2 phase conductors likewise increases the calculated electric field at the southern ROW edge, from 0.43 kV/m to approximately 1.1 kV/m. The increase of the calculated electric field in section MD-3 is lower than in section MD-2, approximately 0.6 kV/m at the northern ROW edge and 0.2 kV/m at the southern ROW edge. Though the distribution and catenary conductors of the Metro North Railroad were not included in the electric field models, these conductors are (a) located further toward the center of the ROW, and (b) operated at lower voltage than the 88005A-2 and 89005B-2 lines. For these reasons these other conductors are not anticipated to significantly change electric field levels and Table 4 reflects the anticipated project-related changes in calculated electric field at the ROW edges.

Operation of the project increases the calculated magnetic-field levels at the north and south ROW edges in sections MD-1 through MD-3. The pre-project and post-project loading is approximately the same on the 88005A-2 and 89005B-2 lines. The anticipated increase in

calculated magnetic-field levels is therefore due to the lower height of the repositioned conductors and the closer proximity to the ROW edges, as summarized in Table 3.

At the northern ROW edge in section MD-1, operation of the project at average load increases the calculated magnetic field from approximately 6.1 mG (pre-construction) to 18.1 mG (post-construction), with a smaller increase (4.6 mG) at the southern ROW edge. The largest increase in the calculated magnetic field at average load is in section MD-2, where operation of the project increases the calculated magnetic field from approximately 10.4 mG (pre-construction) to 31.3 mG (post-construction) at the northern ROW edge. The lowered position of the 89005B-2 phase conductors likewise increases the calculated magnetic field at the southern ROW edge, from 15.0 mG to approximately 29.6 mG. The increase of the calculated magnetic field in section MD-3 is somewhat lower, approximately 19.7 mG at the northern ROW edge and 3.9 mG at the southern ROW edge.

Under peak load conditions (Table 6), the calculated increase in the magnetic-field levels is greater at the ROW edges. In section MD-1, the calculated magnetic field increases by about 16.3 mG at the northern edge of the ROW due to operation of the project, and 6.2 mG at the southern edge. The greatest increase in calculated magnetic field is again in section MD-2, with a 28.2 mG increase at the northern ROW edge and 19.7 mG increase at the southern ROW edge. Results for section MD-3 are comparable to section MD-2, a 26.5 mG increase at the northern ROW edge and 5.3 mG increase at the southern ROW edge.

Though the distribution and catenary conductors of the Metro North Railroad were not included in the magnetic field models under average and peak load conditions, the increases noted above are a conservative upper bound on project-related changes in the calculated magnetic field.

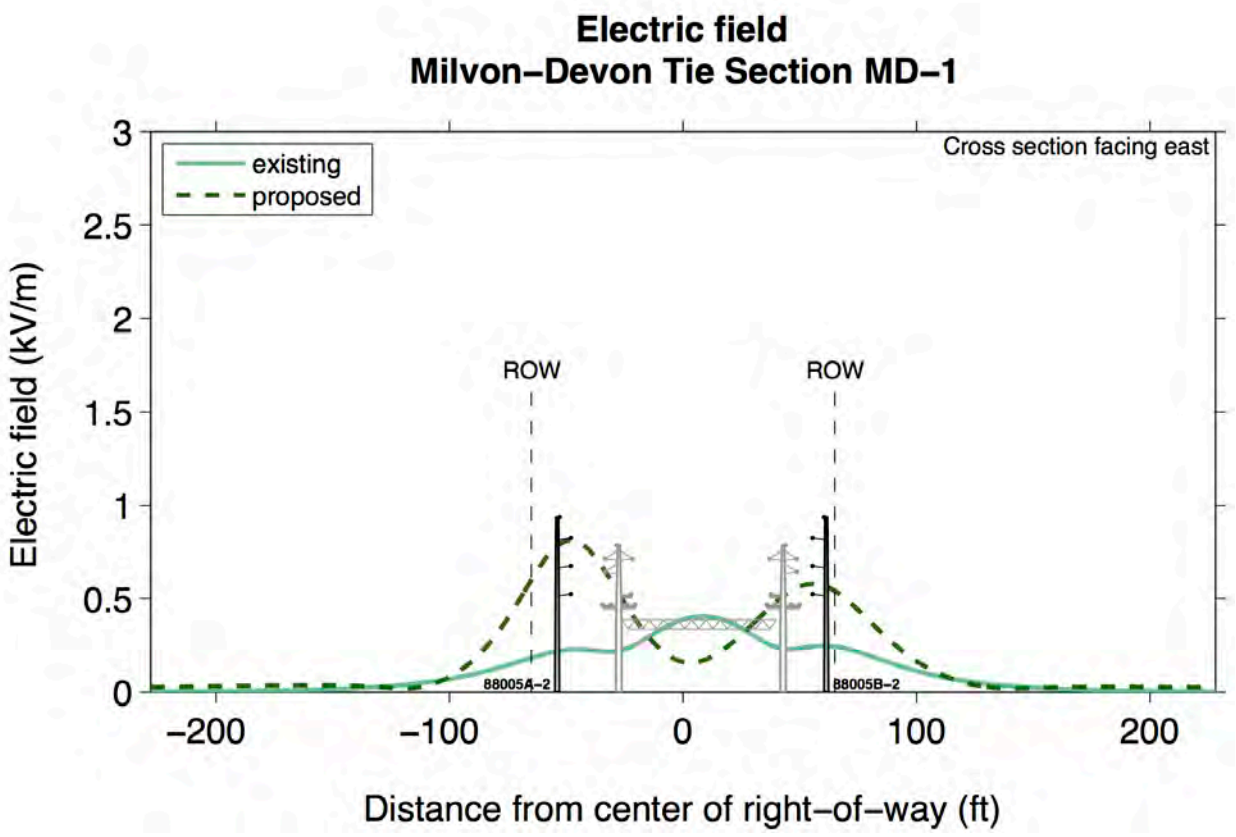

Figure 1. Calculated electric-field profile in section MD-1 for existing and proposed configurations, between structures B865 and N868.

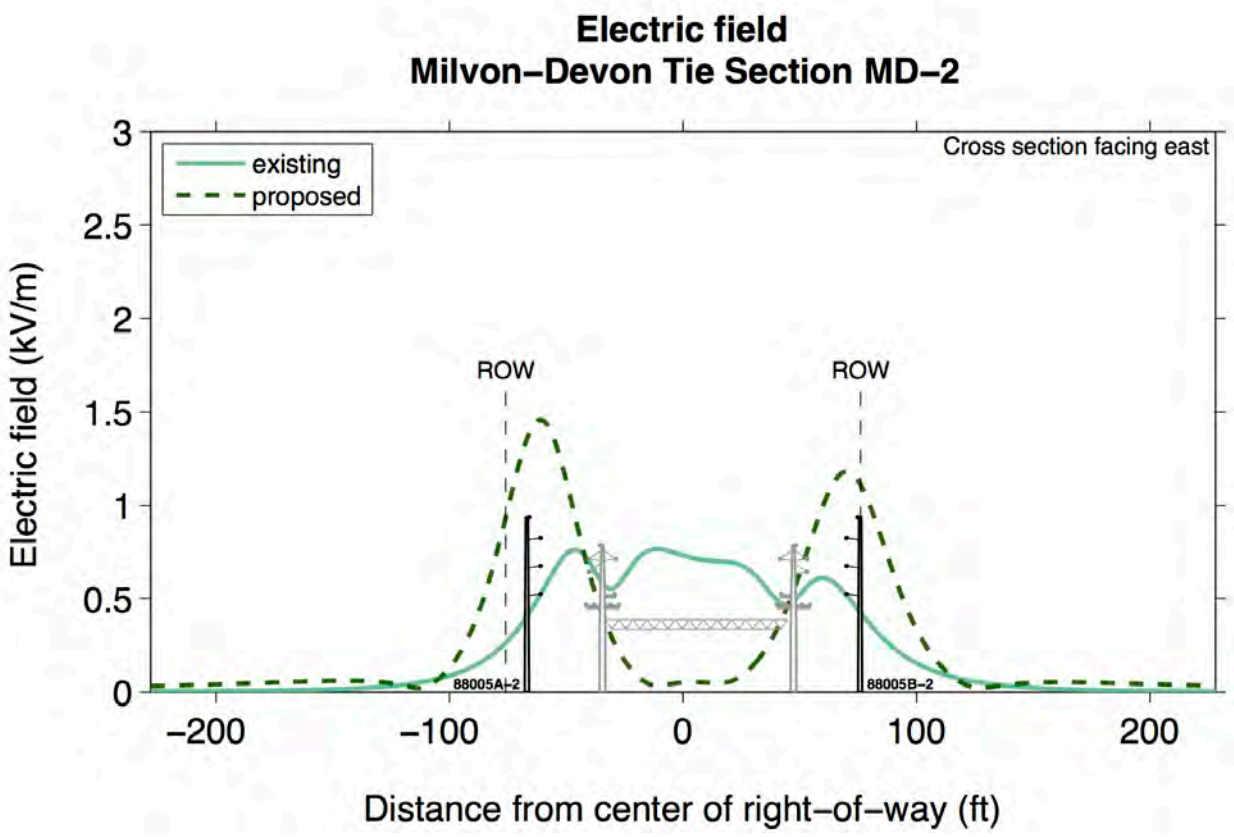

Figure 2. Calculated electric-field profile in section MD-2 for existing and proposed configurations, between structures B870 and B884.

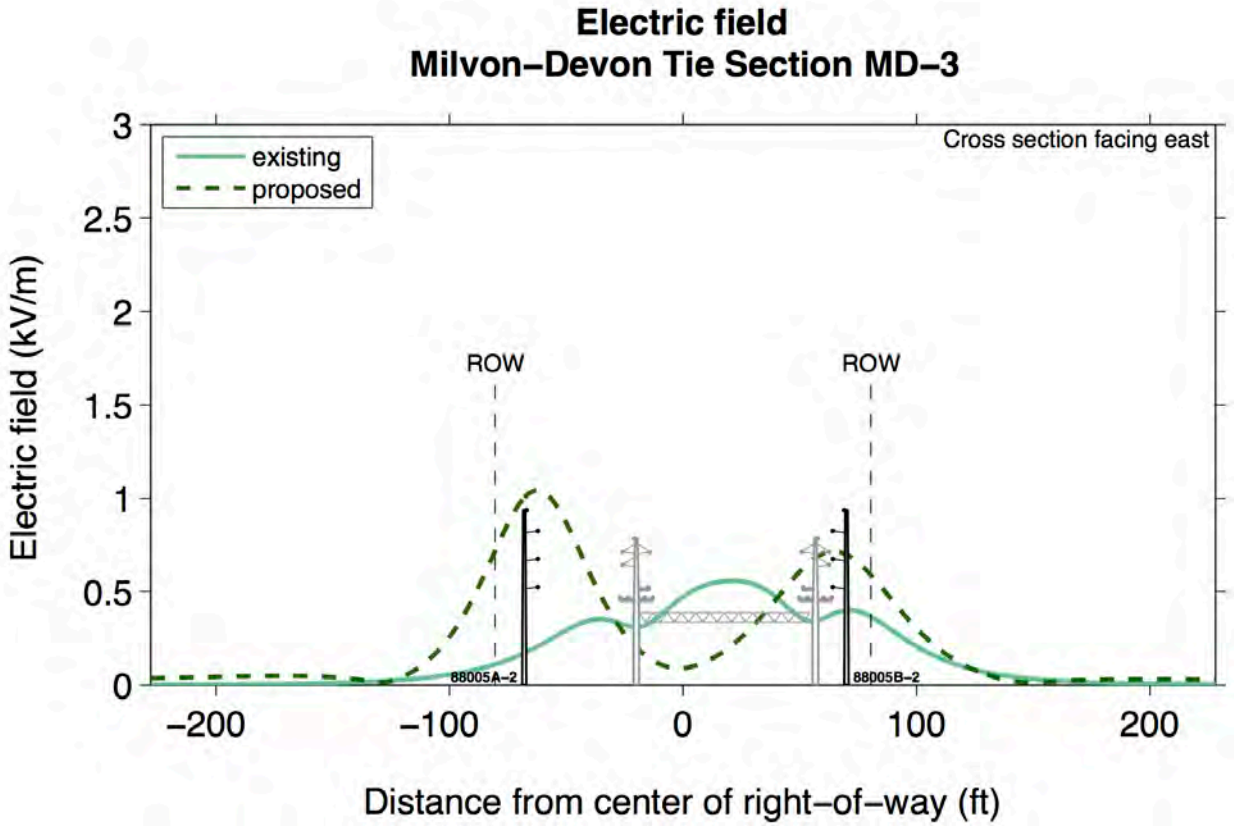

Figure 3. Calculated electric-field profile in section MD-3 for existing and proposed configurations, between structures B884 and B888.

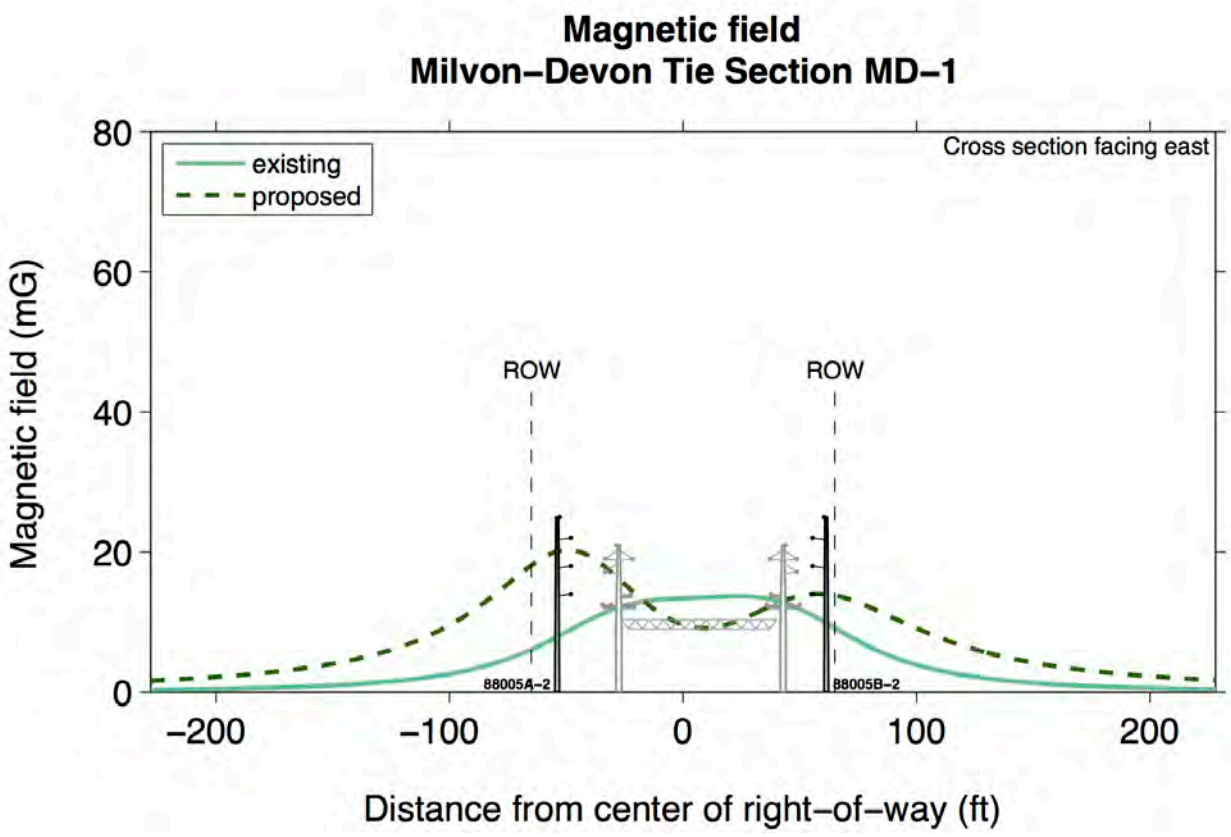

Figure 4. Calculated magnetic-field profile in section MD-1 for existing and proposed configurations, average load case, between structures B865 and B868.

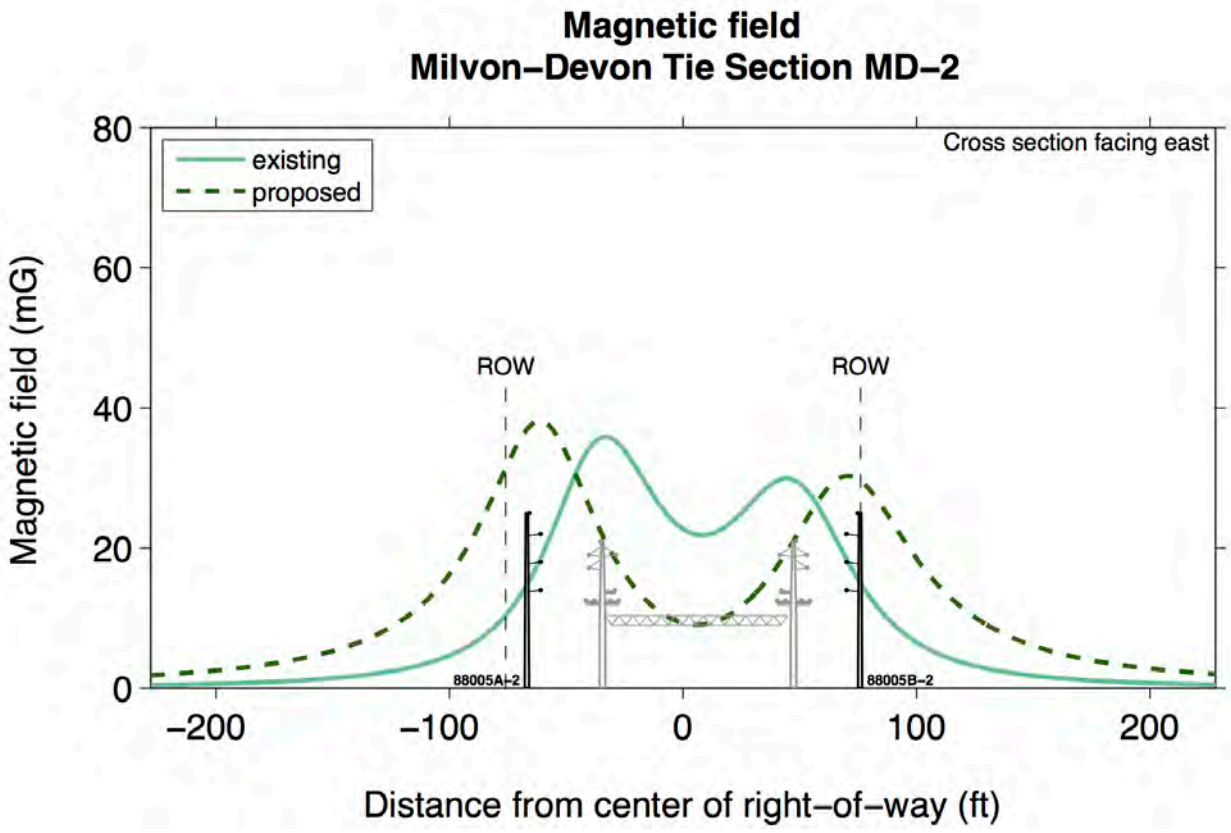

Figure 5. Calculated magnetic-field profile in section MD-2 for existing and proposed configurations, average load case, between structures B870 and B884.

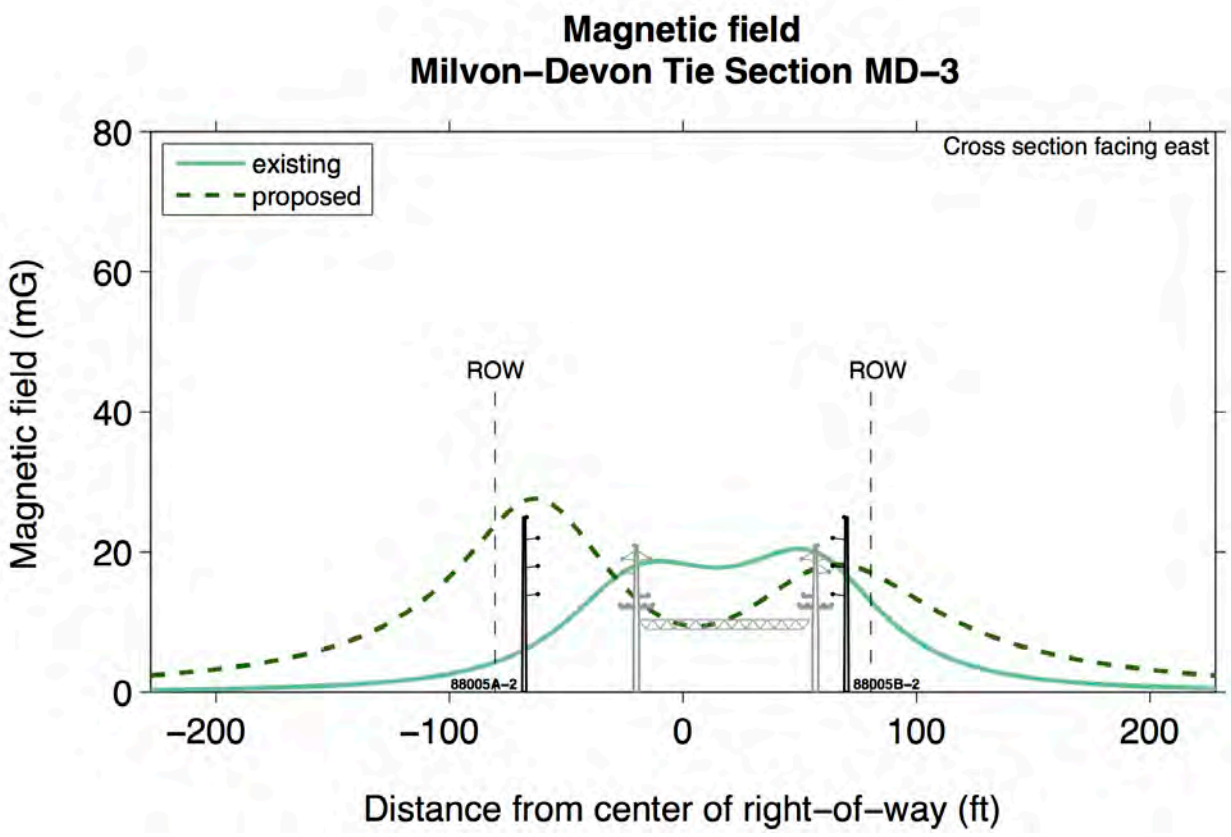

Figure 6. Calculated magnetic-field profile in section MD-3 for existing and proposed configurations, average load case, between structures B884 and B888.

Table 4 Calculated electric-field levels

Cross Section	Configuration	Electric Field (kV/m)		
		North Edge of ROW	Max on ROW	South Edge of ROW
MD-1 (Strs. B865-B868)	Existing	0.18	0.41	0.24
	Proposed	0.60	0.81	0.54
MD-2 (Strs. B870-B884)	Existing	0.26	0.77	0.43
	Proposed	0.93	1.46	1.11
MD-3 (Strs. B884-B888)	Existing	0.11	0.56	0.37
	Proposed	0.73	1.04	0.6

Table 5 Calculated magnetic-field levels, average load case

Cross Section	Configuration	Magnetic Field (mG)		
		North Edge of ROW	Max on ROW	South Edge of ROW
MD-1 (Strs. B865-B868)	Existing	6.1	13.7	9.2
	Proposed	18.1	20.3	13.8
MD-2 (Strs. B870-B884)	Existing	10.4	35.9	15.0
	Proposed	31.3	38.1	29.6
MD-3 (Strs. B884-B888)	Existing	4.3	20.4	13.2
	Proposed	24.0	27.6	17.1

Table 6 Calculated magnetic-field levels, peak load case

Cross Section	Configuration	Magnetic Field (mG)		
		North Edge of ROW	Max on ROW	South Edge of ROW
MD-1 (Strs. B865-B868)	Existing	8.2	18.5	12.4
	Proposed	24.5	27.4	18.6
MD-2 (Strs. B870-B884)	Existing	14.1	48.5	20.3
	Proposed	42.3	51.5	40.0
MD-3 (Strs. B884-B888)	Existing	5.9	27.6	17.8
	Proposed	32.4	37.3	23.1

Pre-construction measurements

In order to characterize the EMF of unmodeled Metro North Railroad conductors, EMF for pre-construction conditions were measured on April 28, 2014. The measurements were taken at a height of 1 meter (3.28 feet) above ground in accordance with the standard methods for measuring near power lines (IEEE Std. 644-1994a). Both electric and magnetic fields were expressed as the total field computed as the resultant of field vectors measured along vertical, transverse, and longitudinal axes.[5] The electric field was measured in units of kV/m with a single-axis field sensor and meter manufactured by Enertech Consultants. The magnetic field was measured in units of mG by orthogonally mounted sensing coils whose output was logged by a digital recording meter (EMDEX II) manufactured by Enertech Consultants. These instruments meet the Institute of Electrical and Electronics Engineers **(**IEEE) instrumentation standard for obtaining accurate field measurements at power line frequencies (IEEE Std.1308-1994b). The meters were calibrated by the manufacturer by methods like those described in IEEE Std. 644-1994a.

The New Haven line includes a 12.6 kV, 60 Hz catenary system that powers some rolling stock, and magnetic fields in the vicinity of the tracks would be expected to exhibit variation with

[5] Measurements along the vertical, transverse, and longitudinal axes were recorded as root-mean-square magnitudes. “Root mean square” refers to the common mathematical method of defining the effective voltage, current, or field of an AC system.

traction load during periods of train acceleration. Figure 7 depicts the time variation of the magnetic field above the catenaries and distribution circuits of the New Haven line, measured between structures B865W and B866W on the Naugatuck Avenue overpass. Variations of 4 times or more in the measured magnetic field, lasting for 1-2 minutes, were observed after the passage of east- and west-bound trains.

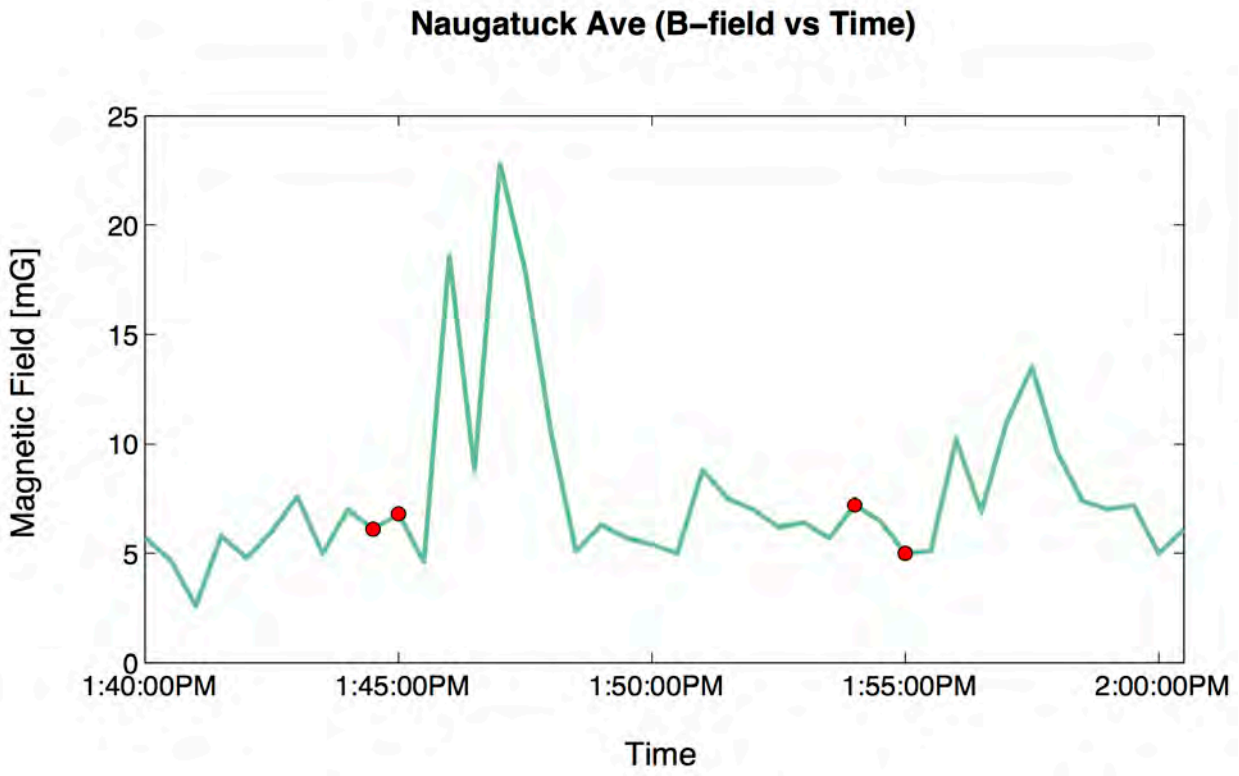

Figure 7. Time variation of magnetic field, measured on the Naugatuck Avenue overpass between structures B865E and B866W. The time of train passage under the measurement location is denoted by red markers.

Figures 8 and 9 depict measured electric fields on two spans in section MD-2 and MD-3, overlaid on the calculated electric-field profiles for these sections. Figures 10-13 likewise depict measured magnetic fields on three spans (B869-B870, B881-B882, and B885-886) overlaid on the calculated magnetic-field profiles at average load. No operational data (loading at the time of measurements) or span-specific line height data was used to refine the calculated

profiles. The data show that the unmodeled conductors of the Metro North Railroad electrical system (which are nearer to the ground) primarily affect EMF levels between the existing 88005A-2 and 89005B-2 transmission lines. For this reason, the modeled EMF profiles provide a conservative bound on project-related changes in EMF at the ROW edges.

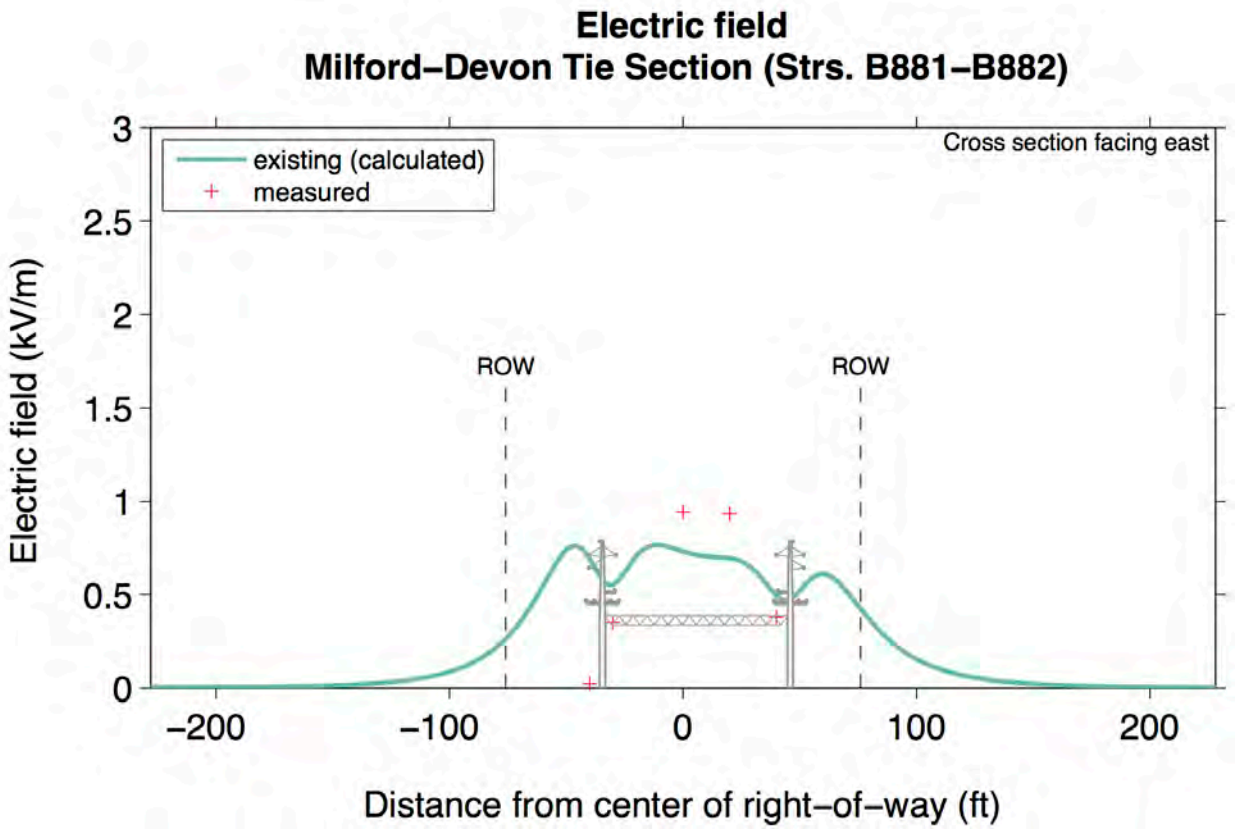

Figure 8. Measured electric-field profile of the existing transmission-line configuration between structures B881 and B882, in section MD-2.

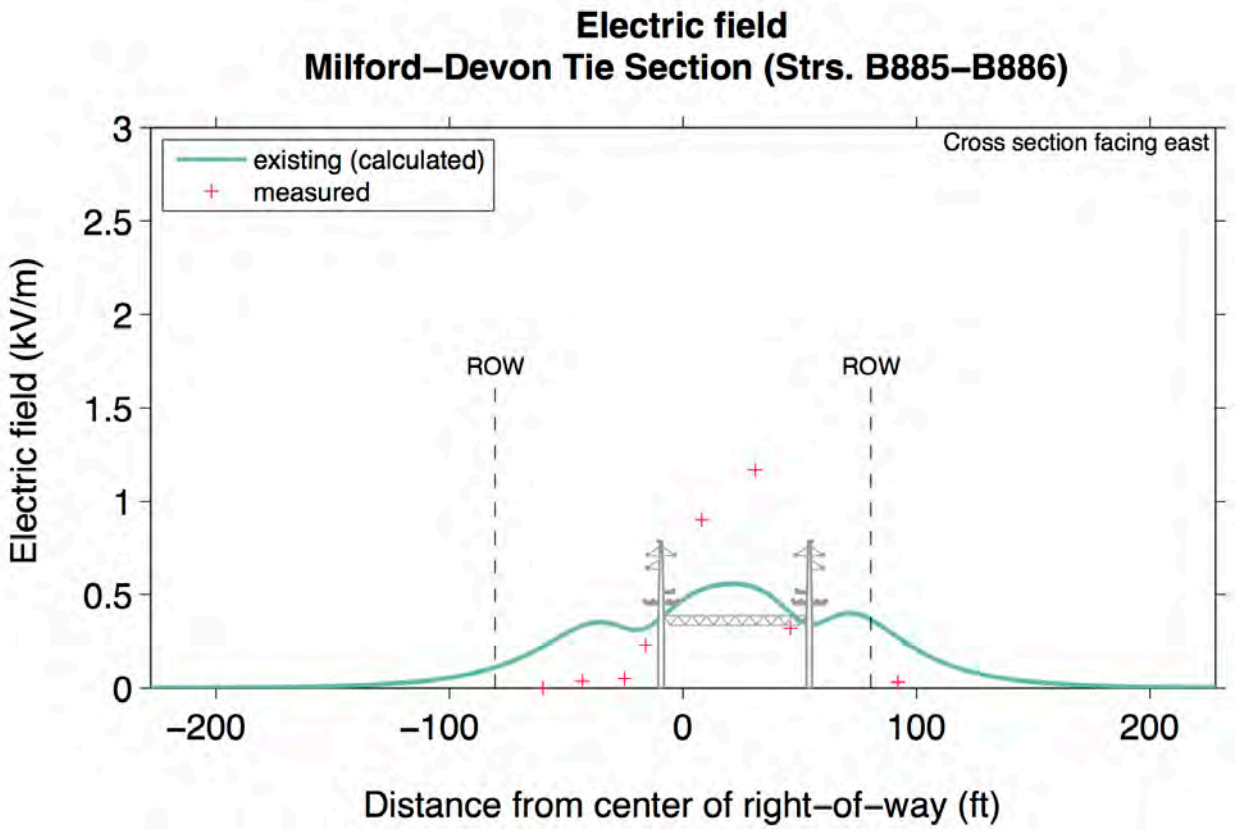

Figure 9. Measured electric-field profile of the existing transmission-line configuration between structures B885 and B886, in section MD-3.

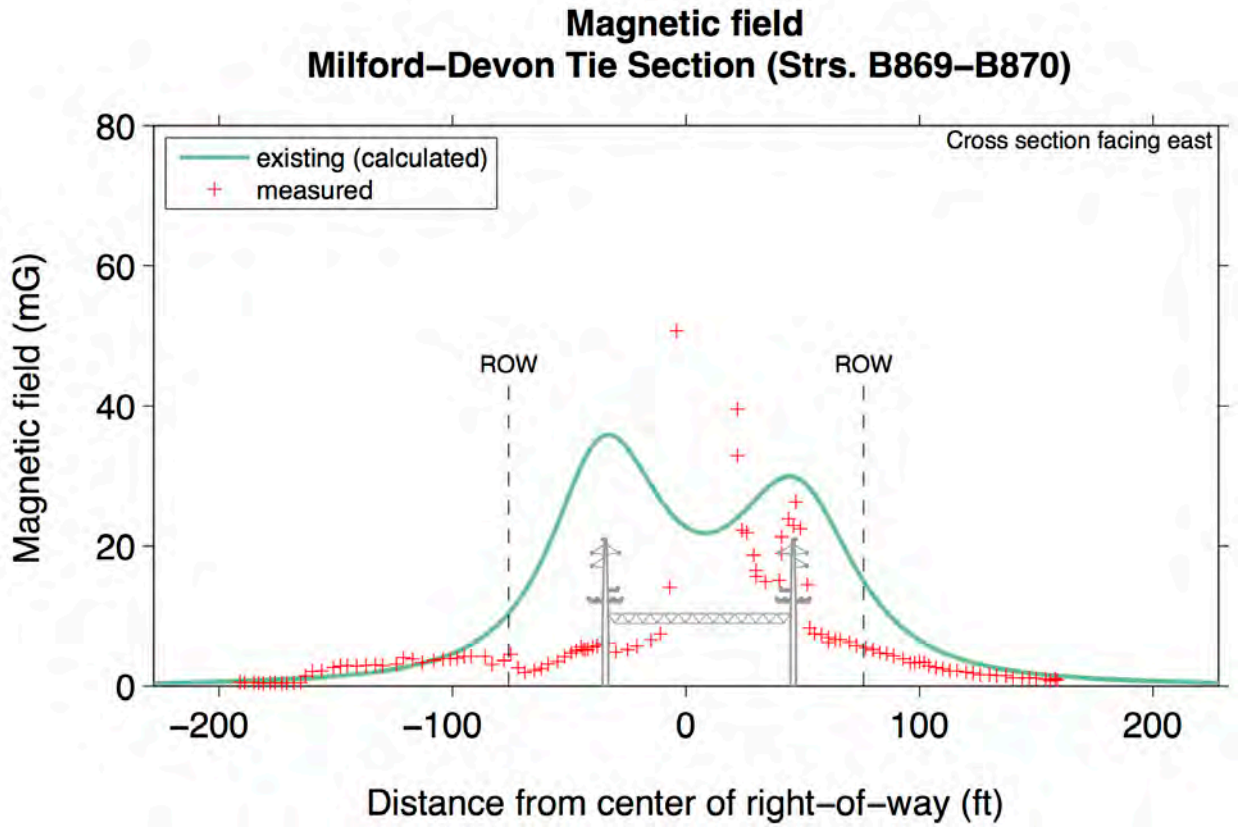

Figure 10. Measured magnetic-field profile of the existing transmission-line configuration between structures B869 and B870, between sections MD-1 and MD-2.

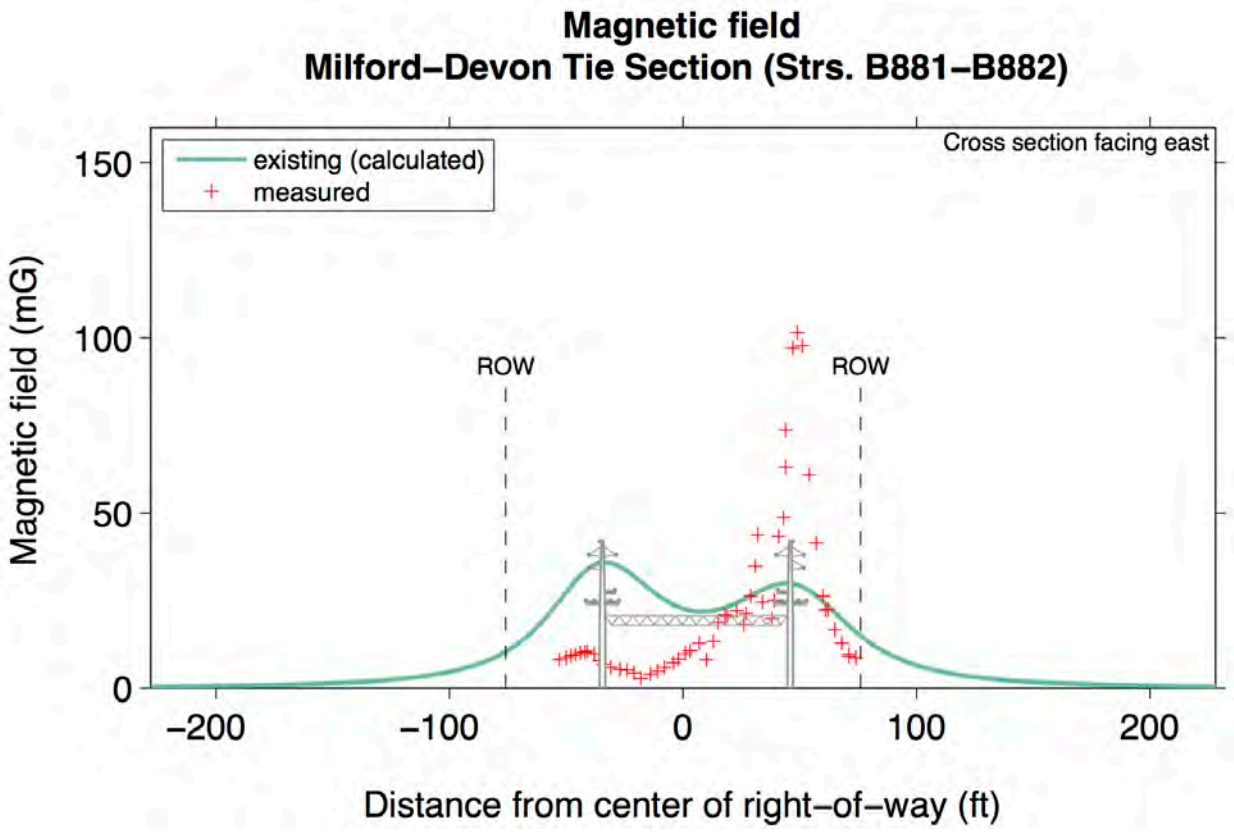

Figure 11. Measured magnetic-field profile of the existing transmission-line configuration between structures B881 and B882, in section MD-2.

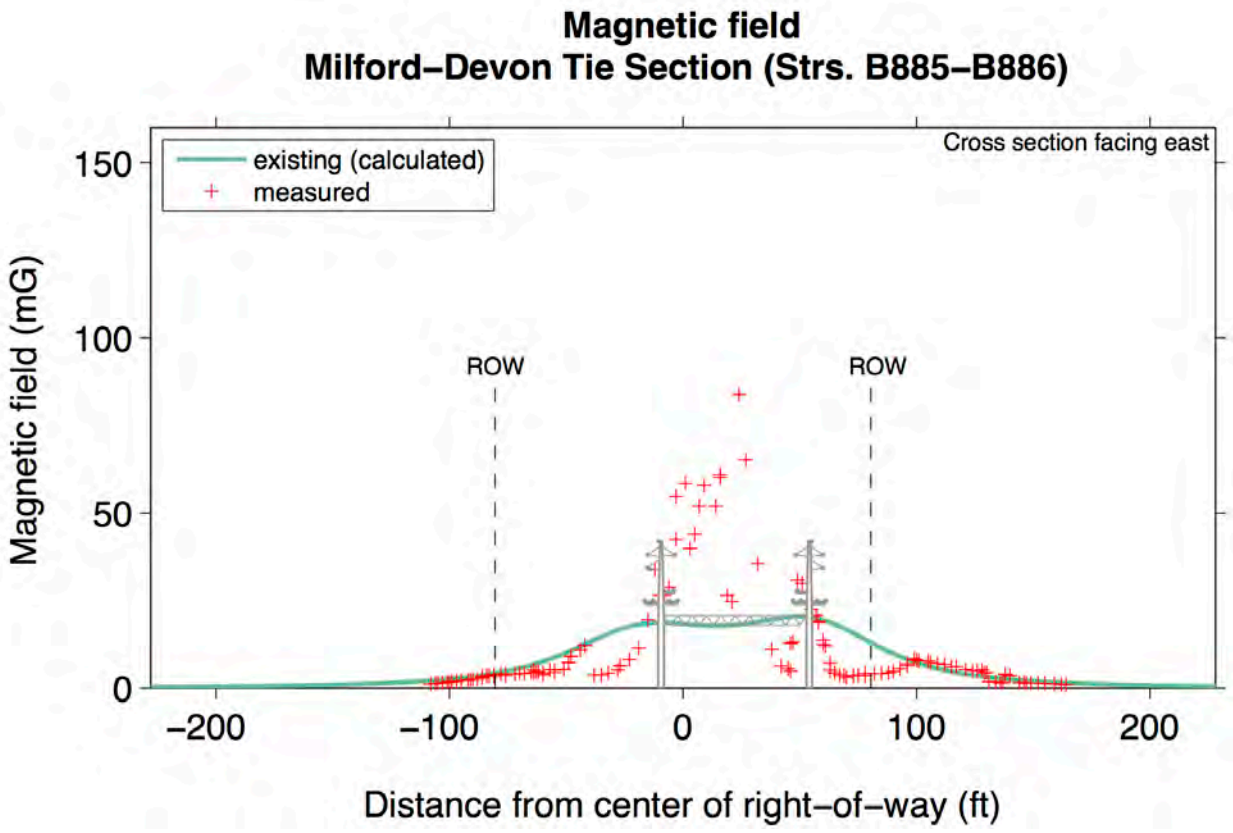

Figure 12. Measured magnetic-field profile of the existing transmission-line configuration between structures B885 and B886, in section MD-3.

Attachment F
Letters from City Officials

City of Milford, Connecticut

- Founded in 1639 -

Benjamin G. Blake
Mayor

City Hall
110 River Street
Milford, CT 06460

May 13, 2014

Samantha Marone
The United Illuminating Company
180 Marsh Hill Road
Orange, CT 06477

Dear Ms. Marone:

On March 5, 2014, representatives from The United Illuminating Company (UI) met with the City of Milford to discuss railroad upgrade projects, portions of which would occur in Milford. The three projects, the FAC-008, a compliance project, the Housatonic River Crossing and the Milvon to Devon upgrade are made necessary by the impending re-build of the railroad bridge crossing the Housatonic, and also support UI's efforts to replace existing aging transmission line infrastructure providing greater capacity and continued reliability for our region.

As long as this project strengthens the electrical system in Milford and does not impact or compromise private citizens or public needs, the City of Milford does not object to the system upgrade.

Very truly yours,

Benjamin G. Blake
Mayor

Attachment G
Signed Notice Letters

A UIL HOLDINGS COMPANY

The United Illuminating Company
180 Marsh Hill Road, Orange, CT 06477-3629
203-499-2000

July 07, 2014

Benjamin G. Blake
Mayor
City Hall
110 River Street
Milford, CT 06460

Dear Mayor Blake:

Enclosed please find a copy of the petition to the Connecticut Siting Council requesting a determination that no Certificate of Environmental Compatibility and Public Need is necessary for The United Illuminating Company's proposed Railroad Upgrade Project.

With this letter, UI is providing you notice of its proposed work activity, as described in the enclosed petition. You have 30 days from the date of this letter to send any comments or concerns to the Council at the following address:

Attorney Melanie Bachman
Acting Executive Director/Staff Attorney
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051
Phone: (860) 827-2935
E-Mail: siting.council@ct.gov

Sincerely,

Yan Lachowicz, PMP
Sr. Project Manager

Enclosures

A **UIL HOLDINGS** COMPANY

The United Illuminating Company
180 Marsh Hill Road, Orange, CT 06477-3629
203-499-2000

July 07, 2014

Dear Property Owner:

The purpose of this letter is to notify you that The United Illuminating Company (UI) is filing a petition with the Connecticut Siting Council (Council), proposing work on the Connecticut Department of Transportation's (CDOT) right-of-way (ROW) in Milford. The proposed work includes installing 44 tubular steel monopole structures within the ROW.

Transmission-owning utilities are required by the North American Electric Reliability Corporation ("NERC") to meet reliability and planning standards. UI, along with ISO-NE and CL&P, completed a long term (2018) reliability Needs Assessment of the Southwest Connecticut (SWCT) area. Based on this study the transmission lines within the current CDOT ROW in Milford need to be upgraded.

UI is required to notify town(s) and abutting property owners of its proposed activity and that town officials and abutting property owners be given 30 days to comment or express concerns to the Council. With this letter, UI is providing notice to you of its proposed work activity, as described in the enclosed petition. You have 30 days from the date of this letter to send any comments or concerns to the Council at the following address:

Attorney Melanie Bachman
Acting Executive Director/Staff Attorney
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051
Email: siting.council@ct.gov

If you would like to provide comments to the Council, please reference the enclosed Petition.

Sincerely,

Yan Lachowicz, PMP
Sr. Project Manager

Enclosure

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

PETITION OF THE UNITED ILLUMINATING COMPANY FOR A DECLARATORY RULING THAT NO CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED IS REQUIRED REGARDING UPGRADES TO 115-kV TRANSMISSION LINES IN MILFORD, CONNECTICUT	:	PETITION NO. ____ July 07, 2014

AFFIDAVIT OF SERVICE OF NOTICE

STATE OF CONNECTICUT)
) ss: Orange July 07, 2014
COUNTY OF NEW HAVEN)

BOHDAN KATRECZKO, being duly sworn, states:

1. I am the Manager of Environmental and Real Estate Services for UIL Holdings Corporation, 180 Marsh Hill Road, Orange, Connecticut ("UIL"). UIL is the parent company of The United Illuminating Company ("UI" or the "Company"). I am over the age of eighteen years and understand the obligations of making statements under oath.

2. I am familiar with *The United Illuminating Company Petition for a Declaratory Ruling that No Certificate of Environmental Compatibility and Public Need is Required for the Proposed Upgrades to the 115-kV transmission lines in Milford, Connecticut.*

3. I hereby certify, in accordance with Regulations of Connecticut State Agencies Section 16-50j-40 that a copy of the Petition concerning the proposed replacement of transmission structures on two (2) line sections from Milvon Substation to Devon Tie Switching Station in Milford, CT were mailed on July 07, 2014 to the following:

The Honorable Benjamin G. Blake
Mayor, City of Milford
City Hall, 110 River Street
Milford, CT 06460

4. Additionally, I hereby certify, in accordance with Regulations of Connecticut State Agencies Section 16-50j-40 that a copy of the Petition was mailed on July 03, 2014 to owners of property that abuts the right-of-way between Milvon substation and Devon Tie switching station. The table below lists the property owners to whom the petition was provided.

CFC Real Estate, LLC.	15 Warfield Street	Milford	CT	06461
Gannett Outdoor Co. of Connecticut	Warfield Street	Milford	CT	06461
XLO Realty, LLC	23-41 Warfield Street	Milford	CT	06461
GNN Realty, LLC	53 Warfield Street	Milford	CT	06461
Christopher & Michael Laskowski	65 Warfield Street	Milford	CT	06461
CAP Associates	75 Warfield Street	Milford	CT	06461
Ring's End, Inc	260 Rowe Avenue	Milford	CT	06461
Snowflake Realty, LLC.	1 Rowe Avenue	Milford	CT	06461
Wayne L Coury	31 Rowe Avenue	Milford	CT	06461
C.A.P. Associates	228 Rowe Avenue	Milford	CT	06461
Coury Enterprises, LLC	60 Rowe Avenue	Milford	CT	06461
200 Rowe Avenue, LLC.	200 Rowe Avenue	Milford	CT	06461
William B & Marlyss R Rzepko	90 Opal Street	Milford	CT	06461
Wayne L Coury	Rowe Avenue	Milford	CT	06461
M & R Realty Group, LLC	90 Munson Street	Milford	CT	06461
Rowe Avuenue, LLC.	William Street	Milford	CT	06461
USI II, LLC	80 Rowe Avenue	Milford	CT	06461
City of Milford	School House Road	Milford	CT	06461
Kingdom Life Christian Church, Inc	553 West Avenue	Milford	CT	06461
S 675 West Avenue LLC	675 West Avenue	Milford	CT	06461
Winkle Christian F IV Trustee	10 Schoolhouse Rd	Milford	CT	06461
City of Milford	Milford Reservoir	Milford	CT	06461
Jordan Realty, LLC	School House Road	Milford	CT	06461
Sanford Realty, LLC	750 Bridgeport Avenue	Milford	CT	06461

Bohdan Katreczko

Subscribed and sworn to before me
this 7th day of July, 2014

Notary Public/
Commissioner of Superior Court

LISA S. JOHNSON
NOTARY PUBLIC
MY COMMISSION EXPIRES SEPT. 30, 2014