EXHIBIT JC-3

BEFORE THE

NEW JERSEY BOARD OF PUBLIC UTILITIES

IN THE MATTER OF THE PETITION OF JERSEY CENTRAL POWER & LIGHT COMPANY PURSUANT TO N.J.S.A. 40:55D-19 FOR A DETERMINATION THAT THE MONTVILLE – WHIPPANY 230 kV TRANSMISSION PROJECT IS REASONABLY NECESSARY FOR THE SERVICE, CONVENIENCE OR WELFARE OF THE PUBLIC

Direct Testimony

of

Dave Kozy Jr.

Re: The Design, Engineering, Construction, Operation and Maintenance of the Project, and Issues Associated with Underground Installation of 230 kV Transmissions Lines

I. INTRODUCTION AND BACKGROUND

Q. Please state your name and business address.

A. My name is Dave Kozy Jr. My business address is 76 South Main Street, Akron, Ohio 44308.

Q. By whom are you employed and in what capacity?

A. I am employed by FirstEnergy Service Company ("FirstEnergy"), as General Manager of Transmission Engineering. I am responsible for the management of engineering and design activities with regard to the construction, operation, and maintenance of FirstEnergy's transmission lines. My role includes the management of transmission line work associated with Jersey Central Power & Light Company's ("JCP&L") "Energizing the Future" transmission projects, such as the Montville - Whippany 230 kilovolt ("kV") Transmission Line Project (the "Project").

Q. Please describe your professional experience and educational background.

A. I began my career as a Substation Engineer with Ohio Edison Company, a predecessor to FirstEnergy, in June, 1987. I was promoted to Construction Engineer in August, 1989 and was then promoted to Transmission Engineer in February, 1991. I have been in the Transmission Engineering Department since 1991. I have held different positions (Transmission Engineer, Advanced Engineer, Senior Engineer, Supervisor, and Manager) prior to being promoted to General Manager, Transmission Engineering in April, 2011. All employment has been with FirstEnergy or its predecessors.

My education, experience and qualifications are fully-set forth in Appendix A to my testimony.

Q. Have you previously testified in Board of Public Utilities ("Board" or "BPU") proceedings?

A. Yes, I provided testimony on the Oceanview 230 kV Transmission Project, BPU Docket Number EO14030281.

Q. Have you testified before any other government body relating to transmission projects?

A. Yes. I have testified before the Pennsylvania Public Utility Commission. I have also testified before the Ohio Power Siting Board. In Pennsylvania, I provided testimony on the Bedford North – Osterburg East 115 kV Transmission Line Project Docket Number A-2011-2247862. Before the Ohio Power Siting Board I have provided testimony on the Geauga County 138 kV Transmission Line Supply Project, Docket Number 07-0171-EL-BTX.

II. PROJECT OVERVIEW

Q. Would you describe the purpose of your testimony?

A. The purpose of my testimony is to describe JCP&L's plans for designing, engineering, and constructing the Project. I will also explain the plans for operating and maintaining the Project, including the removal and control of vegetation and trees along the right-of-way ("ROW").

Q. Are you sponsoring any Exhibits?

A. Yes, I am sponsoring the following exhibits:

Exhibit DRK-01: Preliminary engineering rendering of the proposed ROW corridor cross section from the existing Whippany Substation to Troy Road, approximately 0.6 miles[1];

Exhibit DRK-02: Preliminary engineering rendering of the proposed ROW corridor cross section from Troy Road to approximately 0.2 miles north of Troy Road, approximately 0.2 miles;

Exhibit DRK-03: Preliminary engineering rendering of the proposed ROW corridor cross section from approximately 0.2 miles north of Troy Road to Interstate 80, approximately 2.2 miles;

Exhibit DRK-04: Preliminary engineering rendering of the proposed ROW corridor cross section from Interstate 80 to State Route 46, approximately 0.4 miles;

Exhibit DRK-05: Preliminary engineering rendering of the proposed ROW corridor cross section from State Route 46 to Vail Road/Stiles Lane, approximately 0.7 miles;

Exhibit DRK-06: Preliminary engineering rendering of the proposed ROW corridor cross section from Vail Road/Stiles Lane to John Henry Drive, approximately 0.9 miles;

Exhibit DRK-07: Preliminary engineering rendering of the proposed ROW corridor cross section from John Henry Drive to approximately 0.3 miles north of John Henry Drive, approximately 0.3 miles;

Exhibit DRK-08: Preliminary engineering rendering of the proposed ROW corridor cross section from approximately 0.3 miles north of John Henry Drive to Changebridge Substation, approximately 0.4 miles;

Exhibit DRK-09: Preliminary engineering rendering of the proposed ROW corridor cross section from Changebridge Substation to approximately 0.1 miles north of Old Changebridge Road, approximately 0.2 miles;

Exhibit DRK-10: Preliminary engineering rendering of the proposed ROW corridor cross section from approximately 0.1 miles north of Old Changebridge Road to south of Church Lane, approximately 0.4 miles;

Exhibit DRK-11: Preliminary engineering rendering of the proposed ROW corridor cross section from south of Church Lane to north of Springbrook Road East, approximately 0.4 miles;

[1] The segment lengths that are described in my testimony and in Exhibits DRK-01 through Exhibit DRK-13 are rounded to the one-tenth decimal place. Therefore, the segment lengths may not sum to the total project length due to rounding.

Exhibit DRK-12: Preliminary engineering rendering of the proposed ROW corridor cross section from north of Springbrook Road East to south of Schneider Lane, approximately 0.3 miles;

Exhibit DRK-13: Preliminary engineering rendering of the proposed ROW corridor cross section from south of Schneider Lane to the existing Montville Substation, approximately 0.2 miles;

Exhibit DRK-14: Project Overview Map and detailed mapping the depicts the proposed transmission line route; and

Exhibit DRK-15: Preliminary Project Construction Access Maps.

Q. Please describe the Project from an engineering perspective.

A. During the Regional Transmission Expansion Planning ("RTEP") process, PJM Interconnection L.L.C. ("PJM") identified the need to construct a new 230 kV transmission line that would supply power to the existing Montville Substation located in Montville Township. From an engineering and design perspective, the Project is divided into thirteen segments, beginning at the existing Whippany substation located in East Hanover Township heading north, and ending at the Montville Substation located in Montville Township. For most of the Project's length, the new 230 kV circuit will follow the path of JCP&L's existing 34.5kV double circuit: (i) K-115, Montville -Whippany No. 2 ("K-115"); and (ii) O-93, Chapin Road - Montville - Whippany ("O-93").

Below I provide detailed descriptions of each of the thirteen segments.

- **Segment No. 1**. The first segment begins at the existing Whippany substation located in East Hanover Township and heads north to Troy Road in Parsippany-Troy Hills Township, a distance of approximately 0.6 miles. *See* Exhibit DRK-01. Segment No. 1 will be built within JCP&L's existing ROW that is

approximately 395 feet wide.[2] In Segment No. 1, the Company is proposing to remove the existing two pole, double circuit wood structures that are located in JCP&L's existing ROW that carry the K-115 and O-93, 34.5kV circuits. The Company will replace the existing two pole, double circuit wood structures with new steel monopoles. The steel monopoles will carry the new 230kV circuit as well the K-115 and O-93, 34.5 kV circuits. Both the K-115 and O-93, 34.5 kV circuits will be underbuilt on the steel monopoles. Based on preliminary engineering design, the proposed steel monopoles will range from 130 to 150 feet high in this segment.

- **Segment No. 2**. The second segment is located from Troy Road to approximately 0.2 miles north of Troy Road, a distance of approximately 0.2 miles. *See* Exhibit DRK-02. Segment No. 2 will be built within JCP&L's existing ROW that is approximately 340 to 365 feet wide.[3] An additional 25 feet of new ROW will be needed on the western side of the existing ROW where the ROW narrows north of Troy Road.[4] Segment No. 2 is similar to Segment No. 1 in that the Company is proposing to remove and replace the existing two pole, double circuit wood structures carrying the K-115 kV and O-93, 34.5 kV circuits with new steel

[2] JCP&L's existing ROW for Segment No. 1 contains the following subtransmission and transmission lines: (i) double circuit, 34.5 kV subtransmission lines, I-61, Greystone-Whippany and D-4, Montville-Whippany; (ii) double circuit, 34.5 kV subtransmission lines, K-115 and 0-93; (iii) double circuit, 230/115kV transmission lines, B-1016, Morristown-Whippany 230 kV and G-943, West Wharton-Whippany 115kV; and (iv) double circuit, 230kV transmission lines, Q-1031, Greystone-Whippany 230kV and J-1024, Greystone-Whippany 230 kV. *See* Exhibit DRK-01.

[3] JCP&L's existing ROW for Segment No. 2 contains the following subtransmission and transmission lines: (i) double circuit, 34.5 kV subtransmission lines, K-115 and 0-93; (ii) double circuit, 230/115kV transmission lines, B-1016, Morristown-Whippany 230 kV and G-943, West Wharton-Whippany 115kV; and (iii) double circuit, 230kV transmission lines, Q-1031, Greystone-Whippany 230kV and J-1024, Greystone-Whippany 230 kV. *See* Exhibit DRK-02.

[4] Please refer to Tracey J. Janis's testimony (Exhibit JC-8) for further discussion regarding the additional ROW that is needed for the Project.

monopoles. The steel monopoles will carry the new 230 kV circuit as well as the K-115 and O-93, 34.5 kV circuits. Both the K-115 and O-93, 34.5 kV circuits will be underbuilt on the steel monopoles. Based on preliminary engineering design, the proposed steel monopoles will range from 130 to 150 feet high in this segment.

- **Segment No. 3.** The third segment is located approximately 0.2 miles north of Troy Road to Interstate 80, a distance of approximately 2.2 miles. *See* Exhibit DRK-03. Segment No. 3 will be built within JCP&L's existing ROW which is approximately 155 feet wide. However, there are several parcels located in Segment No. 3 where the ROW need to be expanded.[5] The new steel monopoles will be located on the east side of existing ROW and adjacent to the double circuit steel lattice tower structures carrying the K-115 and the O-93, 34.5 kV circuits. Based on preliminary engineering design, the proposed steel monopoles will range from 110 to 150 feet high in this segment.
- **Segment No. 4**. The fourth segment is located from Interstate 80 to State Route 46, a distance of approximately 0.4 miles. *See* Exhibit DRK-04. Segment No. 4 will be built within JCP&L's existing ROW that is approximately 155 feet wide. The Company will need to obtain a highway crossing permit for this segment. The new steel monopoles will be located on the east side of existing ROW and adjacent to the two pole, double circuit wood structures carrying the K-115 and O-93, 34.5 kV circuits. Based on preliminary engineering design, the proposed steel monopoles will range from 165 feet to 185 feet high in this segment.

[5] Please refer to Tracey J. Janis's testimony (Exhibit JC-8) for further discussion regarding the additional ROW that is needed for the Project.

- **Segment No. 5**. The fifth segment is located from State Route 46 to Vail Road/Stiles Lane in Montville Township, a distance of approximately 0.7 miles. *See* Exhibit DRK-05. JCP&L will need approximately 120 feet of new ROW for this segment. Preliminary pole alignment in this segment is centered within the new ROW. Based on preliminary engineering design, the proposed steel monopoles will range from 110 feet to 150 feet high in this segment.
- **Segment No. 6**. The sixth segment is located from Vail Road/Stiles Lane to John Henry Drive, a distance of approximately 0.9 miles. *See* Exhibit DRK-06. Segment No. 6 will be built within JCP&L's existing unused ROW that is approximately 170 feet wide. Preliminary pole alignment in this segment is approximately 60 feet from the eastern edge of the ROW. Based on preliminary engineering design, the proposed steel monopoles will range from 110 feet to 150 feet high in this segment.
- **Segment No. 7**. The seventh segment is located from John Henry Drive to approximately 0.3 miles north of John Henry Drive, a distance of approximately 0.3 miles. *See* Exhibit DRK-07. Segment No. 7 will be built within JCP&L's existing ROW that is approximately 170 feet wide. Preliminary pole alignment in this segment is approximately 75 feet from the eastern edge of the ROW. Based on preliminary engineering design, the proposed steel monopoles will range from 100 feet to 140 feet high in this segment.
- **Segment No. 8**. The eighth segment is located from approximately 0.3 miles north of John Henry Drive to Changebridge Substation, a distance of approximately 0.4 miles. *See* Exhibit DRK-08. Segment No. 8 will be built

within JCP&L's existing unused ROW that is approximately 100 feet wide. Preliminary pole alignment in this segment is centered within the 100 foot wide ROW. Based on preliminary engineering design, the proposed steel monopoles will range from approximately 110 feet to 150 feet high in this segment.

- **Segment No. 9**. The ninth segment is located from the Changebridge Substation to approximately 0.1 miles north of Old Changebridge Road, a distance of approximately 0.2 miles. *See* Exhibit DRK-09. Segment No. 9 will be built within JCP&L's existing ROW that is approximately 100 feet wide. The Company is proposing to remove and replace the existing single pole double circuit wood structures carrying the K-115 and O-93, 34.5 kV taps to Changebridge Substation with new steel monopoles. The steel monopoles will carry the new 230 kV circuit as well as the K-115 and O-93 34.5 kV taps to Changebridge Substation. Based on preliminary engineering design, the proposed steel monopoles will range from approximately 130 feet to 170 feet high in this segment.
- **Segment No. 10**. The tenth segment is located from approximately 0.1 miles north of Old Changebridge Road to south of Church Lane, a distance of approximately 0.4 miles. *See* Exhibit DRK-10. Segment No. 10 will be built within JCP&L's existing ROW that is approximately 170 feet wide. The new steel monopoles will be located approximately 70 feet from the east side of the existing ROW and adjacent to the single pole, double circuit structures carrying the K-115 and O-93, 34.5 kV circuits.[6] Based on preliminary engineering design,

[6] JCP&L's ROW in this area is adjacent to the east side of the Public Service Electric and Gas ("PSE&G") 500/230 kV Susquehanna – Roseland double circuit steel monopole structures.

the proposed steel monopoles will range from approximately 110 feet to 150 feet high in this segment.

- **Segment No. 11**. The eleventh segment is located from south of Church Lane to north of Springbrook Road East, a distance of approximately 0.4 miles, and is adjacent to two underground gas pipelines owned by Spectra Energy Corp. *See* Exhibit DRK-11. Segment No. 11 will be built within JCP&L's existing ROW that is approximately 210 feet wide. The new steel monopoles will be located approximately 55 feet from the east side of the existing ROW and adjacent to the two pole, double circuit structures carrying the K-115 and O-93, 34.5 kV circuit. Based on preliminary engineering design, the proposed steel monopoles will range from approximately 110 feet to 150 feet high in this segment.[7]
- **Segment No. 12**. The twelfth segment is located from north of Springbrook Road East to south of Schneider Lane, a distance of approximately 0.3 miles and is adjacent to two underground gas pipelines owned by Spectra Energy Corp. *See* Exhibit DRK-12. Segment No. 12 will be built within JCP&L's existing ROW that varies from approximately 160 to 210 feet wide. The new steel monopoles will be located approximately 55 feet from the east side of the existing ROW and adjacent to the single pole, double circuit wood structures carrying the K-115 and O-93, 34.5 kV circuits.[8] Based on preliminary engineering design, the proposed

[7] JCP&L's ROW in this area is adjacent to the east side of the Public Service Electric and Gas (PSE&G) 500/230 kV Susquehanna – Roseland double circuit steel monopole structures.

[8] Segment 12 is also adjacent to the PSE&G 500/230 kV Susquehanna – Roseland double circuit steel monopole structures.

steel monopoles will range from approximately 110 feet to 150 feet high in this segment.

- **Segment No. 13**. The thirteenth segment is located from south of Schneider Lane to the existing Montville Substation in Montville Township, a distance of approximately 0.2 miles. *See* Exhibit DRK –13. Segment No. 13 will be built within JCP&L's existing ROW approximately 170 feet wide. The new steel monopoles will be located approximately 70 feet from the east side of the existing ROW and adjacent to the single pole, double circuit wood structures carrying the K-115 and O-93, 34.5 kV circuits.[9] Based on preliminary engineering design, the proposed steel monopoles will range from approximately 110 feet to 150 feet in this segment.

Q. Will the Project include any changes to the existing Montville and Whippany substations? Please explain.

A. Yes. The Project will involve reconfiguration of both the Whippany and Montville substations. In order to accommodate the new Montville-Whippany 230 kV line, the Whippany 230 kV substation will add one 230 kV breaker, along with carrier equipment that includes a wave trap, CVT and carrier cabinet.[10] The cost associated with the work at the Whippany substation is approximately $1,187,100.[11] The existing Montville Substation will add one 230 kV breaker, along with carrier equipment that includes a wave trap, CVT and carrier cabinet.

[9] Segment 13 is also adjacent to the PSE&G easement.

[10] Carrier equipment allows substations to communicate with each other in order to coordinate protection of the substation and transmission lines from outages on the system.

[11] This cost estimate includes overhead costs.

The cost associated with the work at the Montville substation is approximately $1,132,600.[12]

III. DESIGN OF TRANSMISSION STRUCTURES

Q. Does JCP&L have an existing transmission line from the Whippany Substation to the Montville Substation?

A. No. JCP&L currently has three 34.5 kV subtransmission circuits running between Whippany Substation and Montville Substation. The circuits are the D-4, Montville-Whippany, the K-115, and the O-93. PSE&G's E-2205, Montville – Roseland 230 kV and N-2214, Montville – Newton 230 kV circuits supply energy to the Montville Substation.

Q. Is JCP&L proposing to rebuild or upgrade the existing subtransmission circuits from Whippany Substation to the Montville Substation?

A. The Company is only proposing to rebuild certain portions of the existing subtransmission circuits (the K-115 and 0-93, 34.5 kV circuits). As previously explained, the Company will be rebuilding the K-115 and 0-93, 34.5 kV double circuit structures within Segment Nos. 1, 2, and 9. The existing 34.5 kV circuits will remain in service after the Project is placed in service.

Q. Please explain why the Company is only proposing to rebuild certain portions of the K-115 and O-93, 34.5 kV double circuit instead of rebuilding the whole circuit?

A. The only portions of the 34.5 kV subtransmission circuits that are proposed to be rebuilt are the portions where the new 230 kV line will need to occupy the same

[12] This cost estimate includes overhead costs.

approximate centerline due to right-of-way limitations. In other words, in the segments where is the existing ROW is not wide enough for separate 34.5 kV and 230 kV pole lines, JCP&L plans to place the 34.5 kV circuits on the same poles as the new 230 kV circuit, in an underbuild configuration. *See, e.g.*, Exhibit DRK-09.

Q. What is the width of the ROW needed for the Project?

A. JCP&L's ROW for the Project, including areas where new ROW is required, will vary from approximately 100 to 395 feet wide. Some of this ROW will include existing transmission and sub-transmission lines.

Q. Can you describe the proposed structure design and type of pole proposed for the project?

A. JCP&L is proposing to install single steel monopoles. Based on the location of the monopoles, the monopoles will have either davit arms with suspension type insulators installed or horizontal braced post insulators that are directly connected to the steel monopole. In segments that require underbuilt 34.5 kV circuits, the 34.5 kV circuits will be mounted on two cross arms approximately 15 feet below the lowest 230 kV conductor.

Q. Are you able to describe the proposed structures for this Project?

A. Yes. The transmission line structures proposed to be installed as part of the Project will support both the initial 230 kV transmission line and incorporate provisions to provide the flexibility to install a second 230 kV transmission line should a second circuit become necessary at some future time. JCP&L believes it is appropriate to initially install structures that can support two transmission lines, as it would avoid

the need to replace single circuit structures with double circuit structures or installing another series of structures along this corridor.

Q. How is the monopole structure constructed?

A. A monopole structure is manufactured and constructed in sections limited by length and weight for shipping and erection purposes. Monopoles require very large construction support equipment on site for erection.

Q. What type of foundations or footings will be used for the monopole structures?

A. The foundations will be reinforced concrete drilled piers, or helical piles.

IV. PROJECT DESIGN

Q. What will the voltage of the new circuit be for this Project?

A. This transmission line will be constructed and operated at 230,000 volts, which is also described as a 230 kV.

Q. What is the size, type and number of conductors planned for this Project?

A. Transmission lines transmit 3-phase electrical power. Each phase requires one or more conductors. A single-circuit transmission line structure must be capable of supporting three phases. "Shield wires" are one or two smaller steel or aluminum cables or fiber optic cables that are suspended above the upper conductor. The shield wires are intended to intercept lightning strikes, which would electrically interfere with the power system if they were to strike the conductors directly. The shield wires may also have a fiber optic communications capability for use in controlling the operation of the transmission system.

The 230 kV circuit for this project will be utilizing a single 1590 kcmil 45/7 Aluminum Conductor Steel Reinforced "Lapwing" conductor per phase that is 1.502 inches in diameter, weighs approximately 10,777 pounds per mile and has a rated breaking strength of 43,800 pounds. The 45/7 designation indicates the stranding of the conductor, with the 45 representing the outer 45 aluminum wires and the 7 representing the inner 7 steel wires.

Q. Will there be any other overhead wires on the structures in connection with this Project?

A. Yes. The static or shield wire will be a minimum of two 7#5 Alumoweld, and will be installed above the top phase conductor attachment points for lightning and relay protection. In addition, as I discussed above, the existing 34.5 kV subtransmission circuits will be underbuilt on the new monopoles in Segments 1, 2 and 9. The 34.5 kV circuits will be 556.5 kcmil 26/7 "Dove" conductor per phase.

Q. Please describe the configuration of the conductors and why this configuration was selected.

A. JCP&L will be installing a single circuit 230 kV monopole that will have one set of three phases arranged vertically on the structure using one conductor per phase. The vertical configuration is typical for these types of projects and is also economical. The vertical configuration also allows for a compact design which minimizes: (i) electric and magnetic fields; and (ii) the visual impacts that the monopoles may have on the ROW. The underbuilt 34.5 kV circuits, will be mounted on two cross arms approximately 15 feet below the lowest 230 kV

conductor where required. This configuration for the 34kV circuits minimizes structure heights.

Q. What is the height range of the proposed transmission structures that will be constructed for this Project?

A. As I discussed above with respect to the individual segments, based on preliminary engineering design the proposed structures are expected to range in height from approximately 100 feet to approximately 185 feet tall. The tallest structures are expected to be required for State Route 46 and Interstate 80 highway crossings. The structures for this segment, Segment 4, are expected to be approximately 165 to 185 feet tall.

Q. What factors determined the height of the monopoles?

A. The factors which determine structure height include: (i) terrain; (ii) National Electric Safety Code ("NESC") clearance requirements; (iii) phase to phase clearance; (iv) phase to ground clearance; (v) phase to other utilities clearance; and (vi) crossing of roads, other structures, and bodies of water.

Q. Does JCP&L plan to use the shortest monopoles that satisfy engineering, safety, and reliability concerns for the Project?

A. Yes. JCP&L uses the most cost-effective structures possible that minimize electric and magnetic fields, while meeting all NESC, Occupational Safety and Health Administration ("OSHA"), and FirstEnergy clearance and safety requirements.

Q. Does JCP&L have transmission structures at a similar height anywhere else in New Jersey?

A. Yes. Most JCP&L transmission circuits 230 kV or greater have transmission structures that are 80 feet or taller.

Q. Are there any transmission lines owned by JCP&L that consistently have towers exceeding 80 feet in height?

A. Most JCP&L transmission circuits that are 230 kV or greater have a majority of structures that are 80 feet or taller.

V. INFRASTRUCTURE BENEFITS AND LOCATION

Q. What factors does JCP&L consider in its decision regarding structure design and location?

A. The design and location of the transmission structures are based on the natural environment. Specifically, the Company will need to manage steep land, avoid wetlands, properly cross bodies of water and roads, and design structures that are able to withstand severe weather conditions. Other factors that influence design and location are proper clearance to ground, FirstEnergy voltage standards, effects on foundation, and property owner impacts.

JCP&L, along with its consultants, will carefully review the final location of each of the new structures to minimize the number of structures, and manage wetlands, steep topography, and difficult access requirements.

Q. Please explain where the transmission structures will be located in the ROW.

A. Please see Exhibits DRK-Exhibit 01 through DRK-Exhibit 13, which show the proposed centerline within the ROW based on the preliminary engineering.

Q. Please describe the temperature at which the conductors will operate.

A. The transmission line will be designed to operate at a maximum design temperature of 212 degree Fahrenheit ("F").

Q. Please describe the relationship of the proposed ROW width to design and NESC requirements for the project?

A. The ROW width was determined in order to provide necessary conductor clearances when considering structure type, conductor motion, line voltage, and NESC-defined weather conditions.

Q. Please describe the minimum conductor to ground clearance under maximum operating conditions the design will meet.

A. The transmission line will be designed to meet or exceed the NESC requirements under all operating conditions. In general, the minimum NESC conductor to ground clearance on public access areas is 22.5 feet, although the minimum requirements vary depending on what the conductor is traveling over. NESC Code clearances are different for, among others, bodies of water, railroad crossings and crossing over other types of structures, such as buildings. JCP&L will meet or exceed all NESC requirements.

VI. GAS AND OIL PIPELINES

Q. Are there existing gas or oil pipelines in the ROW or adjacent to the ROW

A. Yes, all underground gas or oil pipelines in the vicinity of the Project have been identified on Exhibits DRK-07, 11, 12 and 13. Gas transmission lines are commonly located adjacent to, or within, a utility's electric transmission ROW due to the efficiency of acquiring an easement on an existing ROW verses acquiring new ROW.

Q. How will construction be handled near the underground gas or oil pipelines?

A. The Company will coordinate construction and maintenance, as necessary, with the owners of underground gas or oil pipelines in proximity to the Project. Proposed structures will not be placed on existing gas or oil pipeline easements. All access routes are anticipated to avoid the gas or oil pipeline easements. However, if it is necessary to cross pipelines with construction equipment, appropriate matting or additional mounding shall be coordinated with the gas or oil pipeline companies.

Q. Is there any additional coordination required with the gas or oil pipeline companies?

A. Yes. The Company will collaborate, as necessary, with the owners of underground pipelines in the proximity to the Project to review existing cathodic protection for the pipelines.

VII. ACCESS AND CONSTRUCTION

Q. As a General Manager of Transmission engineering, are you responsible for designing and implementing a construction plan?

A. Yes.

Q. Please describe, in general terms, the construction process.

A. The project will be constructed in accordance with Best Management Practices ("BMP") that utilize industry standard construction practices to perform work safely, responsibly, and cost effectively in compliance with applicable OSHA Rules and Regulations, environmental regulations and at a reasonable cost to customers. Project activities will include the installation and maintenance of soil

erosion and sedimentation control measures, i.e., silt fencing, temporary access route construction, right-of-way clearing, foundation, structure and wire installations, and the rehabilitation of areas disturbed during construction, e.g., reseeding of disturbed areas.

Q. Will JCP&L perform the work with its employees or will the work be contracted?

A. JCP&L anticipates using contractors for construction.

Q. How will JCP&L oversee construction?

A. JCP&L will use both internal and third-party resources to manage and oversee the construction of the Project. JCP&L plans to assign an internal project manager for this project, with responsibility for internal and external resources, materials, timeline and budget.

Q. How do you anticipate access for construction will be accomplished?

A. Construction access requirements along the route are being identified as part of JCP&L's design effort and the Company plans to use existing ROW access routes, where available. Where there is no current access, JCP&L will need to locate access points and negotiate with property owners for the right to access these properties.

Q. What factors determine the proposed location and type of access required?

A. The factors JCP&L considers in determining the type of access and the locations are: (i) proximity to structures; (ii) environmental impacts; (iii) topography; (iv) structure type; (v) adjacent access; (vi) property rights and (vii) the type of equipment required at each location.

Q. What material will JCP&L use to construct access roads?

A. Access road material is dependent upon site-specific conditions and requirements. However, typical construction access road materials typically consist of stone and matting.

Q. Where do you anticipate construction lay-down areas will be located?

A. Construction lay-down areas not adjacent to or part of the structure lay-down area will be determined as part of the detailed design effort. However, JCP&L anticipates that the Montville and Whippany, substations as well as existing ROW will be used as part of the Company's construction lay-down areas.

Q. Do you anticipate any clearing of the ROW will be necessary for construction?

A. Yes. Much of the route is proposed to be constructed in ROW that currently has no existing infrastructure in it, or in new ROW. As previously mentioned, the Company will need additional easements for additional tree clearing rights in certain areas along the edge of the existing ROW.

Q. What steps are planned for minimizing the effects of construction on areas within and outside of the ROW, including such things as traffic and other local community issues?

A. Work will commence and be conducted in accordance with all applicable federal, state and local laws, under proper permits, property releases and approved special conditions. JCP&L will, at all times, minimize the impacts of construction activities on local communities.

Q. What is necessary to prepare the ROW for construction?

A. The construction specifications adopted for the Project are designed to lessen environmental impact from the Project. In addition to the implementation of BMP, JCP&L's efforts during the ROW preparation phase of construction will include the following:

1. Submission of a copy of the Soil Erosion and Sedimentation Control Plan ("E&S Plan"), along with the appropriate permit forms, to the New Jersey Department of Environmental Protection for approval.

2. Placement of Soil Erosion and Sedimentation Control measures prior to any earth disturbance.

3. Access routes will be constructed in accordance with the E&S Plan. JCP&L will attempt to avoid construction of additional permanent access roads. Where access routes are needed for construction, the routes will be re-graded to approximate pre-construction contours and re-vegetated.

Q. What method or methods will be used to clear the ROW for construction?

A. The initial clearing will be performed in accordance with N.J.A.C 14:5-9.6 and the Company's Vegetation Management Program. The Company's Vegetation Management Program includes the removal of incompatible vegetation within the Transmission clearing zone. The transmission clearing zone corridor refers to the clearing width to be achieved at the time of routine vegetation management. All incompatible vegetation overhanging the transmission clearing zone corridor that is within the minimum clearance requirements shall be removed, pruned to the main stem, or controlled using herbicides. When required, JCP&L's standard

specifications will be modified and/or amended to comply with all terms of the applicable permits required to construct the project.

Q. After construction is completed, will JCP&L take steps to upgrade, seed, or otherwise restore disturbed right-of way and any access roads?

A. Yes. Disturbed work areas will be re-vegetated in accordance with the E&S Plan. After construction, drainage, fencing and erosion control aspects of the transmission line ROW will be restored to conditions as good as or better than those that existed prior to construction, which may include some or all of the following: 1) the restoring of drainage ditches, fencing and field drainage tiles; 2) fertilizing, seeding and mulching of disturbed non-cultivated areas; and 3) removing temporary soil erosion and sedimentation control measures after vegetative cover has been established. Where required, access roads shall be removed and the area restored to as good as or better than those that existed prior to construction.

Q. What is the timetable to complete construction and have facilities in service?

A. The construction schedule will be established to meet a June 1, 2017 in-service date. JCP&L anticipates access road construction will start in early 2016 and actual transmission line construction is estimated to take approximately 12 to 16 months.

Q. What is the estimated cost to site and construct the Project?

A. The total project cost is approximately $35,463,300[13], which includes construction work at two (2) existing substations - Montville Substation

[13] This cost estimate includes overhead costs.

(approximately $1,132,000) and Whippany Substation (approximately $1,187,100).

Q. How will property owners be notified when construction begins?

A. The Company's project managers typically notify property owners that are on the ROW or adjacent to the ROW by letter via U.S. Mail approximately one month prior to start of construction for each area.

VIII. MAINTENANCE

Q. Under what general parameters will JCP&L maintain the Project's ROW?

A. JCP&L will maintain the Project in accordance with BMP, Company's Transmission Vegetation Management Program, along with NESC and OSHA Regulations. Each transmission circuit within the FirstEnergy footprint has a vegetation maintenance plan filed with FERC that FirstEnergy is required to follow. The plan for this project will be filed after the transmission line is placed in service.

Tall-growth vegetation within the line ROW will be removed. Dead, dying and deceased vegetation that is outside of the ROW will be removed, so that it does not later cause a service interruption or interfere with line inspections or repairs. These tasks may be accomplished by the use of herbicides, mechanical mowing, or hand cutting. Tree limbs that threaten to intrude into the ROW from trees growing outside the ROW will be removed, to eliminate the threat of damage to the line conductor or other facilities. This "vegetation removal" will be accomplished by a wide variety of mechanical trimmers, manual trimming, or the aerial saw, as conditions require.

Entire trees, both within and outside of the ROW, will be removed should they exhibit weakness or structural damage and pose a high degree of risk to the line's uninterrupted service. This tree removal process will apply to any dead or live priority trees and will be accomplished using any tool at JCP&L's disposal that can safely and quickly remediate the hazard. JCP&L's overarching goal is to prevent all vegetation-caused service interruptions at the lowest possible cost by removing potentially threatening vegetation at the most advantageous time. In order to remove trees that are outside the Company's ROW (i.e., off-corridor), JCP&L will have to first obtain the necessary rights from the applicable property owners.

IX. UNDERGROUNDING ELECTRIC TRANSMISSION LINES

Q. Did JCP&L assess the option of placing the 230 kV facilities underground?

A. Yes.

Q. What would construction of an underground transmission line entail for this Project?

A. Underground installation of this transmission line would involve installing dialectic encased conductors, each approximately 4½ inches in diameter and weighing approximately 20 pounds per foot, in a PVC duct for the length of the Project. The PVC ducts would be encased in concrete. Within each substation, terminations and associated surge arresters would require an area approximately 30 feet by 100 feet. Terminations, which connect cables to overhead bus, resemble transformer bushings and are approximately 9 ½ feet tall.

Q. Please explain why the Company did not choose to place the 230 kV line underground?

A. JCP&L chose not to place the 230 kV line underground for the following reasons:

1. Environmental Impacts. Underground cables, buried concrete duct banks and manholes would require extensive excavation when compared to overhead construction. The extensive excavation would negatively impact streams, wetlands, and other sensitive areas especially due to moving heavy large excavation equipment, concrete trucks, tractor-trailers with 80,000 pound manholes and 50,000 pound cable reels in the terrain associated with the ROW.

2. Restoration Period. Should an underground transmission line experience a problem, it will take longer to repair the underground transmission line compared to an overhead transmission line. This is due to specialized equipment being required to determine the location of a fault for an underground transmission line and the excavation that is necessary to reach the fault. A repair may take weeks, whereas that same repair for an overhead transmission line may take only hours or days. A failed cable can easily be out of service for a month or longer. Therefore, alternate provisions for power transfer must be made until the cable can be repaired.

3. Cost. As I discussed above, the total cost of the transmission line associated with the Project is approximately $35,463,300. If the Company was to construct this line underground the cost would be approximately 4 – 10 times as much.

4. Less capacity. Underground cables of the same size transmit less power than overhead lines of the same size. Therefore, larger or multiple cables will be required for an underground transmission line to transfer the same capacity as overhead transmission line. In order to protect the underground cables, those cables are placed in plastic encasement or oil filled reservoirs. Overhead transmission lines do not require the same type of protection.

Q. Generally, what types of environmental impacts are related to underground transmission lines?

A. Underground transmission construction generally has greater environmental impact than overhead transmission construction for several reasons:

- The entire route must be excavated or installed by trenchless means;
- Significant access roads would need to be constructed adjacent to the trenched area to support heavy equipment, such as large excavation equipment, concrete trucks, tractor-trailers with 80,000 pound manholes and 50,000 pound cable reels;
- It is generally not practical to cross wetlands, creeks, rivers, railroads, or highways with open trenching. Horizontal directional drilling may be required. Horizontal drilling requires an extensive amount of equipment and requires using "drilling mud[14]" that has the possibility of forcing its way to the surface in undesired locations.

[14] Drilling mud, also called drilling fluid is a heavy, viscous fluid mixture used to carry rock cuttings to the surface and also to lubricate and cool the drill bit. The drilling mud, by hydrostatic pressure, also helps prevent the collapse of unstable strata into the borehole and the intrusion of water from water-bearing strata that may be encountered.

- If the wetlands have crossings of 3,000 feet or more, alternate routes may be required unless approval is granted by the New Jersey Department of Environmental Protection ("NJDEP") to open trench in the wetlands. It is generally more difficult to obtain permits for open trenches through wetlands as opposed to installing overhead structures and using temporary access roads;
-
- Since every foot of the length is trenched or excavated, the possibility of encountering contaminated soils is increased;
- Blasting may be required for substantial distances, especially in the case of rock outcroppings; and
- The temperature at the earth's surface is elevated several degrees above that of the surrounding area.

Q. Does the Preferred Route have any specific environmental concerns that make undergrounding a transmission line problematic?

A. Yes. The Preferred Route (A3) has extensive wetlands, which, from an engineering perspective, is problematic with respect to the installation of underground cable. Horizontal directional drilling (non-open trench) can allow crossing some wetlands, but the maximum length is approximately 3,000 feet. Longer lengths, such as Segment 3 which is approximately 2.2 miles in length, would most likely require re-routing the cables.

Impacts associated with undergrounding transmission lines through wetlands, transition areas and riparian areas are greater than traditional overhead construction. Impacts associated with overhead transmission lines are limited to

the footprint of the structure foundations, while impacts associated with underground transmission lines would occur the entire length of the project. In particular, this Project would require duct banks that could support up to six separate cables. Only three transmission cables would be pulled for the initial planned circuit, it would also require placement of manholes every approximately 2,500 feet. As explained above, overhead transmission structures are being designed to support a second 230 kV transmission line. Therefore, JCP&L would use the same design approach if the Project were to be built as an underground project. In order to support a future 230 kV transmission line underground, two manholes would need to be placed side by side, each manhole is approximately 28 feet long, 8 feet wide, and 7 feet tall and weighs approximately 80,000 pounds. The separate manholes are used to pull cable and make splices without taking adjacent circuits out of service.

The use of underground cables tends to elevate temperatures several degrees above the duct banks, which may have impacts on the wetlands.

Q. Would construction of the proposed transmission line underground eliminate electric and magnetic fields ("EMF")?

A. At the Project's public meetings, certain residents and property owners have voiced concerns over the EMF levels for this Project. Although the earth blocks the electric field from underground transmission lines, the earth does not block magnetic fields. At 1 meter above ground the magnetic field could be higher with underground construction than with the proposed overhead transmission line, but the magnetic field level would diminish quickly with distance from the

underground line. However, an underground line might not be constructed on a ROW but be placed underneath or alongside public streets, which would increase the opportunity for the public to encounter higher magnetic fields. Moreover, modeling of the magnetic field from the existing and the proposed overhead line indicates that the construction of the Project will decrease the current levels of both electric and magnetic field levels near the Lazar Middle School. Please refer to the Testimony of Kyle G. King, Exhibit JC-10, for additional details. This anticipated reduction in EMF with the proposed Project would not occur if the new line was constructed underground under the existing ROW or public streets.

Q. Are underground facilities more reliable and have less frequent outages than overhead facilities?

A. Initially, underground facilities may have less frequent outages as the equipment is new and is not directly exposed to the weather. Over time, these facilities age and deteriorate as all materials do. When an underground transmission line is experiencing a problem, it will take longer to repair the underground transmission line compared to an overhead transmission line. This is due to specialized equipment being required to determine the location of a fault for an underground transmission line and the amount of excavation that is necessary to reach the fault. Therefore, a repair may take weeks, whereas a similar repair for an overhead transmission line may take only hours or days.

Q. Are there operational considerations that need to be studied for an underground transmission installation?

A. The electrical characteristics of underground cables are different than those of overhead transmission lines, which can cause problems in other system operations. Cables behave like long distributed capacitors. The cable capacitance reduces the allowable flow of real power, that can cause instability in system operation and cause overvoltages that may damage system components such as transformers.

Q. In your expert opinion, what would be the preferred installation for this Project?

A. In my opinion, the overhead transmission installation would be the more appropriate installation for the Project for the reasons I stated above.

Q. Does this conclude your direct testimony?

A. Yes, it does.

Dave Kozy, Jr.

Education

1987	University of Akron, BS Civil Engineering

Experience

1987 – 1989	Substation Engineer B, Substation Engineering, Ohio Edison Company
1989 – 1991	Construction Engineer A, Substation Construction, Ohio Edison Company
1991 – 1996	Transmission Engineer, Transmission Engineering, Ohio Edison Company
1996 – 2004	Advanced Engineer, Transmission Engineering, FirstEnergy Service Company
2004 – 2006	Senior Engineer, Transmission Engineering, FirstEnergy Service Company
2006 – 2008	Supervisor, Transmission Engineering, FirstEnergy Service Company
2008 – 2011	Manager, Transmission Engineering, FirstEnergy Service Company
2011 – Present	General Manager, Transmission Engineering, FirstEnergy Service Company

Professional Engineer

Licensed in Ohio, Pennsylvania, New Jersey, West Virginia, Maryland and Virginia

Provided testimony in the following cases:

Ohio Power Siting Board Case:

Docket No. 07-0171-EL-BTX, Geauga County 138 kV Transmission Line Supply Project

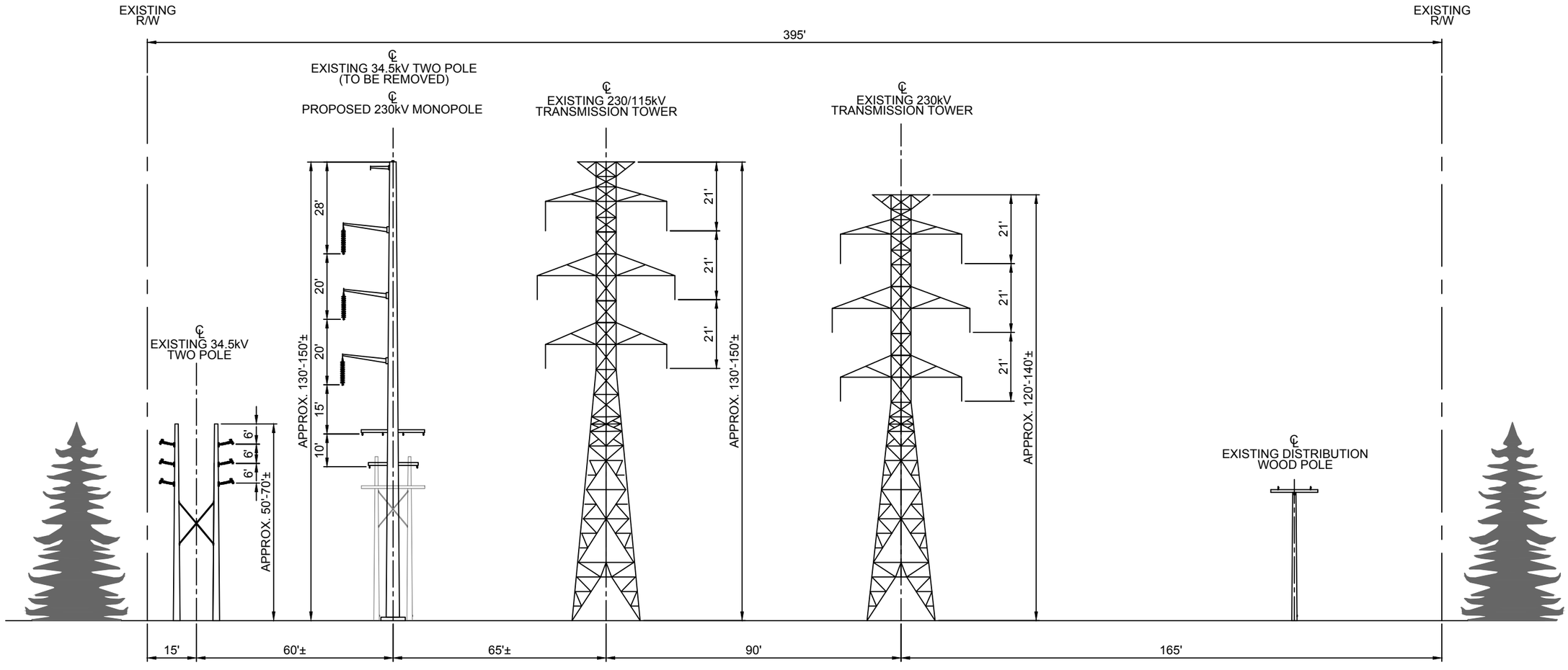
Pa P.U.C. Case:

Docket No. A-2011-2247862, Bedford North – Osterberg East 115 kV HV Transmission Line Project

NJ BPU Case:

Docket No. EO14030281, Oceanview 230 kV Transmission Line Project

Exhibit DRK-01



MONTVILLE-WHIPPANY

(LOOKING NORTH)

EXISTING WHIPPANY SUBSTATION TO TROY ROAD
APPROXIMATELY 0.6 MILES

NOTES:
PROPOSED STRUCTURE HEIGHTS AND DIMENSIONS ARE CONSIDERED PRELIMINARY AND COULD VARY SIGNIFICANTLY UPON FINAL DESIGN.

PRELIMINARY - NOT FOR CONSTRUCTION

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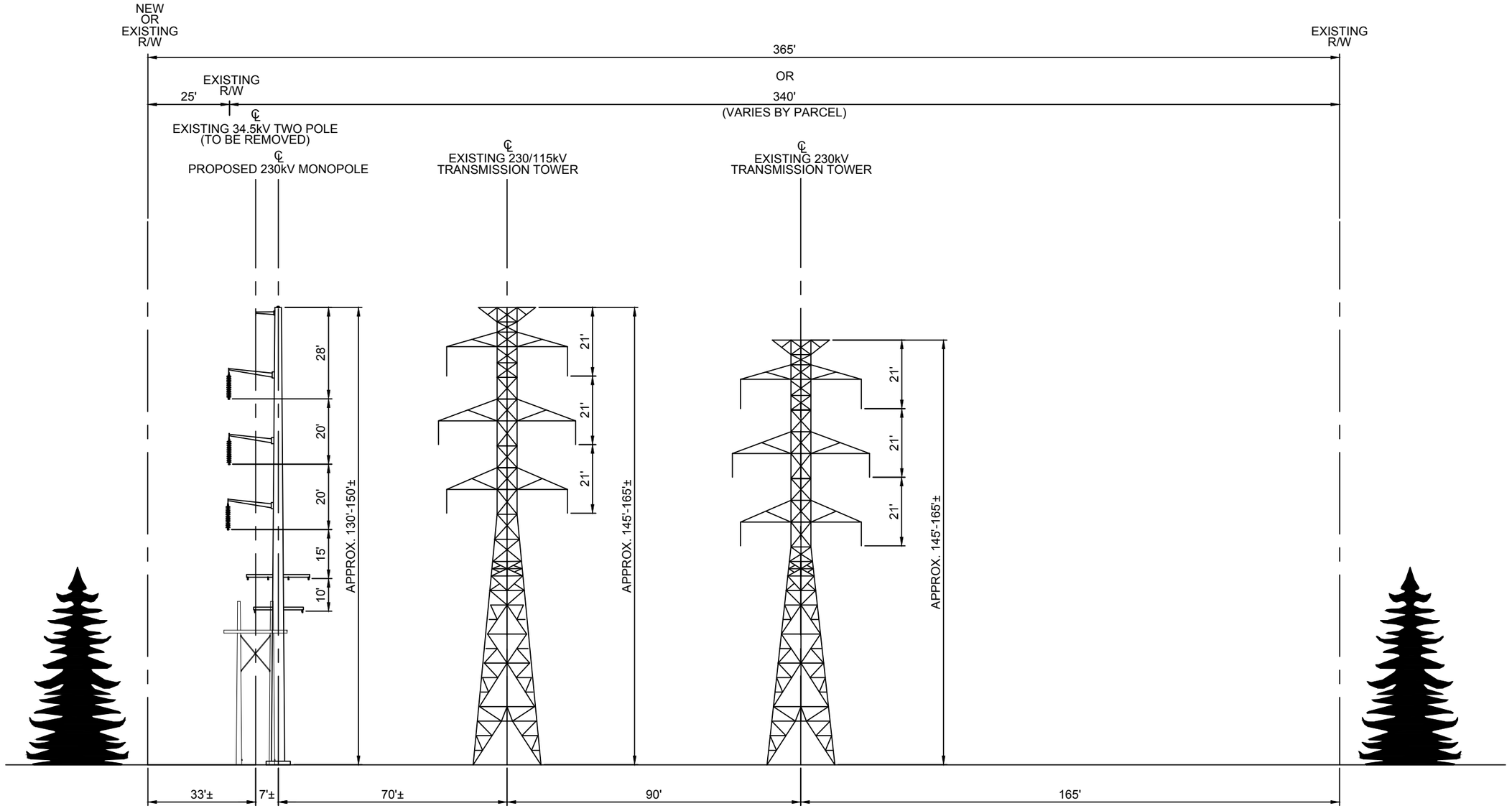
Jersey Central Power & Light
A FirstEnergy Company

Transmission Design
CORRIDOR CROSS SECTION
MONTVILLE-WHIPPANY 230kV
DRK - EXHIBIT 01

Exhibit DRK-02



MONTVILLE-WHIPPANY
(LOOKING NORTH)
TROY ROAD TO APPROXIMATELY 0.2 MILES NORTH OF TROY ROAD
APPROXIMATELY 0.2 MILES

PRELIMINARY - NOT FOR CONSTRUCTION

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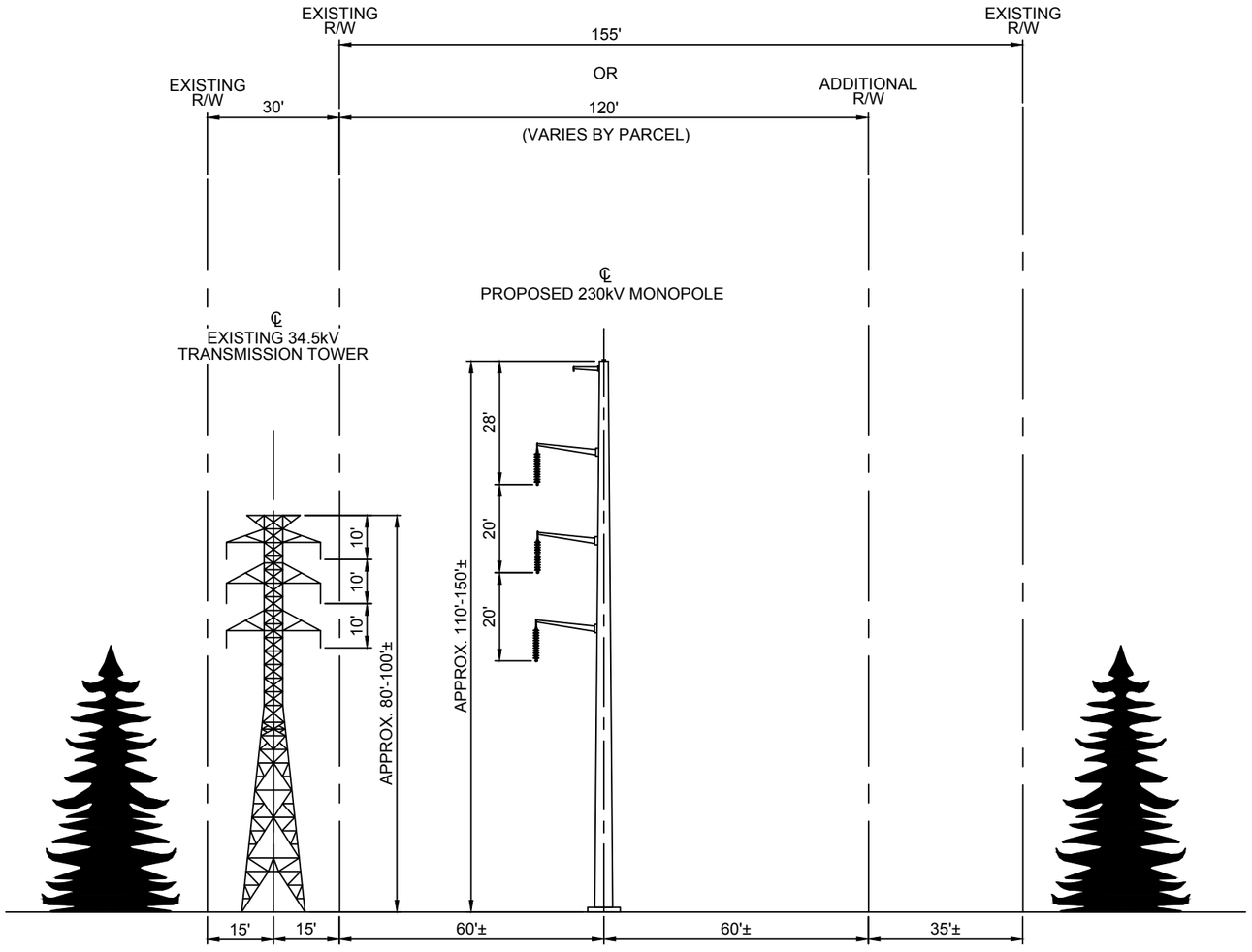
MONTVILLE-WHIPPANY 230kV
DRK - EXHIBIT 02

Exhibit DRK-03



MONTVILLE-WHIPPANY
(LOOKING NORTH)
APPROXIMATELY 0.2 MILES NORTH OF TROY ROAD TO INTERSTATE 80
APPROXIMATELY 2.2 MILES

NOTES:
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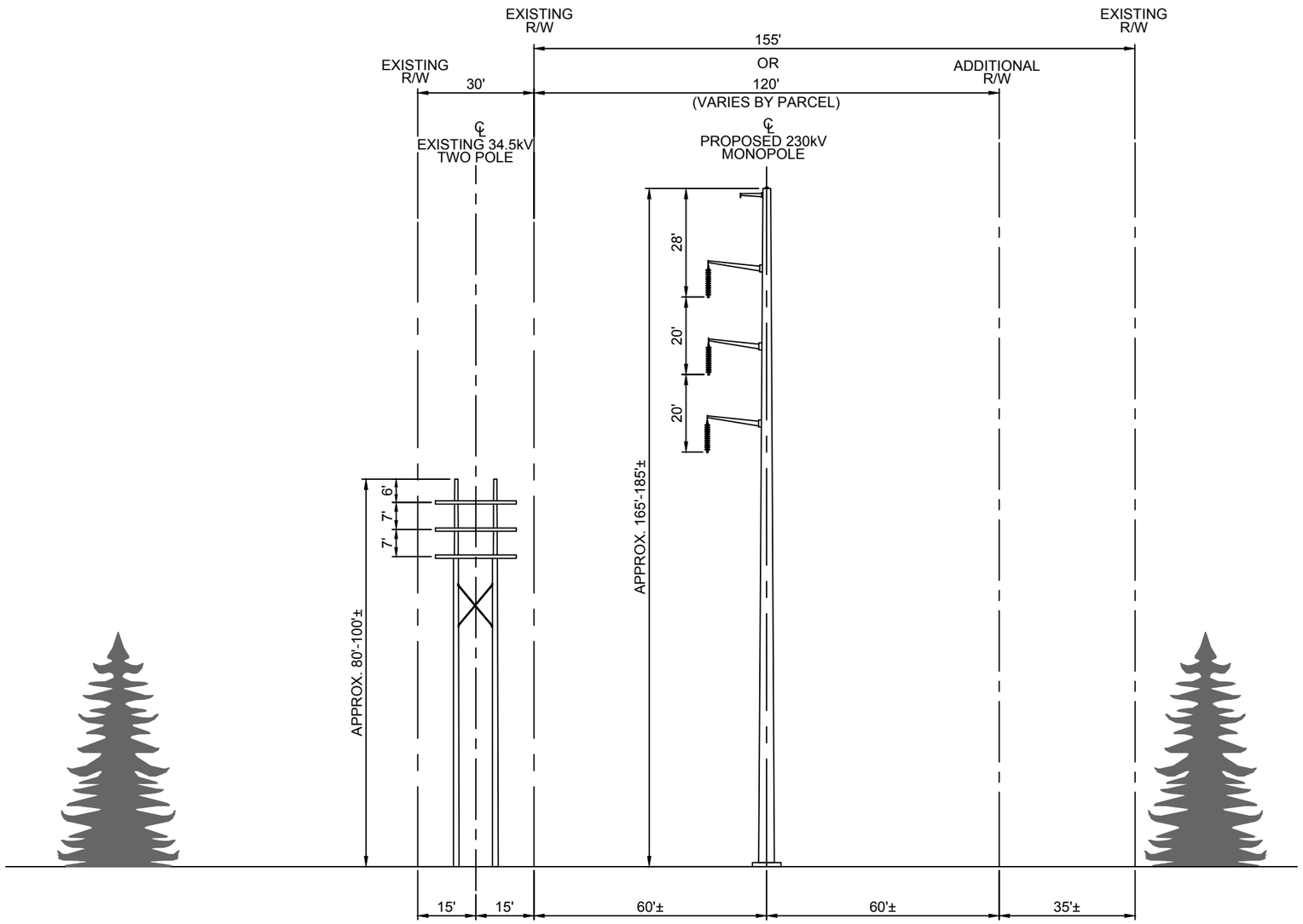
MONTVILLE-WHIPPANY 230kV
DRK - EXHIBIT 03

Exhibit DRK-04



MONTVILLE-WHIPPANY
(LOOKING NORTH)
INTERSTATE 80 TO STATE ROUTE 46
APPROXIMATELY 0.4 MILES

PRELIMINARY - NOT FOR CONSTRUCTION

NOTES:
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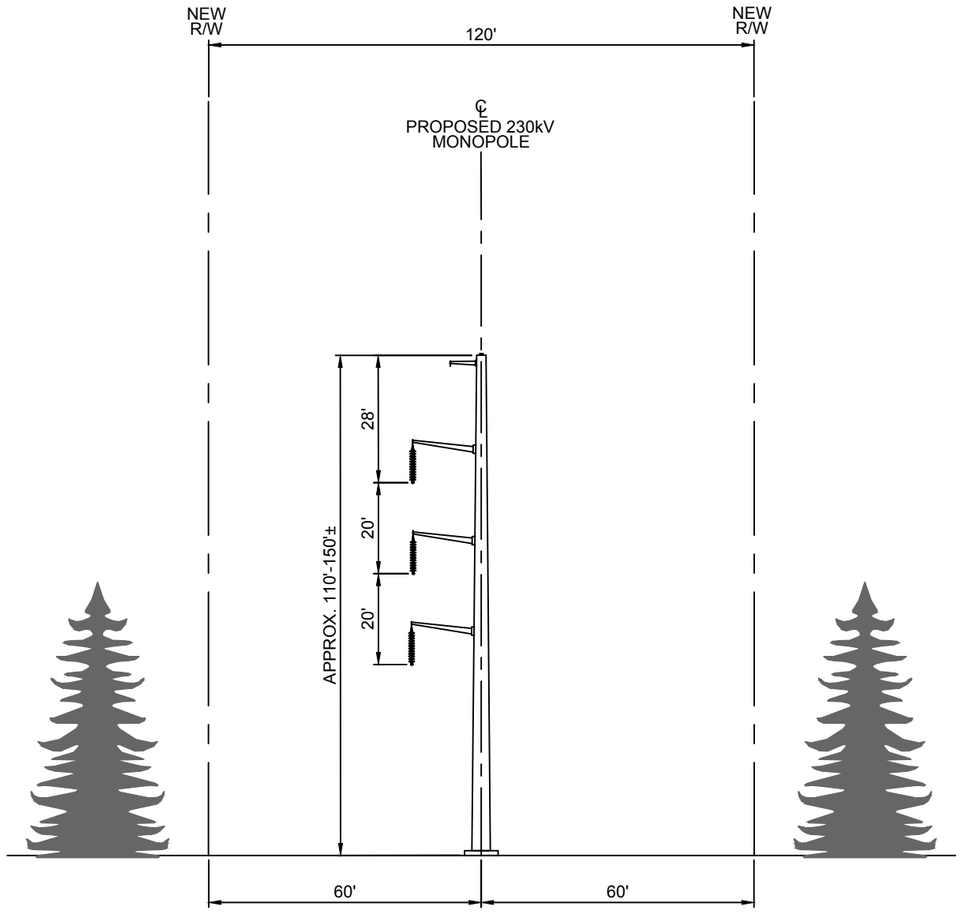
MONTVILLE-WHIPPANY 230kV
DRK - EXHIBIT 04

Exhibit DRK-05



MONTVILLE-WHIPPANY
(LOOKING NORTH)
STATE ROUTE 46 TO VAIL ROAD/STILES LANE
APPROXIMATELY 0.7 MILES

PRELIMINARY - NOT FOR CONSTRUCTION

NOTES:
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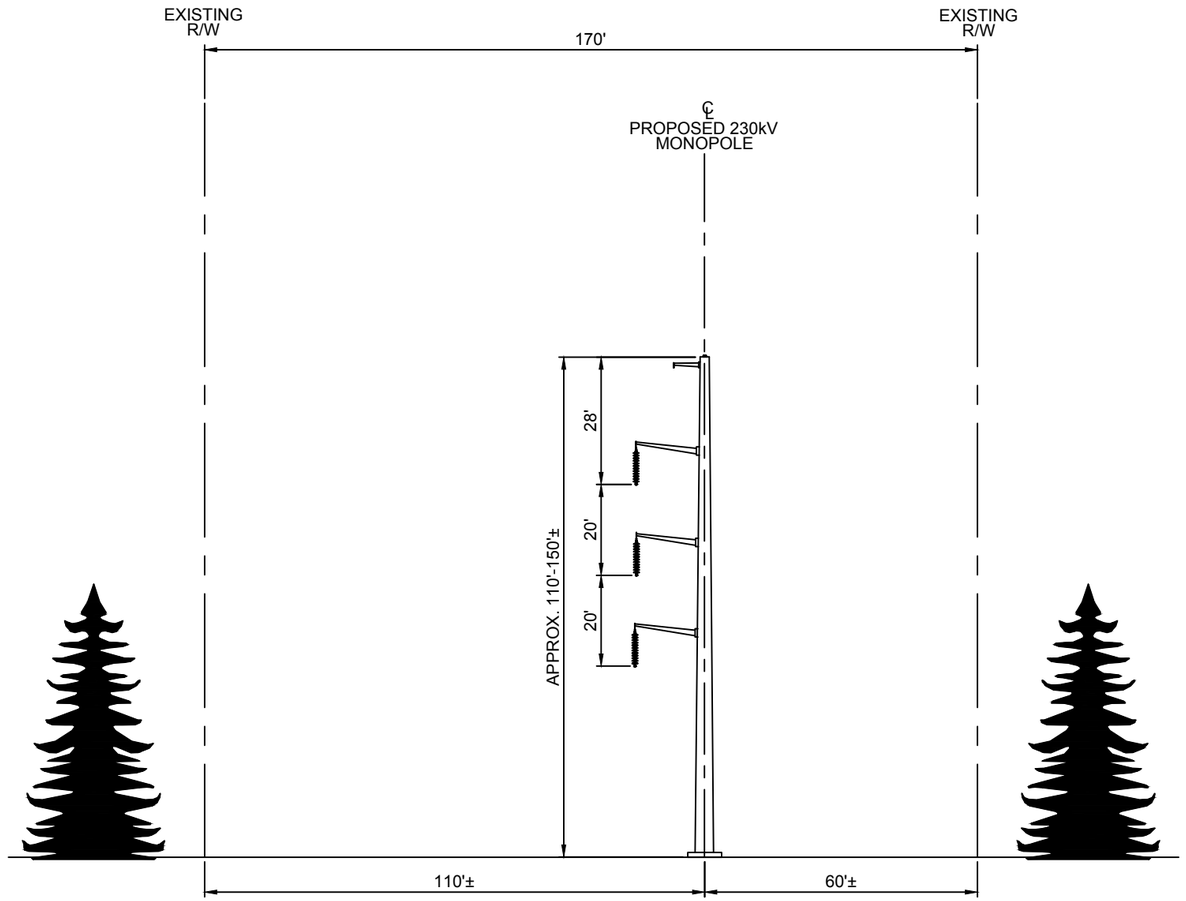
MONTVILLE-WHIPPANY 230kV
DRK - EXHIBIT 05

Exhibit DRK-06



MONTVILLE-WHIPPANY
(LOOKING NORTH)
VAIL ROAD/STILES LANE TO JOHN HENRY DRIVE
APPROXIMATELY 0.9 MILES

PRELIMINARY - NOT FOR CONSTRUCTION

NOTES:
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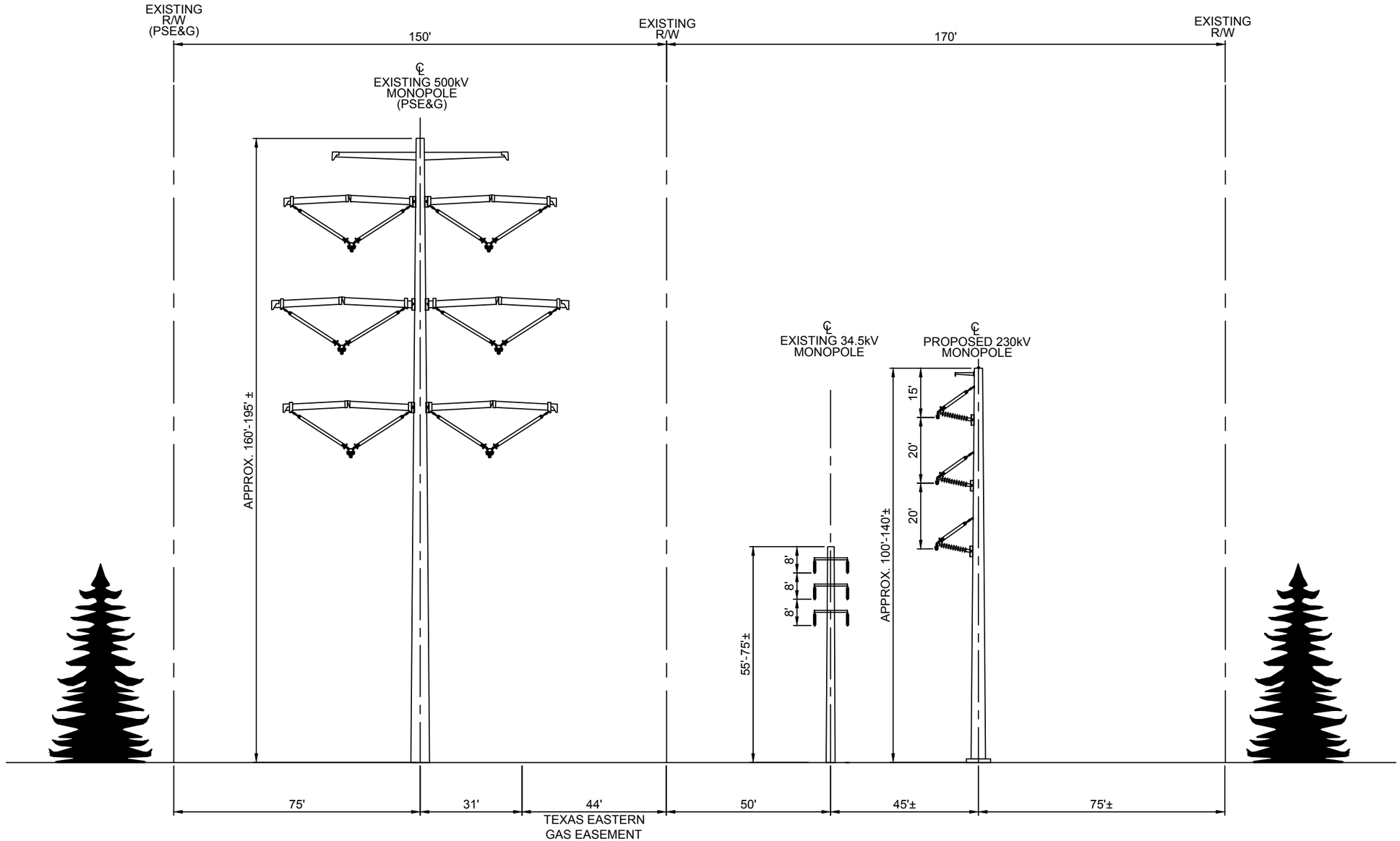
A FirstEnergy Company

Transmission Design
CORRIDOR CROSS SECTION
MONTVILLE-WHIPPANY 230kV
DRK - EXHIBIT 06

Exhibit DRK-07



MONTVILLE-WHIPPANY
(LOOKING NORTH)
JOHN HENRY DRIVE TO APPROXIMATELY 0.3 MILES NORTH OF JOHN HENRY DRIVE
APPROXIMATELY 0.3 MILES

PRELIMINARY - NOT FOR CONSTRUCTION

NOTES:
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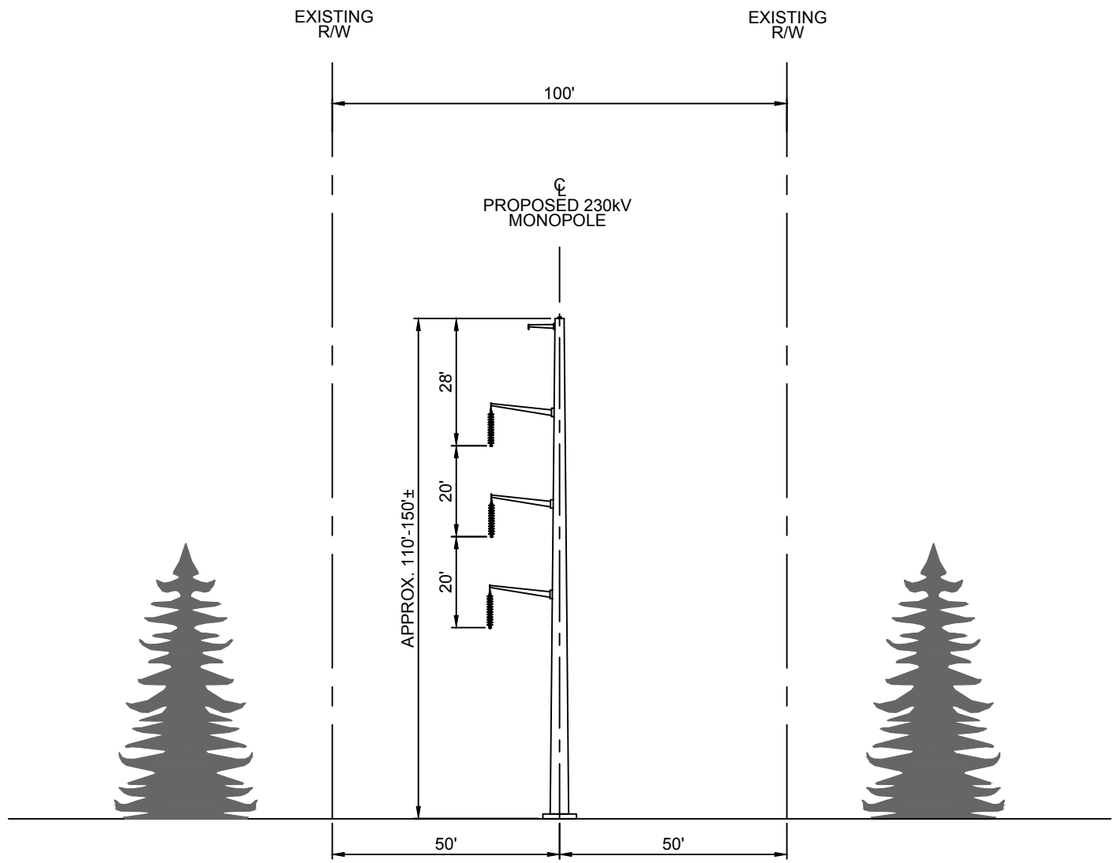
MONTVILLE-WHIPPANY 230kV
DRK - EXHIBIT 07

Exhibit DRK-08



MONTVILLE-WHIPPANY
(LOOKING NORTH)
APPROXIMATELY 0.3 MILES NORTH OF JOHN HENRY DRIVE TO CHANGEBRIDGE SUBSTATION
APPROXIMATELY 0.4 MILES

PRELIMINARY - NOT FOR CONSTRUCTION

NOTES:
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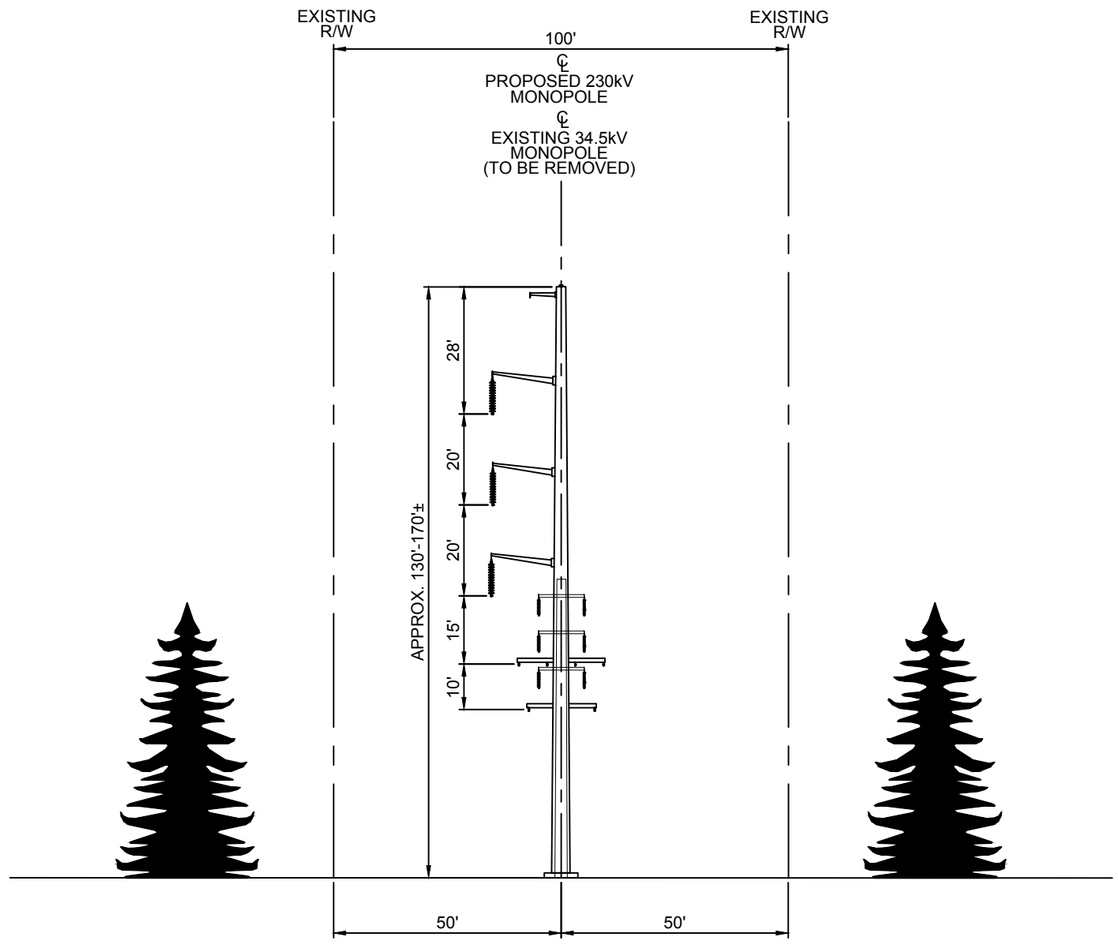
MONTVILLE-WHIPPANY 230kV
DRK - EXHIBIT 08

Exhibit DRK-09



MONTVILLE-WHIPPANY
(LOOKING NORTH)
CHANGEBRIDGE SUBSTATION TO APPROXIMATELY 0.1 MILES NORTH OF OLD CHANGEBRIDGE ROAD
APPROXIMATELY 0.2 MILES

NOTES:
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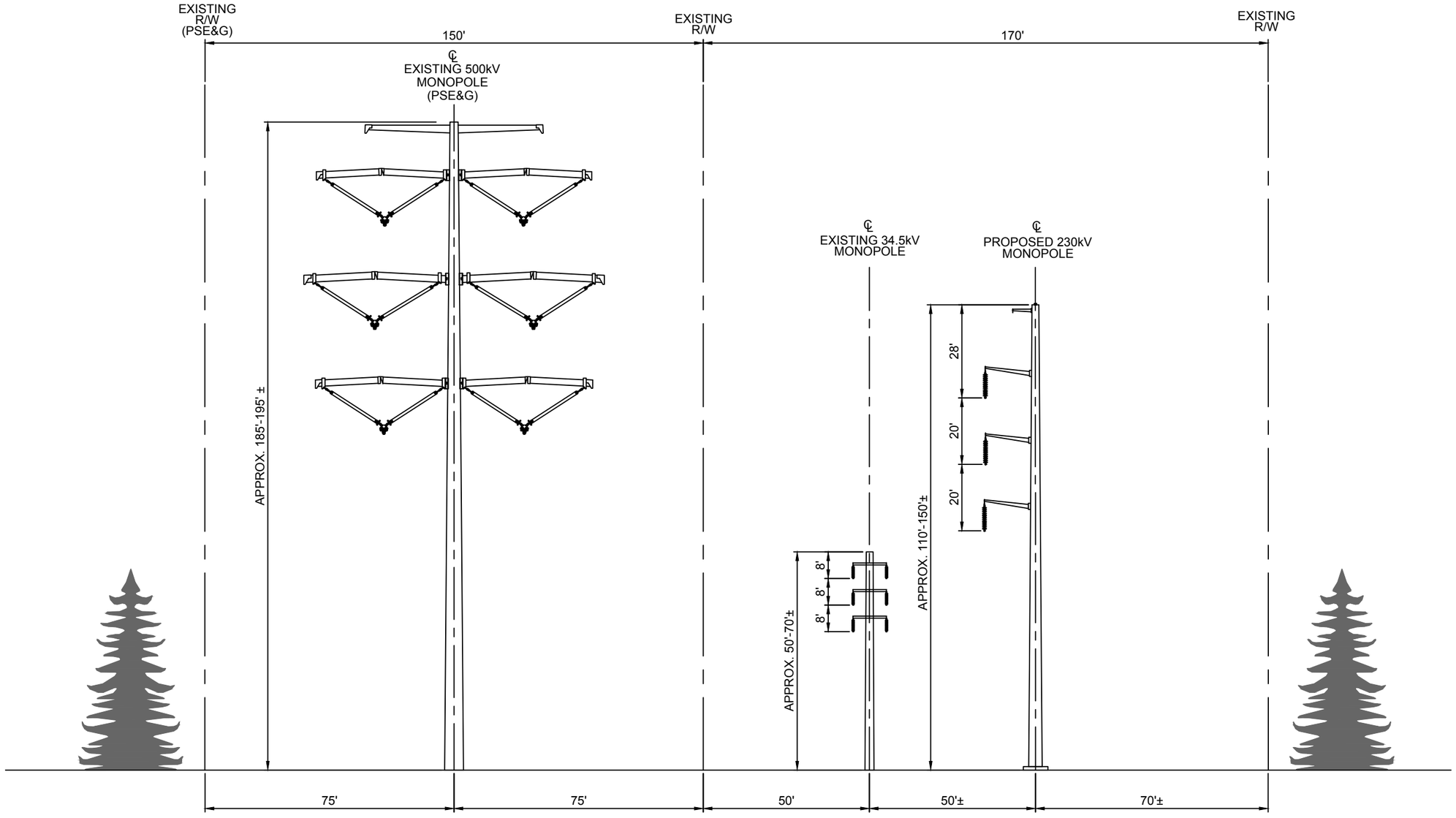
MONTVILLE-WHIPPANY 230kV
DRK - EXHIBIT 09

Exhibit DRK-10



MONTVILLE-WHIPPANY
(LOOKING NORTH)
APPROXIMATELY 0.1 MILES NORTH OF OLD CHANGEBRIDGE ROAD TO SOUTH OF CHURCH LANE
APPROXIMATELY 0.4 MILES

PRELIMINARY - NOT FOR CONSTRUCTION

NOTES:
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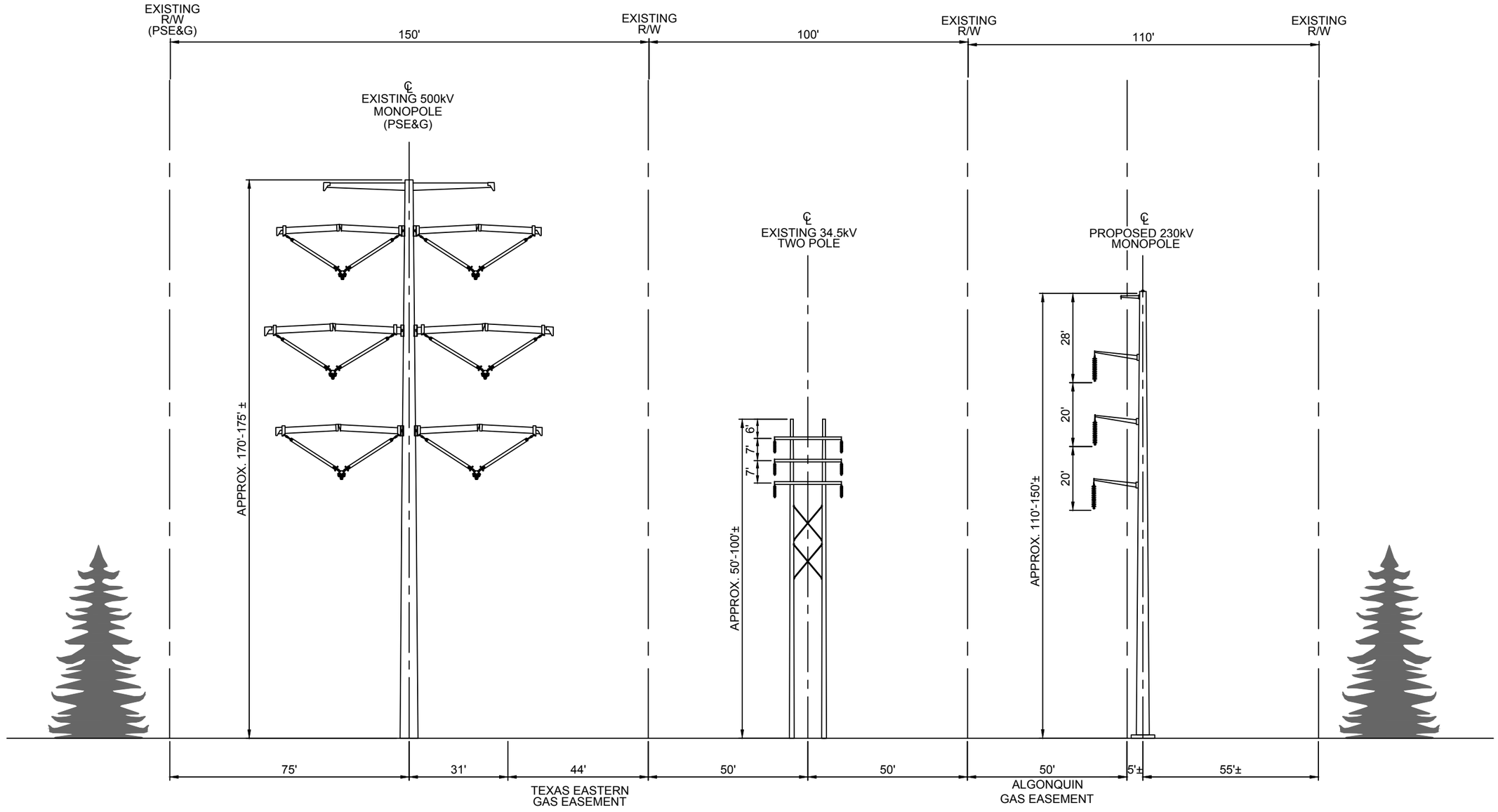
MONTVILLE-WHIPPANY 230kV
DRK - EXHIBIT 10

Exhibit DRK-11



MONTVILLE-WHIPPANY
(LOOKING NORTH)
SOUTH OF CHURCH LANE TO NORTH OF SPRINGBROOK ROAD EAST
APPROXIMATELY 0.4 MILES

PRELIMINARY - NOT FOR CONSTRUCTION

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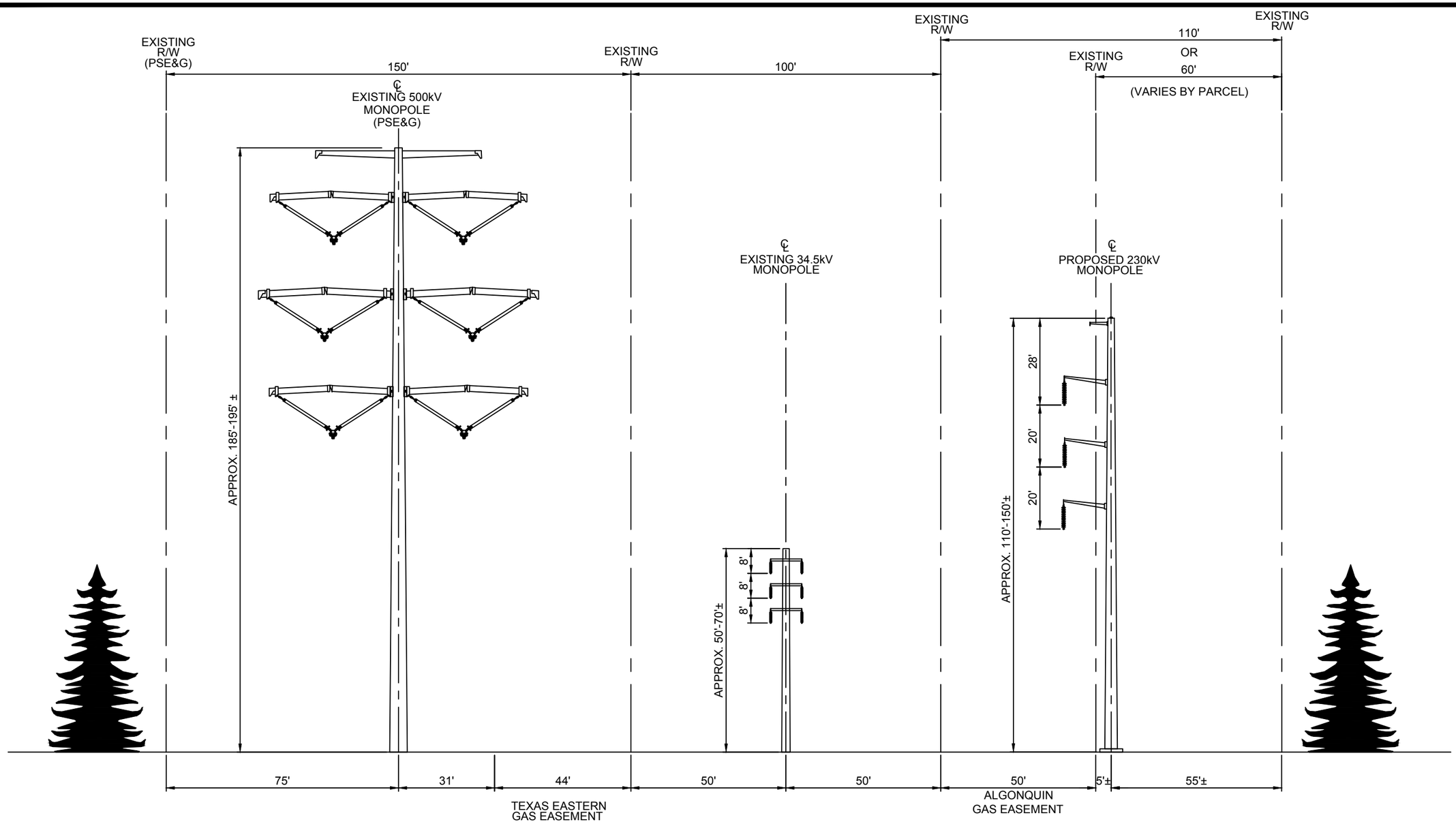
Transmission Design
CORRIDOR CROSS SECTION
MONTVILLE-WHIPPANY 230kV
DRK - EXHIBIT 11

Exhibit DRK-12



MONTVILLE-WHIPPANY
(LOOKING NORTH)
NORTH OF SPRINGBROOK ROAD EAST TO SOUTH OF SCHNEIDER LANE
APPROXIMATELY 0.3 MILES

PRELIMINARY - NOT FOR CONSTRUCTION

NOTES:
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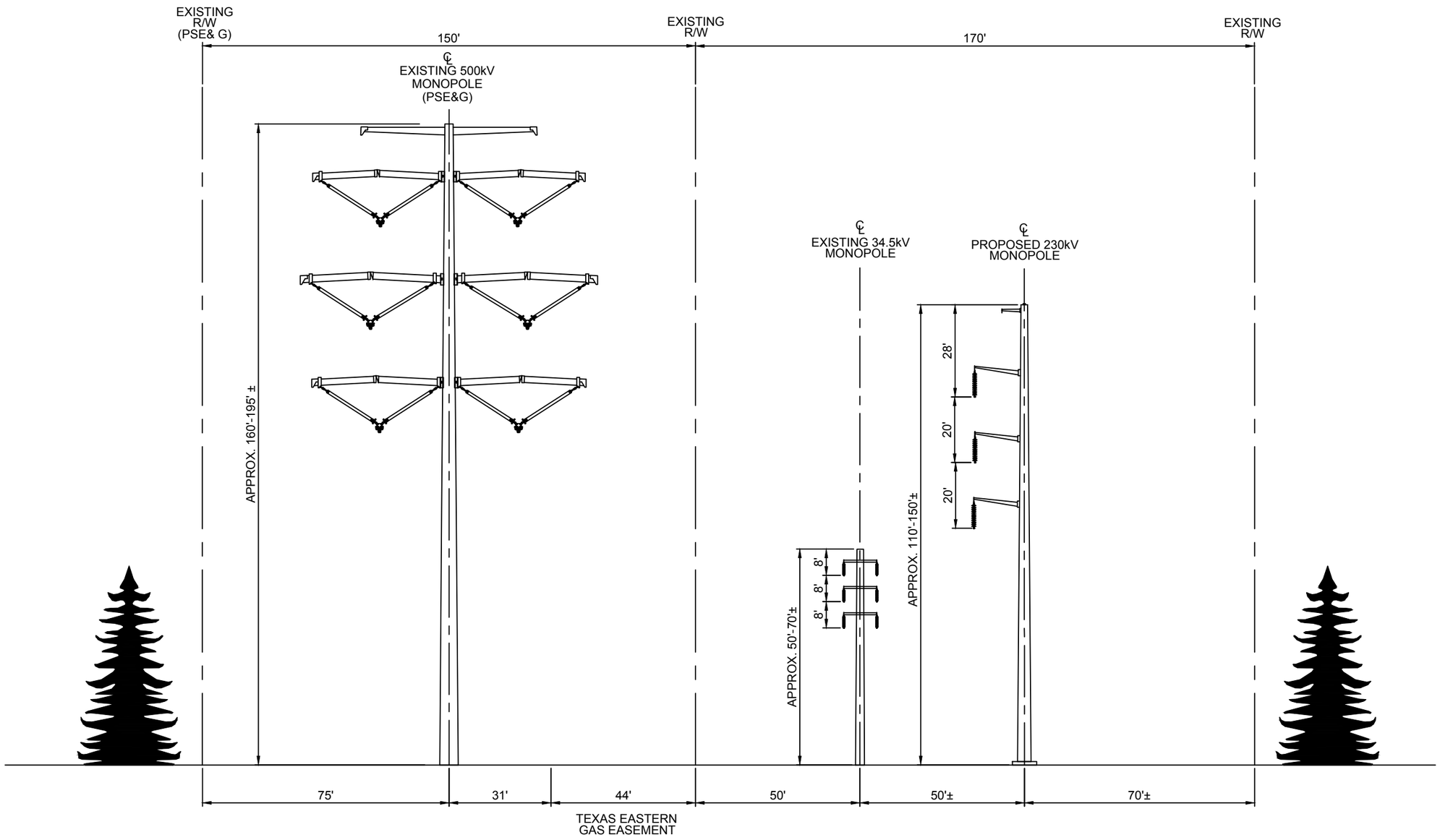
Transmission Design
CORRIDOR CROSS SECTION
MONTVILLE-WHIPPANY 230kV
DRK - EXHIBIT 12

Exhibit DRK-13



MONTVILLE-WHIPPANY
(LOOKING NORTH)
SOUTH OF SCHNEIDER LANE TO EXISTING MONTVILLE SUBSTATION
APPROXIMATELY 0.2 MILES

PRELIMINARY - NOT FOR CONSTRUCTION

NOTES:
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A FirstEnergy Company

Transmission Design
CORRIDOR CROSS SECTION
MONTVILLE-WHIPPANY 230kV
DRK - EXHIBIT 13

Exhibit DRK-14

Legend

Substation	Interstate
Proposed Route	U.S. Highway
Proposed Route - Rebuild	State Highway
Railroad	County Road
Airport	Local Road
Populated Place	River

Existing Transmission

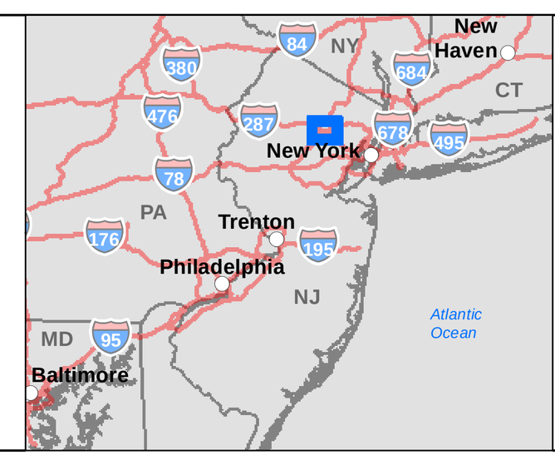
- 230 kV
- 115/138 kV
- < 115 kV
- PSE&G 500/230 kV

- County Boundary
- Municipal Boundary
- Stream/Waterbody
- Local/Private Conservation
- State Conservation

DRK - EXHIBIT 14

0 0.5 1 1.5 2 2.5 Miles

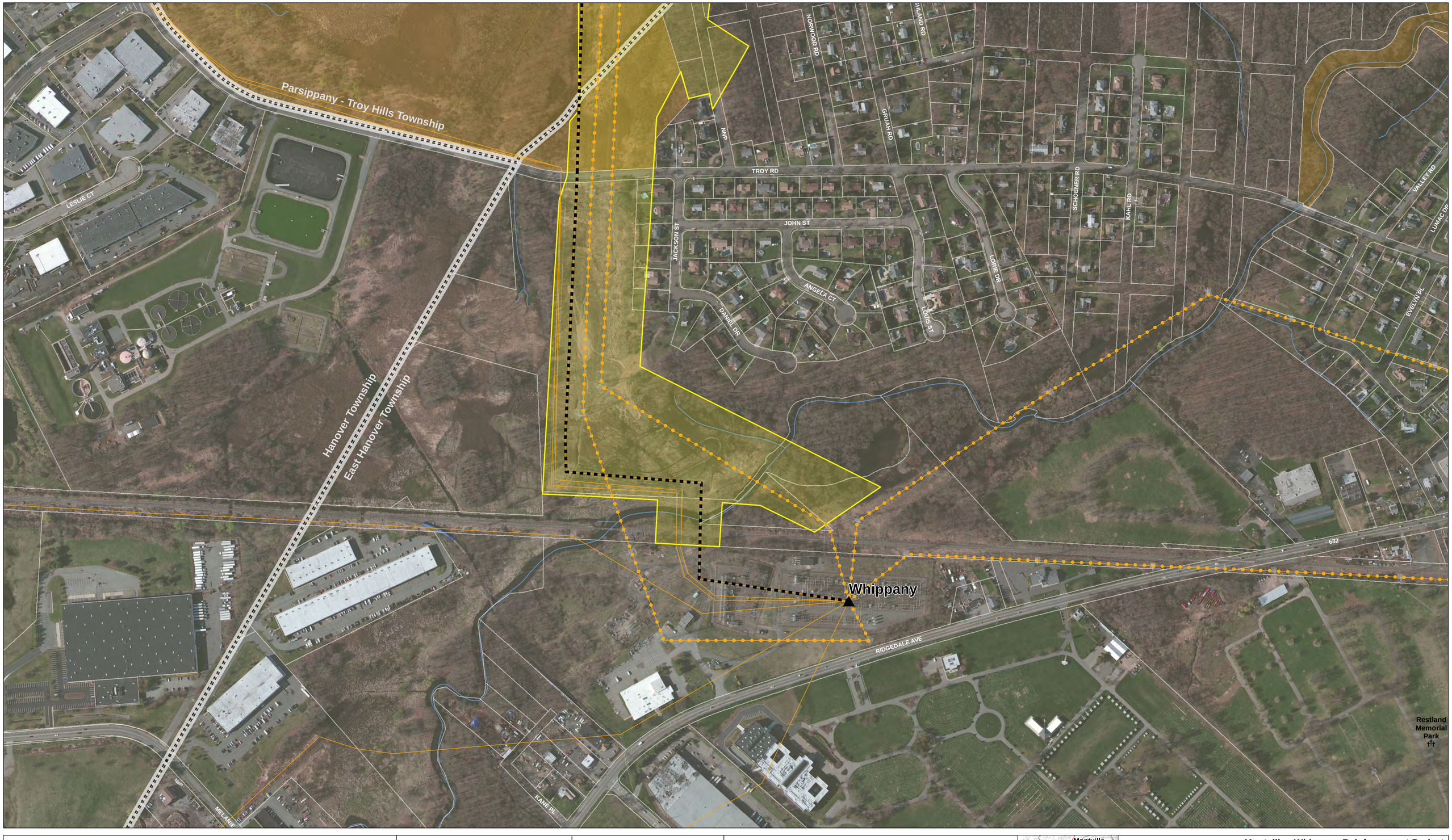
Data Sources: ESRI, 2012; USGS 2012, NJDEP, 2012
Geographic Coordinate System:NAD_1983_StatePlane_New_Jersey_FIPS_2900_Feet
Datum: North American Datum of 1983 (NAD83).
Projection: Transverse Mercator.
Linear Unit: Foot_US
Ellipsoid: Geodetic Reference System 80.



Montville - Whippany Reinforcement Project
Project Overview
Jersey Central Power & Light
December 4, 2014

Jersey Central Power & Light
A FirstEnergy Company

Louis Berger



Substation
Church
Cemetery
School

Potential 230kV Route
- Preferred Route
- Preferred Route - Rebuild
- Existing JCP&L Easement
- Existing JCP&L Tree Rights

Existing Transmission
- 230 kV
- 115/138 kV
- < 115 kV
- PSE&G 500/230 kV

- Local/Private Conservation
- State Conservation
- Municipal Boundary
- River
- Gas Line
- Railroad

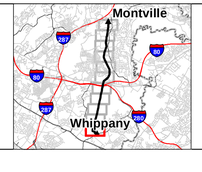
Note: Property parcels are represented as thin white lines.
Easement boundaries are approximate.

DRK - EXHIBIT 14a

N W E S

0 200 400 600 800 1,000 Feet

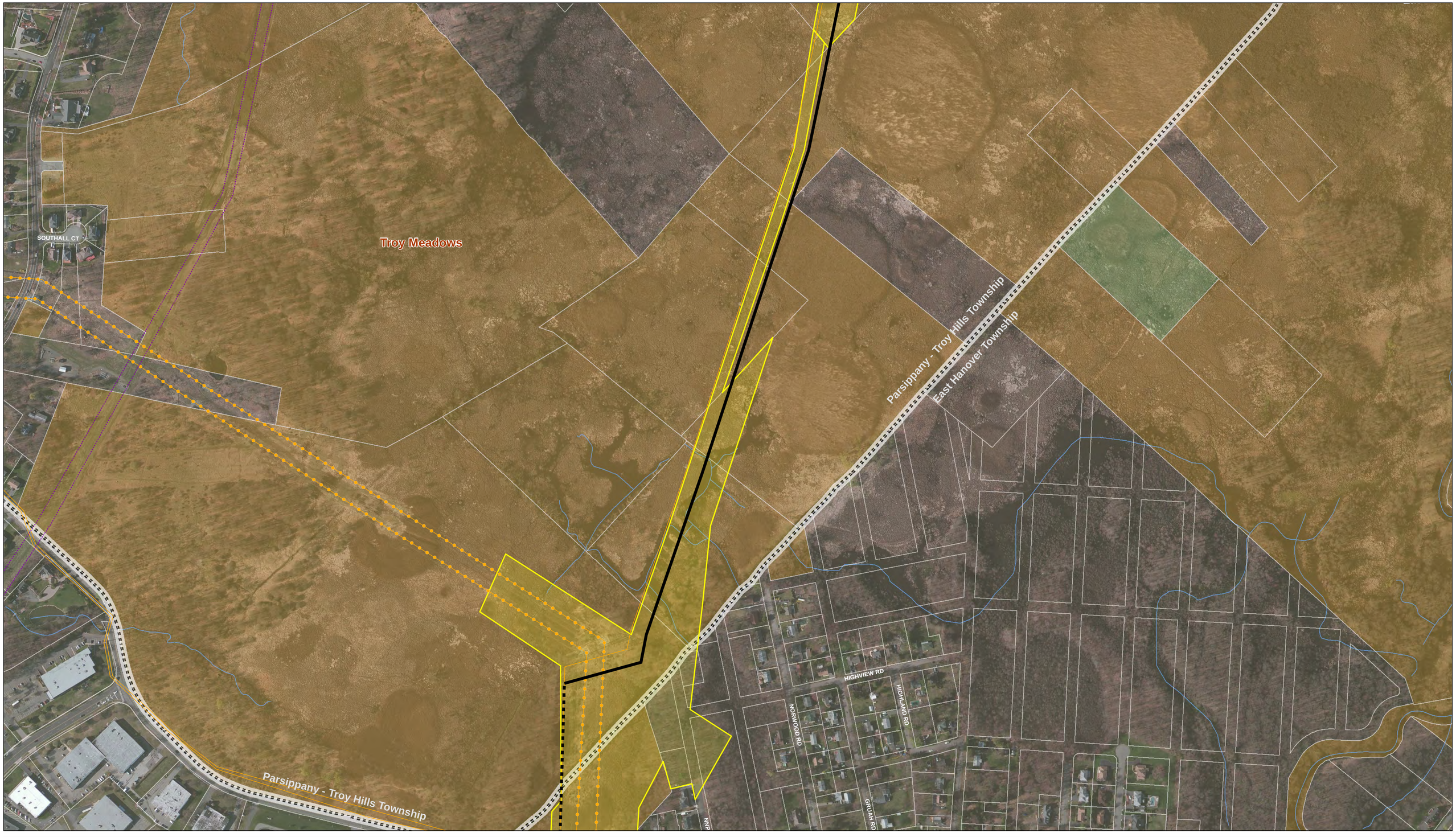
Data Sources: ESRI, 2012; USGS 2012, NJDEP, 2012
Geographic Coordinate System:NAD_1983_StatePlane_New_Jersey_FIPS_2900_Feet
Datum: North American Datum of 1983 (NAD83).
Projection: Transverse Mercator.
Linear Unit: Foot_US
Ellipsoid: Geodetic Reference System 80.



Montville - Whippany Reinforcement Project
Project Overview
Jersey Central Power & Light
December 4, 2014

Jersey Central Power & Light
A FirstEnergy Company

Louis Berger



Substation
Church
Cemetery
School

Potential 230kV Route
Preferred Route
Preferred Route - Rebuild
Existing JCP&L Easement
Existing JCP&L Tree Rights

Existing Transmission
230 kV
115/138 kV
< 115 kV
PSE&G 500/230 kV

Local/Private Conservation
State Conservation
Municipal Boundary
River
Gas Line
Railroad

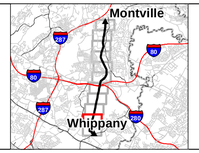
Note: Property parcels are represented as thin white lines.
Easement boundaries are approximate.

DRK - EXHIBIT 14b

N W E S

0 200 400 600 800 1,000 Feet

Data Sources: ESRI, 2012; USGS 2012, NJDEP, 2012
Geographic Coordinate System:NAD_1983_StatePlane_New_Jersey_FIPS_2900_Feet
Datum: North American Datum of 1983 (NAD83).
Projection: Transverse Mercator.
Linear Unit: Foot_US
Ellipsoid: Geodetic Reference System 80.



Montville - Whippany Reinforcement Project
Project Overview
Jersey Central Power & Light
December 4, 2014

Jersey Central Power & Light
A FirstEnergy Company

Louis Berger

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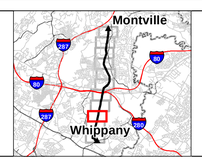
DRK - EXHIBIT 14c

N W E S

0 200 400 600 800 1,000 Feet

Data Sources: ESRI, 2012; USGS 2012, NJDEP, 2012
Geographic Coordinate System:NAD_1983_StatePlane_New_Jersey_FIPS_2900_Feet
Datum: North American Datum of 1983 (NAD83).
Projection: Transverse Mercator.
Linear Unit: Foot_US
Ellipsoid: Geodetic Reference System 80.



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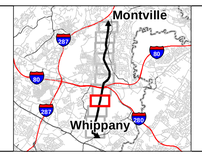
Note: Property parcels are represented as thin white lines.
Easement boundaries are approximate.

DRK - EXHIBIT 14d

N W E S

0 200 400 600 800 1,000 Feet

Data Sources: ESRI, 2012; USGS 2012, NJDEP, 2012
Geographic Coordinate System:NAD_1983_StatePlane_New_Jersey_FIPS_2900_Feet
Datum: North American Datum of 1983 (NAD83).
Projection: Transverse Mercator.
Linear Unit: Foot_US
Ellipsoid: Geodetic Reference System 80.



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