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July 21, 2022

Melanie A. Bachman, Esq.
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Docket No. 3B - The United Illuminating Company Amended Certificate of Environmental Compatibility and Public Need for Replacement of a Portion of the Existing Derby – Shelton 115-kV Electric Transmission Line Facility

Dear Ms. Bachman:

Enclosed for filing with the Connecticut Siting Council (“Council”) are The United Illuminating Company’s responses to the Siting Council’s interrogatories dated July 5, 2022 (“Set 1”).

An original and fifteen (15) copies of this filing will be hand delivered to the Council.

Should you have any questions regarding this letter, please do not hesitate to contact me.

Very truly yours,



Bruce L. McDermott

Enclosures

cc: Service List

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Interrogatory CSC 1-1

The United Illuminating Company
Docket No. 3B

Witness: Leslie Downey
Page 1 of 3

Q-CSC 1-1: Referencing page 8-2 of the Overview in Support of the Motion to Reopen and Modify Docket No. 3 (OSPRM), has The United Illuminating Company (UI) received any comments on the Project from abutting property owners since the Motion to Reopen and Modify was submitted to the Council? If yes, please indicate what such comments were and how UI addressed such comments.

A-CSC 1-1: In May and June 2022, UI representatives held coordination meetings with municipal leaders from Derby, Ansonia, and Shelton. After the Mayor of Ansonia indicated that he would like UI to hold a Public Informational Meeting regarding the Project. On July 1, 2022, UI mailed postcards to abutters in all three cities and social media posts on Facebook appeared on the sites of UI, Shelton, Derby, and Ansonia advising residents of the meeting. UI held the informational meeting on July 14, 2022.

Four residents attended the 90-minute meeting, along with an official from the City of Shelton and the City Engineer from Ansonia. At the meeting, UI's Project Manager gave a PowerPoint presentation that included a detailed Project Overview, schedule, visual simulations, and route mapping. The Project Fact sheet, which includes Project contact information, was also distributed to meeting attendees. Exhibit CSC 1-1-1. The table below summarizes the comments from the meeting and UI's response to each.

Interrogatory CSC 1-1

The United Illuminating Company
Docket No. 3B

Witness: Leslie Downey
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Topic	Question	UI Response
Construction	<ol style="list-style-type: none"> 1. Will there be blasting? 2. Will there be helicopters? 3. Number of vehicles in use? 4. Will residents be notified? 5. How are the towers protected? 6. Will there be lights placed on the monopoles/towers? 7. Where and how will materials be staged? 8. Will the old towers and foundations be removed? 9. Are lines being added? 	<ol style="list-style-type: none"> 1. No blasting is anticipated 2. Helicopters are only potentially expected to be used at the Housatonic River crossing 3. Construction will be a staged operation with intermittent vehicles during typical work hours. 4. UI's field team would notify customers prior to arrival and construction information would be updated on the Project website 5. Towers are designed to withstand Cat. 3 storms and are consistent with national codes 6. Per FAA, lights are not needed 7. Contractors locate their own laydown yards. 8. Towers would be recycled, and the foundations removed 2' below grade, unless agricultural to 4'. 9. No- the 2 lines are being replaced.
EMFs	Are there EMF concerns?	<p>As part of the Project planning, UI performed extensive EM studies. EMF levels are measured ahead of time and modelled to verify that they will be within acceptable parameters. Further, the voltage would not change from the current voltage.</p> <p>Participants at the meeting were encouraged to read the EMF study that has been produced as part of the OSPRM.</p>

Interrogatory CSC 1-1

The United Illuminating Company
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General Project	Are there financial impacts to local residents?	There are no project costs that are borne by solely by local residents. With the current project design UI expects that all costs associated with this project will be shared amongst all New England electric ratepayers through typical transmission cost sharing mechanisms. As part of this arrangement UI customers would be responsible for approximately 5% of the project cost regardless of what part of the UI service territory they live in.
Environmental	<ol style="list-style-type: none"> 1. Residents detailed historic (10 years ago) issues with local vegetation management company and distribution related tree trimming 2. What are the considerations for species and wildlife? 3. How are wetlands verified as maps may be old? 	<ol style="list-style-type: none"> 1. UI committed to look into the local vegetation management company further 2. The Bald Eagle and Sedge Wren are the species of concern on CTDEEP's NDDB report. 3. Wetlands were delineated in the field as part of the Project studies.
Right of Ways	Will the ROW be reduced in the area of Reichelt Terrace since some of the towers are planned to move west of the existing centerline?	No, while the centerline of the new ROW may shift to the west the ROW width will also increase thus the eastern boundary of the ROW in this area will not change.



An AVANGRID Company

Derby Junction to Ansonia 115-kV Transmission Line Rebuild Project

CONTACT

Project Information Line: **888.848.3697**

DerbyJunctionAnsoniaTransmissionLineRebuild.com

PROJECT DESCRIPTION

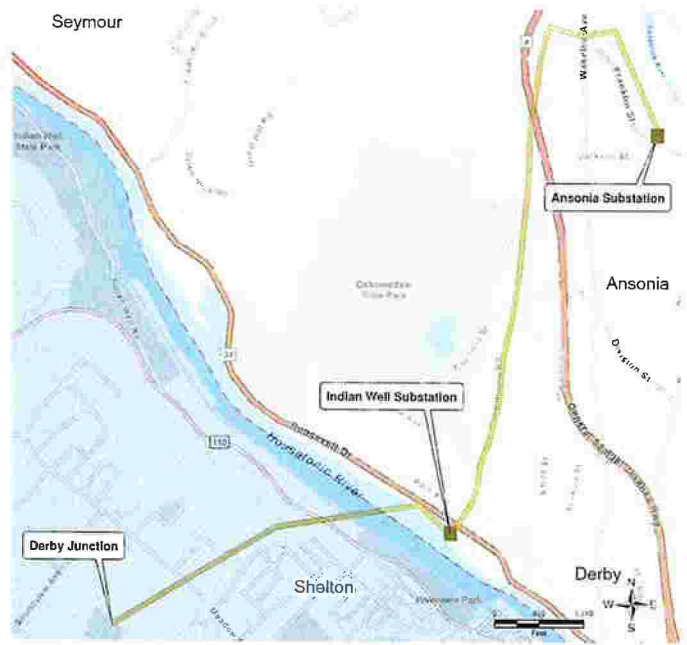
Rebuild the existing transmission lines along the 4.1-mile corridor between Derby Junction in Shelton, spanning the Housatonic River, and crossing portions of Derby and Ansonia, ending at the existing Ansonia Substation. The transmission lines presently consist of 34 double circuit lattice-type structures and 7 monopole structures. UI proposes to replace these structures with a combination of double circuit and a few single circuit steel monopoles to improve the reliability of the electric transmission system for customers in Connecticut and New England.

PROJECT NEED AND BENEFITS TO THE REGION

The existing transmission line structures were originally built in the early 1920s. Over the years, the transmission lines have been upgraded several times in response to increasing demand for electricity. Detailed engineering analyses and field inspections have determined that the lines now must be completely rebuilt to assure the continuation of reliable and resilient electric service to our community.



Typical existing lattice steel structure in Derby



PROJECT SCOPE

UI proposes to rebuild the transmission lines between Derby Junction and Ansonia Substation. These upgrades will require the following:

- Perform engineering and environmental surveys along the transmission corridor
- Prepare the corridor for construction (involving vegetation clearing and grading as necessary)
- Construct approximately 44 new steel monopoles, along with new conductors, insulators, and hardware
- Remove all existing transmission structures
- Restore (regrade, seed) the areas affected by construction

PROJECT FACTS

Municipalities: Ansonia, Shelton and Derby

Counties Impacted: New Haven and Fairfield

ESTIMATED TIMETABLE *(subject to change)*

Permitting Approvals: 1st Quarter 2023

Construction: 3rd Quarter 2023

Completion/In-Service Date: 4th Quarter 2024

Interrogatory CSC 1-2

The United Illuminating Company
Docket No. 3B

Witness: Ed Roedel
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Q-CSC 1-2: Would any federal initiatives e.g. U.S. Department of Energy "Building a Better Grid" support the proposed project? Explain.

A-CSC 1-2: UI believes that it is possible this project could meet some of the eligibility requirements of one or more Sections of the Bipartisan Infrastructure Law in that the new structures and conductors increase the resilience of these transmission lines.

UI is still in the process of understanding the full range of eligibility requirements and likely prioritization criteria for grant applications.

The company expects to have a more thorough understanding in the Fall as more information is released, and it continues to collaborate with industry groups.

Interrogatory CSC 1-3

The United Illuminating Company

Witnesses: Todd Berman
Jasun Van Horn

Docket No. 3B

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Q-CSC 1-3: What other permits are required from what other entities for the Housatonic River Crossing?

A-CSC 1-3: Table 8-1 of the OSPRM summarizes the permits anticipated to be required for the Project. Subsequent to the submission of the OSPRM, UI conducted additional consultations with both the U.S. Army Corps of Engineers (USACE), the Connecticut Department of Energy and Environmental Protection (CT DEEP), and the U.S. Coast Guard (USCG) regarding the removal of the existing 115-kV lines and the installation of the new 115-kV facilities over the Housatonic River. The results of these consultations are as follows:

USACE: The Project will file a Self-Verification Notice with the USACE for the removal from the river of one of the Structure 360 tower foundations. The rebuilt Structure 360 will be installed in an upland area. No other permits from the USACE will be required for the transmission line rebuild work over the river.

CT DEEP: No coastal permits are required above the Ousatonic Dam. 401 water quality certification would apply, however, there is no filling of wetlands anticipated.

USCG: No permitting was required through the USCG due to the lack of "no obstructions within the waterway and no addition or changes to the waterway aids".

FAA: The response from the FAA concluded the following: "the wire configuration in this location does not require further aeronautical study. If you would like to voluntarily mark the wires across the river, you can do so in accordance with the current advisory circular which is noted in the determination. This would make them more conspicuous to any low flying aircraft navigating along the river."

In addition, as explained in the OSPRM, whereas UI currently has an 80-foot-wide easement for the existing 115-kV lines over the Housatonic River, to conform to current electrical standards for blowout, an additional 160 feet of ROW will be required. The existing 80-foot-wide ROW was granted in 1924 by the Housatonic Power Company.

Interrogatory CSC 1-4

The United Illuminating Company
Docket No. 3B

Witness: MeeNa Sazanowicz
Page 1 of 2

Q-CSC 1-4: What modifications, if any, are necessary at Derby Junction to connect the UI circuits to Eversource-owned and operated facilities? Referencing page 3-12 of the OSPRM, what is the status of collaboration with Eversource for the tie-in?

A-CSC 1-4: UI is aware of Eversource's intention to rebuild its Stevenson to Pootatuck transmission lines (the 115-kilovolt 1560, 1808, and 1580 lines*), including at Derby Junction. Eversource's plans are described in Petition 1527. In addition, UI and Eversource have been holding monthly coordination meetings to discuss the projects. At these meetings, the two companies' representatives discuss engineering, construction, and any challenges with respect to the proposed designs.

UI understands that, as part of the Stevenson to Pootatuck work, Eversource plans to replace the existing Derby Junction tower (Structure 1364, which is current in a double circuit configuration) with a two-pole structure. The two new monopoles will be re-named as Structure 19624, which will support the 1560 Line, and Structure 19624A, which will carry the 1808 Line.

For the Project, UI will tap its 1560-3 circuit from Eversource Structure 19624 to the north side of UI Structure 351, which will be a double circuit single monopole configuration.

Similarly, UI's 1808-2 circuit will be tapped from Eversource Structure 19624A to UI Structure 350, which will be a single circuit H-frame structure with phases attached in a horizontal configuration. A horizontal configuration for Structure 350 will be required because the 1808 circuit will be cross underneath the 1560 circuit.

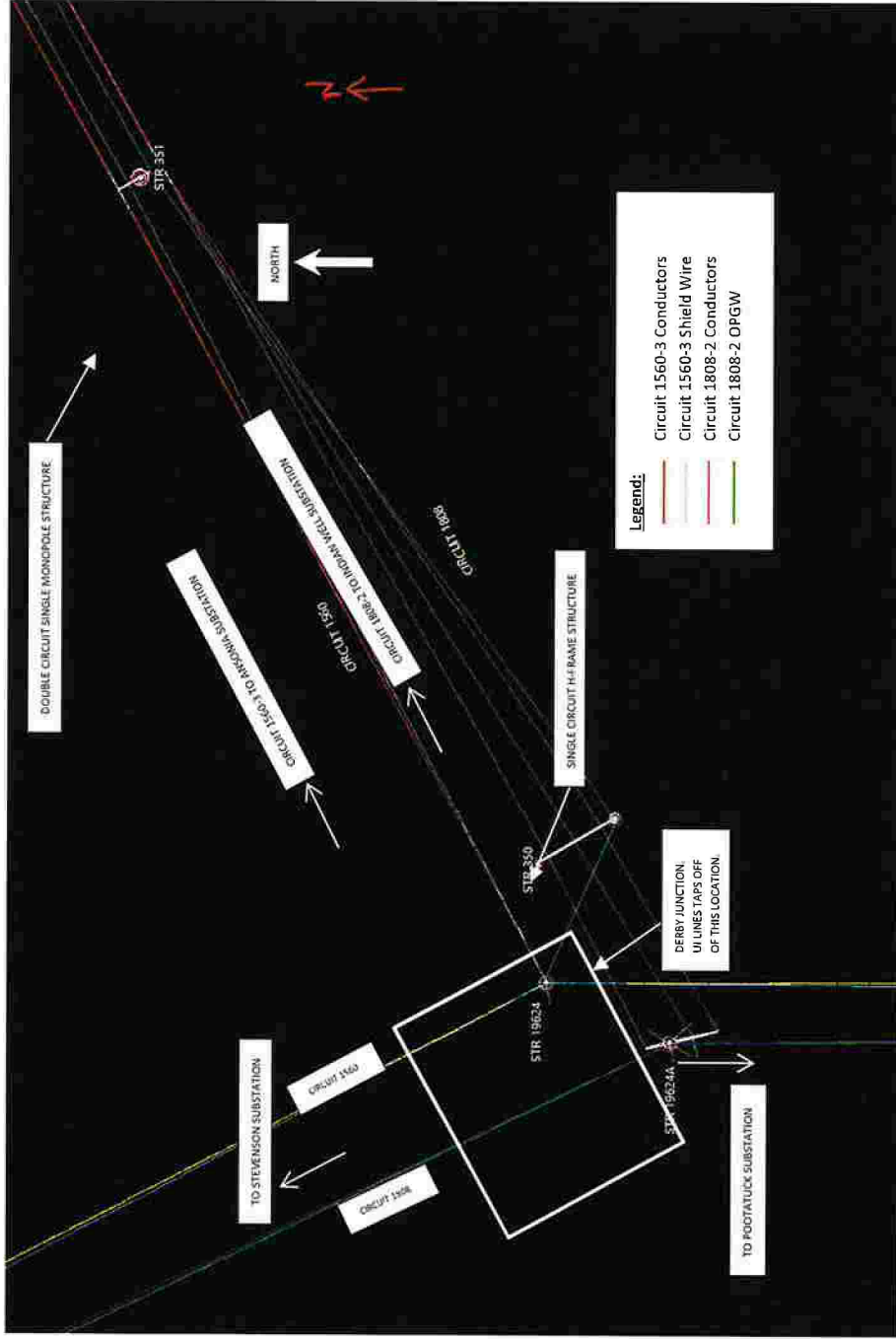
Below is a plan view of the described modifications at Derby Junction.

* At Derby Junction, UI taps into Eversource's 1560 and 1808 lines. Eversource's 1580 is located on the western portion of the Eversource ROW and is not affected by the UI work at Derby Junction.

Interrogatory CSC 1-4

The United Illuminating Company
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Witness: MeeNa Sazanowicz
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Interrogatory CSC 1-5

The United Illuminating Company

Witnesses: Matt Scully,
MeeNa Sazanowicz,
Kevin McMahon

Docket No. 3B

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Q-CSC 1-5: What other existing collocated uses (ex. wireless telecommunications equipment, water and sewer lines, etc.) are within the Project area? Would any have to be removed, relocated or modified, either temporarily or permanently, for construction of the Project?

A-CSC 1-5: In general, the proposed poles have been strategically placed to avoid any known active subsurface utilities. However, utilities adjacent to or crossing the project area include underground electrical, storm, water, sewer, communications, and gas lines. Based on the current design and the due diligence activities conducted to-date, there are no locations where underground utilities will have to be removed and relocated. UI will continue due diligence throughout the design and construction process.

Interrogatory CSC 1-6

The United Illuminating Company
Docket No. 3B

Witness: MeeNa Sazanowicz
Page 1 of 1

Q-CSC 1-6: Are the proposed monopoles capable of hosting telecommunications equipment collocations? Does UI have a policy related to telecommunications equipment collocations on its transmission line structures? If so, please provide the policy.

A-CSC 1-6: No, the proposed monopoles have not been designed to accommodate third party telecommunication equipment. No UI policy exists.

Interrogatory CSC 1-7

The United Illuminating Company
Docket No. 3B

Witness: Ed Roedel
Page 1 of 1

Q-CSC 1-7: Is the proposed project identified in any ISO-New England, Inc. (ISO-NE) needs and solutions analyses? Is the proposed project on the ISO-NE Regional System Plan (RSP), RSP Project List and/or Asset Condition List?

A-CSC 1-7: This project was not identified as part of an ISO-NE Needs and Solutions analyses; it was identified as part of an asset condition assessment performed by UI.

The project is listed in the ISO-NE RSP Asset Condition List.

Interrogatory CSC 1-8

The United Illuminating Company
Docket No. 3B

Witness: Ed Roedel
Page 1 of 1

Q-CSC 1-8: Referencing page 1-5 of the OSPRM, UI notes that it conducted engineering studies in 2020-2021 that indicated asset condition issues and National Electrical Safety Code (NESC) clearance issues and gave a presentation to ISO-NE in September 2021. Please provide a copy of ISO-NE presentation (any portions of the presentation that contain Critical Energy Infrastructure Information may be submitted with a motion for protective order).

A-CSC 1-8: A copy of the September 2021 presentation to the ISO-NE Planning Advisory Committee (PAC) is included as part of this interrogatory response. Exhibit CSC 1-8-1. The September 2021 presentation is an update to an earlier presentation given to the ISO-NE PAC in October 2019 which is also included as part of this response.* Exhibit CSC 1-8-2. The October 2019 presentation discussed the initial asset condition findings that resulted in a the partial rebuild solution being identified as the preferred alternative.

During detailed engineering design that was performed after October 2019 there were additional deficiencies that were identified as enumerated on page 1-5 of the OSPRM. These deficiencies required modifying the project scope such that a full rebuild of the transmission lines became the preferred alternative as reflected in the September 2021 presentation.

* The included copy of the October 2019 presentation has a single CELL diagram redacted that shows the local power system; a similar (but non-CELL version) is included in the September 2021 presentation.



September 22nd, 2021

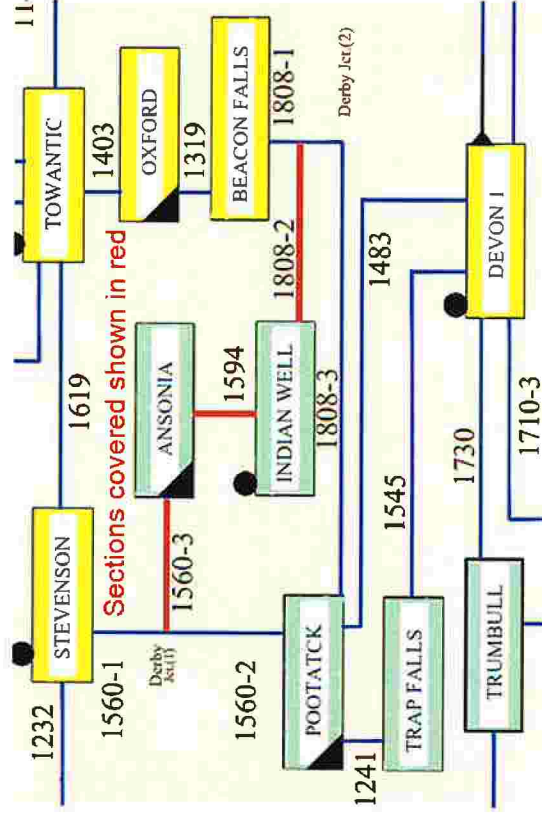
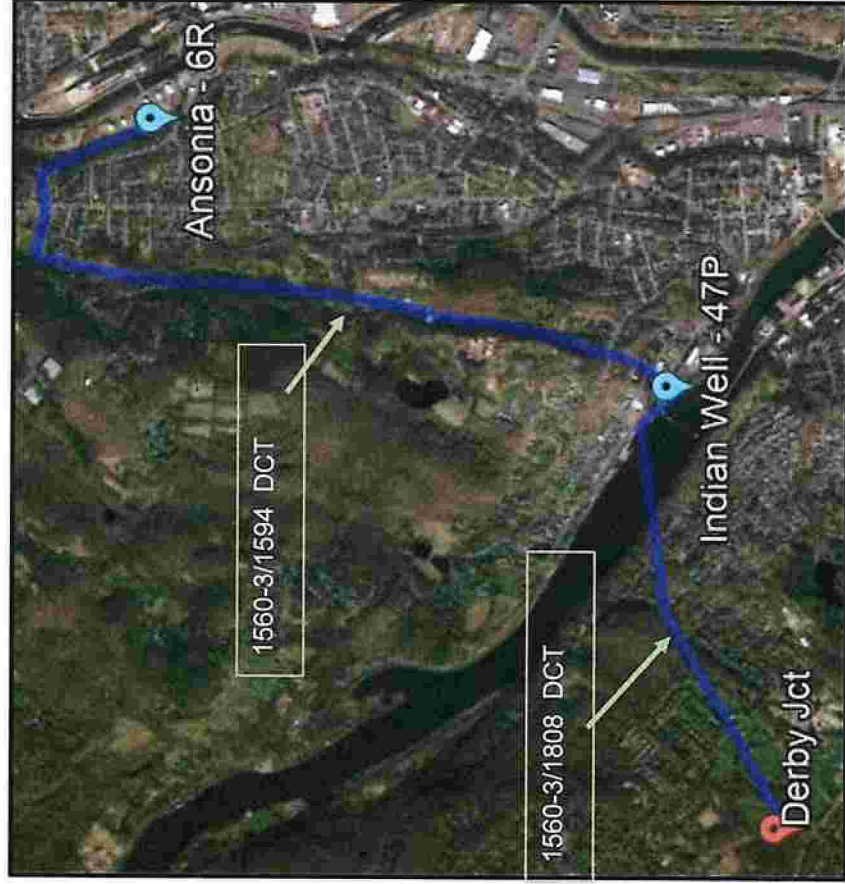
UI's 115kV Derby Junction to Ansonia Corridor Needs & Solutions Update:

PAC Presentation

Presentation to:
NEPOOL Planning Advisory Committee

Overview - Location

- There are three 115kV Lines operated in the right-of-way between Derby Junction and UI's Indian Well & Ansonia Substations.
- The 1560-3, 1594 & 1808 Lines have a total length of 8.16 circuit miles.



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Project Evolution

Background & Needs

ISO-NE PAC Presentation (10/18/2019)

- 115 kV lines consist of 34 lattice type & 7 monopole structure types (4/0 CU)
- Built in 1924 to be operated at 13.8 kV
- Upgraded to 69kV in the 1930's & to 115kV in 1968
- Foundation (cosmetic-only) repairs performed '08-'09

4/0 Conductor & Insulators determined to be at their end-of-life:

- 90+ year old conductor with observed surface contamination & pitting.
- Tensile strength tests performed indicating a loss in conductor strength capabilities.
- Sampled insulators failed electrical tests

Project Scope

Reconductor (300 kcmil ACSR) and Partial Structure Replacement (8 Monopoles)

\$22.4 M (+50/-25%)

Note (1): The following were additional needs that were identified as a result of detailed engineering activities and are left unmitigated by the original project scope-of-work.

Additional¹ Needs Identified

Engineering Activities (2020-21)

Comprehensive field / eng. inspections:

- Foundations were found to have spalling & anchor-bolt/plate galvanic corrosion
- Tension only members were found in compression.
- Deficiencies such as deflected tower peaks, bent members/tower arms, and inadequate shield-wire support were identified.
- NESC clearance violations were identified.

Structural and Foundation Analysis:

- Structural member failures identified (300 kcmil ACSR) against NESC 250B criteria.
 - The majority of foundations were identified to have concrete breakout & pull out failures (in accordance with ACI / NESC criteria)
- 80% + structures in need of replacement / refurbishment



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Solution Alternative – Assessment

Alternative #1: Partial Rebuild w/ 300 kcmil ACSR \$33.7M (+50/-25%)¹

- Includes the *replacement of 30 structures*² (structural deficiencies, footing deficiencies³, NESC clearance violations, and visual inspection failures).
- 90+ year old structures/foundations remain in-service, less robust design, and uncertainty about remaining service life.
- The partial rebuild has a more complex construction sequence as well as a higher reliability risk, and uncertainty due to the reuse of existing structures.
- The partial rebuild marginally increases the existing Summer LTE rating by approximately 8% and requires a special coating that must be maintained.
- No industry data is available to inform how often this coating has to be maintained/replaced. Increased uncertainty on how this would be maintained across the Housatonic River.

Alternative #2 (Selected): Full Rebuild w/ 795 kcmil ACSR \$36M (+50/-25%)

- This alternative replaces all structures and addresses all known deficiencies.
- The design of the line can start immediately with no need for onsite inspections or testing.
- A new standard 795 ACSR conductor and hardware can be used which increases the summer LTE rating by approximately 85%⁴.
- This alternative is comparable in cost and will extend the life of this line by a minimum of 50+ years.

Note (1): Cost estimate includes \$3.6M to replace the 12 sets of foundations (6 sets of grillage and 6 sets of pier types) with new single pole caissons.

Note (2): Replacements driven by a number of factors such as structural / footing deficiencies, NESC clearance violations, and visual inspection failures

Note (3): 6-out-of-the-12 foundations (grillage) would require additional field excavation surveys, which could undermine these 90+ year old footings. This analysis assumes that refurbishment of grillage foundations is not viable and upgrades are required.

Note (4): ACSS was evaluated but found to have unacceptable sag characteristics.



Questions



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Appendix - Key Finding Updates

Structure Modeling

- Structural modeling in PLS CADD / TOWER using NESC 1961 identified 6 towers with members exceeding their capability with the 300 kcmil conductor



Foundation Inspection

- Field inspections found a variety of deficiencies:
 - Spalling
 - Anchor-bolt/plate galvanic corrosion
- Other Foundations Issues
 - Grillage-type

Foundation Modeling

- Anchor Bolts
 - In-service anchor bolts do not have a corresponding ACI compliant pull-out calculation.
 - Non-standard anchors in tension
- Failed concrete breakout checks





Avangrid
October 24, 2019

Derby Junction to Ansonia Corridor Transmission Upgrades

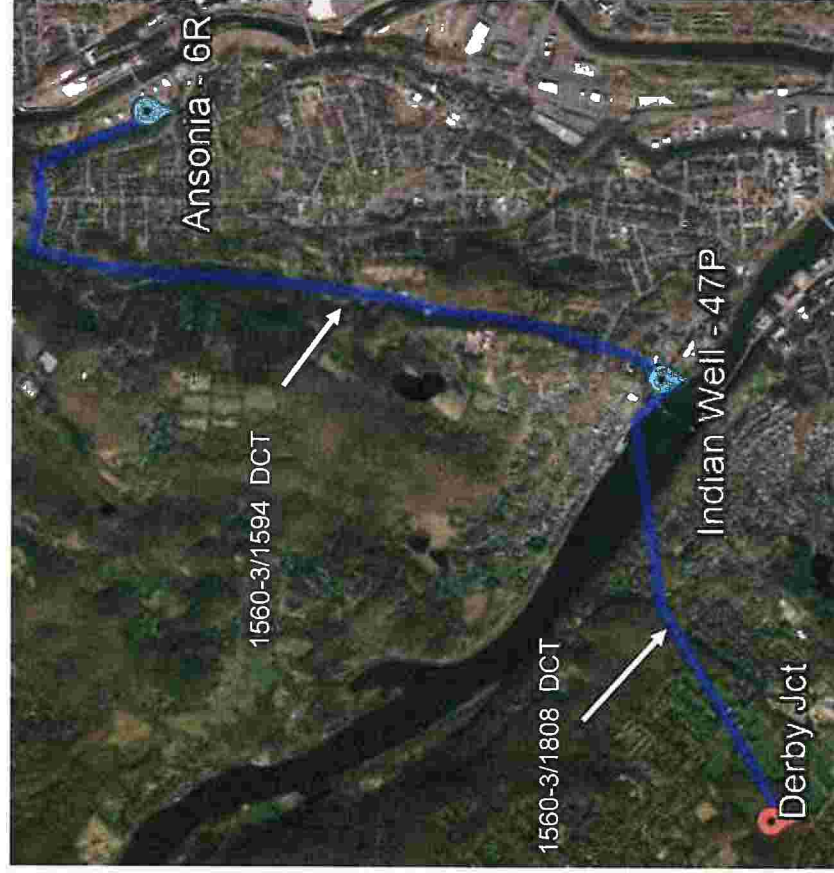
Presentation to:
Planning Advisory Committee (PAC) Meeting

Edward Roedel
Principal Engineer - Transmission Planning (CT)

Contains Critical Energy Infrastructure Information (CEII) - Do Not Distribute

Overview - Location

- There are three 115kV Lines operated in the right-of-way between Derby Junction and UI's Indian Well & Ansonia Substations.
- The 1560-3, 1594 & 1808 Lines have a total length of 8.16 circuit miles.



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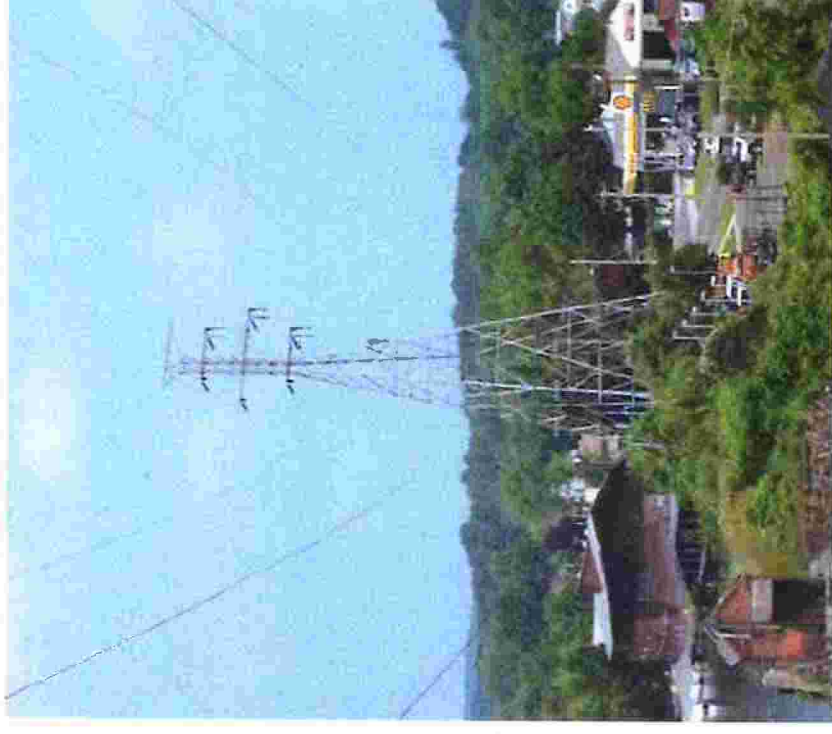


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Overview – History & Evaluation

- The lines in this right of way (ROW) consist of 34 lattice type structures and 7 monopoles primarily using 4/0 copper conductor and shield wire
- Originally built in 1924 to be operated at 13.8kV
- Upgraded to 69kV in the 1930's
- Upgraded to 115kV in 1968
- Foundation repairs completed '08-'09



Inspection & Testing

Conductor (4/0 CU)

- Evaluation of tensile strength of sample conductor section

Insulators

- Thermal-mechanical cycling and combined mechanical-electrical testing

Structures

- Climbing & visual inspections
- Mechanical loading & conductor sway simulations in PLS CADD / TOWER



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Key Findings

Conductor (4/0 CU)

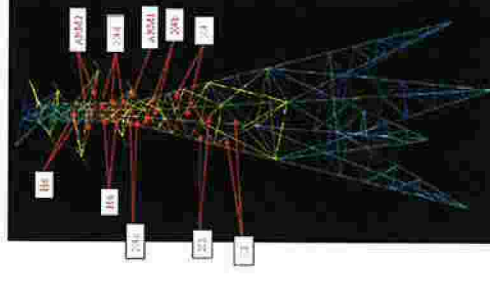
- Surface contamination and pitting observed
- The tested breaking strength of the conductor has decreased and is reaching end of life

Insulators

- Several sampled insulating bells failed electrically

Structures

- Structural modeling in PLS CADD / TOWER revealed member failure risks
- Field inspections revealed additional structural deficiencies (e.g. bent members)



Solutions

Conductors & Hardware

- Replace existing 4/0 CU conductor with 300 kcmil ACSR and associated supporting insulators
- 300 kcmil ACSR chosen based on similar physical characteristics and ampacity

Structures

- Reinforce/upgrade of structure members to meet structure loading criteria with the 300 kcmil ACSR conductor
- 8 additional monopole structures or weights needed to meet sway requirements



Options

	Option #1	Option #2	Option #3
Structures	Upgrade Existing + 8 new monopoles	Double Circuit Tower Rebuild	Single Circuit Tower Rebuild
Conductor	300 kcmil ACSR	795 kcmil ACSS	795 kcmil ACSS
+50/-25% Estimate	\$22,374,000	\$40,151,791	\$44,244,382

- Option #1 is the preferred solution
 - Replaces deteriorated conductors & insulators
 - Upgrades all structures to meet mechanical loading criteria and sway requirements



Questions



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Interrogatory CSC 1-9

The United Illuminating Company

Witnesses: MeeNa Sazanowicz
Todd Berman

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Q-CSC 1-9: Please describe how the proposed project is consistent with the recommendations of the Federal Energy Regulatory Commission and the North American Electric Reliability Corporation Report on Transmission Facility Outages During the Northeast Snowstorm of October 29-30, 2011 – Causes and Recommendations.

A-CSC 1-9: The main driver for transmission line outages during the Northeast Snowstorm of October 29-30, 2011 was due to tree contact from trees located both within and outside of the transmission right of way. A vast majority of these were healthy trees which were pulled down because of the saturated ground and heavy wet snow that accumulated on the tree and their still intact leaves.

The recommendations proposed in the report by FERC and NERC will be implemented in the proposed Project by adhering to UI's Vegetation Management Operating Procedure (Transmission Vegetation Management Procedure OP-70) which covers transmission line right of way clearing requirements, inclusive of width of clearing and danger tree removal, and has been used by the Project to ensure the transmission right of way expansion is wide enough to allow for proper vegetation management to the conductors. The expanded rights that are to be acquired by the Project will also include a provision for removal of danger trees outside of the right of way to mitigate fall ins under storm conditions such as the October 2011 snowstorm.

UI's Transmission Vegetation Management Procedure (TVMP) is based on the latest requirements of the NERC FAC-003-4 standard and is used as a best management practice and applied to all transmission right of ways, both new and existing.

Interrogatory CSC1-10

The United Illuminating Company
Docket No. 3B

Witness: MeeNa Sazanowicz
Page 1 of 1

Q-CSC 1-10: Referencing page 1-1 of the OSPRM, the 115-kV lines must be rebuilt in conformance with the NESC and UI standards. What are the NESC and UI standards?

A-CSC 1-10: The State of Connecticut adopts the newest version of the NESC as the minimum requirement for safe design, construction and operation of electric supply stations and associated supply and communications (i.e., electrical clearances and structure loading requirements). Many utilities across the country, including UI, have their own design standards exceeding the minimums laid out in the NESC. For example, UI standard structure loading criteria includes Category 3 wind loading, as a result of recent hurricanes and future climate change.

Interrogatory CSC 1-11

The United Illuminating Company

Witnesses: MeeNa Sazanowicz
Sathish Konduru

Docket No. 3B

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Q-CSC 1-11: Referencing page 2-6 of the OSPRM, please explain in further detail what is meant by "[S]ingle-circuit monopoles will be installed...as required to correctly align the phases of different circuits to the existing line terminal switches in each substation yard."

A-CSC 1-11: Current line termination transmission pole to the South of Indian Well substation is not directly located in front of the substation line termination structure. As part of the proposed design, a new pole is needed to be located in-line with the substation line terminal, so that line angle is reduced on the substation line terminal structure. Similarly, double circuit monopole to the North of Ansonia substation is located such a way that similar line angles are maintained on the substation line termination structures.

Interrogatory CSC 1-12

The United Illuminating Company

Witnesses: Todd Berman
Jasun Van Horn

Docket No. 3B

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Q-CSC 1-12: Referencing Section 9-4 of the OSPRM, what is the status of coordination with DEEP regarding the proposed expansion of the ROW across Osbornedale State Park?

A-CSC 1-12: UI has been actively coordinating with CT DEEP regarding the proposed expansion of the 1,465-foot section of the ROW across Osbornedale State Park. UI's consultant, Robert Klee (Klee Sustainability Advisors LLC), has corresponded with CT DEEP representatives via e-mail to organize various meetings regarding the existing 115-kV lines and the proposed alignment of the rebuilt transmission lines across the State Park. UI has formally presented its proposed expansion of the ROW across Osbornedale State Park to CT DEEP through an *Application for Review of Land Management Request on State-Owned Land or Water* ("Land Management Application").

To date, the following consultations have been conducted between UI and CT DEEP:

May 9, 2022: UI held a pre-application meeting (teleconference) with CT DEEP representatives, facilitated by CT DEEP's Client Concierge Service. The purpose of the meeting was to inform CT DEEP about the proposed Project, the proposed expansion of the ROW across Osbornedale State Park, the status of UI's submission to the Council, and UI's plan to submit to CT DEEP a Land Management Application. The tele-meeting included the agency personnel likely to be involved in the review of the Land Management Application, including representatives from CT DEEP's Commissioner's Office, Office of Planning and Program Development, Land Acquisition and Management, Wildlife, Forestry, Parks, and Stormwater.

May 25, 2022: UI submitted to CT DEEP its Land Management Application regarding the proposed ROW expansion, incorporating feedback from CT DEEP from the pre-application meeting.

June 16, 2022: UI held a follow-up teleconference with CT DEEP's Office of Land Acquisition and Management to discuss any questions regarding the application and the next steps to move forward with the Land Management Application process. UI has agreed to conduct a field investigation of the proposed ROW expansion area to gain a better understanding of the types, sizes, and ages of trees in the forested area where the expansion of the ROW will take place and of the understory vegetation. UI has also agreed to coordinate its land survey activities with CT DEEP to ensure that the survey of the area of the ROW in the State Park meets the CT DEEP's survey requirements. UI and the Office of and Management are also exploring options for differential approaches to

Interrogatory CSC 1-12

The United Illuminating Company

Witnesses: Todd Berman
Jasun Van Horn

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vegetation management in different zones of the utility ROW (e.g., directly under the wires versus on the edge of the ROW), which would allow for lessened or delayed tree cutting, and post-construction planting in certain zones in support of CT DEEP's ecosystem management priorities (e.g., planting for habitat for pollinator or other species).

June 29, 2022: UI held a teleconference with representatives of the CT DEEP Natural Diversity Data Base to discuss the existing habitat on the ROW and in the proposed ROW expansion area within the State Park, as well as the potential that a listed plant species (not otherwise identified on publicly available information) to be present within the State Park in the Project area. Although UI was not formally required to undergo an additional NDDB determination with respect to this species, in the spirit of cooperation and in minimizing harm to species of interest, UI and DEEP agreed to (1) investigate whether this species may be present in the forested area adjacent to the existing ROW, (2) undertake efforts to minimize impacts on this species if found (including relocating the species as feasible), and (3) explore ways to enhance the local forested area to the benefit of this species, even if it is not found in or near the ROW. UI received notice on July 13, 2022, that after a desktop review of photos and maps provided by UI, CT DEEP's botanist concluded that the ROW expansion area did not contain a specific traprock vein associated with this listed plant species, and that further surveying for this species was not required.

July 19, 2022: UI will held a teleconference with representatives of the CT DEEP Commissioner's Office, Land Acquisition and Management, Parks, and Forestry regarding potential mitigation strategies to offset forest loss from the proposed ROW expansion in the State Park. This conversation explored mitigation options including a conservation easement on 3.5 acres UI property adjacent to the State Park; a revegetation plan for the entire ROW in the State Park to support CT DEEP's ecosystem management goals; tree planting in the State Park, to support the Park and Forestry Divisions' management goals; a beneficial reuse and recovery plan for any trees cut due to the ROW expansion (e.g., for park benches or firewood); exploration of potential mitigation of visual impacts in the State Park from the new transmission infrastructure; potential funding for enhanced recreational use or habitat restoration in the State Park.

Interrogatory CSC 1-13

The United Illuminating Company

Witnesses: MeeNa Sazanowicz
Annette Potasz

Docket No. 3B

Page 1 of 1

Q-CSC 1-13: Referencing page 2-8 of the OSPRM, in both existing and expanded easement areas, would any existing sheds, outbuildings, or other structures have to be removed for the construction of the Project? Are there any uses that are incompatible with the UI easement?

A-CSC 1-13: Based on the design and construction plans, existing sheds, outbuildings, or other structures will not be removed since they will not be interfering with the construction.

Within the existing and expanded easement area, UI will allow existing facilities (sheds, garages, pools, etc.) to remain but as part of the easement acquisition process would only allow rebuilding in the ROW within 18 months if those existing facilities were substantially damaged or destroyed.

Interrogatory CSC 1-14

The United Illuminating Company

Witnesses: Anette Potasz
Kevin McMahon
Ed Roedel

Docket No. 3B

Page 1 of 1

Q-CSC 1-14: For Project work to be completed within the ROW at present and in the future, are the costs associated with removal and/or rebuilding of sheds, outbuildings or other structures borne by the ratepayers? Have these costs been factored into the total Project cost?

A-CSC 1-14: As indicated in the response to CSC 1-13, the current design and construction plans for this project do not identify any existing sheds, outbuildings, or other structures that must be removed, so there are no costs associated with those activities included in the current Project cost.

Interrogatory CSC 1-15

The United Illuminating Company

Witnesses: MeeNa Sazanowicz
Todd Berman

Docket No. 3B

Page 1 of 1

Q-CSC 1-15: Referencing page 9-22 of the OSPRM, what is the status of the analysis for the use of temporary structures? What is the cost to use temporary structures?

A-CSC 1-15: After the submission of the OSPRM, UI analyzed the feasibility of using temporary structures to allow the installation of double-circuit monopoles (instead of the proposed two single-circuit monopoles) at Structures 3, 4, 17, 18, and 19. As a result of these investigations, UI determined that a double-circuit monopole can feasibly be installed at Structure 4 and now proposes this as the preferred configuration for Structure 4.

Exhibit CSC 1-15-1 provides details regarding the analysis, including UI's justification for selecting the double-circuit configuration for Structure 4 and for determining that a double-circuit monopoles, installed using temporary structures, is not practical at Structures 3, 17, 18, and 19.

Exhibit CSC 1-15-1 also provides updated maps, cross-sections, visual simulations, and EMF analyses for the now preferred Structure 4 double-circuit monopole configuration.

Background and Proposed Modification to Structure 4 Design

Because the Project's transmission lines provide critical electric service to customers in the Shelton-Ansonia area, one of the existing 115-kV lines between Derby Junction, Indian Well Substation, and Ansonia Substation must remain in service at all times during Project construction. The inability to take a dual-circuit outage on the lines during construction poses significant constraints; and was a key factor in the Project design; and is a significant consideration in construction and tower de-construction planning.

As detailed in the Exhibit, Overview in Support of the Petition to Reopen and Modify Docket No. 3 ("OSPRM"), UI proposed to replace five of the existing double-circuit lattice steel towers (Structures 3 and 4 in Derby and Structures 17, 18, and 19 in Ansonia) with paired single-circuit monopoles instead of the double-circuit monopoles that are planned for the rest of the Project.¹ At these five locations, the ROW is characterized by steep topography, line angles, and/or directly bordering densely-developed residential/commercial uses – all factors that complicate the installation of the rebuilt 115-kV structures while keeping one line in service

As described in Section 9.5 of the OSPRM, UI determined that an alternative to rebuilding Structure Nos. 3, 4, 17, 18, and 19 on paired single-circuit monopoles while still maintaining one of the 115-kV lines in service during Project construction would be to erect structures to temporarily support one of the circuits.

Using this alternative, temporary structures would be installed within the ROW near each of the five existing lattice steel towers. The in-service 115-kV line would be transferred to these temporary structures during the rebuild work, thereby avoiding a dual-circuit outage. This could potentially allow the installation of double-circuit monopoles to rebuild the lines at these five locations. The temporary poles would be removed after the one of the new 115-kV lines is energized and the remaining line (the circuit supported on the temporary poles) is taken out of service.

At the time that the OSPRM was filed with the Council, UI was in the process of performing further analyses of the potential use of double-circuit monopoles at these five locations and anticipated that the alternative approach could have merit for allowing the installation of double-circuit monopoles at Structure Nos. 4 and 17 in particular.

Subsequently, UI completed further engineering and constructability studies of the five structures and determined that only Structure No. 4 can be rebuilt in a double-circuit

¹ The use of the single-circuit monopoles will facilitate construction by allowing one of the 115-kV circuits to be rebuilt on a new single-circuit structure and then placed in service, after which the second circuit will be taken out of service and rebuilt on the second single-circuit monopole.

configuration. No temporary poles will be required because this Structure was able to be placed west of the existing lattice tower, which also shifted the wires west but did not place the wires directly over adjacent buildings. This shifted location will not impact the construction sequence or overall timeline, so it will be incorporated into the preferred Project design.

The alternative double-circuit configuration for Structure No. 4 is illustrated on the revised 1"=400' (Attachment A) and 1"=100' aerial maps (Attachment B and C), as well as on a revised Cross-Section 5A (Attachment D). In addition, the double-circuit configuration at Structure 4 is depicted on the attached visual simulation (Attachment E).

The revised 1"=400' (Attachment A) and 1"=100' aerial maps (Attachment B) are to replace existing maps as follows:

- 1"=400' Scale Map 2 (Attachment A) is to replace Map 2 in Appendix A.3 of the OSPRM.
- 1"=400' Scale Map 3 (Attachment A) is to replace Map 3 in Appendix A.3 of the OSPRM
- 1"=100' Scale Map 7 (Attachment B) is to replace Map 7 in Appendix A.4 of the OSPRM
- 1"=100' Scale Map 8 (Attachment B) is to replace Map 8 in the Appendix A.4 of the OSPRM
- 1"=100' Scale Maps 11 and 12 and the associated owner/direct abutter lists (Attachment C) are to replace Maps 11 and 12 and Owner lists in Appendix A.4 of the OSPRM

Summary of Findings Regarding Structures 3, 17, 18, and 19 and Use of Temporary Structures

UI determined that the use of temporary structures and the installation of one double-circuit monopole, in lieu of the dual single circuit monopoles, at Structures 3, 17, 18, and 19 would be impractical and cost-ineffective for the following reasons:

1. The primary design philosophy for the installation of the rebuilt 115-kV facilities in these tightly constrained residential areas was to ensure that under NESC and UI clearance requirements, displaced wire positions are not directly over existing homes and buildings.
2. Even with the installation of temporary structures and construction at these locations, maintaining proper clearances of a new double circuit monopole to the energized circuit during construction would mean placement would be such that the new conductors would shift closer to or over buildings on adjacent properties.

3. In areas, such as Structure 18, the space is tightly constrained by a parking lot to the north, Wakelee Avenue to the east, and residential property to the south. To maintain safe working clearances to the energized circuit, the temporary pole would need to be placed on adjacent private property.
4. The single-circuit monopole locations, as presently designed for Structures 3, 17, 18, and 19, are strategically placed based on a construction and outage sequence that is efficient in ability to place new foundations, erect new poles, and dismantle the existing with one circuit energized. Temporary construction in these locations would significantly impact the construction schedule and sequence by requiring flipping between outages on two circuits, and additional construction steps to enable safe construction and decommissioning of the structures.
5. Other challenges include the need for guying on the temporary structures where there are large line angles, especially at Structures 17 and 19. In such locations, having guy wires will not only interfere with the other 115-kV circuit that would be energized, but also would hinder the construction activities.

UI did not complete a detailed cost estimate for the use/installation of the temporary structures (as would be required to support one of the 115-kV lines) because the overall use in these four locations would, overall, pose design, safety, and constructability concerns that make the approach impractical. However, a minimal conceptual (+200% / -50%) estimate is \$3.5M for the use/installation of the temporary structures.



Project Area is within the designated CT DEEP Coastal Boundary in the City of Shelton

Map Legend

- Proposed Structure To Be Removed
- Existing Structure Connected to 115-kV Facilities
- Proposed Centerline of Rebuilt 115-kV Line
- Existing Substation Connected to 115-kV Facilities
- Proposed Additional ROW
- Trail
- Municipal Boundary
- County Boundary
- Aquifer Protection Area
- Delimited Stream
- Delimited Tidal Wetland
- Delimited Wetland
- FEMA Floodway
- FEMA 100-Year Floodplain
- FEMA 500-Year Floodplain
- Natural Diversity Database Area
- Park/Recreation Area
- Community Facility
- 10% Contour
- Parcel Boundary
- UI Owned Land
- State Owned Land

Derby Junction to Ansonia 115-kV Transmission Line
Rebuild Project
 CITIES OF SHELTON, DERBY, AND ANSONIA
 Proposed Route

0 400 Feet
 1" = 400'

Received: 2022-02-28

Map Legend

- Proposed Structure To Be Removed
- Existing Structure Connected to 115-kV Facilities
- Proposed Centerline of Rebuilt 115-kV Line
- Existing Substation Connected to 115-kV Facilities
- Proposed Additional ROW
- Trail
- Municipal Boundary
- County Boundary
- Aquifer Protection Area
- Delimited Stream
- Delimited Tidal Wetland
- Delimited Wetland
- FEMA Floodway
- FEMA 100-Year Floodplain
- FEMA 500-Year Floodplain
- Natural Diversity Database Area
- Park/Recreation Area
- Community Facility
- 10% Contour
- Parcel Boundary
- UI Owned Land
- State Owned Land

Derby Junction to Ansonia 115-kV Transmission Line
Rebuild Project
 CITIES OF SHELTON, DERBY, AND ANSONIA
 Proposed Route

0 400 Feet
 1" = 400'

Received: 2022-02-28

Map Legend

- Proposed Structure To Be Removed
- Existing Structure Connected to 115-kV Facilities
- Proposed Centerline of Rebuilt 115-kV Line
- Existing Substation Connected to 115-kV Facilities
- Proposed Additional ROW
- Trail
- Municipal Boundary
- County Boundary
- Aquifer Protection Area
- Delimited Stream
- Delimited Tidal Wetland
- Delimited Wetland
- FEMA Floodway
- FEMA 100-Year Floodplain
- FEMA 500-Year Floodplain
- Natural Diversity Database Area
- Park/Recreation Area
- Community Facility
- 10% Contour
- Parcel Boundary
- UI Owned Land
- State Owned Land

Derby Junction to Ansonia 115-kV Transmission Line
Rebuild Project
 CITIES OF SHELTON, DERBY, AND ANSONIA
 Proposed Route

0 400 Feet
 1" = 400'

Received: 2022-02-28

Map Legend

- Proposed Structure To Be Removed
- Existing Structure Connected to 115-kV Facilities
- Proposed Centerline of Rebuilt 115-kV Line
- Existing Substation Connected to 115-kV Facilities
- Proposed Additional ROW
- Trail
- Municipal Boundary
- County Boundary
- Aquifer Protection Area
- Delimited Stream
- Delimited Tidal Wetland
- Delimited Wetland
- FEMA Floodway
- FEMA 100-Year Floodplain
- FEMA 500-Year Floodplain
- Natural Diversity Database Area
- Park/Recreation Area
- Community Facility
- 10% Contour
- Parcel Boundary
- UI Owned Land
- State Owned Land

Derby Junction to Ansonia 115-kV Transmission Line
Rebuild Project
 CITIES OF SHELTON, DERBY, AND ANSONIA
 Proposed Route

0 400 Feet
 1" = 400'

Received: 2022-02-28



Westwood

Map 2 of 4 - Alternate Structure 4
 Double Circuit Monopole



Map Sheet 9
Map Sheet 8

Map Sheet 7
Map Sheet 8



Map Legend

- Proposed Structure
- Existing Structure To Be Removed
- Proposed Centerline of Rebuilt 115-kV Line
- Proposed Additional ROW
- Proposed Temporary Work Pad

- Municipal Boundary
- County Boundary
- Tree Clearing Area
- Delineated Stream
- Delineated Wetland
- Park/Recreation Area
- Community Facility
- .10ft Contour

- ZR Contour
- Parcel Boundary
- UI Owned Property
- Derby Zoning
- P
- R-4
- R-5

Derby Junction to Ansonia 115-kV Transmission Line Rebuild Project
CITIES OF SHELTON, DERBY, AND ANSONIA
Proposed Route

0 100 200 Feet
1" = 100'

Revised: 2015-06-29



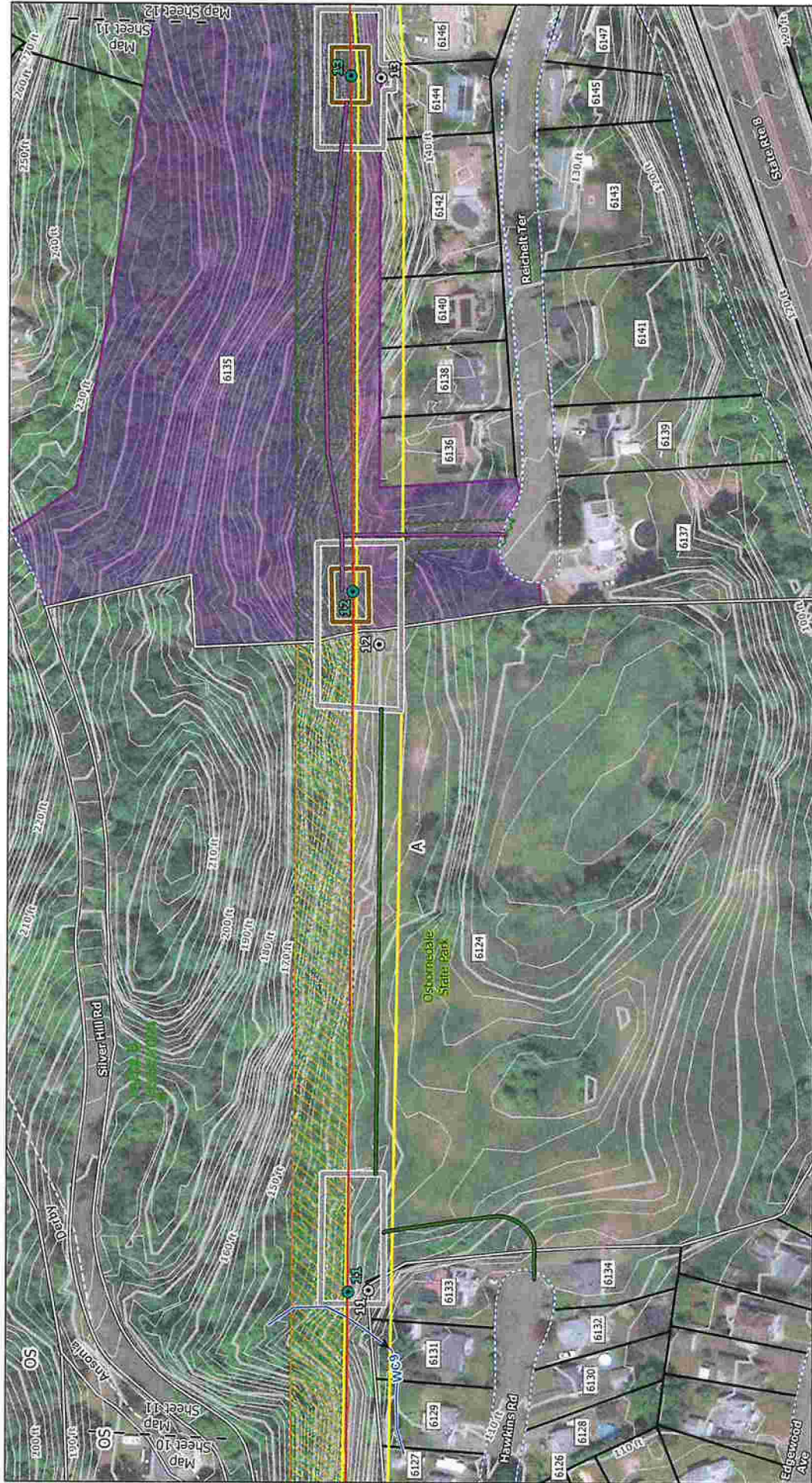
Westwood

Map 8 of 16 - Alternate Structure 4
Double Circuit Monopole

ATTACHMENT C TO EXHIBIT CSC 1-15-1

DERBY JUNCTION TO ANSONIA 115-KV TRANSMISSION LINE REBUILD PROJECT
 Mapsheet 11 of 16 – Owner/Direct Abutter List

Line List Number	City	Site Address	Owner Name
DA 6124	Ansonia	17 Silver Hill Road	State of CT
DA 6126	Ansonia	8 West Road	Matthew J. Morse
DA 6127	Ansonia	3 Hawkins Road	Paul Emutis
DA 6128	Ansonia	6 Hawkins Road	Jack W. Waterbury
DA 6129	Ansonia	5 Hawkins Road	Phyllis Dawn Berry
DA 6130	Ansonia	8 Hawkins Road	Jennifer M. DeLeon
DA 6131	Ansonia	7 Hawkins Road	Tracy A. Henri
DA 6132	Ansonia	10 Hawkins Road	Diane S. Mazzola
DA 6133	Ansonia	9 Hawkins Road	Zoey Lynn Potter
DA 6134	Ansonia	12 Hawkins Road	Drew Dorfinger
DA 6135	Ansonia	35 Silver Hill Road	United Illuminating Company
DA 6136	Ansonia	16 Reichelt Terrace	Josephine A. McDermott
DA 6137	Ansonia	17 Reichelt Terrace	Carlos J. Gomez
DA 6138	Ansonia	14 Reichelt Terrace	Terri A. Sells
DA 6139	Ansonia	15 Reichelt Terrace	Pon Praseutsack
DA 6140	Ansonia	12 Reichelt Terrace	Daniel Weller
DA 6141	Ansonia	11 Reichelt Terrace	Zane H. St. Pierre
DA 6142	Ansonia	8 Reichelt Terrace	Patricia Reynolds
DA 6143	Ansonia	7 Reichelt Terrace	Robert W. Reichelt
DA 6144	Ansonia	6 Reichelt Terrace	Ronald Tarini
DA 6145	Ansonia	5 Reichelt Terrace	Amy L. Taber
DA 6146	Ansonia	4 Reichelt Terrace	María Ciliberti Cotas
DA 6147	Ansonia	3 Reichelt Terrace	Dorian Damico



Map Legend

- Proposed Structure
- Existing Structure To Be Removed
- Proposed Centerline of Rebuilt 115-kV Line
- Existing ROW
- Proposed Additional ROW
- Proposed Permanent Access Road
- Proposed Temporary Access Road
- Proposed Temporary Work
- Proposed Permanent Work
- Proposed Boundary
- County Boundary
- Tree Clearing Area
- Delineated Stream
- Park/Recreation Area
- 10ft Contour
- 2ft Contour
- Parcel Boundary
- UI Owned Property
- State Owned Land
- Ansonia Zoning
- Derby Zoning
- OS

Derby Junction to Ansonia 115-kV Transmission Line Rebuild Project
CITIES OF SHELTON, DERBY, AND ANSONIA
Proposed Route

Westwood AVANGRID

Map 11 of 16

1" = 100' Feet

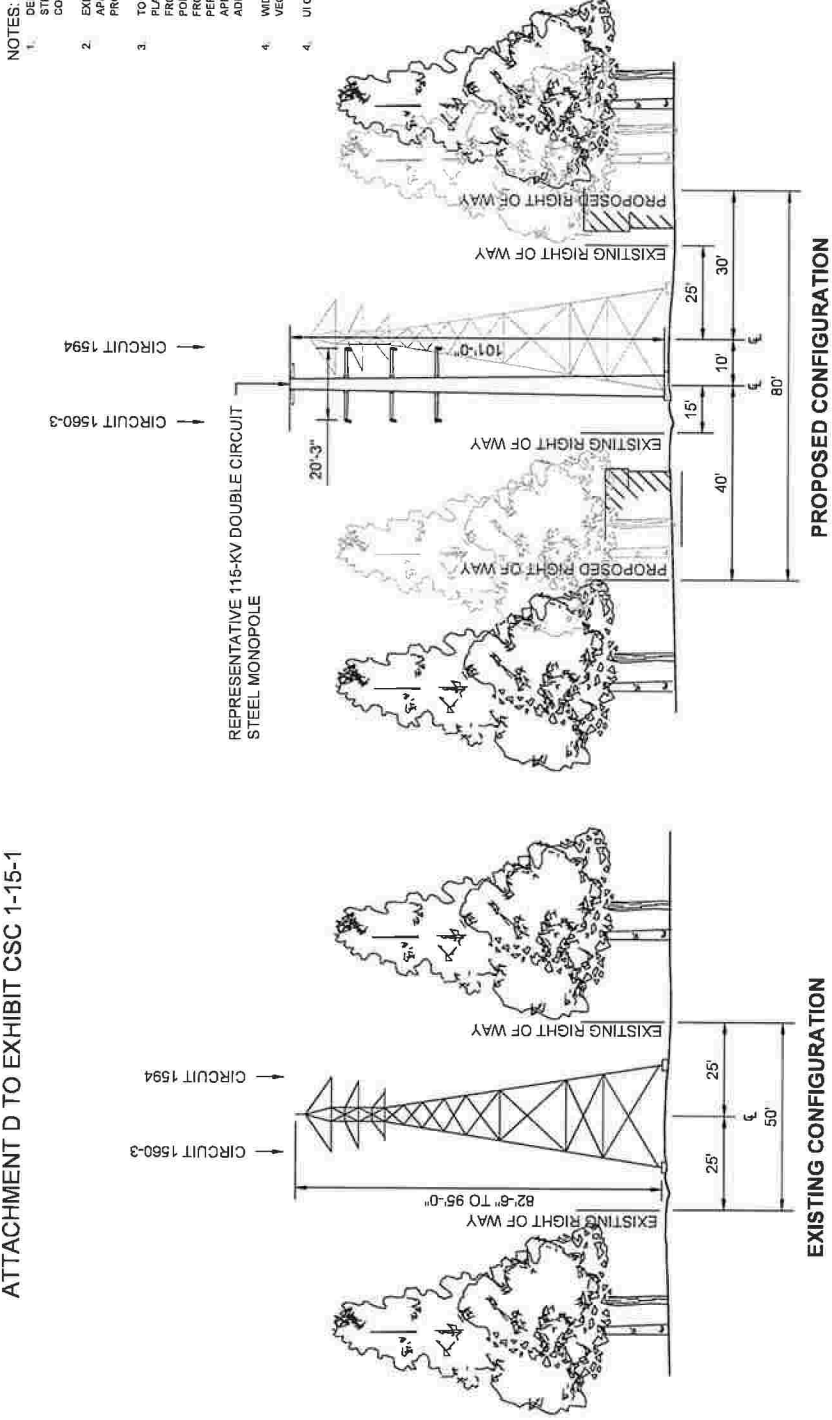
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Revised: 2022-07-26

DERBY JUNCTION TO ANSONIA 115-KV TRANSMISSION LINE REBUILD PROJECT
Mapsheet 12 of 16 – Owner/Direct Abutter List


Line List Number	City	Site Address	Owner Name
DA 6135	Ansonia	35 Silver Hill Road	United Illuminating Company
DA 6146	Ansonia	4 Reichelt Terrace	Marfa Ciliberti Cotas
DA 6147	Ansonia	3 Reichelt Terrace	Dorian Damico
DA 6148	Ansonia	40 Edgehill Road	Michael Greco Jr.
DA 6149	Ansonia	36 Edgehill Road	Alta M. Glover
DA 6150	Ansonia	30 Edgehill Road	Kristy Lebreque
DA 6151	Ansonia	24 Edgehill Road	Jacqueline M. Daleon
DA 6152	Ansonia	22 Edgehill Road	Tomaso Dambrosio
DA 6153	Ansonia	55 1/2 Silver Hill Road	Michael Miklius Jr.
DA 6154	Ansonia	16 Edgehill Road	James W. & Colleen Fraulo
DA 6155	Ansonia	57 Silver Hill Road	Cynthia Hager
DA 6156	Ansonia	4 Edgehill Road	Robert L. Antonucci
DA 6157	Ansonia	61 Silver Hill Road	Shaun Monahan
DA 6158	Ansonia	26 Adanti Avenue	David Tackach
DA 6159	Ansonia	29 Adanti Avenue	Jenny Ortega
DA 6160	Ansonia	18 Adanti Avenue	Kristie E. & Brendan D. Smith
DA 6161	Ansonia	25 Adanti Avenue	Pawel Cieslik
DA 6162	Ansonia	22 Adanti Avenue	Elizabeth A. Occhipinti
DA 6163	Ansonia	21 Adanti Avenue	Patrick Sampson & Terri Ann William Vassel
DA 6164	Ansonia	16 Adanti Avenue	David Boylan
DA 6165	Ansonia	17 Adanti Avenue	Henri Wilson
DA 6166	Ansonia	14 Adanti Avenue	Tammy M. Carson
DA 6167	Ansonia	13 Adanti Avenue	Meni Vasilellis
DA 6168	Ansonia	12 Adanti Avenue	Timoor Golchin
DA 6169	Ansonia	9 Adanti Avenue	Thomas S. Lawrence Jr.
DA 6170	Ansonia	10 Adanti Avenue	Irene G. Kiraltie
DA 6171	Ansonia	5 Adanti Avenue	Nicholas Guarina
DA 6172	Ansonia	8 Adanti Avenue	Philip W. Evans Jr.
DA 6173	Ansonia	1 Adanti Avenue	Stylianios Kantzas
DA 6174	Ansonia	6 Adanti Avenue	Austin L. French
DA 6175	Ansonia	32 Wesley Street	Westley Street Properties LLC
DA 6176	Ansonia	4 Adanti Avenue	Lizabeth Nieves
DA 6177	Ansonia	85 Dwight Street	Nelson Centeno
DA 6178	Ansonia	2 Adanti Avenue	Alyma & John Coker
DA 6179	Ansonia	23 Hull Street Rear	Jose Parra

ATTACHMENT D TO EXHIBIT CSC 1-15-1



- NOTES:**
1. DEPICTED STRUCTURE IS A STEEL TANGENT STRUCTURE. DEADEND STRUCTURES WILL DIFFER WITH RESPECT TO WIRE ATTACHMENT CONFIGURATION.
 2. EXISTING VEGETATION WITHIN THE UI ROW VARIES BY LOCATION. REFER TO APPENDIX A.3 AND A.4 PROJECT MAPS AND DRAWINGS. FOR LOCATIONS OF PROPOSED TREE REMOVAL.
 3. TO COMPLY WITH UI STANDARD TRANSMISSION VEGETATION MANAGEMENT PLANS, UI REQUIRES VEGETATION MANAGEMENT IN THE AREA THAT IS 40'-0" FROM EACH STRUCTURE CENTER (32'-0" FROM CONDUCTOR ATTACHMENT POINT). IN LOCATIONS WHERE THE UI ROW BOUNDARY IS LESS THAN 40'-0" FROM THE PROPOSED STRUCTURE LOCATION, UI PROPOSED TO ACQUIRE A PERMANENT EASEMENT FROM ADJACENT LANDOWNERS. REFER TO PROJECT MAPS AND DRAWINGS. FOR PROPOSED ADDITIONAL PERMANENT EASEMENT LOCATIONS.
 4. WIDTH OF ROW (EXISTING AND PROPOSED) WILL BE SUBJECT TO UI VEGETATION MANAGEMENT.
 4. UI OWNS THE 90-FOOT-WIDE ROW AT STR. 4

CONCEPTUAL - NOT FOR CONSTRUCTION

AVANGRID ENGINEERING 

TYPICAL CROSS SECTION DIAGRAMS
LOOKING NORTH TOWARDS HAWTHORNE AVE.
STR. 4

CITY OF DERBY SCALE: NTS FILE
BY: HMS NO. DATE: 06/09/2022
CK: SKK
APP: JRD
DATE: 06/09/2022

REVISIONS:

REV	DESCRIPTION	DATE	BY	CK	APP
0-0A	ISSUED FOR REVIEW	07/16/2022	HMS	SKK	JRD

NEW HAVEN COUNTY
FILE NO. XS-5A
REV 0-0A



EXISTING

PHOTO

10

LOCATION

COON HOLLOW ROAD - DERBY

ORIENTATION

SOUTH



ALL-POINTS
TECHNOLOGY CORPORATION





PROPOSED

PHOTO

10

LOCATION

COON HOLLOW ROAD - DERBY

ORIENTATION

SOUTH





RE-DESIGN

PHOTO

10

LOCATION

**COON HOLLOW ROAD - DERBY
RE-DESIGNED STRUCTURE #4**

ORIENTATION



Interrogatory CSC 1-16

The United Illuminating Company
Docket No. 3B

Witness: Kevin McMahon
Page 1 of 1

Q-CSC 1-16: Referencing page 2-9 of the OSPRM, what are the major components driving the total cost for the Project?

A-CSC 1-16: Cost Estimate +50/-25%

Length in Linear Miles	4.1
Transmission Line Costs	\$ 36,357,330
Distribution Related Costs	\$ 1,000,000
Substation Costs	\$ 139,052
Misc. Costs (e.g. removals, sales tax, escalation, contingency)	\$ 19,357,331
Total Project Cost	\$ 57,199,494

Interrogatory CSC1-17

The United Illuminating Company
Docket No. 3B

Witness: Kevin McMahon
Page 1 of 1

Q-CSC 1-17: Referencing page 2-9 of the OSPRM, of the \$57.2M total capital cost, approximately how much is associated with transmission line upgrades, and how much is associated with the substation upgrades?

A-CSC 1-17: Cost Estimate +50/-25%

Transmission Related Costs	\$ 57,060,442
Substation Costs	\$ 139,052
Total Project Cost	\$ 57,199,494

Interrogatory CSC 1-18

The United Illuminating Company
Docket No. 3B

Witness: Ed Roedel
Page 1 of 1

Q-CSC 1-18: Of the approximately \$57.2M cost total, what costs would be regionalized, and what costs would be localized? Estimate the percentages of the total cost that would be borne by UI ratepayers, Connecticut ratepayers and the remainder of New England (excluding Connecticut) ratepayers, as applicable.

A-CSC 1-18: UI believes that all of the estimated Pool Transmission Facilities (PTF) project costs would be regionalized. The approximate cost allocation to various ratepayers based on their percentage share of New England load would be as follows:

Approximate PTF Regionalized Cost Allocation		
	%	\$
UI Retail Customers	5%	\$2.9M
ES+UI CT Retail Customers	24%	\$13.7M
CMEEC + Wallingford Retail Customers	1%	\$0.6M
Remaining New England Customers	75%	\$42.9M
Total	100%	\$57.2M

Interrogatory CSC 1-19

The United Illuminating Company

Witnesses: Kevin McMahon
Ed Roedel

Docket No. 3B

Page 1 of 1

Q-CSC 1-19: What methodology does UI use to determine an acceptable delta between estimated Project costs and actual Project costs? What is the acceptable delta?

A-CSC 1-19: UI follows the guidelines outlined in ISO-NE Planning Procedure 4 (PP4) Attachment D* to determine the level of accuracy required at various stages of a project. A "Proposed Project" requires the level of accuracy to be within a +50/-25% range while a "Final Project Design" requires a +10/-10% range.

In addition to the ISO-NE guidelines, UI has an Investment Planning Procedure with similar cost tolerances.

*¹https://www.iso-ne.com/static-assets/documents/rules_proceeds/isone_plan/pp04_0/pp4_0_attachment_d.pdf

Interrogatory CSC 1-20

The United Illuminating Company

Witnesses: Todd Berman
Jasun Van Horn

Docket No. 3B

Page 1 of 1

Q-CSC 1-20: The entire Project area in Shelton is located within a coastal management area. How does the Project comply with the Act?

A-CSC 1-20: In the City of Shelton, the entire Project ROW is located within the designated coastal management boundary (refer to page 5-24 and the Project mapping). However, as explained on pages 5-24 and 6-17 of the OSPRM, the portion of the Project in Shelton will be located predominantly in uplands, with the ROW traversing municipal open space and agricultural areas. The Project will span the freshwater portion of Housatonic River north of the Ousatonic Dam, which demarcates the boundary between the freshwater and tidally-influenced segment of the river. Further, the Project will involve rebuilding existing 115-kV lines along a long-established ROW, thereby improving the reliability of the transmission system and thus serving the interests of UI's customers. Thus, the Project is consistent with the Federal Power Commission "Guidelines for the Protection of Natural Historic Scenic and Recreational Values in the Design and Location of Rights-of-Way and Transmission Facilities" (referenced in CT DEEP's Reference Guide to Coastal Policies and Definitions, pages 21-22, in the Connecticut Coastal Management Manual).

The Project will not conflict with any coastal use policies or adversely affect coastal resources as defined in Connecticut's Coastal Management Act ("CCMA").*

Within Shelton's designated coastal boundary, the existing Project ROW crosses uplands (shorelands), as well five fresh water wetlands and four freshwater streams. The rebuilt 115-kV lines will be aligned along UI's well-established ROW across these areas.

UI expects (as required) to submit to the City of Shelton a municipal Coastal Site Plan review application.

*Per the CCMA, coastal resources include beaches, dunes, bluffs, escarpments, coastal hazard areas, coastal waters and estuarine embayments, developed shorefronts, intertidal flats, island, rocky shorefronts, shellfish concentration areas, shorelands, submerged aquatic vegetation, tidal wetlands and landscape protection/visual impacts. Coastal activities policies pertain to general development, coastal recreation/access, coastal structures/filing, cultural resources, dams/dikes/reservoirs, dredging and navigation, energy facilities, fisheries, fuel/chemical/hazardous materials, open space and agricultural lands, ports and harbors, water and sewer lines, solid waste, transportation, and water dependent uses.

Interrogatory CSC 1-21

The United Illuminating Company

Witnesses: David George
Jasun Van Horn

Docket No. 3B

Page 1 of 1

Q-CSC 1-21: Referencing page 6-19 of the OSPRM, has UI received any correspondence from the State Historic Preservation Office (SHPO) since the application was submitted? If yes, provide copy of such correspondence.

A-CSC 1-21: UI has not received any correspondence from the SHPO regarding the Project. UI's cultural resource consultant, Heritage Consultants LLC, submitted a Phase 1A cultural resource survey regarding the Project to the SHPO on September 13, 2021.

Additionally, in April 2022, Heritage conducted a Phase 1B field survey between Structures 364 and 365 (Shelton) due to the moderate/high potential to yield intact cultural deposits. During this investigative survey, it was determined that no impacts to significant cultural resources are anticipated by construction of the Project and no additional archaeological examinations of the work areas associated between structures 364 and 365 is recommended. The findings of the Phase 1B survey were submitted to SHPO in April 2022. At this time, no correspondence from SHPO has been received.

Interrogatory CSC 1-22

The United Illuminating Company
Docket No. 3B

Witness: Mike Libertine
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Q-CSC 1-22: Referencing Appendix C of the OSPRM, Visual Assessment, page 1, the ground elevation for the Project area ranges from approximately 500 feet above mean sea level (amsl) to approximately 35 feet amsl. In which municipalities are these highest and lowest points in the Project area located?

A-CSC 1-22: Based on the LiDAR contours for the study area, ground elevations range from 0 feet amsl to 600 feet amsl.

The low elevations 0 feet amsl are located along the banks of the Housatonic River in Shelton and Derby as well as along the banks of the Naugatuck River in Derby and Ansonia.

The high elevations 600 feet amsl are located in Shelton, off Soundview Avenue (west of Derby Junction; see Appendix C, Viewshed Analysis Map Sheet 1 of 2), and in Seymour, in the Village Drive and Davis Road area (the northernmost point of the Study Area – See Appendix C, Viewshed Analysis Map Sheet 2 of 2).

Interrogatory CSC 1-23

The United Illuminating Company

Witnesses: Todd Berman
Jasun Van Horn

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Q-CSC 1-23: Please identify the types of acceptable low growth vegetative species referenced on page 5-12 of the OSPRM.

A-CSC 1-23: Table A-CSC-23-A and Table A-CSC-23-B (Trees with Short Mature Heights and Selected shrubs suitable for planting near utilities) produced by the State of Connecticut Vegetation Management Task Force are set forth below. While not all inclusive, this list is an indicator of the types of trees and shrubs that will be allowed along the Transmission line corridor. Invasive plants encountered will be removed by vegetation management, including invasive vines, where possible.

Trees with Short Mature Heights
Connecticut State Vegetation Management Task Force
Glenn Dreyer¹ (Connecticut College)
Jeffrey Ward² (The Connecticut Agricultural Experiment Station)

Common name	Scientific name ³	Origin ⁴	Height (ft) ⁵		Not for Urban Sites	Notes
			Typical	CT max		
Trident Maple	<i>Acer buergerianum</i>	NE Asia	20-25	57		
Hedge maple	<i>Acer campestre</i>	Europe	30+	60		Tolerates urban conditions well. No fall color.
Paperbark maple	<i>Acer griseum</i>	China	30	40		Beautiful shiny copper-colored bark
Japanese maple	<i>Acer palmatum</i>	NE Asia	15-30	48		Is spreading from planted locations; Invasive in nearby states
Tatarian maple	<i>Acer tataricum</i>	Europe	20-25			Is spreading from planted locations; Invasive in nearby states
Horsechestnut hybrids	<i>Aesculus hybrids</i>	Hybrid	30-35	45-55	?	
Common serviceberry	<i>Amelanchier arborea</i>	Native	<30	55		White flowers in late April; edible fruit in July
Allegheny serviceberry	<i>Amelanchier laevis</i>	Native	<30	50		White flowers in late April; tasty fruit in July
European hornbeam	<i>Carpinus betulus</i>	Europe	30-40	72		
American hornbeam	<i>Carpinus caroliniana</i>	Native	30+	37		Smooth, gray bark
Eastern redbud	<i>Cercis canadensis</i>	Native	25	45	?	Purple-pink spring flowers and heart-shaped leaves
Chinese Fringetree	<i>Chionanthus retusus</i>	NE Asia	15-25	17	?	Weak wood, bushy habit
Flowering dogwood	<i>Cornus florida</i>	Native	30	47	?	Showy white flowers in mid-May; (may be listed as <i>Benthamidia florida</i>)
Dogwood hybrids	<i>Cornus hybrids</i>					Dogwood hybrids
Kousa dogwood	<i>Cornus kousa</i>	NE Asia	30	36		Showy white flowers in late May; (may be listed as <i>Benthamidia japonica</i>)

Common name	Scientific name ³	Origin ⁴	Height (ft) ⁵		Not for Urban Sites	Notes
			Typical	CT max		
Cornelian cherry	<i>Cornus mas</i>	NE Asia	15-25	28		
dogwood						
Smokebush	<i>Cotinus coggygria</i>	Europe	15	20	?	
American smoketree	<i>Cotinus obovatus</i>	Native	30	51	?	
Hawthorn hybrids	<i>Crataegus sp.</i>	Native	25			All have some level of susceptibility to rust and a few have some resistance to leaf spot, some have thorns Bushy habit
Redvein						
Enkianthus	<i>Enkianthus campanulatus</i>	Japan	15		?	
Seven-son flower	<i>Heptacodium miconioides</i>	China	12	25		Fragrant, late summer flowers
American holly	<i>Ilex opaca</i>	Native	30+	47	X	
Long stalk holly	<i>Ilex pedunculosa</i>		15-20	26	X	
Eastern redcedar	<i>Juniperus virginiana</i>	Native	30+	64	X	Evergreen
Amur maackia	<i>Maackia amurensis</i>	NE Asia	30	41		Clusters of yellow flowers in July
Star magnolia	<i>Magnolia stellata</i>	Japan	20	40		Upright shrub with large white flowers
Sweetbay magnolia	<i>Magnolia virginiana</i>	Native	25	28		Creamy flowers have a sweet fragrance
Saucer magnolia	<i>Magnolia x soulangiana</i>	China	30	44		Large white or pink flowers early spring
Crabapples	<i>Malus sp.</i>	Mixed	25	55		Showy flowers in spring and persistent fruit
Hophornbeam	<i>Ostrya virginiana</i>	Native	30+	67		Rough bark
Sourwood	<i>Oxydendrum arboreum</i>	Native	25	87	?	Showy white flowers in July
Persian parrotia	<i>Parrotia persica</i>	SW Asia	20-40	28		Interesting mottled bark
American red plum	<i>Prunus americana</i>	Native	20		?	
Cherry plum	<i>Prunus cerasifera</i>	NE Asia	25	29		White flowers in spring; purple leaved forms popular
Cherry hybrids	<i>Prunus hybrids</i>					
Sargent cherry	<i>Prunus sargentii</i>	Japan	35-40	42		
Japanese flowering cherry	<i>Prunus serrulata</i>	NE Asia	25	33		Pink early spring flowers; 'Kwanzan' a popular type
Higan cherry	<i>Prunus subhirtella</i>	Japan	30+	67		Pink spring flowers; weeping forms available
Bosc (common) pear	<i>Pyrus communis</i>	Europe	30	59	?	White spring flowers; fruit could be a problem

Common name	Scientific name ³	Origin ⁴	Height (ft) ⁵		Not for Urban Sites	Notes
			Typical	CT max		
Pussy willow	<i>Salix discolor</i>	Native	30		?	Appreciated for its small, fuzzy early flowers
Japanese stewartia	<i>Stewartia peuedocamellia</i>	Japan	30	39		Large showy June flowers and colorful mottled bark
Japanese snowbell	<i>Styrax japonicus</i>	Japan	25	28		White bell shaped flowers in June
Japanese tree lilac	<i>Syringa reticulata</i>	Japan	25	51		Creamy flower clusters in June, very adaptable
English yew	<i>Taxus baccata</i>	Europe	30+	47	X	Evergreen
Arborvitae	<i>Thuja occidentalis</i>	Native	30	70	X	Good evergreen screen: susceptible to deer damage

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Common and scientific names from USDA Plants database (<http://plants.usda.gov>)

⁴Native refers to eastern North America

⁵ Typical height from personal observation and Dirr (1998) Manual of woody landscape plants, 5th edition 6
Maximum Connecticut height from database of Connecticut

Notable Tree Project

Table CSC-23-B
Selected shrubs suitable for planting near utilities
Connecticut State Vegetation Management Task Force
Glenn Dreyer¹ (Connecticut College)
Jeffrey Ward² (The Connecticut Agricultural Experiment Station)

Common name	Scientific name ³	Origin ⁴	Height (ft) ⁵	Root suckers ⁵	Notes
Canadian serviceberry	<i>Amelanchier canadensis</i>	Native	15	n	White flowers in late April; edible fruit in July
Red chokeberry	<i>Aronia arbutifolia</i>	Native	6	Yes	Good flowers and fall color (may be listed as <i>Photinia pyrifolia</i>),
Black chokeberry	<i>Aronia melanocarpa</i>	Native	6	Yes	
Carolina allspice	<i>Calycanthus floridus</i>	Native	8	n	Fragrant flowers
Chinese fringetree	<i>Chionanthus retusus</i>	NE Asia	15	n	
White fringetree	<i>Chionanthus virginicus</i>	Native	20	n	Large clusters of white flowers in June
Japanese clethra	<i>Clethra barbinervis</i>	Japan	15	n	White flowers in summer, attractive bark
Alternate-leaved dogwood	<i>Cornus alternifolia</i>	Native	20	n	Large shrub with small clusters of creamy white flowers
Redosier dogwood	<i>Cornus sericea</i>	Native	10	Yes	Bright red stems maintained by cutting older stems
American hazelnut	<i>Corylus americana</i>	Native	12	n	Edible nuts are commercially cultivated
Redvein enkianthus	<i>Enkianthus campanulatus</i>	Japan	15		Great fall color follows midsummer flowers that attract bees
Chinese witchhazel	<i>Hamamelis mollis</i>	China	15	n	Flowers in early spring
Witchhazel	<i>Hamamelis virginiana</i>	Native	15	n	Small yellow flowers in October
Rose-of-Sharon	<i>Hibiscus syriacus</i>	SW Asia	12	n	Summer flowers in various colors
Panicked hydrangea	<i>Hydrangea paniculata</i>	Asia	10	n	Needs constant pruning
Winterberry	<i>Ilex verticillata</i>	Native	10	n	Shrub with abundant red berries
Beach plum	<i>Prunus maritima</i>	Native	12	n	White flowers in spring; edible fruit
Winged sumac	<i>Rhus copallinum</i>	Native	15	Yes	Suckering shrub with brilliant red fall foliage

Common name	Scientific name ³	Origin ⁴	Height (ft) ⁵	Root suckers ⁵	Notes
Smooth sumac	<i>Rhus glabra</i>	Native	15	Yes	Suckering shrub with brilliant red fall foliage
Arrowwood	<i>Viburnum dentatum</i>	Native	6	n	Small white flowers clusters in spring
Nannyberry	<i>Viburnum lentago</i>	Native	15	n	Creamy white flower clusters in June
Withe-rod	<i>Viburnum nudum</i> var. <i>cassinoides</i>	Native	12	n	Flower clusters in June, multi-colored fruit in fall
Blackhaw viburnum	<i>Viburnum prunifolium</i>	Native	12	n	Creamy white flower clusters in June
Cranberry viburnum	<i>Viburnum trilobum</i>	Native	6	n	Edible red fruit persists into winter

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Common and scientific names from USDA Plants database (<http://plants.usda.gov>) Native refers to eastern North America ^s Typical height and root suckering from personal observation and Dirr (1998) Manual of woody landscape plants, 5th edition

Interrogatory CSC 1-24

The United Illuminating Company
Docket No. 3B

Witness: Todd Berman
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Q-CSC 1-24: Could the revegetation of the ROW include a pollinator species seed mix (ex. milkweed for the Monarch butterfly)?

A-CSC 1-24: Yes. A pollinator seed mix could be used for ROW revegetation in those areas where such a mix would be suitable and is approved by the landowner. For example, a pollinator mix may not be appropriate in agricultural or lawn areas. UI would be amendable to exploring the use of a pollinator mix as part of ROW restoration (reseeding) in suitable locations and, as appropriate, would identify such areas in the Project D&M Plan.

Interrogatory CSC 1-25

The United Illuminating Company
Docket No. 3B

Witness: Kevin McMahon
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Q-CSC 1-25: Page 3-5 of the OSPRM mentions hazard trees outside the UI right-of-way would be removed in coordination with the landowner. Is landowner permission required? What if the landowner denies the request?

A-CSC 1-25: In accordance with the easements that will be obtained as part of this Project, permission from a landowner will not be required. Where no new easements have been obtained, vegetation clearing will be coordinated with local tree wardens and other community officials to inform them of hazardous tree conditions that threaten electric reliability and public safety. However, in all cases UI coordinates with the landowner for the removal of vegetation.

Interrogatory CSC 1-26

The United Illuminating Company

Witnesses: Todd Berman
Jasun Van Horn

Docket No. 3B

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Q-CSC 1-26: What is the status of the avian survey referenced on page 6-15 of the OSPRM?

A-CSC 1-26: UI has not yet scheduled surveys to determine if habitat for the sedge wren is present along the ROW in Shelton. These surveys, which would be coordinated with CT DEEP, would be performed prior to the preparation of the D&M Plan for the Project, at a time when the species is most likely to be present in the area, if habitat exists (refer to page 5-17 of the OSPRM for an overview of this species' typical habitat and nesting period).

On May 26, 2022, UI representatives, along with CT DEEP's Brian Hess, performed a field reconnaissance of the ROW near Structure 19 in Ansonia to assess the potential for potential bald eagle presence or potential habitat. No bald eagles or bald eagle nests were observed during the field investigation, although in the past eagles have been seen in the area. UI and CT DEEP agreed that, as Project planning progresses, UI will continue to check for bald eagle activity and, if eagles are found to be nesting near the ROW, will coordinate with CT DEEP to adopt best management practices for avoiding adverse effects to this species. A copy of the UI memorandum documenting the results of the May 26, 2022 field visit is attached as Exhibit CSC 1-26-1.

**MEMORANDUM**

TO: FILE (20200394.A10)

CC: Todd Berman, United Illuminating

FROM: Josh Wilson

DATE: May 3, 2022

RE: Derby Junction to Ansonia 115-kV Transmission Line Rebuild Project
Bald Eagle Habitat Meeting and Evaluation

On April 26, 2022, Brian Hess of Connecticut Department of Energy & Environmental Protection (CTDEEP), Todd Berman and Matt Scully of United Illuminating (UI/Avangrid), and myself met and walked a portion of the Derby-Ansonia right-of-way near Structure 19. The purpose of the meeting and site walk was to inspect the area near Structure 19 for potential bald eagle (*Haliaeetus leucocephalus*) nesting sites.

Historically, a mating pair of bald eagles had established a nest in a white pine (*Pinus strobus*) located approximately 300 feet north-northeast of Structure 19. Mr. Hess indicated, both in previous telephone conversation as well as at the site walk, that the nest had blown down from the white pine in the winter of 2020-2021. Mr. Hess also indicated that since the nest blew down, a mating pair has not been observed nesting or attempting to nest in the white pine or in the vicinity of the previous location.

The group walked and/or inspected an area approximately 600 feet from Structure 19. We confirmed that, while viable nesting trees are located within the vicinity of Structure 19, a new bald eagle nest has not been established. Furthermore, no bald eagles were observed during the site walk. Bald eagles have been observed flying, perching, and performing mating rituals in the area, indicating that the area does serve as suitable habitat for the species.

It was agreed that as the transmission line rebuild process proceeds, UI/Avangrid will continue to monitor the site for nesting activity. In future years, should nesting occur in the vicinity of the right-of-way or related construction areas, UI/Avangrid will coordinate with CTDEEP to ensure best management practices are employed.

Interrogatory CSC 1-27

The United Illuminating Company

Witnesses: Todd Berman
Jasun Van Horn

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Q-CSC 1-27: What best management practices or other design considerations could be employed to deter bird roosting and nesting on transmission structures?

A-CSC 1-27: UI has not had issues with bird nesting or roosting on the existing Derby Junction-Ansonia structures. However, for this Project, UI is aware of and is amenable to employing, if needed, best management practices to deter bird perching and nesting on the rebuilt transmission line structures.

Various options are available and will depend on the location and type of the transmission line structures, as well as on the potential need for bird deterrents. For example, bird perching deterrent options include raptor guards, spikes, and pole top caps with spikes. Nesting deterrent alternatives include nesting diverters, as well as the installation of artificial nests and artificial perches that provide more attractive nest options for birds than the transmission structures. Effigies (decoys) of bird predators such as owls and eagles also can be placed on the transmission structures and may be effective in deterring roosting or nesting by prey species (such as osprey). Separate nesting platforms, installed on independent poles adjacent to transmission structures, also can be used.

Methods for deterring bird roosting and/or nesting on the rebuilt transmission line structures can be evaluated in more detail, if necessary, during the D&M Plan preparation phase of the Project.

Interrogatory CSC 1-28

The United Illuminating Company

Witnesses: MeeNa Sazanowicz
Sathish Konduru

Docket No. 3B

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Q-CSC 1-28: Page 6-20 of the OSPRM indicates the Federal Aviation Administration issued Determinations of No Hazard to Air Navigation for the Project and no special lighting or markers would be required on the rebuilt lines. In footnote 37, UI indicates that it proposes to install marker balls on the lines across the Housatonic River. What is the proposed marker ball scheme? What is the purpose of the proposed marker ball scheme?

A-CSC 1-28: It was determined by the FAA that the proposed wire configuration and structures do not require any further aeronautical study and concluded as "Determination of No Hazard to Air Navigation".

The FAA stated that if UI would like to voluntarily mark the wires to make them more conspicuous to any low flying aircrafts along the river, marker balls could be placed per FAA's Advisory Circular AC-70/7460-1M document. To provide visual distinction of the crossing to potential low flying air craft in the area, UI has decided to voluntarily place the unlighted marker balls on the topmost overhead shield wires with alternating orange, white and yellow marker balls as per AC-70/7460-1M document. Please see the attached schematic in Exhibit CSC 1-28-1 showing the proposed marker ball arrangement for the river crossing span.

EXHIBIT CSC 1-28-1

Below schematic shows the arrangement of Orange, White, and Yellow unlighted marker balls on the topmost overhead shield wires in plan view per coordination with FAA and AC-74/7460-1M circular.

