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June 30, 2021

BY ELECTRONIC FILING

Mr. Bernard Logan, Clerk
c/o Document Control Center
State Corporation Commission
1300 East Main Street
Tyler Building – 1st Floor
Richmond, Virginia 23219

Application of Virginia Electric and Power Company for approval and certification of electric transmission facilities: Line # 235 Extension to Cloud 230 kV and Related Projects
Case No. PUR-2021-00137

Dear Mr. Logan:

Please find enclosed for electronic filing in the above-captioned proceeding the application for approval of electric facilities on behalf of Virginia Electric and Power Company (the "Company"). This filing contains the Application, Appendix, Direct Testimony, and DEQ Supplement, including attachments.

As indicated in Section II.A.12.b of the Appendix, three (3) color copies of the map of the Virginia Department of Transportation "General Highway Map" for Mecklenburg County were mailed to the Commission's Division of Energy Regulation on June 28, 2021. The Company also provided the Division of Energy Regulation electronic access, via e-room on June 28, 2021, to the digital geographic information system ("GIS") map required by § 56-46.1 of the Code of Virginia, which is Attachment II.A.2 to the Appendix.

Please do not hesitate to call if you have any questions in regard to the enclosed.

Very truly yours,

Vishwa B. Link

Enclosures
cc: William H. Chambliss, Esq.
Mr. David Essah
Mr. Neil Joshipura
David J. DePippo, Esq.

Dominion Energy®

Application, Appendix, DEQ Supplement, Direct Testimony and Exhibits of Virginia Electric and Power Company

Before the State Corporation Commission of Virginia

Line #235 Extension to Cloud 230 kV and Related Projets

Application No. 306

Case No. PUR-2021-00137

Filed: June 30, 2021

Volume 1 of 2

COMMONWEALTH OF VIRGINIA
BEFORE THE
STATE CORPORATION COMMISSION

APPLICATION OF

VIRGINIA ELECTRIC AND POWER COMPANY

FOR APPROVAL AND CERTIFICATION
OF ELECTRIC TRANSMISSION FACILITIES

Line #235 Extension to Cloud 230 kV and Related Projects

Application No. 306

Appendix

Containing Information in Response to
"Guidelines for Transmission Line Applications Filed Under title 56 of the Code of Virginia"

Case No. PUR-2021-00137

Filed: June 30, 2021

COMMONWEALTH OF VIRGINIA

STATE CORPORATION COMMISSION

APPLICATION OF	)	
	)	
VIRGINIA ELECTRIC AND POWER COMPANY	)	Case No. PUR-2021-00137
	)	
For approval and certification of electric transmission facilities: Line #235 Extension to Cloud 230 kV and Related Projects	)	

APPLICATION OF VIRGINIA ELECTRIC AND POWER COMPANY FOR APPROVAL AND CERTIFICATION OF ELECTRIC TRANSMISSION FACILITIES: LINE #235 EXTENSION TO CLOUD 230 KV AND RELATED PROJECTS

Pursuant to § 56-46.1 of the Code of Virginia ("Va. Code") and the Utility Facilities Act, Va. Code § 56-265.1 *et seq.*, Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company"), by counsel, files with the State Corporation Commission of Virginia (the "Commission") this application for approval and certification of electric transmission facilities (the "Application"). In support of its Application, Dominion Energy Virginia respectfully shows as follows:

1. Dominion Energy Virginia is a public service corporation organized under the laws of the Commonwealth of Virginia furnishing electric service to the public within its Virginia service territory. The Company also furnishes electric service to the public in portions of North Carolina. Dominion Energy Virginia's electric system—consisting of facilities for the generation, transmission, and distribution of electric energy—is interconnected with the electric systems of neighboring utilities and is a part of the interconnected network of electric systems serving the continental United States. By reason of its operation in two states and its interconnections with other utilities, the Company is engaged in interstate commerce.

2. In order to perform its legal duty to furnish adequate and reliable electric service, Dominion Energy Virginia must, from time to time, replace existing transmission facilities or construct new transmission facilities in its system. The electric facilities proposed in this Application are necessary so that Dominion Energy Virginia can continue to provide reliable electric service to its customers, consistent with applicable reliability standards.

3. In this Application, in order to provide service to two delivery points ("DP") requested by Old Dominion Electric Cooperative ("ODEC"), on behalf of Mecklenburg Electric Cooperative ("MEC"), for MEC to provide service to one of its customers in Mecklenburg County, Virginia; to maintain reliable service for the overall growth in the area; and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, the Company proposes to complete the following in Mecklenburg County, Virginia:

(i) convert the Company's existing Cloud 115 kV Switching Station[1] located on six acres at the former Mecklenburg Correctional Center (960 Prison Road, Boydton, Virginia) in Mecklenburg County to a 230 kV switching station ("Cloud 230 kV Switching Station");

(ii) convert the Company's under construction Easters 115 kV Switching Station[2] located between future 115 kV Line #1042 and existing 115 kV Line #137 (both lines between Ridge Road 115 kV Substation and Kerr Dam 115 kV Substation) in Mecklenburg County to a 230 kV switching station ("Easters 230 kV Switching Station"), and add one 230 kV 84 MVAR cap bank in the Easters 230 kV Switching Station for voltage support;

[1] On November 8, 2020, the Company requested that Commission Staff ("Staff") find that the Company's work associated with the construction of its proposed 115 kV Cloud Switching Station qualified as "ordinary extensions or improvements in the usual course of business" pursuant to § 56-265.2 A 1 of the Va. Code and, therefore, did not require approval pursuant to Va. Code § 56-46.1 B or a CPCN from the Commission. Specifically, this proposed project included looping existing 115 kV Line #38 in and out of a new breaker station (the 115 kV Cloud Switching Station) to provide service to MEC's Coleman Creek DP, which was intended to serve the load of a new data center under construction in Mecklenburg County. On November 22, 2020, Staff agreed that the construction of the Company's proposed Cloud Switching Station qualified as ordinary course.

[2] The proposed in-service date for the Easters Switching Station is November 1, 2021. Since the energization date for this Switching Station occurs after the Company files its Application for these Projects, the Company notes that the 115 kV Easters Switching Station is under construction.

(iii) cut the Clover-Farmville Line #235 at Structure #235/310 (a point starting west of Chase City Substation), and extend (a) one 230 kV line to the Cloud 230 kV Switching Station, resulting in the 230 kV Farmville-Cloud Line #235; (b) one 230 kV line to the Easters 230 kV Switching Station and renumber the Line #235 structures between Structure #235/310-Clover Substation, resulting in the 230 kV Clover-Easters Line #2226, and (c) one 230kV line between the Easters 230 kV Switching Station and Cloud 230 kV Switching Station, resulting in the 230 kV Easters-Cloud Line #2229. Two 230 kV lines will be installed primarily along approximately 15.3 miles of existing right-of-way with expanded rights-of-way east of the Chase City Substation by less than 0.1 mile, at the Ridge Road Junction by 0.3 mile, and at the Boydton DP by 0.4 mile to accommodate the proposed area of the Projects, totaling approximately 0.7 mile of new rights-of-way. The lines will be supported by 96 double circuit 2-pole galvanized steel structures, 7 double circuit galvanized steel poles, and 4 single circuit galvanized steel H-frame structures utilizing a three-phase twin-bundled 795 ACSR type conductor with a summer transfer capability of 1225 MVA (collectively, "Line #235 Extension"); and

(iv) relocate Line Numbers 40, 171, and 1009 in an approximate 0.55 mile section of right-of-way located east of the Chase City Substation to allow for the installation of the proposed 230 kV lines (collectively, "115 kV Line Relocations"). To accommodate the 115 kV Line Relocations within the existing right-of-way, the Company proposes to install two single circuit galvanized steel poles; five double circuit galvanized steel poles; two single circuit galvanized steel H-frames; and three triple circuit galvanized steel H-frames.

The proposed Cloud 230 kV Switching Station, proposed Easters 230 kV Switching Station, Line #235 Extension, and 115 kV Line Relocations are collectively referred to as the "Projects."

4. The Projects are necessary to assure that MEC can support the load growth in Mecklenburg County. On October 12, 2020, ODEC, on behalf of MEC, submitted to the Company two DP requests to serve large data center campuses in Mecklenburg County, known as the "Coleman Creek DP" and "Timber DP."

5. The Coleman Creek DP is located in Mecklenburg County south of Route 58, which is about two miles west of the double circuit 115 kV Line #38 (Kerr Dam Substation to Cloud Switching Station) and 115 kV Line #137 (Kerr Dam Substation to Ridge Road Substation). The Cloud 230 kV Switching Station will feed MEC's Coleman Creek Substation at the Coleman

Creek DP to power MEC's customer's "Prison" data center campus. The Timber DP is located in Mecklenburg County along the existing double circuit 115 kV Line #137 (Kerr Dam Substation to Ridge Road Substation) and 115 kV Line #38 (Kerr Dam Substation to Cloud Switching Station) transmission corridor, which is southeast of the junction of 115 kV Line Numbers 1009, 171, 38, and 137 (also known as Ridge Road Junction). The Easters 230 kV Switching Station will feed MEC's Timber Substation at the Timber DP to power MEC's customer's Timber data center campus.

6. The desired in-service date of the proposed Projects is June 1, 2024, based on information provided to the Company from MEC about its customer's load ramp. The total load at the Cloud 230 kV Switching Station and Easters 230 kV Switching Station is projected to be approximately 419 MW at full build-out. The existing Cloud 115 kV Switching Station and under construction Easters 115 kV Switching Station can provide up to 100 MW and 41 MW, respectively. Per the existing load ramp, the capacities for both switching stations will be exceeded by summer 2024. At which point, the Cloud 230 kV Switching Station and Easters 230 kV Switching Station conversion will be required to accommodate the future load growth.

7. In addition to MEC's customer's two data center campuses, future data centers are expected in this region of Mecklenburg County. The timing of these projects is not yet defined, but the Company is tracking these projects as future load growth in the area, as the proposed Cloud 230 kV Switching Station and Easters 230 kV Switching Station could also serve these projects. Constructing the proposed Projects within this high potential growth area will therefore allow the Company to continue to serve future economic development in the area in a timely manner.

8. Accordingly, the proposed Projects are needed to meet the load requirements of MEC's customer's two new data center campuses and can serve future load growth in Mecklenburg County, which will, in turn, facilitate economic growth in the Commonwealth.

9. The desired in-service target date for the proposed Projects is June 1, 2024. The Company estimates it will take approximately 23 months for detailed engineering, materials procurement, permitting, real estate, and construction after a final order from the Commission. Accordingly, to support this estimated construction timeline and construction plan, the Company respectfully requests a final order by July 1, 2022. Should the Commission issue a final order by July 1, 2022, the Company estimates that construction should begin around April 1, 2023, and be completed by the in-service target date of June 1, 2024. This construction timeline will enable the Company to meet the targeted in-service date for the Projects. This schedule is contingent upon obtaining the necessary permits and transmission line outages; dates may need to be adjusted based on permitting or outage delays, or design modifications in order to comply with additional agency requirements identified during the permitting application process.

10. The estimated conceptual cost of the proposed Projects is approximately $101.5 million, which includes approximately $66.2 million for transmission–related work and approximately $35.3 million for substation-related[3] work (2021 dollars). The description of the proposed Projects is described in detail in Sections I and II of the Appendix attached to this Application.

11. The majority of the Projects is within the Company's existing right-of-way and extends for 15.3 miles; however, as noted above, to accommodate the Projects, the Company will

[3] The Company notes that the substation-related costs provided above include the costs that ODEC, on behalf of MEC, intends to pay on behalf of its customer as excess facilities charges for these Projects.

need to expand the rights-of-way east of Chase City Substation, at the Ridge Road Junction, and at the Boydton DP, totaling approximately 0.7 mile of expanded rights-of-way. Section II of the Appendix addresses routing issues. The impact of the proposed Projects on scenic, environmental, and historical features is described in detail in Section III of the Appendix.

12. Based on the Company's experience, the advice of consultants, and a review of published studies by experts in the field, the Company believes that there is no causal link to harmful health or safety effects from electric and magnetic fields generated by the Company's existing or proposed facilities. Section IV of the Appendix provides further details on Dominion Energy Virginia's consideration of the health aspects of electric and magnetic fields.

13. Section V of the Appendix provides a proposed route description for public notice purposes and a list of federal, state, and local agencies and officials that the Company has or will notify about the Application.

14. Based on consultations with the Virginia Department of Environmental Quality ("DEQ"), the Company has developed a supplement ("DEQ Supplement") containing information designed to facilitate review and analysis of the proposed facilities by the DEQ and other relevant agencies. The DEQ Supplement is attached to this Application.

15. In addition to the information provided in the Appendix and the DEQ Supplement, this Application is supported by the pre-filed direct testimony of Company Witnesses Kunal Amare, Furmose Gomez, Mohammad Othman, and Lane Carr filed with this Application.

WHEREFORE, Dominion Energy Virginia respectfully requests that the Commission:

(a) direct that notice of this Application be given as required by § 56-46.1 of the Code of Virginia;

(b) approve pursuant to § 56-46.1 of the Code of Virginia the construction of the Projects; and,

(c) grant a certificate of public convenience and necessity for the Projects under the Utility Facilities Act, § 56-265.1 *et seq.* of the Code of Virginia.

VIRGINIA ELECTRIC AND POWER COMPANY

By: /s/ Vishwa B. Link
Counsel for Applicant

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June 30, 2021

COMMONWEALTH OF VIRGINIA
BEFORE THE
STATE CORPORATION COMMISSION

APPLICATION OF

VIRGINIA ELECTRIC AND POWER COMPANY

FOR APPROVAL AND CERTIFICATION
OF ELECTRIC TRANSMISSION FACILITIES

Line #235 Extension to Cloud 230 kV and Related Projects

Application No. 306

Appendix

Containing Information in Response to
"Guidelines for Transmission Line Applications Filed Under title 56 of the Code of Virginia"

Case No. PUR-2021-00137

Filed: June 30, 2021

TABLE OF CONTENTS

Executive Summary

In order to provide service to two delivery points ("DP") requested by Old Dominion Electric Cooperative ("ODEC"), on behalf of Mecklenburg Electric Cooperative ("MEC"), for MEC to provide service to one of its customers in Mecklenburg County, Virginia; to maintain reliable service for the overall growth in the area; and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company") proposes to complete the following in Mecklenburg County, Virginia:

(i) convert the Company's existing Cloud 115 kV Switching Station[1] located on six acres at the former Mecklenburg Correctional Center (960 Prison Road, Boydton, Virginia) in Mecklenburg County to a 230 kV switching station ("Cloud 230 kV Switching Station");

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(iii) cut the Clover-Farmville Line #235 at Structure #235/310 (a point starting west of Chase City Substation), and extend (a) one 230 kV line to the Cloud 230 kV Switching Station, resulting in the 230 kV Farmville-Cloud Line #235; (b) one 230 kV line to the Easters 230 kV Switching Station and renumber the Line #235 structures between Structure #235/310-Clover Substation, resulting in the 230 kV Clover-Easters Line #2226, and (c) one 230kV line between the Easters 230 kV Switching Station and Cloud 230 kV Switching Station, resulting in the 230 kV Easters-Cloud Line #2229. Two 230 kV lines will be installed primarily along approximately 15.3 miles of existing right-of-way with expanded rights-of-way east of the Chase City Substation by less than 0.1 mile, at the Ridge Road Junction by 0.3 mile, and at the Boydton DP by 0.4 mile to accommodate the proposed area of the Projects, totaling approximately 0.7 mile of new rights-of-way. The lines will be supported by 96 double circuit 2-pole galvanized steel structures, 7 double circuit galvanized steel poles, and 4 single circuit galvanized steel H-frame structures utilizing a three-phase twin-bundled 795 ACSR type conductor with a

[1] On November 8, 2020, the Company requested that Commission Staff ("Staff") find that the Company's work associated with the construction of its proposed 115 kV Cloud Switching Station qualified as "ordinary extensions or improvements in the usual course of business" pursuant to § 56-265.2 A 1 of the Va. Code and, therefore, did not require approval pursuant to Va. Code § 56-46.1 B or a CPCN from the Commission. Specifically, this proposed project included looping existing 115 kV Line #38 in and out of a new breaker station (the 115 kV Cloud Switching Station) to provide service to MEC's Coleman Creek DP, which was intended to serve the load of a new data center under construction in Mecklenburg County. On November 22, 2020, Staff agreed that the construction of the Company's proposed Cloud Switching Station qualified as ordinary course.

[2] The proposed in-service date for the Easters Switching Station is November 1, 2021. Since the energization date for this Switching Station occurs after the Company files its Application for these Projects, the Company notes that the 115 kV Easters Switching Station is under construction.

summer transfer capability of 1225 MVA (collectively, "Line #235 Extension"); and

(iv) relocate Line Numbers 40, 171, and 1009 in an approximate 0.55 mile section of right-of-way located east of the Chase City Substation to allow for the installation of the proposed 230 kV lines (collectively, "115 kV Line Relocations"). To accommodate the 115 kV Line Relocations within the existing right-of-way, the Company proposes to install two single circuit galvanized steel poles; five double circuit galvanized steel poles; two single circuit galvanized steel H-frames; and three triple circuit galvanized steel H-frames, as further discussed in Section V.A below.

The proposed Cloud 230 kV Switching Station, proposed Easters 230 kV Switching Station, Line #235 Extension, and 115 kV Line Relocations are collectively referred to as the "Projects."

The Projects are necessary to assure that MEC can support the load growth in Mecklenburg County. On October 12, 2020, ODEC, on behalf of MEC, submitted to the Company two DP requests to serve large data center campuses in Mecklenburg County, known as the "Coleman Creek DP" and "Timber DP."

The Coleman Creek DP is located in Mecklenburg County south of Route 58, which is about two miles west of the double circuit 115 kV Line #38 (Kerr Dam Substation to Cloud Switching Station) and 115 kV Line #137 (Kerr Dam Substation to Ridge Road Substation). The Cloud 230 kV Switching Station will feed MEC's Coleman Creek Substation at the Coleman Creek DP to power MEC's customer's "Prison" data center campus.

The Timber DP is located in Mecklenburg County along the existing double circuit 115 kV Line #137 (Kerr Dam Substation to Ridge Road Substation) and 115 kV Line #38 (Kerr Dam Substation to Cloud Switching Station) transmission corridor, which is southeast of the junction of 115 kV Line Numbers 1009, 171, 38, and 137 (also known as Ridge Road Junction). The Easters 230 kV Switching Station will feed MEC's Timber Substation at the Timber DP to power MEC's customer's Timber data center campus.

The desired in-service date of the proposed Projects is June 1, 2024, based on information provided to the Company from MEC about its customer's load ramp. The total load at the Cloud 230 kV Switching Station and Easters 230 kV Switching Station is projected to be approximately 419 MW at full build-out. The existing Cloud 115 kV Switching Station and under construction Easters 115 kV Switching Station can provide up to 100 MW and 41 MW, respectively. Per the existing load ramp, the capacities for both switching stations will be exceeded by summer 2024. At which point, the Cloud 230 kV Switching Station and Easters 230 kV Switching Station conversion will be required to accommodate the future load growth.

In addition to MEC's customer's two data center campuses, future data centers are expected in this region of Mecklenburg County. The timing of these projects is not yet defined, but the Company is tracking these projects as future load growth in the area, as the proposed Cloud 230 kV Switching Station and Easters 230 kV Switching Station could also serve these projects. Constructing the

proposed Projects within this high potential growth area will therefore allow the Company to continue to serve future economic development in the area in a timely manner.

Accordingly, the proposed Projects are needed to meet the load requirements of MEC's customer's two new data center campuses and can serve future load growth in Mecklenburg County, which will, in turn, facilitate economic growth in the Commonwealth.

The majority of the Projects is within the Company's existing right-of-way and extends for 15.3 miles; however, as noted above, to accommodate the Projects, the Company will need to expand the rights-of-way east of Chase City Substation, at the Ridge Road Junction, and at the Boydton DP, totaling 0.7 mile of expanded rights-of-way.

The estimated conceptual cost of the proposed Projects is approximately $101.5 million, which includes approximately $66.2 million for transmission–related work and approximately $35.3 million for substation-related[3] work (2021 dollars).

The desired in-service target date for the proposed Projects is June 1, 2024. The Company estimates it will take approximately 23 months for detailed engineering, materials procurement, permitting, real estate, and construction after a final order from the Commission. Accordingly, to support this estimated construction timeline and construction plan, the Company respectfully requests a final order by July 1, 2022. Should the Commission issue a final order by July 1, 2022, the Company estimates that construction should begin around April 1, 2023, and be completed by the in-service target date of June 1, 2024. This construction timeline will enable the Company to meet the targeted in-service date for the Projects. This schedule is contingent upon obtaining the necessary permits and transmission line outages; dates may need to be adjusted based on permitting or outage delays, or design modifications in order to comply with additional agency requirements identified during the permitting application process.

[3] The Company notes that the substation-related costs provided above include the costs that ODEC, on behalf of the MEC, intends to pay on behalf of its customer (the "Customer") as excess facilities charges for these Projects.

I. NECESSITY FOR THE PROPOSED PROJECT

A. State the primary justification for the proposed project (for example, the most critical contingency violation including the first year and season in which the violation occurs). In addition, identify each transmission planning standard(s) (of the Applicant, regional transmission organization ("RTO"), or North American Electric Reliability Corporation) projected to be violated absent construction of the facility.

Response: The Projects are necessary to provide service to two DPs requested by ODEC, on behalf of MEC, for MEC to provide service to one of its customers in Mecklenburg County, Virginia, as discussed below, to maintain reliable service for the overall growth in the area, and to comply with mandatory NERC Reliability Standards. See Attachment I.A.1 for an overview map of the proposed Projects.

Dominion Energy Virginia's transmission system is responsible for providing transmission service (i) for redelivery to the Company's retail customers; (ii) to Appalachian Power Company, ODEC, Northern Virginia Electric Cooperative ("NOVEC"), Central Virginia Electric Cooperative, and Virginia Municipal Electric Association for redelivery to their retail customers in Virginia; and, (iii) to North Carolina Electric Membership Corporation and North Carolina Eastern Municipal Power Agency for redelivery to their customers in North Carolina (collectively, the "Dominion Energy Zone" or "DOM Zone"). The Company needs to be able to maintain the overall, long-term reliability of its transmission system as its customers require more power in the future.

Dominion Energy Virginia is part of the PJM Interconnection, L.L.C. ("PJM") regional transmission organization ("RTO"), which provides service to a large portion of the eastern United States. PJM is currently responsible for ensuring the reliability and coordinating the movement of electricity through all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and the District of Columbia. This service area has a population of approximately 65 million and, on August 2, 2006, set a record high of 166,929 megawatts ("MW") for summer peak demand, of which Dominion Energy Virginia's load portion was approximately 19,256 MW serving 2.4 million customers. On July 20, 2020, the Company set a record high of 20,087 MW for summer peak demand. On February 20, 2015, the Company set a winter peak and all-time record demand of 21,651 MW. Based on the 2021 PJM load forecast, the Dominion Energy Zone is expected to grow with average growth rates of 0.5% summer and 0.9% winter over the next 10 years compared to the PJM average of 0.3% and 0.3% over the same period for the summer and winter, respectively.

Dominion Energy Virginia is also part of the Eastern Interconnection transmission grid, meaning its transmission system is interconnected, directly or indirectly, with all of the other transmission systems in the United States and Canada between the Rocky Mountains and the Atlantic Coast, except for Quebec and most of Texas.

All of the transmission systems in the Eastern Interconnection are dependent on each other for moving bulk power through the transmission system and for reliability support. Dominion Energy Virginia's service to its customers is extremely reliant on a robust and reliable regional transmission system.

NERC has been designated by the Federal Energy Regulatory Commission ("FERC") as the electric reliability organization for the United States. Accordingly, NERC requires that the planning authority and transmission planner develop planning criteria to ensure compliance with NERC Reliability Standards. Mandatory NERC Reliability Standards require that a transmission owner ("TO") develop facility interconnection requirements that identify load and generation interconnection minimum requirements for a TO's transmission system, as well as the TO's reliability criteria.[4]

Federally mandated NERC Reliability Standards constitute minimum criteria with which all public utilities must comply as components of the interstate electric transmission system. Moreover, the Energy Policy Act of 2005 mandates that electric utilities follow these NERC Reliability Standards and imposes fines on utilities found to be in noncompliance up to $1.3 million per day per violation.

PJM's Regional Transmission Expansion Plan ("RTEP") is the culmination of a FERC-approved annual transmission planning process that includes extensive analysis of the electric transmission system to determine any needed improvements.[5] PJM's annual RTEP is based on the effective criteria in place at the time of the analyses, including applicable standards and criteria of NERC, PJM, and local reliability planning criteria, among others.[6] Projects identified through the RTEP process are developed by the TO in coordination with PJM, and are presented at the Transmission Expansion Advisory Committee ("TEAC") meetings prior to inclusion in the RTEP that is then presented for approval by the PJM Board of Managers (the "PJM Board").

Outcomes of the RTEP process include three types of transmission system upgrades or projects: (i) baseline upgrades are those that resolve a system reliability criteria violation, which can include planning criteria from NERC, ReliabilityFirst, SERC Reliability Corporation, PJM, and TOs; (ii) network upgrades are new or upgraded facilities required primarily to eliminate reliability criteria violations caused by proposed generation, merchant transmission, or long-term firm transmission service requests; and (iii) supplemental projects are projects initiated by the TO in order to interconnect new customer load, address degraded equipment performance, improve operational flexibility and efficiency, and increase infrastructure resilience.

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[4] *See* FAC-001-3, which can be found at https://www.nerc.com/_layouts/15/PrintStandard.aspx?standardnumber=FAC-001-3&title=Facility%20Interconnection%20Requirements&Jurisdiction=United%20States (effective Jan. 1, 2019).

[5] PJM Manual 14B focuses on the RTEP process and can be found at https://www.pjm.com/~/media/documents/manuals/m14b.ashx.

[6] See PJM Manual 14B, Attachment D: PJM Reliability Planning Criteria.

The Projects are classified as supplemental projects initiated by the TO in order to interconnect new customer load. While supplemental projects are included in the RTEP, and the PJM Board administers stakeholder review of supplemental projects as part of the RTEP process, the PJM Board does not actually approve such projects. See Section I.J for a discussion of the PJM process as it relates to these Projects.

On October 12, 2020, ODEC, on behalf of MEC, submitted to the Company two DP requests to serve large data center campuses in Mecklenburg County, known as the Coleman Creek DP and the Timber DP. The Coleman Creek DP is located in Mecklenburg County south of Route 58, which is about two miles west of the double circuit 115 kV Line #38 (Kerr Dam Substation to Cloud Switching Station) and 115 kV Line #137 (Kerr Dam Substation to Ridge Road Substation). This DP request from ODEC projected approximately 251 MW of load and an in-service date of June 1, 2024, for MEC to serve its customer's (the "Customer") new data center development. ODEC's Coleman Creek DP request is provided as Attachment I.A.2. Timber DP is located in Mecklenburg County along the existing double circuit 115 kV Line #137 (Kerr Dam Substation to Ridge Road Substation) and 115 kV Line #38 (Kerr Dam Substation to Cloud Switching Station) transmission corridor, which is southeast of the junction of 115 kV Line Numbers 1009, 171, 38, and 137 (the Ridge Road Junction). This DP request from ODEC projected approximately 168 MW of load and an in-service date of June 1, 2024, for MEC to serve its Customer's new data center development. ODEC's Timber DP request is provided as Attachment I.A.3.

Substation Scope of Work

The Company's Cloud 115 kV Switching Station[7] currently feeds MEC's Coleman Creek Substation at the Coleman Creek DP, which powers the Customer's "Prison" data center campus. The Company is also developing a switching station, Easters 230 kV Switching Station, in the area of the Projects, which is located on an approximately 7-acre site east of Ridge Road, to serve MEC's Timber DP. Currently, the Company's Easters 115 kV Switching Station[8] will feed MEC's Timber Substation at the Timber DP, which will power the Customer's Timber data center campus.

The Customer has requested retail electric service from MEC to support the future build-out of its two campuses: (1) the 145-acres Coleman Creek campus, and (2) the 330-acres Timber campus. Specifically, the Customer is requesting a total of 251 MW of power from the Coleman Creek DP, and 168 MW of power from the Timber DP, both DP's with normal service feeds and full capacity alternate feeds.

[7] *See supra* n. 1.
[8] *See supra* n. 2.

In addition to MEC's customer's two data center campuses, future data centers are expected in this region of Mecklenburg County. The timing of these projects is not yet defined, but the Company is tracking these projects as future load growth in the area, and the proposed Cloud 230 kV Switching Station and Easters 230 kV Switching Station could also serve these projects. Constructing the proposed Projects within this high potential growth area will therefore allow the Company to continue to serve future economic development in the area in a timely manner.

Accordingly, the proposed Projects are needed to meet the load requirements of MEC's customer's two new data center campuses and can serve future load growth in Mecklenburg County, which will, in turn, facilitate economic growth in the Commonwealth. The in-service date of the proposed Projects is June 1, 2024, based on information provided to the Company from MEC about its Customer's load ramp. The total load at the Cloud 230 kV Switching Station and Easters 230 kV Switching Station is projected to be approximately 419 MW at full build-out. The existing Cloud 115kV Switching Station and under construction Easters 115 kV Switching Station can provide up to 100 MW and 41 MW, respectively. Per the existing load ramp, these capacities will be exceeded by summer 2024. At which point, the 230 kV conversions will be required to accommodate the future load growth.

The Company has already constructed the Cloud 115 kV Switching Station by looping Line #38 (Kerr Dam 115 kV Substation to Cloud 115 kV Switching Station) and extending the double circuit 115 kV line to the Cloud 115 kV Switching Station. The 115 kV line number between Cloud 115 kV Switching Station to Boydton Plank Road 115 kV Substation is Line #1041 and Cloud 115 kV Switching Station to Kerr Dam 115 kV Substation is Line #38. See Attachment I.A.4 for the existing system as of April 2021.

In the Projects, the Company proposes to convert the 115 kV Cloud Switching Station to the 230 kV Cloud Switching Station. The Company intends to use the proposed Cloud 230 kV Switching Station to continue to serve the Coleman Creek DP located on six acres at the old Mecklenburg Correctional Center (960 Prison Road, Boydton, Virginia) in Mecklenburg County. The existing Cloud 115kV Switching Station can provide up to 100 MW. Per the existing load ramp, this load will exceed 100 MW in summer 2024. At which point, the Cloud 230 kV Switching Station conversion will be required to accommodate the future load growth. The proposed Cloud 230 kV Switching Station will be constructed initially with four 230 kV breakers in a ring bus arrangement, two 224 MVA 230/115 kV transformers with breakers on both sides, and a 115 kV four breaker ring bus. Two 230 kV feeds will be provided to serve the Customer. The Switching Station will be designed to accommodate future growth in the area with a build-out of three row breakers and a half scheme bus with three 230 kV breakers in each row. The third 230 kV breaker and a half scheme bus row will be used for future Company 230 kV transmission lines and future MEC 230 kV feeds. The 115 kV bus will be designed to accommodate future 115 kV expansion with a build-out of two row breaker and

half scheme bus with three 115 kV breakers in each row. The 230 kV Switching Station will be built to 3000 Amp Standards.

As noted above, the Company is also currently constructing the Easters 115 kV Switching Station, which is planned to be a 115 kV switching station, by cutting and terminating Line #137 (Kerr Dam Substation to Ridge Road Substation) into a four breaker 115 kV ring bus. The projected in-service date for this project is November 1, 2021. The conductor and switching station equipment used to interconnect Easters 115 kV with the transmission system will be the same as a 230 kV switching station and line equipment. See Attachment I.A.5 for a one–line diagram of the system, as of November 2021, after construction of the Easters 115 kV Switching Station.

As part of the instant Projects, the Company also proposes to construct the Easters 230 kV Switching Station. The Easters 115 kV Switching Station and line equipment will be converted to the Easters 230 kV Switching Station. The Company intends to use the same 115 kV feed that enters into the Easters 115 kV Switching Station for the proposed 230 kV feed that will also enter the switching station. The Company proposes to terminate Line #2226 and Line #2229 into the Easters 230 kV Switching Station, resulting in (i) 230 kV Clover-Easters Line #2226, and (ii) 230 kV Cloud-Easters Line #2229. See Attachment I.A.6 for a one-line diagram of the proposed system after the completion of the 230 kV switching station conversion. One 230 kV 84 MVAR cap bank will be added in the Easters 230 kV Switching Station for voltage support. Once conversion from the 115 kV to 230 kV switching station is complete, the Easters 115 kV tap will be removed and Line #137 (Kerr Dam Substation to Ridge Road Substation) will be reconnected. The under construction Easters 115 kV Switching Station can provide up to 41 MW. Per the existing load ramp, this load will exceed 41 MW in summer 2024. At which point, the Easters 230 kV Switching Station conversion will be required to accommodate the future load growth. The Company will continue to deliver 115 kV into the Easters Switching Station until the 230 kV conversion is complete.

The proposed Easters 230 kV Switching Station will be constructed initially with four 230 kV breakers in a ring bus arrangement. Five 230 kV feeds will be provided to serve the Customer. The Easters 230 kV Switching Station will be designed to accommodate future growth in the area with a build-out of five row breakers and a half scheme bus with three 230 kV breakers in the first four rows and two 230 kV breakers in the last row. The 230 kV switching station will be built to 3000 Amp Standards.

Transmission Scope of Work

As part of the Projects' transmission scope of work, the Company proposes to construct the Line #235 Extension. This part of the Projects would include cutting the Clover-Farmville Line #235 at Structure #235/310 (a point starting west of Chase City Substation), and extending (a) one 230 kV line to the Cloud 230 kV

Switching Station, resulting in the 230 kV Farmville-Cloud Line #235; (b) one 230 kV line to the Easters 230 kV Switching Station and renumbering the Line #235 structures between Structure #235/310-Clover Substation, resulting in the 230 kV Clover-Easters Line #2226, and (c) one 230 kV line between the Easters 230 kV Switching Station and Cloud 230 kV Switching Station, resulting in the 230 kV Easters-Cloud Line #2229. Two 230 kV lines will be installed primarily along approximately 15.3 miles of existing right-of-way with expanded rights-of-way east of the Chase City Substation by less than 0.1 mile, at the Ridge Road Junction by 0.3 mile, and at the Boydton DP by 0.4 mile to accommodate the proposed area of the Projects, totaling approximately 0.7 mile of new rights-of-way. The lines will be supported by 96 double circuit 2-pole galvanized steel structures, 7 double circuit galvanized steel poles, and 4 single circuit galvanized steel H-frame structures utilizing a three-phase twin-bundled 795 ACSR type conductor with a summer transfer capability of 1225 MVA.

In these Projects, the Company also intends to complete the 115 kV Line Relocations. This part of the Projects includes relocating Line Numbers 40, 171, and 1009 in an approximate 0.55 mile section of right-of-way located east of the Chase City Substation, to allow for the installation of the proposed 230 kV lines. To accommodate the 115 kV Line Relocations within the existing right-of-way, the Company proposes to install two single circuit galvanized steel poles; five double circuit galvanized steel poles; two single circuit galvanized steel H-frames; and three triple circuit galvanized steel H-frames, as further discussed in Section V.A below.

See Attachment I.A.6 for a one-line diagram of the proposed system after completion of the Projects in June 2024; specifically, please note the updates to the system after completion of the proposed transmission work described above.

Summary of the Scope of Work for the Projects

Please see Attachments I.A.4-6 for one-line diagrams of the transmission system *before* (specifically, see Attachment I.A.4) and *after* (specifically, see Attachment I.A.6) construction of the Projects. As noted above,

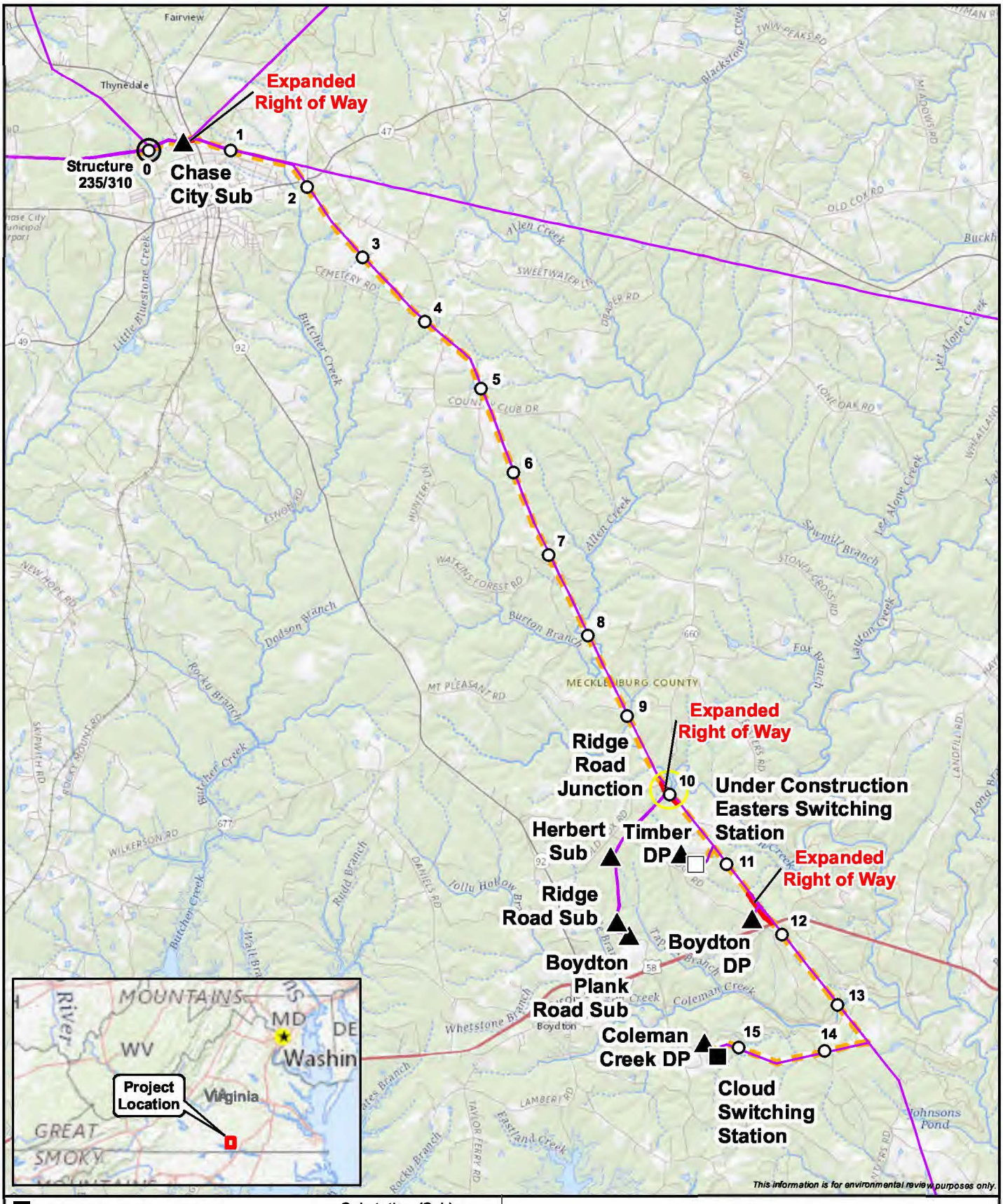
(i) Attachment I.A.4 provides a one-line diagram of the existing system facilities, as of April 2021, prior to construction of the Projects;

(ii) Attachment I.A.5 provides a one-line diagram of the system, as of November 2021, after the completion of the Company's under construction Easters 115 kV Switching Station; and

(iii) Attachment I.A.6 provides a one-line diagram of the system after completion of the proposed Line #235 Extension and 115 kV Line Relocations. Importantly, it shows the proposed system after construction of the Projects as of June 2024.

***

In sum, the proposed Projects will provide service requested by the Customer in Mecklenburg County, Virginia, maintain reliable service for the overall growth in the area of the Projects, and comply with mandatory NERC Reliability Standards. See also Attachment II.A.2 for a map depicting the proposed Projects.



Attachment I.A.1
Project Overview
Line #235 Extension to Cloud 230 kV and Related Projects
Mecklenburg County, Virginia

Redacted for Personal Information

REQUEST/NOTIFICATION FOR
CHANGES IMPACTING DOMINION FACILITIES

SECTION I – GENERAL Date: 10 / 12/ 2020 Revision No.: 3

Requestor Name: Old Dominion Electric Cooperative

Requestor Address: 4201 Dominion Blvd, Suite 300

Glen Allen, Virginia 23060

Name of Contact Person: Dan Watkins Coop Member Contact Person: Brian Woods MEC 434-372-6120

Contact's Phone: [redacted] ext. Contact's Cell: - -

Contact's Fax: - - Contact's Email: [redacted]

Signature below authorizes Dominion to proceed with design, engineering, and estimation of Project cost as appropriate for Dominion to evaluate and respond to this request. This authorization is pursuant and subject to all terms and conditions of the Agreement of which this Appendix is a part.

Authorizing Signature: Auth. Date: 10 /12/ 2020

Printed Name: Bill Pezalla Phone: [redacted]

Title: Director of Transmission Serivces

SECTION II – DESCRIPTION OF REQUEST

Name of Delivery Point: Coleman Creek 230

Brief Description of Request: (attach detail) MEC is requesting Dominion Energy to construct a 230kV transmission line to a new delivery point. Load ramp is included.

Brief Reasoning for Request: (attach detail) MEC has a new data center with a total build-out utility load of 251 MW.

Delivery Point Location: (attach detail if DP is new) Located at the old Mecklenburg Correctional Center, 960 Prison Rd. Boydton, VA.

Noteworthy Load Characteristics: (large motors, large fluctuating loads, large harmonic-producing loads, etc.)

PRESENT DELIVERY POINT DATA:

Present Delivery Point Voltage: N/A

Present Maximum kVA Capacity of Delivery Point Facilities:

Present Summer Peak kW Demand: Present Summer Peak kVAR Demand:

Present Winter Peak kW Demand: Present Winter Peak kVAR Demand:

ANTICIPATED NEW DELIVERY POINT FACILITES DATA:

New Delivery Point Voltage: 230kV

New Peak kVA Capacity of Delivery Point Facilities: 251 MVA

Peak kW and rkVA During First Three Years Following Implementation and Highest Peak Within Ten Years:

	Initial Year:	Second Year:	Third Year:	Highest in First Ten Years:
Enter Year ➔	2020	2021	2022	2030
Summer Peak kW:		11MW	40MW	248 MW
Summer Peak rkVA:				
Winter Peak kW:	10MW	18MW	46MW	251 MW
Winter Peak rkVA:				

Delivery Point Facilities Route:

(attach detail if new line extension is involved)

Additional Comments: This revision entails delivery request for 230kV transmission facilities. This design is to include a breaker and half protection scheme to include four transmsision feeds provided to the Coleman Creek substation. Single line diagram included to show requested design. Load ramp included to show projected load ramp anticipated along with future potential growth to full capacity. Please provide costs associated with excess facilities.

SECTION III – CUSTOMER'S EQUIPMENT

Transformer Primary Voltage: 230 kV Transformer Secondary Voltage: 25kV

Transformer Nameplate Capacity: 30/50 MVA Temperature Rise: 55

Transformer Taps:

Connection (e.g. Wye-Wye): Delta - Wye

Transformer Impedance:

Isolation Device Type and Rating: 230 kV, 1200A, 3-PST, GOAB Switch

Protection Device Type and Rating: 230kV, 2000A Circuit Breaker

Required Attachments: [1] One-line diagram [2] Transformer test report [3] Transformer loss curve
[4] Operating procedures description [5] Protection scheme functional diagram
[6] Protection Device information (including device types, serial and model numbers, relay settings, etc.)

SECTION IV – TIMING

Request included in Customer's planning documents submitted to Dominion on:

Most Recent Submission: 09 /25/ 2019 Second Most Recent Submission: 10/09/2018

Expected Date Customer's Construction to Commence: 2 /1/ 2020

Expected Completion Date of Customer Work: 11 /1/ 2020

Date Requested for Dominion Construction to Commence: 1 /1/ 2020

Requested Completion Date of Dominion Work (De-energized): 10 /31/ 2020

Requested Date to Energize: **(See Note)** 11 /1/ 2020

Other Milestones:

NOTE: If the "Requested Date to Energize" is marked as (E), then the firm date ultimately supplied must be on or after the estimated date, unless an earlier firm date is mutually agreed-upon prior to submission of the revised request form.

(E) = Estimated

N/A = Not Available

TBD = To Be Determined

REQUEST/NOTIFICATION FOR
CHANGES IMPACTING DOMINION FACILITIES

SECTION I – GENERAL Date: 10 / 09/ 2020 Revision No.: 2

Requestor Name: Old Dominion Electric Cooperative

Requestor Address: 4201 Dominion Blvd, Suite 300

Glen Allen, Virginia 23060

Name of Contact Person: Dan Watkins Coop Member Contact Person: Brian Woods MEC 434-372-6120

Contact's Phone: [redacted] ext. Contact's Cell: - -

Contact's Fax: - - Contact's Email: [redacted]

Signature below authorizes Dominion to proceed with design, engineering, and estimation of Project cost as appropriate for Dominion to evaluate and respond to this request. This authorization is pursuant and subject to all terms and conditions of the Agreement of which this Appvhich this Appendix is

Authorizing Signature: Auth. Date: 10 /12/ 2020

Printed Name: Bill Pezalla Phone: [redacted]

Title: Director of Transmission Serivces

SECTION II – DESCRIPTION OF REQUEST

Name of Delivery Point:	Timber 1
Brief Description of Request: (attach detail)	MEC is requesting Dominion Energy (DE) to study/design/construct a 230kV transmission line to a new 230kV delivery point. The request requires DE to provide 5 lines across the fence to MEC. This should be provided through a breaker and half scheme.
Brief Reasoning for Request: (attach detail)	MEC has a new data center with a total build-out load of 168 MW. Through discussions with DE, this will have to be served temporarily via a current 115kV line until the 230kV line can be constructed.
Delivery Point Location: (attach detail if DP is new)	Site location is adjacent to current DE transmission line near Ridge Road, Boydton, VA. Site is east of Ridge Road and South of Old Cox Road.
Noteworthy Load Characteristics: (large motors, large fluctuating loads, large harmonic-producing loads, etc.)	Data Center

PRESENT DELIVERY POINT DATA:

Present Delivery Point Voltage:

Present Maximum kVA Capacity of Delivery Point Facilities:

Present Summer Peak kW Demand: Present Summer Peak kVAR Demand:

Present Winter Peak kW Demand: Present Winter Peak kVAR Demand:

ANTICIPATED NEW DELIVERY POINT FACILITES DATA:

New Delivery Point Voltage: 230kV

New Peak kVA Capacity of Delivery Point Facilities: 168 MVA

Peak kW and rkVA During First Three Years Following Implementation and Highest Peak Within Ten Years:

	Initial Year:	Second Year:	Third Year:	Highest in First Ten Years:
Enter Year ➔	2021	2022	2023	2028
Summer Peak kW:	0	12 MW	18 MW	168MW
Summer Peak rkVA:				
Winter Peak kW:	12 MW	18 MW	33 MW	168MW
Winter Peak rkVA:				

Delivery Point Facilities Route:

(attach detail if new line extension is involved)

Additional Comments: Load ramp schedule and target connection date is attached. Two scenarios presented representing design capacity along with maximum capacity. Given the request for 5 feeds as well as a temporary 115kV source, please provide associated excess facilities charges.

SECTION III – CUSTOMER'S EQUIPMENT

Transformer Primary Voltage: 230kV Transformer Secondary Voltage: 25kV

Transformer Nameplate Capacity: 40/60 MVA Temperature Rise: 55

Transformer Taps:

Connection (e.g. Wye-Wye): Delta - Wye

Transformer Impedance:

Isolation Device Type and Rating: 230kV, 1200A, 3-PST, GOAB Switch

Protection Device Type and Rating: 230kV, 2000A Circuit Breaker

Required Attachments: [1] One-line diagram [2] Transformer test report [3] Transformer loss curve
[4] Operating procedures description [5] Protection scheme functional diagram
[6] Protection Device information (including device types, serial and model numbers, relay settings, etc.)

SECTION IV – TIMING

Request included in Customer's planning documents submitted to Dominion on:

Most Recent Submission: 06 /16/ 2020 Second Most Recent Submission: 03/09/2020

Expected Date Customer's Construction to Commence: / / 20

Expected Completion Date of Customer Work: / / 20

Date Requested for Dominion Construction to Commence: / / 20

Requested Completion Date of Dominion Work (De-energized): / / 20

Requested Date to Energize: **(See Note)** / / 20

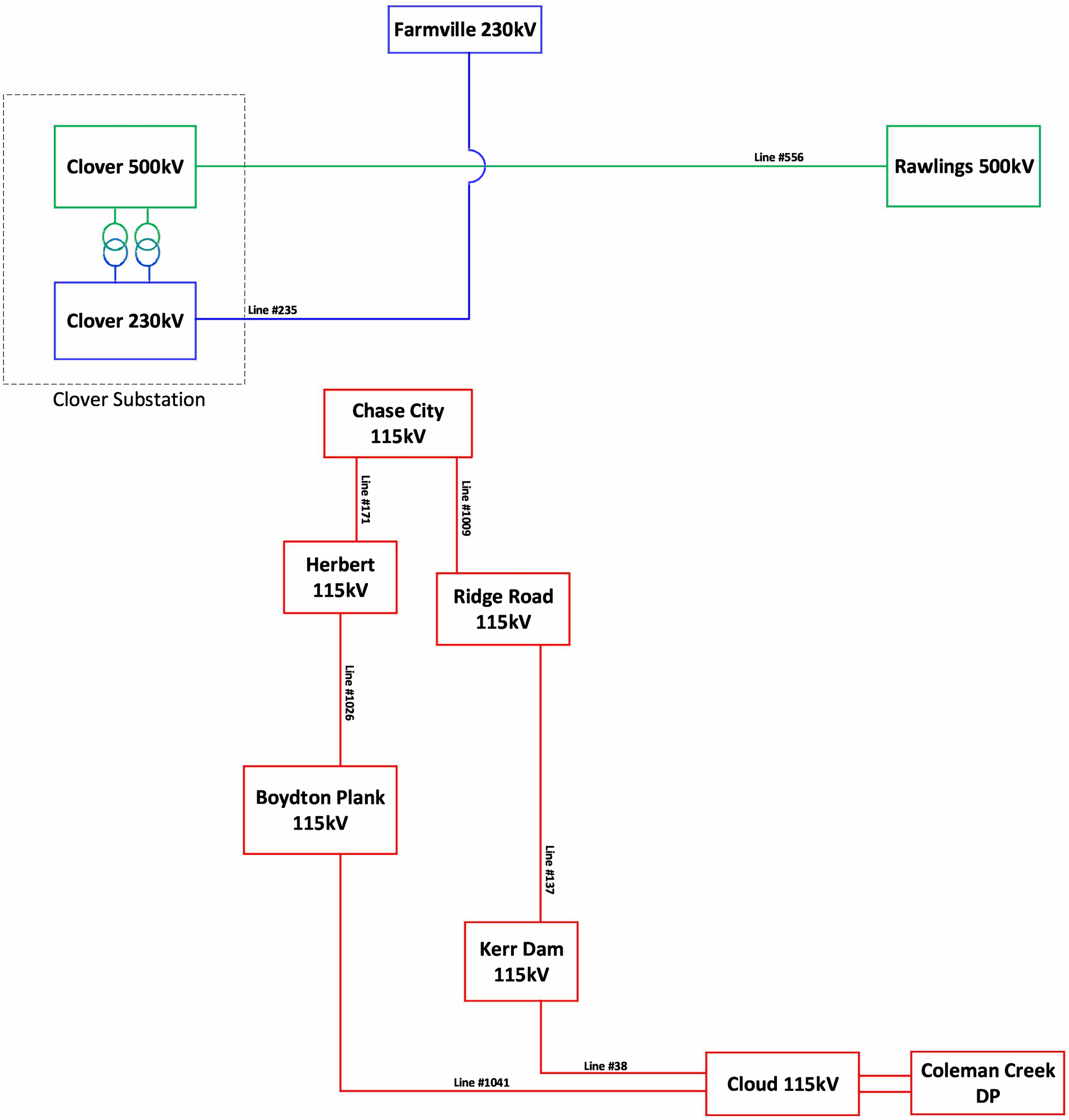
Other Milestones: Project milestones directed by load ramp and schedule provided.

NOTE: If the "Requested Date to Energize" is marked as (E), then the firm date ultimately supplied must be on or after the estimated date, unless an earlier firm date is mutually agreed-upon prior to submission of the revised request form.

(E) = Estimated

N/A = Not Available

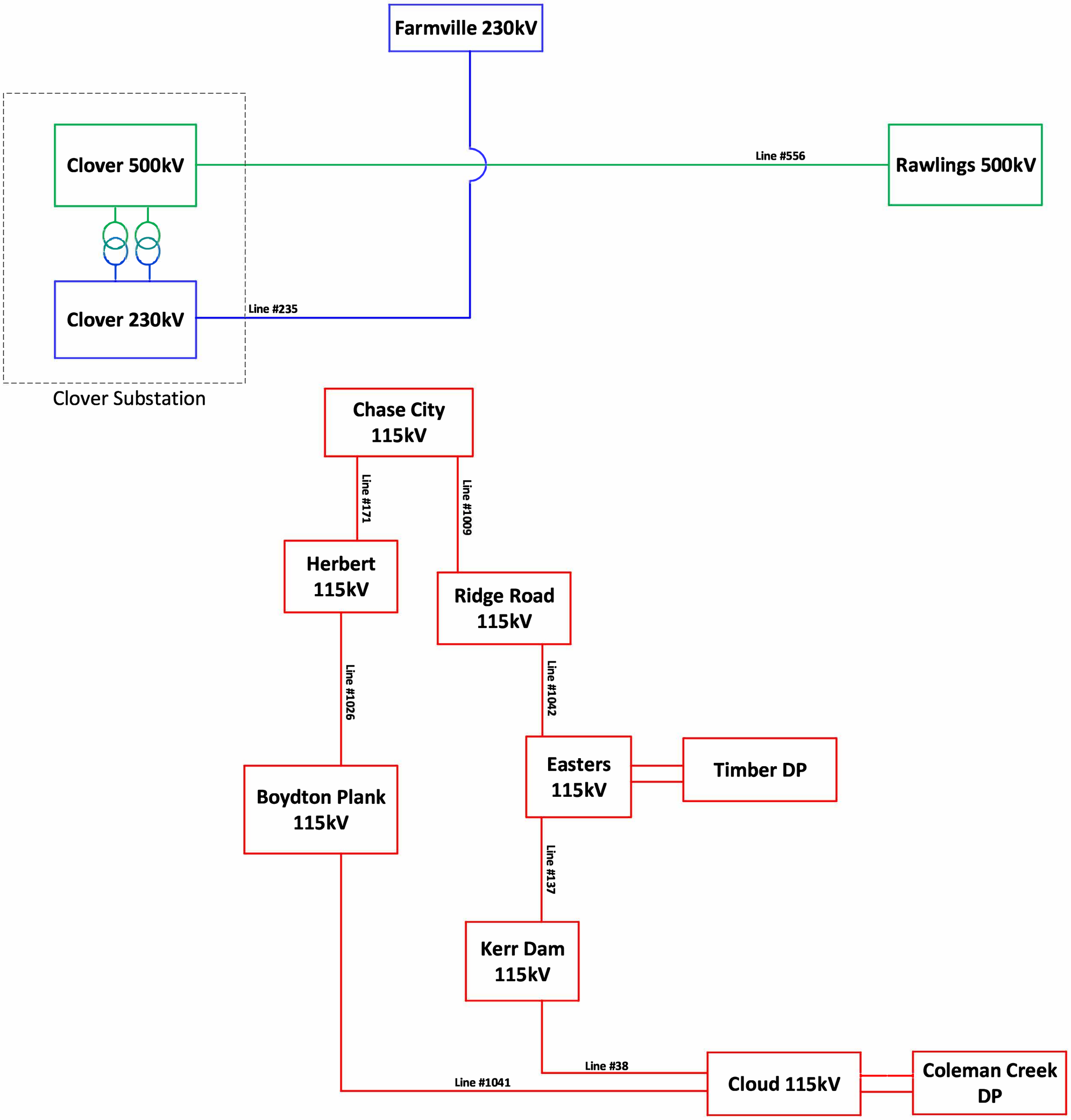
TBD = To Be Determined

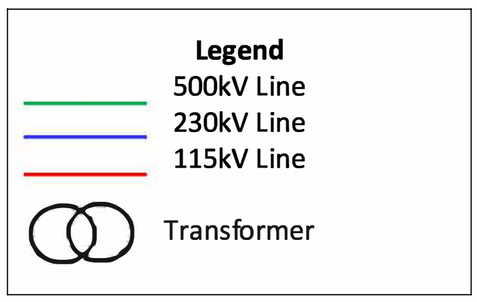


Legend
500kV Line
230kV Line
115kV Line
Transformer

All referenced boxes are substations, with the exception of Cloud Switching Station and Easters Switching Station.
All 115kV lines are double circuit lines.

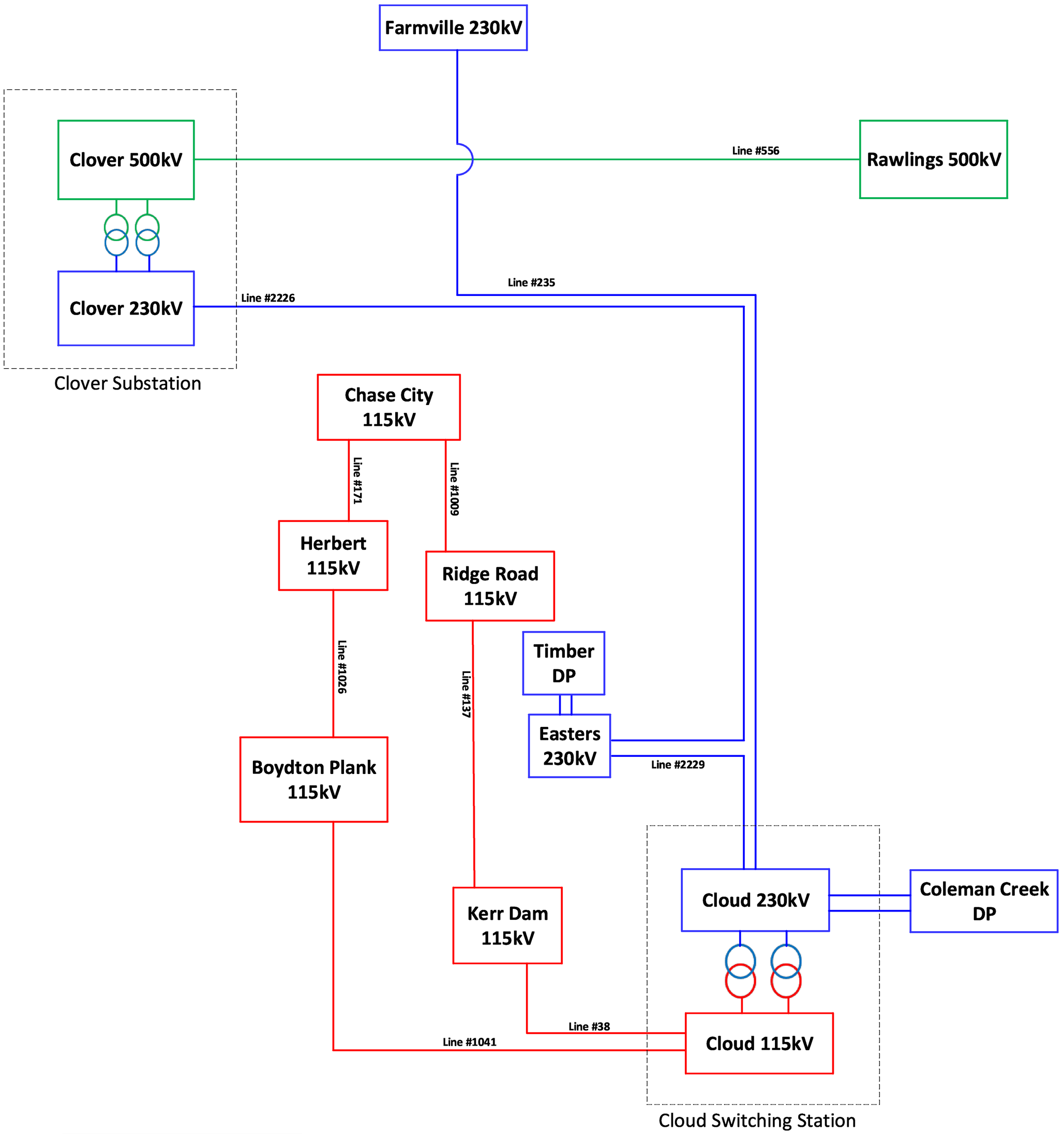
System with the Addition of the Easters 115 kV Switching Station (System as of November 2021)





All referenced boxes are substations, with the exception of Cloud Switching Station and Easters Switching Station.
All 115kV lines are double circuit lines.

Proposed System After Completion of the Projects (System as of June 2024)



Legend

500kV Line

230kV Line

115kV Line

Transformer

All referenced boxes are substations, with the exception of Cloud Switching Station and Easters Switching Station.
All 115kV lines are double circuit lines.

I. NECESSITY FOR THE PROPOSED PROJECT

B. Detail the engineering justifications for the proposed project (for example, provide narrative to support whether the proposed project is necessary to upgrade or replace an existing facility, to significantly increase system reliability, to connect a new generating station to the Applicant's system, etc.). Describe any known future project(s), including but not limited to generation, transmission, delivery point or retail customer projects, that require the proposed project to be constructed. Verify that the planning studies used to justify the need for the proposed project considered all other generation and transmission facilities impacting the affected load area, including generation and transmission facilities that have not yet been placed into service. Provide a list of those facilities that are not yet in service.

Response: **(1) Engineering Justification for Project**

See Section I.A of the Appendix.

(2) Known Future Projects

The proposed Projects are needed to serve future data center developments in the area of the Projects, as described in Section I.A. See Attachment I.A.1 for existing and future distribution and transmission facilities in the affected load area, including the proposed Projects. Each future data center project has its own unique load growth drivers, and as such, these future projects do not "require" the proposed Projects to be constructed. However, as discussed above, the proposed Projects could also serve these future projects to accommodate future load growth in the area, to the extent necessary.

Additionally, Dominion Energy Virginia is working with a customer to evaluate possible substation locations for a new industrial site, which will be located south of the Chase City area near Line #171(Structure 49). The proposed station will connect to existing 115 kV infrastructure via new right-of-way and the new 115 kV transmission lines will likely cross underneath the proposed Chase City – Cloud 230 kV transmission line. The crossing may or may not require the existing right-of-way to be expanded to accommodate the transmission line crossing.

(3) Planning Studies

For these Projects, the Company received DP requests with expected load ramp from MEC to build the Cloud 230 kV Switching Station and Easters 230 kV Switching Station (see Attachments I.A.2 and I.A.3).

MEC conferred with the Company's Transmission Planning group to analyze the effects of the projected growth and the addition of Cloud Switching Station and Easters Switching Station on the transmission system.

Dominion Energy Virginia's Electric Transmission Planning group performs

planning studies to ensure delivery of bulk power to a continuously changing customer demand under a wide variety of operating conditions. Studies are performed in coordination with the Company's RTO (*i.e.*, PJM) and in accordance with NERC Reliability Standards. In completing these studies, the Company considered all other known generation and transmission facilities impacting the affected load area.

In order to maintain reliable service to customers of the Company and to comply with mandatory NERC Reliability Standards, specifically Facility Connection ("FAC") standard FAC-001,[9] the Company's Facility Interconnection Requirements ("FIR")[10] document addresses the interconnection requirements of generation, transmission, and electricity end-user facilities. The purpose of the NERC FAC standards is to avoid adverse impacts on reliability by requiring each transmission owner ("TO") to establish facility connection and performance requirements in accordance with FAC-001, and requiring the TO and end-users to meet and adhere to the established facility connection and performance requirements in accordance with FAC-002.

NERC Reliability Standards TPL-001 requirements R2, R5, and R6 require PJM, the Planning Coordinator ("PC") and the TO, to have criteria. PJM's planning criteria outlined in Attachment D of Manual 14B requires the Company, as a TO, to follow NERC and Regional Planning Standards and criteria as well as the TO Standards filed in Dominion Energy Virginia's FERC 715 filings. The Company's FERC 715 filing contains the Dominion Energy Virginia Transmission Planning Criteria in Exhibit A of the FIR document.

The four major criteria considered as part of these Projects were:

1) Ring bus arrangement is required for load interconnections in excess of 100 MW (Company's FIR, Section 6.2);

2) The amount of direct-connected load at any substation is limited to 300 MW (Company's Transmission Planning Criteria Exhibit A, Section C.2.8);

3) N-1-1 contingencies load loss is limited to 300 MW (PJM Manual 14B Section 2.3.8, Attachment D, Attachment D-1, Attachment F); and

4) The minimum load levels within a 10-year planning horizon for the direct interconnection to existing transmission lines is 30 MW for a 230 kV delivery (Company's FAC-001 Section 6, Load Criteria – End User).

[9] *See supra* n. 4.

[10] The Company's FIR is available at: https://www.pjm.com/-/media/planning/planning-criteria/dominion-planning-criteria.ashx.

(4) Facilities List

See Attachment I.A.1 for existing and future distribution and transmission facilities in the affected region of Mecklenburg County.

I. NECESSITY FOR THE PROPOSED PROJECT

C. Describe the present system and detail how the proposed project will effectively satisfy present and projected future electrical load demand requirements. Provide pertinent load growth data (at least five years of historical summer and winter peak demands and ten years of projected summer and winter peak loads where applicable). Provide all assumptions inherent within the projected data and describe why the existing system cannot adequately serve the needs of the Applicant (if that is the case). Indicate the date by which the existing system is projected to be inadequate.

Response: See Attachments I.A.1 and I.G.1 for the portion of the Company's transmission facilities in the area of the Projects. The existing Boydton Plank, Ridge Road, Herbert Substations, and Cloud 115 kV Switching Station are the primary sources of distribution power to the load area. The combined projected load at the Customer's upcoming two campuses in 10 years is projected to be approximately 419 MW at full build-out. Adding this load to existing 115 kV substations and Cloud 115 kV Switching Station would result in overload conditions and NERC transmission system reliability criteria violations.

Attachment I.C.1 shows loading (MW), as follows:

- Attachment I.C.1.a.1-2 shows projected load ramp at Cloud 115 kV Switching Station without the Cloud 230 kV Switching Station.
- Attachment I.C.1.b.1-2 shows projected load ramp at Easters 115 kV Switching Station without the Easters 230 kV Switching Station.

From Attachment I.C.1.a.1-2, the Cloud 115 kV Switching Station's load is projected to exceed 100 MW by summer 2024.

From Attachment I.C.1.b.1-2, the Easters 115 kV Switching Station's load is projected to exceed 41 MW by summer 2024.

The NERC low voltage criteria for loss of single line is 0.93 per unit. For the loss of Line #38, the voltage at Cloud 115 kV bus and Boydton 115 kV bus drops below 0.93 per unit. The NERC low voltage criteria for loss of tower line contingency (the loss of any two adjacent circuits on common structure) is 0.90 per unit. For the loss of common structure for Line #38 and Line#137, the voltage at Cloud 115 kV bus and Boydton 115 kV bus drops below 0.90 per unit.

For tower line contingencies review, in summer 2026, for the loss of Line #38 and Line#137, thermal overloads are seen for Line #1026 (387.5 MVA of load on a 384 MVA rating or 101% overload) and Line #171 (398 MVA of load on a 384 MVA rating or 104% overload).

The NERC Criteria for 300 MW load loss due to loss of two lines (N-1-1) is violated in summer 2026. For the loss of Line #38 and Line#137, the total load loss is 341 MW. For the loss of Line #38 and Line#1026, the total load loss is 328 MW. For the purposes of this NERC Criterion, the load values do not include the redundant, alternate feed contract values, but rather just the projected Customer loading in Cloud and Easters Switching Stations.

Based on all these stated projected overloads and criteria violations above, the Company needs to construct the Cloud 230 kV Switching Station, Easters 230 kV Switching Station, and the Line # 235 Extension by summer 2024, to avoid these issues.

Attachment I.C.1.a

Year	TX 1	TX 2	TX 3	TX 4	TX 5	TX 6	TX 7	Existing Cloud 115 kV Switching Station Total MW
2020	10							10
2021	9.25	9.25						18.5
2022	18.25	18.25	10					46.5
2023	27.25	27.25	9.25	9.25				73
2024	35.875	35.875	18.25	18.25	10			118.25
2025	35.875	35.875	27.25	27.25	9.25	10		145.5
2026	35.875	35.875	35.875	35.875	18.25	5.5	10	167.25
2027	35.875	35.875	35.875	35.875	27.25	14.5	9.25	185.25
2028	35.875	35.875	35.875	35.875	35.875	23.5	18.25	202.875
2029	35.875	35.875	35.875	35.875	35.875	32.5	27.25	239.125
2030	35.875	35.875	35.875	35.875	35.875	35.875	35.875	251.125

* Values provided by the Customer from load ramp spreadsheets contained in the Coleman Creek DP request.

Attachment I.C.1.b

Year	TX 1	TX 2	TX 3	TX 4	Under Construction Easters 115 kV Switching Station Total MW
2020					
2021	12.5				12.5
2022	6	12.5			18.5
2023	18	5	12.5		24
2024	30	17	8	12.5	56
2025	42	29	20	8	99
2026	42	41	32	20	135
2027	42	42	42	32	158
2028	42	42	42	42	168
2029	42	42	42	42	168
2030	42	42	42	42	168

* Values provided by the Customer from load ramp spreadsheets contained in the Timber DP request.

LVL - Prison FFCR

INPUTS

IT MW Source	*LVL2?*	*DCD*	*LVL4?*	*DCD*	*DCD*	*DCD*		
	LVL 1	**LVL 2**	**LVL 3**	**LVL 4**	**LVL 5**	**LVL 6**	**LVL7**	**Total**
Max Design IT MW	41.0	41.0	41.0	41.0	41.0	41.0	41.0	**287.0**
Utilization	70%	70%	70%	70%	70%	70%	70%	
PUE Factor	1.25	1.25	1.25	1.25	1.25	1.25	1.25	
Ramp (MW/month)	0.8	0.8	0.8	0.8	0.8	0.8	0.8	
Max Utility MW	35.9	35.9	35.9	35.9	35.9	35.9	35.9	**251.1**

Month	Date	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6		Total MW	*Notes*
1	7/1/2020	10.00							10.00	
2	8/1/2020	10.00							10.00	
3	9/1/2020	10.00							10.00	
4	10/1/2020	10.00							10.00	
5	11/1/2020	10.00							10.00	
6	12/1/2020	10.00							10.00	
7	1/1/2021	1.00	1.00						2.00	
8	2/1/2021	1.75	1.75						3.50	
9	3/1/2021	2.50	2.50						5.00	
10	4/1/2021	3.25	3.25						6.50	
11	5/1/2021	4.00	4.00						8.00	
12	6/1/2021	4.75	4.75						9.50	
13	7/1/2021	5.50	5.50						11.00	
14	8/1/2021	6.25	6.25						12.50	
15	9/1/2021	7.00	7.00						14.00	
16	10/1/2021	7.75	7.75						15.50	
17	11/1/2021	8.50	8.50						17.00	
18	12/1/2021	9.25	9.25						18.50	
19	1/1/2022	10.00	10.00						20.00	
20	2/1/2022	10.75	10.75						21.50	
21	3/1/2022	11.50	11.50						23.00	
22	4/1/2022	12.25	12.25						24.50	
23	5/1/2022	13.00	13.00						26.00	
24	6/1/2022	13.75	13.75						27.50	
25	7/1/2022	14.50	14.50	10.00					39.00	
26	8/1/2022	15.25	15.25	10.00					40.50	
27	9/1/2022	16.00	16.00	10.00					42.00	
28	10/1/2022	16.75	16.75	10.00					43.50	
29	11/1/2022	17.50	17.50	10.00					45.00	
30	12/1/2022	18.25	18.25	10.00					46.50	
31	1/1/2023	19.00	19.00	1.00	1.00				40.00	
32	2/1/2023	19.75	19.75	1.75	1.75				43.00	
33	3/1/2023	20.50	20.50	2.50	2.50				46.00	
34	4/1/2023	21.25	21.25	3.25	3.25				49.00	
35	5/1/2023	22.00	22.00	4.00	4.00				52.00	
36	6/1/2023	22.75	22.75	4.75	4.75				55.00	
37	7/1/2023	23.50	23.50	5.50	5.50				58.00	
38	8/1/2023	24.25	24.25	6.25	6.25				61.00	
39	9/1/2023	25.00	25.00	7.00	7.00				64.00	
40	10/1/2023	25.75	25.75	7.75	7.75				67.00	
41	11/1/2023	26.50	26.50	8.50	8.50				70.00	
42	12/1/2023	27.25	27.25	9.25	9.25				73.00	
43	1/1/2024	28.00	28.00	10.00	10.00				76.00	
44	2/1/2024	28.75	28.75	10.75	10.75				79.00	
45	3/1/2024	29.50	29.50	11.50	11.50				82.00	
46	4/1/2024	30.25	30.25	12.25	12.25				85.00	
47	5/1/2024	31.00	31.00	13.00	13.00				88.00	
48	6/1/2024	31.75	31.75	13.75	13.75				91.00	
49	7/1/2024	32.50	32.50	14.50	14.50	10.00			104.00	

50	8/1/2024	33.25	33.25	15.25	15.25	10.00			107.00
51	9/1/2024	34.00	34.00	16.00	16.00	10.00			110.00
52	10/1/2024	34.75	34.75	16.75	16.75	10.00			113.00
53	11/1/2024	35.50	35.50	17.50	17.50	10.00			116.00
54	12/1/2024	35.88	35.88	18.25	18.25	10.00			118.25
55	1/1/2025	35.88	35.88	19.00	19.00	1.00			110.75
56	2/1/2025	35.88	35.88	19.75	19.75	1.75			113.00
57	3/1/2025	35.88	35.88	20.50	20.50	2.50			115.25
58	4/1/2025	35.88	35.88	21.25	21.25	3.25			117.50
59	5/1/2025	35.88	35.88	22.00	22.00	4.00			119.75
60	6/1/2025	35.88	35.88	22.75	22.75	4.75			122.00
61	7/1/2025	35.88	35.88	23.50	23.50	5.50			124.25
62	8/1/2025	35.88	35.88	24.25	24.25	6.25			126.50
63	9/1/2025	35.88	35.88	25.00	25.00	7.00			128.75
64	10/1/2025	35.88	35.88	25.75	25.75	7.75			131.00
65	11/1/2025	35.88	35.88	26.50	26.50	8.50			133.25
66	12/1/2025	35.88	35.88	27.25	27.25	9.25	10.00		145.50
67	1/1/2026	35.88	35.88	28.00	28.00	10.00	10.00		147.75
68	2/1/2026	35.88	35.88	28.75	28.75	10.75	10.00		150.00
69	3/1/2026	35.88	35.88	29.50	29.50	11.50	10.00		152.25
70	4/1/2026	35.88	35.88	30.25	30.25	12.25	10.00		154.50
71	5/1/2026	35.88	35.88	31.00	31.00	13.00	10.00		156.75
72	6/1/2026	35.88	35.88	31.75	31.75	13.75	1.00		150.00
73	7/1/2026	35.88	35.88	32.50	32.50	14.50	1.75	10.00	153.00
74	8/1/2026	35.88	35.88	33.25	33.25	15.25	2.50	10.00	156.00
75	9/1/2026	35.88	35.88	34.00	34.00	16.00	3.25	10.00	159.00
76	10/1/2026	35.88	35.88	34.75	34.75	16.75	4.00	10.00	162.00
77	11/1/2026	35.88	35.88	35.50	35.50	17.50	4.75	10.00	165.00
78	12/1/2026	35.88	35.88	35.88	35.88	18.25	5.50	10.00	167.25
79	1/1/2027	35.88	35.88	35.88	35.88	19.00	6.25	1.00	168.75
80	2/1/2027	35.88	35.88	35.88	35.88	19.75	7.00	1.75	170.25
81	3/1/2027	35.88	35.88	35.88	35.88	20.50	7.75	2.50	171.75
82	4/1/2027	35.88	35.88	35.88	35.88	21.25	8.50	3.25	173.25
83	5/1/2027	35.88	35.88	35.88	35.88	22.00	9.25	4.00	174.75
84	6/1/2027	35.88	35.88	35.88	35.88	22.75	10.00	4.75	176.25
85	7/1/2027	35.88	35.88	35.88	35.88	23.50	10.75	5.50	177.75
86	8/1/2027	35.88	35.88	35.88	35.88	24.25	11.50	6.25	179.25
87	9/1/2027	35.88	35.88	35.88	35.88	25.00	12.25	7.00	180.75
88	10/1/2027	35.88	35.88	35.88	35.88	25.75	13.00	7.75	182.25
89	11/1/2027	35.88	35.88	35.88	35.88	26.50	13.75	8.50	183.75
90	12/1/2027	35.88	35.88	35.88	35.88	27.25	14.50	9.25	185.25
91	1/1/2028	35.88	35.88	35.88	35.88	28.00	15.25	10.00	186.75
92	2/1/2028	35.88	35.88	35.88	35.88	28.75	16.00	10.75	188.25
93	3/1/2028	35.88	35.88	35.88	35.88	29.50	16.75	11.50	189.75
94	4/1/2028	35.88	35.88	35.88	35.88	30.25	17.50	12.25	191.25
95	5/1/2028	35.88	35.88	35.88	35.88	31.00	18.25	13.00	192.75
96	6/1/2028	35.88	35.88	35.88	35.88	31.75	19.00	13.75	194.25
97	7/1/2028	35.88	35.88	35.88	35.88	32.50	19.75	14.50	195.75
98	8/1/2028	35.88	35.88	35.88	35.88	33.25	20.50	15.25	197.25
99	9/1/2028	35.88	35.88	35.88	35.88	34.00	21.25	16.00	198.75
100	10/1/2028	35.88	35.88	35.88	35.88	34.75	22.00	16.75	200.25
101	11/1/2028	35.88	35.88	35.88	35.88	35.50	22.75	17.50	201.75
102	12/1/2028	35.88	35.88	35.88	35.88	35.88	23.50	18.25	202.88
103	1/1/2029	35.88	35.88	35.88	35.88	35.88	24.25	19.00	203.63
104	2/1/2029	35.88	35.88	35.88	35.88	35.88	25.00	19.75	204.38
105	3/1/2029	35.88	35.88	35.88	35.88	35.88	25.75	20.50	205.13
106	4/1/2029	35.88	35.88	35.88	35.88	35.88	26.50	21.25	205.88
107	5/1/2029	35.88	35.88	35.88	35.88	35.88	27.25	22.00	206.63
108	6/1/2029	35.88	35.88	35.88	35.88	35.88	28.00	22.75	207.38
109	7/1/2029	35.88	35.88	35.88	35.88	35.88	28.75	23.50	208.13
110	8/1/2029	35.88	35.88	35.88	35.88	35.88	29.50	24.25	208.88
111	9/1/2029	35.88	35.88	35.88	35.88	35.88	30.25	25.00	209.63
112	10/1/2029	35.88	35.88	35.88	35.88	35.88	31.00	25.75	236.13

113	11/1/2029	35.88	35.88	35.88	35.88	35.88	31.75	26.50	237.63
114	12/1/2029	35.88	35.88	35.88	35.88	35.88	32.50	27.25	239.13
115	1/1/2030	35.88	35.88	35.88	35.88	35.88	33.25	28.00	240.63
116	2/1/2030	35.88	35.88	35.88	35.88	35.88	34.00	28.75	242.13
117	3/1/2030	35.88	35.88	35.88	35.88	35.88	34.75	29.50	243.63
118	4/1/2030	35.88	35.88	35.88	35.88	35.88	35.50	30.25	245.13
119	5/1/2030	35.88	35.88	35.88	35.88	35.88	35.88	31.00	246.25
120	6/1/2030	35.88	35.88	35.88	35.88	35.88	35.88	31.75	247.00
121	7/1/2030	35.88	35.88	35.88	35.88	35.88	35.88	32.50	247.75
122	8/1/2030	35.88	35.88	35.88	35.88	35.88	35.88	33.25	248.50
123	9/1/2030	35.88	35.88	35.88	35.88	35.88	35.88	34.00	249.25
124	10/1/2030	35.88	35.88	35.88	35.88	35.88	35.88	34.75	250.00
125	11/1/2030	35.88	35.88	35.88	35.88	35.88	35.88	35.50	250.75
126	12/1/2030	35.88	35.88	35.88	35.88	35.88	35.88	35.88	251.13
127	1/1/2031	35.88	35.88	35.88	35.88	35.88	35.88	35.88	251.13
128	2/1/2031	35.88	35.88	35.88	35.88	35.88	35.88	35.88	251.13
129	3/1/2031	35.88	35.88	35.88	35.88	35.88	35.88	35.88	251.13
130	4/1/2031	35.88	35.88	35.88	35.88	35.88	35.88	35.88	251.13
131	5/1/2031	35.88	35.88	35.88	35.88	35.88	35.88	35.88	251.13
132	6/1/2031	35.88	35.88	35.88	35.88	35.88	35.88	35.88	251.13
133	7/1/2031	35.88	35.88	35.88	35.88	35.88	35.88	35.88	251.13
134	8/1/2031	35.88	35.88	35.88	35.88	35.88	35.88	35.88	251.13
135	9/1/2031	35.88	35.88	35.88	35.88	35.88	35.88	35.88	251.13
136	10/1/2031	35.88	35.88	35.88	35.88	35.88	35.88	35.88	251.13
137	11/1/2031	35.88	35.88	35.88	35.88	35.88	35.88	35.88	251.13
138	12/1/2031	35.88	35.88	35.88	35.88	35.88	35.88	35.88	251.13
139	1/1/2032	35.88	35.88	35.88	35.88	35.88	35.88	35.88	251.13
140	2/1/2032	35.88	35.88	35.88	35.88	35.88	35.88	35.88	251.13
141	3/1/2032	35.88	35.88	35.88	35.88	35.88	35.88	35.88	251.13

Attachment I.C.1.a.2

LVL - Timber FFCR

INPUTS

IT MW Source	*DCD*	*DCD*	*DCD*	*DCD*	*Leroy*	*Leroy*			
	LVL 1	**LVL 2**	**LVL 3**	**LVL 4**	**LVL 5**	**LVL 6**	**LVL7**		**Total**
Max Design IT MW	48	48.0	48.0	48.0	48.0	48.0	48.0		**336.0**
Utilization	100%	100%	100%	100%	100%	100%	100%		
PUE Factor	1.25	1.25	1.25	1.25	1.25	1.25	1.25		
Ramp (MW/month)	0.8	0.8	0.8	0.8	0.8	0.8	0.8		
Max Utility MW	60.0	60.0	60.0	60.0	60.0	60.0	60.0		**420.0**

Month	Date	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6			Total MW	*Notes*
1	7/1/2020									-	
2	8/1/2020									-	
3	9/1/2020									-	
4	10/1/2020									-	
5	11/1/2020									-	
6	12/1/2020									-	
7	1/1/2021									-	
8	2/1/2021									-	
9	3/1/2021									-	
10	4/1/2021									-	
11	5/1/2021									-	
12	6/1/2021									-	
13	7/1/2021									-	
14	8/1/2021		10.00							10.00	
15	9/1/2021		10.00							10.00	
16	10/1/2021		10.00							10.00	
17	11/1/2021		10.00							10.00	
18	12/1/2021		10.00							10.00	
19	1/1/2022		10.00							10.00	
20	2/1/2022		1.00							1.00	
21	3/1/2022		1.75							1.75	
22	4/1/2022		2.50	1.00						3.50	
23	5/1/2022		3.25	1.75						5.00	
24	6/1/2022		4.00	2.50						6.50	
25	7/1/2022		4.75	3.25						8.00	
26	8/1/2022		5.50	4.00						9.50	
27	9/1/2022		6.25	4.75						11.00	
28	10/1/2022	10.00	7.00	5.50						22.50	
29	11/1/2022	10.00	7.75	6.25						24.00	
30	12/1/2022	10.00	8.50	7.00						25.50	
31	1/1/2023	10.00	9.25	7.75						27.00	
32	2/1/2023	10.00	10.00	8.50						28.50	
33	3/1/2023	10.00	10.75	9.25						30.00	
34	4/1/2023	1.00	11.50	10.00						22.50	
35	5/1/2023	1.75	12.25	10.75						24.75	
36	6/1/2023	2.50	13.00	11.50						27.00	
37	7/1/2023	3.25	13.75	12.25						29.25	
38	8/1/2023	4.00	14.50	13.00						31.50	
39	9/1/2023	4.75	15.25	13.75						33.75	
40	10/1/2023	5.50	16.00	14.50						36.00	
41	11/1/2023	6.25	16.75	15.25						38.25	
42	12/1/2023	7.00	17.50	16.00						40.50	
43	1/1/2024	7.75	18.25	16.75						42.75	
44	2/1/2024	8.50	19.00	17.50						45.00	
45	3/1/2024	9.25	19.75	18.25						47.25	
46	4/1/2024	10.00	20.50	19.00						49.50	
47	5/1/2024	10.75	21.25	19.75						51.75	
48	6/1/2024	11.50	22.00	20.50						54.00	
49	7/1/2024	12.25	22.75	21.25						56.25	
50	8/1/2024	13.00	23.50	22.00						58.50	
51	9/1/2024	13.75	24.25	22.75						60.75	
52	10/1/2024	14.50	25.00	23.50						63.00	
53	11/1/2024	15.25	25.75	24.25						65.25	
54	12/1/2024	16.00	26.50	25.00						67.50	
55	1/1/2025	16.75	27.25	25.75						69.75	

56	2/1/2025	17.50	28.00	26.50		10.00				82.00
57	3/1/2025	18.25	28.75	27.25		10.00				84.25
58	4/1/2025	19.00	29.50	28.00		10.00				86.50
59	5/1/2025	19.75	30.25	28.75	10.00	10.00				98.75
60	6/1/2025	20.50	31.00	29.50	10.00	10.00				101.00
61	7/1/2025	21.25	31.75	30.25	10.00	10.00				103.25
62	8/1/2025	22.00	32.50	31.00	10.00	1.00				96.50
63	9/1/2025	22.75	33.25	31.75	10.00	1.75				99.50
64	10/1/2025	23.50	34.00	32.50	10.00	2.50	10.00			112.50
65	11/1/2025	24.25	34.75	33.25	1.00	3.25	10.00			106.50
66	12/1/2025	25.00	35.50	34.00	1.75	4.00	10.00			110.25
67	1/1/2026	25.75	36.25	34.75	2.50	4.75	10.00			114.00
68	2/1/2026	26.50	37.00	35.50	3.25	5.50	10.00			117.75
69	3/1/2026	27.25	37.75	36.25	4.00	6.25	10.00			121.50
70	4/1/2026	28.00	38.50	37.00	4.75	7.00	1.00			116.25
71	5/1/2026	28.75	39.25	37.75	5.50	7.75	1.75	10.00		130.75
72	6/1/2026	29.50	40.00	38.50	6.25	8.50	2.50	10.00		135.25
73	7/1/2026	30.25	40.75	39.25	7.00	9.25	3.25	10.00		139.75
74	8/1/2026	31.00	41.50	40.00	7.75	10.00	4.00	10.00		144.25
75	9/1/2026	31.75	42.25	40.75	8.50	10.75	4.75	10.00		148.75
76	10/1/2026	32.50	43.00	41.50	9.25	11.50	5.50	10.00		153.25
77	11/1/2026	33.25	43.75	42.25	10.00	12.25	6.25	1.00		148.75
78	12/1/2026	34.00	44.50	43.00	10.75	13.00	7.00	1.75		154.00
79	1/1/2027	34.75	45.25	43.75	11.50	13.75	7.75	2.50		159.25
80	2/1/2027	35.50	46.00	44.50	12.25	14.50	8.50	3.25		164.50
81	3/1/2027	36.25	46.75	45.25	13.00	15.25	9.25	4.00		169.75
82	4/1/2027	37.00	47.50	46.00	13.75	16.00	10.00	4.75		175.00
83	5/1/2027	37.75	48.25	46.75	14.50	16.75	10.75	5.50		180.25
84	6/1/2027	38.50	49.00	47.50	15.25	17.50	11.50	6.25		185.50
85	7/1/2027	39.25	49.75	48.25	16.00	18.25	12.25	7.00		190.75
86	8/1/2027	40.00	50.50	49.00	16.75	19.00	13.00	7.75		196.00
87	9/1/2027	40.75	51.25	49.75	17.50	19.75	13.75	8.50		201.25
88	10/1/2027	41.50	52.00	50.50	18.25	20.50	14.50	9.25		206.50
89	11/1/2027	42.25	52.75	51.25	19.00	21.25	15.25	10.00		211.75
90	12/1/2027	43.00	53.50	52.00	19.75	22.00	16.00	10.75		217.00
91	1/1/2028	43.75	54.25	52.75	20.50	22.75	16.75	11.50		222.25
92	2/1/2028	44.50	55.00	53.50	21.25	23.50	17.50	12.25		227.50
93	3/1/2028	45.25	55.75	54.25	22.00	24.25	18.25	13.00		232.75
94	4/1/2028	46.00	56.50	55.00	22.75	25.00	19.00	13.75		238.00
95	5/1/2028	46.75	57.25	55.75	23.50	25.75	19.75	14.50		243.25
96	6/1/2028	47.50	58.00	56.50	24.25	26.50	20.50	15.25		248.50
97	7/1/2028	48.25	58.75	57.25	25.00	27.25	21.25	16.00		253.75
98	8/1/2028	49.00	59.50	58.00	25.75	28.00	22.00	16.75		259.00
99	9/1/2028	49.75	60.00	58.75	26.50	28.75	22.75	17.50		264.00
100	10/1/2028	50.50	60.00	59.50	27.25	29.50	23.50	18.25		268.50
101	11/1/2028	51.25	60.00	60.00	28.00	30.25	24.25	19.00		272.75
102	12/1/2028	52.00	60.00	60.00	28.75	31.00	25.00	19.75		276.50
103	1/1/2029	52.75	60.00	60.00	29.50	31.75	25.75	20.50		280.25
104	2/1/2029	53.50	60.00	60.00	30.25	32.50	26.50	21.25		284.00
105	3/1/2029	54.25	60.00	60.00	31.00	33.25	27.25	22.00		287.75
106	4/1/2029	55.00	60.00	60.00	31.75	34.00	28.00	22.75		291.50
107	5/1/2029	55.75	60.00	60.00	32.50	34.75	28.75	23.50		295.25
108	6/1/2029	56.50	60.00	60.00	33.25	35.50	29.50	24.25		299.00
109	7/1/2029	57.25	60.00	60.00	34.00	36.25	30.25	25.00		302.75
110	8/1/2029	58.00	60.00	60.00	34.75	37.00	31.00	25.75		306.50
111	9/1/2029	58.75	60.00	60.00	35.50	37.75	31.75	26.50		310.25
112	10/1/2029	59.50	60.00	60.00	36.25	38.50	32.50	27.25		314.00
113	11/1/2029	60.00	60.00	60.00	37.00	39.25	33.25	28.00		317.50
114	12/1/2029	60.00	60.00	60.00	37.75	40.00	34.00	28.75		320.50
115	1/1/2030	60.00	60.00	60.00	38.50	40.75	34.75	29.50		323.50
116	2/1/2030	60.00	60.00	60.00	39.25	41.50	35.50	30.25		326.50
117	3/1/2030	60.00	60.00	60.00	40.00	42.25	36.25	31.00		329.50
118	4/1/2030	60.00	60.00	60.00	40.75	43.00	37.00	31.75		332.50
119	5/1/2030	60.00	60.00	60.00	41.50	43.75	37.75	32.50		335.50
120	6/1/2030	60.00	60.00	60.00	42.25	44.50	38.50	33.25		338.50
121	7/1/2030	60.00	60.00	60.00	43.00	45.25	39.25	34.00		341.50
122	8/1/2030	60.00	60.00	60.00	43.75	46.00	40.00	34.75		344.50
123	9/1/2030	60.00	60.00	60.00	44.50	46.75	40.75	35.50		347.50
124	10/1/2030	60.00	60.00	60.00	45.25	47.50	41.50	36.25		350.50

125	11/1/2030	60.00	60.00	60.00	46.00	48.25	42.25	37.00	353.50
126	12/1/2030	60.00	60.00	60.00	46.75	49.00	43.00	37.75	356.50
127	1/1/2031	60.00	60.00	60.00	47.50	49.75	43.75	38.50	359.50
128	2/1/2031	60.00	60.00	60.00	48.25	50.50	44.50	39.25	362.50
129	3/1/2031	60.00	60.00	60.00	49.00	51.25	45.25	40.00	365.50
130	4/1/2031	60.00	60.00	60.00	49.75	52.00	46.00	40.75	368.50
131	5/1/2031	60.00	60.00	60.00	50.50	52.75	46.75	41.50	371.50
132	6/1/2031	60.00	60.00	60.00	51.25	53.50	47.50	42.25	374.50
133	7/1/2031	60.00	60.00	60.00	52.00	54.25	48.25	43.00	377.50
134	8/1/2031	60.00	60.00	60.00	52.75	55.00	49.00	43.75	380.50
135	9/1/2031	60.00	60.00	60.00	53.50	55.75	49.75	44.50	383.50
136	10/1/2031	60.00	60.00	60.00	54.25	56.50	50.50	45.25	386.50
137	11/1/2031	60.00	60.00	60.00	55.00	57.25	51.25	46.00	389.50
138	12/1/2031	60.00	60.00	60.00	55.75	58.00	52.00	46.75	392.50
139	1/1/2032	60.00	60.00	60.00	56.50	58.75	52.75	47.50	395.50
140	2/1/2032	60.00	60.00	60.00	57.25	59.50	53.50	48.25	398.50
141	3/1/2032	60.00	60.00	60.00	58.00	60.00	54.25	49.00	401.25
142	4/1/2032	60.00	60.00	60.00	58.75	60.00	55.00	49.75	403.50
143	5/1/2032	60.00	60.00	60.00	59.50	60.00	55.75	50.50	405.75
144	6/1/2032	60.00	60.00	60.00	60.00	60.00	56.50	51.25	407.75
145	7/1/2032	60.00	60.00	60.00	60.00	60.00	57.25	52.00	409.25
146	8/1/2032	60.00	60.00	60.00	60.00	60.00	58.00	52.75	410.75
147	9/1/2032	60.00	60.00	60.00	60.00	60.00	58.75	53.50	412.25
148	10/1/2032	60.00	60.00	60.00	60.00	60.00	59.50	54.25	413.75
149	11/1/2032	60.00	60.00	60.00	60.00	60.00	60.00	55.00	415.00
150	12/1/2032	60.00	60.00	60.00	60.00	60.00	60.00	55.75	415.75
151	1/1/2033	60.00	60.00	60.00	60.00	60.00	60.00	56.50	416.50
152	2/1/2033	60.00	60.00	60.00	60.00	60.00	60.00	57.25	417.25
153	3/1/2033	60.00	60.00	60.00	60.00	60.00	60.00	58.00	418.00
154	4/1/2033	60.00	60.00	60.00	60.00	60.00	60.00	58.75	418.75
155	5/1/2033	60.00	60.00	60.00	60.00	60.00	60.00	59.50	419.50
156	6/1/2033	60.00	60.00	60.00	60.00	60.00	60.00	60.00	420.00
157	7/1/2033	60.00	60.00	60.00	60.00	60.00	60.00	60.00	420.00
158	8/1/2033	60.00	60.00	60.00	60.00	60.00	60.00	60.00	420.00

Attachment I.C.1.b.1

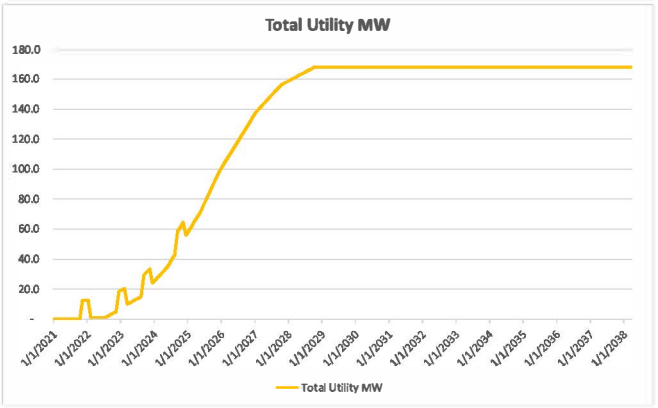
Template IST FFCR

INPUTS

	LVL08	LVL09	LVL10	LVL11	Total
Max Design IT MW	48.0				
Utilization	70%				
PUE Factor	1.25				
Ramp (MW/month)	1.00				
Utility MW	42.0	42.0	42.0	42.0	168.0

Month	Date	LVL08	LVL09	LVL10	LVL11	Total Utility MW
1	1/1/2021					-
2	2/1/2021					-
3	3/1/2021					-
4	4/1/2021					-
5	5/1/2021					-
6	6/1/2021					-
7	7/1/2021					-
8	8/1/2021					-
9	9/1/2021					-
10	10/1/2021					-
11	11/1/2021	12.5				12.5
12	12/1/2021	12.5				12.5
13	1/1/2022	12.5				12.5
14	2/1/2022	12.5				1.0
15	3/1/2022	12.5				1.0
16	4/1/2022	1.0				1.0
17	5/1/2022	1.0				1.0
18	6/1/2022	1.0				1.0
19	7/1/2022	1.0				1.0
20	8/1/2022	2.0				2.0
21	9/1/2022	3.0				3.0
22	10/1/2022	4.0				4.0
23	11/1/2022	5.0				5.0
24	12/1/2022	6.0	12.5			18.5
25	1/1/2023	7.0	12.5			19.5
26	2/1/2023	8.0	12.5			20.5
27	3/1/2023	9.0	12.5			10.0
28	4/1/2023	10.0	12.5			11.0
29	5/1/2023	11.0	1.0			12.0
30	6/1/2023	12.0	1.0			13.0
31	7/1/2023	13.0	1.0			14.0
32	8/1/2023	14.0	1.0			15.0
33	9/1/2023	15.0	2.0			29.5
34	10/1/2023	16.0	3.0	12.5		31.5
35	11/1/2023	17.0	4.0	12.5		33.5
36	12/1/2023	18.0	5.0	12.5		24.0
37	1/1/2024	19.0	6.0	12.5		26.0
38	2/1/2024	20.0	7.0	12.5		28.0
39	3/1/2024	21.0	8.0	1.0		30.0
40	4/1/2024	22.0	9.0	1.0		32.0
41	5/1/2024	23.0	10.0	1.0		34.0
42	6/1/2024	24.0	11.0	2.0		37.0
43	7/1/2024	25.0	12.0	3.0		40.0
44	8/1/2024	26.0	13.0	4.0		43.0
45	9/1/2024	27.0	14.0	5.0		58.5
46	10/1/2024	28.0	15.0	6.0	12.5	61.5
47	11/1/2024	29.0	16.0	7.0	12.5	64.5
48	12/1/2024	30.0	17.0	8.0	12.5	56.0
49	1/1/2025	31.0	18.0	9.0	12.5	59.0
50	2/1/2025	32.0	19.0	10.0	12.5	62.0
51	3/1/2025	33.0	20.0	11.0	1.0	65.0
52	4/1/2025	34.0	21.0	12.0	1.0	68.0
53	5/1/2025	35.0	22.0	13.0	1.0	71.0
54	6/1/2025	36.0	23.0	14.0	2.0	75.0
55	7/1/2025	37.0	24.0	15.0	3.0	79.0
56	8/1/2025	38.0	25.0	16.0	4.0	83.0
57	9/1/2025	39.0	26.0	17.0	5.0	87.0
58	10/1/2025	40.0	27.0	18.0	6.0	91.0
59	11/1/2025	41.0	28.0	19.0	7.0	95.0
60	12/1/2025	42.0	29.0	20.0	8.0	99.0
61	1/1/2026	42.0	30.0	21.0	9.0	102.0
62	2/1/2026	42.0	31.0	22.0	10.0	105.0
63	3/1/2026	42.0	32.0	23.0	11.0	108.0
64	4/1/2026	42.0	33.0	24.0	12.0	111.0
65	5/1/2026	42.0	34.0	25.0	13.0	114.0
66	6/1/2026	42.0	35.0	26.0	14.0	117.0
67	7/1/2026	42.0	36.0	27.0	15.0	120.0
68	8/1/2026	42.0	37.0	28.0	16.0	123.0
69	9/1/2026	42.0	38.0	29.0	17.0	126.0
70	10/1/2026	42.0	39.0	30.0	18.0	129.0
71	11/1/2026	42.0	40.0	31.0	19.0	132.0
72	12/1/2026	42.0	41.0	32.0	20.0	135.0
73	1/1/2027	42.0	42.0	33.0	21.0	138.0
74	2/1/2027	42.0	42.0	34.0	22.0	140.0
75	3/1/2027	42.0	42.0	35.0	23.0	142.0
76	4/1/2027	42.0	42.0	36.0	24.0	144.0
77	5/1/2027	42.0	42.0	37.0	25.0	146.0
78	6/1/2027	42.0	42.0	38.0	26.0	148.0
79	7/1/2027	42.0	42.0	39.0	27.0	150.0
80	8/1/2027	42.0	42.0	40.0	28.0	152.0
81	9/1/2027	42.0	42.0	41.0	29.0	154.0
82	10/1/2027	42.0	42.0	42.0	30.0	156.0
83	11/1/2027	42.0	42.0	42.0	31.0	157.0
84	12/1/2027	42.0	42.0	42.0	32.0	158.0
85	1/1/2028	42.0	42.0	42.0	33.0	159.0
86	2/1/2028	42.0	42.0	42.0	34.0	160.0
87	3/1/2028	42.0	42.0	42.0	35.0	161.0
88	4/1/2028	42.0	42.0	42.0	36.0	162.0
89	5/1/2028	42.0	42.0	42.0	37.0	163.0
90	6/1/2028	42.0	42.0	42.0	38.0	164.0
91	7/1/2028	42.0	42.0	42.0	39.0	165.0
92	8/1/2028	42.0	42.0	42.0	40.0	166.0
93	9/1/2028	42.0	42.0	42.0	41.0	167.0
94	10/1/2028	42.0	42.0	42.0	42.0	168.0
95	11/1/2028	42.0	42.0	42.0	42.0	168.0
96	12/1/2028	42.0	42.0	42.0	42.0	168.0
97	1/1/2029	42.0	42.0	42.0	42.0	168.0
98	2/1/2029	42.0	42.0	42.0	42.0	168.0

Notes



99	3/1/2029	42.0	42.0	42.0	42.0	168.0
100	4/1/2029	42.0	42.0	42.0	42.0	168.0
101	5/1/2029	42.0	42.0	42.0	42.0	168.0
102	6/1/2029	42.0	42.0	42.0	42.0	168.0
103	7/1/2029	42.0	42.0	42.0	42.0	168.0
104	8/1/2029	42.0	42.0	42.0	42.0	168.0
105	9/1/2029	42.0	42.0	42.0	42.0	168.0
106	10/1/2029	42.0	42.0	42.0	42.0	168.0
107	11/1/2029	42.0	42.0	42.0	42.0	168.0
108	12/1/2029	42.0	42.0	42.0	42.0	168.0
109	1/1/2030	42.0	42.0	42.0	42.0	168.0
110	2/1/2030	42.0	42.0	42.0	42.0	168.0
111	3/1/2030	42.0	42.0	42.0	42.0	168.0
112	4/1/2030	42.0	42.0	42.0	42.0	168.0
113	5/1/2030	42.0	42.0	42.0	42.0	168.0
114	6/1/2030	42.0	42.0	42.0	42.0	168.0
115	7/1/2030	42.0	42.0	42.0	42.0	168.0
116	8/1/2030	42.0	42.0	42.0	42.0	168.0
117	9/1/2030	42.0	42.0	42.0	42.0	168.0
118	10/1/2030	42.0	42.0	42.0	42.0	168.0
119	11/1/2030	42.0	42.0	42.0	42.0	168.0
120	12/1/2030	42.0	42.0	42.0	42.0	168.0
121	1/1/2031	42.0	42.0	42.0	42.0	168.0
122	2/1/2031	42.0	42.0	42.0	42.0	168.0
123	3/1/2031	42.0	42.0	42.0	42.0	168.0
124	4/1/2031	42.0	42.0	42.0	42.0	168.0
125	5/1/2031	42.0	42.0	42.0	42.0	168.0
126	6/1/2031	42.0	42.0	42.0	42.0	168.0
127	7/1/2031	42.0	42.0	42.0	42.0	168.0
128	8/1/2031	42.0	42.0	42.0	42.0	168.0
129	9/1/2031	42.0	42.0	42.0	42.0	168.0
130	10/1/2031	42.0	42.0	42.0	42.0	168.0
131	11/1/2031	42.0	42.0	42.0	42.0	168.0
132	12/1/2031	42.0	42.0	42.0	42.0	168.0
133	1/1/2032	42.0	42.0	42.0	42.0	168.0
134	2/1/2032	42.0	42.0	42.0	42.0	168.0
135	3/1/2032	42.0	42.0	42.0	42.0	168.0
136	4/1/2032	42.0	42.0	42.0	42.0	168.0
137	5/1/2032	42.0	42.0	42.0	42.0	168.0
138	6/1/2032	42.0	42.0	42.0	42.0	168.0
139	7/1/2032	42.0	42.0	42.0	42.0	168.0
140	8/1/2032	42.0	42.0	42.0	42.0	168.0
141	9/1/2032	42.0	42.0	42.0	42.0	168.0
142	10/1/2032	42.0	42.0	42.0	42.0	168.0
143	11/1/2032	42.0	42.0	42.0	42.0	168.0
144	12/1/2032	42.0	42.0	42.0	42.0	168.0
145	1/1/2033	42.0	42.0	42.0	42.0	168.0
146	2/1/2033	42.0	42.0	42.0	42.0	168.0
147	3/1/2033	42.0	42.0	42.0	42.0	168.0
148	4/1/2033	42.0	42.0	42.0	42.0	168.0
149	5/1/2033	42.0	42.0	42.0	42.0	168.0
150	6/1/2033	42.0	42.0	42.0	42.0	168.0
151	7/1/2033	42.0	42.0	42.0	42.0	168.0
152	8/1/2033	42.0	42.0	42.0	42.0	168.0
153	9/1/2033	42.0	42.0	42.0	42.0	168.0
154	10/1/2033	42.0	42.0	42.0	42.0	168.0
155	11/1/2033	42.0	42.0	42.0	42.0	168.0
156	12/1/2033	42.0	42.0	42.0	42.0	168.0
157	1/1/2034	42.0	42.0	42.0	42.0	168.0
158	2/1/2034	42.0	42.0	42.0	42.0	168.0
159	3/1/2034	42.0	42.0	42.0	42.0	168.0
160	4/1/2034	42.0	42.0	42.0	42.0	168.0
161	5/1/2034	42.0	42.0	42.0	42.0	168.0
162	6/1/2034	42.0	42.0	42.0	42.0	168.0
163	7/1/2034	42.0	42.0	42.0	42.0	168.0
164	8/1/2034	42.0	42.0	42.0	42.0	168.0
165	9/1/2034	42.0	42.0	42.0	42.0	168.0
166	10/1/2034	42.0	42.0	42.0	42.0	168.0
167	11/1/2034	42.0	42.0	42.0	42.0	168.0
168	12/1/2034	42.0	42.0	42.0	42.0	168.0
169	1/1/2035	42.0	42.0	42.0	42.0	168.0
170	2/1/2035	42.0	42.0	42.0	42.0	168.0
171	3/1/2035	42.0	42.0	42.0	42.0	168.0
172	4/1/2035	42.0	42.0	42.0	42.0	168.0
173	5/1/2035	42.0	42.0	42.0	42.0	168.0
174	6/1/2035	42.0	42.0	42.0	42.0	168.0
175	7/1/2035	42.0	42.0	42.0	42.0	168.0
176	8/1/2035	42.0	42.0	42.0	42.0	168.0
177	9/1/2035	42.0	42.0	42.0	42.0	168.0
178	10/1/2035	42.0	42.0	42.0	42.0	168.0
179	11/1/2035	42.0	42.0	42.0	42.0	168.0
180	12/1/2035	42.0	42.0	42.0	42.0	168.0
181	1/1/2036	42.0	42.0	42.0	42.0	168.0
182	2/1/2036	42.0	42.0	42.0	42.0	168.0
183	3/1/2036	42.0	42.0	42.0	42.0	168.0
184	4/1/2036	42.0	42.0	42.0	42.0	168.0
185	5/1/2036	42.0	42.0	42.0	42.0	168.0
186	6/1/2036	42.0	42.0	42.0	42.0	168.0
187	7/1/2036	42.0	42.0	42.0	42.0	168.0
188	8/1/2036	42.0	42.0	42.0	42.0	168.0
189	9/1/2036	42.0	42.0	42.0	42.0	168.0
190	10/1/2036	42.0	42.0	42.0	42.0	168.0
191	11/1/2036	42.0	42.0	42.0	42.0	168.0
192	12/1/2036	42.0	42.0	42.0	42.0	168.0
193	1/1/2037	42.0	42.0	42.0	42.0	168.0
194	2/1/2037	42.0	42.0	42.0	42.0	168.0
195	3/1/2037	42.0	42.0	42.0	42.0	168.0
196	4/1/2037	42.0	42.0	42.0	42.0	168.0
197	5/1/2037	42.0	42.0	42.0	42.0	168.0
198	6/1/2037	42.0	42.0	42.0	42.0	168.0
199	7/1/2037	42.0	42.0	42.0	42.0	168.0
200	8/1/2037	42.0	42.0	42.0	42.0	168.0
201	9/1/2037	42.0	42.0	42.0	42.0	168.0
202	10/1/2037	42.0	42.0	42.0	42.0	168.0
203	11/1/2037	42.0	42.0	42.0	42.0	168.0
204	12/1/2037	42.0	42.0	42.0	42.0	168.0
205	1/1/2038	42.0	42.0	42.0	42.0	168.0
206	2/1/2038	42.0	42.0	42.0	42.0	168.0
207	3/1/2038	42.0	42.0	42.0	42.0	168.0

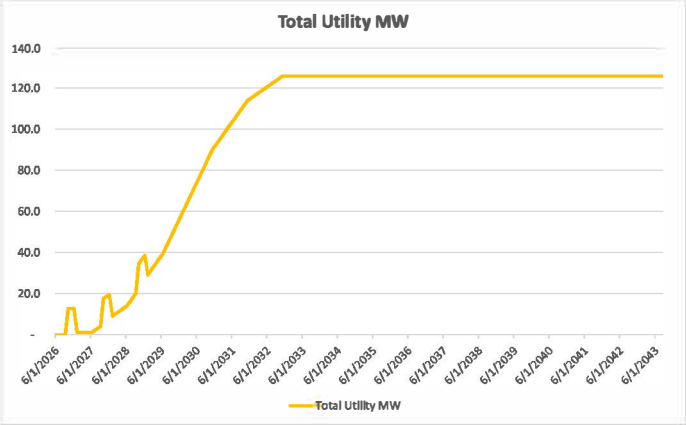
Template FFCR

INPUTS

	LVL12	LVL13	LVL14	Total
Max Design IT MW	48.0			
Utilization	70%			
PUE Factor	1.25			
Ramp (MW/month)	1.00			
Utility MW	42.0	42.0	42.0	126.0

Month	Date	LVL12	LVL13	LVL14	Total Utility MW
1	6/1/2026				-
2	7/1/2026				-
3	8/1/2026				-
4	9/1/2026				-
5	10/1/2026	12.5			12.5
6	11/1/2026	12.5			12.5
7	12/1/2026	12.5			12.5
8	1/1/2027	1.0			1.0
9	2/1/2027	1.0			1.0
10	3/1/2027	1.0			1.0
11	4/1/2027	1.0			1.0
12	5/1/2027	1.0			1.0
13	6/1/2027	1.0			1.0
14	7/1/2027	2.0			2.0
15	8/1/2027	3.0			3.0
16	9/1/2027	4.0			4.0
17	10/1/2027	5.0	12.5		17.5
18	11/1/2027	6.0	12.5		18.5
19	12/1/2027	7.0	12.5		19.5
20	1/1/2028	8.0	1.0		9.0
21	2/1/2028	9.0	1.0		10.0
22	3/1/2028	10.0	1.0		11.0
23	4/1/2028	11.0	1.0		12.0
24	5/1/2028	12.0	1.0		13.0
25	6/1/2028	13.0	1.0		14.0
26	7/1/2028	14.0	2.0		16.0
27	8/1/2028	15.0	3.0		18.0
28	9/1/2028	16.0	4.0		20.0
29	10/1/2028	17.0	5.0	12.5	34.5
30	11/1/2028	18.0	6.0	12.5	36.5
31	12/1/2028	19.0	7.0	12.5	38.5
32	1/1/2029	20.0	8.0	1.0	29.0
33	2/1/2029	21.0	9.0	1.0	31.0
34	3/1/2029	22.0	10.0	1.0	33.0
35	4/1/2029	23.0	11.0	1.0	35.0
36	5/1/2029	24.0	12.0	1.0	37.0
37	6/1/2029	25.0	13.0	1.0	39.0
38	7/1/2029	26.0	14.0	2.0	42.0
39	8/1/2029	27.0	15.0	3.0	45.0
40	9/1/2029	28.0	16.0	4.0	48.0
41	10/1/2029	29.0	17.0	5.0	51.0
42	11/1/2029	30.0	18.0	6.0	54.0
43	12/1/2029	31.0	19.0	7.0	57.0
44	1/1/2030	32.0	20.0	8.0	60.0
45	2/1/2030	33.0	21.0	9.0	63.0
46	3/1/2030	34.0	22.0	10.0	66.0
47	4/1/2030	35.0	23.0	11.0	69.0
48	5/1/2030	36.0	24.0	12.0	72.0
49	6/1/2030	37.0	25.0	13.0	75.0
50	7/1/2030	38.0	26.0	14.0	78.0
51	8/1/2030	39.0	27.0	15.0	81.0
52	9/1/2030	40.0	28.0	16.0	84.0
53	10/1/2030	41.0	29.0	17.0	87.0
54	11/1/2030	42.0	30.0	18.0	90.0
55	12/1/2030	42.0	31.0	19.0	92.0
56	1/1/2031	42.0	32.0	20.0	94.0
57	2/1/2031	42.0	33.0	21.0	96.0
58	3/1/2031	42.0	34.0	22.0	98.0
59	4/1/2031	42.0	35.0	23.0	100.0
60	5/1/2031	42.0	36.0	24.0	102.0
61	6/1/2031	42.0	37.0	25.0	104.0
62	7/1/2031	42.0	38.0	26.0	106.0
63	8/1/2031	42.0	39.0	27.0	108.0
64	9/1/2031	42.0	40.0	28.0	110.0
65	10/1/2031	42.0	41.0	29.0	112.0
66	11/1/2031	42.0	42.0	30.0	114.0
67	12/1/2031	42.0	42.0	31.0	115.0
68	1/1/2032	42.0	42.0	32.0	116.0
69	2/1/2032	42.0	42.0	33.0	117.0
70	3/1/2032	42.0	42.0	34.0	118.0
71	4/1/2032	42.0	42.0	35.0	119.0
72	5/1/2032	42.0	42.0	36.0	120.0
73	6/1/2032	42.0	42.0	37.0	121.0
74	7/1/2032	42.0	42.0	38.0	122.0
75	8/1/2032	42.0	42.0	39.0	123.0
76	9/1/2032	42.0	42.0	40.0	124.0
77	10/1/2032	42.0	42.0	41.0	125.0
78	11/1/2032	42.0	42.0	42.0	126.0
79	12/1/2032	42.0	42.0	42.0	126.0
80	1/1/2033	42.0	42.0	42.0	126.0
81	2/1/2033	42.0	42.0	42.0	126.0
82	3/1/2033	42.0	42.0	42.0	126.0
83	4/1/2033	42.0	42.0	42.0	126.0
84	5/1/2033	42.0	42.0	42.0	126.0
85	6/1/2033	42.0	42.0	42.0	126.0
86	7/1/2033	42.0	42.0	42.0	126.0
87	8/1/2033	42.0	42.0	42.0	126.0
88	9/1/2033	42.0	42.0	42.0	126.0
89	10/1/2033	42.0	42.0	42.0	126.0
90	11/1/2033	42.0	42.0	42.0	126.0
91	12/1/2033	42.0	42.0	42.0	126.0
92	1/1/2034	42.0	42.0	42.0	126.0

Notes



93	2/1/2034	42.0	42.0	42.0	126.0
94	3/1/2034	42.0	42.0	42.0	126.0
95	4/1/2034	42.0	42.0	42.0	126.0
96	5/1/2034	42.0	42.0	42.0	126.0
97	6/1/2034	42.0	42.0	42.0	126.0
98	7/1/2034	42.0	42.0	42.0	126.0
99	8/1/2034	42.0	42.0	42.0	126.0
100	9/1/2034	42.0	42.0	42.0	126.0
101	10/1/2034	42.0	42.0	42.0	126.0
102	11/1/2034	42.0	42.0	42.0	126.0
103	12/1/2034	42.0	42.0	42.0	126.0
104	1/1/2035	42.0	42.0	42.0	126.0
105	2/1/2035	42.0	42.0	42.0	126.0
106	3/1/2035	42.0	42.0	42.0	126.0
107	4/1/2035	42.0	42.0	42.0	126.0
108	5/1/2035	42.0	42.0	42.0	126.0
109	6/1/2035	42.0	42.0	42.0	126.0
110	7/1/2035	42.0	42.0	42.0	126.0
111	8/1/2035	42.0	42.0	42.0	126.0
112	9/1/2035	42.0	42.0	42.0	126.0
113	10/1/2035	42.0	42.0	42.0	126.0
114	11/1/2035	42.0	42.0	42.0	126.0
115	12/1/2035	42.0	42.0	42.0	126.0
116	1/1/2036	42.0	42.0	42.0	126.0
117	2/1/2036	42.0	42.0	42.0	126.0
118	3/1/2036	42.0	42.0	42.0	126.0
119	4/1/2036	42.0	42.0	42.0	126.0
120	5/1/2036	42.0	42.0	42.0	126.0
121	6/1/2036	42.0	42.0	42.0	126.0
122	7/1/2036	42.0	42.0	42.0	126.0
123	8/1/2036	42.0	42.0	42.0	126.0
124	9/1/2036	42.0	42.0	42.0	126.0
125	10/1/2036	42.0	42.0	42.0	126.0
126	11/1/2036	42.0	42.0	42.0	126.0
127	12/1/2036	42.0	42.0	42.0	126.0
128	1/1/2037	42.0	42.0	42.0	126.0
129	2/1/2037	42.0	42.0	42.0	126.0
130	3/1/2037	42.0	42.0	42.0	126.0
131	4/1/2037	42.0	42.0	42.0	126.0
132	5/1/2037	42.0	42.0	42.0	126.0
133	6/1/2037	42.0	42.0	42.0	126.0
134	7/1/2037	42.0	42.0	42.0	126.0
135	8/1/2037	42.0	42.0	42.0	126.0
136	9/1/2037	42.0	42.0	42.0	126.0
137	10/1/2037	42.0	42.0	42.0	126.0
138	11/1/2037	42.0	42.0	42.0	126.0
139	12/1/2037	42.0	42.0	42.0	126.0
140	1/1/2038	42.0	42.0	42.0	126.0
141	2/1/2038	42.0	42.0	42.0	126.0
142	3/1/2038	42.0	42.0	42.0	126.0
143	4/1/2038	42.0	42.0	42.0	126.0
144	5/1/2038	42.0	42.0	42.0	126.0
145	6/1/2038	42.0	42.0	42.0	126.0
146	7/1/2038	42.0	42.0	42.0	126.0
147	8/1/2038	42.0	42.0	42.0	126.0
148	9/1/2038	42.0	42.0	42.0	126.0
149	10/1/2038	42.0	42.0	42.0	126.0
150	11/1/2038	42.0	42.0	42.0	126.0
151	12/1/2038	42.0	42.0	42.0	126.0
152	1/1/2039	42.0	42.0	42.0	126.0
153	2/1/2039	42.0	42.0	42.0	126.0
154	3/1/2039	42.0	42.0	42.0	126.0
155	4/1/2039	42.0	42.0	42.0	126.0
156	5/1/2039	42.0	42.0	42.0	126.0
157	6/1/2039	42.0	42.0	42.0	126.0
158	7/1/2039	42.0	42.0	42.0	126.0
159	8/1/2039	42.0	42.0	42.0	126.0
160	9/1/2039	42.0	42.0	42.0	126.0
161	10/1/2039	42.0	42.0	42.0	126.0
162	11/1/2039	42.0	42.0	42.0	126.0
163	12/1/2039	42.0	42.0	42.0	126.0
164	1/1/2040	42.0	42.0	42.0	126.0
165	2/1/2040	42.0	42.0	42.0	126.0
166	3/1/2040	42.0	42.0	42.0	126.0
167	4/1/2040	42.0	42.0	42.0	126.0
168	5/1/2040	42.0	42.0	42.0	126.0
169	6/1/2040	42.0	42.0	42.0	126.0
170	7/1/2040	42.0	42.0	42.0	126.0
171	8/1/2040	42.0	42.0	42.0	126.0
172	9/1/2040	42.0	42.0	42.0	126.0
173	10/1/2040	42.0	42.0	42.0	126.0
174	11/1/2040	42.0	42.0	42.0	126.0
175	12/1/2040	42.0	42.0	42.0	126.0
176	1/1/2041	42.0	42.0	42.0	126.0
177	2/1/2041	42.0	42.0	42.0	126.0
178	3/1/2041	42.0	42.0	42.0	126.0
179	4/1/2041	42.0	42.0	42.0	126.0
180	5/1/2041	42.0	42.0	42.0	126.0
181	6/1/2041	42.0	42.0	42.0	126.0
182	7/1/2041	42.0	42.0	42.0	126.0
183	8/1/2041	42.0	42.0	42.0	126.0
184	9/1/2041	42.0	42.0	42.0	126.0
185	10/1/2041	42.0	42.0	42.0	126.0
186	11/1/2041	42.0	42.0	42.0	126.0
187	12/1/2041	42.0	42.0	42.0	126.0
188	1/1/2042	42.0	42.0	42.0	126.0
189	2/1/2042	42.0	42.0	42.0	126.0
190	3/1/2042	42.0	42.0	42.0	126.0
191	4/1/2042	42.0	42.0	42.0	126.0
192	5/1/2042	42.0	42.0	42.0	126.0
193	6/1/2042	42.0	42.0	42.0	126.0
194	7/1/2042	42.0	42.0	42.0	126.0
195	8/1/2042	42.0	42.0	42.0	126.0
196	9/1/2042	42.0	42.0	42.0	126.0
197	10/1/2042	42.0	42.0	42.0	126.0
198	11/1/2042	42.0	42.0	42.0	126.0
199	12/1/2042	42.0	42.0	42.0	126.0

200	1/1/2043	42.0	42.0	42.0	126.0
201	2/1/2043	42.0	42.0	42.0	126.0
202	3/1/2043	42.0	42.0	42.0	126.0
203	4/1/2043	42.0	42.0	42.0	126.0
204	5/1/2043	42.0	42.0	42.0	126.0
205	6/1/2043	42.0	42.0	42.0	126.0
206	7/1/2043	42.0	42.0	42.0	126.0
207	8/1/2043	42.0	42.0	42.0	126.0

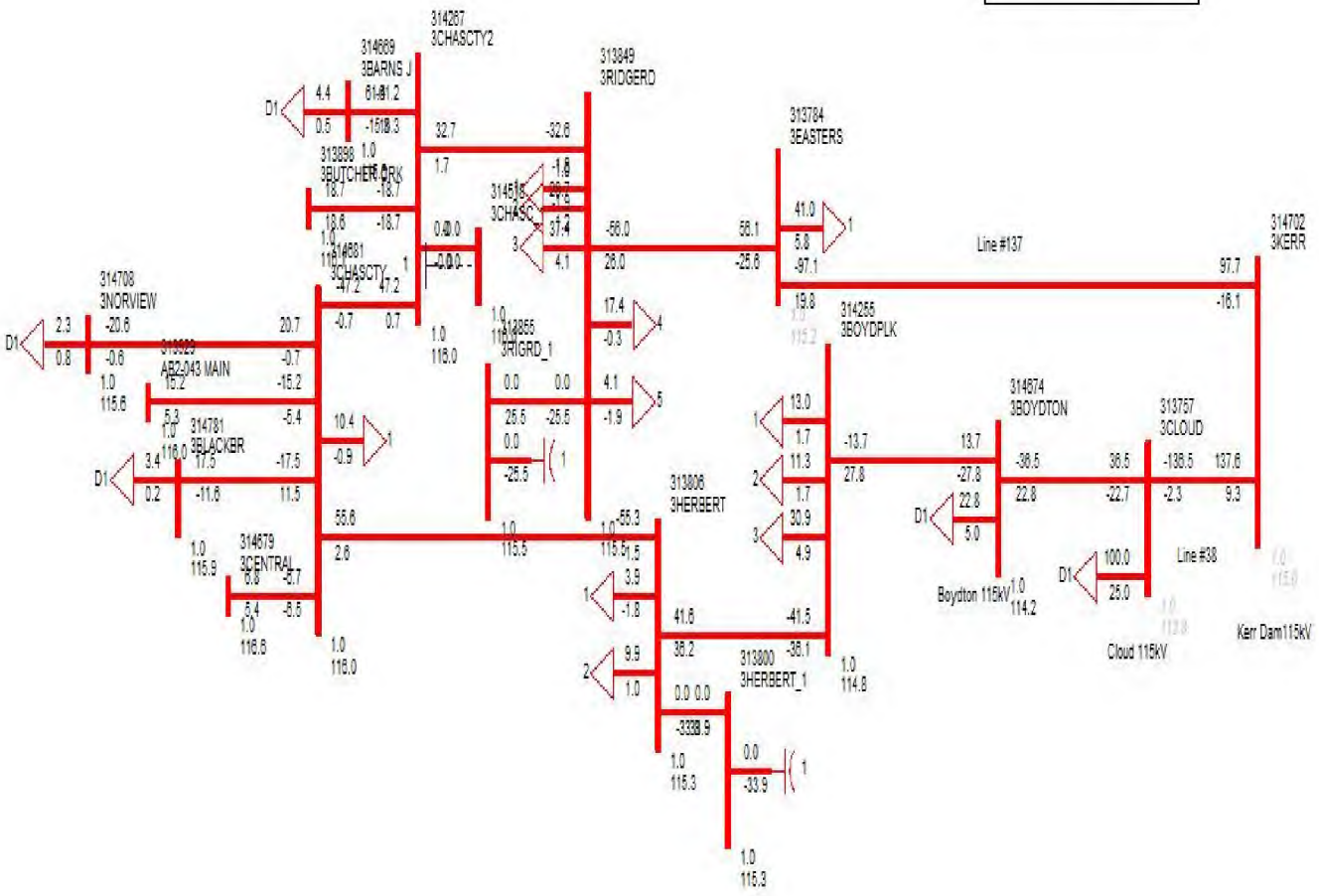
I. NECESSITY FOR THE PROPOSED PROJECT

D. If power flow modeling indicates that the existing system is, or will at some future time be, inadequate under certain contingency situations, provide a list of all these contingencies and the associated violations. Describe the critical contingencies including the affected elements and the year and season when the violation(s) is first noted in the planning studies. Provide the applicable computer screenshots of single-line diagrams from power flow simulations depicting the circuits and substations experiencing thermal overloads and voltage violations during the critical contingencies described above.

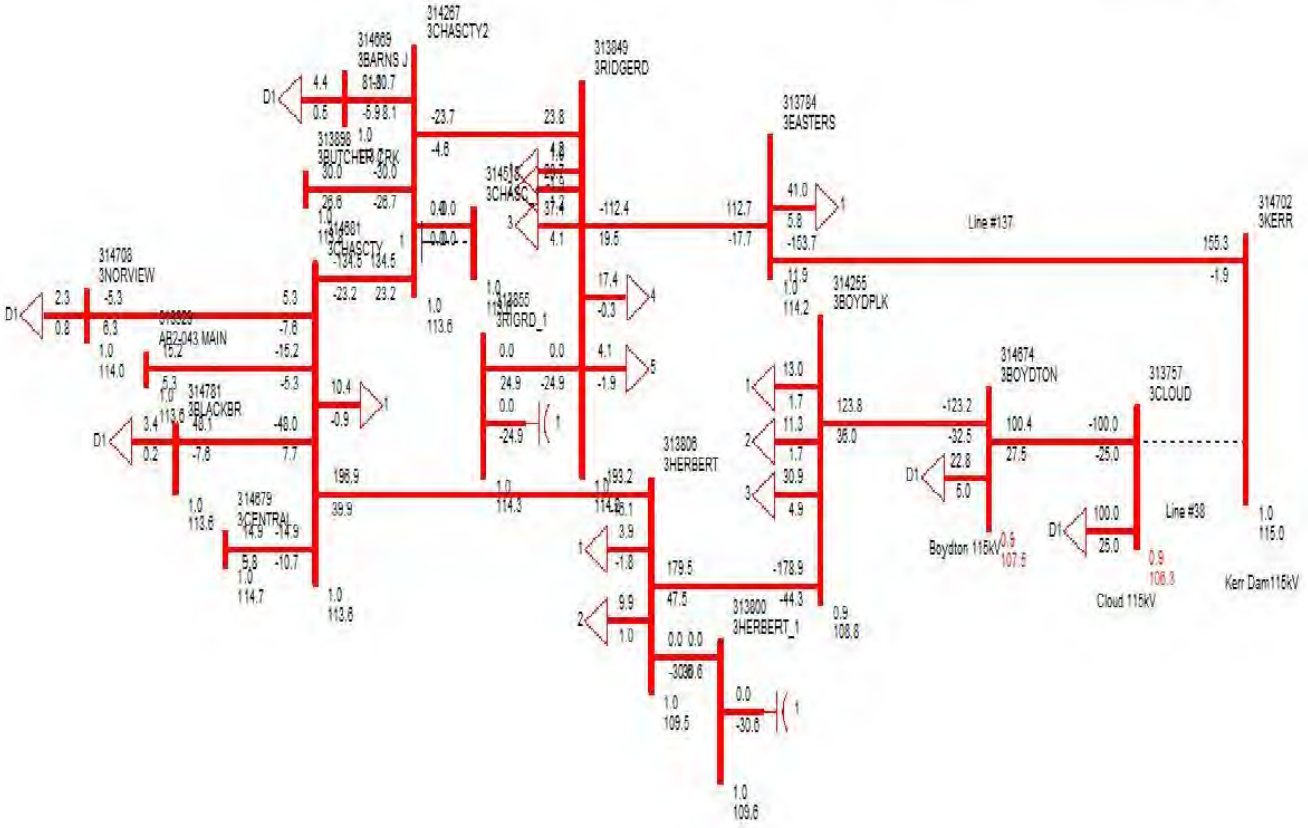
Response: The following TPL critical contingencies result in NERC criteria violations for the existing system. Please see the screenshots below of power flow simulations:

Contingency Name: Loss of Line #38
Contingency Type: Single Line
Violation Season and Year: Summer 2024
NERC Criteria Violation: Low voltages at Cloud 115kV and Boydton 115kV buses (Less than 0.93 pu).

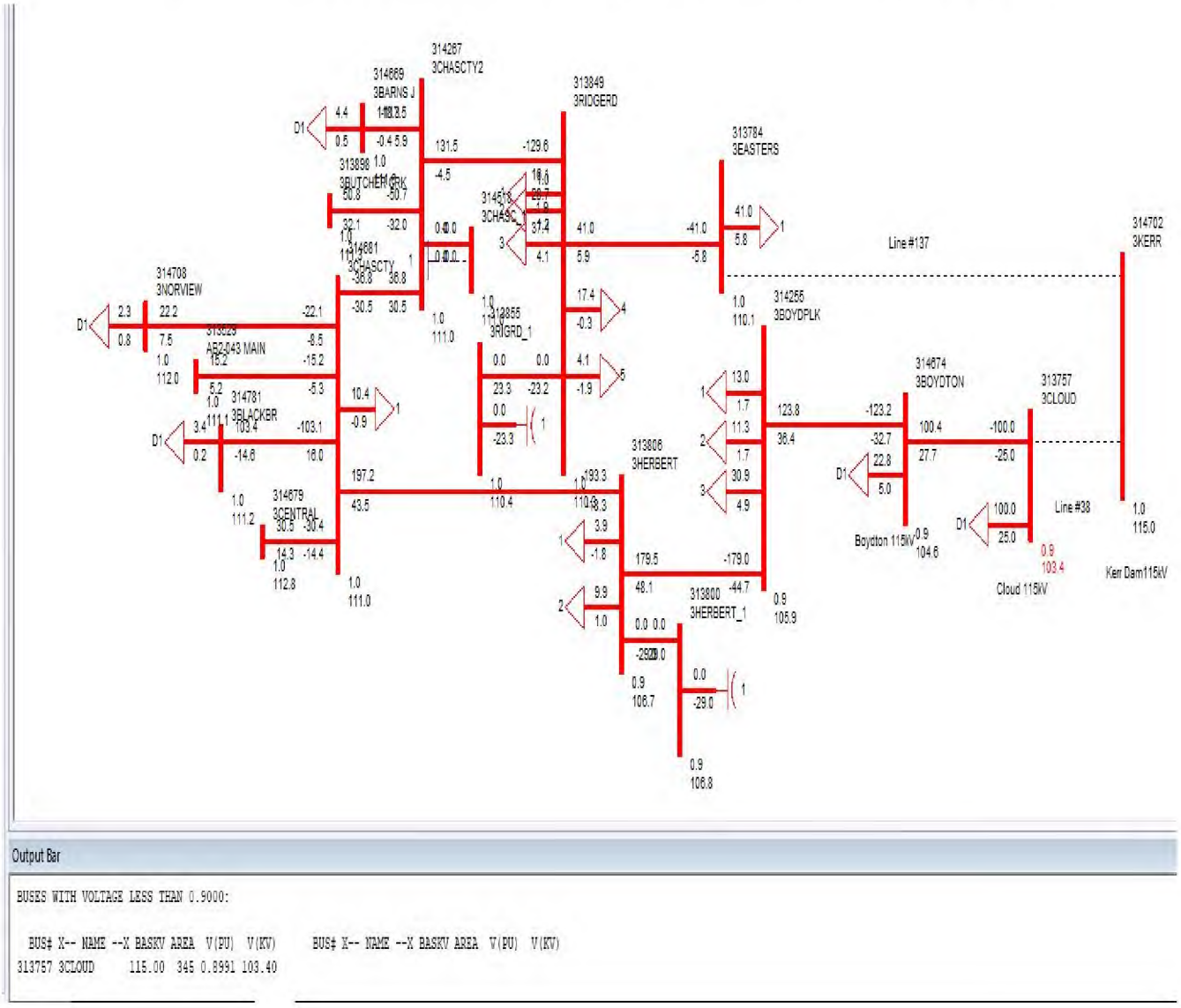
Normal System



Contingency Simulation



Contingency Name: Loss of Line #38 and Line #137
Contingency Type: Tower Line
Violation Season and Year: Summer 2024
NERC Criteria Violation: Low voltage at Cloud 115kV (Less than 0.90 pu).



Output Bar

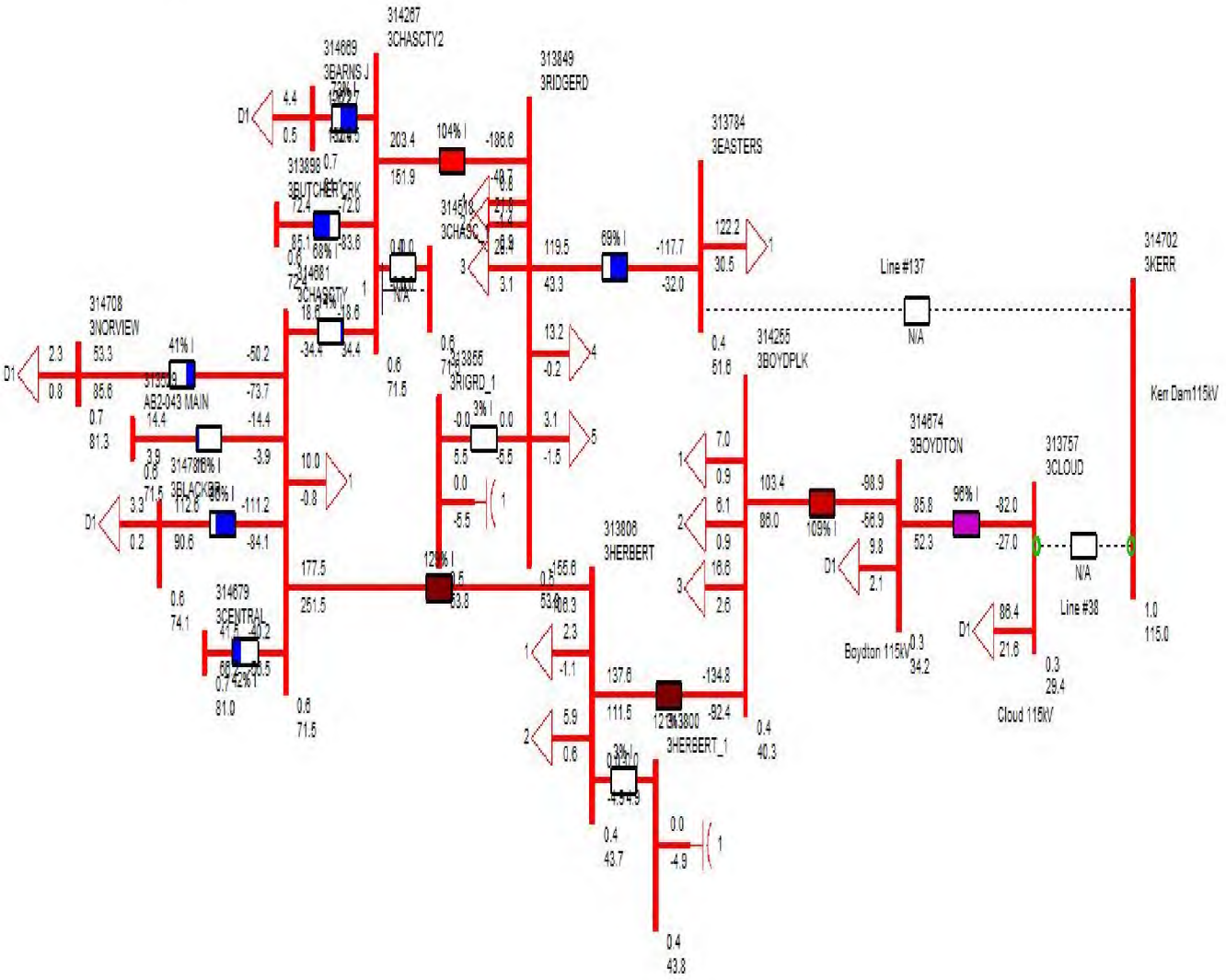
```
BUSES WITH VOLTAGE LESS THAN 0.9000:

  BUS# X-- NAME --X BASKV AREA  V(PU)  V(KV)      BUS# X-- NAME --X BASKV AREA  V(PU)  V(KV)
313757 3CLOUD      115.00  345 0.8991 103.40
```


313757
3CLOUD
D1
100.0
25.0
* -100.0
-25.0
100.4
27.7
314674
3BOYDTON
0.9
104.6
314702
3KERR
1.0
115.0
Bus # 313757
3CLOUD 115.00
Type 1
Area 345 DVP
Zone 358 SOUTHSDE
Voltage 0.89914PU
103.401KV
Angle
(deg) -66.17
0.9
103.4

Contingency Name: Loss of Line #38 and Line #137
Contingency Type: N-1-1
Violation Season and Year: Summer 2026
NERC Criteria Violation: 341 MW load loss (Greater than 300 MW).

Contingency Name: Loss of Line #38 and Line #137
Contingency Type: N-1-1, Tower Line
Violation Season and Year: Summer 2026
NERC Criteria Violation: Thermal Overloads on Line #1026 and Line #171 (Greater than 100%).



All of the above violations are mitigated with the construction of the Cloud 230 kV Switching Station, Easters 230 kV Switching Station, and the Line #235 Extension by summer 2024.

I. NECESSITY FOR THE PROPOSED PROJECT

E. Describe the feasible project alternatives, if any, considered for meeting the identified need including any associated studies conducted by the Applicant or analysis provided to the RTO. Explain why each alternative was rejected.

Response: The Company considered electrical alternatives to the proposed Projects, including the use of distribution facilities, as well as existing and planned substations to serve the need for the Projects. Aside from the Company's preferred transmission option, which was selected for the proposed Projects, the Company considered one other transmission alternative.

Distribution Alternatives:

There are no feasible distribution alternatives to construction of the Cloud 230 kV Switching Station and Easters 230 kV Switching Station in response to ODEC's DP requests.

Transmission Alternative (Rejected Transmission Option):

The Company's transmission alternative is similar in scope to the preferred transmission option selected for the instant Projects. The proposed option and the transmission alternative each require the (i) Cloud 230 kV Switching Station; (ii) Easters 230 kV Switching Station; and (iii) Line #235 Extension. The major differences between the two options is the type of 230 kV line structures required for the Projects, the installation of a STATCOM, and the resulting cost increases for the rejected transmission alternative. For the reasons discussed below, the Company is proposing to reject the transmission alternative.

Please see Attachment I.E.1 for the rejected transmission alternative for the Projects. With this option, the Company proposed to do the following:

Cut 230 kV Line #235 at Structure #235/310 (a point starting west of Chase City Substation), and extend two 230 kV lines on double circuit structures to Easters Switching Station Junction and two 230 kV lines on single circuit structures from Easters Switching Station Junction to Cloud Switching Station

Line #235 Extension: cut the Clover-Farmville Line #235 at Structure #235/310 (a point starting west of Chase City Substation), and extend (a) one 230 kV line to the Cloud 230 kV Switching Station, resulting in the 230 kV Farmville-Cloud Line #235; (b) one 230 kV line to the Easters 230 kV Switching Station and renumber the Line #235 structures between Structure #235/310-Clover Substation, resulting in the 230kV Clover-Easters Line #2226, and (c) one 230 kV line between the Easters 230 kV Switching Station and Cloud 230 kV Switching Station, resulting in the 230 kV Easters-Cloud Line #2229. Two 230 kV lines will be installed primarily along approximately 15.3 miles of existing right-of-way with expanded right-of-way east of the Chase City Substation by less than 0.1 mile, at the Ridge

Road Junction by 0.3 mile, and at the Boydton DP by 0.4 mile to accommodate the proposed area of the Projects, totaling approximately 0.7 mile of new rights-of-way. The lines will be supported by 31 double circuit 2-pole galvanized steel structures, 72 double circuit galvanized steel poles, and 4 single circuit galvanized steel H-frame structures utilizing a three-phase twin-bundled 795 ACSR type conductor with a summer transfer capability of 1225 MVA.

Two Separate 230 kV Single Circuits: Line #2226 and Line #235 would primarily share common transmission structures for 11 miles. Line #2229 and Line #235 will be on two separate 230 kV single circuit structures for 4 miles each and will not share any transmission structures. Since Line #2226 and Line #235 share common transmission structure for more than a mile, the loss of Line #2226 and Line #235 would be considered a tower contingency (the loss of any two adjacent circuits on common structure) per NERC TPL contingency P7 definition. When this contingency occurs, the Company would see a voltage low violation criteria violation at Cloud 230 kV and Easters 230 kV buses. One 230 kV 125 MVAR STATCOM would be needed to mitigate the voltage drop. The cost of this STATCOM solution is at least $23.2 million more than the proposed transmission option for the Projects. Also, the Company notes that STATCOM is operationally more complex compared to the cap bank that the Company intends to use in the preferred transmission option. Therefore, the Company rejected this transmission alternative due to the increased costs for the use of the STATCOM.

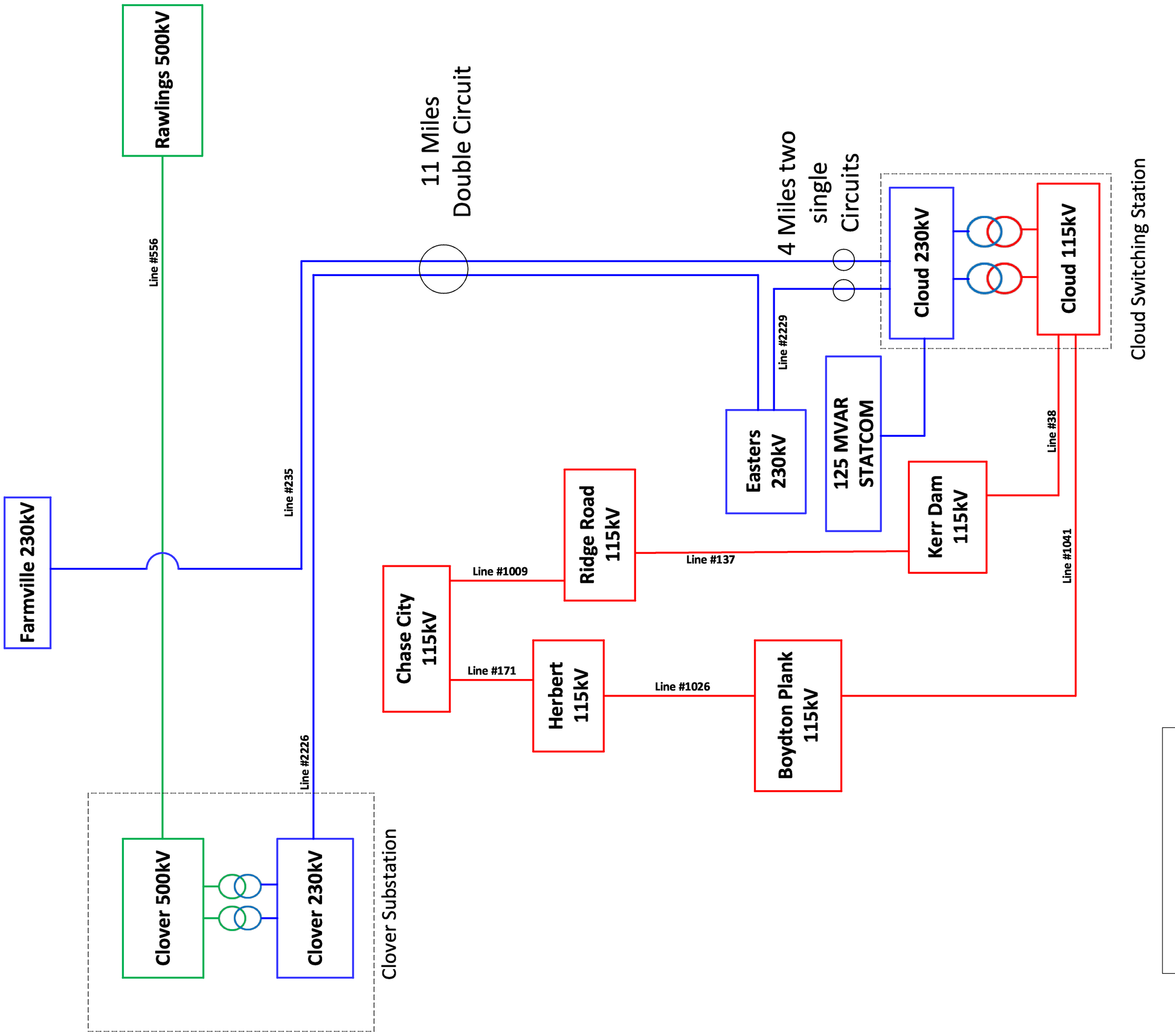
Analysis of Demand-Side Resources:

Pursuant to the Commission's November 26, 2013, Order entered in Case No. PUE-2012-00029, and its November 1, 2018, Final Order entered in Case No. PUR-2018-00075 ("2018 Final Order"), the Company is required to provide analysis of demand-side resources ("DSM") incorporated into the Company's planning studies. DSM is the broad term that includes both energy efficiency ("EE") and demand response ("DR"). In this case, PJM and the Company have identified a need for the proposed Projects in order to comply with mandatory NERC Reliability Standards, while maintaining the overall long-term reliability of its transmission system.[11] Notwithstanding, when performing an analysis based on PJM's 50/50 load forecast, there is no adjustment in load for DR programs that are bid into the PJM reliability pricing model ("RPM") auction because PJM only dispatches DR when the system is under stress (*i.e.*, a system emergency). Accordingly, while existing DSM is considered to the extent the load forecast accounts for it, DR that has been bid into PJM's RPM market is not a factor in this particular application because of the identified need for the Projects.

[11] While the PJM load forecast does not directly incorporate DR, its load forecast incorporates variables derived from Itron that reflect EE by modeling the stock of end-use equipment and its usages. Further, because P JM's load forecast considers the historical non-coincident peak ("NCP") for each load serving entity ("LSE") within PJM, it reflects the actual load reductions achieved by DSM programs to the extent an LSE has used DSM to reduce its NCPs.

Based on these considerations, the evaluation of the Projects demonstrated that despite accounting for DSM consistent with PJM's methods, the Projects are necessary. As noted in the 2018 Final Order, pursuant to the Grid Transformation and Modernization Act of 2018, the Company must propose $870 million of EE programs by 2028. Since July 1, 2018, the Company has proposed approximately $476 million for the design, implementation, and operation of energy efficiency programs in the Commonwealth. This amount includes approximately $128.6 million of new energy efficiency programs, designated as "Phase IX" of the Company's DSM portfolio, which the Company filed for approval of on December 2, 2020. These programs are pending before the Commission and have not been accounted for in PJM's load forecast, and thus, were not part of the Company's planning studies.

One Line Diagram
Transmission Alternative



I. NECESSITY FOR THE PROPOSED PROJECT

F. Describe any lines or facilities that will be removed, replaced, or taken out of service upon completion of the proposed project, including the number of circuits and normal and emergency ratings of the facilities.

Response: The proposed Projects include the *removal* of the following:

- 2 double circuit 115 kV 3-pole structures (Structure Numbers 137/66 to 137/67 and 1042/64 to 1042/63)

The proposed Projects include the *replacement* of the following (see Section II.B.5 for replacement structures):

- 1 double circuit 230 kV tower (Structure Number 235/310)
- 1 single circuit 115 kV running angle guyed steel pole (Structure Number 1045/3)
- 1 double circuit 115 kV steel pole (Structure Numbers 40/496 and 171/25)
- 1 double circuit 115 kV steel H-frame (Structure Numbers 40/495A and 1009/129)
- 1 single circuit 115 kV steel pole (Structure Number 40/495)
- 5 single circuit 115 kV H-frame structures (Structure Numbers 40/490 to 40/494)
- 4 double circuit 115 kV steel poles (Structure Numbers 1009/125 to 1009/128 and 171/26 to 171/29)

The existing Line #40 3-phase twin-bundled 336 ACSR conductors will be replaced with 3-phase twin-bundled 336 ACSR conductors between proposed Structure #40/490-Chase City Substation. The existing Line #40 3-phase twin-bundled 336 ACSR conductors have a normal/emergency transfer capability of 347 MVA. The two 3#6 alumoweld shield wires will be replaced with two 3#6 alumoweld shield wires between proposed Structure #40/490-490A and one 3#6 alumoweld shield wire between proposed Structure #40/490A-491 and 40/494-Chase City.

The existing Line #171 3-phase 768.2 ACSS/TW conductors will be replaced with 3-phase 768.2 ACSS/TW conductors between proposed Structure #171/29B-Chase City. The existing Line #171 3-phase 768.2 ACSS/TW conductor has a normal/emergency transfer capability of 393 MVA. The one optical ground wire ("OPGW") shield wire will be replaced with one OPGW shield wire.

The existing Line #1009 3-phase 768.2 ACSS/TW conductors will be replaced with 3-phase 768.2 ACSS/TW conductors between proposed Structure #1009/124A–Chase City. The existing Line #1009 3-phase 768.2 ACSS/TW conductor has a normal/emergency transfer capability of 393 MVA. The one OPGW shield wire will be replaced with one OPGW shield wire.

The existing Lines #137 and #1042 3-phase 2-795 ACSR conductors will be removed between Structure #137/66-67 (1042/64-63) to replace the 115 kV connection to the Easters DP with the proposed 230 kV Lines #2226 and #2229.

I. NECESSITY FOR THE PROPOSED PROJECT

G. Provide a system map, in color and of suitable scale, showing the location and voltage of the Applicant's transmission lines, substations, generating facilities, etc., that would affect or be affected by the new transmission line and are relevant to the necessity for the proposed line. Clearly label on this map all points referenced in the necessity statement.

Response: See Attachment I.G.1.

Attachment I.G.1

CLOUD 230kV PROJECT

115kV Transmission Line

230kV Transmission Line

Switching Station, Substation, DP

0 2.5 5 10 Miles

FARMVILLE SUB

CLOVER SUB

CHASE CITY SUB

RIDGE ROAD JUNCTION

UNDER CONSTRUCTION

EASTERS SWITCHING STATION

HERBERT SUB

RIDGE RD SUB

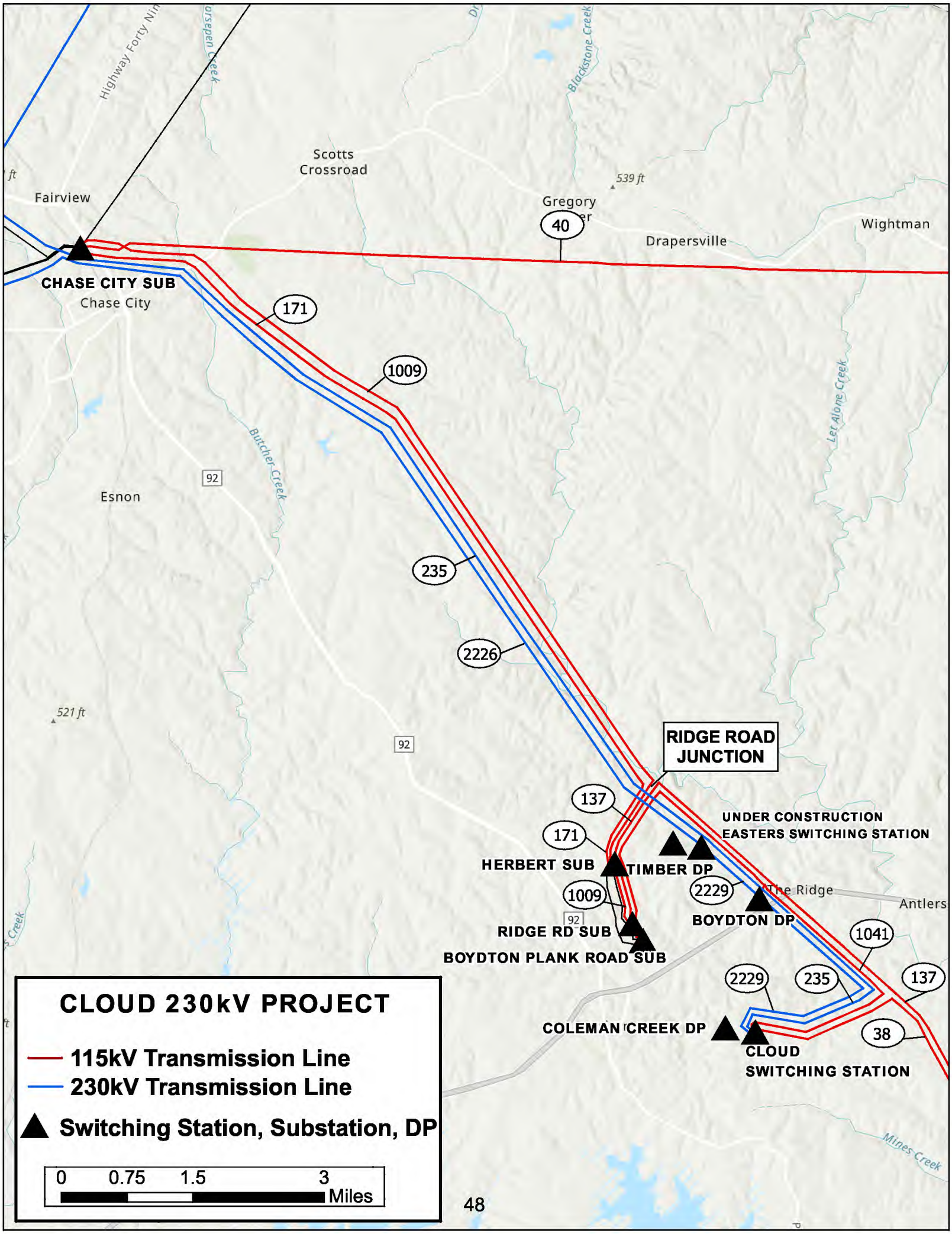
BOYDTON PLANK ROAD SUB

BOYDTON DP

CLOUD SWITCHING STATION

KERR DAM SUB

Farmville
Flat Creek
Bush River
460
Rice
Hampden Sydney
Buffalo Creek
360
Burkeville
Prince Edward Gallion State Forest
Green Bay
Little Not
Jefferson Hwy
Cullen
CHARLOTTE
PRINCE EDWARD
Farmville Rd
15
Meherrin
47
Charlotte Court House
40
George Washington Hwy
Keysville
North Meherrin River
235
Drakes Branch
624 ft
Victoria
Big Juniper Creek
Saxe
Crafton Gate Hwy
Wyllieburg
MECKLENBURG
Crooked Creek
LUNENBURG
Barnesville Hwy
171
2226
1009
40
Highway Ninety-Two
Staunton River State Park
Dan River
HALIFAX
Roanoke River
1041
2229
38
137
58
49
Clarksville
Occoneechee State Park
Bracey


Highway Forty Nine
Scotts Crossroad
Blackstone Creek
Fairview
Scotts Crossroad
539 ft
Gregory
40
Wightman
Drapersville
CHASE CITY SUB
Chase City
171
1009
Butcher Creek
Let Alone Creek
92
Esnon
235
2226
521 ft
92
RIDGE ROAD JUNCTION
137
UNDER CONSTRUCTION
EASTERS SWITCHING STATION
171
HERBERT SUB
TIMBER DP
1009
2229
The Ridge
Antlers
92
RIDGE RD SUB
BOYDTON DP
1041
BOYDTON PLANK ROAD SUB
2229
235
137
COLEMAN CREEK DP
38
CLOUD
SWITCHING STATION
Mines Creek
CLOUD 230kV PROJECT
115kV Transmission Line
230kV Transmission Line
Switching Station, Substation, DP
0 0.75 1.5 3
Miles

I. NECESSITY FOR THE PROPOSED PROJECT

H. Provide the desired in-service date of the proposed project and the estimated construction time.

Response: The desired in-service target date for the proposed Project is June 1, 2024. The Company estimates it will take approximately 23 months for detailed engineering, materials procurement, permitting, real estate, and construction after a final order from the Commission. Accordingly, to support this estimated construction timeline and construction plan, the Company respectfully requests a final order by July 1, 2022. Should the Commission issue a final order by July 1, 2022, the Company estimates that construction should begin around April 1, 2023, and be completed by the in-service target date, which is June 1, 2024. This construction timeline will enable the Company to meet the targeted in-service date for the Projects. This schedule is contingent upon obtaining the necessary permits and transmission line outages; dates may need to be adjusted based on permitting or outage delays, or design modifications in order to comply with additional agency requirements identified during the permitting application process.

I. NECESSITY FOR THE PROPOSED PROJECT

I. Provide the estimated total cost of the project as well as total transmission-related costs and total substation-related costs. Provide the total estimated cost for each feasible alternative considered. Identify and describe the cost classification (e.g. "conceptual cost," "detailed cost," etc.) for each cost provided.

Response: **Costs for the Proposed Project**

The estimated conceptual cost of the proposed Projects is approximately $101.5 million, which includes approximately $66.2 million for transmission–related work and approximately $35.3 million for substation-related[12] work (2021 dollars).

Costs for the Rejected Project Alternative

The estimated conceptual cost of the rejected alternative is approximately $124.7 million, which includes approximately $57.4 million for transmission–related work and approximately $67.3 million for substation-related[13] work (2021 dollars).

[12] *See supra* n. 3.
[13] *See supra* n. 3.

I. NECESSITY FOR THE PROPOSED PROJECT

J. If the proposed project has been approved by the RTO, provide the line number, regional transmission expansion plan number, cost responsibility assignments, and cost allocation methodology. State whether the proposed project is considered to be a baseline or supplemental project.

Response: The Projects are classified as supplemental projects (Supplemental Projects DOM-2021-0009 and DOM-2021-0010) initiated by the TO in order to interconnect new customer load. The Projects were submitted to PJM on February 9, 2021, and the solution slide was submitted to PJM on April 6, 2021. See Attachments I.J.1 and I.J.2, respectively. The Company is currently awaiting for PJM to conduct its do-no-harm analysis and acceptance in the Local Plan.

The Projects are presently 100% cost allocated to the DOM Zone.

Dominion Supplemental Projects

52

Transmission Expansion Advisory Committee
February 9, 2021

Dominion Energy

Attachment I.J.1

Needs

Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process

53

Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2021-0009

Process Stage: Need Meeting 02/09/2021

Project Driver: Customer Service

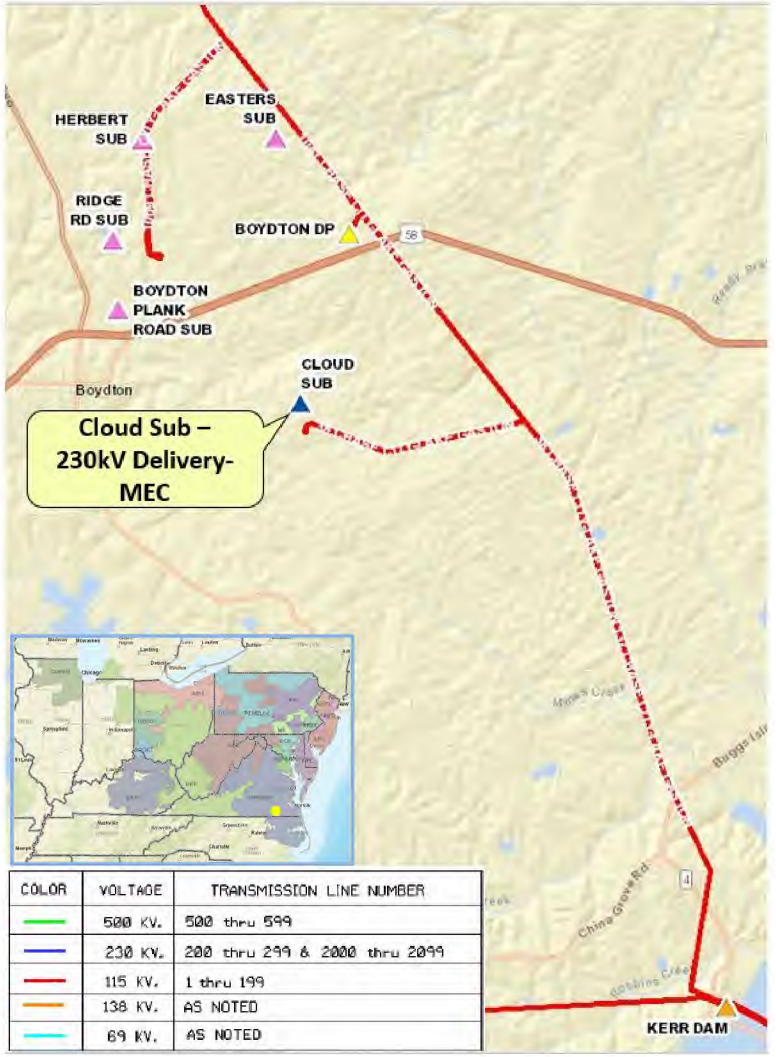
Specific Assumption References:

Customer load request will be evaluated per Dominion's Facility Interconnection Requirements Document and Dominion's Transmission Planning Criteria.

Problem Statement:

ODEC has submitted a request with an updated load projection on behalf of Mecklenburg Electric Coop (MEC) for a delivery point (Cloud Sub - Coleman Creek DP) at Boydton, VA, to support a datacenter campus with a total load in excess of 100 MW. The customer requests service by June 1, 2024.

Initial In-Service Load	Projected 2026 Load
Summer: 91.0 MW	Summer: 156.0 MW



Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2021-0010

Process Stage: Need Meeting 02/09/2021

Project Driver: Customer Service

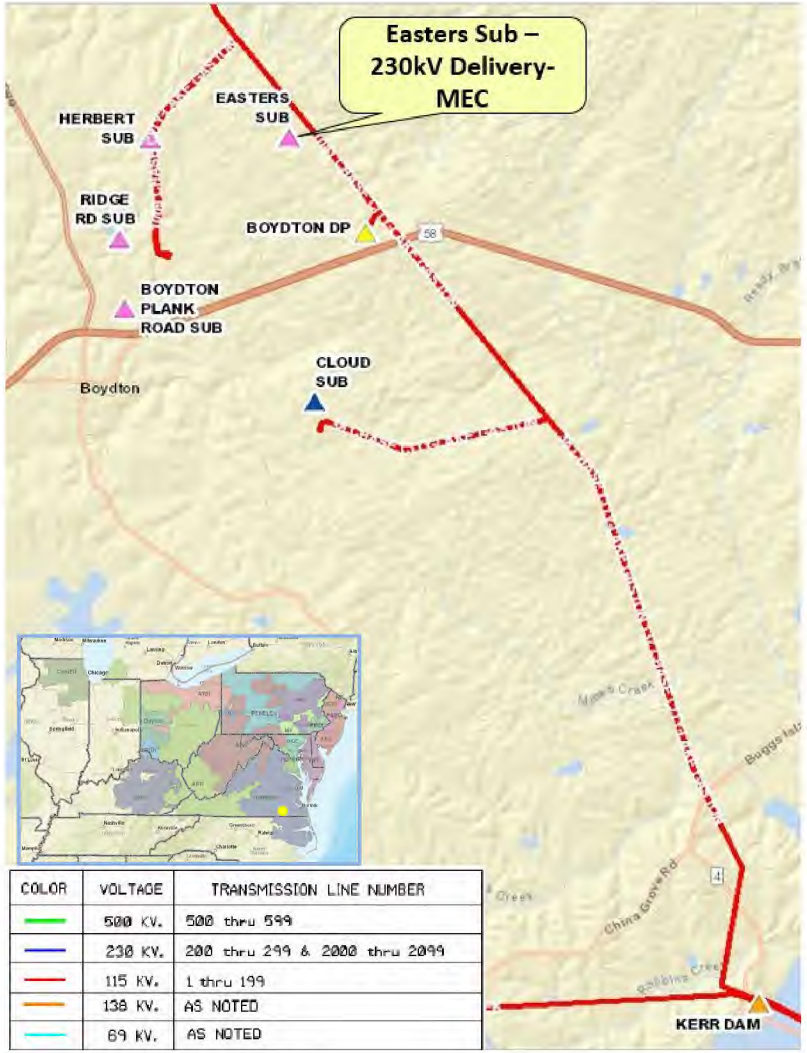
Specific Assumption References:

Customer load request will be evaluated per Dominion's Facility Interconnection Requirements Document and Dominion's Transmission Planning Criteria.

Problem Statement:

ODEC has submitted a request on behalf of Mecklenburg Electric Coop (MEC) for a new delivery point (Easters Sub – Timber DP) at Boydton, VA, to support a new datacenter campus with a total load in excess of 100 MW. The customer requests service by November 1, 2021.

Initial In-Service Load	Projected 2026 Load
Winter: 12.0 MW	Summer: 123.0 MW



Dominion Supplemental Projects

Transmission Expansion Advisory Committee
April 6, 2021

Solutions

Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process

57

Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2021-0009

Process Stage: Solutions Meeting 04/06/2021

Previously Presented: Need Meeting 02/09/2021

Project Driver: Customer Service

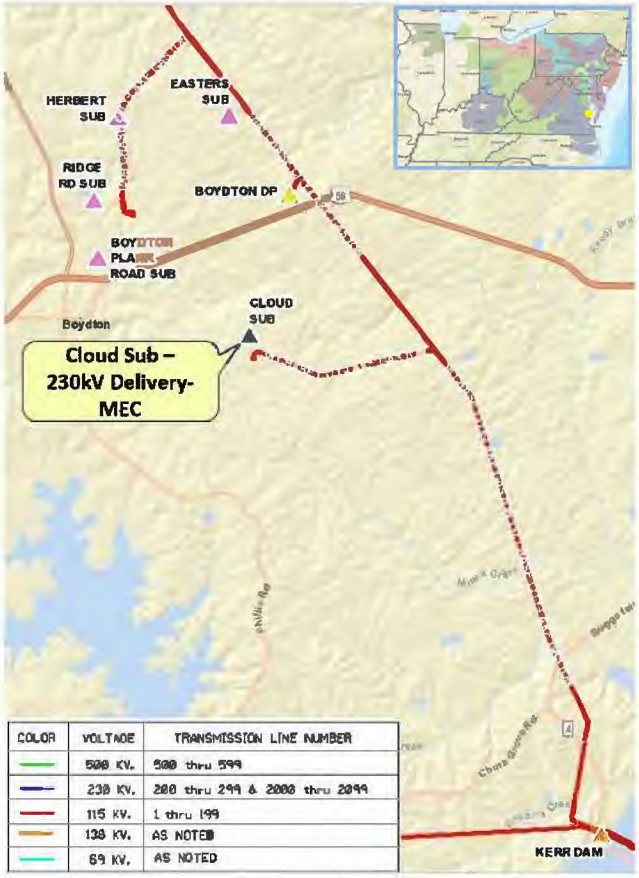
Specific Assumption References:

Customer load request will be evaluated per Dominion's Facility Interconnection Requirements Document and Dominion's Transmission Planning Criteria.

Problem Statement:

ODEC has submitted a request with an updated load projection on behalf of Mecklenburg Electric Coop (MEC) for a delivery point (Cloud Sub - Coleman Creek DP) at Boydton, VA, to support a datacenter campus of total load in excess of 100 MW. The customer requests service by June 1, 2024.

Initial In-Service Load	Projected 2026 Load
Summer: 91.0 MW	Summer: 156.0 MW



Dominion Transmission Zone: Supplemental Cloud 230kV Delivery - MEC

Need Number: DOM-2021-0009

Process Stage: Solutions Meeting 04/06/2021

Proposed Solution:

- Split 230kV Line #235 (Clover - Farmville) near Chase City substation and extend two single circuit 230kV lines for approx. 15 miles to the proposed Cloud Substation.
- Terminate the two 230kV lines into 4 breaker ring bus to create a Cloud - Clover line and a Cloud - Farmville line.
- Add two 224 MVA 115/230kV transformers with breakers on both sides.
- Expand 115kV bus to 4 breaker ring bus.
- 4 additional 230kV breakers will be paid for by Customer (cost not included here).

Estimated Project Cost: $45.0 M (Total)

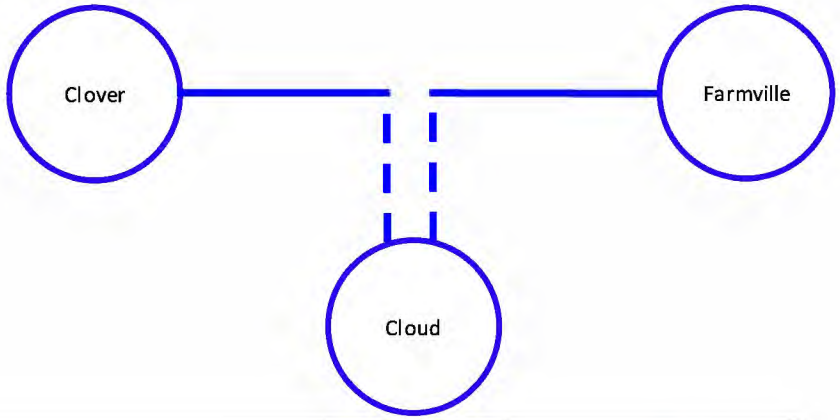
Transmission Line	$30M
Substation	$15M

Alternatives Considered:

No feasible alternatives

Projected In-service Date: 06/01/2024

Project Status: Engineering



Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2021-0010

Process Stage: Solutions Meeting 04/06/2021

Previously Presented: Need Meeting 02/09/2021

Project Driver: Customer Service

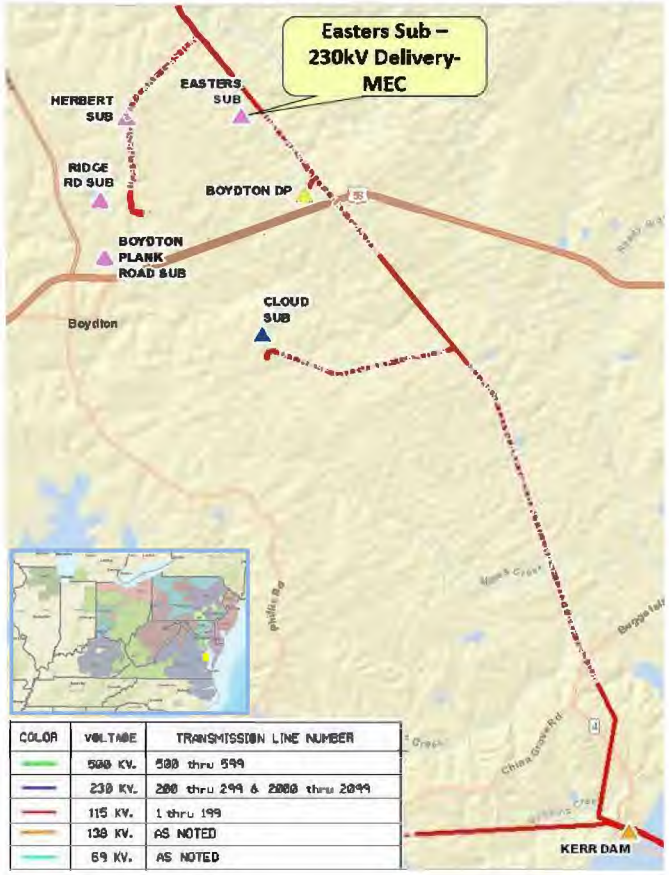
Specific Assumption References:

Customer load request will be evaluated per Dominion's Facility Interconnection Requirements Document and Dominion's Transmission Planning Criteria.

Problem Statement:

ODEC has submitted a request on behalf of Mecklenburg Electric Coop (MEC) for a new delivery point (Easters Sub – Timber DP) at Boydton, VA, to support a new datacenter campus with a total load in excess of 100 MW. The customer requests service by November 1, 2021.

Initial In-Service Load	Projected 2026 Load
Winter: 12.0 MW	Summer: 123.0 MW



Dominion Transmission Zone: Supplemental Easters 230kV Delivery - MEC

Need Number: DOM-2021-0010

Process Stage: Solutions Meeting 04/06/2021

Proposed Solution:

The project will need to be built in 2 stages due to the timeframe associated with obtaining a CPCN and extend 230kV into the area. The 115kV Station will help meet the initial load target date.

Stage 1: Interconnect the new substation by cutting and extending 115kV Line #137 (Kerr Dam – Ridge Road) to the proposed Easters 115kV Substation. The conductor, substation and line equipment used to interconnect Easters 115 kV with the transmission system will be same as 230kV substation. The projected in-service date for Stage 1 is November 1, 2021.

Stage 2: Cut and extend 230kV Line #2226 (Clover – Cloud 230kV) to the proposed Easters 230kV Substation. Add one 84 MVAR 230kV cap bank for voltage support. Once conversion from 115kV to 230kV substation is complete, remove Easters 115kV tap and reconnect Line #137 Kerr Dam – Ridge Road. 8 additional 230kV breakers will be paid for by Customer (cost not included here). The projected in-service date for Stage 2 is June 1, 2024.

Estimated Project Cost: $20.0 M (Total)

Transmission Line	$5M
115kV Substation	$10M
230kV Substation	$5M

Alternatives Considered:

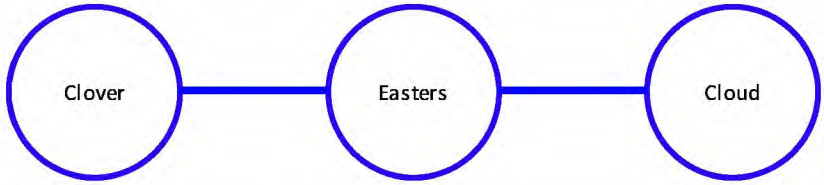
No feasible alternatives

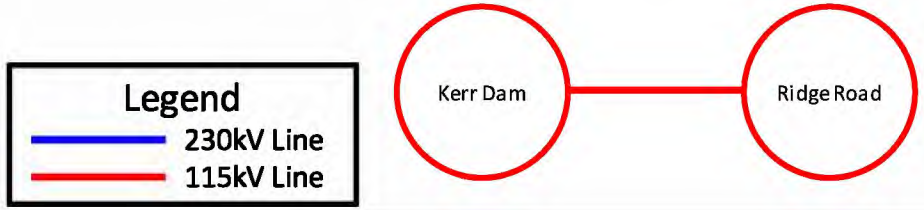
Projected In-service Date: 06/01/2024 (Stage 2)

Project Status: Engineering

Stage 1: Easters 115kV Sub

Stage 2: Easters 230kV Sub





I. NECESSITY FOR THE PROPOSED PROJECT

K. If the need for the proposed project is due in part to reliability issues and the proposed project is a rebuild of an existing transmission line(s), provide five years of outage history for the line(s), including for each outage the cause, duration and number of customers affected. Include a summary of the average annual number and duration of outages. Provide the average annual number and duration of outages on all Applicant circuits of the same voltage, as well as the total number of such circuits. In addition to outage history, provide five years of maintenance history on the line(s) to be rebuilt including a description of the work performed as well as the cost to complete the maintenance. Describe any system work already undertaken to address this outage history.

Response: Not applicable. The need for the proposed Projects is not due to reliability issues. See Section I.A.

I. NECESSITY FOR THE PROPOSED PROJECT

L. If the need for the proposed project is due in part to deterioration of structures and associated equipment, provide representative photographs and inspection records detailing their condition.

Response: Not applicable. The need for the proposed Projects is not due to deterioration of structures and associated equipment. See Sections I.A and I.C.

I. NECESSITY FOR THE PROPOSED PROJECT

M. In addition to the other information required by these guidelines, applications for approval to construct facilities and transmission lines interconnecting a Non-Utility Generator ("NUG") and a utility shall include the following information:

1. The full name of the NUG as it appears in its contract with the utility and the dates of initial contract and any amendments;

2. A description of the arrangements for financing the facilities, including information on the allocation of costs between the utility and the NUG;

3. a. For Qualifying Facilities ("QFs") certificated by Federal Energy Regulatory Commission ("FERC") order, provide the QF or docket number, the dates of all certification or recertification orders, and the citation to FERC Reports, if available;

b. For self-certificated QFs, provide a copy of the notice filed with FERC;

4. Provide the project number and project name used by FERC in licensing hydroelectric projects; also provide the dates of all orders and citations to FERC Reports, if available; and

5. If the name provided in 1 above differs from the name provided in 3 above, give a full explanation.

Response: Not applicable.

I. NECESSITY FOR THE PROPOSED PROJECT

N. Describe the proposed and existing generating sources, distribution circuits or load centers planned to be served by all new substations, switching stations and other ground facilities associated with the proposed project.

Response: The proposed Cloud 230 kV Switching Station and Easters 230 kV Switching Station will serve the region of Mecklenburg County described in Section I.C. See also Attachment I.A.1. The Projects may be used to support future data centers in the area.

II. DESCRIPTION OF THE PROPOSED PROJECT

A. Right-of-way ("ROW")

1. Provide the length of the proposed corridor and viable alternatives.

Response: The total length of the Projects is approximately 15.3 miles. No alternative routes are proposed for the Projects. See Section II.A.9 for an explanation of the Company's route selection process.

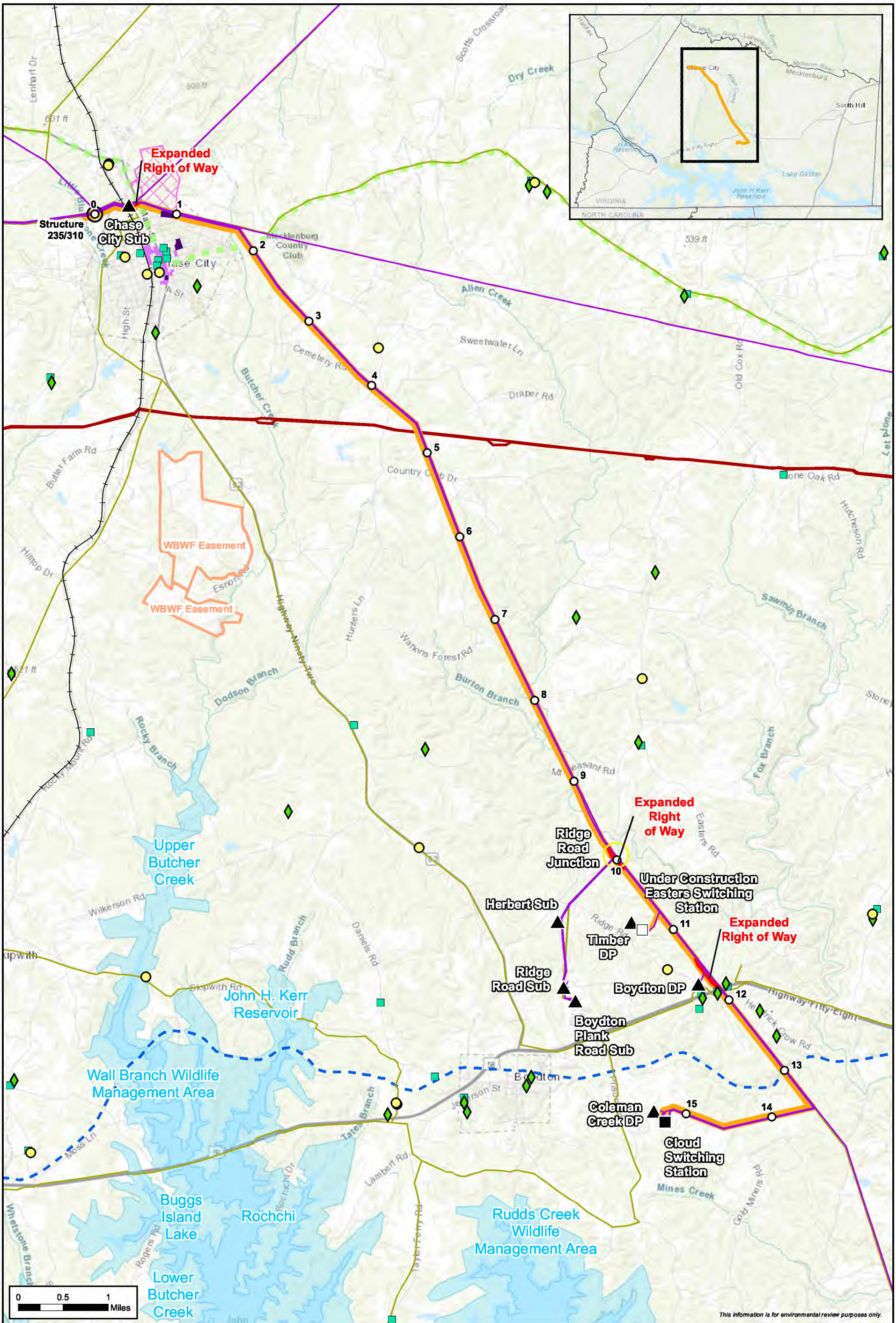
II. DESCRIPTION OF THE PROPOSED PROJECT

A. Right-of-way ("ROW")

2. Provide color maps of suitable scale (including both general location mapping and more detailed GIS-based constraints mapping) showing the route of the proposed line and its relation to: the facilities of other public utilities that could influence the route selection, highways, streets, parks and recreational areas, scenic and historic areas, open space and conservation easements, schools, convalescent centers, churches, hospitals, burial grounds/cemeteries, airports and other notable structures close to the proposed project. Indicate the existing linear utility facilities that the line is proposed to parallel, such as electric transmission lines, natural gas transmission lines, pipelines, highways, and railroads. Indicate any existing transmission ROW sections that are to be quitclaimed or otherwise relinquished. Additionally, identify the manner in which the Applicant will make available to interested persons, including state and local governmental entities, the digital GIS shape file for the route of the proposed line.

Response: See Attachment II.A.2. No portion of the right-of-way is proposed to be quitclaimed or relinquished.

The Company will make the digital Geographic Information Systems ("GIS") shapefile available to interested persons upon request to counsel for the Company as listed in the Projects' Application.


Expanded Right of Way
Structure 235/310
Chase City Sub
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
WBWF Easement
WBWF Easement
Ridge Road Junction
Expanded Right of Way
Herbert Sub
Timber DP
Under Construction Easters Switching Station
Expanded Right of Way
Ridge Road Sub
Boydton DP
Boydton Plank Road Sub
Coleman Creek DP
Cloud Switching Station
Upper Butcher Creek
John H. Kerr Reservoir
Wall Branch Wildlife Management Area
Buggs Island Lake
Rochchi
Lower Butcher Creek
Rudds Creek Wildlife Management Area
Mecklenburg Country Club
Dry Creek
Allen Creek
Butcher Creek
Dodson Branch
Rocky Branch
Burton Branch
Sawmill Branch
Fox Branch
Mines Creek
Sweetwater Ln
Draper Rd
Cemetery Rd
Old Cox Rd
Lone Oak Rd
Hutcheson Rd
Watkins Forest Rd
Hunters Ln
Hilltop Dr
Butler Farm Rd
Rocky Mount Rd
Wilkerson Rd
Skipwith Rd
Moss Ln
Lambert Rd
Mt Pleasant Rd
Easters Rd
Highway Fifty-Eight
Highway Ninety-Two
Chase City
South Hill
Mecklenburg
Halifax
Lunenburg
Lake Gaston
John H Kerr Reservoir
VIRGINIA
NORTH CAROLINA
0 0.5 1 Miles
This information is for environmental review purposes only.
Milepost
Proposed Centerline
Expanded Right of Way
Existing Dominion Transmission Line
Other Electric Line
Substation (Sub) or Delivery Point (DP)
Existing Switching Station
Under Construction Switching Station
Junction
Scenic Byway
School
Cemetery
Church
Architectural Resource
Historic District
Ward Burton Wildlife Foundation Easement
Natural Gas Pipeline
Tobacco Heritage Trail
Railroad
USACE Managed Lands
Blue Ridge Land Conservancy Conservation Easement
N
ERM
Attachment II.A.2
Environmental Constraints Map
Line #235 Extension to
Cloud 230 kV and Related Project
Mecklenburg County, Virginia
Dominion Energy
MPLS M:\Clients\D-F\DOM\Cloud\ArcGIS\2021\06\SCC_DOM_CLD_Att_II_A_2_Constraints_v5.mxd | REVISED: 06/08/2021 | SCALE: 1:63,360 when printed at 11x17
DRAWN BY: 0239

II. DESCRIPTION OF THE PROPOSED PROJECT

A. Right-of-way ("ROW")

3. Provide a separate color map of a suitable scale showing all the Applicant's transmission line ROWs, either existing or proposed, in the vicinity of the proposed project.

Response: See Attachment I.G.1.

II. DESCRIPTION OF THE PROPOSED PROJECT

A. Right-of-way ("ROW")

4. To the extent the proposed route is not entirely within existing ROW, explain why existing ROW cannot adequately service the needs of the Applicant.

Response: Three minor expansions of the Company's existing right-of-way are required outside of the Chase City Substation, at the Ridge Road Junction, and at the tap for the Boydton DP. These three expansions are necessary to accommodate the number of lines and structures that occur at these tap locations. Specifically, the majority of the Projects are within the Company's existing right-of-way and extends for 15.3 miles; however, the Company will need to expand the existing right-of-way east of the Chase City Substation between 9 feet and 27 feet in width for less than 0.1 mile in length, at the Ridge Road Junction between 1 foot and 121 feet in width for approximately 0.3 mile in length, and at the Boydton DP between 1 foot and 95 feet in width for approximately 0.4 mile in length to accommodate the proposed area of the Projects, totaling approximately 0.7 mile of new rights-of-way.

II. DESCRIPTION OF THE PROPOSED PROJECT

A. Right-of-way ("ROW")

5. Provide drawings of the ROW cross section showing typical transmission line structure placements referenced to the edge of the ROW. These drawings should include:

a. ROW width for each cross section drawing;

b. Lateral distance between the conductors and edge of ROW;

c. Existing utility facilities on the ROW; and

d. For lines being rebuilt in existing ROW, provide all of the above (i) as it currently exists, and (ii) as it will exist at the conclusion of the proposed project.

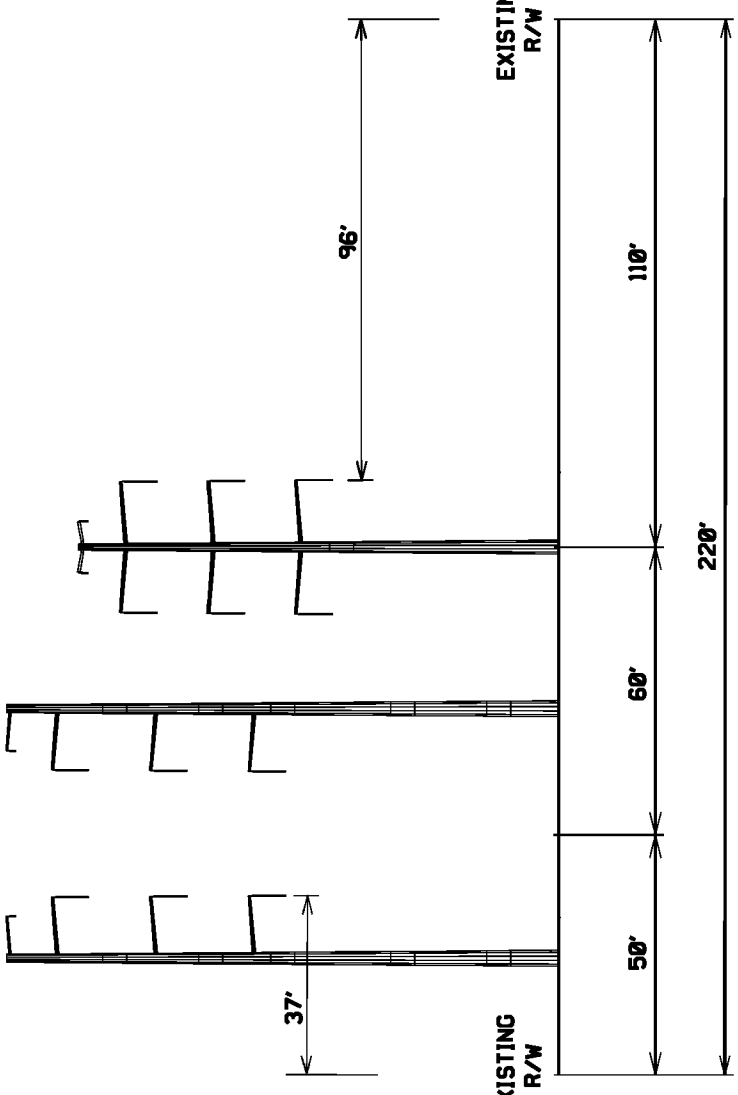
Response: See Attachment II.A.5.a - o.

For additional information on the structures, see Section II.B.3.

ATTACHMENT II.A.5.a

PRELIMINARY

CLOUD - PROPOSED STR 235/402



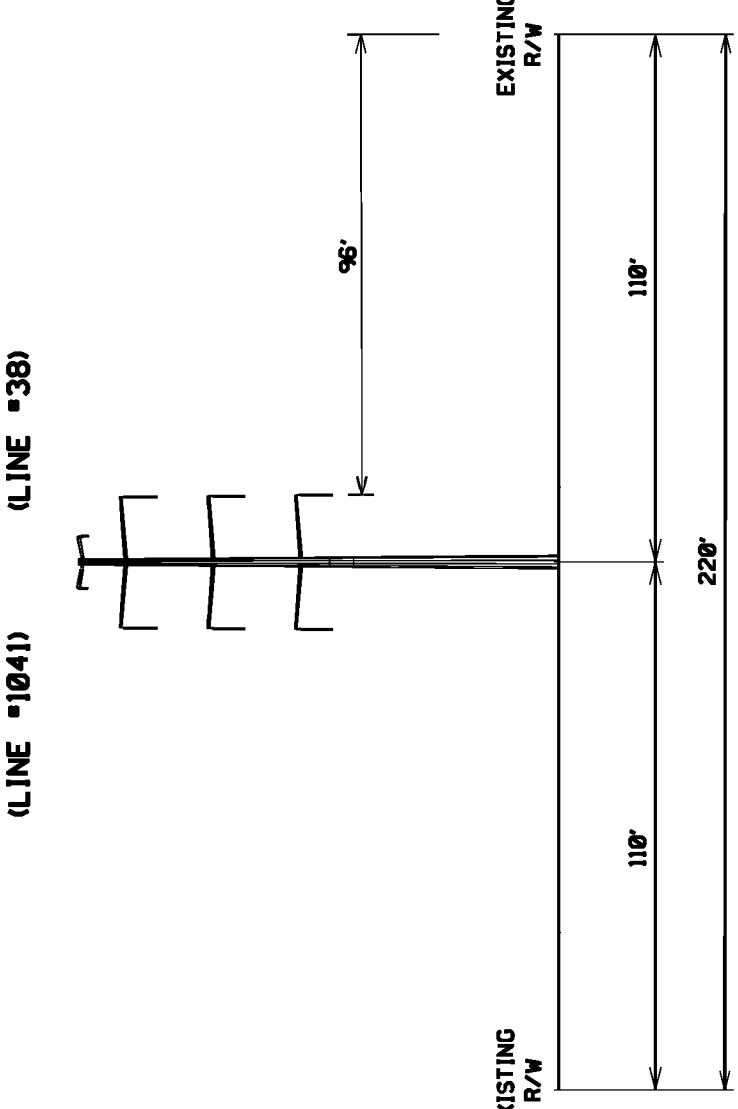
PROPOSED CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

CLOUD - PROPOSED STR 235/402

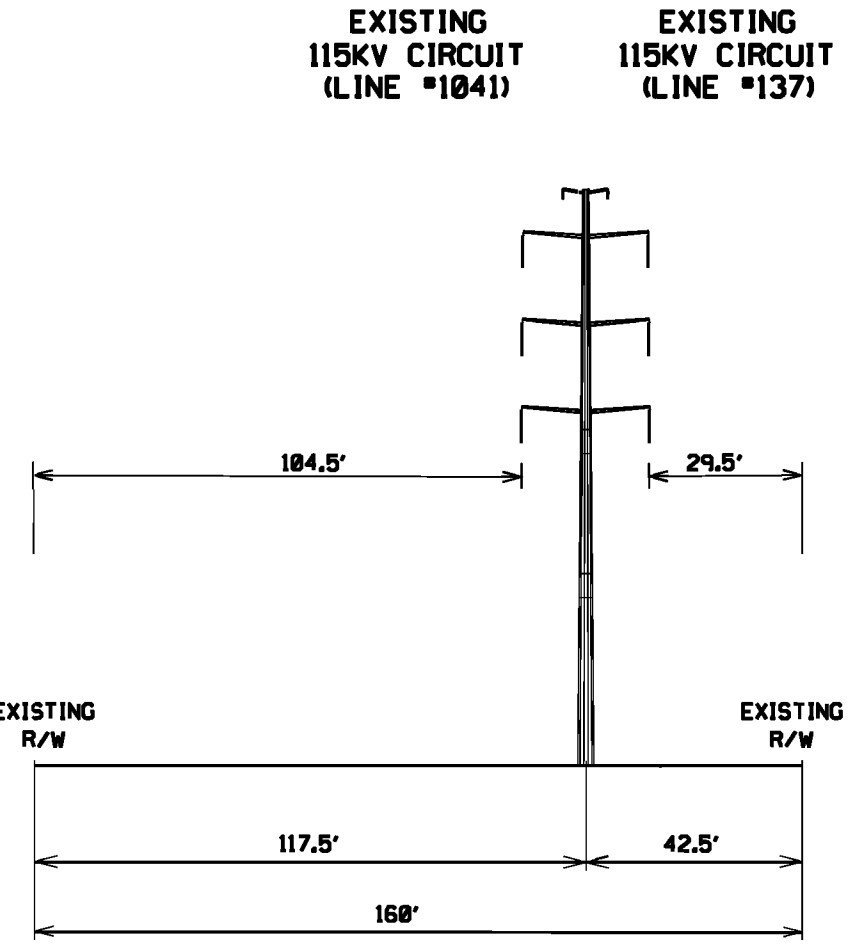


EXISTING CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

$DGNSPEC$

PROPOSED STR 235/402-393



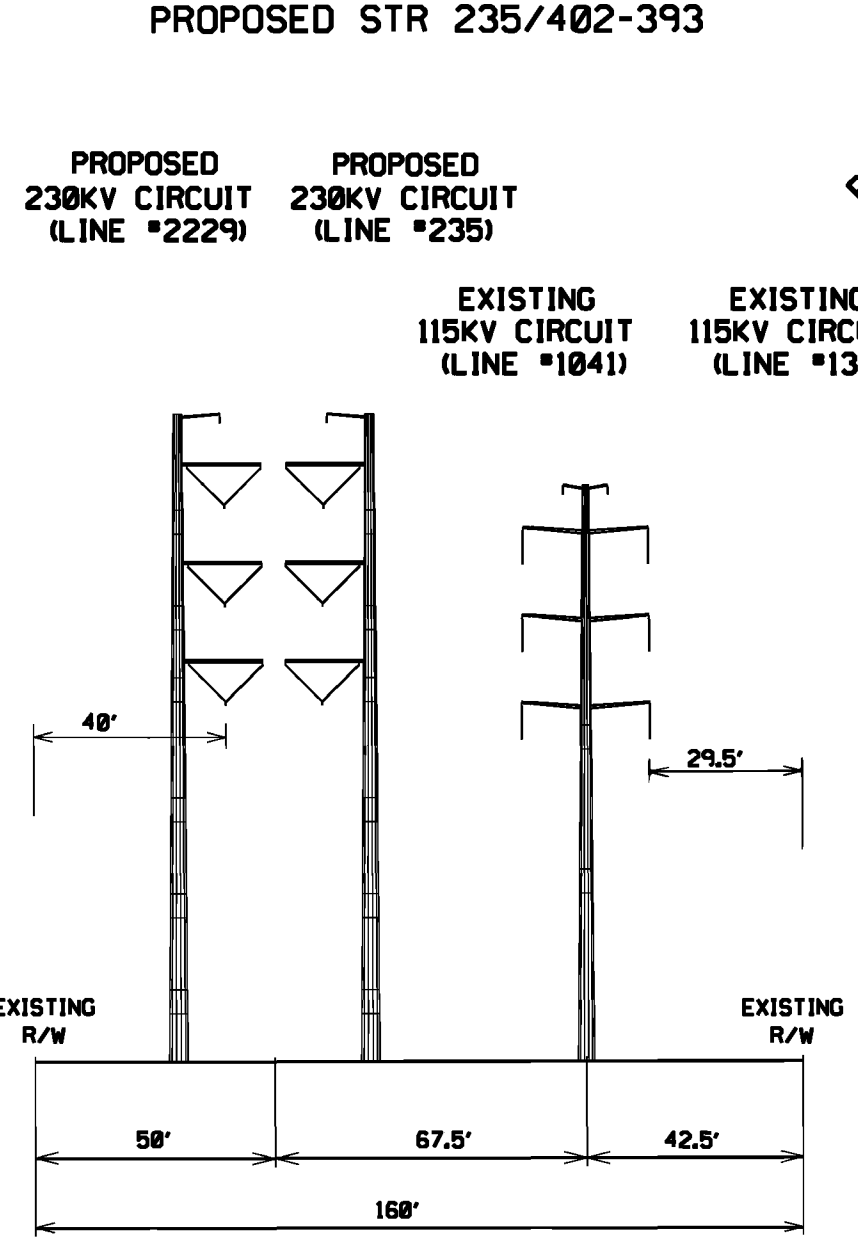
EXISTING CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

$DGNSPEC$

PROPOSED STR 235/402-393

PRELIMINARY



PROPOSED CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

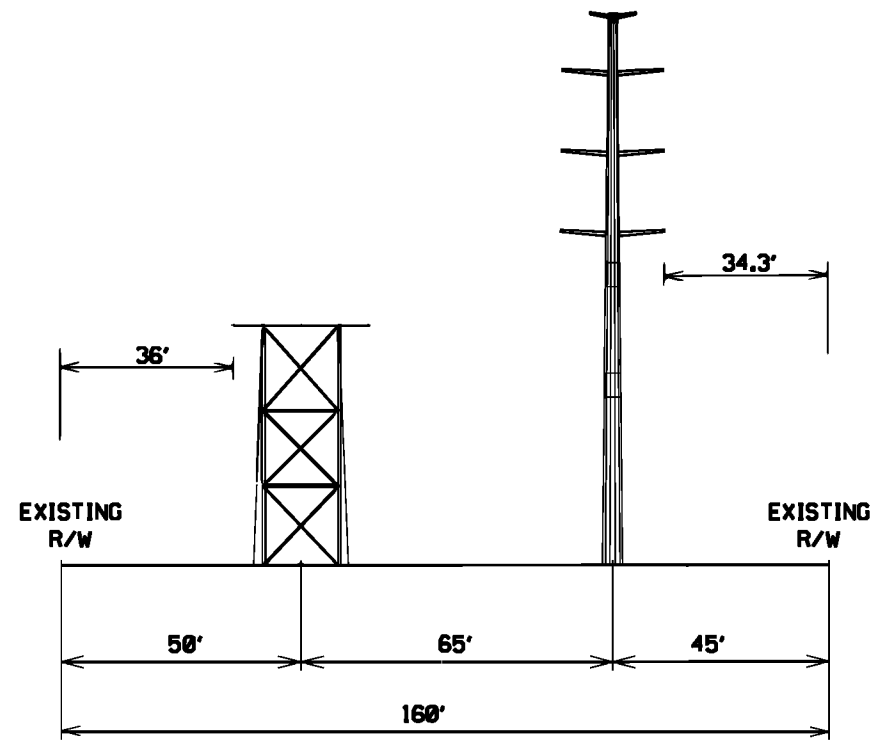
NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/393-389

EXISTING 115KV CIRCUIT (LINE #1041)

EXISTING 115KV CIRCUIT (LINE #137)



EXISTING CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

$DGNSPEC$

PROPOSED STR 235/393-389

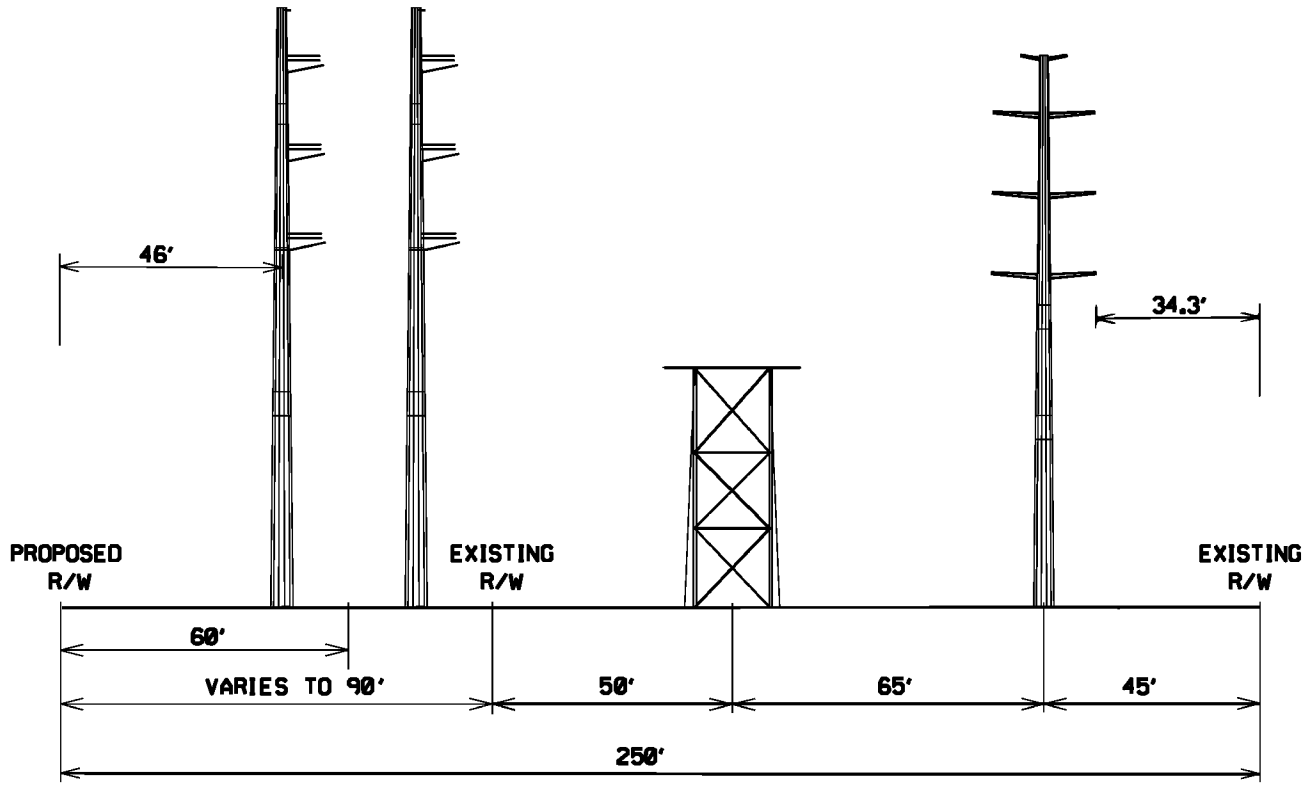
PRELIMINARY

PROPOSED 230KV CIRCUIT (LINE #2229)

PROPOSED 230KV CIRCUIT (LINE #235)

EXISTING 115KV CIRCUIT (LINE #1041)

EXISTING 115KV CIRCUIT (LINE #137)



PROPOSED CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

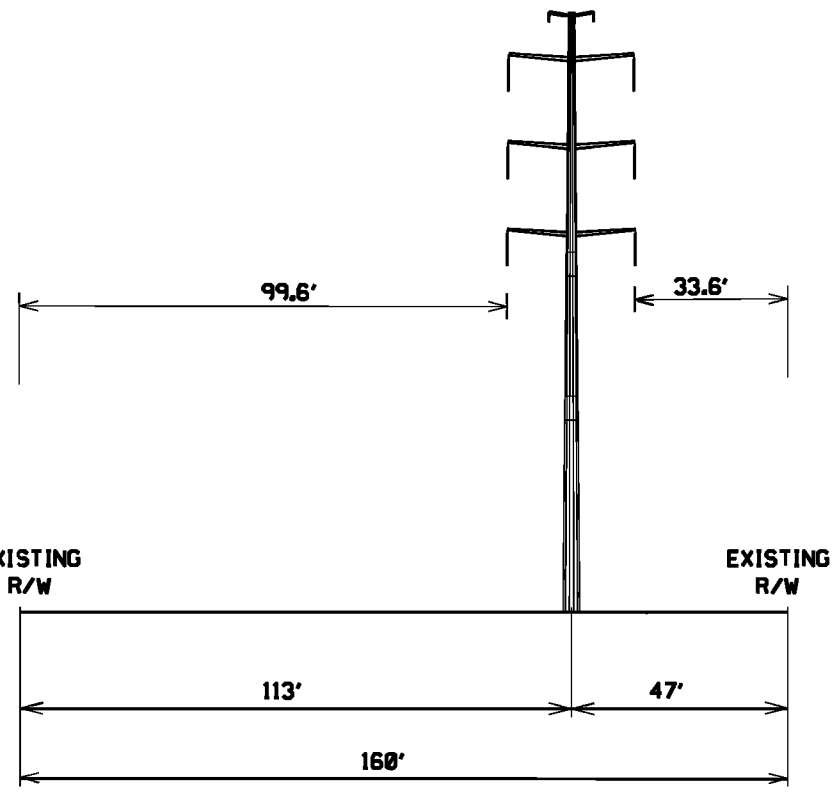
NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/389-385

EXISTING 115KV CIRCUIT (LINE #1041)

EXISTING 115KV CIRCUIT (LINE #137)



EXISTING CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

$DGNSPEC$

PROPOSED STR 235/389-385

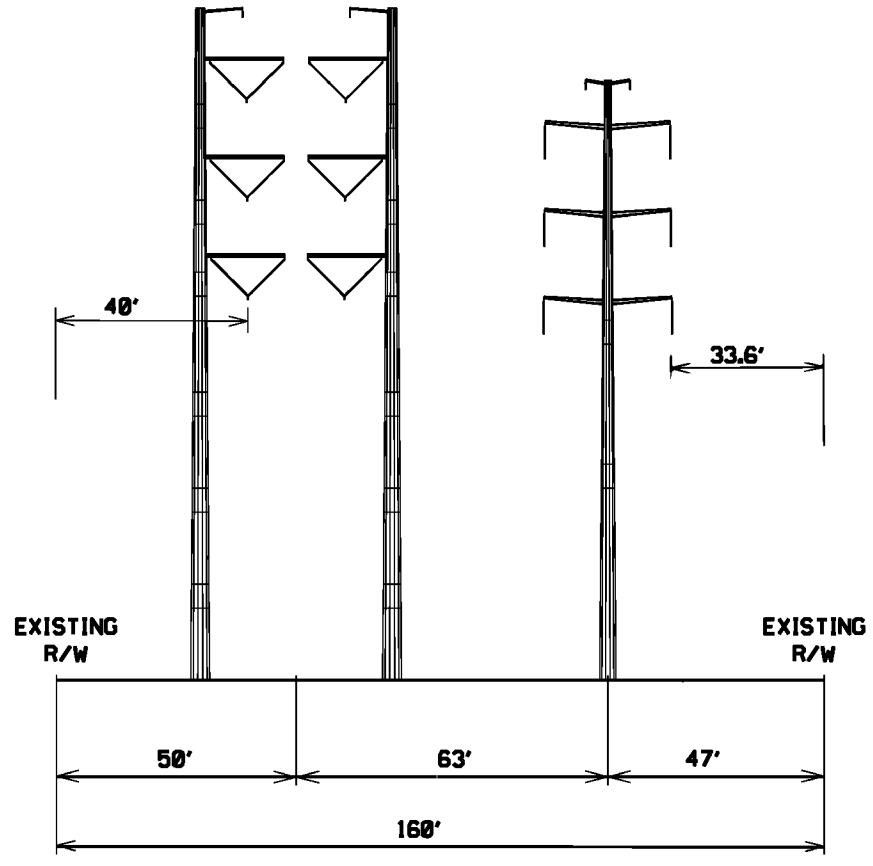
PRELIMINARY

PROPOSED 230KV CIRCUIT (LINE #2229)

PROPOSED 230KV CIRCUIT (LINE #235)

EXISTING 115KV CIRCUIT (LINE #1041)

EXISTING 115KV CIRCUIT (LINE #137)



PROPOSED CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

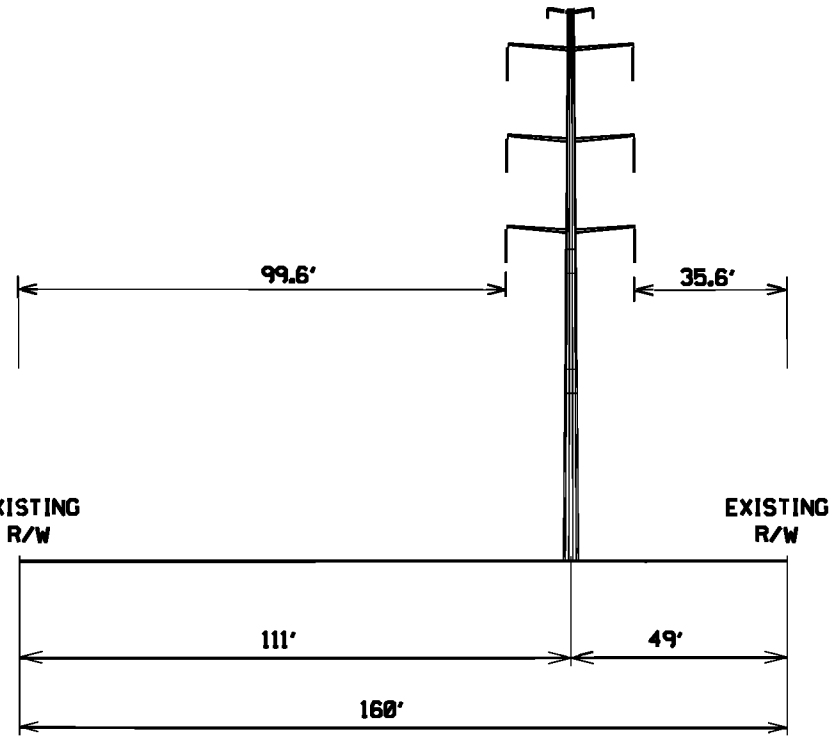
NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/385-381

EXISTING 115KV CIRCUIT (LINE #1041)

EXISTING 115KV CIRCUIT (LINE #137)



EXISTING CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

$DGNSPEC$

PROPOSED STR 235/385-381

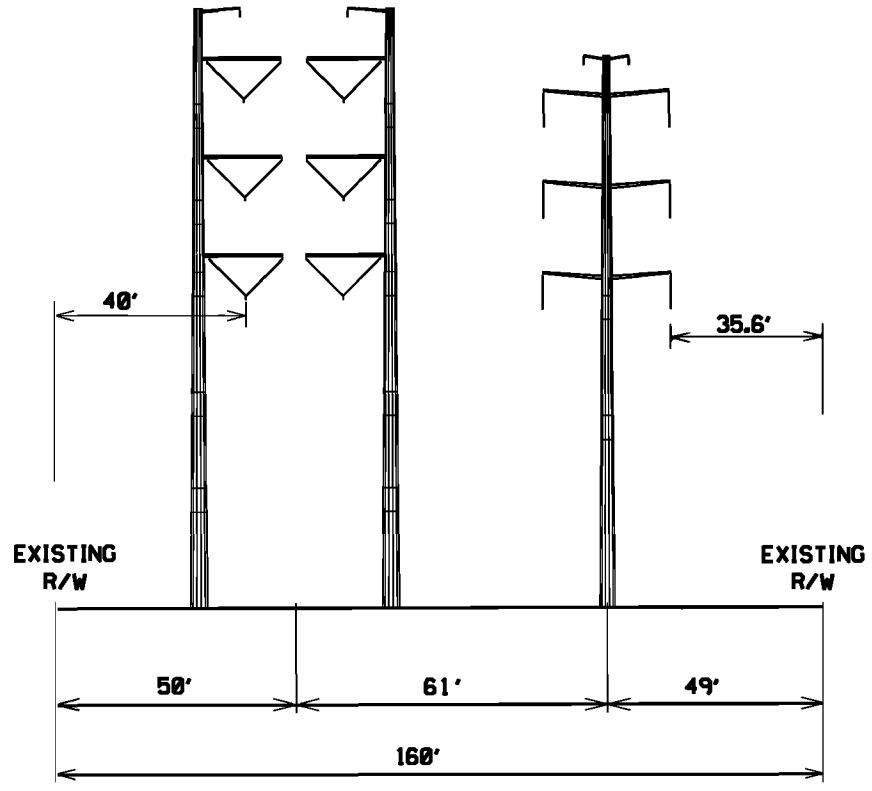
PRELIMINARY

PROPOSED 230KV CIRCUIT (LINE #2226)

PROPOSED 230KV CIRCUIT (LINE #235)

EXISTING 115KV CIRCUIT (LINE #1041)

EXISTING 115KV CIRCUIT (LINE #137)



PROPOSED CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

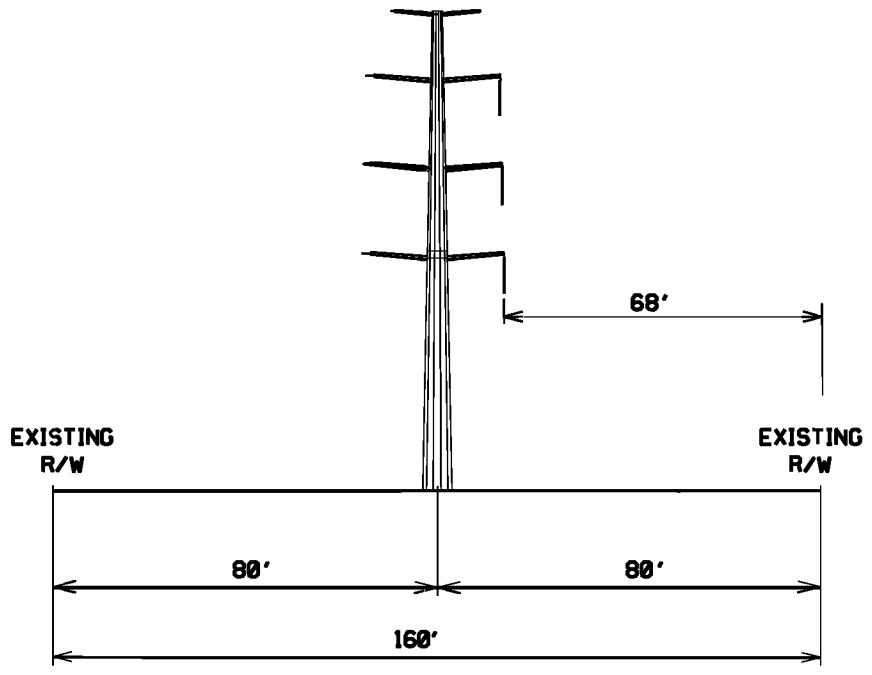
NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/381-378

EXISTING
115KV CIRCUIT
(LINE #171)
(LINE #1041)

EXISTING
115KV CIRCUIT
(LINE #1009)
(LINE #137)



EXISTING CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

$DGNSPEC$

PROPOSED STR 235/381-378

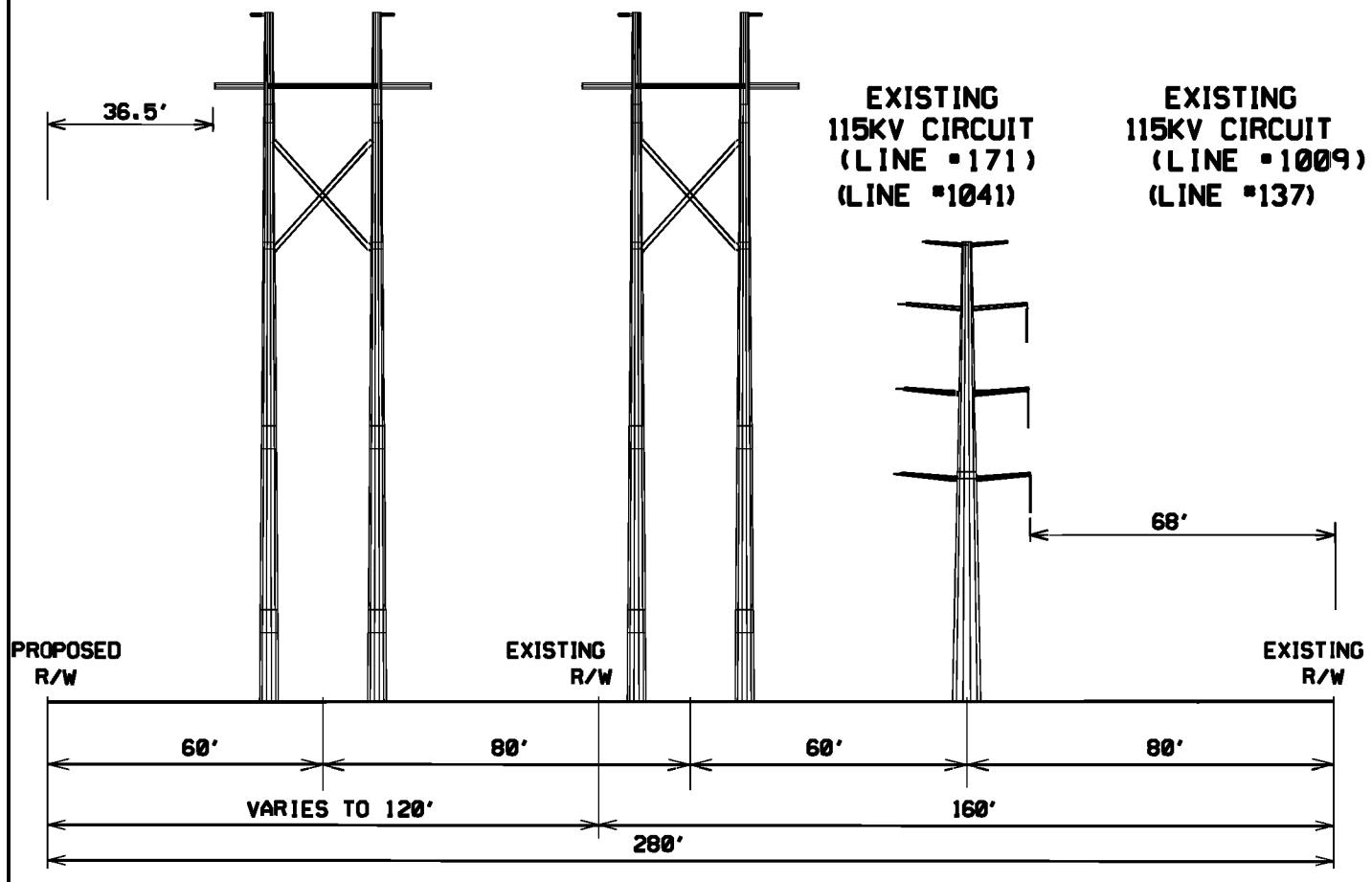
PRELIMINARY

PROPOSED
230KV CIRCUIT
(LINE #2226)

PROPOSED
230KV CIRCUIT
(LINE #235)

EXISTING
115KV CIRCUIT
(LINE #171)
(LINE #1041)

EXISTING
115KV CIRCUIT
(LINE #1009)
(LINE #137)



PROPOSED CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

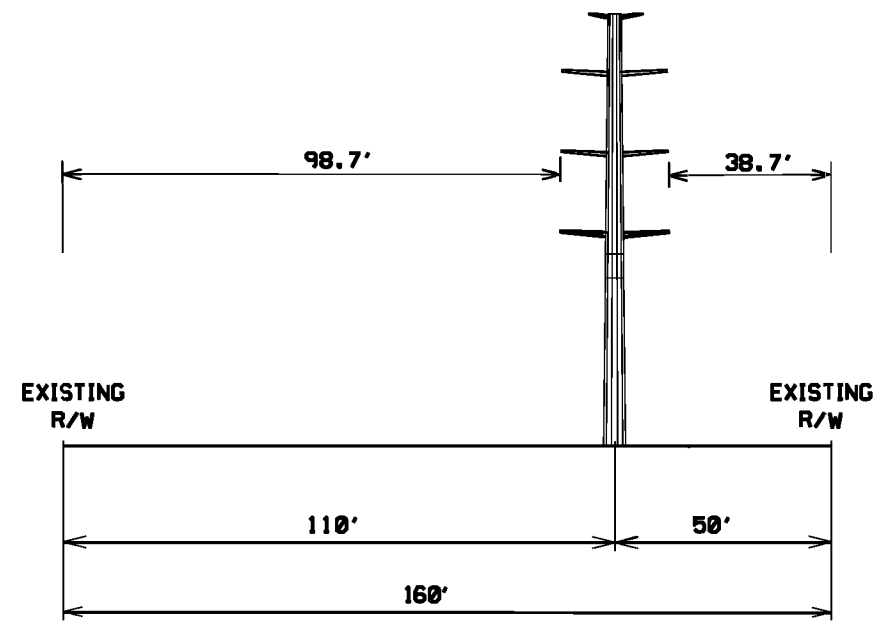
NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/378-377

EXISTING 115KV CIRCUIT (LINE #171)

EXISTING 115KV CIRCUIT (LINE #1009)



EXISTING CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

$DGNSPEC$

PROPOSED STR 235/378-377

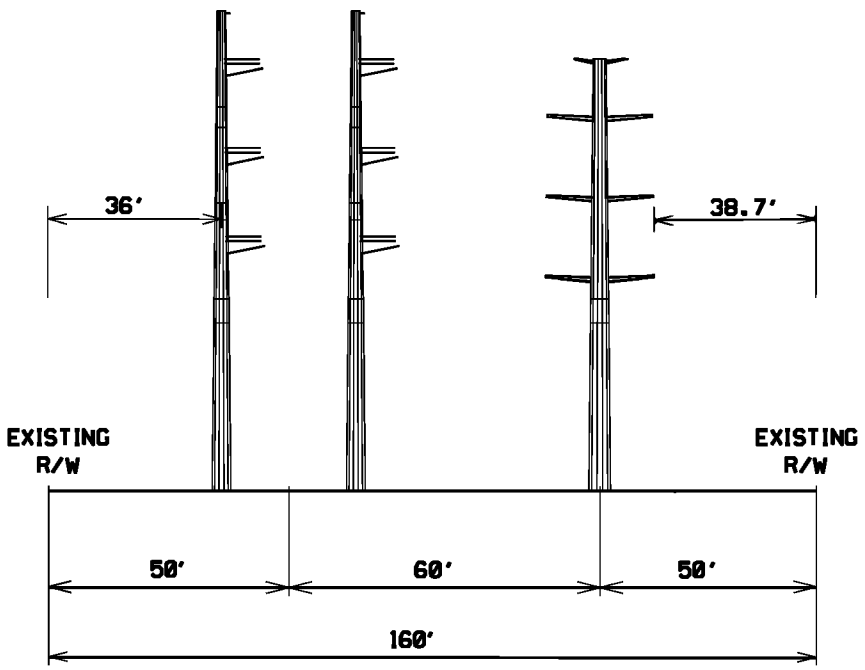
PRELIMINARY

PROPOSED 230KV CIRCUIT (LINE #2226)

PROPOSED 230KV CIRCUIT (LINE #235)

EXISTING 115KV CIRCUIT (LINE #171)

EXISTING 115KV CIRCUIT (LINE #1009)



PROPOSED CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

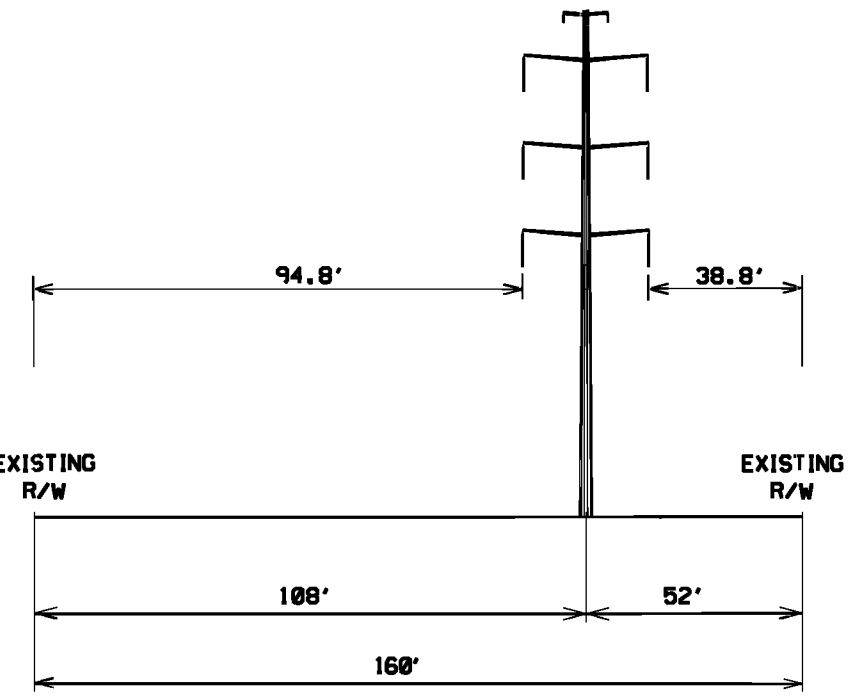
NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/377-373

EXISTING 115KV CIRCUIT (LINE #171)

EXISTING 115KV CIRCUIT (LINE #1009)



EXISTING CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

$DGNSPEC$

PROPOSED STR 235/377-373

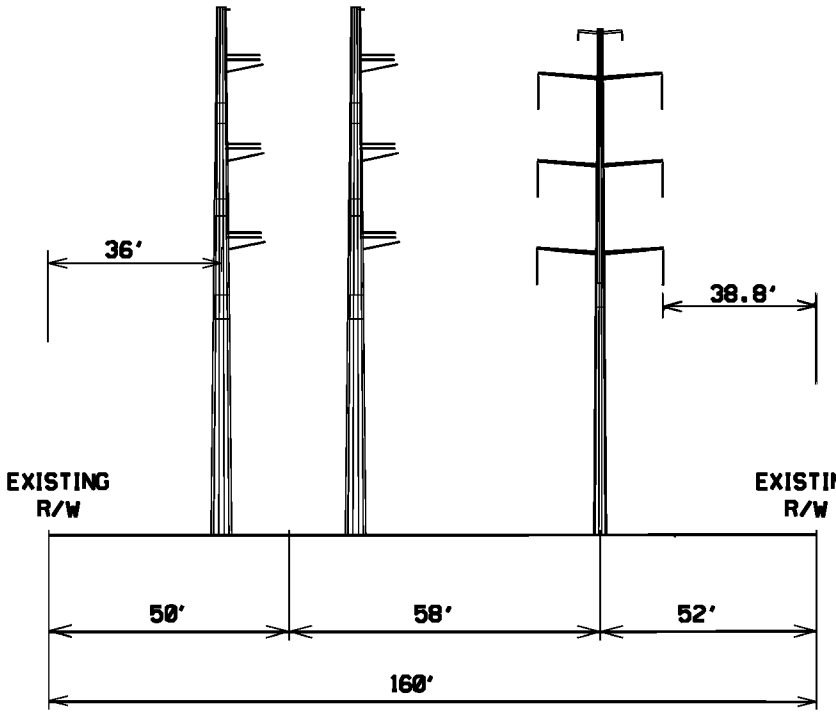
PRELIMINARY

PROPOSED 230KV CIRCUIT (LINE #2226)

PROPOSED 230KV CIRCUIT (LINE #235)

EXISTING 115KV CIRCUIT (LINE #171)

EXISTING 115KV CIRCUIT (LINE #1009)



PROPOSED CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

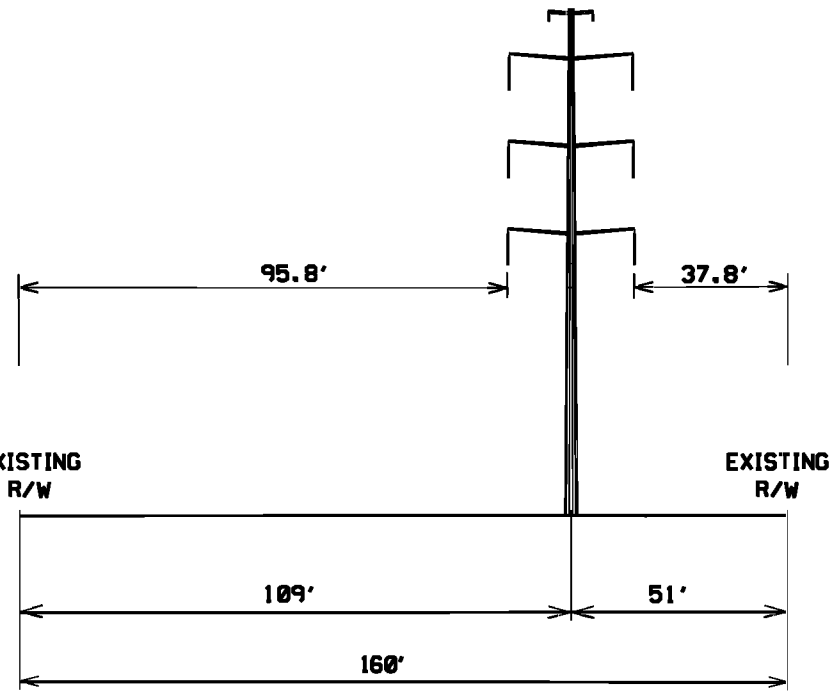
NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/373-327

EXISTING 115KV CIRCUIT (LINE #171)

EXISTING 115KV CIRCUIT (LINE #1009)



EXISTING CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

PROPOSED STR 235/373-327

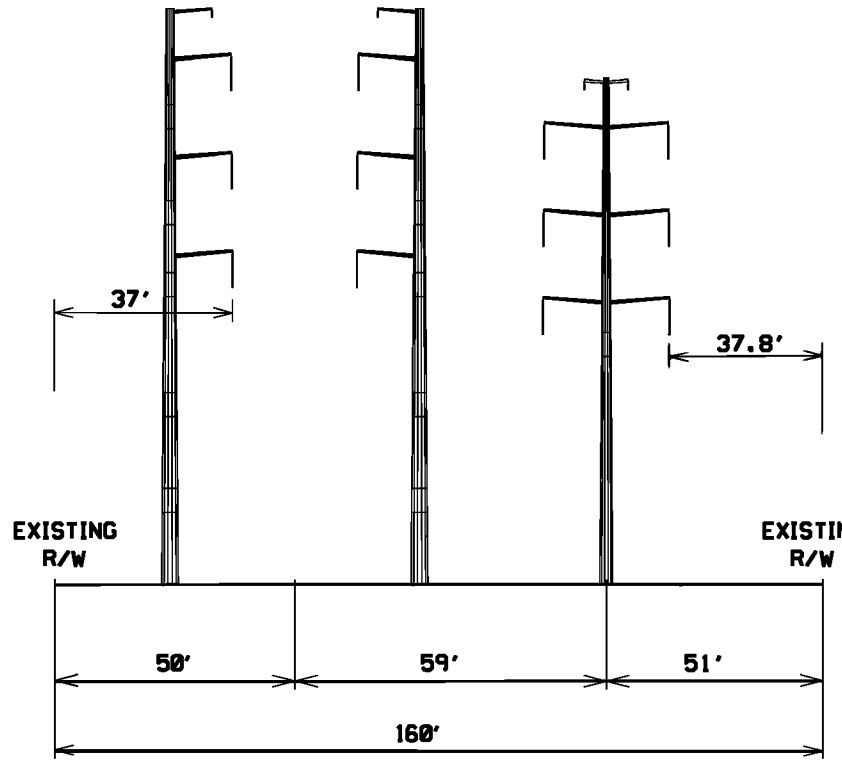
PRELIMINARY

PROPOSED 230KV CIRCUIT (LINE #2226)

PROPOSED 230KV CIRCUIT (LINE #235)

EXISTING 115KV CIRCUIT (LINE #171)

EXISTING 115KV CIRCUIT (LINE #1009)



PROPOSED CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

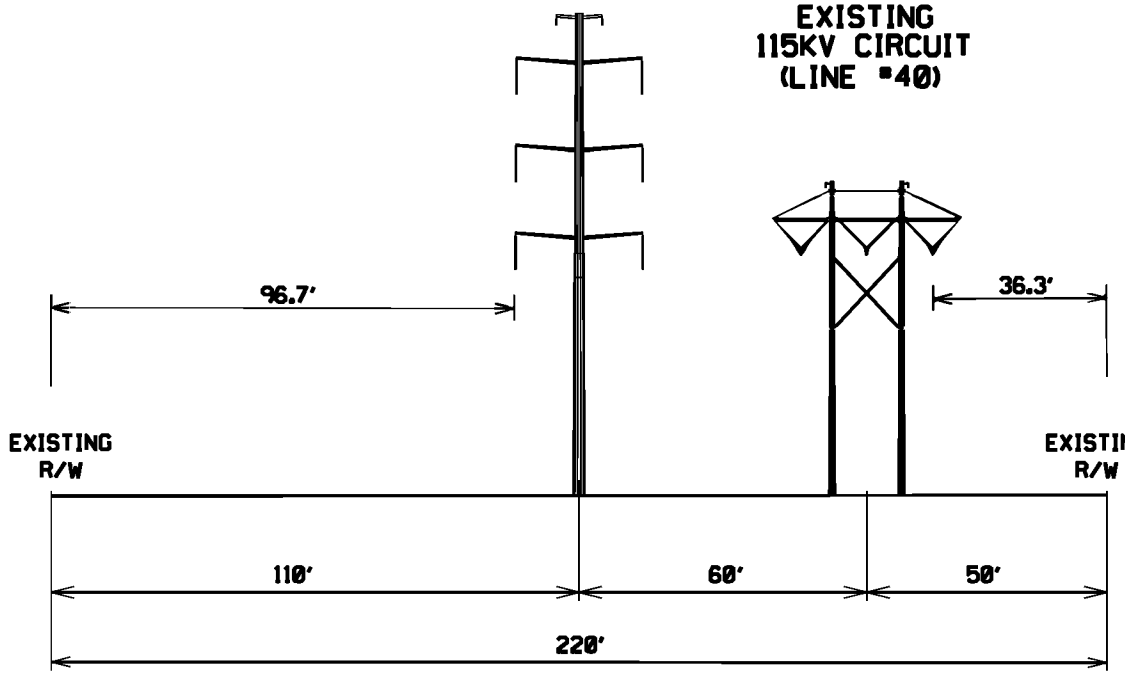
$DGNSPEC$

PROPOSED STR 235/327-322

EXISTING 115KV CIRCUIT (LINE #171)

EXISTING 115KV CIRCUIT (LINE #1009)

EXISTING 115KV CIRCUIT (LINE #40)



EXISTING CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

$DGNSPEC$

PROPOSED STR 235/327-322

PRELIMINARY

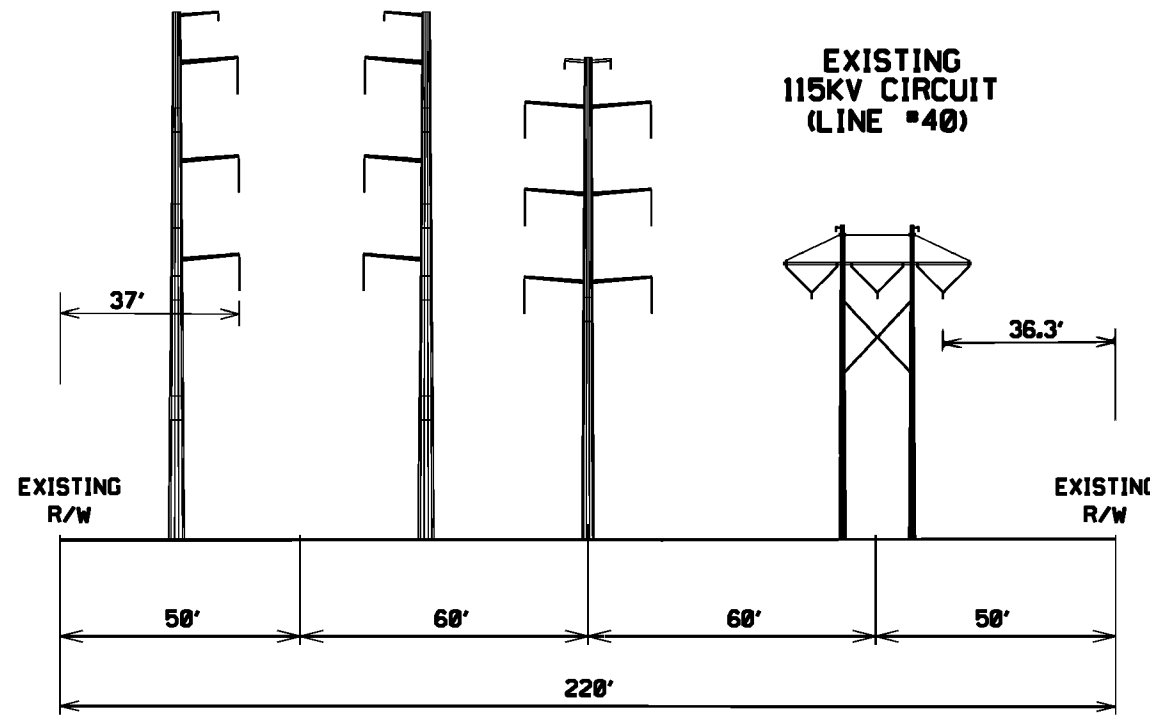
PROPOSED 230KV CIRCUIT (LINE #2226)

PROPOSED 230KV CIRCUIT (LINE #235)

EXISTING 115KV CIRCUIT (LINE #171)

EXISTING 115KV CIRCUIT (LINE #1009)

EXISTING 115KV CIRCUIT (LINE #40)



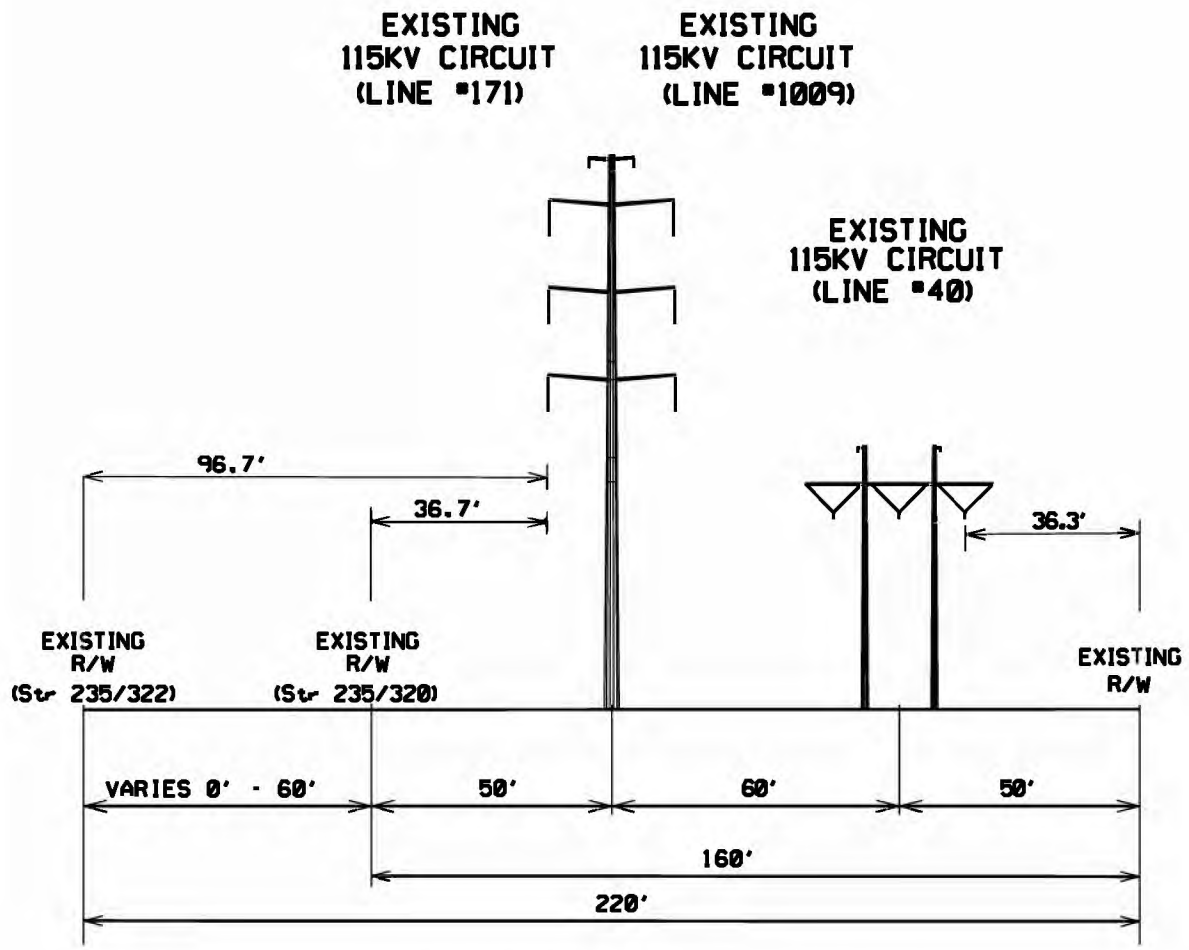
PROPOSED CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

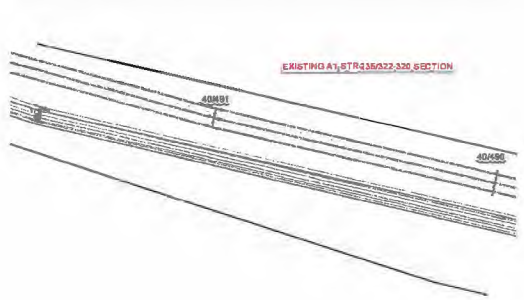
$DGNSPEC$

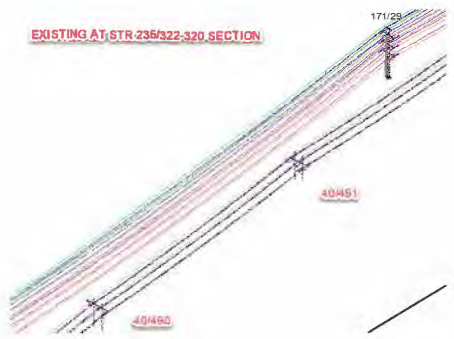
PROPOSED STR 235/322-320



EXISTING CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

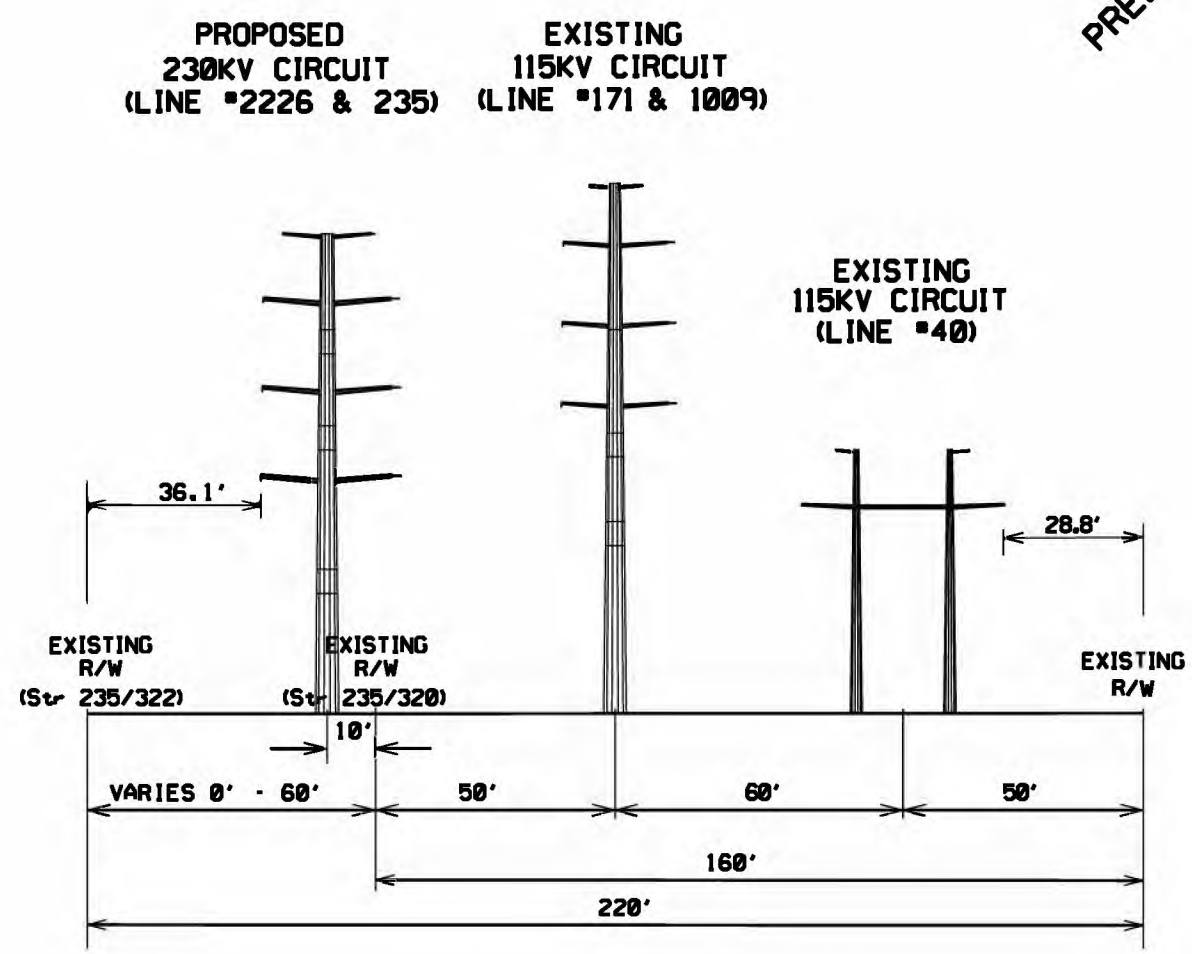




$DGNSPEC$

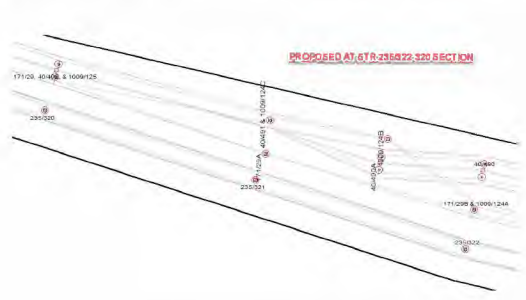
PROPOSED STR 235/322-320

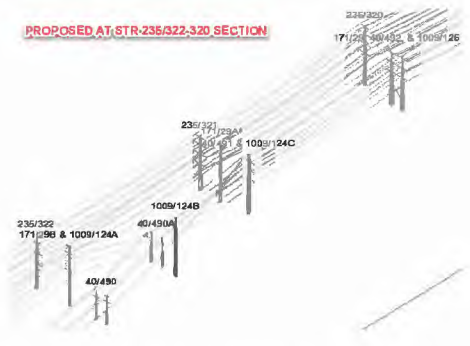
PRELIMINARY



PROPOSED CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310





$DGNSPEC$

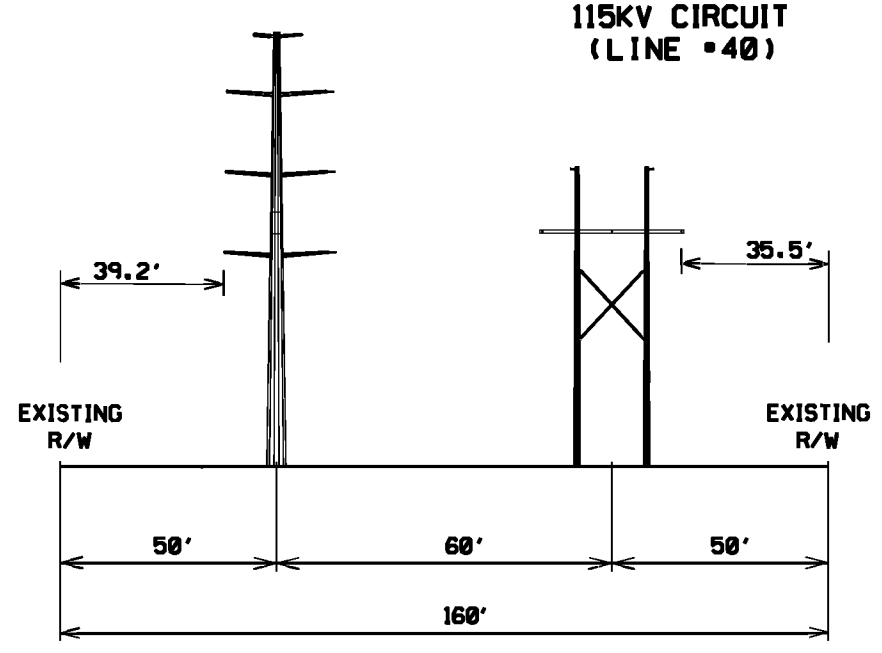
NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

PROPOSED STR 235/320-317

EXISTING 115KV CIRCUIT (LINE #171)

EXISTING 115KV CIRCUIT (LINE #1009)

EXISTING 115KV CIRCUIT (LINE #40)



EXISTING CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

$DGNSPEC$

PROPOSED STR 235/320-317

PRELIMINARY

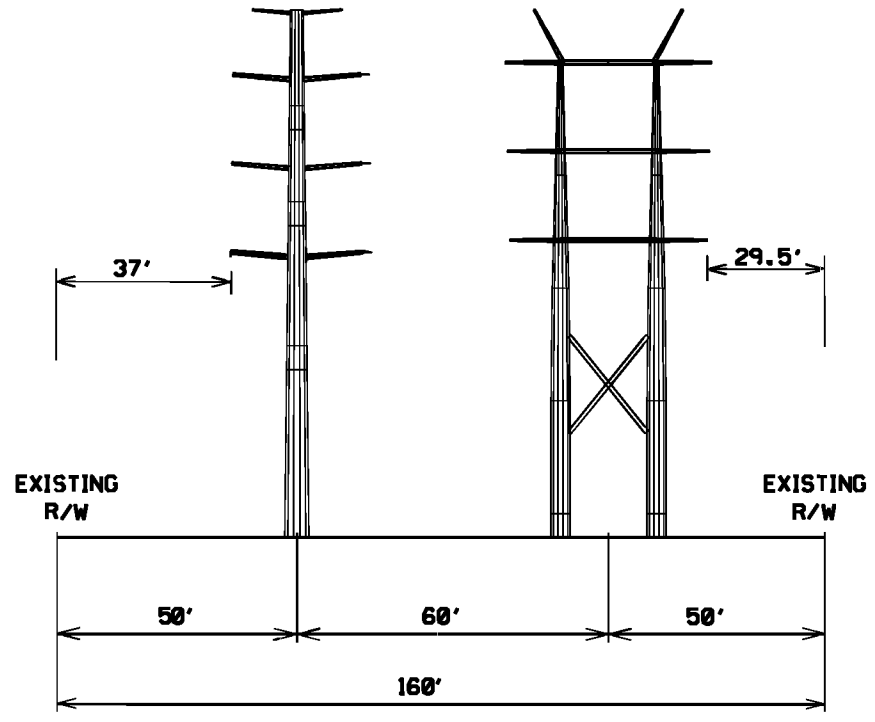
PROPOSED 230KV CIRCUIT (LINE #2226)

PROPOSED 230KV CIRCUIT (LINE #235)

EXISTING 115KV CIRCUIT (LINE #171)

EXISTING 115KV CIRCUIT (LINE #40)

EXISTING 115KV CIRCUIT (LINE #1009)



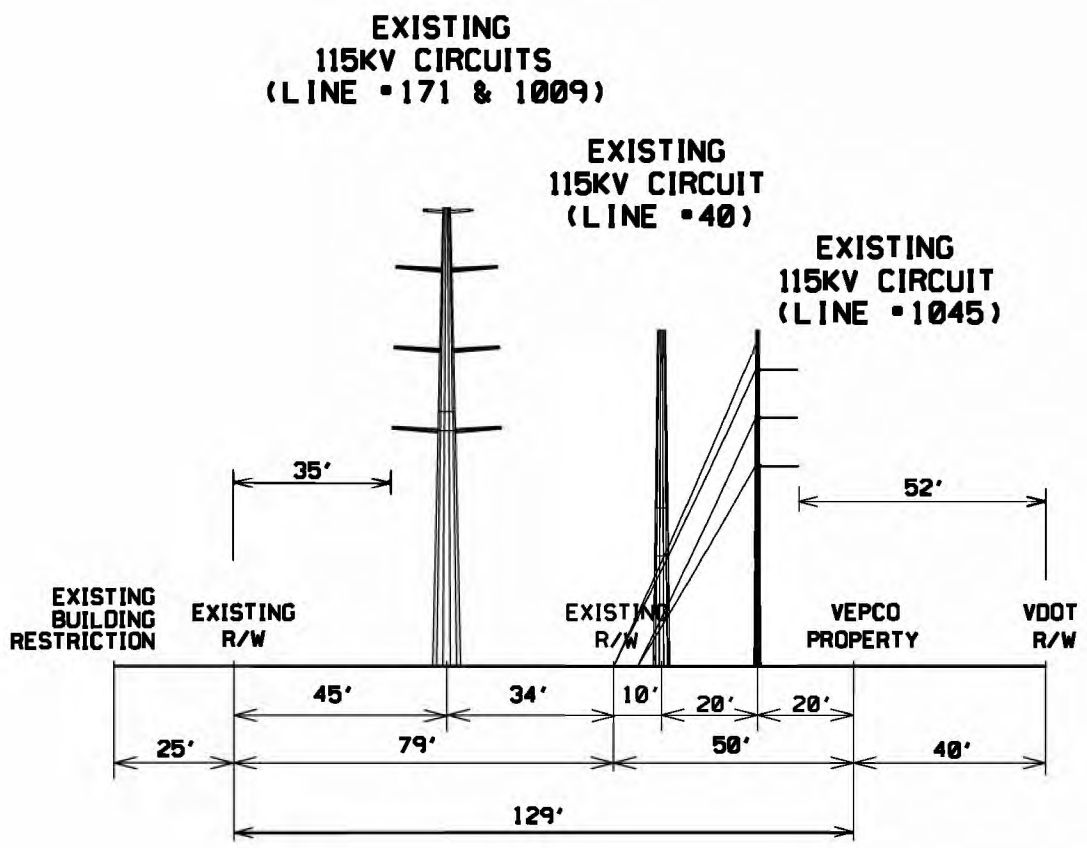
PROPOSED CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

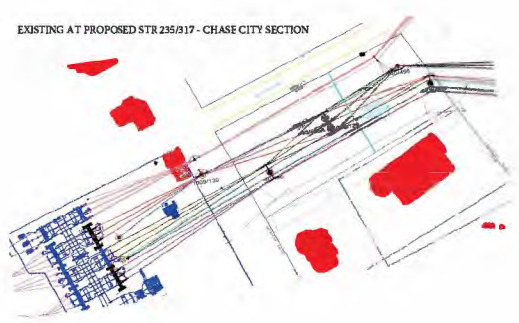
$DGNSPEC$

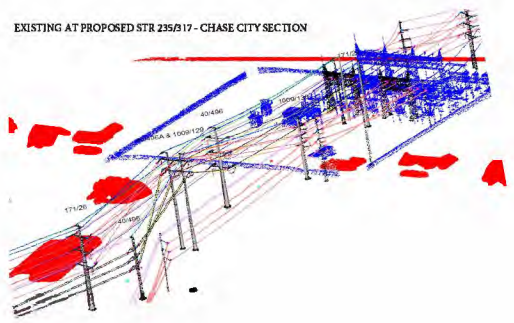
PROPOSED STR 235/317-CHASE CITY



EXISTING CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

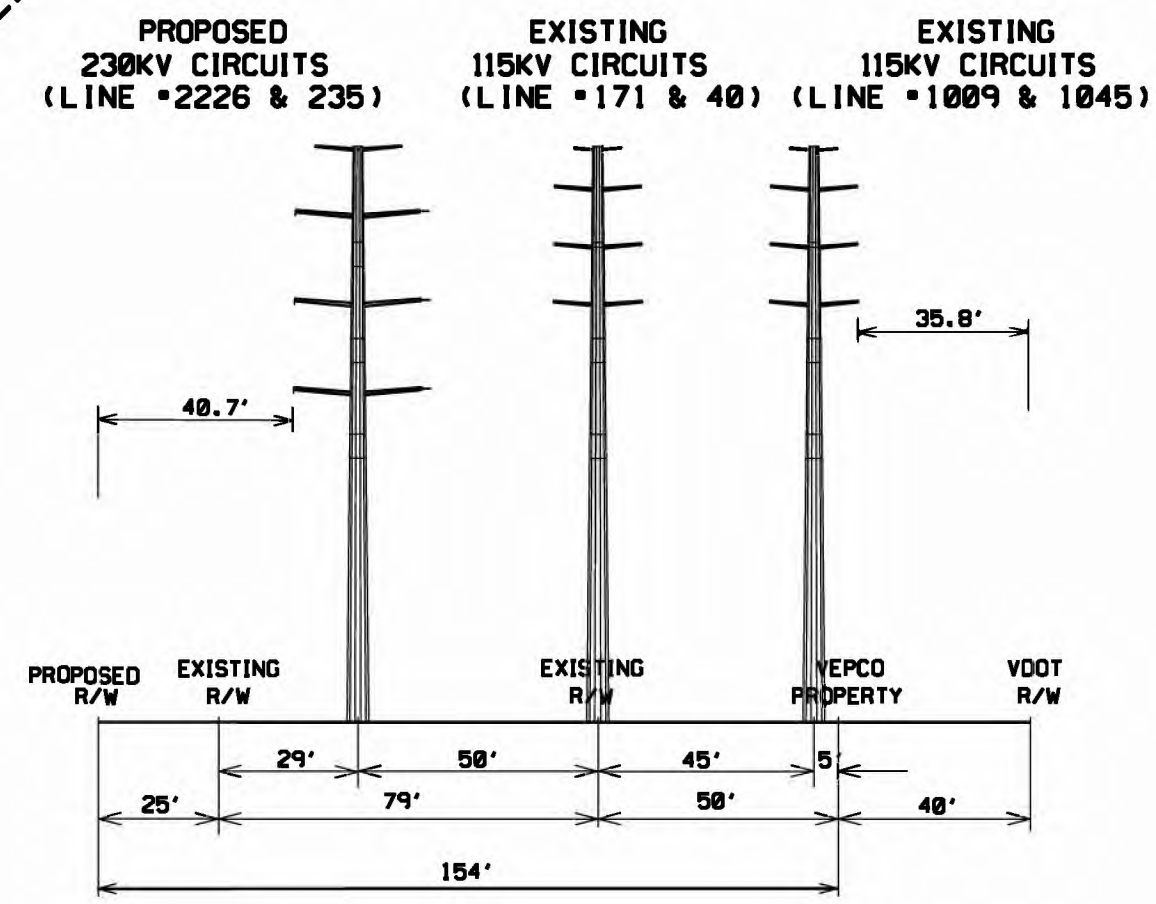




\$DGNSPEC\$

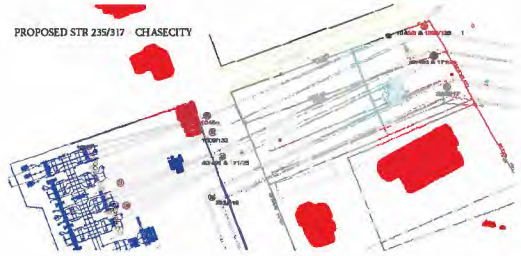
PRELIMINARY

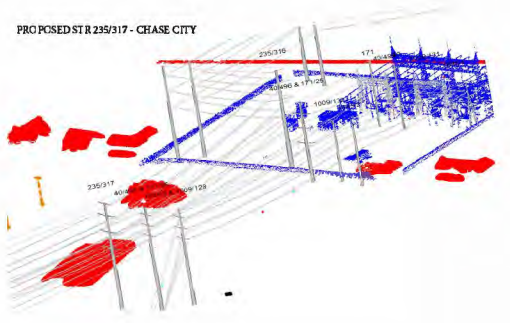
PROPOSED STR 235/317-CHASE CITY



PROPOSED CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

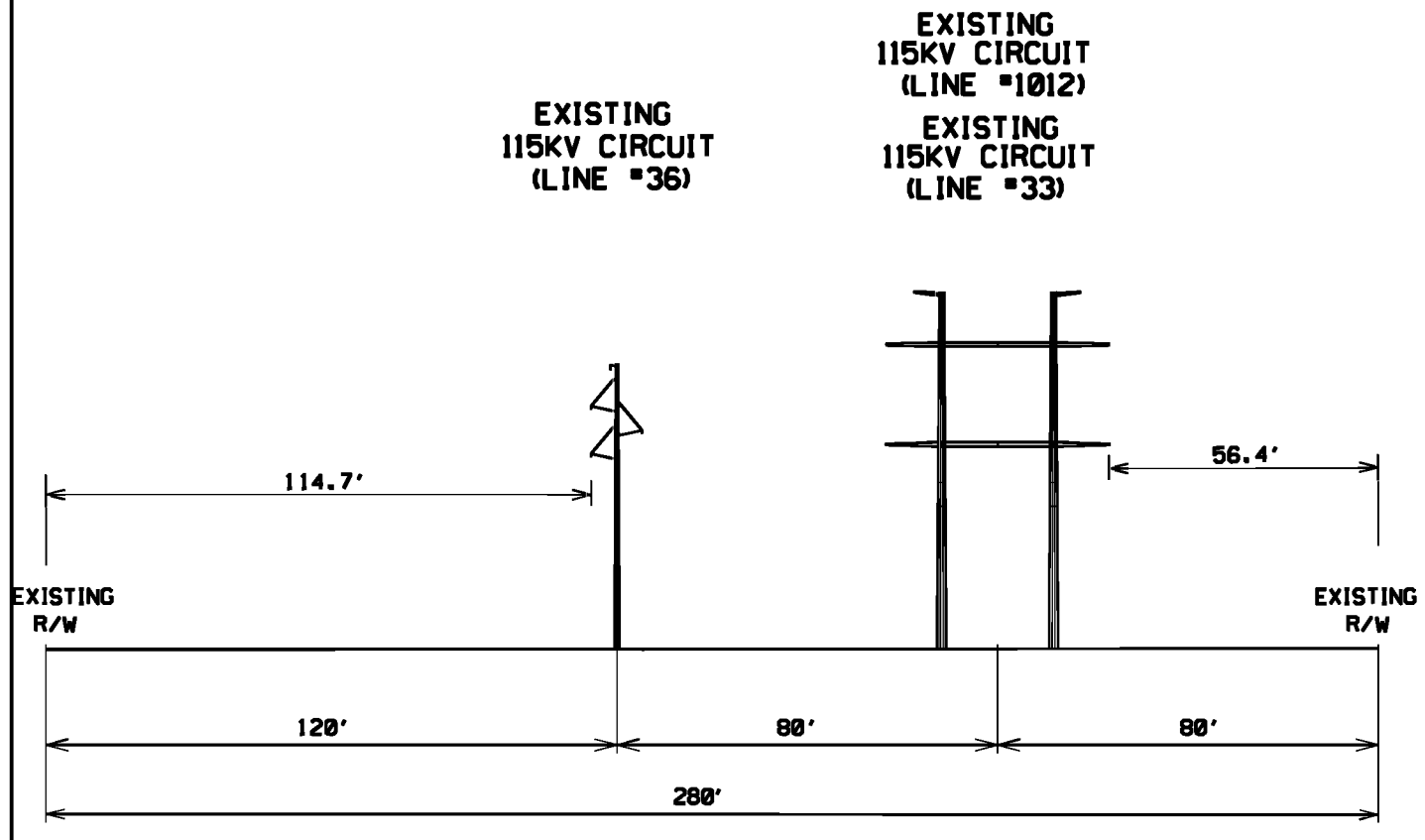




NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

\$DGNSPEC\$

CHASE CITY - PROPOSED STR 235/312



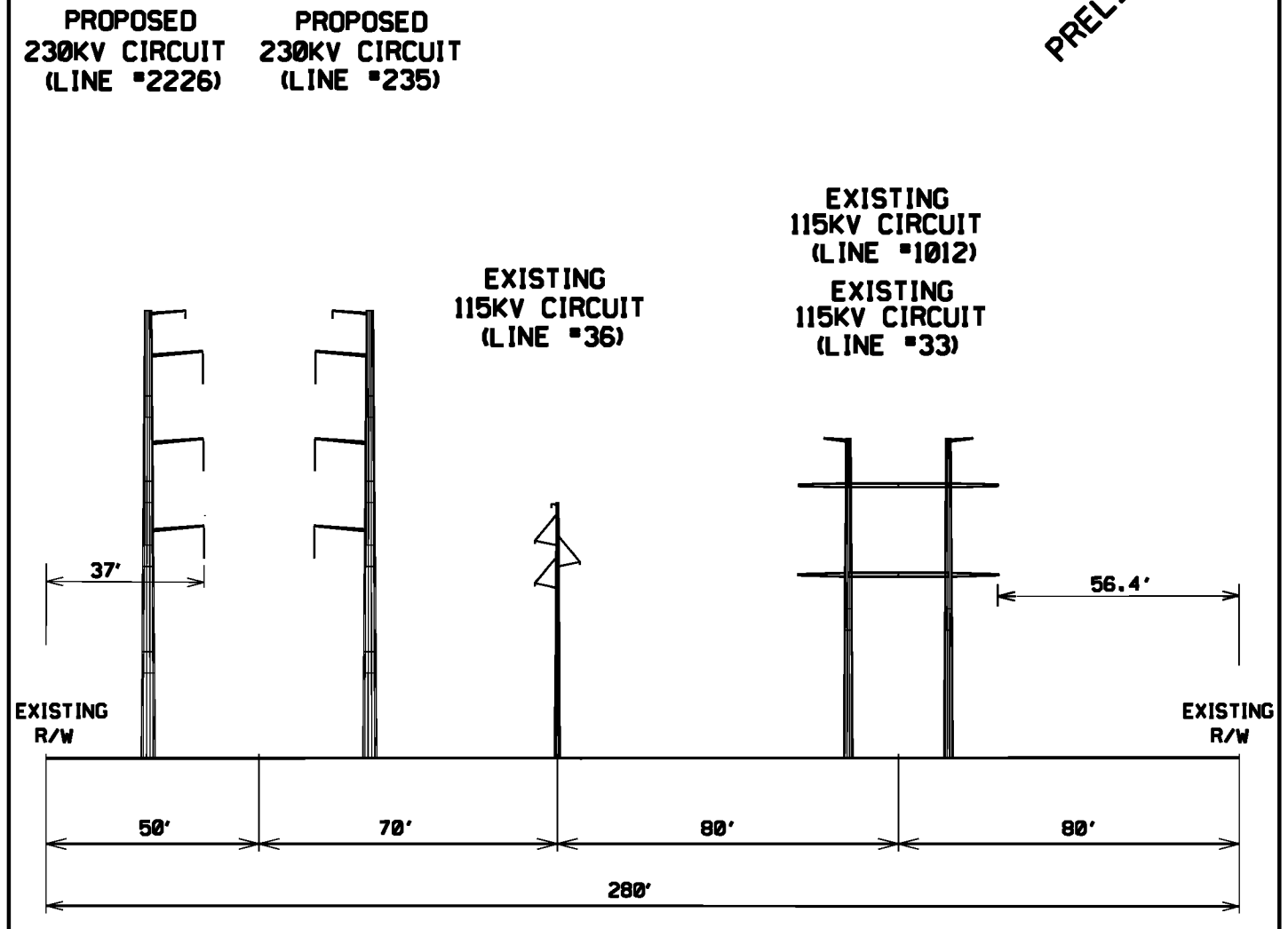
EXISTING CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

$DGNSPEC$

CHASE CITY - PROPOSED STR 235/312

PRELIMINARY



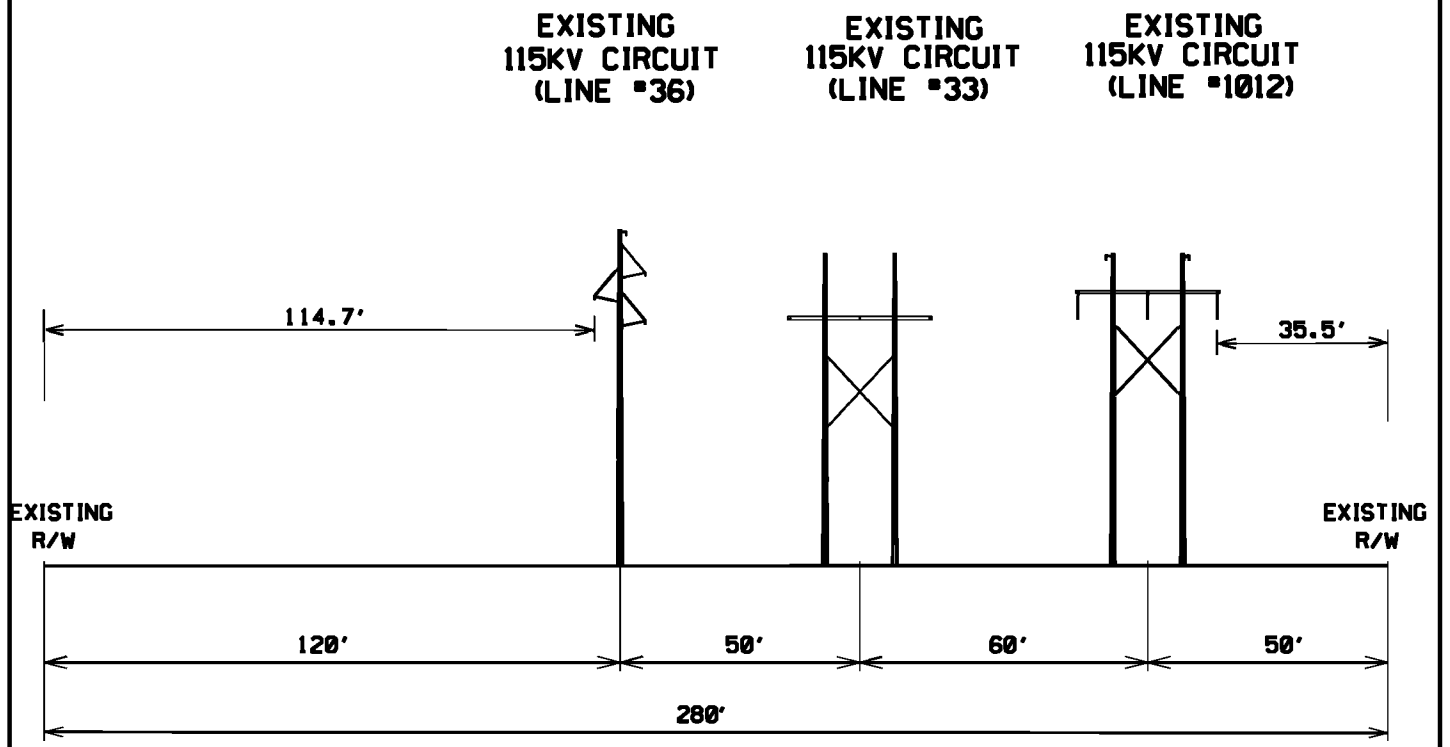
PROPOSED CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/312 - 310



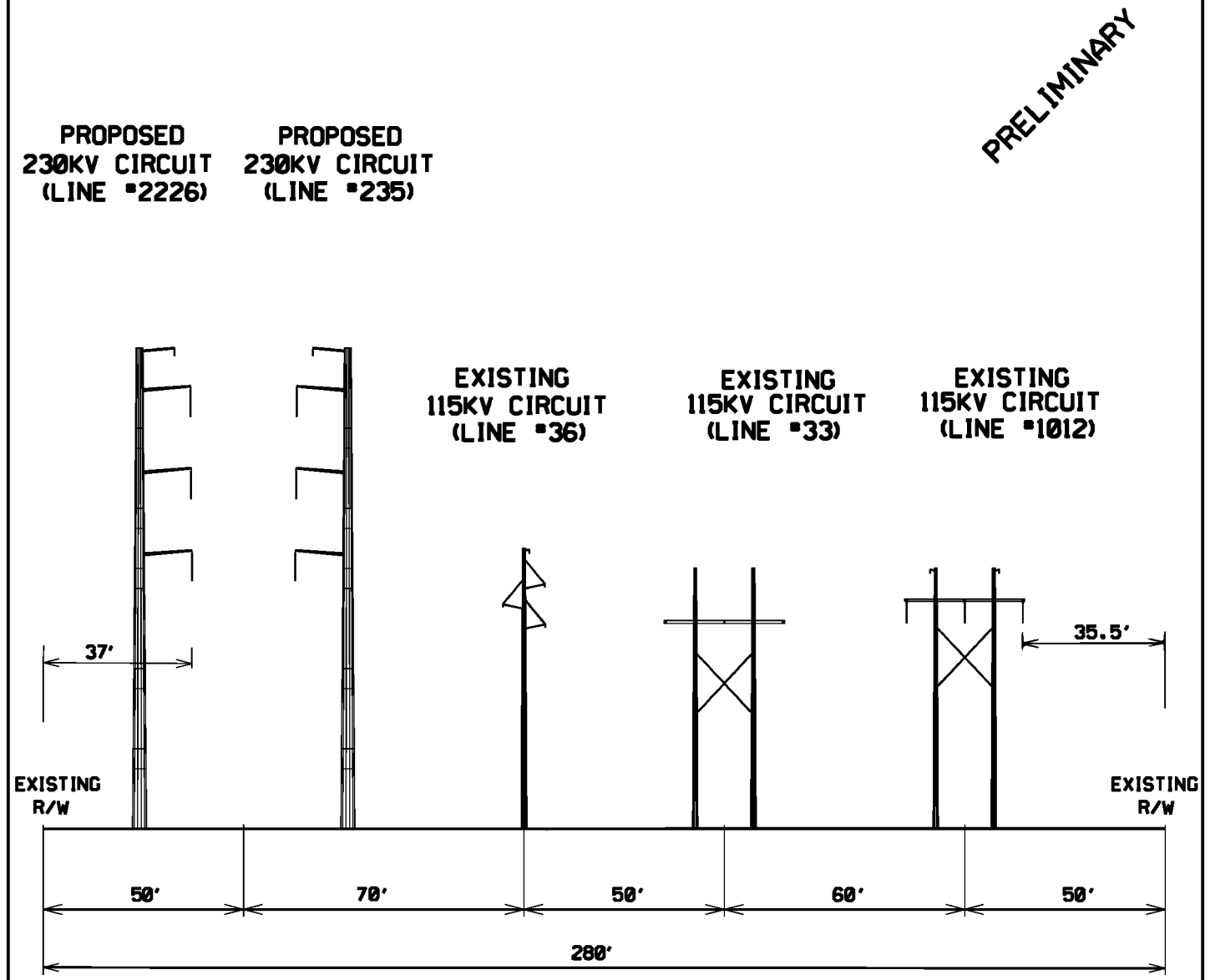
EXISTING CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

$DGNSPEC$

PROPOSED STR 235/312 - 310

PRELIMINARY



PROPOSED CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD STR #235/310

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

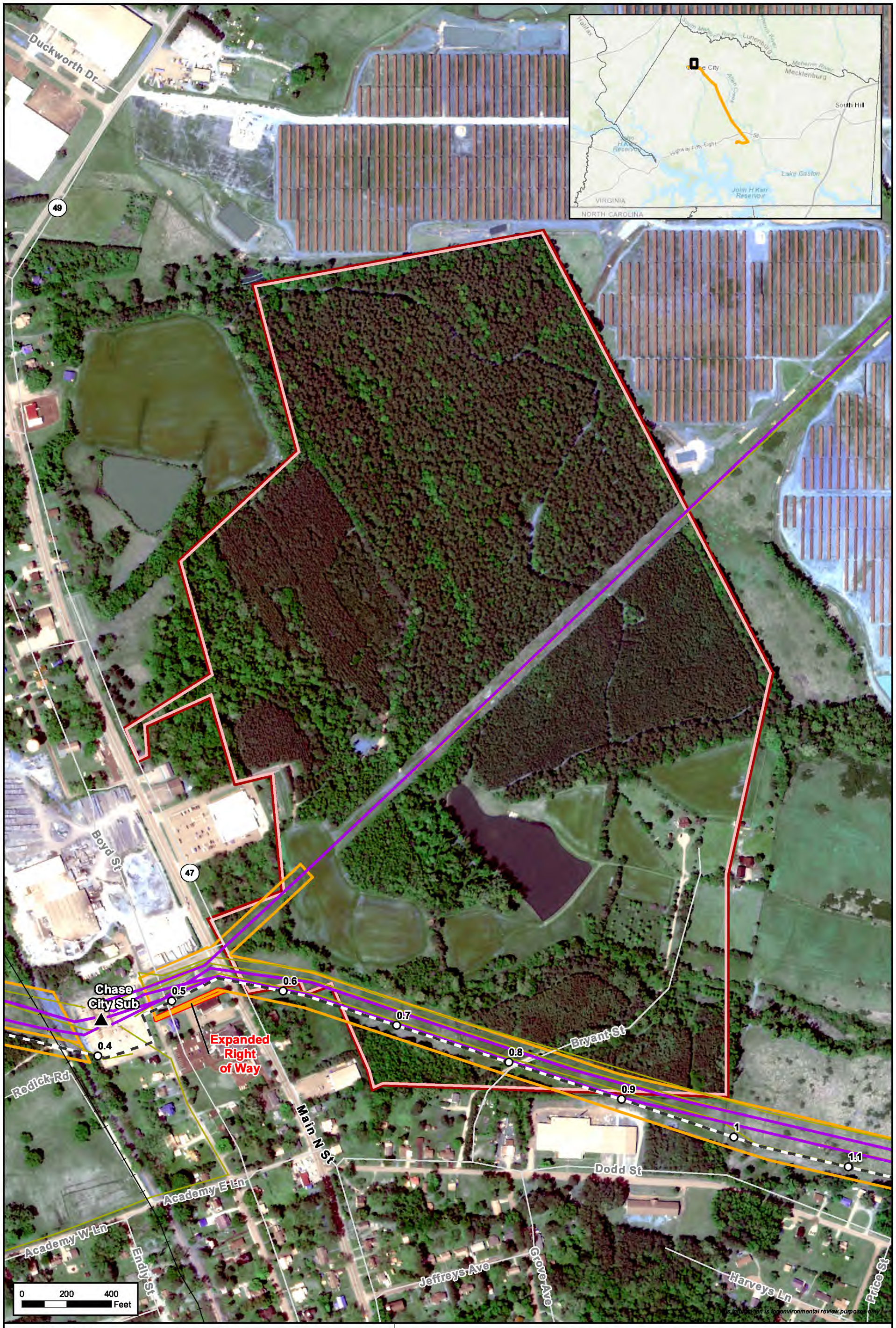
II. DESCRIPTION OF THE PROPOSED PROJECT

A. Right-of-way ("ROW")

6. Detail what portions of the ROW are subject to existing easements and over what portions new easements will be needed.

Response: A majority of the right-of-way is subject to Dominion Energy Virginia's existing easements.

The only portions of the Projects requiring new easements are the three areas where expanded rights-of-way are required, as described in section II.A.4. In addition, the proposed route crosses one conservation easement owned by the Blue Ridge Land Conservancy—east of the Chase City Substation between North Main Street and Bryant Street within the Company's existing right-of-way. This easement was established in 2018. Please see Attachment II.A.6 for a map showing the conservation easement.


Duckworth Dr
49
Halifax
Lunenburg
Meherrin River
Mecklenburg
South Hill
Lake Gaston
John H Kerr Reservoir
VIRGINIA
NORTH CAROLINA
Boyd St
47
Chase City Sub
0.4
0.5
0.6
0.7
0.8
0.9
1
1.1
Expanded Right of Way
Redick Rd
Main N St
Bryant St
Dodd St
Academy E Ln
Academy W Ln
Endly St
Jeffreys Ave
Grove Ave
Harveys Ln
Price St
0 200 400 Feet
This information is for environmental review purposes only.
Milepost
Proposed Centerline
Project Limits
Existing Dominion Transmission Line
Other Electric Line
Substation
Expanded Right of Way
Railroad
Blue Ridge Land Conservancy Conservation Easement
N
ERM
Attachment II.A.6
Existing Easements - Blue Ridge Land Conservancy
Line #235 Extension to
Cloud 230 kV and Related Projects
Mecklenburg County, Virginia
Dominion Energy
MPLS M:\Clients\D-F\DOM\Cloud\ArcGIS\2021\06\SCC_DOM_CLD_Att_II_A_6_Easements_v5.mxd | REVISED: 06/08/2021 | SCALE: 1:4,800 when printed at 11x17
DRAWN BY: 0239

II. DESCRIPTION OF THE PROPOSED PROJECT

A. Right-of-way ("ROW")

7. Detail the proposed ROW clearing methods to be used and the ROW restoration and maintenance practices planned for the proposed project.

Response: A majority of the width of the existing transmission line right-of-way is currently maintained for operation of the existing transmission facilities. New clearing will be required over an approximately 0.4 mile portion of existing but uncleared right-of-way west of Chase City Substation, and at the three locations (described in Section II.A.4) where expansion of the existing right-of-way is required, totaling approximately 1.1 miles of clearing.

Trimming of tree limbs along the edge of the right-of-way may be conducted to support construction activities for the Projects. For any such minimal clearing within the right-of-way, trees will be cut to no more than three inches above ground level. Trees located outside of the right-of-way that are tall enough to potentially impact the transmission facilities, commonly referred to as "danger trees," may also need to be cut. Danger trees will be cut to be no more than three inches above ground level, limbed, and will remain where the trees fall. Debris that is adjacent to homes will be disposed of by chipping or removal. In other areas, debris may be mulched or chipped as practicable. Danger tree removal will be accomplished by hand in wetland areas and within 100 feet of streams, if applicable. Care will be taken not to leave debris in streams or wetland areas. Matting will be used for heavy equipment in these areas.

Erosion control devices will be used on an ongoing basis during all clearing and construction activities accompanied by weekly Virginia Stormwater Management Program inspections.

Erosion control will be maintained and temporary stabilization for all soil disturbing activities will be used until the right-of-way has been restored. Upon completion of the Projects, the Company will restore the right-of-way utilizing site rehabilitation procedures outlined in the Company's *Standards & Specifications for Erosion & Sediment Control and Stormwater Management for Construction and Maintenance of Linear Electric Transmission Facilities* that was approved by the Virginia Department of Environmental Quality ("DEQ"). Time of year and weather conditions may affect when permanent stabilization takes place.

This right-of-way will continue to be maintained on a regular cycle to prevent interruptions to electric service and provide ready access to the right-of-way in order to patrol and make emergency repairs. Periodic maintenance to control woody growth will consist of hand cutting, machine mowing and herbicide application.

II. DESCRIPTION OF THE PROPOSED PROJECT

A. Right-of-way ("ROW")

8. Indicate the permitted uses of the proposed ROW by the easement landowner and the Applicant.

Response: Any non-transmission use will be permitted that:

- Is in accordance with the terms of the easement agreement for the right-of-way;
- Is consistent with the safe maintenance and operation of the transmission lines;
- Will not restrict future line design flexibility; and
- Will not permanently interfere with future construction.

Subject to the terms of the easement, examples of typical permitted uses include, but are not limited to:

- Agriculture,
- Hiking Trails,
- Fences,
- Perpendicular Road Crossings,
- Perpendicular Utility Crossings,
- Residential Driveways, and
- Wildlife / Pollinator Habitat.

II. DESCRIPTION OF THE PROPOSED PROJECT

A. Right-of-way ("ROW")

9. Describe the Applicant's route selection procedures. Detail the feasible alternative routes considered. For each such route, provide the estimated cost and identify and describe the cost classification (e.g. "conceptual cost," "detailed cost," etc.). Describe the Applicant's efforts in considering these feasible alternatives. Detail why the proposed route was selected and other feasible alternatives were rejected. In the event that the proposed route crosses, or one of the feasible routes was rejected in part due to the need to cross, land managed by federal, state, or local agencies or conservation easements or open space easements qualifying under §§ 10.1-1009 – 1016 or §§ 10.1-1700 – 1705 of the Code (or a comparable prior or subsequent provision of the Code), describe the Applicant's efforts to secure the necessary ROW.

Response: The Company's route selection for transmission line projects begins with a review of the existing rights-of-way. This approach generally minimizes impacts on the natural and human environments. This approach is also consistent with Attachment 1 to these Guidelines, which states that existing rights-of-way should be given priority when adding new transmission facilities, and §§ 56-46.1 and 56-259 of the Code of Virginia, which promote the use of existing rights-of-way for new transmission facilities. With the exception of three minor areas, for the proposed Projects, the existing right-of-way and the Company-owned property that currently contains Line Numbers 33, 36, 38, 40, 137, 171, 1009, 1012, 1041, 1042, and 1045 are adequate for a majority of the Projects' length.

Because the existing right-of-way and Company-owned property is generally adequate to construct the proposed Projects, only three areas of expanded rights-of-way (described above in Section II.A.4) are necessary to accommodate the Projects. Given the availability of existing right-of-way and the statutory preference given to the use of existing rights-of-way, and because additional costs and environmental impacts would be associated with the acquisition of and construction on new right-of-way, the Company did not consider any alternate routes requiring extensive amounts of new right-of-way for these Projects.

II. DESCRIPTION OF THE PROPOSED PROJECT

A. Right-of-way ("ROW")

10. Describe the Applicant's construction plans for the project, including how the Applicant will minimize service disruption to the affected load area. Include requested and approved line outage schedules for affected lines as appropriate.

Response: To minimize service disruption to the affected load area during construction of the Projects, the Company plans to take segments of the impacted lines for the Projects out of service in several separate sequentially planned outages, thereby maintaining electrical service and limiting disruption to the affected load area. Assuming a final order from the Commission by July 1, 2022, construction of the new Projects will commence around April 1, 2023.

The Company plans to construct the new 230 kV transmission lines in a manner that minimizes outage time on transmission Line #235, as well as existing 115 kV facilities sharing the right-of-way. Assuming construction commences around April 1, 2023, the cut-in of the new 230 kV lines going to the Cloud 230 kV Switching Station should start around spring 2024. The cut-in process will require a PJM outage eDart ticket for Line #235. The line cut-in should only require a 30-day outage.

In addition, multiple 115 kV line outages will be required throughout the duration of the Projects to rearrange existing Lines #40, #171, #1045, and #1009. The timing and duration of these outages have not yet been determined.

II. DESCRIPTION OF THE PROPOSED PROJECT

A. Right-of-way ("ROW")

11. Indicate how the construction of this transmission line follows the provisions discussed in Attachment 1 of these Guidelines.

Response: As noted in Section II.A.9, Attachment 1 to these Guidelines contains a tool routinely used by the Company in routing its transmission line projects.

The Company utilized Guideline #1 (existing rights-of-way should be given priority when adding additional facilities) by siting the majority of the proposed Projects within the existing transmission corridor, as discussed in Section II.A.9.

By utilizing the existing transmission corridor, the proposed Projects will minimize impact to any site listed on the National Register of Historic Places ("NRHP"). Thus, it is consistent with Guideline #2 (where practical, rights of-way should avoid sites listed on the NRHP). A Stage I Pre-Application Analysis prepared by Dutton Associates ("Dutton") on behalf of the Company, which is included with the DEQ Supplement as Attachment 2.H.1, has been submitted to the Virginia Department of Historic Resources ("VDHR"). See also Section III.A.

The Company has communicated with local, state, and federal agencies prior to filing this Application consistent with Guideline #4 (where government land is involved the applicant should contact the agencies early in the planning process). See Section III.B, III.J, and the DEQ Supplement.

The Company follows recommended construction methods in the Guidelines on a site-specific basis for typical construction projects (Guidelines #8, #10, #11, #15, #16, #18, and #22).

The Company also utilizes recommended guidelines in clearing right-of-way, constructing facilities, and maintaining rights-of-way after construction. Moreover, secondary uses of right-of-way that are consistent with the safe maintenance and operation of facilities are permitted.

II. DESCRIPTION OF THE PROPOSED PROJECT

A. Right-of-way ("ROW")

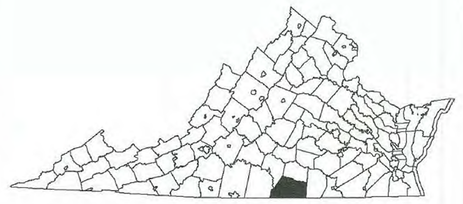
12. a. Detail counties and localities through which the line will pass. If any portion of the line will be located outside of the Applicant's certificated service area: (1) identify each electric utility affected; (2) state whether any affected electric utility objects to such construction; and (3) identify the length of line(s) proposed to be located in the service area of an electric utility other than the Applicant; and

b. Provide three (3) color copies of the Virginia Department of Transportation "General Highway Map" for each county and city through which the line will pass. On the maps show the proposed line and all previously approved and certificated facilities of the Applicant. Also, where the line will be located outside of the Applicant's certificated service area, show the boundaries between the Applicant and each affected electric utility. On each map where the proposed line would be outside of the Applicant's certificated service area, the map must include a signature of an appropriate representative of the affected electric utility indicating that the affected utility is not opposed to the proposed construction within its service area.

Response: a. The proposed Projects traverse Mecklenburg County for a total of 15.3 miles. The Projects are located within the Company's territory for 9 miles, and located within MEC's territory for 6.3 miles.

b. Three copies of the map of the Virginia Department of Transportation ("VDOT") "General Highway Map" for Mecklenburg County have been marked as required and filed with the Application. Reduced copies of the map are provided as Attachment II.A.12.b.

Mecklenburg County Road Map



This digital map depicts the Virginia Electric and Power Company ("Company") transmission facilities in this county as approved by the Virginia State Corporation Commission ("SCC"), and any proposed transmission facilities in this county, as of 5/18/2021. Other Company facilities previously authorized by the SCC may be depicted on prior SCC approved county maps.

VIRGINIA ELECTRIC AND POWER COMPANY PLANS TO BUILD TRANSMISSION LINES AND SUBSTATIONS AS SHOWN IN BLACK DASHES ON THIS MAP.

MECKLENBURG ELECTRIC COOPERATIVE IS NOT OPPOSED TO SUCH CONSTRUCTION IN ITS SERVICE TERRITORY.

SIGNATURE

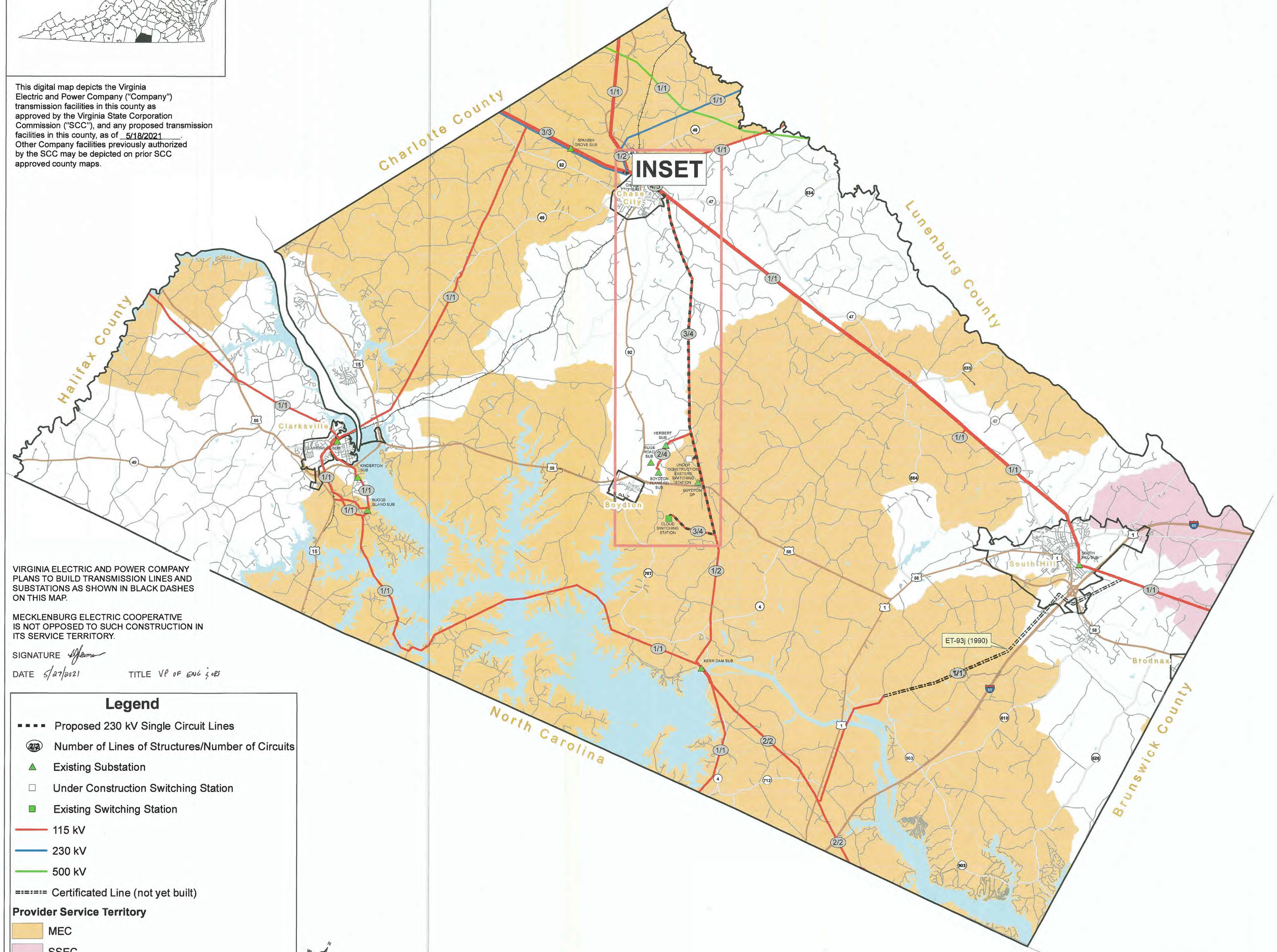
DATE 5/27/2021 TITLE VP OF ENG & OPS

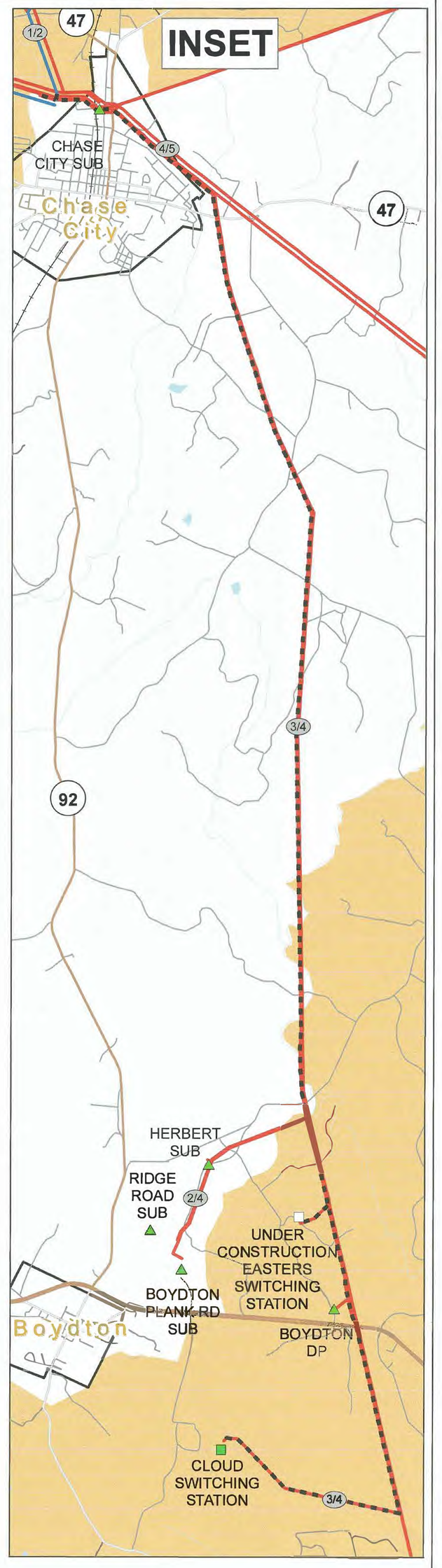
Legend

- Proposed 230 kV Single Circuit Lines
- 4/2 Number of Lines of Structures/Number of Circuits
- Existing Substation
- Under Construction Switching Station
- Existing Switching Station
- 115 kV
- 230 kV
- 500 kV
- Certificated Line (not yet built)

Provider Service Territory

- MEC
- SSEC
- VEPCO





2 1 0 2 4 6 Miles

*VDOT and other road data obtained from Navteq and County data, current as of July 2011.

Mecklenburg

II. DESCRIPTION OF THE PROPOSED PROJECT

B. Line Design and Operational Features

1. Detail the number of circuits and their design voltage, initial operational voltage, any anticipated voltage upgrade, and transfer capabilities.

Response: The proposed single circuit 230 kV Line #2226, located between Structure #235/310 and the Easters DP, will be designed and operated at 230 kV, with no anticipated voltage upgrade, and have a transfer capability of 1225 MVA.

The proposed single circuit 230 kV Line #2229, located between the Easters DP and the Cloud DP, will be designed and operated at 230 kV, with no anticipated voltage upgrade, and have a transfer capability of 1225 MVA.

The proposed single circuit 230 kV Line #235, located between Structure #235/310 and the Cloud DP, will be designed and operated at 230 kV, with no anticipated voltage upgrade, and have a transfer capability of 1225 MVA.

The proposed relocated single circuit 115 kV Line #40, located between proposed Structure #40/490–Chase City, will be designed and operated at 115 kV, with no anticipated voltage upgrade, and have a transfer capability of 347 MVA.

The proposed relocated single circuit 115 kV Line #171, located between proposed Structure #171/29B–Chase City, will be designed and operated at 115 kV, with no anticipated voltage upgrade, and have a transfer capability of 393 MVA.

The proposed relocated single circuit 115 kV Line #1009, located between proposed Structure #1009/124A–Chase City, will be designed and operated at 115 kV, with no anticipated voltage upgrade, and have a transfer capability of 393 MVA.

II. DESCRIPTION OF THE PROPOSED PROJECT

B. Line Design and Operational Features

2. Detail the number, size(s), type(s), coating and typical configurations of conductors. Provide the rationale for the type(s) of conductor(s) to be used.

Response: The single circuit 230 kV Line #2226, located between Structure #235/310 and the Easters DP, will have 3-phase twin-bundled 795 ACSR (26/7) conductors arranged as shown in Attachments II.B.3.ix-xix, xxiii, xxiv, xxvi, & xxviii-xxxi with one fiber optic shield wire. The twin-bundled 795 ACSR (26/7) conductors are the Company's standard conductors for new 230 kV construction.

The single circuit 230 kV Line #2229, located between the Easters DP and the Cloud DP, will have 3-phase twin-bundled 795 ACSR (26/7) conductors arranged as shown in Attachments II.B.3.i-viii with one fiber optic shield wire. The twin-bundled 795 ACSR (26/7) conductors are the Company's standard conductors for new 230 kV construction.

The single circuit 230 kV Line #235, located between Structure #235/310 and the Cloud DP, will have 3-phase twin-bundled 795 ACSR (26/7) conductors arranged as shown in Attachments II.B.3.i-viii, ix-xix, xxiii, xxiv, xxvi, & xxviii-xxxi with one fiber optic shield wire. The twin-bundled 795 ACSR (26/7) conductors are the Company's standard conductors for new 230 kV construction.

The relocated single circuit 115 kV Line #40, located between proposed Structure #40/490-Chase City, will have 3-phase twin-bundled 336.4 ACSR (26/7) conductors arranged as shown in Attachments II.B.3.xx, xxii, xxv, & xxvii with two 3#6 alumoweld shield wires between proposed Structure #40/490-490A and one 3#6 alumoweld shield wire between proposed structure number 40/490A-491 and #40/494-Chase City. The twin-bundled 336.4 ACSR (26/7) conductors are replacing the existing twin-bundled 336.4 ACSR (26/7) conductors.

The relocated single circuit 115 kV Line #171, located between proposed Structure #171/29B-Chase City, will have 3-phase 768.2 ACSS/TW conductors arranged as shown in Attachments II.B.3.xxi, xxii, xxv, & xxvii with one fiber optic shield wire. The 768.2 ACSS/TW conductors are replacing the existing 768.2 ACSS/TW conductors.

The relocated single circuit 115 kV Line #1009, located between proposed Structure #1009/124A–Chase City, will have 3-phase 768.2 ACSS/TW conductors arranged as shown in Attachments II.B.3.xxi, xxii, & xxv with one fiber optic shield wire. The 768.2 ACSS/TW conductors are replacing the existing 768.2 ACSS/TW conductors.

II. DESCRIPTION OF THE PROPOSED PROJECT

B. Line Design and Operational Features

3. With regard to the proposed supporting structures over each portion of the ROW for the preferred route, provide diagrams (including foundation reveal) and descriptions of all the structure types, to include:

a. mapping that identifies each portion of the preferred route;

b. the rationale for the selection of the structure type;

c. the number of each type of structure and the length of each portion of the ROW;

d. the structure material and rationale for the selection of such material;

e. the foundation material;

f. the average width at cross arms;

g. the average width at the base;

h. the maximum, minimum and average structure heights;

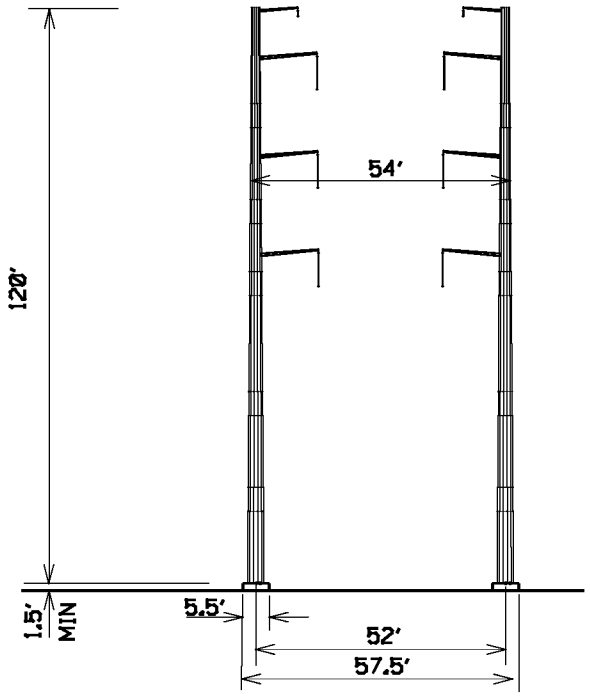
i. the average span length; and

j. the minimum conductor-to-ground clearances under maximum operating conditions.

Response: See Attachments II.B.3.i-xxxi.

CLOUD - PROPOSED STR 235/402
DOUBLE CIRCUIT SUSPENSION 2-POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: REQUIRED BY PLANNING

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
9 AND 1.8 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 54 FEET

g. AVERAGE WIDTH AT BASE: 57.5 FEET

h. MAX, MIN, AND AVERAGE STRUCTURE HEIGHTS: 130 FEET, 105 FEET, AND 119 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

i. AVERAGE SPAN LENGTH: 717 FEET (RANGE 203 - 960 FEET)

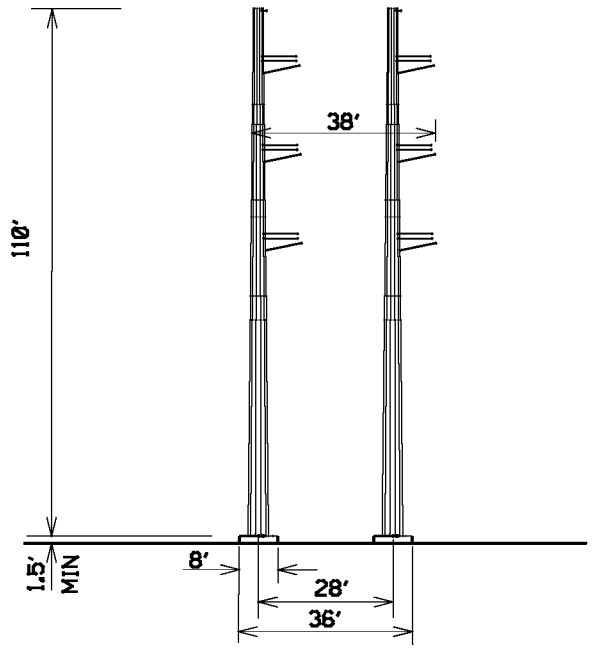
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

CLOUD - PROPOSED STR 235/402
DOUBLE CIRCUIT DOUBLE DEADEND 2-POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: REQUIRED BY PLANNING

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
4 AND 1.8 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 38 FEET

g. AVERAGE WIDTH AT BASE: 36 FEET

h. MAX, MIN, AND AVERAGE STRUCTURE HEIGHTS: 110 FEET, 100 FEET, AND 108 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

i. AVERAGE SPAN LENGTH: 717 FEET (RANGE 203 - 960 FEET)

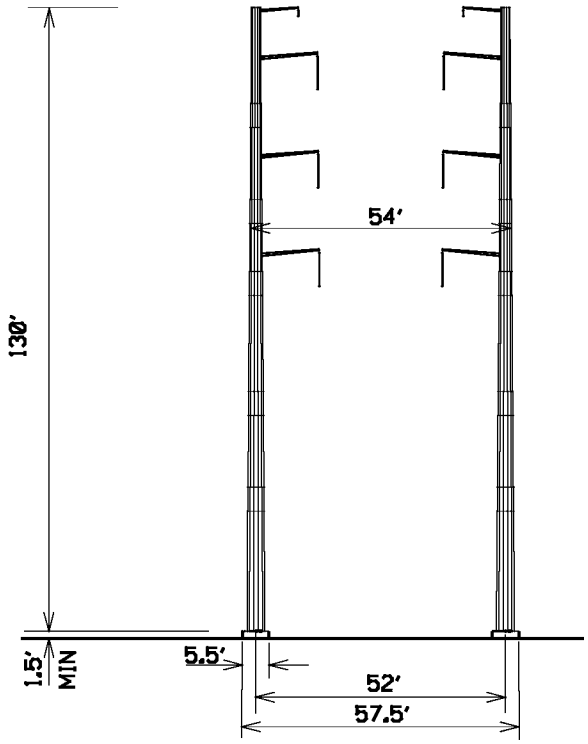
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/402-393
DOUBLE CIRCUIT SUSPENSION 2-POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: REQUIRED BY PLANNING

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
2 AND 1.7 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 54 FEET

g. AVERAGE WIDTH AT BASE: 57.5 FEET

h. MAX, MIN, AND AVERAGE STRUCTURE HEIGHTS: 140 FEET, 120 FEET, AND 130 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

i. AVERAGE SPAN LENGTH: 1000 FEET (RANGE 561 - 1126 FEET)

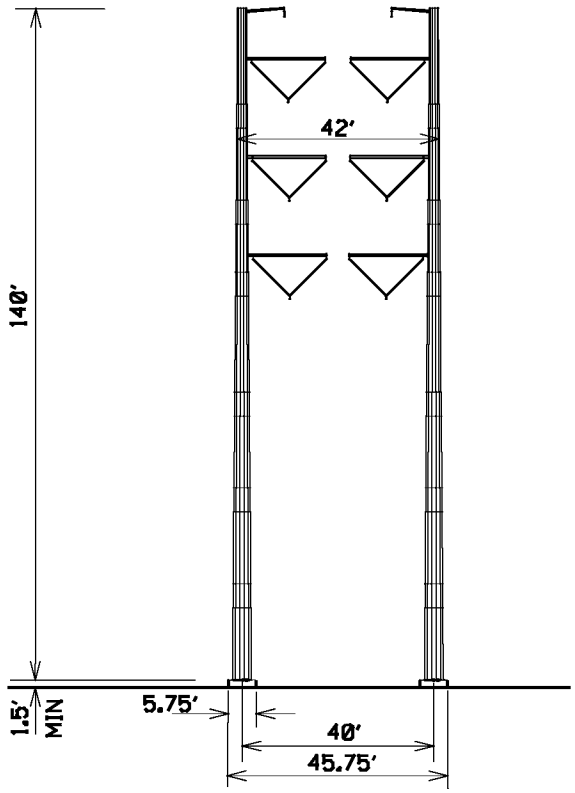
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/402-393
DOUBLE CIRCUIT SUSPENSION (V) 2-POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: REQUIRED BY PLANNING

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
6 AND 1.7 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 42 FEET

g. AVERAGE WIDTH AT BASE: 45.75 FEET

h. MAX, MIN, AND AVERAGE STRUCTURE HEIGHTS: 145 FEET, 125 FEET, AND 138 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

i. AVERAGE SPAN LENGTH: 1000 FEET (RANGE 561 - 1126 FEET)

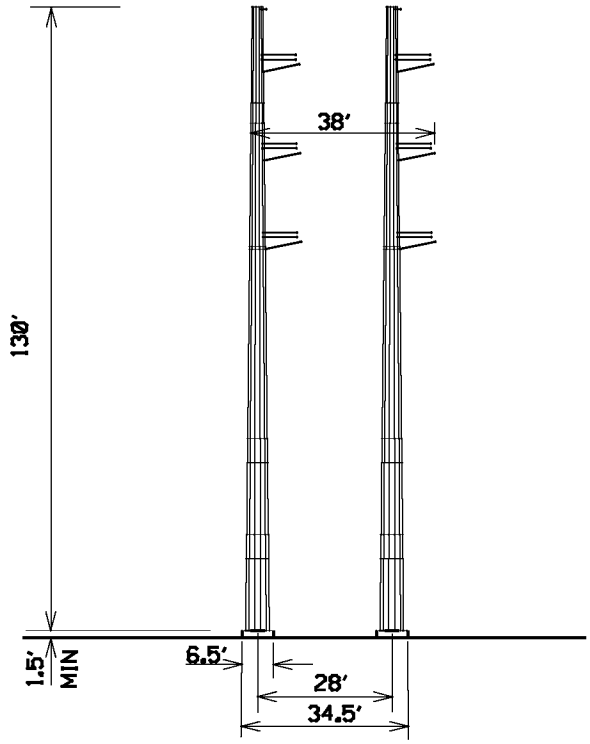
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/402-393
DOUBLE CIRCUIT DOUBLE DEADEND 2-POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: REQUIRED BY PLANNING

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
1 AND 1.7 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 38 FEET

g. AVERAGE WIDTH AT BASE: 34.5 FEET

h. MAX, MIN, AND AVERAGE STRUCTURE HEIGHTS: 130 FEET, 130 FEET, AND 130 FEET
MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

i. AVERAGE SPAN LENGTH: 1000 FEET (RANGE 561 - 1126 FEET)

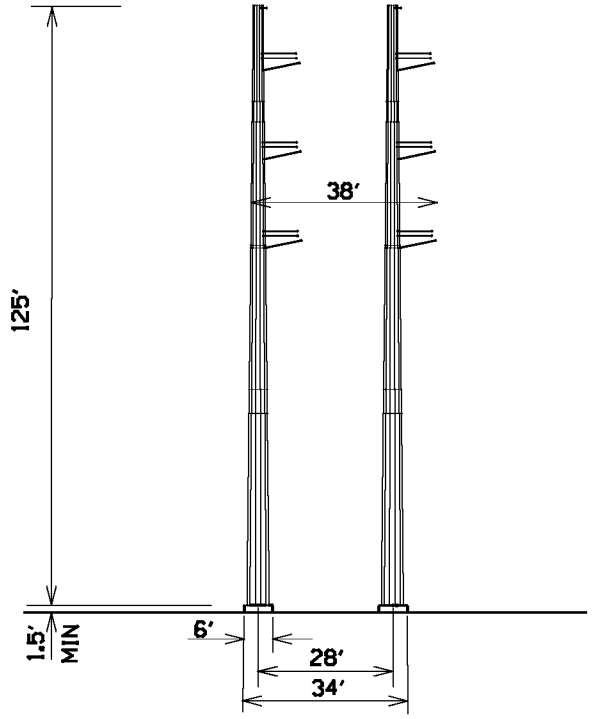
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/393-389
DOUBLE CIRCUIT DOUBLE DEADEND 2-POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: REQUIRED BY PLANNING

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
4 AND 0.4 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 38 FEET

g. AVERAGE WIDTH AT BASE: 34 FEET

h. MAX, MIN, AND AVERAGE STRUCTURE HEIGHTS: 135 FEET, 110 FEET, AND 124 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

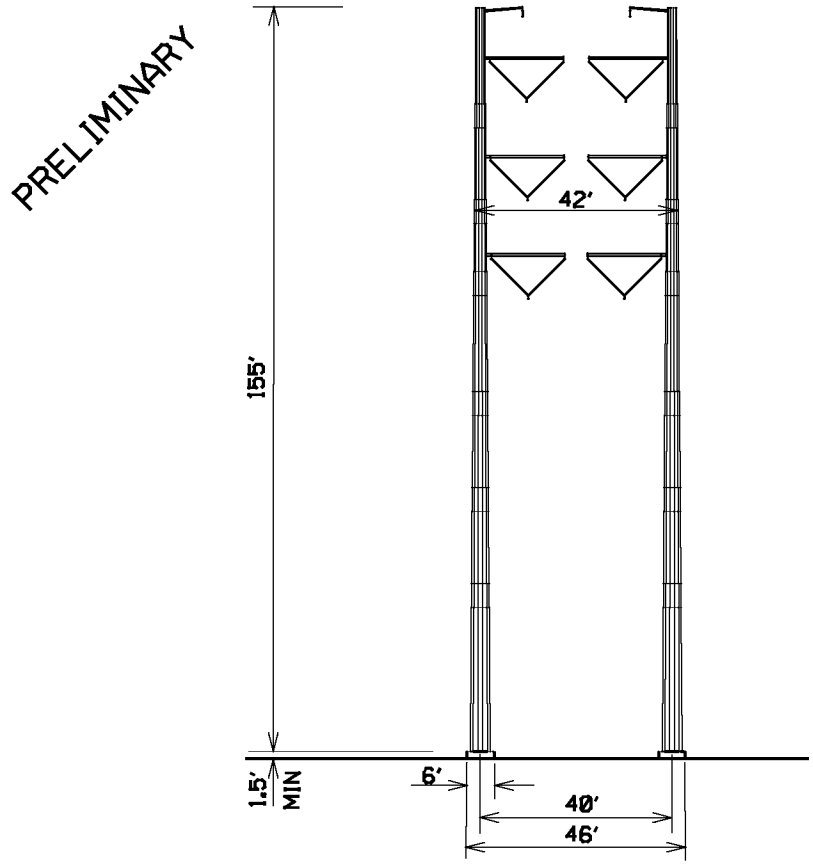
i. AVERAGE SPAN LENGTH: 537 FEET (RANGE 385 - 638 FEET)

j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/389-385
DOUBLE CIRCUIT SUSPENSION (V) 2-POLE



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: REQUIRED BY PLANNING

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
2 AND 0.6 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 42 FEET

g. AVERAGE WIDTH AT BASE: 46 FEET

h. MAX, MIN, AND AVERAGE STRUCTURE HEIGHTS: 155 FEET, 150 FEET, AND 153 FEET
MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

i. AVERAGE SPAN LENGTH: 1107 FEET (RANGE 1100 - 1116 FEET)

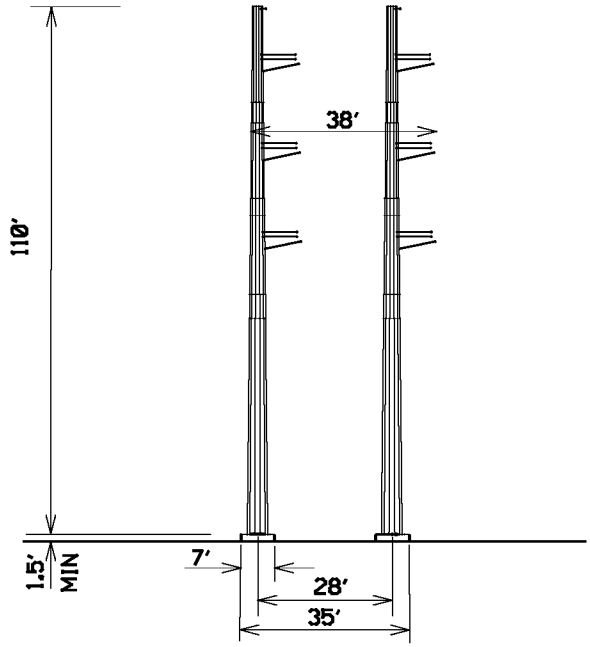
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/389-385
DOUBLE CIRCUIT DOUBLE DEADEND 2-POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: REQUIRED BY PLANNING

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
1 AND 0.6 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 38 FEET

g. AVERAGE WIDTH AT BASE: 35 FEET

h. MAX, MIN, AND AVERAGE STRUCTURE HEIGHTS: 110 FEET, 110 FEET, AND 110 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

i. AVERAGE SPAN LENGTH: 1107 FEET (RANGE 1100 - 1116 FEET)

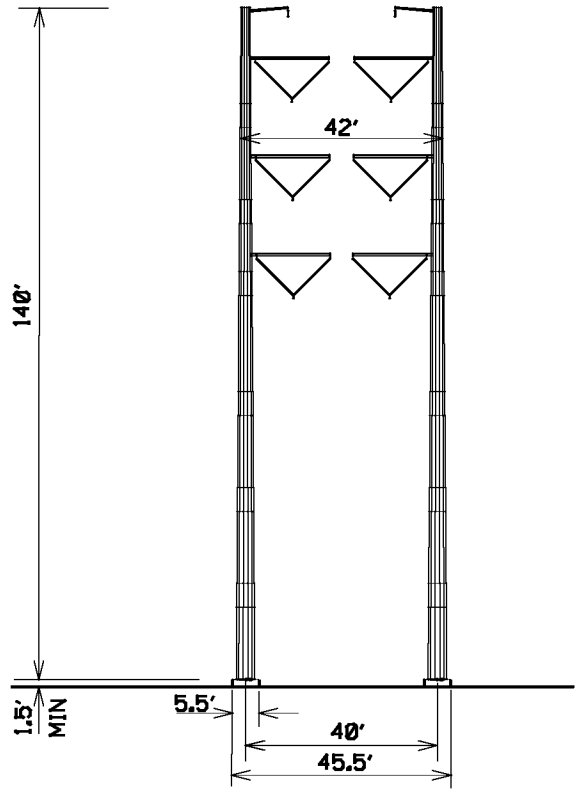
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/385-381
DOUBLE CIRCUIT SUSPENSION (V) 2-POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: REQUIRED BY PLANNING

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
2 AND 0.7 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 42 FEET

g. AVERAGE WIDTH AT BASE: 45.5 FEET

h. MAX, MIN, AND AVERAGE STRUCTURE HEIGHTS: 145 FEET, 135 FEET, AND 140 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

i. AVERAGE SPAN LENGTH: 702 FEET (RANGE 187 - 1099 FEET)

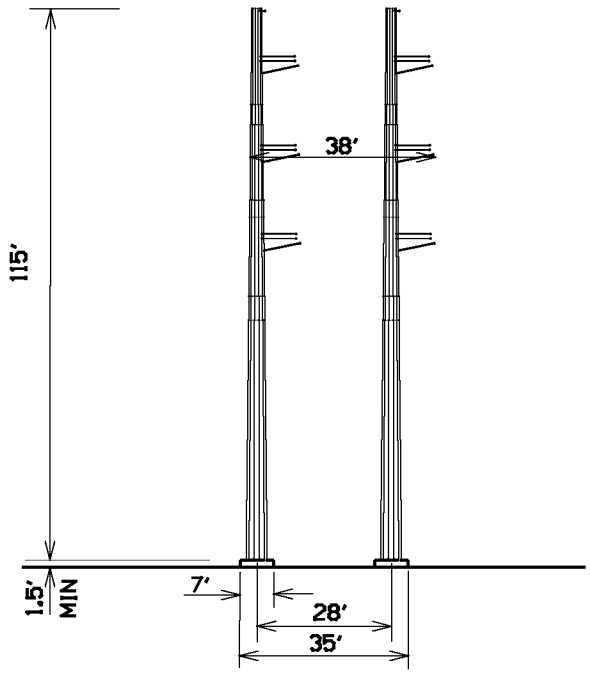
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/385-381
DOUBLE CIRCUIT DOUBLE DEADEND 2-POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: REQUIRED BY PLANNING

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
3 AND 0.7 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 38 FEET

g. AVERAGE WIDTH AT BASE: 35 FEET

h. MAX, MIN, AND AVERAGE STRUCTURE HEIGHTS: 120 FEET, 110 FEET, AND 113 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

i. AVERAGE SPAN LENGTH: 702 FEET (RANGE 187 - 1099 FEET)

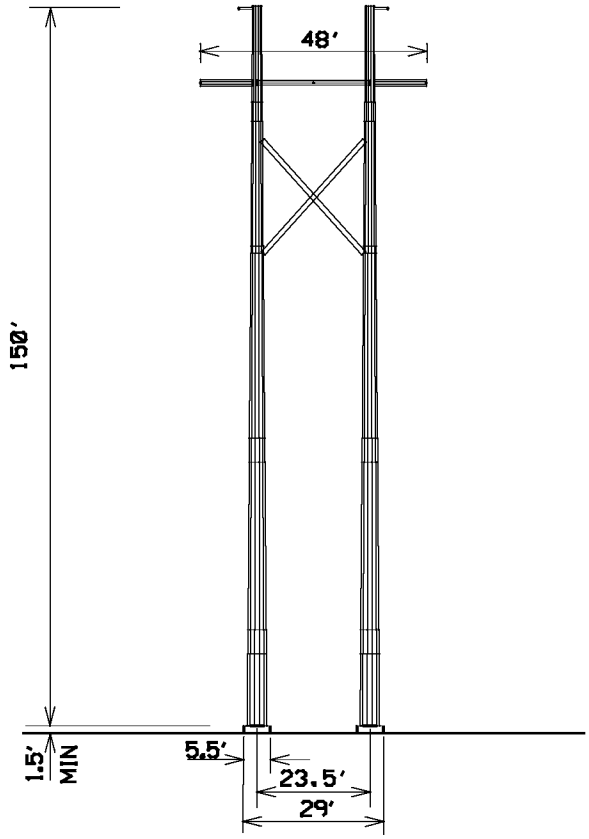
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/381-378
SINGLE CIRCUIT DOUBLE DEADEND H-FRAME

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: REQUIRED BY PLANNING AND REDUCES STRUCTURE HEIGHT FOR 115KV CROSSING

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
4 AND 0.3 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

F. AVERAGE WIDTH AT CROSSARM: 48 FEET

g. AVERAGE WIDTH AT BASE: 29 FEET

H. MAX. MIN. AND AVERAGE STRUCTURE HEIGHTS: 150 FEET, 150 FEET, AND 150 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

I. AVERAGE SPAN LENGTH: 487 FEET (RANGE 396 - 653 FEET)

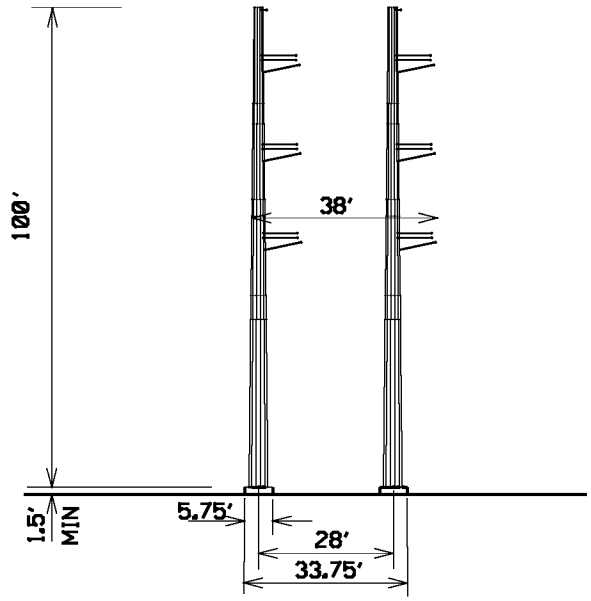
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/378-377
DOUBLE CIRCUIT DOUBLE DEADEND 2-POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: REQUIRED BY PLANNING

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
2 AND 0.1 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 38 FEET

g. AVERAGE WIDTH AT BASE: 33.75 FEET

H. MAX. MIN. AND AVERAGE STRUCTURE HEIGHTS: 100 FEET, 100 FEET, AND 100 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

I. AVERAGE SPAN LENGTH: 574 FEET

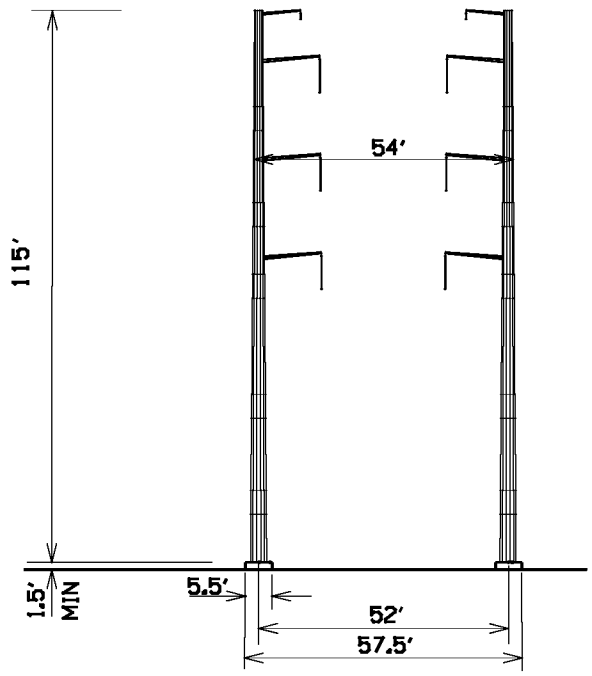
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/377-373
DOUBLE CIRCUIT SUSPENSION 2-POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: REQUIRED BY PLANNING

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
1 AND 0.6 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 54 FEET

g. AVERAGE WIDTH AT BASE: 57.5 FEET

H. MAX., MIN., AND AVERAGE STRUCTURE HEIGHTS: 115 FEET, 115 FEET, AND 115 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

I. AVERAGE SPAN LENGTH: 743 FEET (RANGE 476 - 930 FEET)

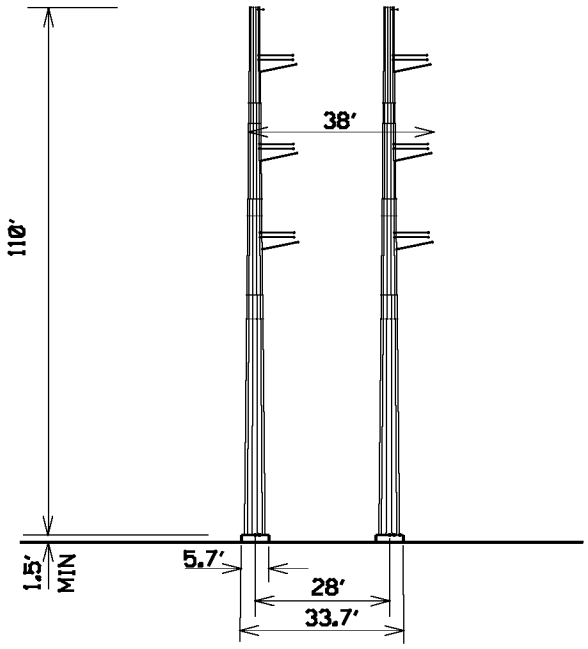
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/377-373
DOUBLE CIRCUIT DOUBLE DEADEND 2-POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: REQUIRED BY PLANNING

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
3 AND 0.6 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 38 FEET

g. AVERAGE WIDTH AT BASE: 33.7 FEET

H. MAX., MIN., AND AVERAGE STRUCTURE HEIGHTS: 110 FEET, 110 FEET, AND 110 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

I. AVERAGE SPAN LENGTH: 743 FEET (RANGE 476 - 930 FEET)

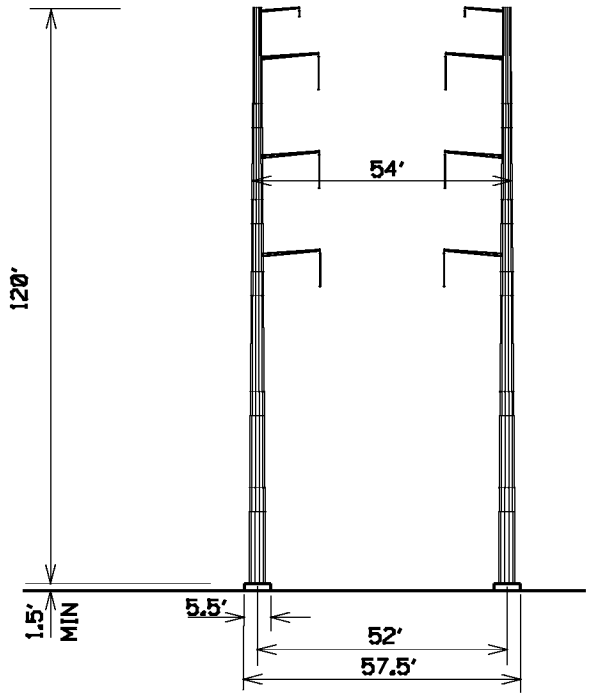
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/373-327
DOUBLE CIRCUIT SUSPENSION 2-POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: REQUIRED BY PLANNING

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
24 AND 7.5 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 54 FEET

g. AVERAGE WIDTH AT BASE: 57.5 FEET

H. MAX. MIN. AND AVERAGE STRUCTURE HEIGHTS: 135 FEET, 105 FEET, AND 118 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

I. AVERAGE SPAN LENGTH: 857 FEET (RANGE 605 - 1100 FEET)

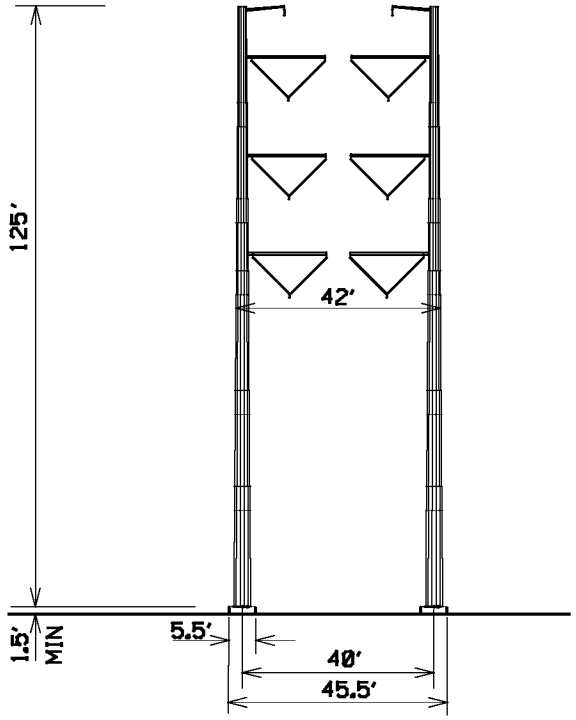
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/373-327
DOUBLE CIRCUIT SUSPENSION (V) 2-POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: REQUIRED BY PLANNING

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
16 AND 7.5 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 42 FEET

g. AVERAGE WIDTH AT BASE: 45.5 FEET

H. MAX., MIN. AND AVERAGE STRUCTURE HEIGHTS: 140 FEET, 90 FEET, AND 126 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

I. AVERAGE SPAN LENGTH: 857 FEET (RANGE 605 - 1100 FEET)

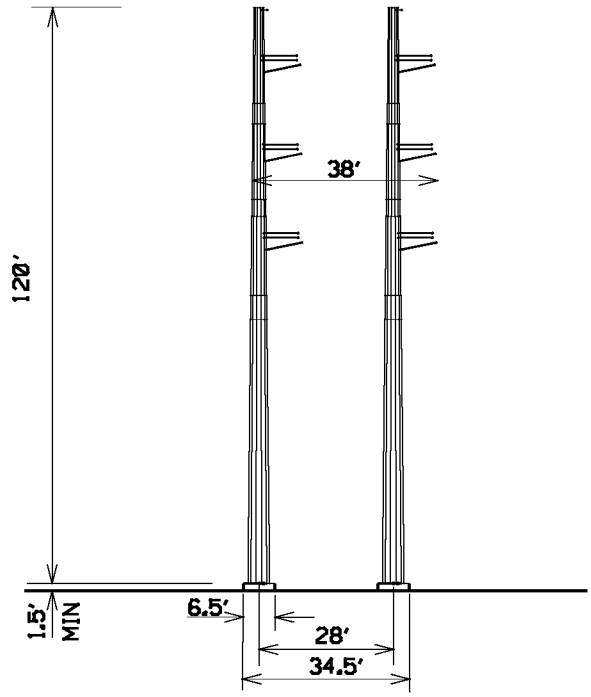
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/373-327
DOUBLE CIRCUIT DOUBLE DEADEND 2-POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: REQUIRED BY PLANNING

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
6 AND 7.5 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 38 FEET

g. AVERAGE WIDTH AT BASE: 34.5 FEET

H. MAX. MIN. AND AVERAGE STRUCTURE HEIGHTS: 125 FEET, 110 FEET, AND 118 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

I. AVERAGE SPAN LENGTH: 857 FEET (RANGE 605 - 1100 FEET)

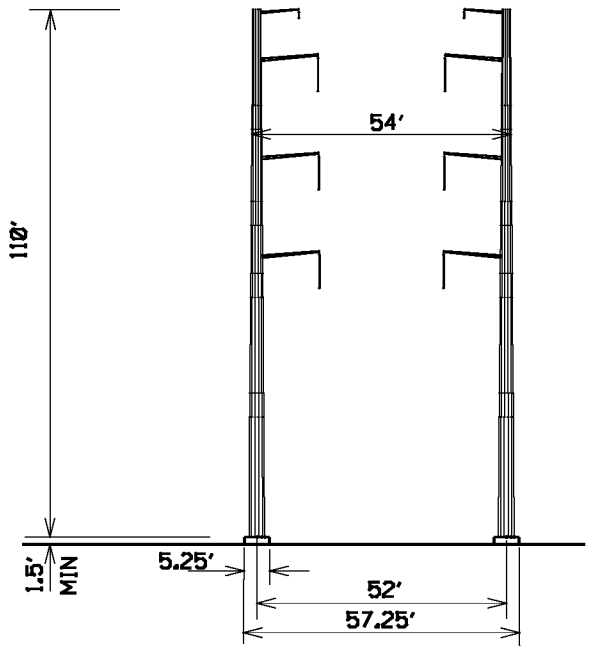
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/327-322
DOUBLE CIRCUIT SUSPENSION 2-POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: REQUIRED BY PLANNING

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
4 AND 0.7 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 54 FEET

g. AVERAGE WIDTH AT BASE: 57.25 FEET

h. MAX, MIN, AND AVERAGE STRUCTURE HEIGHTS: 120 FEET, 95 FEET, AND 108 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

i. AVERAGE SPAN LENGTH: 722 FEET (RANGE 272 - 936 FEET)

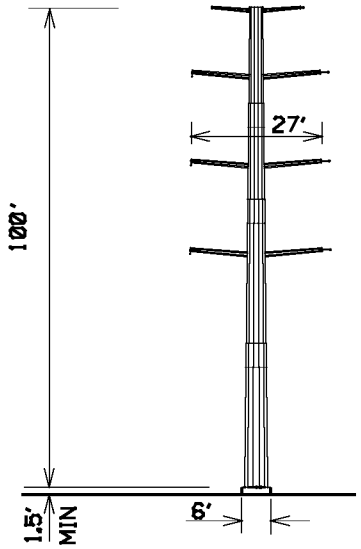
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/322-320
DOUBLE CIRCUIT DOUBLE DEADEND POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: ALLOWS INSTALLATION OF TWO 230kV CIRCUITS IN EXISTING RIGHT-OF-WAY

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
2 AND 0.1 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 27 FEET

g. AVERAGE WIDTH AT BASE: 6 FEET

H. MAX., MIN., AND AVERAGE STRUCTURE HEIGHTS: 100 FEET, 100 FEET, AND 100 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

I. AVERAGE SPAN LENGTH: 322 FEET

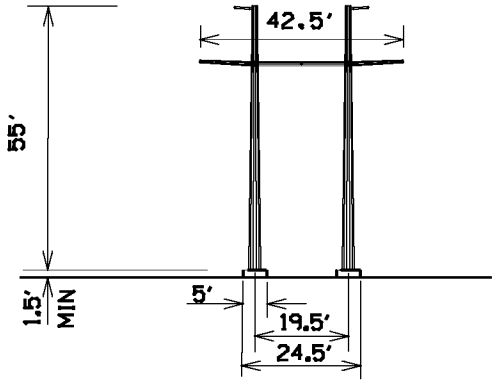
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/322-320
SINGLE CIRCUIT DOUBLE DEADEND H-FRAME

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: ALLOWS RELOCATION OF 115kV CIRCUIT IN EXISTING RIGHT-OF-WAY

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
2 AND 0.1 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 42.5 FEET

g. AVERAGE WIDTH AT BASE: 24.5 FEET

H. MAX. MIN. AND AVERAGE STRUCTURE HEIGHTS: 55 FEET, 55 FEET, AND 55 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

I. AVERAGE SPAN LENGTH: 196 FEET (RANGE 150 - 315 FEET)

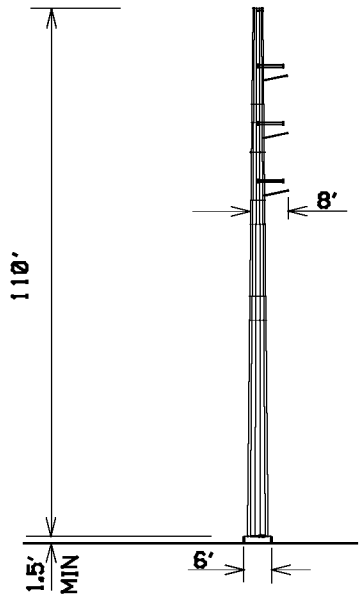
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 20.1'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/322-320
SINGLE CIRCUIT DOUBLE DEADEND POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: ALLOWS RELOCATION OF 115kV CIRCUIT IN EXISTING RIGHT-OF-WAY

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
2 AND 0.1 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 8 FEET

g. AVERAGE WIDTH AT BASE: 6 FEET

H. MAX., MIN., AND AVERAGE STRUCTURE HEIGHTS: 110 FEET, 110 FEET, AND 110 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

I. AVERAGE SPAN LENGTH: 196 FEET (RANGE 150 - 315 FEET)

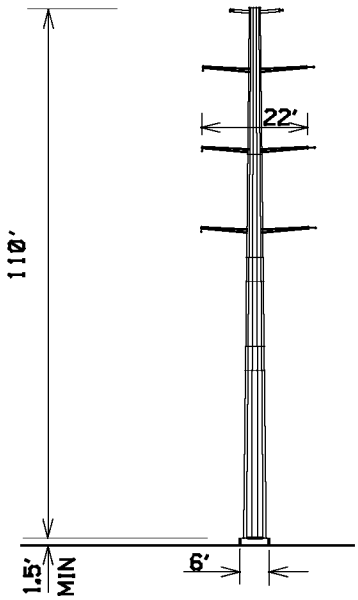
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 20.1'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/322-320
DOUBLE CIRCUIT DOUBLE DEADEND POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: ALLOWS RELOCATION OF TWO 115kV CIRCUITS IN EXISTING RIGHT-OF-WAY

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
2 AND 0.1 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 22 FEET

g. AVERAGE WIDTH AT BASE: 6 FEET

H. MAX. MIN. AND AVERAGE STRUCTURE HEIGHTS: 110 FEET, 110 FEET, AND 110 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

I. AVERAGE SPAN LENGTH: 196 FEET (RANGE 150 - 315 FEET)

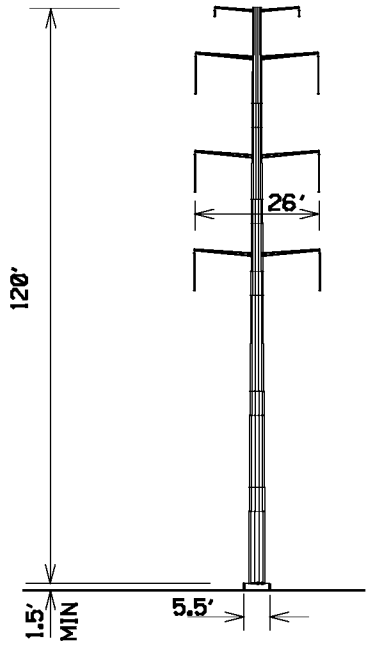
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 20.1'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/320-317
DOUBLE CIRCUIT SUSPENSION POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE: SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: ALLOWS INSTALLATION OF TWO 230kV CIRCUITS IN EXISTING RIGHT-OF-WAY

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W: 1 AND 0.4 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL: GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 26 FEET

g. AVERAGE WIDTH AT BASE: 5.5 FEET

h. MAX, MIN, AND AVERAGE STRUCTURE HEIGHTS: 120 FEET, 120 FEET, AND 120 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

I. AVERAGE SPAN LENGTH: 554 FEET (RANGE 325 - 785 FEET)

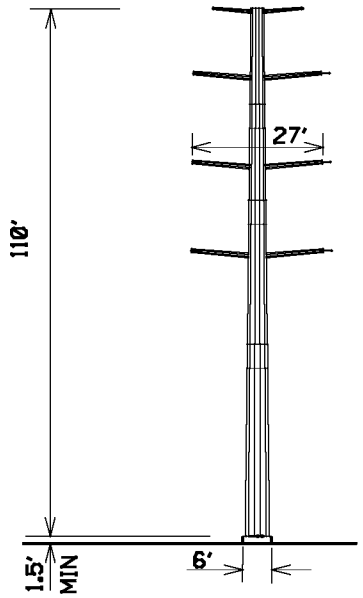
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/320-317
DOUBLE CIRCUIT DOUBLE DEADEND POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: ALLOWS INSTALLATION OF TWO 230kV CIRCUITS IN EXISTING RIGHT-OF-WAY

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
2 AND 0.4 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 27 FEET

g. AVERAGE WIDTH AT BASE: 6 FEET

h. MAX, MIN, AND AVERAGE STRUCTURE HEIGHTS: 110 FEET, 105 FEET, AND 108 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

I. AVERAGE SPAN LENGTH: 554 FEET (RANGE 325 - 785 FEET)

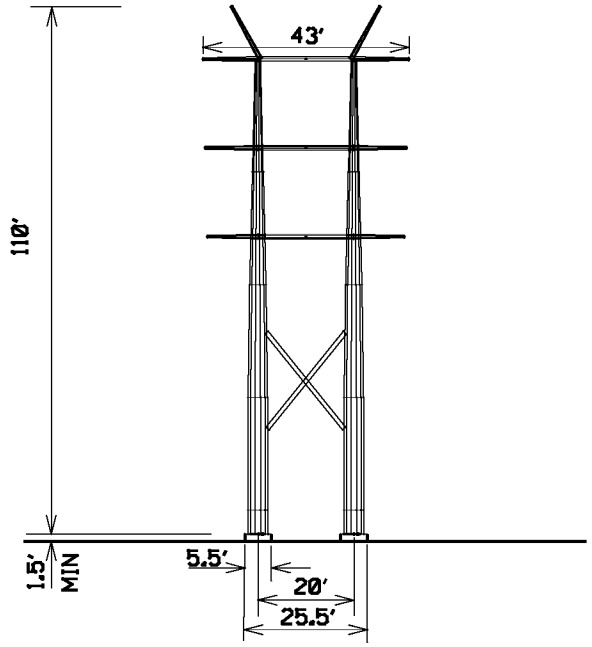
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/320-317
TRIPLE CIRCUIT DOUBLE DEADEND H-FRAME

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: ALLOWS RELOCATION OF THREE EXISTING 115kV CIRCUITS IN THE EXISTING RIGHT-OF-WAY

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
3 AND 0.4 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 43 FEET

g. AVERAGE WIDTH AT BASE: 25.5 FEET

h. MAX, MIN, AND AVERAGE STRUCTURE HEIGHTS: 110 FEET, 110 FEET, AND 110 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

I. AVERAGE SPAN LENGTH: 566 FEET (RANGE 320 - 766 FEET)

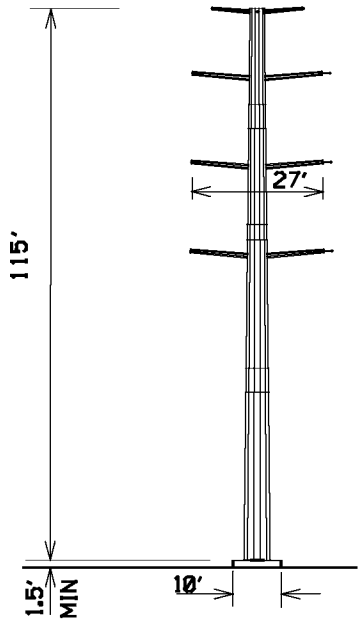
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 20.1'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/317-CHASE CITY
DOUBLE CIRCUIT DOUBLE DEADEND POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

B. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: ALLOWS INSTALLATION OF TWO 230KV CIRCUITS IN EXPANDED RIGHT-OF-WAY

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
2 AND 0.1 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

F. AVERAGE WIDTH AT CROSSARM: 27 FEET

g. AVERAGE WIDTH AT BASE: 10 FEET

H. MAX. MIN. AND AVERAGE STRUCTURE HEIGHTS: 120 FEET, 110 FEET, AND 115 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

I. AVERAGE SPAN LENGTH: 250 FEET (RANGE 126 - 375 FEET)

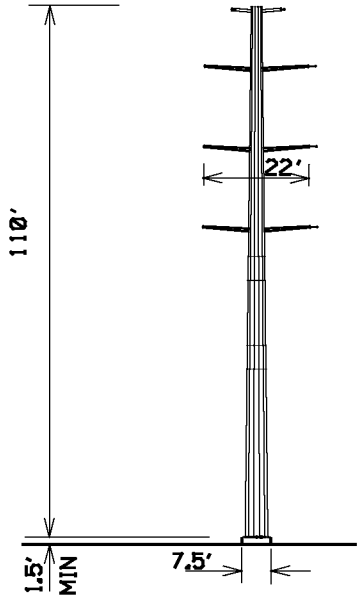
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/317-CHASE CITY
DOUBLE CIRCUIT DOUBLE DEADEND POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

B. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: ALLOWS INSTALLATION OF TWO 115KV CIRCUITS IN EXISTING RIGHT-OF-WAY

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
3 AND 0.1 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

F. AVERAGE WIDTH AT CROSSARM: 22 FEET

g. AVERAGE WIDTH AT BASE: 7.5 FEET

H. MAX. MIN. AND AVERAGE STRUCTURE HEIGHTS: 120 FEET, 90 FEET, AND 110 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

I. AVERAGE SPAN LENGTH: 337 FEET

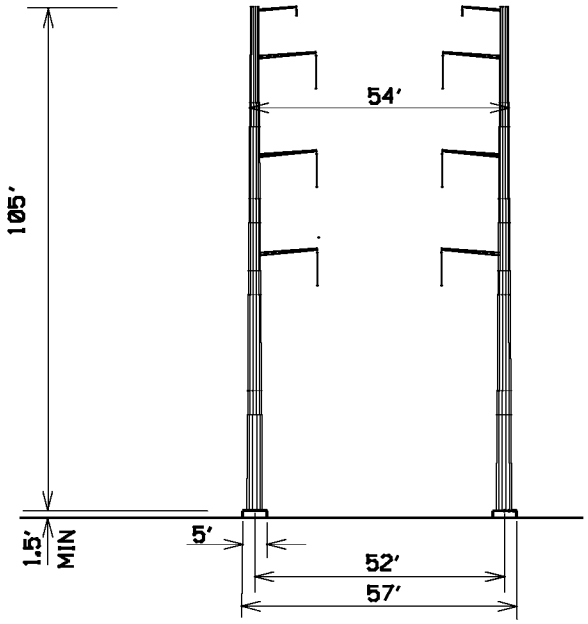
J. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAX OPERATING CONDITIONS: 20.1'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPECS

CHASE CITY - PROPOSED STR 235/312
DOUBLE CIRCUIT SUSPENSION 2-POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: REQUIRED BY PLANNING

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
1 AND 0.2 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 54 FEET

g. AVERAGE WIDTH AT BASE: 57 FEET

H. MAX., MIN., AND AVERAGE STRUCTURE HEIGHTS: 105 FEET, 105 FEET, AND 105 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

I. AVERAGE SPAN LENGTH: 370 FEET (RANGE 223 - 449 FEET)

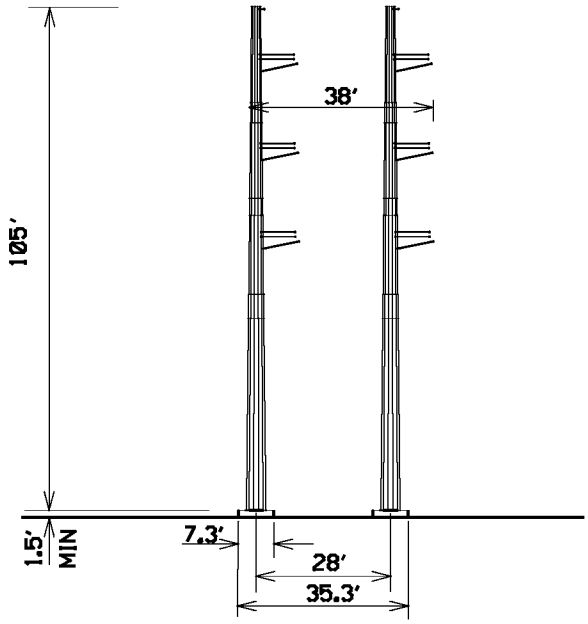
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

CHASE CITY - PROPOSED STR 235/312
DOUBLE CIRCUIT DOUBLE DEADEND 2-POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: REQUIRED BY PLANNING

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
3 AND 0.2 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 38 FEET

g. AVERAGE WIDTH AT BASE: 35.3 FEET

H. MAX., MIN., AND AVERAGE STRUCTURE HEIGHTS: 110 FEET, 100 FEET, AND 107 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

I. AVERAGE SPAN LENGTH: 370 FEET (RANGE 223 - 449 FEET)

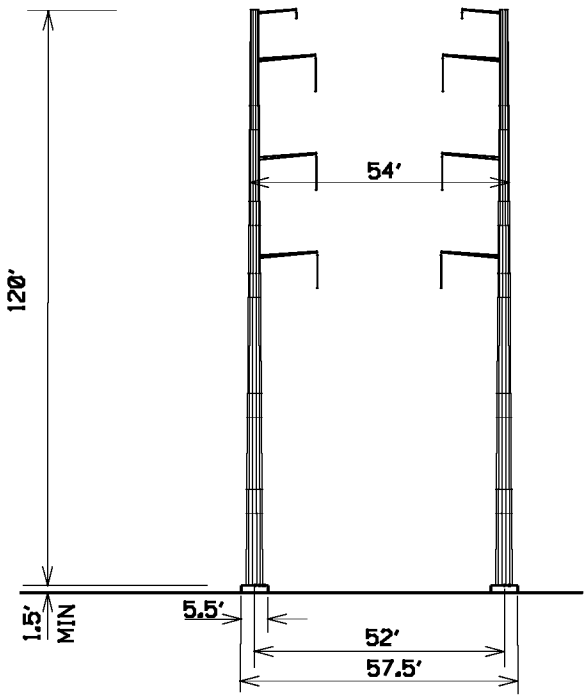
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/312 - 310
DOUBLE CIRCUIT SUSPENSION 2-POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: REQUIRED BY PLANNING

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
1 AND 0.2 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 54 FEET

g. AVERAGE WIDTH AT BASE: 57.5 FEET

H. MAX., MIN., AND AVERAGE STRUCTURE HEIGHTS: 120 FEET, 120 FEET, AND 120 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

I. AVERAGE SPAN LENGTH: 646 FEET (RANGE 620 - 672 FEET)

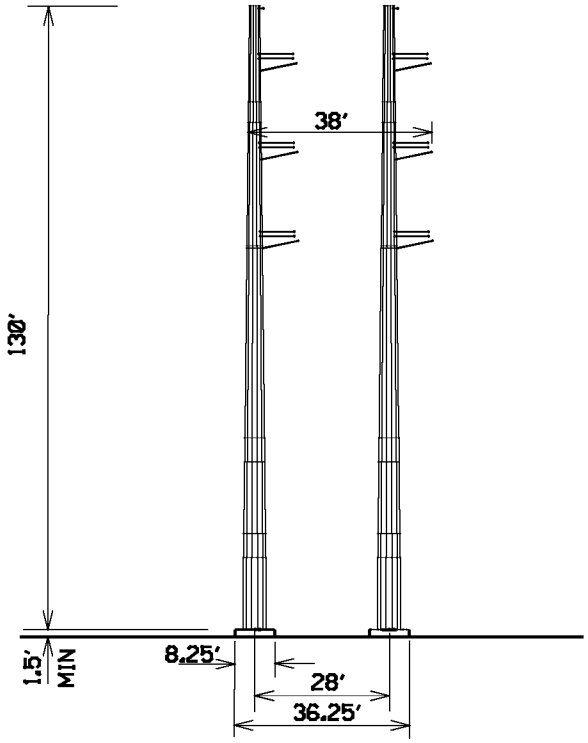
j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

PROPOSED STR 235/312 -310
DOUBLE CIRCUIT DOUBLE DEADEND 2-POLE

PRELIMINARY



a. MAPPING THAT IDENTIFIES EACH PORTION OF THE PREFERRED ROUTE:
SEE ATTACHMENT II.B.5

b. RATIONALE FOR THE SELECTION OF THE STRUCTURE TYPE: REQUIRED BY PLANNING

c. NUMBER OF EACH TYPE OF STRUCTURE AND LENGTH OF EACH PORTION OF THE R/W:
1 AND 0.2 MILES

d. STRUCTURE MATERIAL AND RATIONALE FOR THE SELECTION OF SUCH MATERIAL:
GALVANIZED STEEL TO MATCH ADJACENT STRUCTURES

e. FOUNDATION MATERIAL: CONCRETE (REVEAL WILL VARY BASED ON TERRAIN)

f. AVERAGE WIDTH AT CROSSARM: 38 FEET

g. AVERAGE WIDTH AT BASE: 36.25 FEET

H. MAX. MIN. AND AVERAGE STRUCTURE HEIGHTS: 130 FEET, 130 FEET, AND 130 FEET MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE AND DOES NOT INCLUDE FOUNDATION REVEAL

I. AVERAGE SPAN LENGTH: 646 FEET (RANGE 620 - 672 FEET)

j. MINIMUM CONDUCTOR-GROUND CLEARANCE UNDER MAXIMUM OPERATING CONDITIONS: 22.5'

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

$DGNSPEC$

II. DESCRIPTION OF THE PROPOSED PROJECT

B. Line Design and Operational Features

4. With regard to the proposed supporting structures for all feasible alternate routes, provide the maximum, minimum and average structure heights with respect to the whole route.

Response: Not applicable.

II. DESCRIPTION OF THE PROPOSED PROJECT

B. Line Design and Operational Features

5. For lines being rebuilt, provide mapping showing existing and proposed structure heights for each individual structure within the ROW, as proposed in the application.

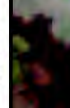
Response: See Attachment II.B.5 for existing structure locations.

See the table below for the existing and proposed heights of structures related to the Projects. The proposed approximate structure heights are from the conceptual design created to estimate the cost of the proposed Projects and are subject to change based on the final engineering design. The approximate structure heights do not include foundation reveal.

Structure Number	Existing Structure Height (ft)	Proposed Structure Height (ft)	Attachment II.B.3. Structure Type
40/490	56.5	55	xx
40/490A	n/a	55	xx
171/29B & 1009/124A	n/a	110	xxii
1009/124B	n/a	110	xxi
171/29A	n/a	110	xxi
40/491	56.5	110 (40/491 & 1009/124C)	xxii
40/492	56.5	*	n/a
40/493	65.5	*	n/a
40/494	65.5	*	n/a
40/495	70	**	n/a
40/495A & 1009/129	110	n/a	n/a
40/496 & 171/25	90	90	xxvii
171/26 & 1009/128	95	**120 (171/26 & 40/495)	xxvii
171/27 & 1009/127	85	*110 (171/27, 40/494, & 1009/127	xxv
171/28 & 1009/126	95	*110 (171/28, 40/493, & 1009/126	xxv
171/29 & 1009/125	90	*110 (171/29, 40/492, & 1009/125	xxv
137/66 & 1042/64	60	n/a	n/a
137/67 & 1042/63	60	n/a	n/a
235/310	135	130 (235/310 & 2226/310)	xxxi
1045/3	70	**120 (1045/3 & 1009/128)	xxvii

* Three single circuit and three double circuit structures are being combined into three triple circuit structures.
** Two single circuit and one double circuit structures are being combined into two double circuit structures.

Structure Number	Existing Structure Height (ft)	Proposed Structure Height (ft)
235/310	135	130 (235/310 & 2226/310)



0 62.5 125 Feet

1:1,500

N

Milepost
Proposed Centerline
Proposed New Structure
Existing Structure to be Removed
Project Limits
Existing ROW to be Cleared
Existing Dominion Transmission Line
Substation Boundary

Page 1 of 4

ERM

Attachment II.B.5
Proposed Structure Height Map Set
Line #235 Extension to
Cloud 230 kV and Related Projects
Mecklenburg County, Virginia

Dominion Energy

MPLS M:\Clients\D-F\DOM\Cloud\ArcGIS\2021\06\SCC_DOM_CLD_Att_II_B_5_Structures_v5.mxd | REVISED: 06/08/2021 | SCALE: 1:1,500 when printed at 11x17

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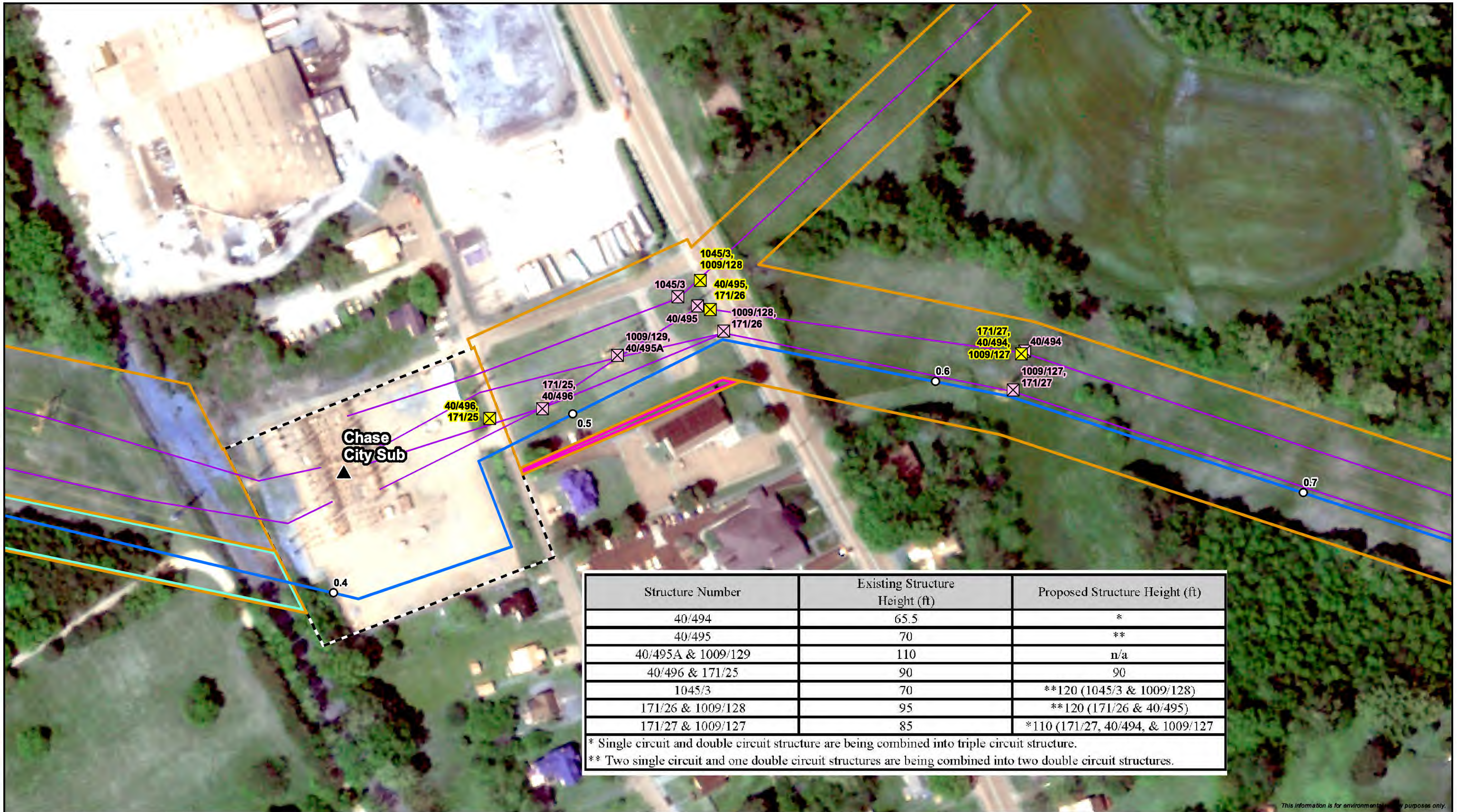

Structure Number	Existing Structure Height (ft)	Proposed Structure Height (ft)
40/494	65.5	*
40/495	70	**
40/495A & 1009/129	110	n/a
40/496 & 171/25	90	90
1045/3	70	**120 (1045/3 & 1009/128)
171/26 & 1009/128	95	**120 (171/26 & 40/495)
171/27 & 1009/127	85	*110 (171/27, 40/494, & 1009/127

* Single circuit and double circuit structure are being combined into triple circuit structure.
** Two single circuit and one double circuit structures are being combined into two double circuit structures.

0 62.5 125 Feet
1:1,500

N

- Milepost
- Proposed Centerline
- Proposed New Structure
- Existing Structure to be Removed
- Project Limits
- Existing ROW to be Cleared
- Expanded Right of Way
- Existing Dominion Transmission Line
- Substation
- Substation Boundary

ERM

Attachment II.B.5
Proposed Structure Height Map Set
Line #235 Extension to
Cloud 230 kV and Related Projects
Mecklenburg County, Virginia

Dominion Energy

MPLS M:\Clients\D-F\DOM\Cloud\ArcGIS\2021\06\SCC_DOM_CLD_Att_II_B_5_Structures_v5.mxd | REVISED: 06/08/2021 | SCALE: 1:1,500 when printed at 11x17

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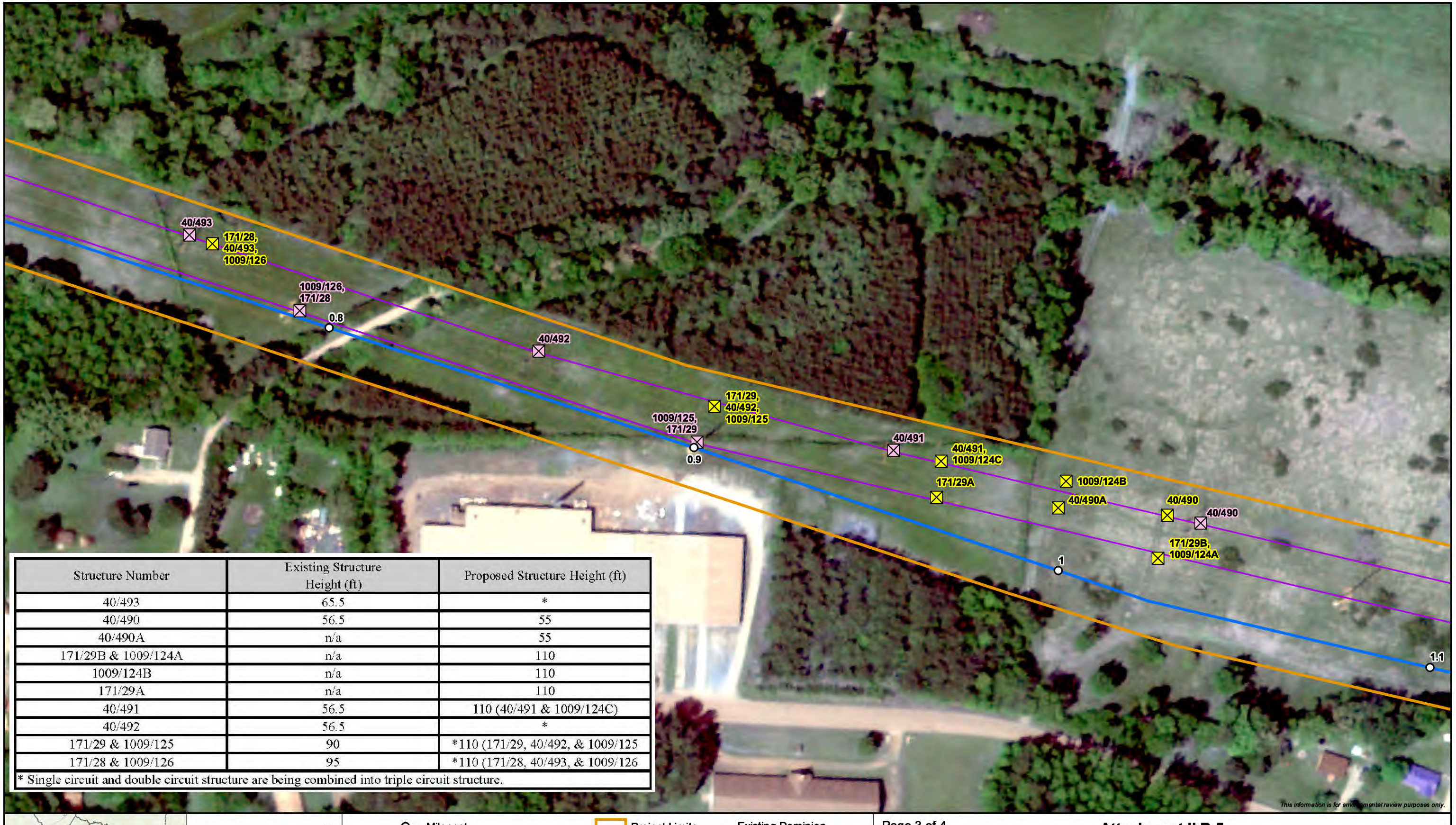
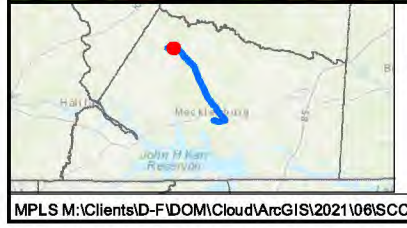


Structure Number	Existing Structure Height (ft)	Proposed Structure Height (ft)
40/493	65.5	*
40/490	56.5	55
40/490A	n/a	55
171/29B & 1009/124A	n/a	110
1009/124B	n/a	110
171/29A	n/a	110
40/491	56.5	110 (40/491 & 1009/124C)
40/492	56.5	*
171/29 & 1009/125	90	*110 (171/29, 40/492, & 1009/125
171/28 & 1009/126	95	*110 (171/28, 40/493, & 1009/126

* Single circuit and double circuit structure are being combined into triple circuit structure.



0 62.5 125 Feet

1:1,500

N

- Milepost
- Proposed Centerline
- Proposed New Structure
- Existing Structure to be Removed
- Project Limits
- Existing Dominion Transmission Line

ERM

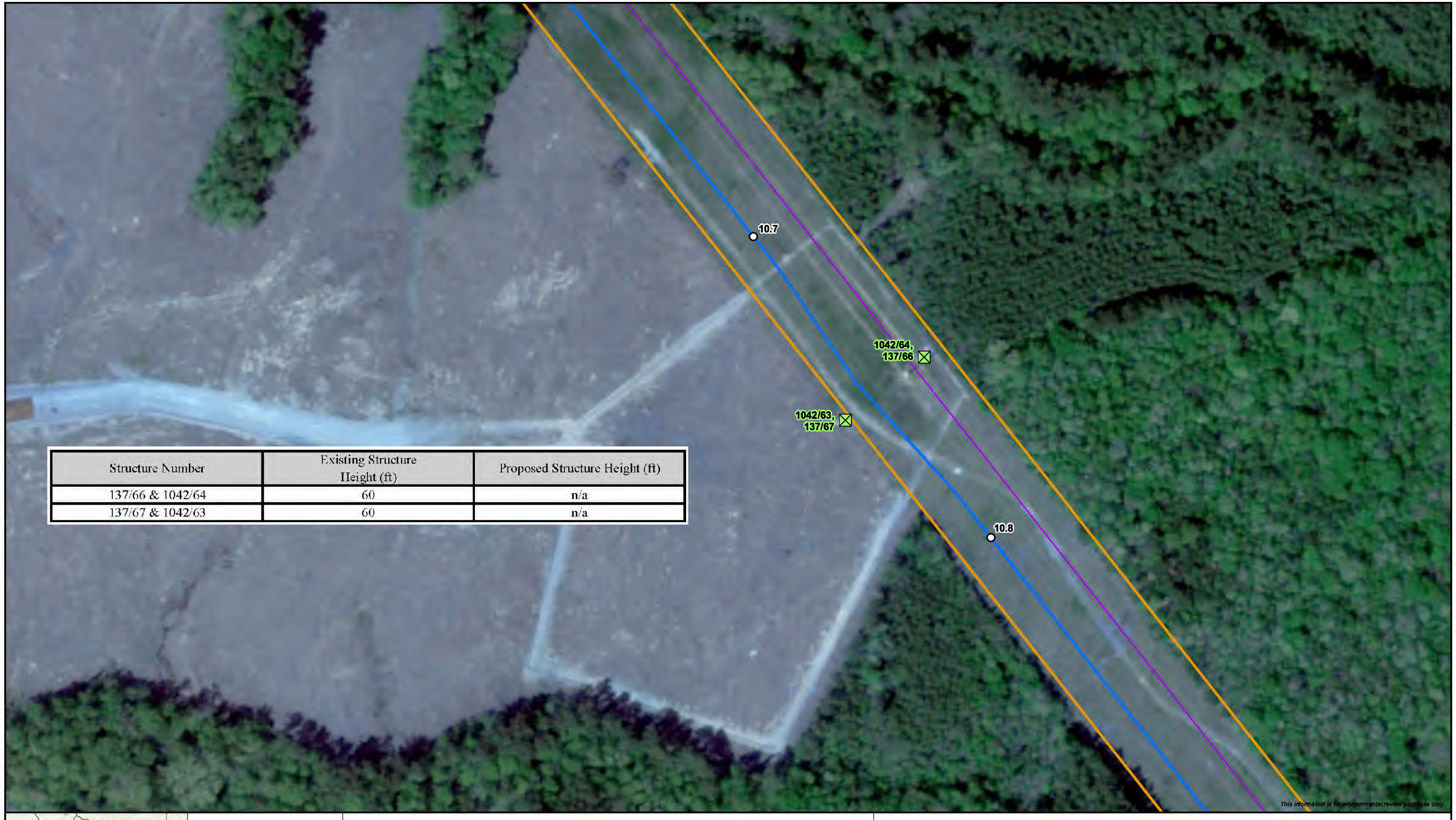
Attachment II.B.5
Proposed Structure Height Map Set
Line #235 Extension to
Cloud 230 kV and Related Projects
Mecklenburg County, Virginia

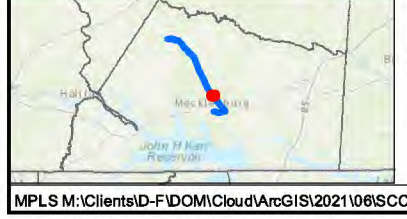
Dominion Energy

MPLS M:\Clients\D-F\DOM\Cloud\ArcGIS\2021\06\SCC_DOM_CLD_Att_II_B_5_Structures_v5.mxd | REVISED: 06/08/2021 | SCALE: 1:1,500 when printed at 11x17

DRAWN BY: 0239

Structure Number	Existing Structure Height (ft)	Proposed Structure Height (ft)
137/66 & 1042/64	60	n/a
137/67 & 1042/63	60	n/a





0 62.5 125 Feet

1:1,500

N

Milepost
Proposed Centerline
Soon To-Be-Installed Easters 115 kV DP Structures
Project Limits
Existing Dominion Transmission Line

ERM

Attachment II.B.5
Proposed Structure Height Map Set
Line #235 Extension to
Cloud 230 kV and Related Projects
Mecklenburg County, Virginia

Dominion Energy

MPLS M:\Clients\D-F\DOM\Cloud\ArcGIS\2021\06\SCC_DOM_CLD_Att_II_B_5_Structures_v5.mxd | REVISED: 06/08/2021 | SCALE: 1:1,500 when printed at 11x17

DRAWN BY: 0239

II. DESCRIPTION OF THE PROPOSED PROJECT

B. Line Design and Operational Features

6. Provide photographs for typical existing facilities to be removed, comparable photographs or representations for proposed structures, and visual simulations showing the appearance of all planned transmission structures at identified historic locations within one mile of the proposed centerline and in key locations identified by the Applicant.

Response: [1] See Attachment II.B.6.a.i-vi for representative photos of typical existing structures.

[2] See Attachment II.B.6.b.i-x for representative photos of typical proposed structures.

[3] See Attachment II.B.6.c. Specifically, Attachment II.B.6.c.i includes a map of the evaluated historic properties within 1.0 mile of the proposed centerline. See Attachments II.B.6.c.ii-iii for key observation points ("KOPs") from each evaluated historic property. Attachments II.B.6.c.iv-xxi provide existing and proposed photographs from the selected KOPs and historic properties towards the Projects alignment. The table below identifies the historic properties evaluated.

Historic Property	KOP	Comments
Vernacular dwelling w/exterior stone chimney (VDHR ID 058-0239)	6	No Impact – Photo Simulation confirmed that the Projects and proposed structures will remain screened by a thick wooded area between the Projects and the property.
Chase City High School, 136 Endly Street (VDHR ID 186-0002)	N/A	No Impact – Views in the direction of the Projects are screened by buildings, trees, and a variety of other development, which inhibit views beyond the adjacent blocks. Existing transmission lines in the vicinity of the Projects are not visible. As such, the Company used line of sight analysis and did not create a photo simulation from this location.
Keel Hall, 307 Walker Street (VDHR ID 186-0003)	N/A	No Impact – Views in the direction of the Projects are screened by buildings, trees, and a variety of other development, which inhibit views beyond the adjacent blocks. Existing transmission lines in the vicinity of the Projects are not visible. As such, the Company used line of sight analysis and did not create a photo simulation from this location.

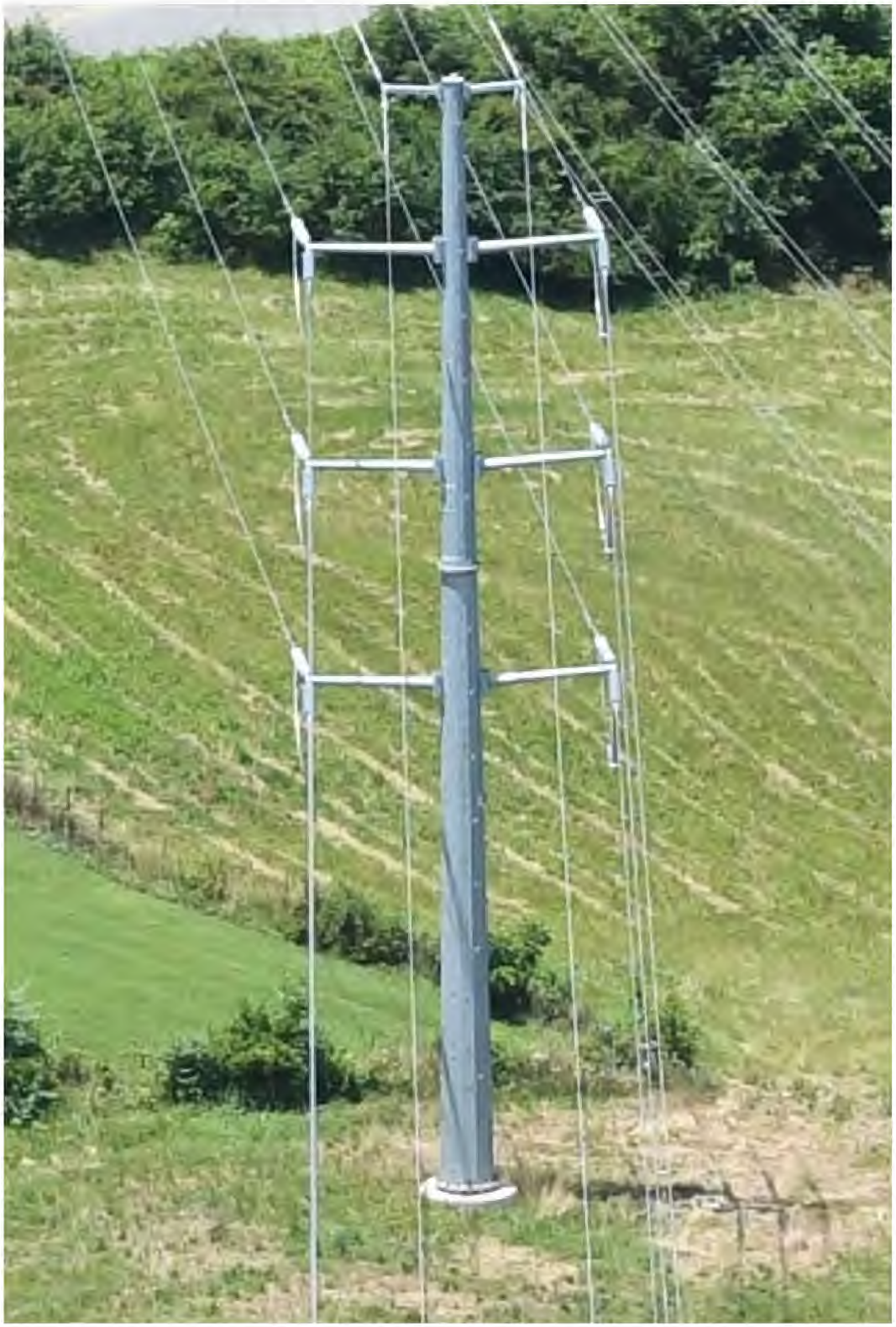
Historic Property	KOP	Comments
MacCallum More, 601-603 Hudgins St (VDHR ID 186-5001)	2	No Impact – Photo Simulation confirmed that the Projects and proposed structures will remain screened by the dense vegetation in the area around and bordering the property.
Shadow Lawn, 27 Main Street (VDHR ID 186-5004)	N/A	No Impact – Views in the direction of the Projects are screened by buildings, trees, and a variety of other development, which inhibit views beyond the adjacent blocks. Existing transmission lines in the vicinity of the Projects are not visible. As such, the Company used line of sight analysis and did not create a photo simulation from this location.
Chase City Warehouse and Commercial Historic District (VDHR ID 186-5005)	3, 4, 5	No Impact – Photo Simulation confirmed that views in the direction of the Projects are screened behind and beneath intervening buildings, trees, and variety of other development associated with the urban area of Chase City.
MacCallum More and Hudgins House Historic District (VDHR ID 186-5020)	2	No Impact – Photo Simulation confirmed that the Projects and proposed structured will remain screened by the dense vegetation in the area around and bordering the property.
Farmers Food, 428 Dodd Street (VDHR ID 186-5023)	1	Minimal Impact – Based on photo simulations, existing structures within the ROW to be shared by the Projects are currently visible. Proposed structures, based on photo simulations, may also become visible over the roof of the building or vegetation in the area, but would be seen in conjunction with existing transmission infrastructure of similar scale and materials.

See Attachment III.B.4 for visual simulations of key locations evaluated.

Photograph provided by Dominion Energy

Existing Structure Type:
115 kV Double Circuit Galvanized Steel H-frame (Double Deadend)

Attachment II.B.6.a.i



Photograph provided by Dominion Energy

Existing Structure Type:
115 kV Double Circuit Galvanized Steel Pole (Double Deadend)

Attachment II.B.6.a.ii

Photograph provided by Dominion Energy

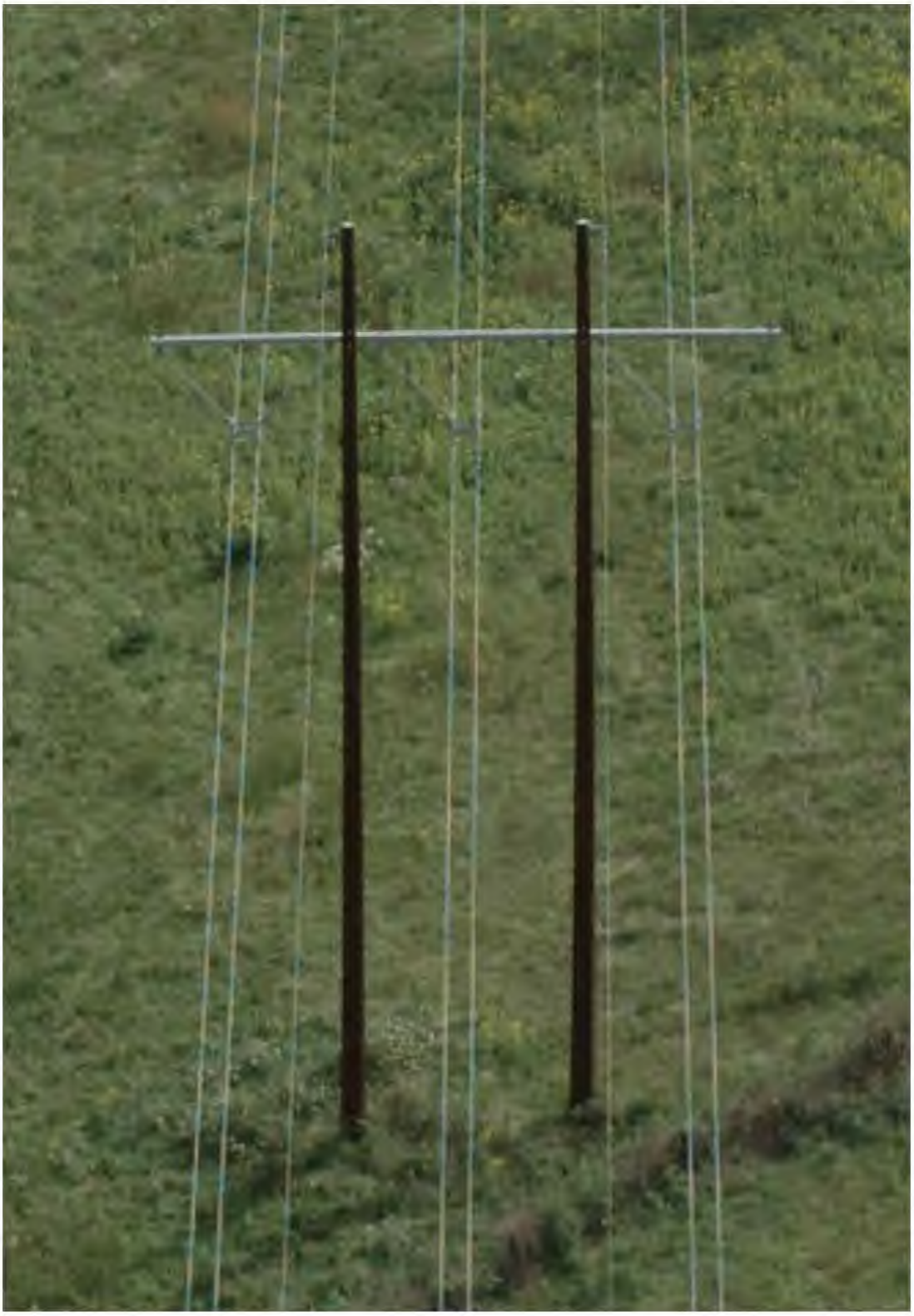
Existing Structure Type:
230 kV Double Circuit Lattice Tower (Double Deadend)

Attachment II.B.6.a.iii

Photograph provided by Dominion Energy

Existing Structure Type:
115 kV Single Circuit Guyed Weathering Steel Pole (Running Angle)

Attachment II.B.6.a.iv



Photograph provided by Dominion Energy

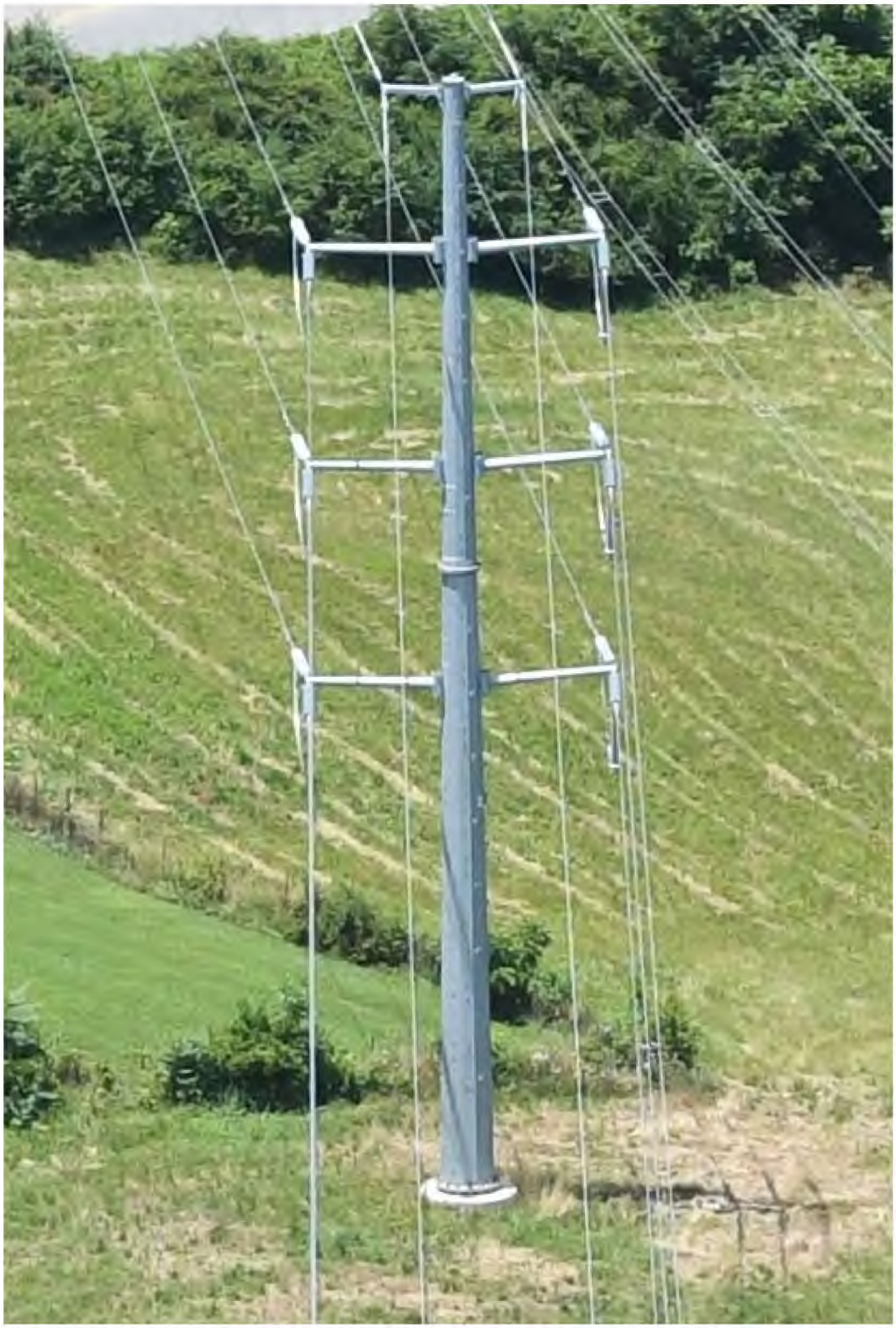
Existing Structure Type:
115 kV Single Circuit Weathering Steel H-Frame (Suspension)

Attachment II.B.6.a.v

Photograph provided by Dominion Energy

Existing Structure Type:
115 kV Single Circuit Weathering Steel Pole (Double Deadend)

Attachment II.B.6.a.vi



Photograph provided by Dominion Energy

Proposed Structure Type:
115 kV Double Circuit Galvanized Steel Pole (Double Deadend)

Attachment II.B.6.b.i

Photograph provided by Dominion Energy

Proposed Structure Type:
230 kV Double Circuit Galvanized Steel Pole (Double Deadend)

Attachment II.B.6.b.ii

Photograph provided by Dominion Energy

Proposed Structure Type:
230 kV Double Circuit Galvanized Steel Pole (Suspension)

Attachment II.B.6.b.iii

Photograph provided by Dominion Energy

Proposed Structure Type:

115 kV Single Circuit Galvanized Steel Pole (Double Deadend)

Attachment II.B.6.b.iv

Photograph provided by Dominion Energy

Proposed Structure Type:
115 kV Single Circuit H-Frame (Double Deadend)

Attachment II.B.6.b.v

Photograph provided by Dominion Energy

Proposed Structure Type:
230 kV Single Circuit Galvanized Steel Steel Pole (Double Deadend)
(Two Side-by-Side Structures Required)

Attachment II.B.6.b.vi

Photograph provided by Dominion Energy

Proposed Structure Type:

230 kV Single Circuit Galvanized Steel 2-Pole (Suspension V-string)
(Two Side-by-Side Structures Required)

Attachment II.B.6.b.vii

Photograph provided by Dominion Energy

Proposed Structure Type:
230 kV Single Circuit Glavanized Steel 2-Pole (Suspension I-string)
(Two Side-by-Side Structures Required)

Attachment II.B.6.b.viii

Photograph provided by Dominion Energy

Proposed Structure Type:
115 kV Triple Circuit Galvanized Steel H-Frame (Double Deadend)

Attachment II.B.6.b.ix

Photograph provided by Dominion Energy

Proposed Structure Type:
230 kV Single Circuit Galvanized Steel H-Frame (Suspension)
Structure will be Double Deadend With Cross Brace

Attachment II.B.6.b.x

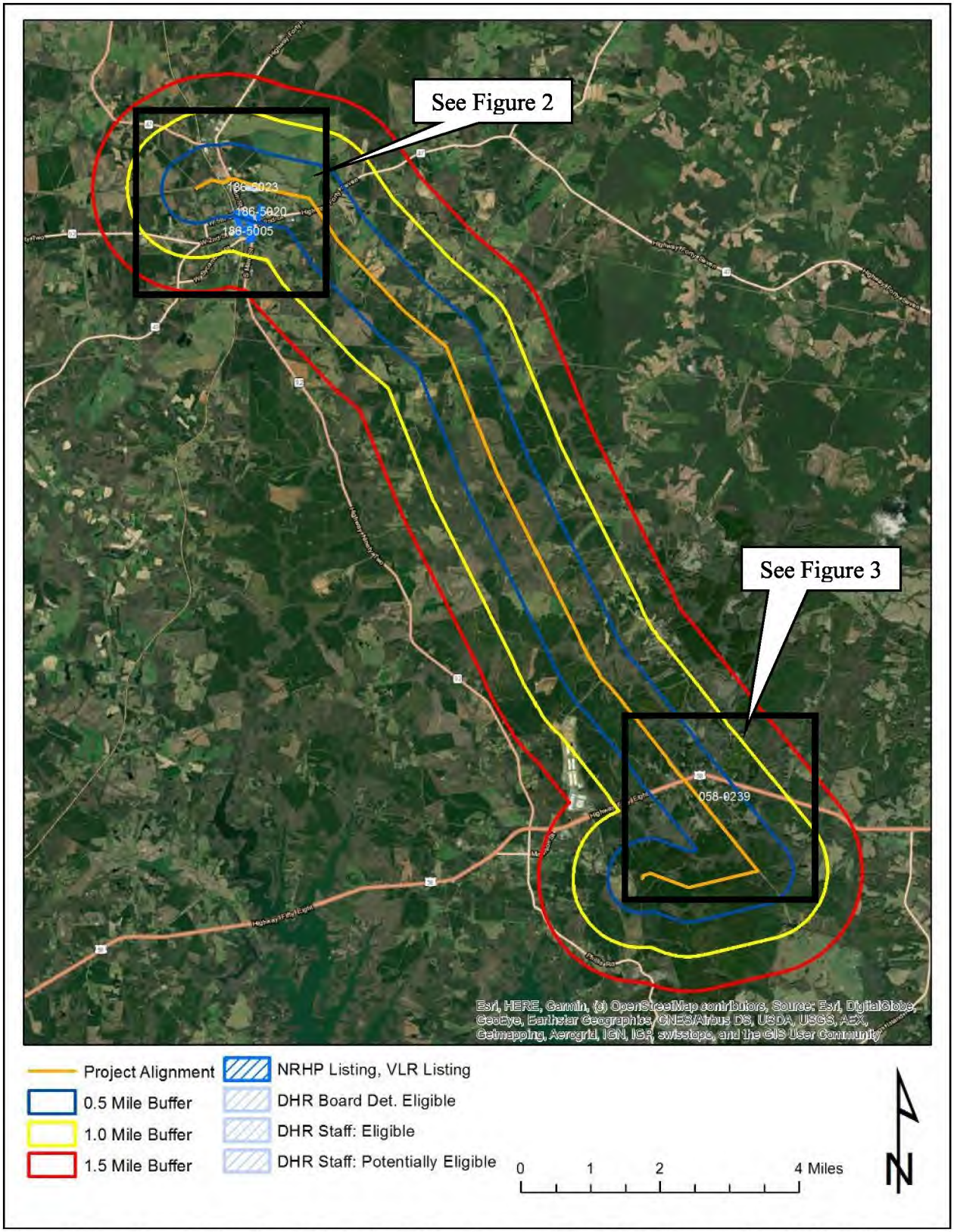


Figure 1: Location and direction of photo simulations from considered historic properties within their respective study tiers around the project alignment.

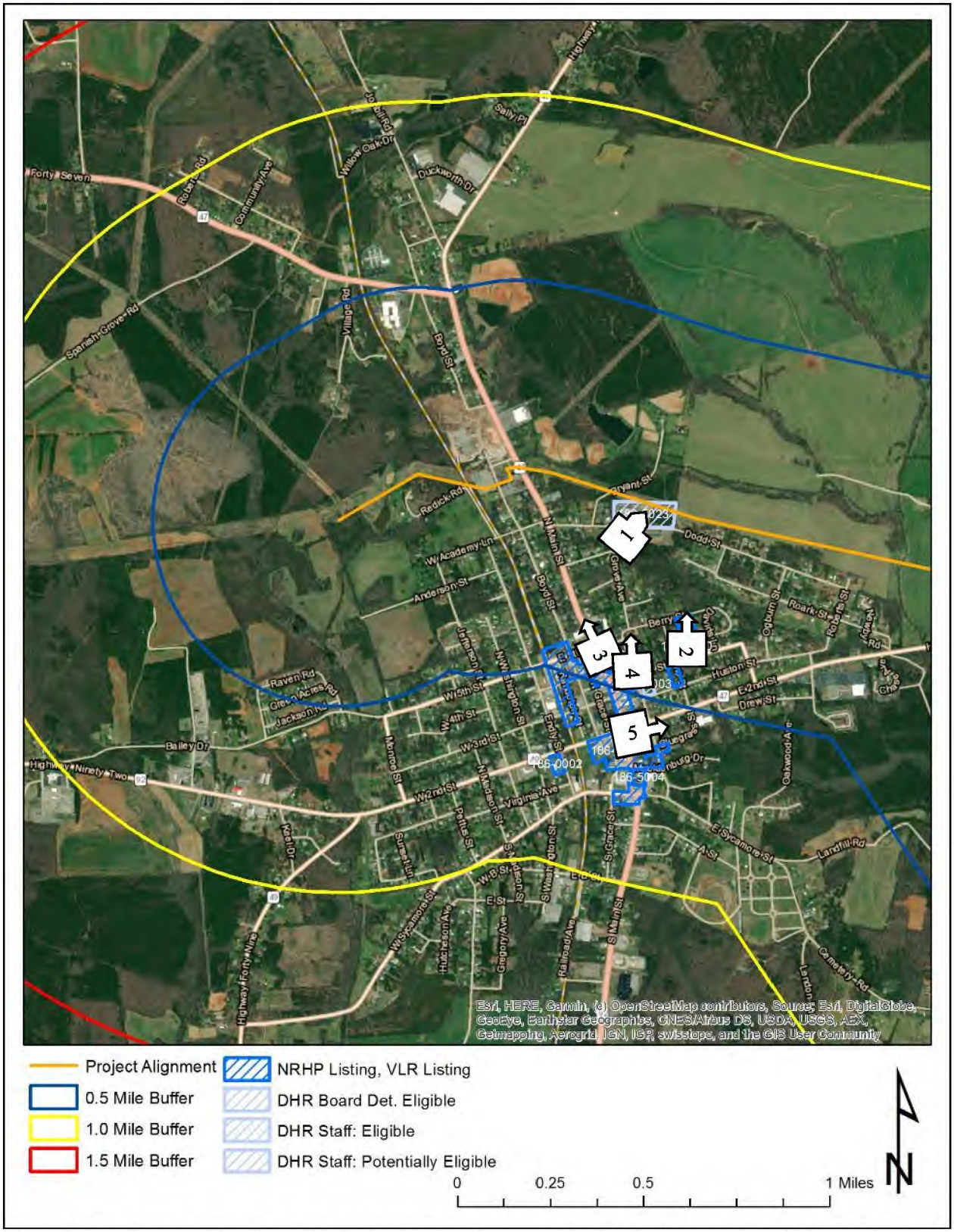


Figure 2: Location and direction of photo simulations from considered historic properties within their respective study tiers around the project alignment (Chase City vicinity).

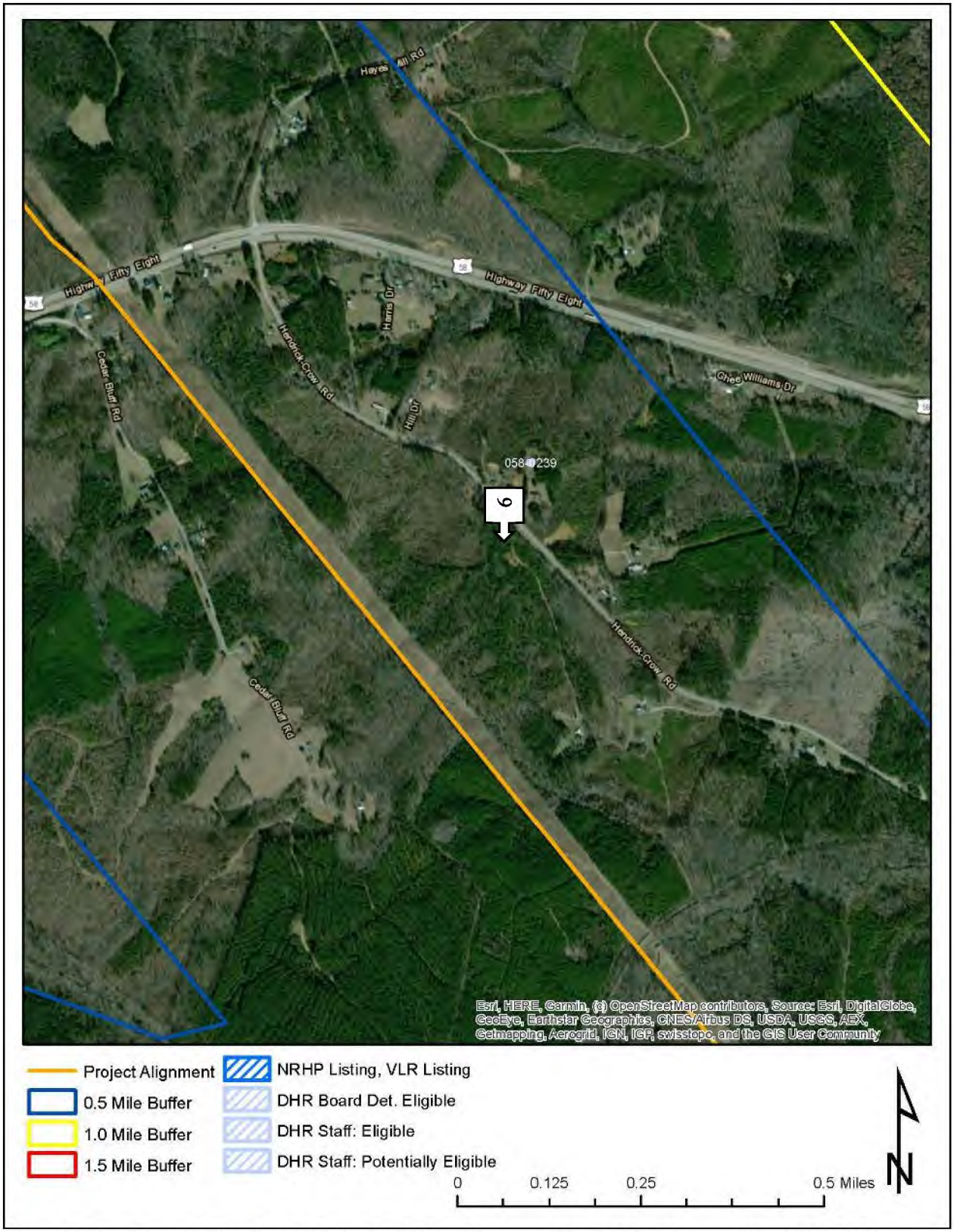


Figure 3: Location and direction of photo simulations from considered historic properties within their respective study tiers around the project alignment (Southern end).

Photo Simulation 1: Farmers Food– Simulation location, direction of view, and structures modeled from Dodd Street. Source: GTTE, LLC

Photo Simulation 1: Farmers Food – Existing view from Dodd Street. Source: GTTE, LLC

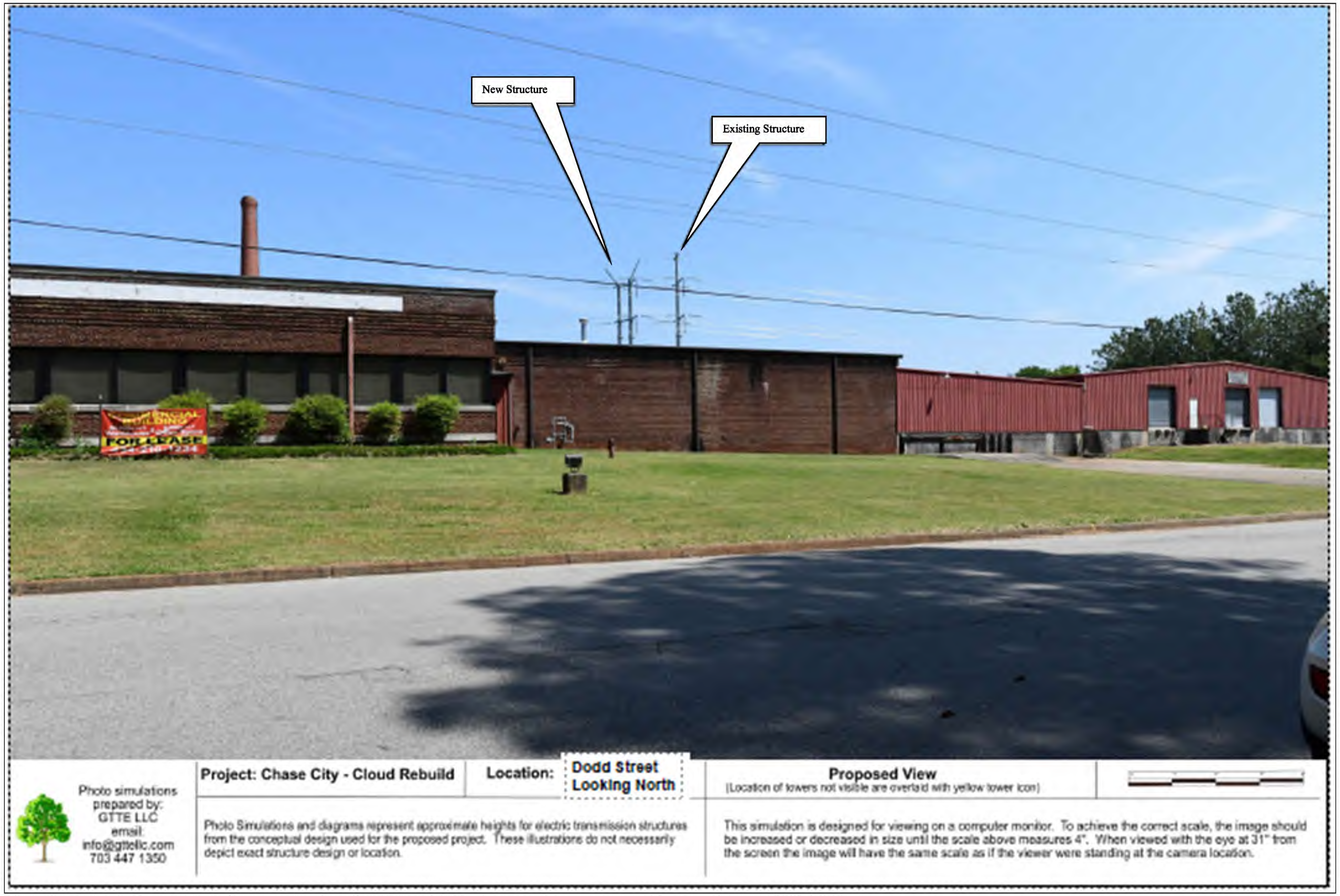


Photo Simulation 1: Farmers Food– Proposed view from Dodd Street (visible structures shown as they would appear. Source: GTTE, LLC

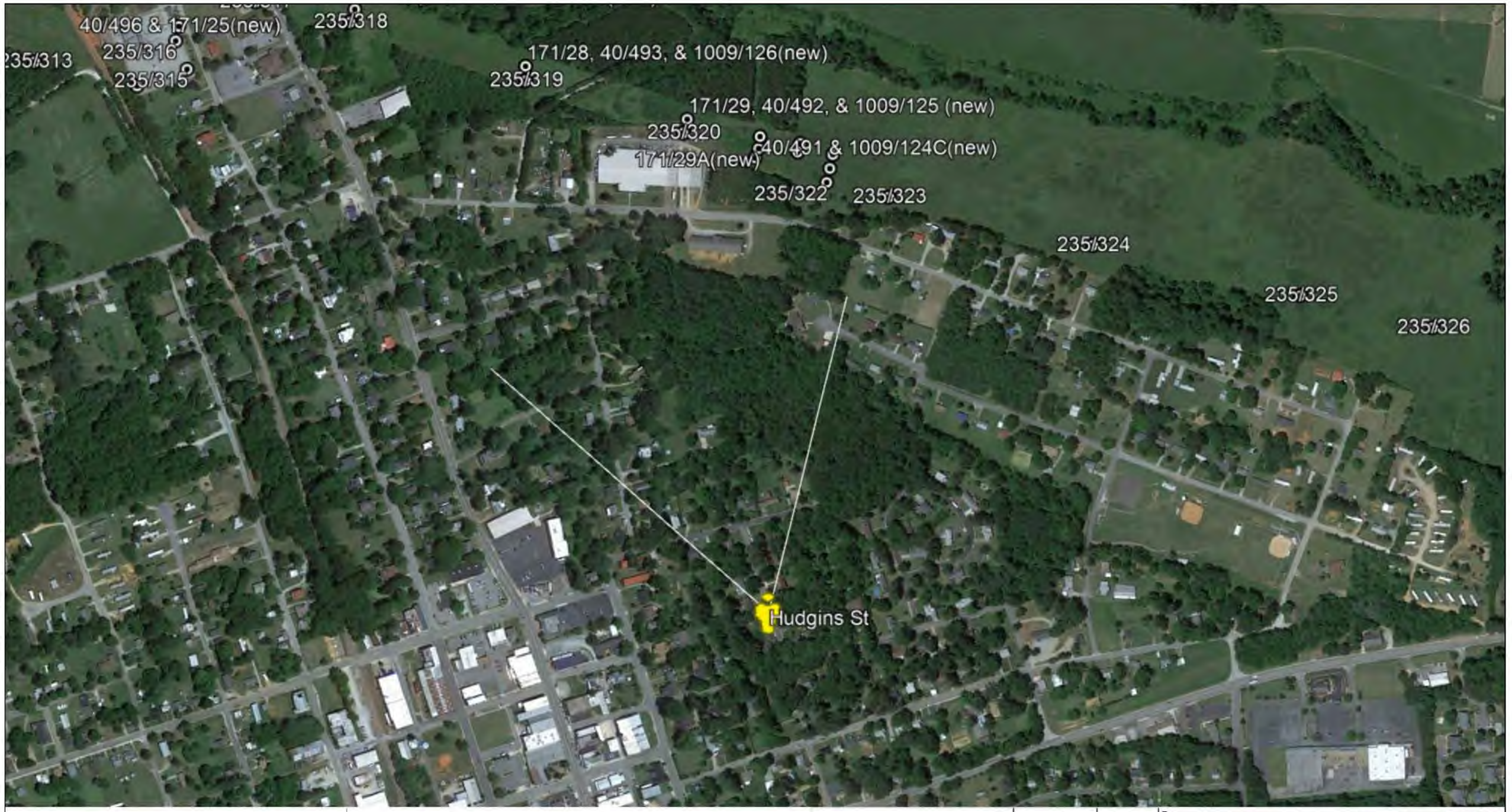


Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: Hudgins St looking N

Project: Chase City - Cloud Rebuild

Structure	Distance (ft)	Height (ft)
40/490 (new)	1965	55.0
171/29B & 1009/124A(new)	1905	112.0
1009/124B(new)	1997	110.0
40/490A(new)	1960	55.0
171/29A(new)	1971	110.0
40/491 & 1009/124C(new)	2021	110.5
171/29, 40/492, & 1009/125 (new)	2124	110.0
171/28, 40/493, & 1009/126(new)	2541	110.0
171/27, 40/494, & 1009/127(new)	3108	110.0

Structure	Distance (ft)	Height (ft)
235/322	1845	100.0
235/321	1932	100.0
235/320	2067	110.0
235/319	2482	120.0
235/318	3070	105.0
235/317	3373	120.0
235/316	3480	110.0

Photo Simulation 2: MacCallum More House HD– Simulation location, direction of view, and structures modeled from Hudgins Street. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	Project: Chase City - Cloud Rebuild	Location: Hudgins St	Existing View	
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.	

Photo Simulation 2: MacCallum More House – Existing view from Hudgins Street. Source: GTTE, LLC

Photo Simulation 2: MacCallum More House HD – Proposed view from Hudgins Street (Structures not visible- shown in yellow). Source: GTTE, LLC

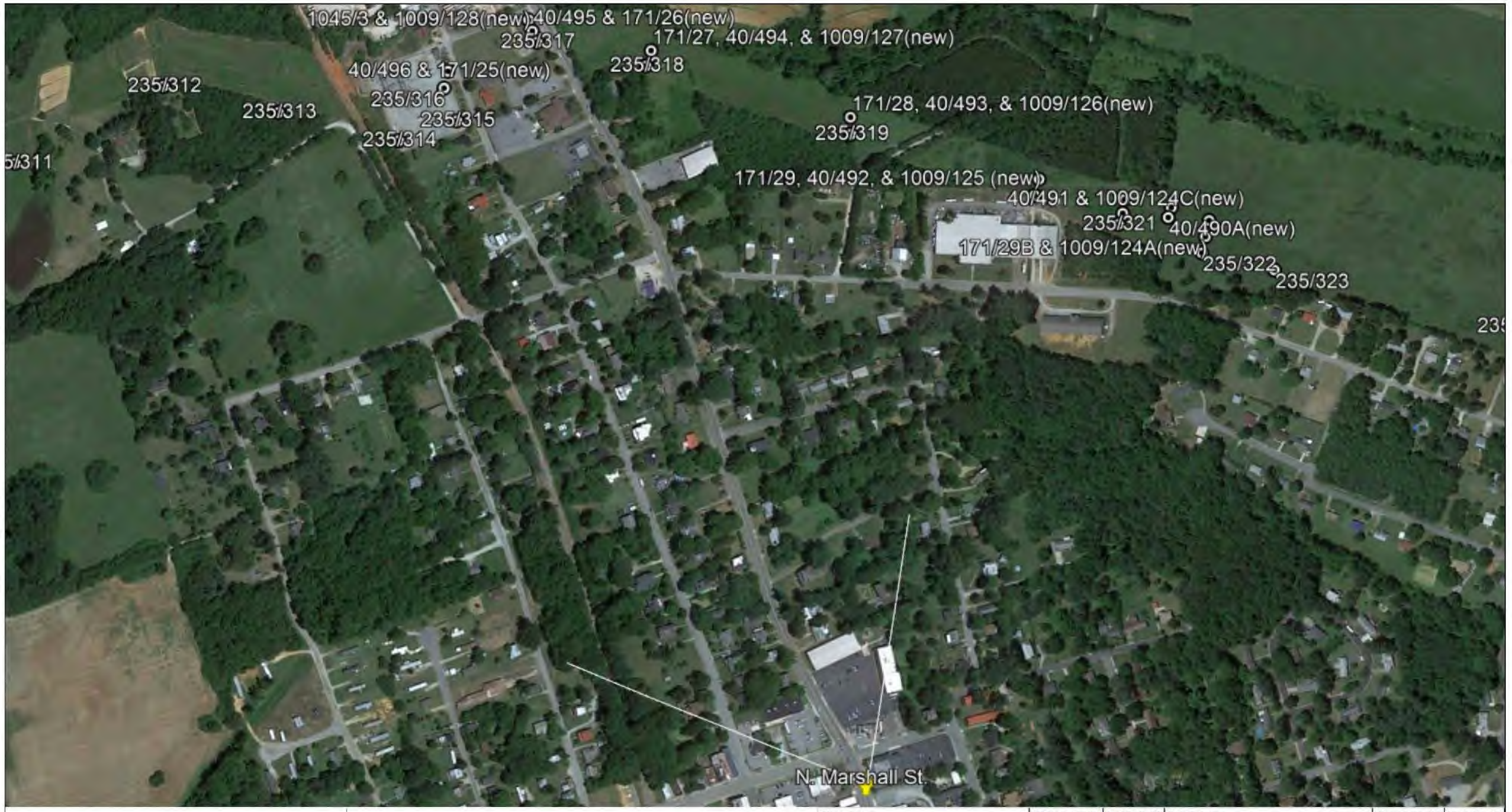


Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location:
N. Marshall St. looking North

Project: Chase City - Cloud Rebuild

Structure	Distance (ft)	Height (ft)
235/319	2346	120.0
235/318	2709	105.0
235/317	2919	120.0
235/316	2926	110.0
235/315	2802	110.0
235/314	2861	110.0
235/313	3215	105.0
235/312	3580	100.0
235/311	3831	120.0

Structure	Distance (ft)	Height (ft)
171/28, 40/493, & 1009/126(new)	2410	110.0
171/27, 40/494, & 1009/127(new)	2760	110.0
1045/3 & 1009/128(new)	3007	120.0
40/495 & 171/26(new)	2964	120.0
40/496 & 171/25(new)	2970	90.0

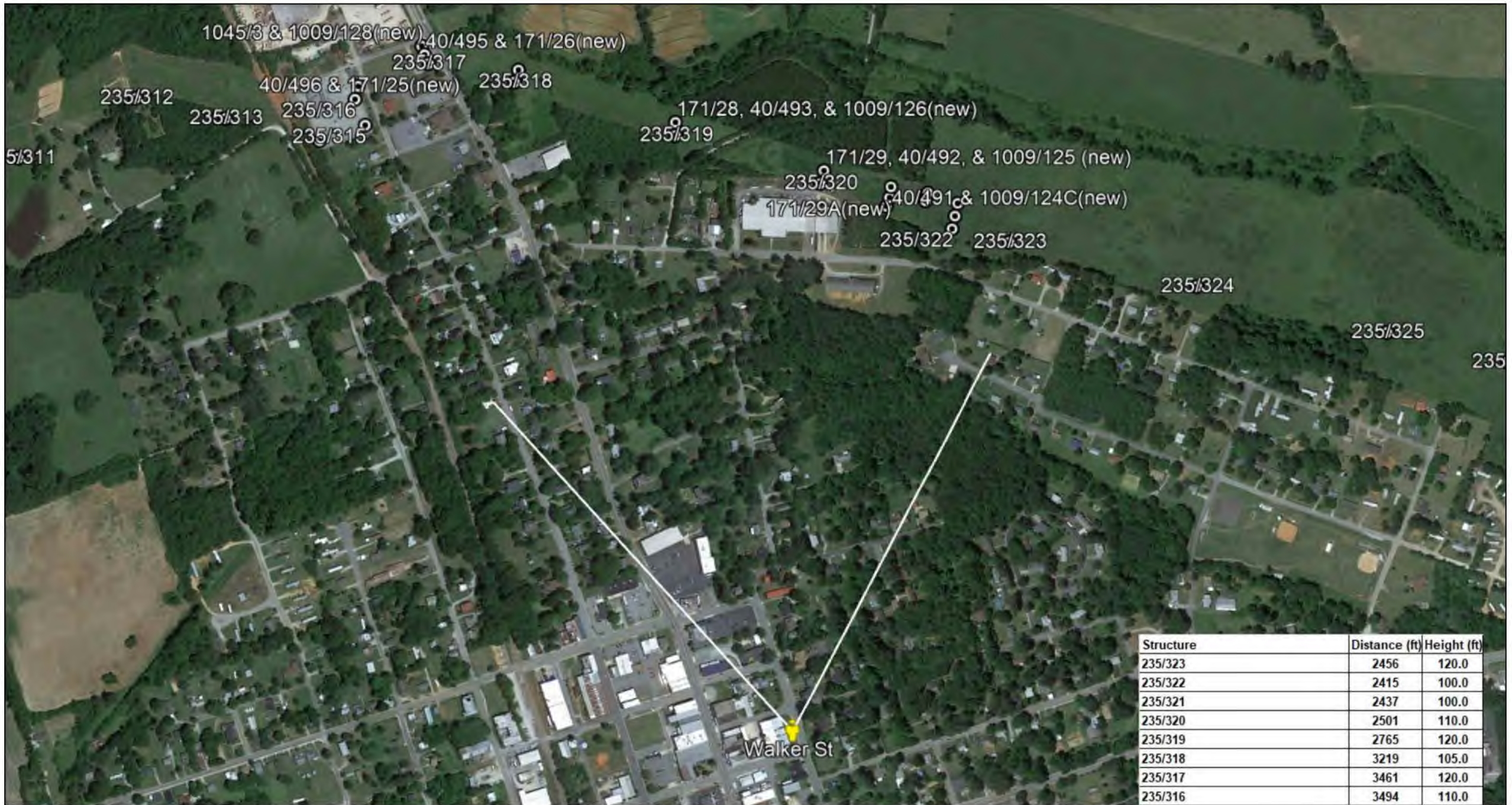
Photo Simulation 3: Chase City Warehouse and Commercial HD – Simulation location, direction of view, and structures modeled from N. Marshall Street. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	**Project: Chase City - Cloud Rebuild**	**Location: N. Marshall St. looking N**	**Existing View**
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Photo Simulation 3: Chase City Warehouse and Commercial HD– Existing view from N. Marshall Street. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	**Project: Chase City - Cloud Rebuild**	**Location: N. Marshall St. looking N**	**Proposed View** (Location of towers not visible are overlaid with yellow tower icon)
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Photo Simulation 3: Chase City Warehouse and Commercial HD – Proposed view from N. Marshall Street (Structures not visible- shown in yellow). Source: GTTE, LLC



Structure	Distance (ft)	Height (ft)
235/323	2456	120.0
235/322	2415	100.0
235/321	2437	100.0
235/320	2501	110.0
235/319	2765	120.0
235/318	3219	105.0
235/317	3461	120.0
235/316	3494	110.0

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: Walker St looking N

Project: Chase City - Cloud Rebuild

Structure	Distance (ft)	Height (ft)
40/490 (new)	2535	55.0
171/29B & 1009/124A(new)	2476	112.0
1009/124B(new)	2540	110.0
40/490A(new)	2502	55.0
171/29A(new)	2479	110.0
40/491 & 1009/124C(new)	2529	110.5

Structure	Distance (ft)	Height (ft)
171/29, 40/492, & 1009/125 (new)	2562	110.0
171/28, 40/493, & 1009/126(new)	2828	110.0
171/27, 40/494, & 1009/127(new)	3266	110.0
1045/3 & 1009/128(new)	3547	120.0
40/495 & 171/26(new)	3505	120.0
40/496 & 171/25(new)	3535	90.0

Photo Simulation 4: Chase City Warehouse and Commercial HD– Simulation location, direction of view, and structures modeled from Walker Street. Source: GTTE, LLC

Photo Simulation 4: Chase City Warehouse and Commercial HD– Existing view from Walker Street. Source: GTTE, LLC

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Project: Chase City - Cloud Rebuild

Location: Walker St. looking N

Proposed View
(Location of towers not visible are overlaid with yellow tower icon)

Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.

This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Photo Simulation 4: Chase City Warehouse and Commercial HD– Proposed view from Walker Street (Structures not visible- shown in yellow). Source: GTTE, LLC

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: Main St looking East

Project: Chase City - Cloud Rebuild

Name	Dist (ft)	Ht (ft)	Name	Dist (ft)	Ht (ft)
235/331	7367	120	235/327	4875	125
235/330	6649	125	235/326	4056	95
235/329	5901	130	235/325	3571	95
235/328	5301	130			

Photo Simulation 5: Chase City Warehouse and Commercial HD– Simulation location, direction of view, and structures modeled from Main Street. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	**Project: Chase City - Cloud Rebuild**	**Location: Main St. looking East**	**Existing View**
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Photo Simulation 5: Chase City Warehouse and Commercial HD– Existing view from Main Street. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	**Project: Chase City - Cloud Rebuild**	**Location: Main St. looking East**	**Proposed View** (Location of towers not visible are overlaid with yellow tower icon)
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Photo Simulation 5: Chase City Warehouse and Commercial HD– Proposed view from Main Street (Structures not visible- shown in yellow). Source: GTTE, LLC

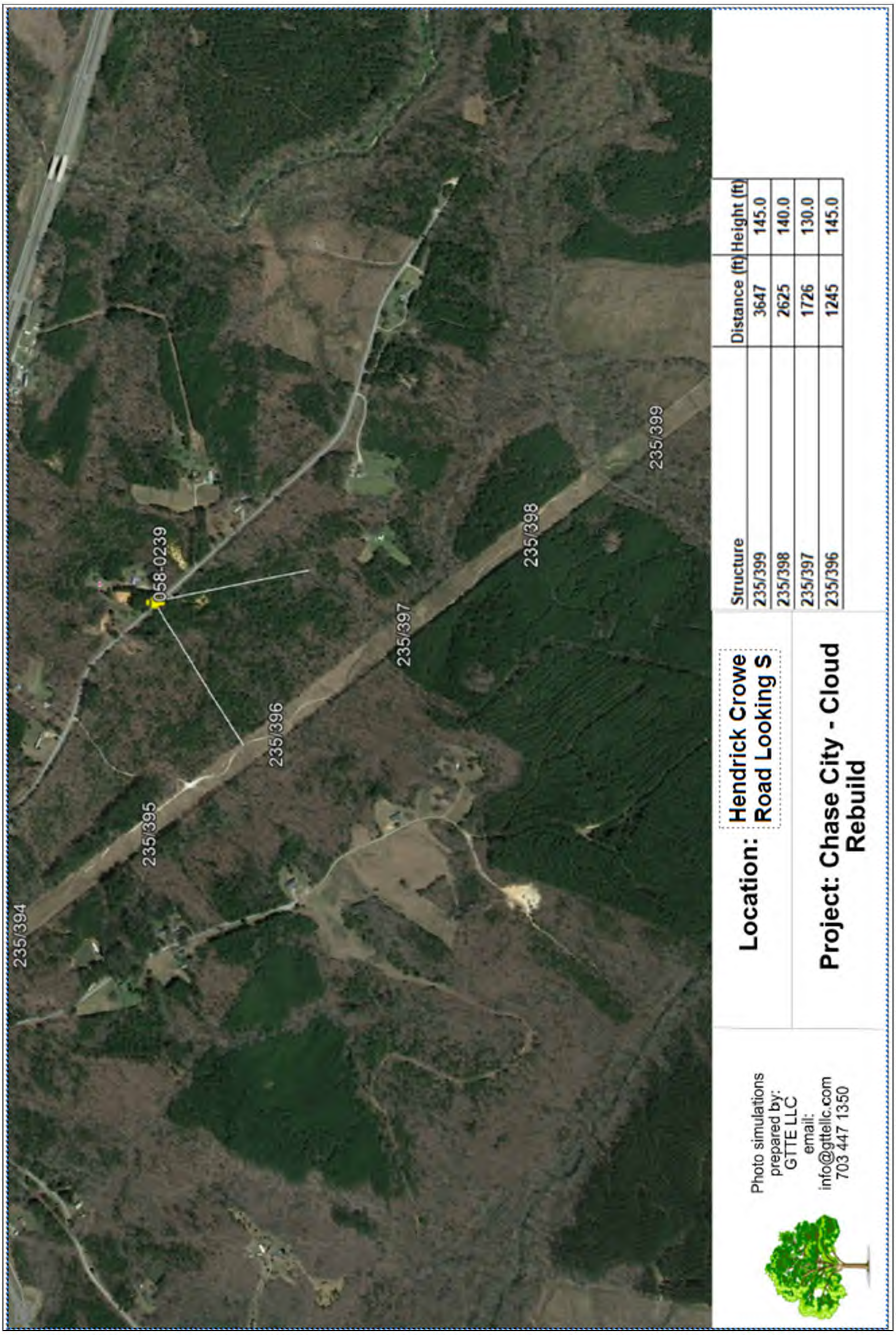


Photo Simulation 6: Vernacular Dwelling (058-0239)– Simulation location, direction of view, and structures modeled from Hendrick-Crow Road. Source: GTTE, LLC

Photo Simulation 6: Vernacular Dwelling (058-0239)– Existing view from Hendrick-Crow Road. Source: GTTE, LLC

Photo Simulation 6: Vernacular Dwelling (058-0239)– Proposed view from Hendrick-Crow Road (Structures not visible- shown in yellow). Source: GTTE, LLC

II. DESCRIPTION OF THE PROPOSED PROJECT

C. Describe and furnish plan drawings of all new substations, switching stations, and other ground facilities associated with the proposed project. Include size, acreage, and bus configurations. Describe substation expansion capability and plans. Provide one-line diagrams for each.

Response: The proposed Projects require developing Easters and Cloud Switching Stations as follows:

Developing and converting the Cloud 115 kV Switching Station to a 230 kV Switching Station

The proposed development of the 230 kV Cloud Switching Station will install 2 230 kV terminals, which would include 10 230 kV 3000A breakers; 16 230 kV 3000A switches; 18 arresters; and 2 224 MVA 230-115 kV transmission transformers. The Cloud Switching Station will be designed to provide 4 230 kV lines to MEC's new delivery point, which will allow the site to be able to accommodate future growth in the area with a total build-out of 6 230 kV breakers in a ring bus arrangement, to the extent necessary.

The development of the Cloud Switching Station will also include the installation of 5 115kV 3000A breakers and 5 115kV 2000A switches.

The one-line and the proposed development for these Projects at the Cloud Switching Station are provided as Attachment II.C.1.a. A one-line of the potential, future build-out of the Cloud Switching Station, as a result of the proposed Projects, is provided as Attachment II.C.1.b, as described above.

Developing and converting Easters 115 kV Switching Station to a 230 kV Switching Station

The proposed conversion will reutilize the initially constructed 115 kV switching station with 6 230 kV breakers in a ring bus arrangement. It will require the installation of an additional 24 arresters, 6 230kV 300A breakers, 11 230kV 3000A switches, and 1 230 kV 84 MVAR cap bank. The Easters Switching Station will be designed to provide 5 230 kV feeds to serve MEC's DP.

The one-line and the proposed development at the Easters Switching Station are provided as Attachment II.C.2.

Dominion Energy

CLOUD SWITCHING STATION

Drawing No. II.C.1A

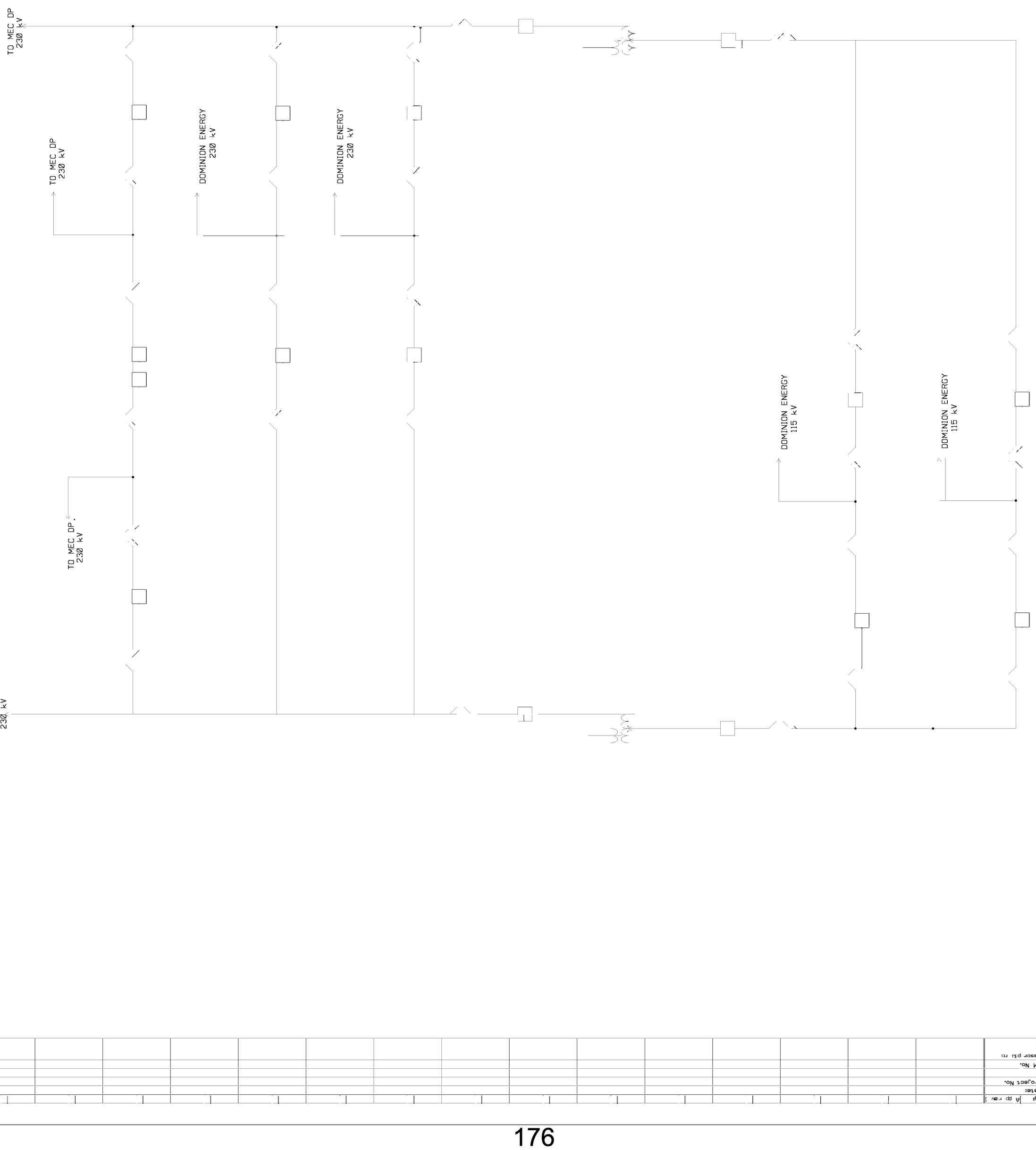
Date

Date

Drawn By:

Approval

6/7/2021



Revisions

Description

BM No.

Project No.

Date:

Appr'd By:

USER: mohammb

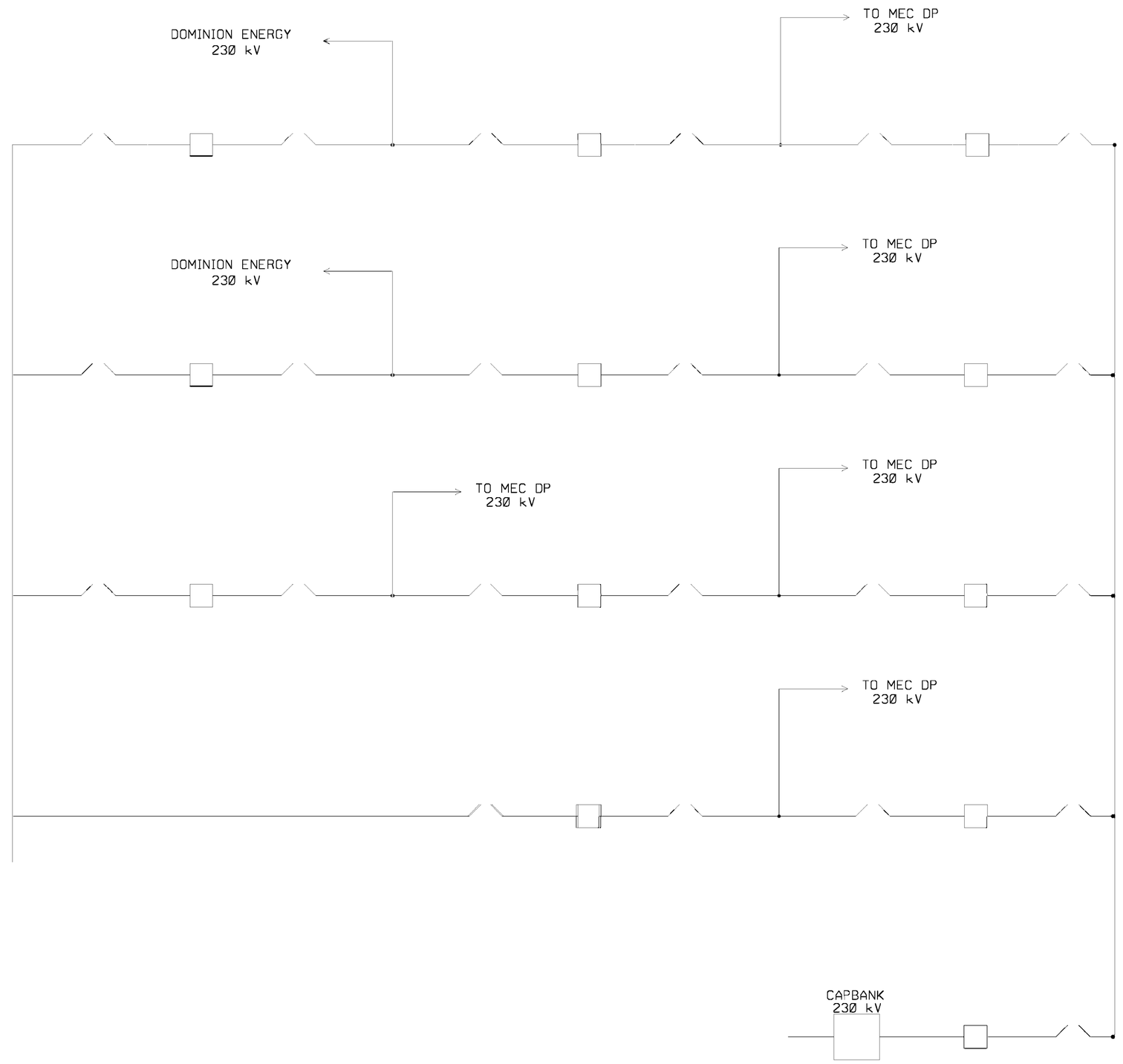
Attachment II.C.1.b

Revisions				
Description	BM No.	Project No.	Date	By
				Approval

Dominion Energy		
Drawn By:	Date	CLOUD SWITCHING STATION
Approval	Date	Drawing No. II.C.1B

USER: mohamm6

8/7/2021



178

Revisions			
Bgd.	Approval		
Date:	Project No.		
BM No.	Description		

USER: mohamm6

Drawn By:	Date	EASTERS SWITCHING STATION
Approval	Date	Drawing No. II.C.2

Dominion Energy

12/28/15

Attachment II.C.2

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

A. Describe the character of the area that will be traversed by this line, including land use, wetlands, etc. Provide the number of dwellings within 500 feet, 250 feet and 100 feet of the centerline, and within the ROW for each route considered. Provide the estimated amount of farmland and forestland within the ROW that the proposed project would impact.

Response: The proposed Projects cross approximately 1.1 miles through the Town of Chase City, Virginia, and approximately 14.2 miles through Mecklenburg County, Virginia in an area that is largely characterized by rural low-density residential development, farmland, and forestland. Using Mecklenburg County GIS parcel data, assessor records, and current aerial photography, 68 dwellings were counted within 500 feet of the centerline; 24 dwellings within 250 feet of the centerline; and 6 dwellings within 100 feet of the centerline. No houses are located within the right-of-way boundaries. These counts are based on desktop data and have not been field verified.

The existing transmission line right-of-way is regularly maintained to keep vegetation at the emergent and scrub-shrub level for the safe operation of the existing facilities. Since the majority of the proposed Projects would be constructed within the existing right-of-way, limited impact to greenfield areas (farmland and forested land) is expected and agricultural uses within the right-of-way can continue after construction of the Projects. Land use impacts within the new expanded right-of-way include less than 0.1 mile of developed land and 0.7 mile of forestland. In addition, about 0.4 mile of forestland occurs within an uncleared portion of existing right-of-way. The Projects' right-of-way crosses approximately 1.7 miles of cultivated farmland. See Section III.F for a discussion of Prime Farmland and Farmland of Statewide Importance crossed by the Projects.

Based on an analysis of the U.S. Geological Survey ("USGS") National Hydrography Database ("NHD"), the proposed route crosses three perennial streams and rivers, including: Butcher Creek, Allen Creek (six crossings), Coleman Creek (two crossings), and 24 intermittent streams.

Based on an analysis of the National Wetlands Inventory ("NWI"), approximately 0.8 mile of wetlands are crossed within the existing right-of-way, and less than 0.01 mile occur with the expanded right-of-way. Because the wetland within the expanded right-of-way is classified as a palustrine forested wetland, there will be a permanent conversion of wetland type from palustrine forested wetland to palustrine emergent wetland.

Prior to construction, the Company will obtain any necessary permits to impact jurisdictional resources.

There are no resources located in or adjacent to the proposed right-of-way listed on the National Register of Historic Places. See Section III.G for additional details regarding the presence of historic resources.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

B. Describe any public meetings the Applicant has had with neighborhood associations and/or officials of local, state or federal governments that would have an interest or responsibility with respect to the affected area or areas.

Response: Save the date postcards were sent to 77 property owners inviting them to attend a Virtual Community Meeting event to hear specific details relating to the Projects and to provide any feedback on the scope and potential impacts of the Projects. Exemplars of the postcards are included as Attachment III.B.1. The postcard sent to property owners outlined the scope of the Projects, provided an overview map, and invited recipients to visit the website for more information regarding the Projects. The postcard also offered a dedicated phone number and email address for community members to provide comment on or to ask any questions about the Projects. The Virtual Community Meeting event was held on May 25, 2021, from 5pm to 6pm, utilizing WebEx Events software. At the Virtual Community Meeting, the Company provided details about construction, timing of the Projects, and the State Corporation Commission approval process. There were 2 attendees at the Virtual Community Meeting.

In addition to the postcards, advertisements for the Virtual Community Meeting were placed in the Mecklenburg Sun and the News Progress newspaper prior to the event. A copy of the advertisement placed in the Mecklenburg Sun is included as Attachment III.B.2. Paid digital and social media campaigns that ran from May 18, 2021 to June 13, 2021, were also used to drive awareness of the Company's Projects and the Virtual Community Meeting, as well as to educate the public. Copies of those digital advertisements are included as Attachment III.B.3. The event campaigns ran within Facebook, Twitter, Google Display, and Nextdoor. Ads were optimized to drive website traffic to a landing page about the Projects, where users could either access and attend a live virtual meeting (Pre-Event) or they could view a recording of the virtual meetings that had been held (Post Event). All phases urged local residents to visit the www.dominionenergy.com/chasecity site to learn more about the meeting and to participate virtually. Campaign results included 684,960 Impressions Delivered, 4,644 Click on Ads, a 0.68% Click Thru Rate, 1,037 Link Clicks, and 20,082 Video Views.

All of the Virtual Community Meeting materials, including an overview video and visual simulations from key locations within the communities, have been posted on the website for the Projects. The visual simulations from the website are included as Attachment III.B.4.

The internet website dedicated to the Projects can be found at: www.dominionenergy.com/chasecity. The website includes route maps, an explanation of need, a description of the Projects and its benefits, information on the Commission review process, structure diagrams, and answers to frequently asked questions.

As part of preparing for these Projects, the Company researched the demographics of the surrounding communities using 2020 U.S. Census data and the 2014-2018 American Community Survey. This information revealed that there are five Census Block Groups that fall within a mile of the Projects' corridor. A review of ethnicity, income, age, and education census data identified populations within the study area that meet the U.S. Environmental Protection Agency threshold to be defined as Environmental Justice communities ("EJ Communities").

Pursuant to Va. Code §§ 56-46.1 C and 56-259 C and Attachment 1 of these Guidelines, there is a strong preference for the use of existing utility rights-of-way whenever feasible. The Projects are within the majority of existing right-of-way and will require three minor expansions of the Company's existing rights-of-way, as described in Section II.A.4 above. Based on the analysis of the Projects, the Company does not anticipate disproportionately high or adverse impacts to the surrounding community and the EJ Communities located within the study area, consistent with the Projects' design and requirements of the Virginia Code to reasonably minimize adverse impacts.

In addition to its evaluation of impacts, the Company has and will continue to engage the EJ Communities and others affected by the Projects in a manner that allows them to meaningfully participate in the development of the Projects and approval process so that their views and input can be taken into consideration. A copy of the Company's Environmental Justice Policy is provided as Attachment III.B.5.

Dominion Energy image. Not project specific.

Electric Transmission
P.O. Box 26666
Richmond, VA 23261

Dominion Energy®

Actions Speak Louder

YOU'RE INVITED TO A VIRTUAL COMMUNITY MEETING

DETAILS ENCLOSED

IMPORTANT

Local Power Line Project Information

Use your iPhone camera or the QR reader app on other smartphones to visit the project page on our website.

Chase City to Cloud 230 kV Electric Transmission Project

AT DOMINION ENERGY, we are committed to continually reviewing and analyzing our energy infrastructure to provide safe, reliable, and affordable electricity to our neighbors. You are receiving this postcard because we are preparing to build an electric transmission line between our Chase City and Cloud substations in Mecklenburg County, Virginia. We would like to invite you to a virtual community meeting to learn more about the project and meet our team.

This project runs along a 15-mile corridor. We are upgrading the existing 115 kilovolt (kV) line to a 230 kilovolt (kV) line to comply with mandatory standards and maintain electric reliability for our customers. Work will primarily take place in existing rights-of-way and will involve the clearing of some trees. Your electric service is not expected to be impacted as a result of this project.

In addition, we want to inform you that we remain committed to safety and will adhere to proper social distancing guidelines.

We are dedicated to working safely and courteously in your community and we will continue to keep you updated as activities progress.

CONTACT US

Visit our website at DominionEnergy.com/chasecity for project updates. Or contact us by calling 888-291-0190 or sending an email to powerline@dominionenergy.com.

At Dominion Energy, we know many of our customers are facing challenges due to the COVID-19 pandemic. We're here to help. In accordance with the law recently passed in Virginia, we're offering payment plans between 6 and 24 months. To set up a payment plan, or view additional assistance options, please visit DominionEnergy.com or call 1-866-366-4357.

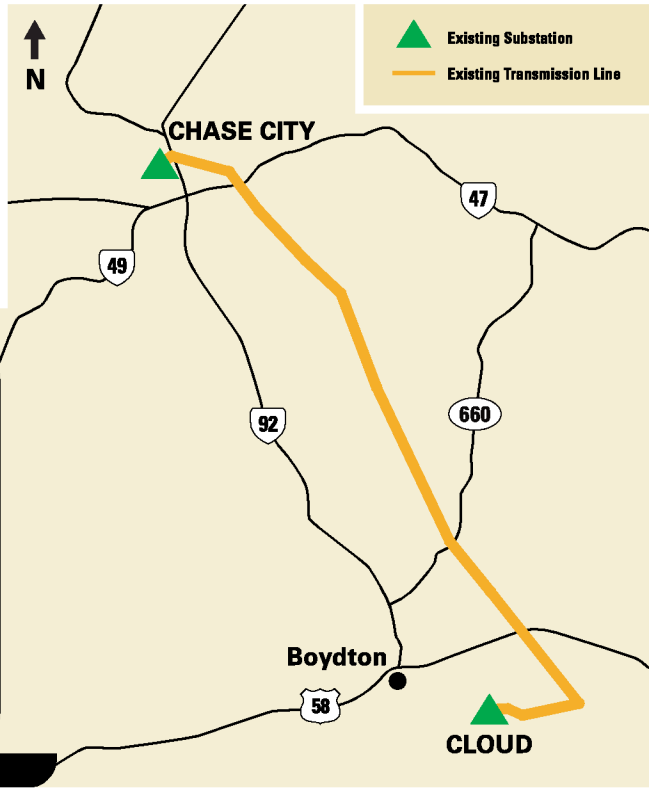
VIRTUAL COMMUNITY MEETING

Live Via Webex Events

Tuesday, May 25, 2021 • 5 – 6 p.m.

First 20 minutes will be a project overview presentation.

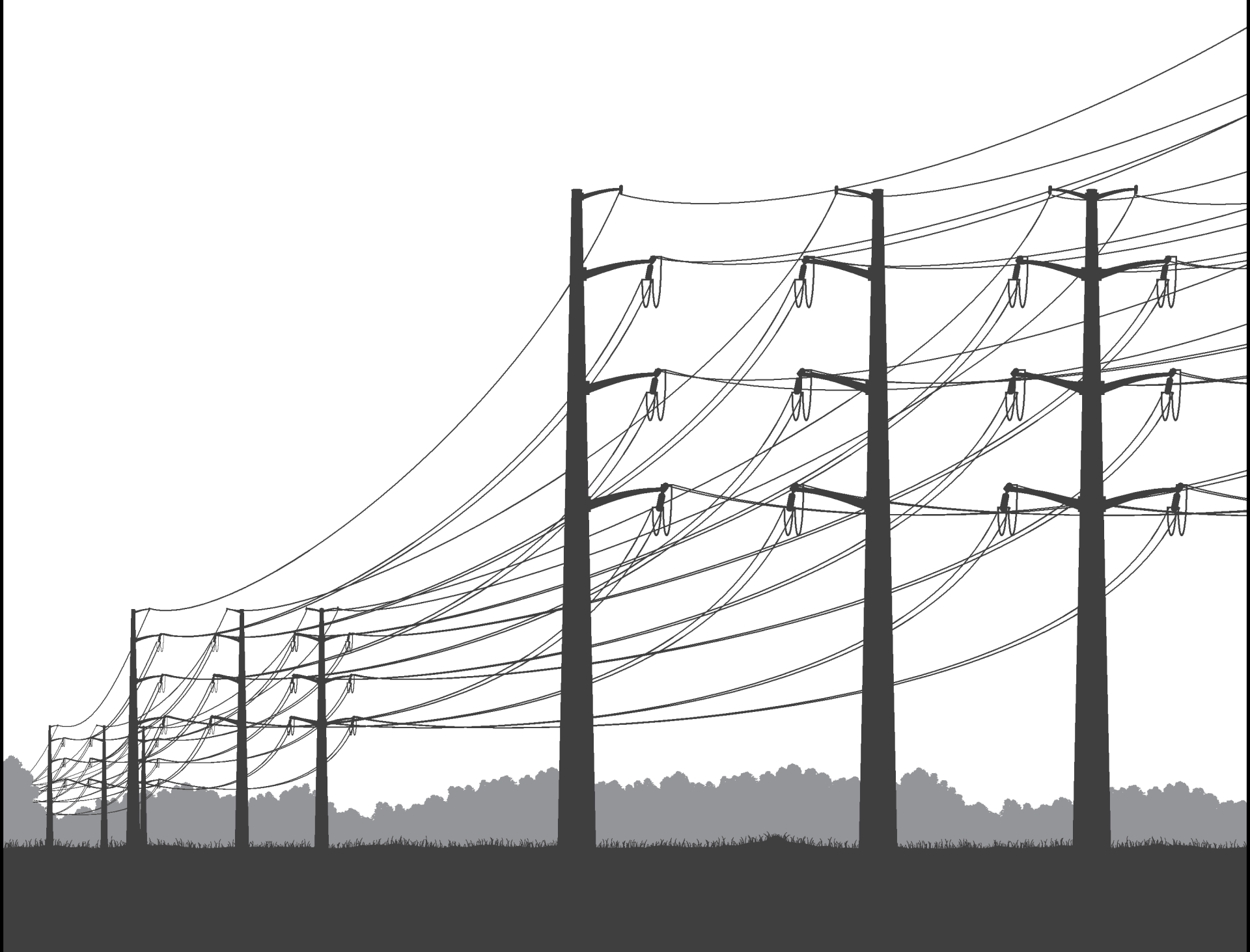
Visit DominionEnergy.com/chasecity for more information.



This map is intended to serve as a representation of the project area and is not intended for detailed engineering purposes.

You are invited to our Virtual Community Meeting

Hear from experts about Dominion Energy's Chase City to Cloud electric transmission line. This project will help ensure our community has access to affordable, reliable energy for years to come.



Join us live online on Thursday, May 25 at 5 p.m.
You can find event details at DominionEnergy.com/chasecity

Use your phone's camera or QR reader app to visit the project page directly.

Dominion Energy®

Actions Speak Louder

Chase City| Event Campaign Summary and Insights

Paid social media campaigns driving awareness of a virtual community meeting that was held to educate the public about upcoming Line 227 transmission line projects ran from 5/182021-6/13/2021. The campaign targeted residents that live near or in the proposed transmission project zones. Deployed in two phases, Pre-Event and Post Event, the campaigns ran on Facebook, Twitter, Google Display and Nextdoor. Ads were optimized to drive website traffic to a landing page about the Chase City project, where users could either access and attend a live virtual meeting (Pre-Event) or they could view a recording of the virtual meetings that had been held (Post Event). Results illustrated below.

Total Results– All Campaigns

- **684,960** Impressions Delivered
- **4,644** Clicks on Ads
- **0.68%** CTR
- **1,037** Link Clicks (Clicks to landing page from social media ads)
- **20,082** Video Views

Insights and Performance Summary

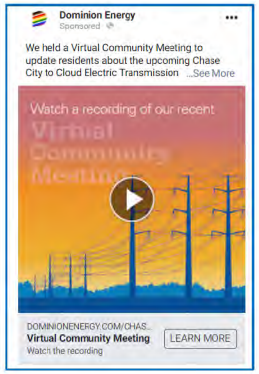
- Facebook Ads earned **99,123 impressions** (**14.5%** of total impressions) within the platform and produced **1,016 link clicks to the landing page**. The campaign's overall CTR was **2.14%**, which was **nearly 138% higher than platform benchmark.**** The Pre-Event portion of the campaign drove the most link clicks to the landing page.

- Twitter ads earned **21 link clicks** to the landing page and an overall **click-through rate of 5.13%**, which was **362% higher than benchmark.***** The Pre-Event portion of the campaign drove the most link clicks to the landing page and the highest CTRs.

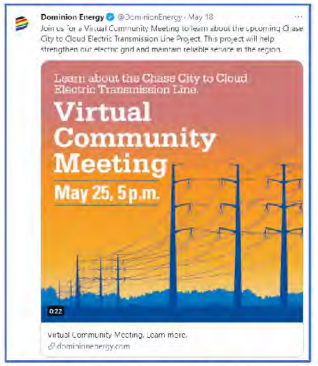
- Display ads ran in tandem with social throughout the campaign to help increase awareness across audience segments, contributing over **585,612 impressions** (**85.5%** of all impressions). The campaign drove 2,496 ad clicks.

Top Ads

Top Display Ad (CTR):
300x600 Banner Ad
1.81% CTR
*262% over benchmark****



Top Facebook Ad (CTR):
Post Event Video Ad 1
Retargeting Audience
3.18% CTR
*253% over benchmark***



Top Twitter Ad (CTR):
Pre-Event Video Ad 1
5.86% CTR
*428% over benchmark**

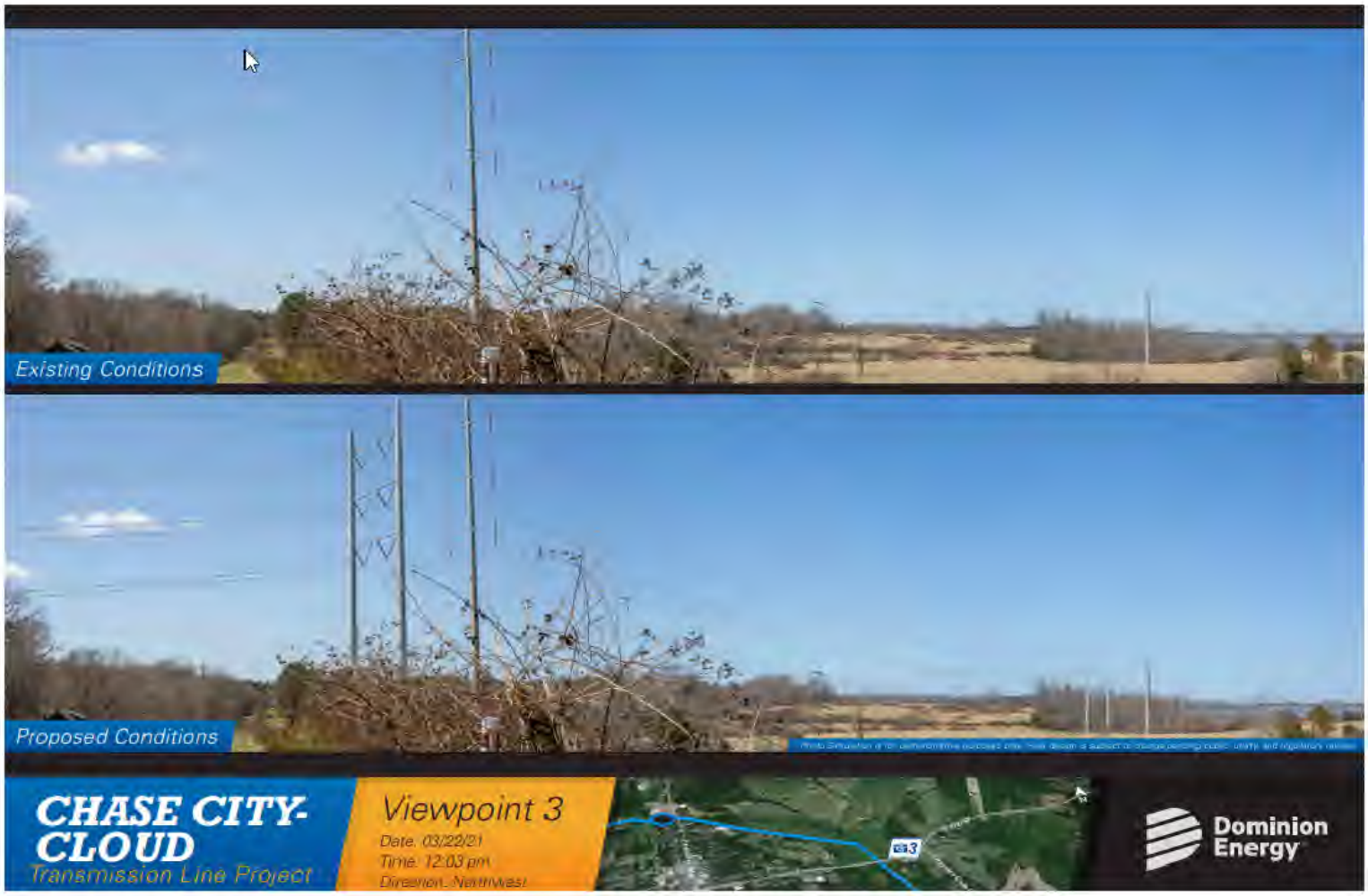
*CTR Benchmark for Twitter Traffic Ads: 1.11%
**CTR Benchmark for Facebook Traffic Ads: 0.90%
***CTR Benchmark for Google Display Ads: 0.50%
^^CTR Benchmark for Nextdoor Ads: 0.15-0.20%

YTD: January 1 – June 6, 2021

charles ryan associates


Existing Conditions
Proposed Conditions
CHASE CITY-CLOUD
Transmission Line Project
Viewpoint 1
Date: 03/22/21
Time: 11:05 am
Direction: Southwest
Dominion Energy


Existing Conditions
Proposed Conditions
CHASE CITY-CLOUD
Transmission Line Project
Viewpoint 2
Date: 03/22/21
Time: 12:01 pm
Direction: Northeast
Dominion Energy


Existing Conditions
Proposed Conditions
CHASE CITY-CLOUD
Transmission Line Project
Viewpoint 3
Date: 03/22/21
Time: 12:03 pm
Direction: Northwest
Dominion Energy


Existing Conditions
Proposed Conditions
CHASE CITY-CLOUD
Transmission Line Project
Viewpoint 4
Date: 03/22/21
Time: 1:41 pm
Direction: Southwest
Dominion Energy


Existing Conditions
Proposed Conditions
CHASE CITY-CLOUD
Transmission Line Project
Viewpoint 5
Date: 03/23/21
Time: 9:24 am
Direction: South
Dominion Energy

Environmental Justice: Ongoing Commitment to Our Communities

At Dominion Energy, we are committed to providing reliable, affordable, clean energy in accordance with our values of safety, ethics, excellence, embrace change and team work. This includes listening to and learning all we can from the communities we are privileged to serve.

Our values also recognize that environmental justice considerations must be part of our everyday decisions, community outreach and evaluations as we move forward with projects to modernize the generation and delivery of energy.

To that end, communities should have a meaningful voice in our planning and development process, regardless of race, color, national origin, or income. Our neighbors should have early and continuing opportunities to work with us. We pledge to undertake collaborative efforts to work to resolve issues. We will advance purposeful inclusion to ensure a diversity of views in our public engagement processes.

Dominion Energy will be guided in meeting environmental justice expectations of fair treatment and sincere involvement by being inclusive, understanding, dedicated to finding solutions, and effectively communicating with our customers and our neighbors. We pledge to be a positive catalyst in our communities.

November 2018

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

C. Detail the nature, location, and ownership of each building that would have to be demolished or relocated if the project is built as proposed.

Response: During the Company's review of the existing corridor, it identified no unauthorized encroachments within the right-of-way of the Projects.

In support of the Projects, the Company will be reviewing the entire corridor width prior to construction and plans to address unauthorized encroachments and easement violations, as appropriate.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

D. Identify existing physical facilities that the line will parallel, if any, such as existing transmission lines, railroad tracks, highways, pipelines, etc. Describe the current use and physical appearance and characteristics of the existing ROW that would be paralleled, as well as the length of time the transmission ROW has been in use.

Response: The proposed Projects are primarily within existing rights-of-way, and the expanded rights-of-way are collocated with existing Dominion Energy Virginia transmission rights-of-way for its entire length, which have been in use since the 1950s. The existing rights-of-way are cleared and characterized by open land, as well as some cultivated farmland and pasture, with the exception of clearing that is necessary for approximately 1.1 miles. The proposed Projects cross the Buckingham Branch Railroad immediately west of the Chase City Substation and crosses a total of 11 roads, to include the following: Redick Road, Boyd Street, North Main Street, Bryant Street, Virginia State Route 47, Cemetery Road, Country Club Drive (two crossings), Draper Road, Mt. Pleasant Road, Old Cox Road, and U.S. Route 58. The proposed Projects cross a Transco natural gas pipeline between Draper Road and Country Club Drive. The proposed Projects do not parallel railroad tracks, highways, or pipelines.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

E. Indicate whether the Applicant has investigated land use plans in the areas of the proposed route and indicate how the building of the proposed line would affect any proposed land use.

Response: The Mecklenburg County *Long Range Plan* (the "Long Range Plan"), dated 2012 and amended in 2017, was reviewed to evaluate the potential effect the proposed Projects could have on future land use. The Long Range Plan outlines a land use vision for the County, inventories existing conditions, discusses land use issues, opportunities, and an action plan to achieve the County's growth and conservation goals. The Long Range Plan provides guiding policies and actions items that will guide development and public infrastructure decisions over the next 10 to 20 years.

The Public Infrastructure Strategy in the Long Range Plan includes working with towns and service providers to coordinate utility needs, upgrades, and expansion of facilities. The County outlines the need to provide adequate and cost-effective utility infrastructure, and wants to do this by focusing on areas designated for growth and redevelopment. The Long Range Plan does not specifically mention transmission lines, but supports utility needs for the County.

Because the proposed Projects are primarily within existing easements and the expanded right-of-way is collocated along an existing transmission corridor, it would not materially change the character of the localities or significantly affect land use.

The Town of Chase City's *Comprehensive Plan Future of 2032*, adopted in 2012, specifies land development patterns that are compatible with planned infrastructure improvements as a goal. Additionally, one of the economic goals of the Town is to support energy infrastructure.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

F. Government Bodies

1. Indicate if the Applicant determined from the governing bodies of each county, city and town in which the proposed facilities will be located whether those bodies have designated the important farmlands within their jurisdictions, as required by § 3.2-205 B of the Code.

2. If so, and if any portion of the proposed facilities will be located on any such important farmland:

a. Include maps and other evidence showing the nature and extent of the impact on such farmlands;

b. Describe what alternatives exist to locating the proposed facilities on the affected farmlands, and why those alternatives are not suitable; and

c. Describe the Applicant's proposals to minimize the impact of the facilities on the affected farmland.

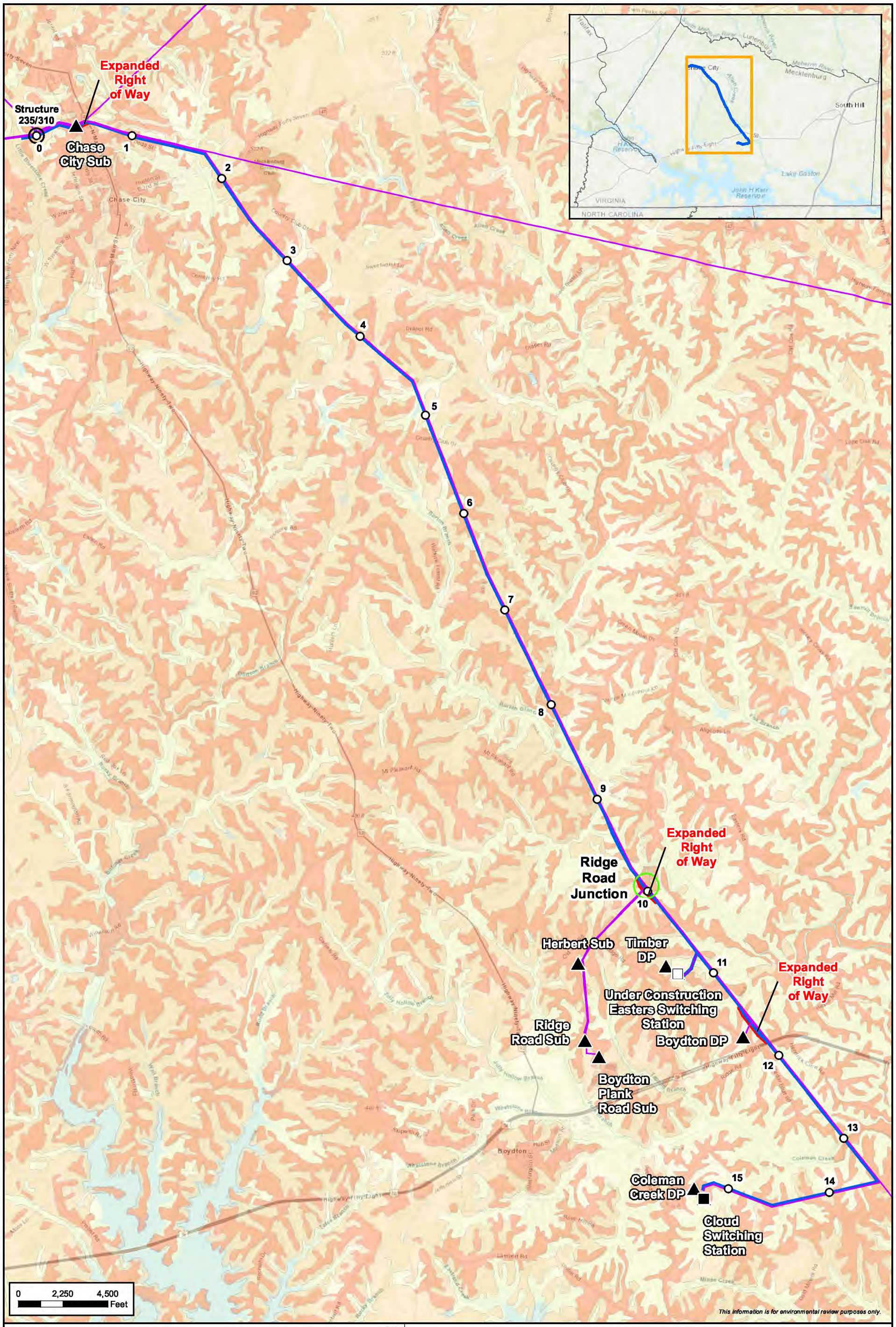
Response:

1. According to the Mecklenburg County *Long Range Plan* (2017), most of the soils in the County are defined as prime farmland or farmlands of state importance. The Long Range Plan also specifies that avoidance and minimization be used on prime farmland or farmlands of statewide importance.

2. a. Minimal impacts to prime farmlands or farmlands of state importance are expected. Of the soils crossed by the proposed Projects, about 63 percent are classified as prime farmlands or farmlands of state importance including: approximately 5.5 miles of prime farmlands and approximately 4.2 miles of farmlands of state importance. For the majority of these areas, there will be no change to the current land-use. The one exception is the approximately 0.7 mile of expanded rights-of-way, where prime farmlands and/or farmlands of state importance are crossed; however, these farmland designations are based on the underlying soil type since these particular locations of expanded right-of-way are forested and not used for crop cultivation. See Attachment III.F.2.

   b. No alternatives exist because the proposed Projects will primarily occur within the Company's existing electric transmission right-of-way. Approximately 0.7 mile of rights-of-way expansion are proposed, as described in Section II.A.4.

c. Although there will be minimal temporary impacts to possible prime farmland soils or farmlands of state importance due to expanded rights-of-way (approximately 0.7 mile), the Company will implement Best Management Practices ("BMPs") during and post construction to mitigate erosion and impacts to topsoil throughout the area of the Projects.



Substation (Sub) or Delivery Point (DP)
Milepost
Proposed Centerline
Junction
Existing Switching Station
Under Construction Switching Station
Expanded Right of Way
Existing Transmission Line

SSURGO Soils Farmland Class
All areas are prime farmland
Farmland of statewide importance
Not prime farmland

N

Attachment III.F.2
Prime Farmland and Farmland of Statewide Importance
Line #235 Extension to Cloud 230 kV and Related Projects
Mecklenburg County, Virginia

ERM

Dominion Energy

MPLS M:\Clients\D-F\DOM\Cloud\ArcGIS\2021\06\SCC_DOM_CLD_Att_III_F_2_Farmland_v5.mxd | REVISED: 06/08/2021 | SCALE: 1:54,000 when printed at 11x17 | DRAWN BY: 0239

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

G. Identify the following that lie within or adjacent to the proposed ROW:

1. **Any district, site, building, structure, or other object included in the National Register of Historic Places maintained by the U.S. Secretary of the Interior;**

2. **Any historic architectural, archeological, and cultural resources, such as historic landmarks, battlefields, sites, buildings, structures, districts or objects listed or determined eligible by the Virginia Department of Historic Resources ("DHR");**

3. **Any historic district designated by the governing body of any city or county;**

4. **Any state archaeological site or zone designated by the Director of the DHR, or its predecessor, and any site designated by a local archaeological commission, or similar body;**

5. **Any underwater historic assets designated by the DHR, or predecessor agency or board;**

6. **Any National Natural Landmark designated by the U.S. Secretary of the Interior;**

7. **Any area or feature included in the Virginia Registry of Natural Areas maintained by the Virginia Department of Conservation and Recreation ("DCR").**

8. **Any area accepted by the Director of the DCR for the Virginia Natural Area Preserves System.**

9. **Any conservation easement or open space easement qualifying under §§ 10.1-1009 – 1016, or §§ 10.1-1700 – 1705, of the Code (or a comparable prior or subsequent provision of the Code).**

10. **Any state scenic river;**

11. **Any lands owned by a municipality or school district; and**

12. **Any federal, state or local battlefield, park, forest, game or wildlife preserve, recreational area, or similar facility. Features, sites, and the like listed in 1 through 11 above need not be identified again.**

Response:

1. There are no NRHP-listed resources located in or adjacent to the proposed right-of-way.

2. None of the Virginia Landmarks Register ("VLR") properties in the vicinity of the Projects are within or adjacent to the proposed right-of-way.

3. None of the recorded historic districts in the vicinity of the Projects are within or adjacent to the proposed right-of-way.

4. There are four archaeological sites within the proposed right-of-way: 44MC0450, 44MC0457, 44MC0458, 44MC0551. These sites include two prehistoric sites—one with Early Archaic (44MC0450) and one with Late Woodland (44MC0458) components; one historic house site (44MC0457), that upon a subsequent revisit to the area, was unable to be relocated; and thus, is presumed to be destroyed; and the Williams Grove Church Cemetery (44MC0551), which dates to the twentieth century. The Williams Grove Church Cemetery has been determined not eligible for the National Register of Historic Places by the Virginia Department of Historic Resources, while the other three sites have not been evaluated.

5. None.

6. None.

7. The VDCR provided an official review on March 8, 2021, that concluded the proposed Projects workspace (including a 100-foot buffer) would not affect any areas included in the Virginia Registry of Natural Areas for VDCR.

8. The VDCR provided an official review on March 8, 2021, that concluded the proposed Projects workspace (including a 100-foot buffer) would not affect any documented areas accepted by the Director of VDCR under the Virginia Natural Area Preserves System.

9. The proposed route crosses one conservation easement owned by the Blue Ridge Land Conservancy.

10. None.

11. According to current Mecklenburg County, VA Parcel Ownership Data (2021), the Projects do not cross any parcels owned by the Town of Chase City, Mecklenburg County, or school districts.

12. The Projects cross the Tobacco Heritage Trail, which is managed by the Roanoke River Rails to Trails Board of Directors. The trail constitutes the central part of the Beaches to Bluegrass Trail Network. The trail runs through forested areas and historical tobacco farms in southern Virginia, which can be used by pedestrians, bicyclists, and equestrians.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

H. List any registered aeronautical facilities (airports, helipads) where the proposed route would place a structure or conductor within the federally-defined airspace of the facilities. Advise of contacts, and results of contacts, made with appropriate officials regarding the effect on the facilities' operations.

Response: The Federal Aviation Administration ("FAA") is responsible for overseeing air transportation in the United States. The FAA manages air traffic in the United States and evaluates physical objects that may affect the safety of aeronautical operations through an obstruction evaluation. The prime objective of the FAA in conducting an obstruction evaluation is to ensure the safety of air navigation and the efficient utilization of navigable airspace by aircraft.

The FAA's website (https://oeaaa.faa.gov/oeaaa/extemal/portal.jsp) was reviewed to identify airports within 10 nautical miles of the proposed Projects. Based on this review, the following airports were identified:

- Chase City Municipal airport, approximately 1.8 miles west of route;
- Twin Towers Airport, approximately 2.5 miles east of route;
- Hazelswart Airport, approximately 4.0 miles northeast of route;
- Merifield Airport, approximately 9.6 miles northeast of route

Based on a preliminary review, impacts to air navigation are not anticipated, but FAA filings are required for sixteen (16) of the proposed structures and twenty seven (27) construction cranes. FAA Part 77 notices will be required for the following airport:

- Chase City Municipal Airport ("CXE")

The Company will file a notice of proposed construction or alteration with the FAA for the towers and cranes described above.

The Company solicited comments directly from the FAA and Virginia Department of Aviation ("DOAv") regarding the proposed Projects. DOAv provided comments via an email dated May 24, 2021, which is included as Attachment 2.N.1 of the DEQ Supplement. In its email, DOAv commented that a portion of the Projects lie within 20,000 linear feet of the Chase City Municipal Airport and must be reviewed by the FAA to determine if the proposed Projects would cause a hazard to navigation. DOAv requested the Company submit a 7460 form to the FAA for any segment of the transmission line within 20,000 linear feet of the Chase City Airport and for any structure (tower or crane) that may reach a height of 200 feet above ground level. Therefore, the

Company will submit the relevant 7460 form to the FAA, as requested.

See also Section 2.N of the DEQ Supplement.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

I. Advise of any scenic byways that are in close proximity to or that will be crossed by the proposed transmission line and describe what steps will be taken to mitigate any visual impacts on such byways. Describe typical mitigation techniques for other highways' crossings.

Response: No scenic byways are crossed or in close proximity to the proposed Projects, and the Projects will not pose any visual impacts. Use of most of the existing right-of-way minimizes additional impacts at any road crossings. However, the proposed route does cross one U.S. Highway (U.S. Highway 58) at approximate milepost 11.8. The Company will develop a Traffic Plan during construction.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

J. Identify coordination with appropriate municipal, state, and federal agencies.

Response: Below is a list of coordination that has occurred with municipal, state, and federal agencies:

- Letters dated May 24, 2021, were submitted to Mecklenburg County and Chase City to describe the Projects and to request comment. See Section V.D.
- Letters were submitted to the agencies listed in Section V.C in May 2021, describing the Projects and requesting comment.
- In an email dated May 24, 2021, DOAv requested the Company to submit a 7460 form to the FAA for any segment of the transmission line within 20,000 linear feet of the Chase City Airport and for any structure (tower or crane) that may reach a height of 200 feet above ground level. See Attachment 2.N.1 to the DEQ Supplement.
- In an email dated May 24, 2021, the DCR Environmental Impacts Review Coordinator responded that the DCR Planning and Recreation has no resource in the area of the Projects. See Attachment 2.K.2 to the DEQ Supplement.
- The Company sent the GIS shapefile for the Projects to the Blue Ridge Land Conservancy ("BRLC") on May 21, 2021. In an email dated May 21, 2021, the BRLC requested additional project information about potential impacts across their easement and the time frame for construction. See Attachment 2.K.1 to the DEQ Supplement.
- A Stage I Pre-Application was submitted to VDHR on June 10, 2021.
- A project review from the DCR's Division of Natural Heritage was received on March 8, 2021, which concluded the proposed Projects' workspace (including a 100-foot buffer) would not affect any documented state-listed animals, plants, and/or insects, and does not cross any State Natural Area Preserves under VDCR's jurisdiction. See Attachment 2.F.3 to the DEQ Supplement.
- Coordination with the Corps, DEQ, and Virginia Marine Resources Commission will take place as appropriate to obtain necessary approvals for the Projects.
- On May 14, 2021, the Company solicited comments via letter from several federally-recognized Native American tribes, including the tribes identified below.

Cheroenhaka (Nottoway) Indian Tribe
Chickahominy Indians Eastern Division
Mattaponi Tribe
Monacan Nation
Nansemond Indian Tribal Association

Nottoway Indian Tribe of Virginia
Pamunkey Nation
Chickahominy Tribe - Eastern Division
Patawomeck Indian Tribe of Virginia
Rappahannock Tribe
The Upper Mattaponi Indian Tribe

A copy of the letter template is provided as Attachment III.J.1.

Dominion Energy Virginia
Electric Transmission
P.O. Box 26666, Richmond, VA 23261-6666
DominionEnergy.com

May 14, 2021

Chase City to Cloud 230 kV Electric Transmission Project

Dear Chief Walt "Red Hawk" Brown:

At Dominion Energy, we are dedicated to finding the best solution for our long-term needs in the communities we serve. As a valued stakeholder with a vested interest in the community, we invite you to participate in the development of a 230 kilovolt (kV) electric transmission line project in Mecklenburg County, Virginia.

We are planning to upgrade an existing 115 kilovolt (kV) line to a 230 kilovolt (kV) line to comply with mandatory standards and maintain electric reliability for our customers. Work will begin at our Chase City Substation and head southeast toward our Cloud Substation near Boydton, Virginia. The line will cross the Tobacco Heritage Trail near the southern end of the electric transmission line. New double-circuit steel poles will be placed in the right of way along the existing transmission line.

Work will take place primarily in existing rights-of-way and will also involve the clearing of some trees. Construction is scheduled to begin during the first quarter of 2023. The target completion date is June 2024.

To see a project overview map and photo simulations of the project, please visit DominionEnergy.com/chasecity.

We are seeking input as we prepare to submit an application with the Virginia State Corporation Commission (SCC) in June 2021. Doing so allows us to hear any concerns you may have as we work to meet the needs of the project. Please feel free to notify other relevant organizations that may have an interest in the project area. For reference, recipients of this letter include other county and statewide historic, cultural and scenic organizations and Native American tribes.

Due to the coronavirus, we do not plan to host formal community open house events at this time. In lieu of our traditional in-person meetings, we will hold a virtual community meeting May 25, 2021 from 5-6 p.m. You can find meeting details, as well as project information, on our project webpage.

If you would like any additional information, have questions, or would like to set up a meeting to discuss the project, please do not hesitate to contact Ken Custalow, our Tribal Liaison. He can be reached by email at ken.custalow@dominionenergy.com. Thank you for your willingness to join us in our commitment to serving the community.

Sincerely,

Robert E Richardson

Robert Richardson
Communications Consultant
The Electric Transmission Project Team

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

K. Identify coordination with any non-governmental organizations or private citizen groups.

Response: On May 14, 2021, the Company solicited comments via letter from the non-governmental organizations and private citizen groups identified below. A copy of the letter template is included as Attachment III.K.1.

Name	Organization
Ms. Elizabeth S. Kostelny	Preservation Virginia
Mr. Thomas Gilmore	Civil War Trust
Mr. Jim Campi	Civil War Trust
Mr. Adam Gillenwater	Civil War Trust
Ms. Kym Hall	Colonial National Historical Park
Mr. Jack Gary	Council of Virginia Archeologists
Ms. Leighton Powell	Scenic Virginia
Mr. Alexander Macaulay	Macaulay & Jamerson
Ms. Sharee Williamson	National Trust for Historic Preservation
Dr. Newby- Alexander	Norfolk State University
Mary Frances Wilkerson	Nottoway Indian Tribe
Mr. Dan Holmes	Piedmont Environmental Council

Dominion Energy Virginia
Electric Transmission
P.O. Box 26666, Richmond, VA 23261-6666
DominionEnergy.com

May 14, 2021

Chase City to Cloud 230 kV Electric Transmission Project

Dear Ms. Elizabeth S. Kostelny:

At Dominion Energy, we are dedicated to finding the best solution for our long-term needs in the communities we serve. As a valued stakeholder with a vested interest in the community, we invite you to participate in the development of a 230 kilovolt (kV) electric transmission line project in Mecklenburg County, Virginia.

We are planning to upgrade an existing 115 kilovolt (kV) line to a 230 kilovolt (kV) line to comply with mandatory standards and maintain electric reliability for our customers. Work will begin at our Chase City Substation and head southeast toward our Cloud Substation near Boydton, Virginia. The line will cross the Tobacco Heritage Trail near the southern end of the electric transmission line. New double-circuit steel poles will be placed in the right of way along the existing transmission line.

Work will take place primarily in existing rights-of-way and will also involve the clearing of some trees to expand the existing right of way. Construction is scheduled to begin during the first quarter of 2023. The target completion date is June 2024.

To see a project overview map and photo simulations of the project, please visit DominionEnergy.com/chasecity.

We are seeking input as we prepare to submit an application with the Virginia State Corporation Commission (SCC) in June 2021. Doing so allows us to hear any concerns you may have as we work to meet the needs of the project. Please feel free to notify other relevant organizations that may have an interest in the project area. For reference, recipients of this letter include other county and statewide historic, cultural and scenic organizations and Native American tribes.

Due to the coronavirus, we do not plan to host formal community open house events at this time. In lieu of our traditional in-person meetings, we will hold a virtual community meeting May 25, 2021 from 5-6 p.m. You can find meeting details, as well as project information, on our project webpage.

If you would like any additional information, have questions, or would like to set up a meeting to discuss the project, please contact me by sending an email to Robert.E.Richardson@dominionenergy.com or calling 888-291-0190.

Thank you for your willingness to join us in our commitment to serving the community.

Sincerely,

Robert E Richardson

Robert Richardson
Communications Consultant
The Electric Transmission Project Team

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

L. Identify any environmental permits or special permissions anticipated to be needed.

Response: The permits or special permissions that are likely to be required for the proposed Projects are listed below.

Potential Permits

Activity	Potential Permit	Agency/Organization
Impacts to wetlands and other waters of the U.S.	Nationwide Permit 57	U.S. Army Corps of Engineers
Impacts to wetlands and other waters of the U.S.	Virginia Water Protection Permit	Virginia Department of Environmental Quality
Work within, over or under state subaqueous bottom	Subaqueous Bottom Permit	Virginia Marine Resources Commission
Discharge of Stormwater from construction	Construction General Permit	Virginia Department of Environmental Quality
Work within VDOT rights-of-way	Land Use Permit	Virginia Department of Transportation
Airspace obstruction evaluation	FAA 7460-1	Federal Aviation Administration

IV. HEALTH ASPECTS OF ELECTROMAGNETIC FIELDS ("EMF")

A. Provide the calculated maximum electric and magnetic field levels that are expected to occur at the edge of the ROW. If the new transmission line is to be constructed on an existing electric transmission line ROW, provide the present levels as well as the maximum levels calculated at the edge of ROW after the new line is operational.

Response: Public exposure to magnetic fields is best estimated by field levels from power lines calculated at annual average loading. For any day of the year, the EMF levels associated with average conditions provide the best estimate of potential exposure. Maximum (peak) values are less relevant as they may occur for only a few minutes or hours each year.

This section describes the levels of EMF associated with the existing transmission line. EMF levels are provided for both historical (2020) and future (2025) annual average and maximum (peak) loading conditions.

Existing lines – Historical average loading

EMF levels were calculated for the existing lines at the ***historical average*** load condition (221 amps for Line #33, 43 amps for Line #36, 208 amps for Line #38, 96 amps for Line #40, 236 amps for Line #137, 116 amps for Line #171, 138 amps for Line #1009, 38 amps for Line #1012, 204 amps for Line #1041, and 105 amps for Line #1045) and at an operating voltage of 120.75 kV when supported on the existing structures – see Attachments II.A.5.a-o.

These field levels were calculated at mid-span where the conductors are closest to the ground and the conductors are at an historical average load operating temperature.

EMF levels at the edge of the rights-of-way for the existing lines at the historical average loading:

	Left Edge		Right Edge	
	Electric Field (kV/m)	Magnetic Field (mG)	Electric Field (kV/m)	Magnetic Field (mG)
Attachment II.A.5.a	0.023	1.368	0.023	1.479
Attachment II.A.5.b	0.037	2.957	0.432	17.837
Attachment II.A.5.c	0.489	10.967	0.318	19.088
Attachment II.A.5.d	0.019	1.117	0.304	10.745
Attachment II.A.5.e	0.023	1.183	0.259	10.835

Attachment II.A.5.f	0.017	2.216	0.017	3.479
Attachment II.A.5.g	0.019	0.495	0.181	5.217
Attachment II.A.5.h	0.017	0.501	0.158	4.537
Attachment II.A.5.i	0.019	0.672	0.233	5.673
Attachment II.A.5.j	0.023	0.818	0.685	5.034
Attachment II.A.5.k	0.021	0.742	0.675	5.238
Attachment II.A.5.l	0.196	3.443	0.678	5.069
Attachment II.A.5.m	0.340	6.285	0.065	4.003
Attachment II.A.5.n	0.060	1.894	0.533	11.137
Attachment II.A.5.o	0.034	1.194	0.509	1.470

Existing lines – Historical peak loading

EMF levels were calculated for the existing lines at the ***historical peak*** load condition (785 amps for Line #33, 574 amps for Line #36, 389 amps for Line #38, 454 amps for Line #40, 619 amps for Line #137, 341 amps for Line #171, 396 amps for Line #1009, 151 amps for Line #1012, 388 amps for Line #1041, and 472 amps for Line #1045) and at an operating voltage of 120.75 kV when supported on the existing structures – see Attachment II.A.5. a-o.

These field levels were calculated at mid-span where the conductors are closest to the ground and the conductors are at a historical peak load operating temperature.

EMF levels at the edge of the rights-of-way for the existing Lines at the historical peak loading:

	Left Edge		**Right Edge**	
	Electric Field (kV/m)	Magnetic Field (mG)	Electric Field (kV/m)	Magnetic Field (mG)
Attachment II.A.5.a	0.024	2.678	0.024	2.705
Attachment II.A.5.b	0.038	6.450	0.432	46.887
Attachment II.A.5.c	0.490	21.882	0.314	48.992

Attachment II.A.5.d	0.019	1.851	0.303	32.042
Attachment II.A.5.e	0.023	1.925	0.255	32.473
Attachment II.A.5.f	0.017	3.689	0.019	11.554
Attachment II.A.5.g	0.020	1.520	0.179	14.939
Attachment II.A.5.h	0.017	1.543	0.155	13.062
Attachment II.A.5.i	0.020	2.059	0.230	16.429
Attachment II.A.5.j	0.024	3.089	0.685	24.077
Attachment II.A.5.k	0.021	2.911	0.674	25.055
Attachment II.A.5.l	0.195	10.179	0.678	24.280
Attachment II.A.5.m	0.340	18.702	0.068	16.781
Attachment II.A.5.n	0.060	8.678	0.531	41.171
Attachment II.A.5.o	0.034	5.622	0.510	4.879

Proposed Projects – Projected average loading in 2025

EMF levels were calculated for the proposed Projects at the ***projected average*** load condition (316 amps for Line #33, 239 amps for Line #36, 387 amps for Line #38, 234 amps for Line #40, 347 amps for Line #137, 83 amps for Line #171, 36 amps for Line #1009, 139 amps for Line #1012, 212 amps for Line #1041, 308 amps for Line #1042, 151 amps for Line #1045, 132 amps for Line #235, 746 amps for Line #2226, and 422 amps for Line #2229) and at an operating voltage of 120.75 and 241.5 kV when supported on the proposed Projects structures – see Attachment II.A.5. a-o.

These field levels were calculated at mid-span where the conductors are closest to the ground and the conductors are at a projected average load operating temperature.

EMF levels at the edge of the rights-of-way for the proposed Projects at the projected average loading:

	Left Edge		Right Edge	
	Electric Field (kV/m)	Magnetic Field (mG)	Electric Field (kV/m)	Magnetic Field (mG)
Attachment II.A.5.a	0.695	26.418	0.029	7.496
Attachment II.A.5.b	0.545	22.239	0.434	26.539
Attachment II.A.5.c	0.318	18.662	0.332	27.478
Attachment II.A.5.d	0.549	21.071	0.302	18.656
Attachment II.A.5.e	0.542	43.495	0.261	21.897
Attachment II.A.5.f	0.318	12.255	0.114	9.401
Attachment II.A.5.g	0.714	47.307	0.206	5.438
Attachment II.A.5.h	0.723	45.977	0.174	5.484
Attachment II.A.5.i	0.405	38.578	0.243	7.266
Attachment II.A.5.j	0.709	47.612	0.680	13.770
Attachment II.A.5.k	0.649	48.744	0.663	14.038
Attachment II.A.5.l	0.668	46.458	0.451	14.292
Attachment II.A.5.m	0.458	44.178	0.346	15.493
Attachment II.A.5.n	0.689	47.497	0.544	18.371
Attachment II.A.5.o	0.702	51.159	0.518	2.939

Proposed Projects – Projected Peak loading in 2025

EMF levels were calculated for the proposed Projects at the ***projected peak*** load condition (527 amps for Line #33, 398 amps for Line #36, 645 amps for Line #38, 390 amps for Line #40, 578 amps for Line #137, 138 amps for Line #171, 60 amps for Line #1009, 232 amps for Line #1012, 353 amps for Line #1041, 513 amps for Line #1042, 252 amps for Line #1045, 220 amps for Line #235, 1243 amps for Line #2226, and 703 amps for Line #2229) and at an operating voltage of 120.75 and 241.5 kV when supported on the proposed Project structures – see Attachment II.A.5. a-o.

These field levels were calculated at mid-span where the conductors are closest to the ground and the conductors are at a projected peak load operating temperature.

EMF levels at the edge of the rights-of-way for the proposed Projects at the projected peak loading:

	Left Edge		**Right Edge**	
	Electric Field (kV/m)	Magnetic Field (mG)	Electric Field (kV/m)	Magnetic Field (mG)
Attachment II.A.5.a	0.692	44.204	0.030	12.552
Attachment II.A.5.b	0.543	37.282	0.435	44.853
Attachment II.A.5.c	0.315	31.218	0.329	46.090
Attachment II.A.5.d	0.547	35.338	0.302	31.595
Attachment II.A.5.e	0.532	73.818	0.259	37.080
Attachment II.A.5.f	0.323	20.586	0.116	15.710
Attachment II.A.5.g	0.703	80.088	0.206	9.109
Attachment II.A.5.h	0.712	78.080	0.175	9.198
Attachment II.A.5.i	0.396	65.525	0.244	12.185
Attachment II.A.5.j	0.697	80.934	0.680	23.052
Attachment II.A.5.k	0.638	82.144	0.662	23.457
Attachment II.A.5.l	0.657	78.631	0.451	23.885
Attachment II.A.5.m	0.448	74.278	0.345	25.867
Attachment II.A.5.n	0.678	80.191	0.544	30.690
Attachment II.A.5.o	0.690	86.588	0.519	4.926

IV. HEALTH ASPECTS OF ELECTROMAGNETIC FIELDS ("EMF")

B. If the Applicant is of the opinion that no significant health effects will result from the construction and operation of the line, describe in detail the reasons for that opinion and provide references or citations to supporting documentation.

Response: The conclusions of multidisciplinary scientific review panels assembled by national and international scientific agencies during the past two decades are the foundation of the Company's opinion that no adverse health effects will result from the operation of the proposed Project. Each of these panels has evaluated the scientific research related to health and power-frequency EMF and provided conclusions that form the basis of guidance to governments and industries. The Company regularly monitors the recommendations of these expert panels to guide their approach to EMF.

Research on EMF and human health varies widely in approach. Some studies evaluate the effects of high, short-term EMF exposures not typically found in people's day-to-day lives on biological responses, while others evaluate the effects of common, lower EMF exposures found throughout communities. Studies also have evaluated the possibility of effects (*e.g.*, cancer, neurodegenerative diseases, and reproductive effects) of long-term exposure. Altogether, this research includes well over a hundred epidemiologic studies of people in their natural environment and many more laboratory studies of animals (*in vivo*) and isolated cells and tissues (*in vitro*). Standard scientific procedures, such as weight-of-evidence methods, were used by the expert panels assembled by agencies to identify, review, and summarize the results of this large and diverse research.

The reviews of EMF biological and health research have been conducted by numerous scientific and health agencies, including the European Health Risk Assessment Network on Electromagnetic Fields Exposure ("EFHRAN"), the International Commission on Non-Ionizing Radiation Protection ("ICNIRP"), the World Health Organization ("WHO"), the IEEE's International Committee on Electromagnetic Safety ("ICES"), the Scientific Committee on Emerging and Newly Identified Health Risks ("SCENIHR") of the European Commission, and the Swedish Radiation Safety Authority ("SSM") (formerly the Swedish Radiation Protection Authority ["SSI"]) (WHO, 2007; SCENIHR, 2009, 2015; EFHRAN, 2010, 2012; ICNIRP, 2010; SSM, 2015, 2016, 2018, 2019, 2020, 2021; ICES, 2019). The general scientific consensus of the agencies that have reviewed this research, relying on generally accepted scientific methods, is that the scientific evidence does not confirm that common sources of EMF in the environment, including transmission lines and other parts of the electric system, appliances, etc., are a cause of any adverse health effects.

The most recent reviews on this topic include the 2015 report by SCENIHR and annual reviews published by SSM (*e.g.*, for the years 2015 through 2021). These reports, similar to previous reviews, found that the scientific evidence does not

confirm the existence of any adverse health effects caused by environmental or community exposure to EMF.

The WHO has recommended that countries adopt recognized international standards published ICNIRP and ICES. Typical levels of EMF from Dominion's power lines outside its property and rights-of-way are far below the screening reference levels of EMF recommended for the general public and still lower than exposures equivalent to restrictions to limits on fields within the body (ICNIRP, 2010; ICES, 2019).

Thus, based on the conclusions of scientific reviews and the levels of EMF associated with the proposed Project, the Company has determined that no adverse health effects are anticipated to result from the operation of the proposed Project.

References

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International Commission on Non-ionizing Radiation Protection (ICNIRP). Guidelines for limiting exposure to time-varying electric and magnetic fields (1 Hz to 100 kHz). Health Phys 99: 818-36, 2010.

International Committee on Electromagnetic Safety (ICES). IEEE Standard for Safety Levels with Respect to Human Exposure to Electromagnetic Fields 0 to 300 GHz. IEEE Std C95.1-2019. New York, NY: IEEE, 2019.

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Swedish Radiation Safety Authority (SSM). Research 2015:19. Recent Research on EMF and Health Risk - Tenth report from SSM's Scientific Council on Electromagnetic Fields. Stockholm, Sweden: Swedish Radiation Safety Authority (SSM), 2015.

Swedish Radiation Safety Authority (SSM). Research 2016:15. Recent Research on EMF and Health Risk - Eleventh report from SSM's Scientific Council on Electromagnetic Fields, 2016. Including Thirteen years of electromagnetic field

research monitored by SSM's Scientific Council on EMF and health: How has the evidence changed over time? Stockholm, Sweden: Swedish Radiation Safety Authority (SSM), 2016.

Swedish Radiation Safety Authority (SSM). Research 2018:09. Recent Research on EMF and Health Risk - Twelfth report from SSM's Scientific Council on Electromagnetic Fields, 2017. Stockholm, Sweden: Swedish Radiation Safety Authority (SSM), 2018.

Swedish Radiation Safety Authority (SSM). Research 2019:08. Recent Research on EMF and Health Risk – Thirteenth Report from SSM's Scientific Council on Electromagnetic Fields, 2018. Stockholm, Sweden: Swedish Radiation Safety Authority (SSM), 2019.

Swedish Radiation Safety Authority (SSM). Research 2020:04. Recent Research on EMF and Health Risk – Fourteenth Report from SSM's Scientific Council on Electromagnetic Fields, 2019. Stockholm, Sweden: Swedish Radiation Safety Authority (SSM), 2020.

Swedish Radiation Safety Authority (SSM). Research 2021:08. Recent Research on EMF and Health Risk – Fifteenth report from SSM's Scientific Council on Electromagnetic Fields, 2020. Stockholm, Sweden: Swedish Radiation Safety Authority (SSM), 2021.

World Health Organization (WHO). Environmental Health Criteria 238: Extremely Low Frequency (ELF) Fields. Geneva, Switzerland: World Health Organization, 2007.

IV. HEALTH ASPECTS OF ELECTROMAGNETIC FIELDS ("EMF")

C. Describe and cite any research studies on EMF the Applicant is aware of that meet the following criteria:

1. Became available for consideration since the completion of the Virginia Department of Health's most recent review of studies on EMF and its subsequent report to the Virginia General Assembly in compliance with 1985 Senate Joint Resolution No. 126;

2. Include findings regarding EMF that have not been reported previously and/or provide substantial additional insight into findings; and

3. Have been subjected to peer review.

Response: The Virginia Department of Health ("VDH") conducted its most recent review and issued its report on the scientific evidence on potential health effects of extremely low frequency ("ELF") EMF in 2000: "[T]he Virginia Department of Health is of the opinion that there is no conclusive and convincing evidence that exposure to extremely low frequency EMF emanated from nearby high voltage transmission lines is causally associated with an increased incidence of cancer or other detrimental health effects in humans."[14]

The continuing scientific research on EMF exposure and health has resulted in many peer-reviewed publications since 2000. The accumulating research results have been regularly and repeatedly reviewed and evaluated by national and international health, scientific, and government agencies, including most notably:

- The WHO, which published one of the most comprehensive and detailed reviews of the relevant scientific peer-reviewed literature in 2007;
- SCENIHR, a committee of the European Commission, which published its assessments in 2009 and 2015;
- The SSM, which has published annual reviews of the relevant peer-reviewed scientific literature since 2003, with its most recent review published in 2021; and,
- EFHRAN, which published its reviews in 2010 and 2012.

The above reviews provide detailed analyses and summaries of relevant recent peer-reviewed scientific publications. The conclusions of these reviews that the evidence overall does not confirm the existence of any adverse health effects due to exposure to EMF below scientifically established guideline values are consistent with the conclusions of the VDH report. With respect to the statistical association observed in some of the childhood leukemia epidemiologic studies, the most recent

[14] *See* http://www.vdh.virginia.gov/content/uploads/sites/12/2016/02/highfinal.pdf.

comprehensive review of the literature by SCENIHR, published in 2015, concluded that "no mechanisms have been identified and no support is existing [*sic*] from experimental studies that could explain these findings, which, together with shortcomings of the epidemiological studies prevent a causal interpretation" (SCENIHR, 2015, p. 16).

While research is continuing on multiple aspects of EMF exposure and health, many of the recent publications have focused on an epidemiologic assessment of the relationship between EMF exposure and childhood leukemia and EMF exposure and neurodegenerative diseases. Of these, the following recent publications, published following the inclusion date (June 2014) for the SCENIHR (2015) report through May 2021, provided additional evidence and contributed to clarification of previous findings. Overall, new research studies have not provided evidence to alter the previous conclusions of scientific and health organizations, including the WHO and SCENIHR.

Recent epidemiologic studies of EMF and childhood leukemia include:

- Bunch et al. (2015) assessed the potential association between residential proximity to high-voltage underground cables and development of childhood cancer in the United Kingdom largely using the same epidemiologic data as in a previously published study on overhead transmission lines (Bunch et al., 2014). No statistically significant associations or trends were reported with either distance to underground cables or calculated magnetic fields from underground cables for any type of childhood cancers.

- Pedersen et al. (2015) published a case-control study that investigated the potential association between residential proximity to power lines and childhood cancer in Denmark. The study included all cases of leukemia (n=1,536), central nervous system tumor, and malignant lymphoma (n=417) diagnosed before the age of 15 between 1968 and 2003 in Denmark, along with 9,129 healthy control children matched on sex and year of birth. Considering the entire study period, no statistically significant increases were reported for any of the childhood cancer types.

- Salvan et al. (2015) compared measured magnetic-field levels in the bedroom for 412 cases of childhood leukemia under the age of 10 and 587 healthy control children in Italy. Although the statistical power of the study was limited because of the small number of highly exposed subjects, no consistent statistical associations or trends were reported between measured magnetic-field levels and the occurrence of leukemia among children in the study.

- Bunch et al. (2016) and Swanson and Bunch (2018) published additional analyses using data from an earlier study (Bunch et al., 2014). Bunch et al. (2016) reported that the association with distance to power lines observed in earlier years was linked to calendar year of birth or year of cancer diagnosis, rather than the age of the power lines. Swanson and Bunch (2018) re-analyzed

data using finer exposure categories (e.g., cut-points of every 50-meter distance) and broader groupings of diagnosis date (e.g., 1960-1979, 1980-1999, and 2000-on) and reported no overall associations between exposure categories and childhood leukemia for the later periods (1980 and on), and consistent pattern for the periods prior to 1980.

- Crespi et al. (2016) conducted a case-control epidemiologic study of childhood cancers and residential proximity to high-voltage power lines (60 kilovolts ["kV"] to 500 kV) in California. Childhood cancer cases, including 5,788 cases of leukemia and 3,308 cases of brain tumor, diagnosed under the age of 16 between 1986 and 2008, were identified from the California Cancer Registry. Controls, matched on age and sex, were selected from the California Birth Registry. Overall, no consistent statistically significant associations for leukemia or brain tumor and residential distance to power lines were reported.

- Kheifets et al. (2017) assessed the relationship between calculated magnetic-field levels from power lines and development of childhood leukemia within the same study population evaluated in Crespi et al. (2016). In the main analyses, which included 4,824 cases of leukemia and 4,782 controls matched on age and sex, the authors reported no consistent patterns, or statistically significant associations between calculated magnetic-field levels and childhood leukemia development. Similar results were reported in subgroup and sensitivity analyses. In two subsequent studies, Amoon et al. (2018a, 2019) examined the potential impact of residential mobility (i.e., moving residences between birth and diagnosis) on the associations reported in Crespi et al. (2016) and Kheifets et al. (2017). Amoon et al. (2018a) concluded that changing residences was not associated with either calculated magnetic-field levels or proximity to the power lines, while Amoon et al. (2019) concluded that while uncontrolled confounding by residential mobility had some impact on the association between EMF exposure and childhood leukemia, it was unlikely to be the primary driving force behind the previously reported associations in Crespi et al. (2016) and Kheifets et al. (2017).

- Amoon et al. (2018b) conducted a pooled analysis of 29,049 cases and 68,231 controls from 11 epidemiologic studies of childhood leukemia and residential distance from high-voltage power lines. The authors reported no statistically-significant association between childhood leukemia and proximity to transmission lines of any voltage. Among subgroup analyses, the reported associations were slightly stronger for leukemia cases diagnosed before 5 years of age and in study periods prior to 1980. Adjustment for various potential confounders (*e.g.*, socioeconomic status, dwelling type, residential mobility) had little effect on the estimated associations.

- Kyriakopoulou et al. (2018) assessed the association between childhood acute leukemia and parental occupational exposure to social contacts, chemicals, and electromagnetic fields. The study was conducted at a major pediatric hospital in Greece and included 108 cases and 108 controls matched for age, gender,

and ethnicity. Statistically non-significant associations were observed between paternal exposure to magnetic fields and childhood acute leukemia for any of the exposure periods examined (1 year before conception; during pregnancy; during breastfeeding; and from birth until diagnosis); maternal exposure was not assessed due to the limited sample size. No associations were observed between childhood acute leukemia and exposure to social contacts or chemicals.

- Auger et al. (2019) examined the relationship between exposure to EMF during pregnancy and risk of childhood cancer in a cohort of 784,000 children born in Quebéc. Exposure was defined using residential distance to the nearest high-voltage transmission line or transformer station. The authors reported statistically non-significant associations between proximity to transformer stations and any cancer, hematopoietic cancer, or solid tumors. No associations were reported with distance to transmission lines.

- Crespi et al. (2019) investigated the relationship between childhood leukemia and distance from high-voltage lines and calculated magnetic-field exposure, separately and combined, within the California study population previously analyzed in Crespi et al. (2016) and Kheifets et al. (2017). The authors reported that neither close proximity to high-voltage lines nor exposure to calculated magnetic fields alone were associated with childhood leukemia; an association was observed only for those participants who were both close to high-voltage lines (< 50 meters) and had high calculated magnetic fields (≥ 0.4 microtesla [i.e., ≥ 4 milligauss]). No associations were observed with low-voltage power lines (< 200 kV). In a subsequent study, Amoon et al. (2020) examined the potential impact of dwelling type on the associations reported in Crespi et al. (2019). Amoon et al. (2020) concluded that while the type of dwelling at which a child resides (e.g., single-family home, apartment, duplex, mobile home) was associated with socioeconomic status and race or ethnicity, it was not associated with childhood leukemia and did not appear to be a potential confounder in the relationship between childhood leukemia and magnetic-field exposure in this study population.

- Swanson et al. (2019) conducted a meta-analysis of 41 epidemiologic studies of childhood leukemia and magnetic-field exposure published between 1979 and 2017 to examine trends in childhood leukemia development over time. The authors reported that while the estimated risk of childhood leukemia initially increased during the earlier period, a statistically non-significant decline in estimated risk has been observed from the mid-1990s until the present (*i.e.*, 2019).

- Talibov et al. (2019) conducted a pooled analysis of 9,723 cases and 17,099 controls from 11 epidemiologic studies to examine the relationship between parental occupational exposure to magnetic fields and childhood leukemia. No statistically significant association was found between either paternal or

maternal exposure and leukemia (overall or by subtype). No associations were observed in the meta-analyses.

- Núñez-Enríquez et al. (2020) assessed the relationship between residential magnetic-field exposure and B-lineage acute lymphoblastic leukemia ("B-ALL") in children under 16 years of age in Mexico. The study included 290 cases and 407 controls matched on age, gender, and health institution; magnetic-field exposure was assessed through the collection of 24-hour measurements in the participants' bedrooms. While the authors reported some statistically significant associations between elevated magnetic-field levels and development of B-ALL, the results were dependent on the chosen cut-points.

- Seomun et al. (2021) performed a meta-analysis based on 33 previously published epidemiologic studies investigating the potential relationship between magnetic-field exposure and childhood cancers, including leukemia and brain cancer. For childhood leukemia, the authors reported statistically significant associations with some, but not all, of the chosen cut-points for magnetic-field exposure. The associations between magnetic-field exposure and childhood brain cancer were statistically non-significant. The study provided limited new insight as most of the studies included in the current meta-analysis, were included in previously conducted meta- and pooled analyses.

Recent epidemiologic studies of EMF and neurodegenerative diseases include:

- Seelen et al. (2014) conducted a population-based case-control study in the Netherlands and included 1,139 cases diagnosed with amyotrophic lateral sclerosis ("ALS") between 2006 and 2013 and 2,864 frequency-matched controls. The shortest distance from the case and control residences to the nearest high-voltage power line (50 to 380 kilovolts [kV]) was determined by geocoding. No statistically significant associations between residential proximity to power lines with voltages of either 50 to 150 kV or 220 to 380 kV and ALS were reported.

- Sorahan and Mohammed (2014) analyzed mortality from neurodegenerative diseases in a cohort of approximately 73,000 electricity supply workers in the United Kingdom. Cumulative occupational exposure to magnetic-fields was calculated for each worker in the cohort based on their job titles and job locations. Death certificates were used to identify deaths from neurodegenerative diseases. No associations or trends for any of the included neurodegenerative diseases (Alzheimer's disease, Parkinson's disease, and ALS) were observed with various measures of calculated magnetic fields.

- Koeman et al. (2015, 2017) analyzed data from the Netherlands Cohort Study of approximately 120,000 men and women who were enrolled in the cohort in 1986 and followed up until 2003. Lifetime occupational history, obtained through questionnaires, and job-exposure matrices on ELF magnetic fields and other occupational exposures were used to assign exposure to study subjects.

Based on 1,552 deaths from vascular dementia, the researchers reported a statistically not significant association of vascular dementia with estimated exposure to metals, chlorinated solvents, and ELF magnetic fields. However, because no exposure-response relationship for cumulative exposure was observed and because magnetic fields and solvent exposures were highly correlated with exposure to metals, the authors attributed the association with ELF magnetic fields and solvents to confounding by exposure to metals (Koeman et al., 2015). Based on a total of 136 deaths from ALS among the cohort members, the authors reported a statistically significant, approximately two-fold association with ELF magnetic fields in the highest exposure category. This association, however, was no longer statistically significant when adjusted for exposure to insecticides (Koeman et al., 2017).

- Fischer et al. (2015) conducted a population-based case-control study that included 4,709 cases of ALS diagnosed between 1990 and 2010 in Sweden and 23,335 controls matched to cases on year of birth and sex. The study subjects' occupational exposures to ELF magnetic fields and electric shocks were classified based on their occupations, as recorded in the censuses and corresponding job-exposure matrices. Overall, neither magnetic fields nor electric shocks were related to ALS.

- Vergara et al. (2015) conducted a mortality case-control study of occupational exposure to electric shock and magnetic fields and ALS. They analyzed data on 5,886 deaths due to ALS and over 58,000 deaths from other causes in the United States between 1991 and 1999. Information on occupation was obtained from death certificates and job-exposure matrices were used to categorize exposure to electric shocks and magnetic fields. Occupations classified as "electric occupations" were moderately associated with ALS. The authors reported no consistent associations for ALS, however, with either electric shocks or magnetic fields, and they concluded that their findings did not support the hypothesis that exposure to either electric shocks or magnetic fields explained the observed association of ALS with "electric occupations."

- Pedersen et al. (2017) investigated the occurrence of central nervous system diseases among approximately 32,000 male Danish electric power company workers. Cases were identified through the national patient registry between 1982 and 2010. Exposure to ELF magnetic fields was determined for each worker based on their job titles and area of work. A statistically significant increase was reported for dementia in the high exposure category when compared to the general population, but no exposure-response pattern was identified, and no similar increase was reported in the internal comparisons among the workers. No other statistically significant increases among workers were reported for the incidence of Alzheimer's disease, Parkinson's disease, motor neuron disease, multiple sclerosis, or epilepsy, when compared to the general population, or when incidence among workers was analyzed across estimated exposure levels.

- Vinceti et al. (2017) examined the association between ALS and calculated magnetic-field levels from high-voltage power lines in Italy. The authors included 703 ALS cases and 2,737 controls; exposure was assessed based on residential proximity to high-voltage power lines. No statistically significant associations were reported and no exposure-response trend was observed. Similar results were reported in subgroup analyses by age, calendar period of disease diagnosis, and study area.

- Checkoway et al. (2018) investigated the association between Parkinsonism[15] and occupational exposure to magnetic fields and several other agents (endotoxins, solvents, shift work) among 800 female textile workers in Shanghai. Exposure to magnetic fields was assessed based on the participants' work histories. The authors reported no statistically significant associations between Parkinsonism and occupational exposure to any of the agents under study, including magnetic fields.

- Gunnarsson and Bodin (2018) conducted a meta-analysis of occupational risk factors for ALS. The authors reported a statistically significant association between occupational exposures to EMF, estimated using a job-exposure matrix, and ALS among the 11 studies included. Statistically significant associations were also reported between ALS and jobs that involve working with electricity, heavy physical work, exposure to metals (including lead) and chemicals (including pesticides), and working as a nurse or physician. The authors reported some evidence for publication bias. In a subsequent publication, Gunnarsson and Bodin (2019) updated their previous meta-analysis to also include Parkinson's disease and Alzheimer's disease. A slight, statistically significant association was reported between occupational exposure to EMF and Alzheimer's disease; no association was observed for Parkinson's disease.

- Huss et al. (2018) conducted a meta-analysis of 20 epidemiologic studies of ALS and occupational exposure to magnetic fields. The authors reported a weak overall association; a slightly stronger association was observed in a subset analysis of six studies with full occupational histories available. The authors noted substantial heterogeneity among studies, evidence for publication bias, and a lack of a clear exposure-response relationship between exposure and ALS.

- Jalilian et al. (2018) conducted a meta-analysis of 20 epidemiologic studies of occupational exposure to magnetic fields and Alzheimer's disease. The authors reported a moderate, statistically significant overall association; however, they

[15] Parkinsonism is defined by Checkoway et al. (2018) as "*a syndrome whose cardinal clinical features are bradykinesia, rest tremor, muscle rigidity, and postural instability. Parkinson disease is the most common neurodegenerative form of [parkinsonism]*" (p. 887).

noted substantial heterogeneity among studies and evidence for publication bias.

- Röösli and Jalilian (2018) performed a meta-analysis using data from five epidemiologic studies examining residential exposure to magnetic fields and ALS. A statistically non-significant negative association was reported between ALS and the highest exposed group, where exposure was defined based on distance from power lines or calculated magnetic-field level.

- Gervasi et al. (2019) assessed the relationship between residential distance to overhead power lines in Italy and risk of Alzheimer's dementia and Parkinson's disease. The authors included 9,835 cases of Alzheimer's dementia and 6,810 cases of Parkinson's disease; controls were matched by sex, year of birth, and municipality of residence. A weak, statistically non-significant association was observed between residences within 50 meters of overhead power lines and both Alzheimer's dementia and Parkinson's disease, compared to distances of over 600 meters.

- Peters et al. (2019) examined the relationship between ALS and occupational exposure to both magnetic fields and electric shock in a pooled study of data from three European countries. The study included 1,323 ALS cases and 2,704 controls matched for sex, age, and geographic location; exposure was assessed based on occupational title and defined as low (background), medium, or high. Statistically significant associations were observed between ALS and ever having been exposed above background levels to either magnetic fields or electric shocks; however, no clear exposure-response trends were observed with exposure duration or cumulative exposure. The authors also noted significant heterogeneity in risk by study location.

- Filippini et al. (2020) investigated the associations between ALS and several environmental and occupational exposures, including electromagnetic fields, within a case-control study in Italy. The study included 95 cases and 135 controls matched on age, gender, and residential province; exposure to electromagnetic fields was assessed using the participants' responses to questions related to occupational use of electric and electronic equipment, occupational EMF exposure, and residential distance to overhead power lines. The authors reported a statistically significant association between ALS and residential proximity to overhead power lines and a statistically non-significant association between ALS and occupational exposure to EMF; occupational use of electric and electronic equipment was associated with a statistically non-significant decrease in ALS development.

- Huang et al. (2020) conducted a meta-analysis of 43 epidemiologic studies examining potential occupational risk factors for dementia or mild cognitive impairment. The authors included five cohort studies and seven case-control studies related to magnetic-field exposure. For both study types, the authors reported positive associations between dementia and work-related magnetic-

field exposures. The paper, however, provided no information on the occupations held by the study participants, their magnetic-field exposure levels, or how magnetic-field levels were assessed; therefore, the results are difficult to interpret. The authors also reported a high level of heterogeneity among studies. Thus, this analysis adds little, if any, to the overall weight of evidence on a potential association between dementia and magnetic fields.

- Jalilian et al. (2020) conducted a meta-analysis of ALS and occupational exposure to both magnetic fields and electric shocks within 27 studies from Europe, the United States, and New Zealand. A weak, statistically significant association was reported between magnetic-field exposure and ALS; however, the authors noted evidence of study heterogeneity and publication bias. No association was observed between ALS and electric shocks.

- Chen et al. (2021) conducted a case-control study to examine the association between occupational exposure to electric shocks, magnetic fields, and motor neuron disease ("MND") in New Zealand. The study included 319 cases with a MND diagnosis (including ALS) and 604 controls, matched on age and gender; exposure was assessed using the participants' occupational history questionnaire responses and previously developed job-exposure matrices for electric shocks and magnetic fields. The authors reported no associations between MND and exposure to magnetic fields; positive associations were reported between MND and working at a job with the potential for electric shock exposure.

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V. NOTICE

A. Furnish a proposed route description to be used for public notice purposes. Provide a map of suitable scale showing the route of the proposed project. For all routes that the Applicant proposed to be noticed, provide minimum, maximum and average structure heights.

Response: A map showing the proposed route to be used for the Projects is provided as Attachment V.A. A written description of the route is as follows:

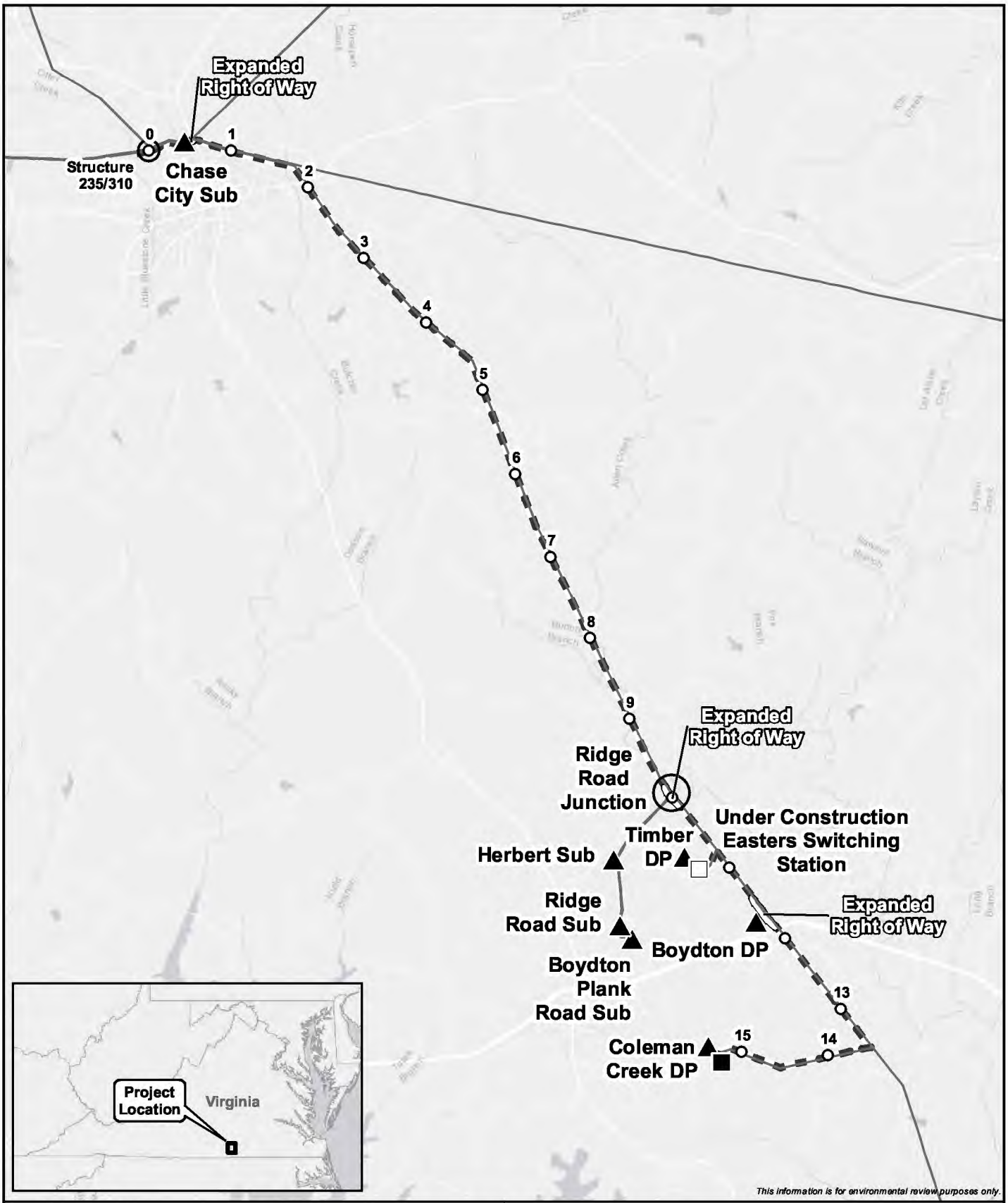
The proposed route for the Projects is located within an approximately 15.3-mile right-of-way—with minor expansions of the rights-of-way east of the Chase City Substation by less than approximately 0.1 mile, at the Ridge Road Junction by approximately 0.3 mile, and at the Boydton DP by approximately 0.4 mile to accommodate the proposed area of the Projects, totaling approximately 0.7 mile of new rights-of-way—currently occupied by existing 115 kV electric transmission lines within Mecklenburg County, Virginia. Dominion Energy Virginia's existing electric transmission line right-of-way for the proposed Projects, which varies between 129 and 280 feet wide, originates at Structure #235/310 (a point starting west of Chase City Substation) where the proposed new 230 kV lines will tie-in to existing Line #235.

The proposed Projects would follow existing right-of-way east for approximately 0.6 mile, crossing Redick Road, the Buckingham Branch Railroad, the Chase City Substation, Boyd Street, and North Main Street. After crossing North Main Street, the Projects continue southeast within existing right-of-way for approximately 1.1 miles, crossing Bryant Street and Butcher Creek. The Projects then head south-southeast for approximately 8.3 miles along existing right-of-way, crossing Virginia State Route 47, Cemetery Road, Country Club Drive, Draper Road, a second crossing of Country Club Drive, four crossings of Allen Creek, Mt. Pleasant Road, and two more crossings of Allen Creek before crossing Old Cox Road and reaching the tap to the Herbert and Ridge Road Substations. The Projects continue along existing right-of-way in a southeast direction for approximately 3.5 miles crossing the Boydton DP Junction, U.S. Route 58, and Coleman Creek before turning southwest for approximately 1.0 mile then veering slightly west for approximately 0.8 mile until reaching the tie-in location with the Cloud 230 kV Switching Station.

To accommodate the proposed 230 kV lines, 96 double circuit 2-pole galvanized steel structures would be installed with a minimum structure height of approximately 90 feet, a maximum structure height of approximately 155 feet, and an average proposed structure height of approximately 120 feet; 7 double circuit galvanized steel poles would be installed with a minimum structure height of approximately 100 feet, a maximum structure height of approximately 120 feet, and an average proposed structure height of approximately 109 feet; and 4 single circuit galvanized steel H-frame structures would be installed with a minimum structure height of approximately 150 feet, a maximum structure height of approximately 150 feet, and an average proposed structure height of approximately 150 feet.

The Company also intends to relocate Line Numbers 40, 171, and 1009 in an approximate 0.55 mile section of right-of-way located east of the Chase City Substation, to allow for the installation of the proposed 230 kV lines. To accommodate the proposed relocation of the existing 115 kV line within the existing right-of-way, two single circuit galvanized steel poles would be installed with a minimum structure height of approximately 110 feet, a maximum structure height of approximately 110 feet, and an average proposed structure height of approximately 110 feet; five double circuit galvanized steel poles would be installed with a minimum structure height of approximately 90 feet, a maximum structure height of approximately 120 feet, and an average proposed structure height of approximately 110 feet; two single circuit galvanized steel H-frames would be installed with a minimum structure height of approximately 55 feet, a maximum structure height of approximately 55 feet, and an average proposed structure height of approximately 55 feet; three triple circuit galvanized steel H-frames would be installed with a minimum structure height of approximately 110 feet, a maximum structure height of approximately 110 feet, and an average proposed structure height of approximately 110 feet.

The pole numbers and structure heights are based on preliminary conceptual design, not including foundation reveal, and subject to change based on final engineering design.



Attachment V.A
Notice Map
Line #235 Extension to
Cloud 230 kV and Related Projects
Mecklenburg County, Virginia

V. NOTICE

B. List Applicant offices where members of the public may inspect the application. If applicable, provide a link to website(s) where the application may be found.

Response: Due to COVID-19, the Application will be made available electronically for public inspection at: www.dominionenergy.com/chasecity.

V. NOTICE

C. List all federal, state, and local agencies and/or officials that may reasonably be expected to have an interest in the proposed construction and to whom the Applicant has furnished or will furnish a copy of the application.

Response: The following agency representatives may reasonably be expected to have an interest in the proposed Projects. Instead of furnishing a copy of the Application to these parties, the Company has sent a letter noting the availability of the Application for the proposed Projects on the Company's website.

Ms. Bettina Rayfield
Manager, Environmental Impact Review and Long Range Priorities
Office of Environmental Impact Review
Department of Environmental Quality, Central Office
PO Box 1105
Richmond, Virginia 23218

Ms. Michelle Henicheck
Office of Wetlands and Streams
Department of Environmental Quality
1111 East Main Street, Suite 1400
Richmond, Virginia 23219

Ms. Jaime Robb
Water Program Manager, Piedmont Regional Office
Department of Environmental Quality
4949-A Cox Road
Glen Allen, Virginia 23060

Ms. Robbie Rhur
Environmental Specialist, Planning & Recreation
Department of Conservation and Recreation
600 East Main Street, 24th Floor
Richmond, Virginia 23219

Ms. Rene Hypes
Environmental Review Coordinator, Natural Heritage Program
Department of Conservation and Recreation
600 East Main Street, 24th Floor
Richmond, Virginia 23219

Ms. Amy M. Ewing
Environmental Services Biologist Manager
Virginia Department of Wildlife Resources
P.O. Box 90778
Henrico, Virginia 23228

Mr. Keith Tignor
Endangered Plant and Insect Species Program
Virginia Department of Agriculture and Consumer Affairs
102 Governor Street
Richmond, Virginia 23219

Mr. Roger Kirchen, Director
Director, Review and Compliance Division
Department of Historic Resources
2801 Kensington Avenue
Richmond, Virginia 23221

Mr. Terry Lasher
Forestland Conservation Division
Virginia Department of Forestry
900 Natural Resources Drive, Suite 800
Charlottesville, Virginia 22903

Mr. Tony Watkinson
Habitat Management Division
Virginia Marine Resources Commission
Building 96, 380 Fenwick Road
Fort Monroe, Virginia 23651

Mr. Troy Andersen
US Fish and Wildlife Service
Ecological Services Virginia Field Office
6669 Short Lane
Gloucester, Virginia 23061

Mr. Todd Miller
U.S. Army Corps of Engineers
Norfolk District, Southern Section
9100 Arboretum Parkway, Suite 235
Richmond, VA 23236

Ms. Martha Little
Virginia Outdoors Foundation
600 East Main Street, Suite 402
Richmond, Virginia 23219

Mr. Conrad Spencer, III
Virginia Department of Mine, Minerals, and Energy
1100 Bank Street
Washington Building, 8th Floor
Richmond, Virginia 23219

Mr. Michael Dowd
Department of Environmental Quality
Air Division
P.O. Box 1105
Richmond, Virginia 23218

Mr. Mike Helvey
Obstruction Evaluation Group Manager
Federal Aviation Administration
FAA Eastern Regional Office
800 Independence Ave, SW
Room 400 East
Washington, D.C. 20591

Mr. Scott Denny
Airport Services Division
Virginia Department of Aviation
5702 Gulfstream Road
Richmond, Virginia 23250

Mr. David Perry
Executive Director
Blue Ridge Land Conservancy
27 Church Avenue SW
Roanoke, VA 24011

Mr. Tommy Johnson
Residency Administrator
Virginia Department of Transportation
1013 West Atlantic St.
P.O. Box 249
South Hill, Virginia 23970

Mr. H. Wayne Carter, III
Mecklenburg County Administrator
P.O. Box 307
Boydton, VA 23917

Mr. C.F. "Dusty" Forbes
Chase City Town Manager
319 North Main Street
Chase City, VA 23924

V. NOTICE

D. If the application is for a transmission line with a voltage of 138 kV or greater, provide a statement and any associated correspondence indicating that prior to the filing of the application with the SCC the Applicant has notified the chief administrative officer of every locality in which it plans to undertake construction of the proposed line of its intention to file such an application, and that the Applicant gave the locality a reasonable opportunity for consultation about the proposed line (similar to the requirements of § 15.2-2202 of the Code for electric transmission lines of 150 kV or more).

Response: In accordance with Va. Code § 15.2-2202 E, letters dated May 24, 2021, were sent to Mr. Wayne Carter, County Administrator in Mecklenburg County, and Mr. C.F. Forbes, Chase City Town Manager in Chase City, advising of the Company's intention to file this Application and inviting Mecklenburg County and Chase City to consult with the Company about the proposed Projects. These letters are included as AttachmentsV.D.1-2.

Dominion Energy Virginia
10900 Nuckols Road, 4th Floor, Glen Allen, Virginia 23060

May 24, 2021

Mr. H. Wayne Carter, III
Mecklenburg County Administrator
P.O. Box 307
Boydton, VA 23917

Reference: Dominion Energy Virginia's Proposed Line #235 Extension to Cloud 230 kV and Related Projects – Mecklenburg County, Virginia
Notice Pursuant to Va. Code § 15.2-2202 E

Dear Mr. H. Wayne Carter, III,

Dominion Energy Virginia (the "Company") is proposing the Line #235 Extension to Cloud 230 kV and Related Projects (the "Project") located entirely within Mecklenburg County, Virginia. The total length of the Project transmission corridor is approximately 15.3 miles and is located primarily within existing cleared and maintained transmission line right-of-way. To accommodate the proposed new transmission lines, a total of approximately 0.7 mile of new expanded right-of-way will be required at three locations: east of the Chase City Substation (less than 0.1 mile), at the Ridge Road Junction (0.3 mile), and at the Boydton DP (0.4 mile). The Project is necessary to provide service to two delivery points requested by the Old Dominion Electric Cooperative on behalf of the Mecklenburg Electric Cooperative, and to maintain and improve reliable electrical service in Mecklenburg County. Specifically, the Project proposes to:

- Convert the Company's existing Cloud 115 kV Switching Station to a 230 kV switching station,
- Convert the Company's under construction Easters 115 kV Switching Station to a 230 kV switching station,
- Extend one 230 kV line from a point west of Chase City Substation to the Cloud 230 kV Switching Station,
- Extend one 230 kV line from a point west of Chase City Substation to the Easters 230 kV Switching Station
- Extend one 230kV line between the Easters 230 kV Switching Station and Cloud 230 kV Switching Station; and
- Relocate three existing 115 kV transmission lines in an approximate 0.55 mile section of right-of-way located east of the Chase City Substation to allow for the installation of the proposed 230 kV transmission lines described above. Additionally, to accommodate the relocation of these 115 kV lines, the Company proposes to install approximately 12 poles/structures.

The Company is preparing an application for a Certificate of Public Convenience and Necessity ("CPCN") from the State Corporation Commission (SCC). Pursuant to Va. Code § 15.2-2202, the Company is writing to notify Loudoun County of the proposed project in advance of the SCC filing. At this time, in advance of the SCC filing, the Company respectfully requests that you submit any comments or additional information you feel would have bearing on the Project within 30 days of the date of this letter. Enclosed is a Project Overview Map depicting the proposed route and project location. If you would like to receive a GIS shapefile of the route to

Dominion Energy Virginia
10900 Nuckols Road, 4th Floor, Glen Allen, Virginia 23060

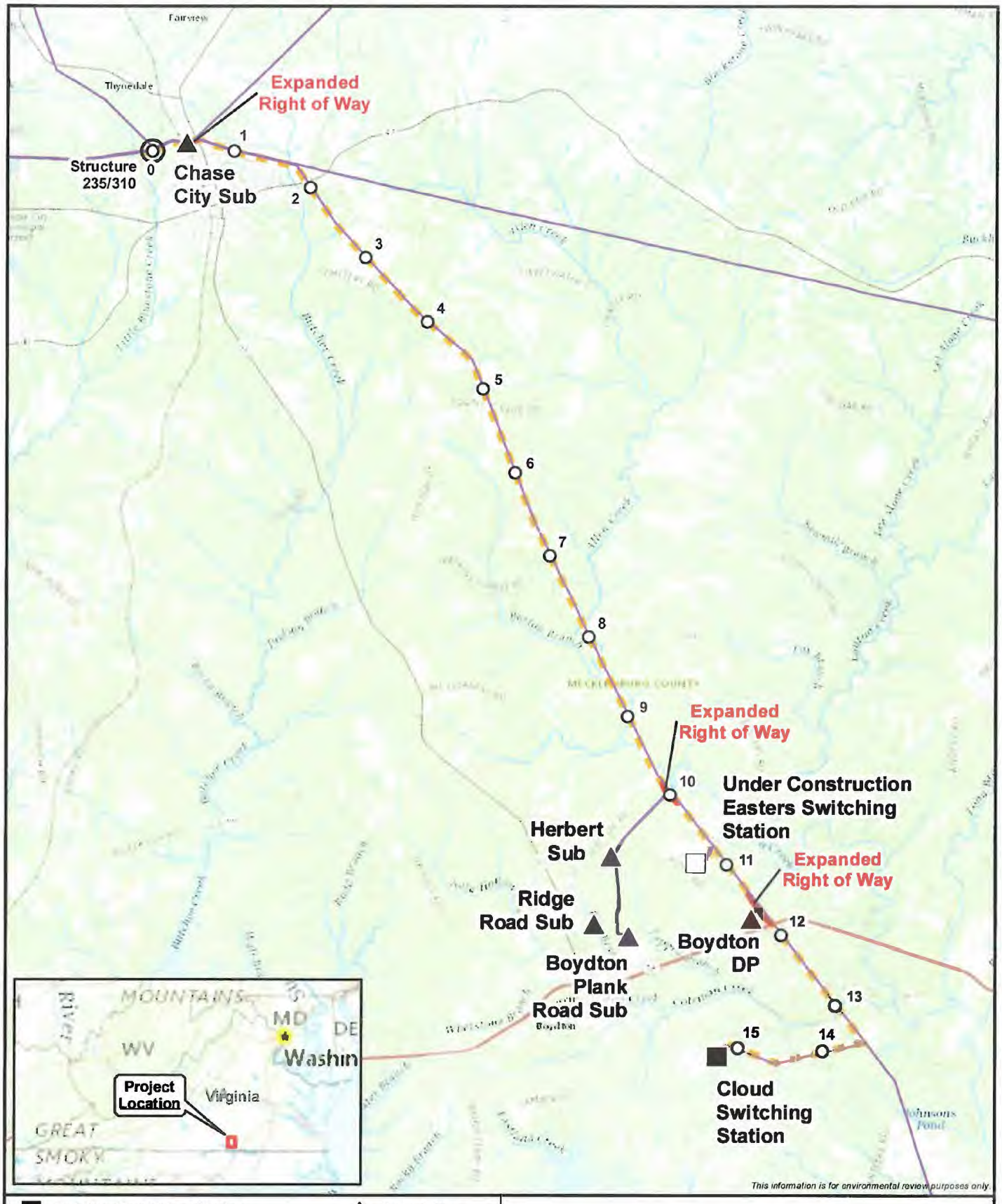
assist in your project review or if you have any questions, please do not hesitate to contact me at (804) 310-9658 or lane.e.carr@dominionenergy.com.

Dominion Energy appreciates your assistance with this project review and looks forward to any additional information you may have to offer.

Regards,

Lane Carr
Siting and Permitting Specialist

Attachment: Project Overview Map



Existing Switching Station
Under Construction Switching Station
Proposed Centerline
Expanded Right of Way
Existing Transmission Line
Substation
Milepost
1:95,040
0 0.75 1.5 Miles
N

Project Overview Map
Line #235 Extension to
Cloud 230 kV and Related Projects
Mecklenburg County, Virginia

Dominion Energy Virginia
10900 Nuckols Road, 4th Floor, Glen Allen, Virginia 23060

May 24, 2021

Mr. C.F. "Dusty" Forbes
Chase City Town Manager
319 North Main Street
Chase City, VA 23924

Reference: Dominion Energy Virginia's Proposed Line #235 Extension to Cloud 230 kV and Related Projects – Mecklenburg County, Virginia
Notice Pursuant to Va. Code § 15.2-2202 E

Dear Mr. C.F. "Dusty" Forbes,

Dominion Energy Virginia (the "Company") is proposing the Line #235 Extension to Cloud 230 kV and Related Projects (the "Project") located entirely within Mecklenburg County, Virginia. The total length of the Project transmission corridor is approximately 15.3 miles and is located primarily within existing cleared and maintained transmission line right-of-way. To accommodate the proposed new transmission lines, a total of approximately 0.7 mile of new expanded right-of-way will be required at three locations: east of the Chase City Substation (less than 0.1 mile), at the Ridge Road Junction (0.3 mile), and at the Boydton DP (0.4 mile). The Project is necessary to provide service to two delivery points requested by the Old Dominion Electric Cooperative on behalf of the Mecklenburg Electric Cooperative, and to maintain and improve reliable electrical service in Mecklenburg County. Specifically, the Project proposes to:

- Convert the Company's existing Cloud 115 kV Switching Station to a 230 kV switching station,
- Convert the Company's under construction Easters 115 kV Switching Station to a 230 kV switching station,
- Extend one 230 kV line from a point west of Chase City Substation to the Cloud 230 kV Switching Station,
- Extend one 230 kV line from a point west of Chase City Substation to the Easters 230 kV Switching Station
- Extend one 230kV line between the Easters 230 kV Switching Station and Cloud 230 kV Switching Station; and
- Relocate three existing 115 kV transmission lines in an approximate 0.55 mile section of right-of-way located east of the Chase City Substation to allow for the installation of the proposed 230 kV transmission lines described above. Additionally, to accommodate the relocation of these 115 kV lines, the Company proposes to install approximately 12 poles/structures.

The Company is preparing an application for a Certificate of Public Convenience and Necessity ("CPCN") from the State Corporation Commission (SCC). Pursuant to Va. Code § 15.2-2202, the Company is writing to notify Loudoun County of the proposed project in advance of the SCC filing. At this time, in advance of the SCC filing, the Company respectfully requests that you submit any comments or additional information you feel would have bearing on the Project within 30 days of the date of this letter. Enclosed is a Project Overview Map depicting the proposed route and project location. If you would like to receive a GIS shapefile of the route to

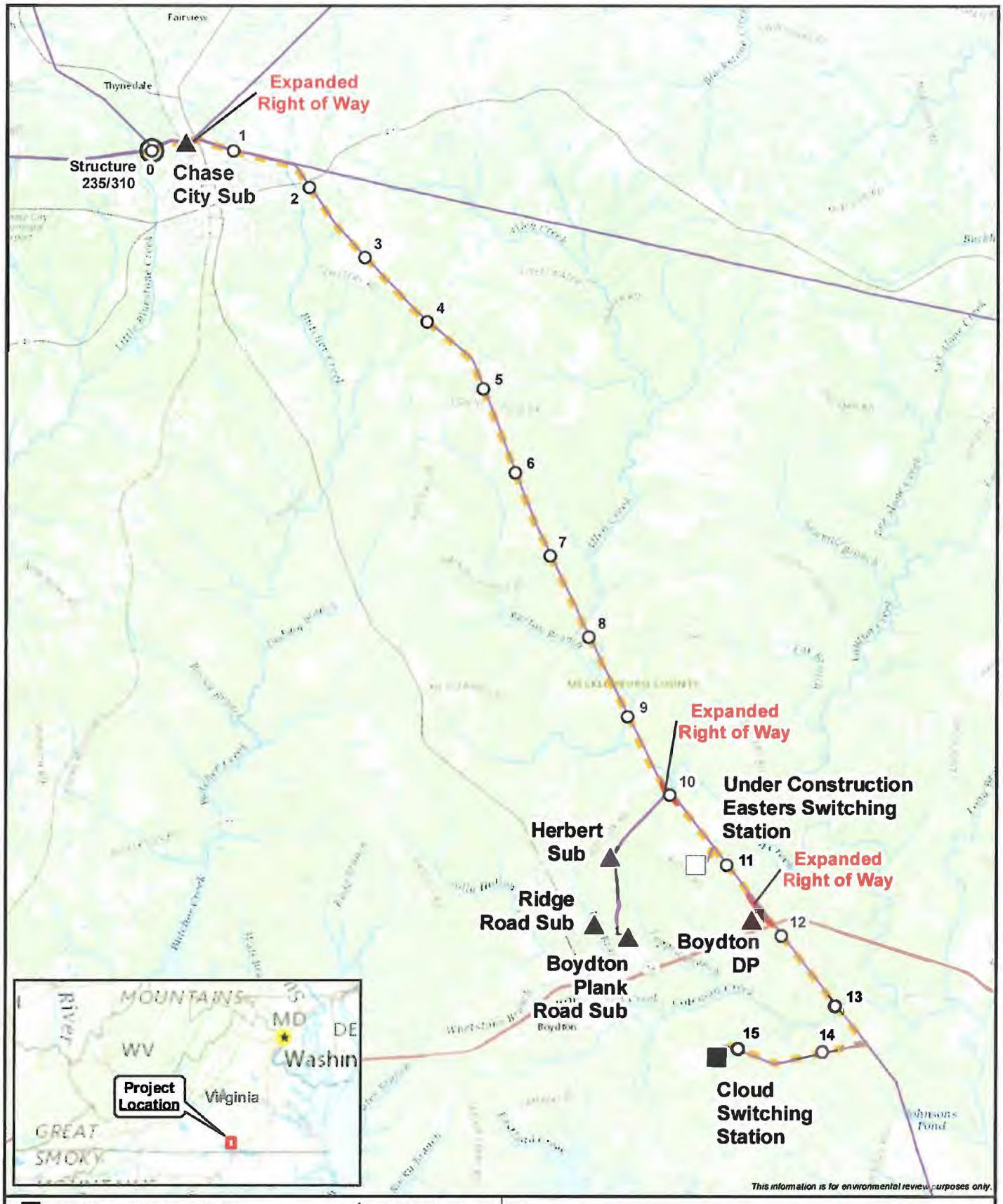
Dominion Energy Virginia
10900 Nuckols Road, 4th Floor, Glen Allen, Virginia 23060

assist in your project review or if you have any questions, please do not hesitate to contact me at (804) 310-9658 or lane.e.carr@dominionenergy.com.
Dominion Energy appreciates your assistance with this project review and looks forward to any additional information you may have to offer.

Regards,

Lane Carr
Siting and Permitting Specialist

Attachment: Project Overview Map



Existing Switching Station
Under Construction Switching Station
Proposed Centerline
Expanded Right of Way
Existing Transmission Line
Substation
Milepost
1:95,040
0 0.75 1.5 Miles
N

Project Overview Map
Line #235 Extension to
Cloud 230 kV and Related Projects
Mecklenburg County, Virginia

COMMONWEALTH OF VIRGINIA

STATE CORPORATION COMMISSION

APPLICATION OF	)	
	)	
VIRGINIA ELECTRIC AND POWER COMPANY	)	Case No. PUR-2021-00137
	)	
For approval and certification of electric	)	
transmission facilities: Line #235 Extension to	)	
Cloud 230 kV and Related Projects	)	

IDENTIFICATION, SUMMARIES AND TESTIMONY OF DIRECT WITNESSES OF VIRGINIA ELECTRIC AND POWER COMPANY

Kunal S. Amare

Witness Direct Testimony Summary
Direct Testimony
Appendix A: Background and Qualifications

Furmose J. Gomez

Witness Direct Testimony Summary
Direct Testimony
Appendix A: Background and Qualifications

Mohammad M. Othman

Witness Direct Testimony Summary
Direct Testimony
Appendix A: Background and Qualifications

Lane E. Carr

Witness Direct Testimony Summary
Direct Testimony
Appendix A: Background and Qualifications

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Kunal S. Amare

Title: Engineer III – Electric Transmission Planning

Summary:

Company Witness Kunal S. Amare sponsors those portions of the Appendix describing the Company's transmission system and need for, and benefits of, the proposed Projects, as follows:

- Section I.B: This section details the engineering justifications for the proposed projects.
- Section I.C: This section describes the present system and details how the proposed projects will effectively satisfy present and projected future load demand requirements.
- Section I.D: This section describes critical contingencies and associated violations due to the inadequacy of the existing system.
- Section I.E: This section explains feasible project alternatives.
- Section I.H: This section provides the desired in-service date of the proposed projects and the estimated construction time.
- Section I.J: This section provides information about the projects if approved by the RTO.
- Section I.K: Although not applicable to the proposed projects, this section, when applicable, provides outage history and maintenance history for existing transmission lines if the proposed project is a rebuild and is due in part to reliability issues.
- Section I.M: Although not applicable to the proposed projects, this section, when applicable, contains information for transmission lines interconnecting a non-utility generator.
- Section I.N: This section provides the proposed and existing generating sources, distribution circuits or load centers planned to be served by all new substations, switching stations, and other ground facilities associated with the proposed projects.
- Section II.A.10: This section provides details of the construction plans for the proposed projects, including requested and approved line outage schedules.

Additionally, Company Witness Amare co-sponsors the following portions of the Appendix:

- Section I.A (co-sponsored with Company Witness Furmose J. Gomez): This section details the primary justifications for the proposed projects.
- Section I.F (co-sponsored with Company Witness Furmose J. Gomez): This section describes any lines or facilities that will be removed, replaced, or taken out of service upon completion of the proposed projects, including the number of circuits and normal and emergency ratings of the facilities.
- Section I.G (co-sponsored with Company Witness Lane E. Carr): This section provides a system map for the affected area.
- Section II.A.3 (co-sponsored with Company Witness Lane E. Carr): This section provides color maps of existing or proposed rights-of-way in the vicinity of the proposed projects.

A statement of Mr. Amare's background and qualifications is attached to his testimony as Appendix A.

DIRECT TESTIMONY
OF
KUNAL S. AMARE
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2021-00137

Q. Please state your name, business address and position with Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company").

A. My name is Kunal S. Amare, and I am an Engineer III in the Electric Transmission Planning Department for the Company. My business address is 10900 Nuckols Road, Glen Allen, Virginia 23060. A statement of my qualifications and background is provided as Appendix A.

Q. Please describe your areas of responsibility with the Company.

A. I am responsible for planning the Company's electric transmission system for voltages of 69 kilovolt ("kV") through 500 kV.

Q. What is the purpose of your testimony in this proceeding?

A. In order to provide service to two delivery points ("DP") requested by Old Dominion Electric Cooperative ("ODEC"), on behalf of Mecklenburg Electric Cooperative ("MEC"), for MEC to provide service to one of its customers in Mecklenburg County, Virginia; to maintain reliable service for the overall growth in the area; and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company") proposes to complete the following in Mecklenburg County, Virginia:

(i) convert the Company's existing Cloud 115 kV Switching Station[1] located on six acres at the former Mecklenburg Correctional Center (960 Prison Road, Boydton, Virginia) in Mecklenburg County to a 230 kV switching station ("Cloud 230 kV Switching Station");

(ii) convert the Company's under construction Easters 115 kV Switching Station[2] located between future 115 kV Line #1042 and existing 115 kV Line #137 (both lines between Ridge Road 115 kV Substation and Kerr Dam 115 kV Substation) in Mecklenburg County to a 230 kV switching station ("Easters 230 kV Switching Station"), and add one 230 kV 84 MVAR cap bank in the Easters 230 kV Switching Station for voltage support;

(iii) cut the Clover-Farmville Line #235 at Structure #235/310 (a point starting west of Chase City Substation), and extend (a) one 230 kV line to the Cloud 230 kV Switching Station, resulting in the 230 kV Farmville-Cloud Line #235; (b) one 230 kV line to the Easters 230 kV Switching Station and renumber the Line #235 structures between Structure #235/310-Clover Substation, resulting in the 230 kV Clover-Easters Line #2226, and (c) one 230kV line between the Easters 230 kV Switching Station and Cloud 230 kV Switching Station, resulting in the 230 kV Easters-Cloud Line #2229. Two 230 kV lines will be installed primarily along approximately 15.3 miles of existing right-of-way with expanded rights-of-way east of the Chase City Substation by less than 0.1 mile, at the Ridge Road Junction by 0.3 mile, and at the Boydton DP by 0.4 mile to accommodate the proposed area of the Projects, totaling approximately 0.7 mile of new rights-of-way. The lines will be supported by 96 double circuit 2-pole galvanized steel structures, 7 double circuit galvanized steel poles, and 4 single circuit galvanized steel H-frame structures utilizing a three-phase twin-bundled 795 ACSR type conductor with a summer transfer capability of 1225 MVA (collectively, "Line #235 Extension"); and

(iv) relocate Line Numbers 40, 171, and 1009 in an approximate 0.55 mile section of right-of-way located east of the Chase City Substation to allow for the installation of the proposed 230 kV lines (collectively, "115 kV Line Relocations"). To accommodate the 115 kV Line Relocations within the existing right-of-way, the Company proposes to install two single circuit galvanized steel poles; five double

[1] On November 8, 2020, the Company requested that Commission Staff ("Staff") find that the Company's work associated with the construction of its proposed 115 kV Cloud Switching Station qualified as "ordinary extensions or improvements in the usual course of business" pursuant to § 56-265.2 A 1 of the Va. Code and, therefore, did not require approval pursuant to Va. Code § 56-46.1 B or a CPCN from the Commission. Specifically, this proposed project included looping existing 115 kV Line #38 in and out of a new breaker station (the 115 kV Cloud Switching Station) to provide service to MEC's Coleman Creek DP, which was intended to serve the load of a new data center under construction in Mecklenburg County. On November 22, 2020, Staff agreed that the construction of the Company's proposed Cloud Switching Station qualified as ordinary course.

[2] The proposed in-service date for the Easters Switching Station is November 1, 2021. Since the energization date for this Switching Station occurs after the Company files its Application for these Projects, the Company notes that the 115 kV Easters Switching Station is under construction.

circuit galvanized steel poles; two single circuit galvanized steel H-frames; and three triple circuit galvanized steel H-frames.

The proposed Cloud 230 kV Switching Station, proposed Easters 230 kV Switching Station, Line #235 Extension, and 115 kV Line Relocations are collectively referred to as the "Projects."

The purpose of my testimony is to describe the Company's transmission system and the need for, and benefits of, the proposed Projects. I am sponsoring Sections I.B, I.C, I.D, I.E, I.H, I.J, I.K, I.M, I.N, and II.A.10 of the Appendix. Additionally, I co-sponsor Sections I.A and I.F with Company Witness Furmose J. Gomez, and Sections I.G and II.A.3 with Company Witness Lane E. Carr.

Q. Does this conclude your pre-filed direct testimony?

A. Yes, it does.

BACKGROUND AND QUALIFICATIONS OF KUNAL S. AMARE

Kunal S. Amare received a Master of Science degree in Electrical Engineering from Virginia Polytechnic Institute and State University in 2016. He received a Bachelor of Technology degree in Electrical Engineering from the University of Mumbai in 2014. He has been licensed as a Professional Engineer in the State of Texas since 2019. He has been employed with the Company in the Transmission Planning team for over a year. Prior to working with Dominion, Mr. Amare worked with Entergy Services LLC in the Transmission Planning Department from 2017-2020. Mr. Amare is skilled in Transmission Planning, Transient Stability Analysis, Renewable Energy Systems, and Electromagnetic Transient Analysis.

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Furmose J. Gomez

Title: Transmission Line Engineering Supervisor – Electric Transmission Line Engineering

Summary:

Company Witness Furmose J. Gomez sponsors those portions of the Appendix providing an overview of the design characteristics of the transmission facilities for the proposed Projects, and discussing electric and magnetic field levels, as follows:

- Section I.L: Although not applicable to the proposed projects, this section, when applicable, provides photographs illustrating the deterioration of structures and associated equipment as applicable.

- Section II.A.5: This section provides drawings of the right-of-way cross section showing typical transmission lines structure placements.

- Section II.B.1 to II.B.3: These sections provide the line design and operational features of the proposed projects.

- Section II.B.4: Although not applicable to the proposed projects, this section, when applicable, normally provides the line design and operational features of a proposed project.

- Section IV: This section provides analysis on the health aspects of electric and magnetic field levels.

Additionally, Company Witness Gomez co-sponsors the following portions of the Appendix:

- Section I.A (co-sponsored with Company Witness Kunal S. Amare): This section details the primary justifications for the proposed projects.

- Section I.F (co-sponsored with Company Witness Kunal S. Amare): This section describes any lines or facilities that will be removed, replaced, or taken out of service upon completion of the proposed projects, including the number of circuits and normal and emergency ratings of the facilities.

- Section I.I (co-sponsored with Company Witness Mohammad M. Othman): This section provides the estimated total cost of the proposed projects.

- Section II.B.5 (co-sponsored with Company Witness Lane E. Carr): This section provides the mapping and structure heights for the existing overhead structures.

A statement of Mr. Gomez's background and qualifications is attached to his testimony as Appendix A.

DIRECT TESTIMONY
OF
FURMOSE J. GOMEZ
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2021-00137

Q. Please state your name, business address and position with Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company").

A. My name is Furmose J. Gomez, and I am a Transmission Line Engineering Supervisor in the Electric Transmission Line Engineering Department of the Company. My business address is 10900 Nuckols Road, Glen Allen, Virginia 23060. A statement of my qualifications and background is provided as Appendix A.

Q. Please describe your areas of responsibility with the Company.

A. I am responsible for the estimating, conceptual, and final design of high voltage transmission line projects from 69 kilovolt ("kV") to 500 kV.

Q. What is the purpose of your testimony in this proceeding?

A. In order to provide service to two delivery points ("DP") requested by Old Dominion Electric Cooperative ("ODEC"), on behalf of Mecklenburg Electric Cooperative ("MEC"), for MEC to provide service to one of its customers in Mecklenburg County, Virginia; to maintain reliable service for the overall growth in the area; and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company") proposes to complete the following in Mecklenburg County, Virginia:

(i) convert the Company's existing Cloud 115 kV Switching Station[1] located on six acres at the former Mecklenburg Correctional Center (960 Prison Road, Boydton, Virginia) in Mecklenburg County to a 230 kV switching station ("Cloud 230 kV Switching Station");

(ii) convert the Company's under construction Easters 115 kV Switching Station[2] located between future 115 kV Line #1042 and existing 115 kV Line #137 (both lines between Ridge Road 115 kV Substation and Kerr Dam 115 kV Substation) in Mecklenburg County to a 230 kV switching station ("Easters 230 kV Switching Station"), and add one 230 kV 84 MVAR cap bank in the Easters 230 kV Switching Station for voltage support;

(iii) cut the Clover-Farmville Line #235 at Structure #235/310 (a point starting west of Chase City Substation), and extend (a) one 230 kV line to the Cloud 230 kV Switching Station, resulting in the 230 kV Farmville-Cloud Line #235; (b) one 230 kV line to the Easters 230 kV Switching Station and renumber the Line #235 structures between Structure #235/310-Clover Substation, resulting in the 230 kV Clover-Easters Line #2226, and (c) one 230kV line between the Easters 230 kV Switching Station and Cloud 230 kV Switching Station, resulting in the 230 kV Easters-Cloud Line #2229. Two 230 kV lines will be installed primarily along approximately 15.3 miles of existing right-of-way with expanded rights-of-way east of the Chase City Substation by less than 0.1 mile, at the Ridge Road Junction by 0.3 mile, and at the Boydton DP by 0.4 mile to accommodate the proposed area of the Projects, totaling approximately 0.7 mile of new rights-of-way. The lines will be supported by 96 double circuit 2-pole galvanized steel structures, 7 double circuit galvanized steel poles, and 4 single circuit galvanized steel H-frame structures utilizing a three-phase twin-bundled 795 ACSR type conductor with a summer transfer capability of 1225 MVA (collectively, "Line #235 Extension"); and

(iv) relocate Line Numbers 40, 171, and 1009 in an approximate 0.55 mile section of right-of-way located east of the Chase City Substation to allow for the installation of the proposed 230 kV lines (collectively, "115 kV Line Relocations"). To accommodate the 115 kV Line Relocations within the existing right-of-way, the Company proposes to install two single circuit galvanized steel poles; five double

[1] On November 8, 2020, the Company requested that Commission Staff ("Staff") find that the Company's work associated with the construction of its proposed 115 kV Cloud Switching Station qualified as "ordinary extensions or improvements in the usual course of business" pursuant to § 56-265.2 A 1 of the Va. Code and, therefore, did not require approval pursuant to Va. Code § 56-46.1 B or a CPCN from the Commission. Specifically, this proposed project included looping existing 115 kV Line #38 in and out of a new breaker station (the 115 kV Cloud Switching Station) to provide service to MEC's Coleman Creek DP, which was intended to serve the load of a new data center under construction in Mecklenburg County. On November 22, 2020, Staff agreed that the construction of the Company's proposed Cloud Switching Station qualified as ordinary course.

[2] The proposed in-service date for the Easters Switching Station is November 1, 2021. Since the energization date for this Switching Station occurs after the Company files its Application for these Projects, the Company notes that the 115 kV Easters Switching Station is under construction.

circuit galvanized steel poles; two single circuit galvanized steel H-frames; and three triple circuit galvanized steel H-frames.

The proposed Cloud 230 kV Switching Station, proposed Easters 230 kV Switching Station, Line #235 Extension, and 115 kV Line Relocations are collectively referred to as the "Projects."

The purpose of my testimony is to describe the design characteristics of the transmission facilities for the proposed Projects and also to discuss electric and magnetic field ("EMF") levels. I sponsor Sections I.L, II.A.5, II.B.1 to II.B.4, and IV of the Appendix. I also co-sponsor Sections I.A and I.F of the Appendix with Company Witness Kunal S. Amare; Section I.I of the Appendix with Company Witness Mohammad M. Othman; and Section II.B.5 with Company Witness Lane E. Carr.

Q. Does this conclude your pre-filed direct testimony?

A. Yes, it does.

APPENDIX A

BACKGROUND AND QUALIFICATIONS
OF
FURMOSE J. GOMEZ

Furmose J. Gomez graduated from North Carolina Agricultural & Technical State University in 2005 with a Bachelor of Science in Civil Engineering. He joined the Company in 2008 and has held various engineering titles within the Electric Transmission Engineering Department, where he currently works as a Transmission Line Engineering Supervisor.

Mr. Gomez has previously testified before the Virginia State Corporation Commission.

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Mohammad M. Othman

Title: Engineer III – Substation Engineering

Summary:

Company Witness Mohammad M. Othman sponsors or co-sponsors the following portions of the Appendix describing the work to be performed at existing or under construction switching stations for the proposed Projects, as follows:

- Section I.I (co-sponsored with Company Witness Furmose J. Gomez): This section provides the estimated total cost of the proposed projects.

- Section II.C: This section describes and furnishes a one-line diagram of the substations and/or switching stations associated with the proposed projects.

A statement of Mr. Othman's background and qualifications is attached to his testimony as Appendix A.

DIRECT TESTIMONY
OF
MOHAMMAD M. OTHMAN
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2021-00137

Q. Please state your name, business address and position with Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company").

A. My name is Mohammad M. Othman, and I am an Engineer III in the Substation Engineering section of the Electric Transmission group of the Company. My business address is 2400 Grayland Avenue, Richmond, Virginia 23220. A statement of my qualifications and background is provided as Appendix A.

Q. Please describe your areas of responsibility with the Company.

A. I am responsible for evaluation of the substation project requirements, feasibility studies, conceptual physical design, scope development, preliminary engineering, and cost estimating for high voltage transmission and distribution substations.

Q. What is the purpose of your testimony in this proceeding?

A. In order to provide service to two delivery points ("DP") requested by Old Dominion Electric Cooperative ("ODEC"), on behalf of Mecklenburg Electric Cooperative ("MEC"), for MEC to provide service to one of its customers in Mecklenburg County, Virginia; to maintain reliable service for the overall growth in the area; and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company") proposes to complete the following in Mecklenburg County, Virginia:

(i) convert the Company's existing Cloud 115 kV Switching Station[1] located on six acres at the former Mecklenburg Correctional Center (960 Prison Road, Boydton, Virginia) in Mecklenburg County to a 230 kV switching station ("Cloud 230 kV Switching Station");

(ii) convert the Company's under construction Easters 115 kV Switching Station[2] located between future 115 kV Line #1042 and existing 115 kV Line #137 (both lines between Ridge Road 115 kV Substation and Kerr Dam 115 kV Substation) in Mecklenburg County to a 230 kV switching station ("Easters 230 kV Switching Station"), and add one 230 kV 84 MVAR cap bank in the Easters 230 kV Switching Station for voltage support;

(iii) cut the Clover-Farmville Line #235 at Structure #235/310 (a point starting west of Chase City Substation), and extend (a) one 230 kV line to the Cloud 230 kV Switching Station, resulting in the 230 kV Farmville-Cloud Line #235; (b) one 230 kV line to the Easters 230 kV Switching Station and renumber the Line #235 structures between Structure #235/310-Clover Substation, resulting in the 230 kV Clover-Easters Line #2226, and (c) one 230kV line between the Easters 230 kV Switching Station and Cloud 230 kV Switching Station, resulting in the 230 kV Easters-Cloud Line #2229. Two 230 kV lines will be installed primarily along approximately 15.3 miles of existing right-of-way with expanded rights-of-way east of the Chase City Substation by less than 0.1 mile, at the Ridge Road Junction by 0.3 mile, and at the Boydton DP by 0.4 mile to accommodate the proposed area of the Projects, totaling approximately 0.7 mile of new rights-of-way. The lines will be supported by 96 double circuit 2-pole galvanized steel structures, 7 double circuit galvanized steel poles, and 4 single circuit galvanized steel H-frame structures utilizing a three-phase twin-bundled 795 ACSR type conductor with a summer transfer capability of 1225 MVA (collectively, "Line #235 Extension"); and

(iv) relocate Line Numbers 40, 171, and 1009 in an approximate 0.55 mile section of right-of-way located east of the Chase City Substation to allow for the installation of the proposed 230 kV lines (collectively, "115 kV Line Relocations"). To accommodate the 115 kV Line Relocations within the existing right-of-way, the Company proposes to install two single circuit galvanized steel poles; five double

[1] On November 8, 2020, the Company requested that Commission Staff ("Staff") find that the Company's work associated with the construction of its proposed 115 kV Cloud Switching Station qualified as "ordinary extensions or improvements in the usual course of business" pursuant to § 56-265.2 A 1 of the Va. Code and, therefore, did not require approval pursuant to Va. Code § 56-46.1 B or a CPCN from the Commission. Specifically, this proposed project included looping existing 115 kV Line #38 in and out of a new breaker station (the 115 kV Cloud Switching Station) to provide service to MEC's Coleman Creek DP, which was intended to serve the load of a new data center under construction in Mecklenburg County. On November 22, 2020, Staff agreed that the construction of the Company's proposed Cloud Switching Station qualified as ordinary course.

[2] The proposed in-service date for the Easters Switching Station is November 1, 2021. Since the energization date for this Switching Station occurs after the Company files its Application for these Projects, the Company notes that the 115 kV Easters Switching Station is under construction.

circuit galvanized steel poles; two single circuit galvanized steel H-frames; and three triple circuit galvanized steel H-frames.

The proposed Cloud 230 kV Switching Station, proposed Easters 230 kV Switching Station, Line #235 Extension, and 115 kV Line Relocations are collectively referred to as the "Projects."

The purpose of my testimony is to describe the work to be performed at the proposed Projects' various substations. I sponsor Section II.C of the Appendix and co-sponsor Section I.I of the Appendix with Company Witness Furmose J. Gomez, specifically, as it pertains to substation or switching station work.

Q. Does this conclude your pre-filed direct testimony?

A. Yes, it does.

BACKGROUND AND QUALIFICATIONS OF MOHAMMAD M. OTHMAN

Mohammad M. Othman received a Bachelor of Science degree in Electrical Engineering from Virginia Commonwealth University in 2008. Mr. Othman's responsibilities include the evaluation of the substation project requirements, development of scope documents and schedules, preparation of estimates and proposals, preparation of specifications and bid documents, material procurement, design substation physical layout, development of detailed physical drawings, bill of materials, electrical schematics and wiring diagrams. Mr. Othman joined the Dominion Energy Virginia Substation Engineering department in 2010 as an Engineer II and was later promoted to Engineer III, the title he currently holds.

Mr. Othman has previously submitted pre-filed testimony to the Virginia State Corporation Commission.

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Lane E. Carr

Title: Siting and Permitting Specialist I

Summary:

Company Witness Lane E. Carr sponsors those portions of the Appendix providing an overview of the design of the route for the proposed Projects, and related permitting, as follows:

- Section II.A.1: This section provides the length of the proposed corridor and viable alternatives to the proposed projects.
- Section II.A.2: This section provides a map showing the route of the proposed projects in relation to notable points close to the proposed projects.
- Section II.A.4: This section explains why the existing right-of-way is not adequate to serve the need, to the extent applicable.
- Sections II.A.6 to II.A.8: These sections provide detail regarding the right-of-way for the proposed projects.
- Section II.A.9: This section describes the proposed route selection procedures and details alternative routes considered.
- Section II.A.11: This section details how the construction of the proposed projects follow the provisions discussed in Attachment 1 of the Transmission Appendix Guidelines.
- Section II.A.12: This section identifies the counties and localities through which the proposed projects will pass and provides General Highway Maps for these localities.
- Section II.B.6: This section provides photographs of existing facilities, representations of proposed facilities, and visual simulations.
- Section III: This section details the impact of the proposed projects on scenic, environmental, and historic features.
- Section V: This section provides information related to public notice of the proposed projects.

Additionally, Ms. Carr co-sponsors the following portion of the Appendix:

- Section I.G (co-sponsored with Company Witness Kunal S. Amare): This section provides a system map for the affected area.
- Section II.A.3 (co-sponsored with Company Witness Kunal S. Amare): This section provides color maps of existing or proposed rights-of-way in the vicinity of the proposed projects.
- Section II.B.5 (co-sponsored with Company Witness Furmose J. Gomez): This section provides the mapping and structure heights for the existing overhead structures.

Finally, Ms. Carr sponsors the DEQ Supplement filed with the Application.

A statement of Ms. Carr's background and qualifications is attached to her testimony as Appendix A.

DIRECT TESTIMONY
OF
LANE E. CARR
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2021-00137

Q. Please state your name, business address and position with Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company").

A. My name is Lane E. Carr, and I am a Siting and Permitting Specialist for the Company. My business address is 10900 Nuckols Road, Glen Allen, Virginia 23060. A statement of my qualifications and background is provided as Appendix A.

Q. Please describe your areas of responsibility with the Company.

A. I am responsible for identifying appropriate routes for transmission lines and obtaining necessary federal, state, and local approvals and environmental permits for those facilities. In this position, I work closely with government officials, permitting agencies, property owners, and other interested parties, as well as with other Company personnel, to develop facilities needed by the public so as to reasonably minimize environmental and other impacts on the public in a reliable, cost-effective manner.

Q. What is the purpose of your testimony in this proceeding?

A. In order to provide service to two delivery points ("DP") requested by Old Dominion Electric Cooperative ("ODEC"), on behalf of Mecklenburg Electric Cooperative ("MEC"), for MEC to provide service to one of its customers in Mecklenburg County, Virginia; to maintain reliable service for the overall growth in the area; and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability

Standards, Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company") proposes to complete the following in Mecklenburg County, Virginia:

(i) convert the Company's existing Cloud 115 kV Switching Station[1] located on six acres at the former Mecklenburg Correctional Center (960 Prison Road, Boydton, Virginia) in Mecklenburg County to a 230 kV switching station ("Cloud 230 kV Switching Station");

(ii) convert the Company's under construction Easters 115 kV Switching Station[2] located between future 115 kV Line #1042 and existing 115 kV Line #137 (both lines between Ridge Road 115 kV Substation and Kerr Dam 115 kV Substation) in Mecklenburg County to a 230 kV switching station ("Easters 230 kV Switching Station"), and add one 230 kV 84 MVAR cap bank in the Easters 230 kV Switching Station for voltage support;

(iii) cut the Clover-Farmville Line #235 at Structure #235/310 (a point starting west of Chase City Substation), and extend (a) one 230 kV line to the Cloud 230 kV Switching Station, resulting in the 230 kV Farmville-Cloud Line #235; (b) one 230 kV line to the Easters 230 kV Switching Station and renumber the Line #235 structures between Structure #235/310-Clover Substation, resulting in the 230 kV Clover-Easters Line #2226, and (c) one 230kV line between the Easters 230 kV Switching Station and Cloud 230 kV Switching Station, resulting in the 230 kV Easters-Cloud Line #2229. Two 230 kV lines will be installed primarily along approximately 15.3 miles of existing right-of-way with expanded rights-of-way east of the Chase City Substation by less than 0.1 mile, at the Ridge Road Junction by 0.3 mile, and at the Boydton DP by 0.4 mile to accommodate the proposed area of the Projects, totaling approximately 0.7 mile of new rights-of-way. The lines will be supported by 96 double circuit 2-pole galvanized steel structures, 7 double circuit galvanized steel poles, and 4 single circuit galvanized steel H-frame structures utilizing a three-phase twin-bundled 795 ACSR type conductor with a summer transfer capability of 1225 MVA (collectively, "Line #235 Extension"); and

[1] On November 8, 2020, the Company requested that Commission Staff ("Staff") find that the Company's work associated with the construction of its proposed 115 kV Cloud Switching Station qualified as "ordinary extensions or improvements in the usual course of business" pursuant to § 56-265.2 A 1 of the Va. Code and, therefore, did not require approval pursuant to Va. Code § 56-46.1 B or a CPCN from the Commission. Specifically, this proposed project included looping existing 115 kV Line #38 in and out of a new breaker station (the 115 kV Cloud Switching Station) to provide service to MEC's Coleman Creek DP, which was intended to serve the load of a new data center under construction in Mecklenburg County. On November 22, 2020, Staff agreed that the construction of the Company's proposed Cloud Switching Station qualified as ordinary course.

[2] The proposed in-service date for the Easters Switching Station is November 1, 2021. Since the energization date for this Switching Station occurs after the Company files its Application for these Projects, the Company notes that the 115 kV Easters Switching Station is under construction.

(iv) relocate Line Numbers 40, 171, and 1009 in an approximate 0.55 mile section of right-of-way located east of the Chase City Substation to allow for the installation of the proposed 230 kV lines (collectively, "115 kV Line Relocations"). To accommodate the 115 kV Line Relocations within the existing right-of-way, the Company proposes to install two single circuit galvanized steel poles; five double circuit galvanized steel poles; two single circuit galvanized steel H-frames; and three triple circuit galvanized steel H-frames.

The proposed Cloud 230 kV Switching Station, proposed Easters 230 kV Switching Station, Line #235 Extension, and 115 kV Line Relocations are collectively referred to as the "Projects."

The purpose of my testimony is to provide an overview of the route and permitting for the proposed Projects. As it pertains to routing and permitting, I sponsor Sections II.A.1, II.A.2, II.A.4, II.A.6, II.A.7, II.A.8, II.A.9, II.A.11, II.A.12, II.B.6, III, and V of the Appendix. I also sponsor the DEQ Supplement filed with the Application, and co-sponsor Sections I.G and II.A.3 with Company Witness Kunal S. Amare, and Section II.B.5 of the Appendix with Company Witness Furmose J. Gomez.

Q. Has the Company complied with Va. Code § 15.2-2202 E?

A. Yes. In accordance with Va. Code § 15.2-2202 E, letters dated May 24, 2021, were sent to Mr. Wayne Carter, County Administrator in Mecklenburg County, and Mr. C.F. Forbes, Chase City Town Manager in Chase City, advising of the Company's intention to file this Application and inviting Mecklenburg County and Chase City to consult with the Company about the proposed Projects. Copies of these letters are included as Appendix Attachments V.D.1-2.

Q. Does this conclude your pre-filed direct testimony?

A. Yes, it does.

APPENDIX A

BACKGROUND AND QUALIFICATIONS
OF
LANE E. CARR

Lane E. Carr graduated from California Polytechnic State University in 1992 with a Bachelor of Science in Agricultural Business. She also obtained a Master of Science from California Polytechnic State University, San Luis Obispo in 1997. Ms. Carr joined the Company's Transmission Right-of-Way group in January 2019 as a Siting and Permitting Specialist, the position she presently holds. Prior to working for the Company, Ms. Carr worked as an Environmental Inspector for the County of Henrico.

Ms. Carr has previously submitted pre-filed testimony to the Virginia State Corporation Commission.