

CSC Set 2
Interrogatory CSC-1

The United Illuminating Company
Docket 317

Witness: Charles Eves
Page 1 of 1

Q-CSC-1: How many distribution feeders would leave the substation from the proposed site? What direction would they go to connect to the distribution system?

A-CSC-1: The substation is designed with provisions for ten feeders. When the substation is energized, four distribution feeders will leave the substation from the proposed site. The feeders will exit the substation underground in ductline onto Wildflower Lane. The ductline will continue north on Huntington Turnpike and tie into existing ductline that crosses the Merritt Parkway.

The new feeders from Trumbull substation will pick up the distribution load from feeders 2620 and 2627 from Old Town substation and feeders 3545 and 3547 from Trap Falls Substation.

A map of the proposed feeder routes for the four original feeders is attached as CSC Set 2, Exhibit CSC 1-1.

UI
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Witness: Charles Eves



Legend

- 2620 2620, 1
- 2620 2620, 2
- 2627 2627, 1
- 2627 2627, 2
- 3545 3545, 1
- 3545 3545, 2
- 3545 3545, 3
- 3547 3547, 1
- 3547 3547, 2
- 3547 3547, 3
- Substations
- NU Transmission ROW
- UI Transmission ROW
- Street_CenterLine
- UI Property
- <all other values>



Trumbull Substation Project

Project

Feeder Routes

Proposed Site

Trumbull, Connecticut



The United Illuminating Company

CSC Set 2
Interrogatory CSC-2

The United Illuminating Company
Docket 317

Witness: Charles Eves
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Q-CSC-2: How many distribution feeders would leave the substation from sites 6A, 6B, and 6C? What direction would they go to connect to the distribution system?

A-CSC-2: The substation is designed with provisions for ten feeders. When the substation is energized, four distribution feeders will leave the site.

From sites 6A and 6B, feeders 3547 and 3545 will exit the substation in duct line on Quail Trail that will be extended north of the Merritt Parkway. Feeders 2620 and 2627 will exit the substation underground onto the right-of-way and rise to open wire.

From Site 6C, feeders 3547 and 3545 will exit the substation in duct line on Rocky Ridge Drive. This duct line will be extended north on Huntington Turnpike and tie into the existing duct line that crosses the Merritt Parkway. Feeders 2620 and 2627 will exit the station underground onto the right-of-way and rise to open wire.

A map of the proposed feeder routes for the four original feeders is attached as CSC Set 2, 2-1, 2-2 and 2-3 for Sites 6A, 6B and 6C respectively.

Attachment CSC Set 2 - 2 - 1
 UI
 Docket 317
 Witness: Charles Eves

Legend

- Substations
- UI Transmission ROW
- UI Transmission ROW
- Street_CenterLine
- UI Property
- <all other values>
- 2620A
- 2620, 1
- 2620, 2
- 2627A
- 2627, 1
- 2627, 2
- 3545A
- 3545, 1
- 3545, 2
- 3545, 3
- 3547A
- 3547, 1
- 3547, 2
- 3547, 3



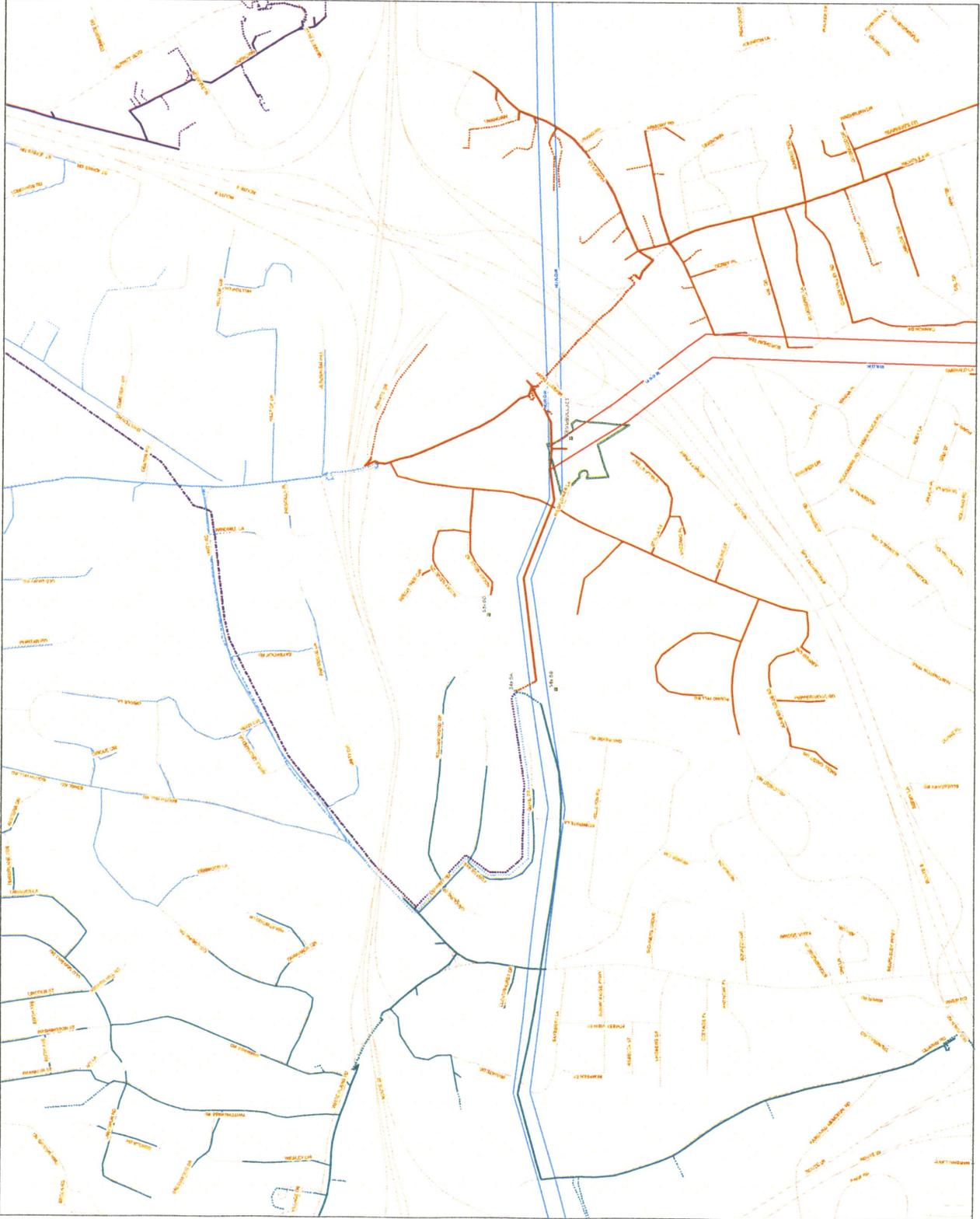
**Trumbull Substation
 Project**

Feeder Routes
 Site 6A

Trumbull, Connecticut



The United Illuminating Company



Legend

- Proposed Substations
 - NU Transmission ROW
 - UI Transmission ROW
 - Street_CenterLine
 - UI Property
 - <all other values>
- 2620B**
- 2620, 1
 - 2620, 2
- 2627B**
- 2627, 1
 - 2627, 2
- 3545B**
- 3545, 1
 - 3545, 2
 - 3545, 3
- 3547B**
- 3547, 1
 - 3547, 2
 - 3547, 3



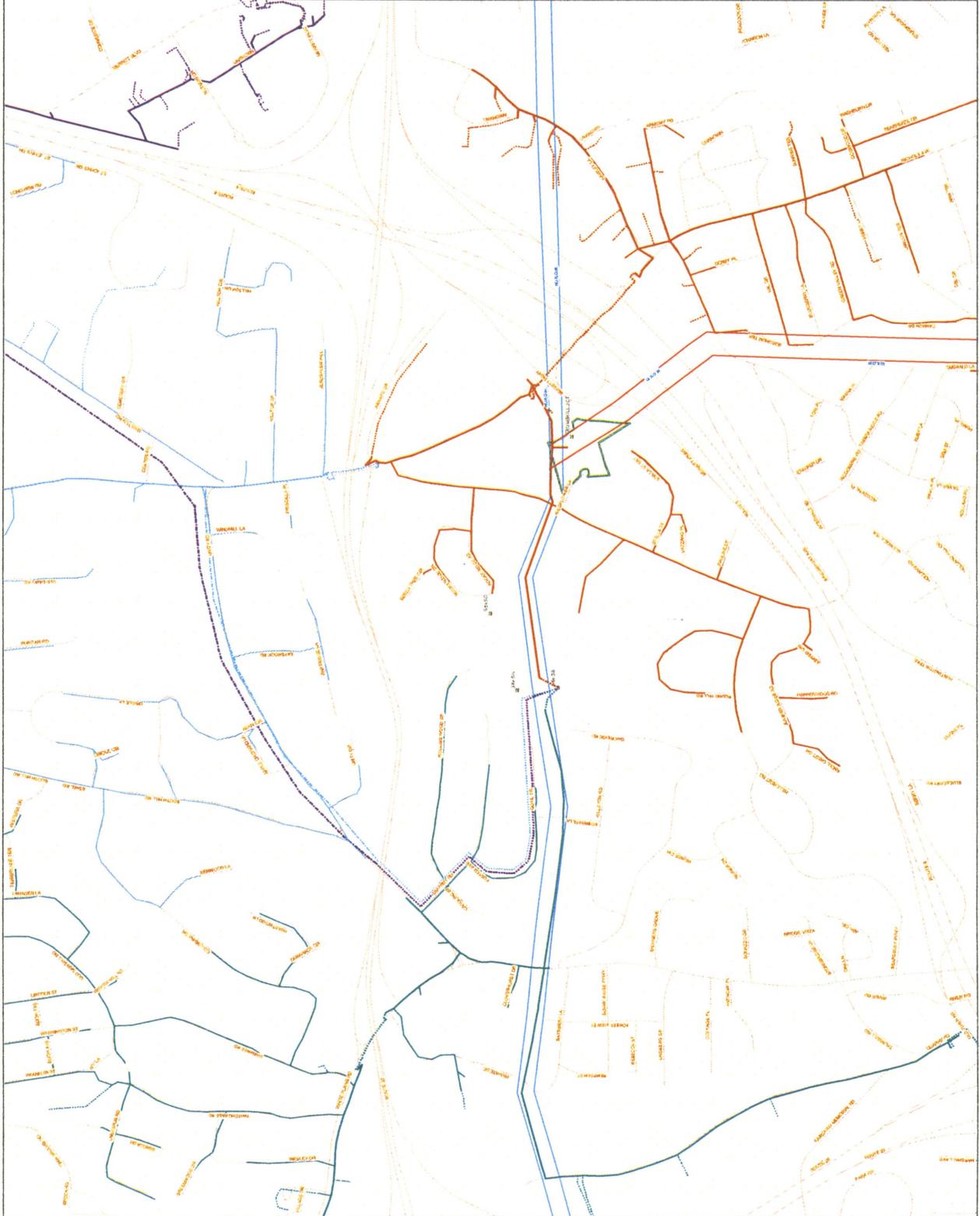
**Trumbull Substation
 Project**

Feeder Routes
 Site 6B

Trumbull, Connecticut



The United Illuminating Company



Legend

- Substations
- NJ Transmission ROW
- UI Transmission ROW
- Street_CenterLine
- UI Property
- <all other values>

2620C

2620, 1

2620, 2

2627C

2627, 1

2627, 2

3545C

3545, 1

3545, 2

3545, 3

3547C

3547, 1

3547, 2

3547, 3



Trumbull Substation Project

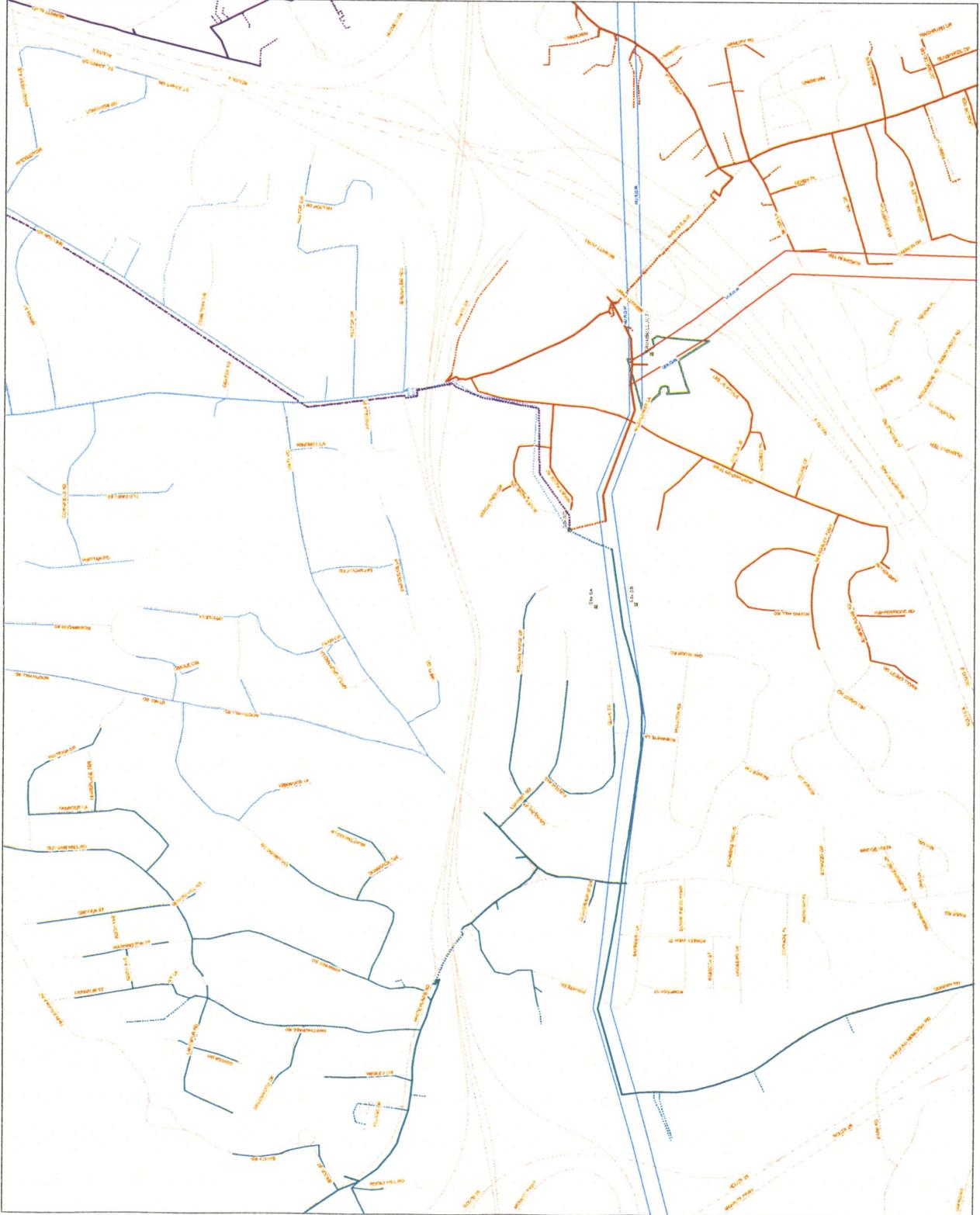
Feeder Routes

Site 6C

Trumbull, Connecticut



The United Illuminating Company



CSC Set 2
Interrogatory CSC-3

The United Illuminating Company
Docket 317

Witness: Charles Eves
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Q-CSC-3: Of the three sites 6A, 6B, and 6C, which one does UI believe is most preferable? Explain why.

A-CSC-3: Site 6A is the most preferable. Of the three sites, it offers the greatest distance from existing residences. The nearest residence is 280' from the proposed location. Additionally, the topography is the most suitable for construction. Site 6A also directly abuts Quail Trail and does not require the Company to negotiate a right-of-way for the distribution feeders to exit the substation.

Site 6B is located approximately 100' from the nearest residence. The grade at Site 6B has a greater degree of slope than Site 6A. Site 6B is located further from the duct line exit on Quail Trail and will require the distribution duct line to cross the CL&P right-of-way.

Site 6C is located approximately 140' from the nearest residence. Site 6C has the most severe slope of the Site 6 sites. Locating the substation at this site will require the Company to acquire a right-of-way across the private property that separates the town owned parcel from Rocky Ridge Drive. In the alternative, the Company could install the distribution duct line under the stream located on Site 6 so it could exit onto Quail Trail.

CSC Set 2
Interrogatory CSC-4

The United Illuminating Company
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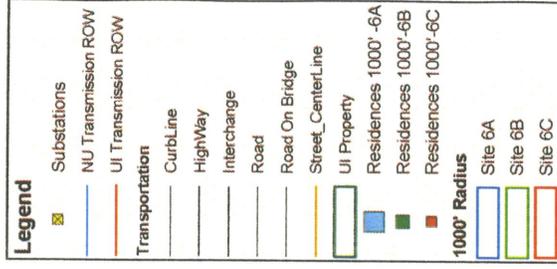
Witness: Charles Eves
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Q-CSC-4: Approximately how many homes are within a 1000' radius of the center of the following sites: 6A, 6B, and 6C?

A-CSC-4:

Site	Number of Homes
Site 6A	45
Site 6B	36
Site 6C	38

A map illustrating these homes is included as CSC Set 2, Exhibit CSC 4 -1.



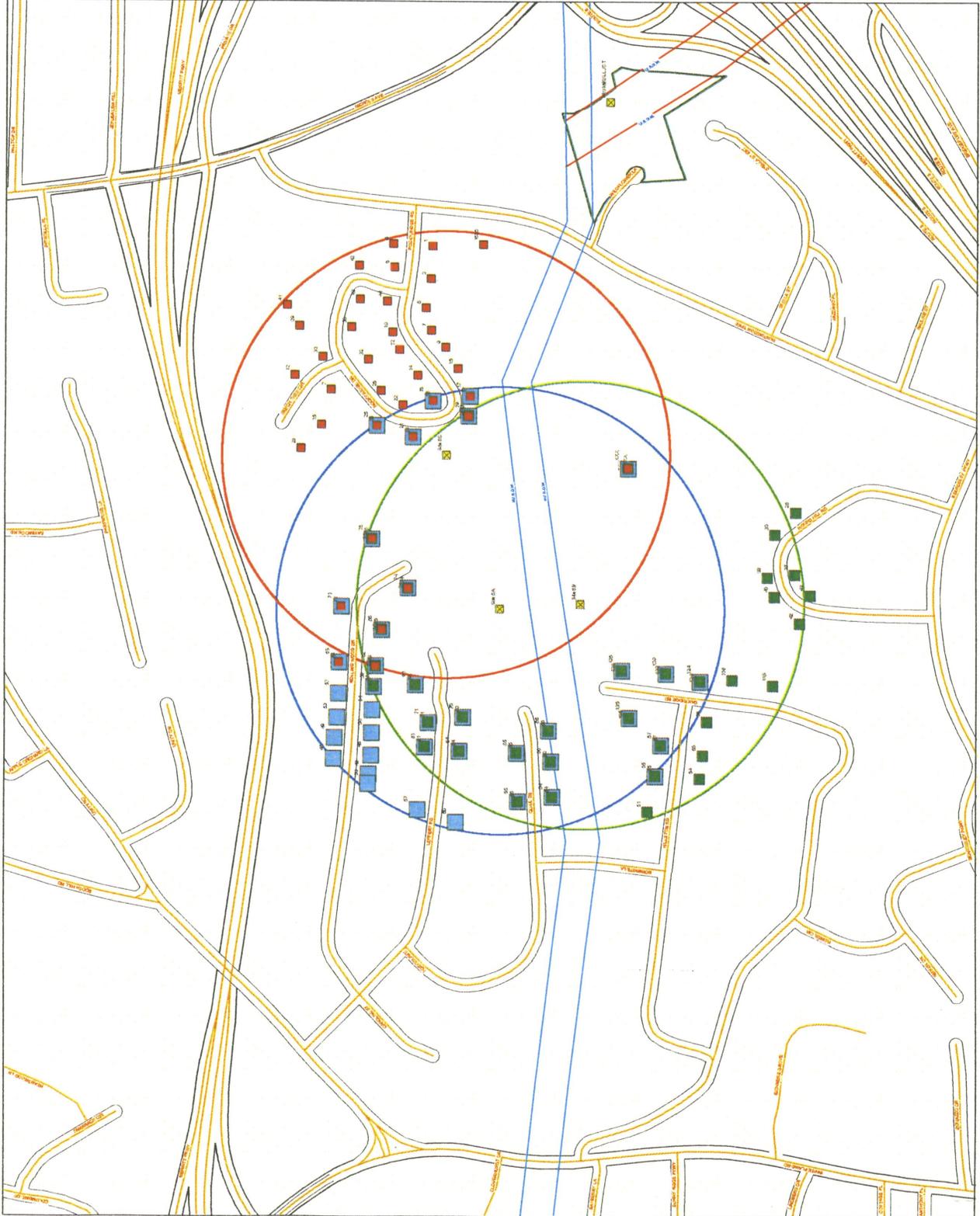
Trumbull Substation Project

Project

Homes within 1000ft
 of Site 6A, 6B, 6C
 Trumbull, Connecticut



The United Illuminating Company



CSC Set 2
Interrogatory CSC-5

The United Illuminating Company
Docket 317

Witness: Charles Eves
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Q-CSC-5: Are alternate sites 6A, 6B, and/or 6C located in wetlands? If no, what is the distance to the nearest wetlands?

A-CSC-5: According to the Inland Wetlands and Watercourses Map, Trumbull, Connecticut (Revised January 1997), there is a wetland located immediately to the north of Sites 6A and 6B, approximately 300 feet from the closest fence line at Site 6A and approximately 450 feet from the closest fence line at Site 6B. Site 6C is located approximately 100 feet east of a stream that bisects the Site 6 area.

CSC Set 2
Interrogatory CSC-6

The United Illuminating Company
Docket 317

Witness: Kathleen Shanley
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Q-CSC-6: Is site 1 or site 6 (A,B,C) located in a flood zone?

A-CSC-6: No.

CSC Set 2
Interrogatory CSC-7

The United Illuminating Company
Docket 317

Witness: Kathleen Shanley
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Q-CSC-7: Where is the nearest state-designated scenic road from the site 6 property?

A-CSC-7: The nearest state-designated scenic road from Site 6 is the Merritt Parkway.

CSC Set 2
Interrogatory CSC-8

The United Illuminating Company
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Witness: Charles Eves
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Q-CSC-8: What Town road(s) would be used to access site 6(A,B,C)? What would be the approximate length of each access road to reach the following sites: 6A, 6B, and 6C?

A-CSC-8: Estimating the length of the access roads requires that the approximate location of the substation at sites 6A, 6B and 6C be determined.

In the Site Selection Study, the Company illustrated locations for Sites 6A, B and 6C. The location of Site 6A in the study optimized the distribution cost, but left the substation relatively close to residences on Quail Trail. The Company believes a better location for Site 6A is further to the east. The Company believes the locations for Sites 6B and 6C presented in the site selection study remain the best locations for a substation given the topography in those areas.

The attached map, CSC Set 2, 8 -2 illustrates the Company's assumed placement of the substation at Sites A, B and C. This graphic assumes the substation will be built on a one acre parcel approximately 200 ft by 200 ft. The placement of the substation takes into account the topographical layout of the parcel and the boundaries of the town owned property.

Sites 6A and 6B would be accessed from Quail Trail. The access roads would be approximately 300 feet long for Site 6A and approximately 360 feet long for Site B, depending on the exact site placement and substation orientation within the property boundary.

Site 6C would be accessed from Rocky Ridge Drive. The access road would be approximately 190 feet long, depending on the exact site placement and substation orientation within the property boundary.

During a May 10, 2006 meeting between the Company, residents nearby the proposed site and the Town of Trumbull, the Trumbull Town Engineer recommended placing the substation directly beneath the right of way. The recommended location is illustrated on CSC Set 2, Exhibit CSC 8-1. It appears the Town Engineer placed the substation at this location to maximize the

CSC Set 2
Interrogatory CSC-8

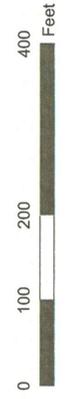
The United Illuminating Company
Docket 317

Witness: Charles Eves
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distance from the substation to nearby residences. The Company typically does not construct substation facilities underneath energized transmission facilities due to the construction, operation and maintenance restrictions this type of design would include.

Legend

- NU Transmission ROW
- UI Transmission ROW
- Street_CenterLine
- Site 6 fence line



Trumbull Substation Project

Site 6
Alternative Substation Sites

Trumbull, Connecticut



The United Illuminating Company



CSC Set 2
Interrogatory CSC-9

The United Illuminating Company
Docket 317

Witness: Charles Eves
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Q-CSC-9: Approximately how many trees 6 inches in diameter or greater at breast height would be removed for substation and access drive construction at each of the following sites: 6A, 6B, and 6C?

A-CSC-9: The woodland condition of Sites 6A, 6B and 6C was visually estimated during a field visit. Each site contains approximately 50 to 60 trees. All of the trees at Sites 6A, 6B and 6C are native species, primarily beech, sugar maple and red oak. On average, Site 6A contains the largest trees, followed by Site 6C and 6B.

Site 6A contains at least 12 trees in excess of 24" in diameter at breast height (dbh). Most of the trees are greater than 12" dbh.

Site 6B contains approximately 6 trees that are in excess of 24" dbh. Most of the trees are in the 6" to 12" dbh range.

Site 6C contains 6 to 10 trees that are in excess of 24" dbh. Most of the trees are in the 12" to 18" dbh range.

CSC Set 2
Interrogatory CSC-10

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Witness: Charles Eves
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Q-CSC-10: Estimate the amount of cut and fill for the following sites: 6A, 6B, and 6C?

A-CSC-10: Since there has been no engineering done for any site other than Site 1, it is not possible to estimate the cut and fill requirements for Sites 6A, 6B and 6C at this time.

CSC Set 2
Interrogatory CSC-11

The United Illuminating Company
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Witness: Charles Eves
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Q-CSC-11: Provide a DEP Natural Diversity database response to site 6.

A-CSC-11: UI contacted the DEP and was instructed to review the DEP State and Federal Listed Species and Significant Natural Communities map for Trumbull, CT in order to determine if the Project is within a Natural Diversity Data Base Area of Concern. If it is, additional review by the DEP is required.

UI reviewed the Trumbull map and determined that Site 6 is not located in an Area of Concern and therefore does not require review by the DEP.

CSC Set 2
Interrogatory CSC-12

The United Illuminating Company
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Witness: Charles Eves
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Q-CSC-12: Provide a SHPO response to site 6.

A-CSC-12: The Company has not received a SHPO response to Site 6. The Company will provide it upon receipt.

CSC Set 2
Interrogatory CSC-13

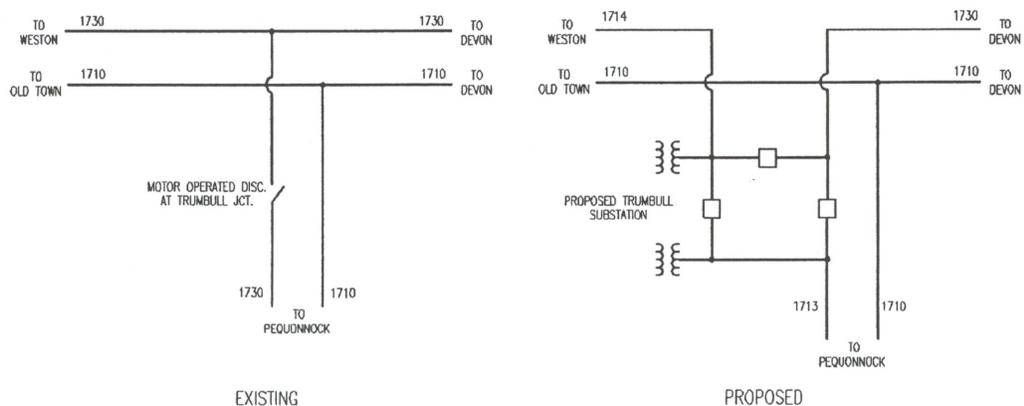
The United Illuminating Company
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Witness: Charles Eves
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Q-CSC-13: Given the different transmission and distribution system configurations at the proposed site and site 6, is one site preferable over the other from an electric reliability standpoint?

A-CSC-13: Transmission Reliability – Site 1 is located at the intersection of the north/south and east/west portions of the 1730 line. Locating the project at Site 1 allows the Company to sectionalize the 1730 line into three shorter, individually protected lines.

Currently a fault on any of the three sections of the line results in the entire line being interrupted. With the Company's proposed design at site 1, only one of the three sections of the line will be interrupted, providing for a loadflow path on the other two non-faulted sections of the line. Sectionalizing the line in this way also improves opportunities for maintenance and the system reliability exposure during maintenance outages.



To provide equivalent benefits at Site 6 would require the relocation of the junction of UI's and CL&P's transmission lines to Site 6 via an underground 115 kV transmission cable, at a minimum incremental cost to the project of approximately \$5.4 million.

CSC Set 2
Interrogatory CSC-13

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Witness: Charles Eves
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Distribution Reliability – Two of the original four feeders will be routed to the north and east of the substation through the intersection of Unity Road and Nichols Ave. The forecast load growth in the greater Trumbull region is also predominately to the north east of the substation, so it is likely that the future feeders from the substation will take this north easterly route.

The intersection of Unity Road and Nichols Ave is the first common point on a northeasterly route from both site 1 and site 6. The distance from site 1 to this point is 3800', the distance from site 6 to this point is 7900'. The longer a distribution feeder is, the more reliability exposure it presents, therefore site 1 is preferable from a distribution reliability perspective.

CSC Set 2
Interrogatory CSC-14

The United Illuminating Company
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Witness: Charles Eves
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Q-CSC-14: In the neighborhoods adjacent to site 6, is the electric distribution system generally overhead or underground?

A-CSC-14: The electric system is generally overhead.