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November 12, 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:
230 kV Line #293 and 115 kV Line #83 Rebuild Project
Case No. PUR-2021-00272

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, a copy of the map of the Virginia Department of Transportation "General Highway Map" for Augusta County and the City of Staunton, as well as 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 were provided via an e-room to the Commission's Division of Energy Regulation on November 2, 2021. The Company followed up with Commission Staff ("Staff") on November 12, 2021, to ensure Staff obtained access to the maps.

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

Very truly yours,

Vishwa B. Link

Vishwa B. Link

Enclosures

cc: William H. Chambliss, Esq.

Mr. David Essah (without enclosures)
Mr. Neil Joshipura (without enclosures)
Mr. Michael A. Cizenski (without enclosures)
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Application, Appendix, DEQ Supplement, Direct Testimony and Exhibits of Virginia Electric and Power Company

Before the State Corporation Commission of Virginia

230 kV Line #293 and 115 kV Line #83 Rebuild Project

Application No. 309

Case No. PUR-2021-00272

Filed: November 12, 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

230 kV Line #293 and 115 kV Line #83 Rebuild Project

Application No. 309

Case No. PUR-2021-00272

Filed: November 12, 2021

COMMONWEALTH OF VIRGINIA

STATE CORPORATION COMMISSION

APPLICATION OF	)	
	)	
VIRGINIA ELECTRIC AND POWER COMPANY	)	Case No. PUR-2021-00272
	)	
For approval and certification of electric	)	
transmission facilities: 230 kV Line #293	)	
and 115 kV Line #83 Rebuild Project	)	

APPLICATION OF VIRGINIA ELECTRIC AND POWER COMPANY
FOR APPROVAL AND CERTIFICATION OF
ELECTRIC TRANSMISSION FACILITIES:
<u>230 kV LINE #293 AND 115 kV LINE #83 REBUILD PROJECT</u>

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.

3. In this Application, in order to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Dominion Energy Virginia proposes the following rebuild project located within existing right-of-way or on Company-owned property along an approximately 21.4-mile existing transmission corridor in the City of Staunton and Augusta County, Virginia (the "Rebuild Project"):

- Rebuild the approximately 21.4-mile 230 kV Staunton-Valley Line #293, which is inclusive of a 3.8-mile section of the 115 kV Craigsville-Staunton Line #83. Specifically, replace 17.6 miles of Line #293, which are supported primarily by single circuit wood H-frame structures, with primarily weathering steel H-frame structures; also replace 3.8 miles of Line #293, which is supported primarily with double circuit COR-TEN®[1] lattice structures that also support 115 kV Line #83, with primarily weathering steel double circuit monopole structures. Additionally, replace the Lines #293 and #83 conductors and shield wires for the entire 21.4 miles.

- Perform minor related substation work at the Company's Staunton, West Staunton, and Valley Substations.

4. The Company has developed a proactive plan to rebuild transmission lines that are comprised of wood pole structures that are experiencing maintenance and reliability issues, including cracked and decaying wood, ground line rot, and woodpecker damage, as well as weathering steel towers (COR-TEN® towers).

5. The proposed Rebuild Project will replace aging infrastructure that is at the end of its service life along the entire 21.4-mile 230 kV Staunton-Valley Line #293, inclusive of the 3.8-

[1] Registered trademark of United States Steel Corporation.

mile section of Line #83, based on the Company's assessment in accordance with Dominion Energy Virginia's mandatory transmission planning criteria (the "Planning Criteria") and consistent with sound engineering judgment. Specifically, for approximately 17.6 miles, Line #293 is supported predominantly by single circuit wood H-frame structures that were erected between 1971 and 1981. Industry experience indicates that life for wood pole structures is approximately 35 to 55 years, for conductors and connectors is approximately 40 to 60 years, and for porcelain insulators is approximately 50 years. The majority of these structures are at least 40 years old, and the Company believes it is most cost-effective to rebuild Line #293 between the Staunton and Valley Substations and the partial Line #83 that is shared with Line #293, rather than replace individual components.

6. The remaining 3.8 miles of double circuit structures supporting both Line #293 and Line #83 consist mainly of COR-TEN® lattice towers that were erected in 1981. These COR-TEN® towers have been identified for replacement. COR-TEN® steel is now known to be problematic when used for lattice-type structures. The Company retained a third-party company, Quanta Technology ("Quanta"), to evaluate the condition of its COR-TEN® towers. After completing its evaluation, Quanta provided the Company with the 2016 Quanta Report, which confirmed the need to rebuild the 3.8-mile COR-TEN® section supporting Line #293 (as well as 115 kV Line #83), among other 230 kV COR-TEN® transmission lines on the Company's system. As indicated in the 2016 Quanta Report, these 230 kV Line #293 structures have been prioritized for replacement in the near term. The Company determined, based on sound engineering judgment, that it is prudent to take all required outages for Line #293 at one time, while the 17.6-mile section of predominantly wood structures are being replaced, and expedite the rebuild of these structures as part of this scheduled active Rebuild Project.

7. In summary, the proposed Rebuild Project will replace aging infrastructure at the end of its service life in compliance with the Company's mandatory Planning Criteria and consistent with sound engineering judgment, thereby enabling the Company to maintain the overall long-term reliability of its transmission system, as well as to provide important system reliability benefits to the Company's entire network.

8. The desired in-service date for the Rebuild Project is December 15, 2025. The Company estimates it will take approximately 38 months for detailed engineering, materials procurement, permitting, and construction after a final order from the Commission. Accordingly, to support this estimated pre-construction activity timeline and construction plan, the Company respectfully requests a final order by October 20, 2022. Should the Commission issue a final order by October 20, 2022, the Company estimates that construction should begin in August 2023, and be completed in December 2025. This construction timeline will enable the Company to meet the targeted in-service date for the Rebuild Project. This schedule is contingent upon obtaining the necessary permits. Dates may need to be adjusted based on permitting delays or design modifications to comply with additional agency requirements identified during the permitting application process.

9. The estimated conceptual cost of the proposed Rebuild Project is approximately $40.8 million, which includes approximately $40.4 million for transmission-related work and approximately $0.4 million for substation-related work (2021 dollars). The description of the proposed Rebuild Project is described in detail in Sections I and II of the Appendix attached to this Application.

10. The length of the existing right-of-way and Company-owned property to be used for the Rebuild Project is approximately 21.4 miles. Because the existing right-of-way and

Company-owned property are adequate for the proposed Rebuild Project, no new right-of-way is required. Given the availability of existing right-of-way and the statutory preference given to use of existing rights-of-way, and because additional costs and environmental impacts would be associated with the acquisition and construction of new right-of-way, the Company did not consider any alternate routes requiring new right-of-way for this Rebuild Project.

11. 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.

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. 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 Mohsen Mahoor, Amanda L. Savage, Antoenette Yanev, and Nancy R. Reid 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 Rebuild Project; and,

(c) grant a certificate of public convenience and necessity for the Rebuild Project 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*_____________
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Counsel for Applicant Virginia Electric and Power Company

November 12, 2021

COMMONWEALTH OF VIRGINIA
BEFORE THE
STATE CORPORATION COMMISSION

APPLICATION OF

VIRGINIA ELECTRIC AND POWER COMPANY

FOR APPROVAL AND CERTIFICATION
OF ELECTRIC TRANSMISSION FACILITIES

230 kV Line #293 and 115 kV Line #83
Rebuild Project

Application No. 309

Appendix

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

Case No. PUR-2021-00272

Filed: November 12, 2021

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EXECUTIVE SUMMARY

In order to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company") proposes the following rebuild project located within existing right-of-way or on Company-owned property along an approximately 21.4-mile existing transmission corridor in the City of Staunton and in Augusta County, Virginia (the "Rebuild Project"):

- Rebuild the existing approximately 21.4-mile 230 kV Staunton-Valley Line #293, which is inclusive of a 3.8-mile section of 115 kV Craigsville-Staunton Line #83. Specifically, replace 17.6 miles of Line #293, which are supported primarily by single circuit wood H-frame structures, with primarily weathering steel H-frame structures; also replace 3.8 miles of Line #293, which is supported primarily by double circuit COR-TEN®[1] lattice structures that also support 115 kV Line #83, with primarily weathering steel double circuit monopole structures. Additionally, replace the Lines #293 and #83 conductors and shield wires for the entire 21.4 miles.

- Perform minor related substation work at the Company's existing Staunton, West Staunton and Valley Substations.

The Company has developed a proactive plan to rebuild transmission lines that are comprised of wood pole structures that are experiencing maintenance and reliability issues, including cracked and decaying wood, ground line rot, and woodpecker damage, as well as weathering steel towers (COR-TEN® towers). The proposed Rebuild Project will replace aging infrastructure that is at the end of its service life along the entire 21.4-mile 230 kV Staunton-Valley Line #293, inclusive of the 3.8-mile section of Line #83, based on the Company's assessment in accordance with Dominion Energy Virginia's mandatory transmission planning criteria (the "Planning Criteria") and consistent with sound engineering judgment.

Specifically, for approximately 17.6 miles, Line #293 is supported predominantly by single circuit wood H-frame structures that were erected between 1971 and 1981. Industry experience indicates that life for wood pole structures is approximately 35 to 55 years, for conductor and connectors is approximately 40 to 60 years, and for porcelain insulators is approximately 50 years. The majority of these structures are at least 40 years old, and the Company believes it is most cost effective to rebuild Line #293 between the Staunton and Valley Substations and the partial Line #83 that is shared with Line #293 rather than replace individual components.

The remaining 3.8 miles of double circuit structures supporting both Line #293 and Line #83 consist mainly of COR-TEN® lattice towers that were erected in 1981. These COR-TEN® towers have been identified for replacement. COR-TEN® steel is now known to be problematic when used for lattice-type structures. The Company retained a third-party company, Quanta Technology ("Quanta"), to evaluate the condition of its COR-TEN® towers. After completing its evaluation, Quanta provided the Company with the 2016 Quanta Report, which confirmed the need to rebuild the 3.8-mile COR-TEN® section supporting Line #293 (as well as 115 kV Line #83), among other

[1] Registered trademark of United States Steel Corporation.

230 kV COR-TEN® transmission lines on the Company's system. As indicated in the 2016 Quanta Report, these 230 kV Line #293 structures have been prioritized for replacement in the near term. The Company determined based on sound engineering judgment that it is prudent to take all required outages for Line #293 at one time, while the 17.6-mile section of predominantly wood structures are being replaced, and expedite the rebuild of these structures as part of this scheduled active Rebuild Project.

In summary, the proposed Rebuild Project will replace aging infrastructure at the end of its service life in compliance with the Company's mandatory Planning Criteria and consistent with sound engineering judgment, thereby enabling the Company to maintain the overall long-term reliability of its transmission system, as well as to provide important system reliability benefits to the Company's entire network.

The length of the existing right-of-way and Company-owned property to be used for the Rebuild Project is approximately 21.4 miles. Because the existing right-of-way and Company-owned property are adequate for the proposed Rebuild Project, no new right-of-way is required. Given the availability of existing right-of-way and the statutory preference given to use of existing rights-of-way, and because additional costs and environmental impacts would be associated with the acquisition and construction of new right-of-way, the Company did not consider any alternate routes requiring new right-of-way for this Rebuild Project.

The estimated conceptual cost of the Rebuild Project is approximately $40.8 million, which includes approximately $40.4 million for transmission-related work, and approximately $0.4 million for substation-related work (2021 dollars).

The desired in-service date for the Rebuild Project is December 15, 2025. The Company estimates it will take approximately 38 months for detailed engineering, materials procurement, permitting, and construction after a final order from the State Corporation Commission (the "Commission"). Accordingly, to support this estimated pre-construction activity timeline and construction plan, the Company respectfully requests a final order by October 20, 2022. Should the Commission issue a final order by October 20, 2022, the Company estimates that construction should begin in August 2023 and be completed in December 2025. This construction timeline will enable the Company to meet the targeted in-service date for the Rebuild Project. This schedule is contingent upon obtaining the necessary permits; dates may need to be adjusted based on permitting delays or design modifications in order to comply with additional agency requirements identified during the permitting application process.

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 Rebuild Project is necessary to replace aging infrastructure that is at the end of its service life along the entire 21.4-mile 230 kV Staunton-Valley Line #293, inclusive of a 3.8-mile section of Line #83 in the City of Staunton and Augusta County, Virginia. See Attachment I.A.1 for an overview map of the proposed Rebuild Project.

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, Old Dominion Electric Cooperative, Northern Virginia Electric Cooperative, 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").

Dominion Energy Virginia is part of the PJM Interconnection, L.L.C. ("PJM") regional transmission organization, which provides service to a large portion of the eastern United States. PJM is currently responsible for ensuring the reliability of 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 DOM Zone is expected to grow 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.[2]

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 for 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.[3] 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.[4] 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. 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.

[2] *See* FAC-001-3 (R1, R3) (effective April 1, 2021), which can be found at https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/virginia/parallel-generation/facility-interconnection-requirements-signed.pdf?la=en&rev=38f51ffb04b1489f921b32a41d9887c8.
[3] PJM Manual 14B (effective July 1, 2021) focuses on the RTEP process and can be found at https://www.pjm.com/-/media/documents/manuals/m14b.ashx.
[4] See PJM Manual 14B, Attachment D: PJM Reliability Planning Criteria.

The Company has developed a proactive plan to rebuild transmission lines that are comprised of wood pole structures that are experiencing maintenance and reliability issues, including cracked and decaying wood, ground line rot, and woodpecker damage, as well as weathering steel towers (COR-TEN® towers). The proposed Rebuild Project will replace aging infrastructure that is at the end of its service life along the entire 21.4-mile 230 kV Staunton-Valley Line #293, inclusive of the 3.8-mile section of Line #83, based on the Company's assessment in accordance with Dominion Energy Virginia's Planning Criteria and consistent with sound engineering judgment.

The entire Line #293 runs approximately 21.4 miles between the Company's existing Staunton and Valley Substations. Of the 21.4 miles, 17.6 miles were constructed on single circuit wood H-frame structures between 1971 and 1981. The remaining 3.8 miles were constructed on double circuit weathering steel lattice structures in 1981. The double circuit weathering steel lattice structures are shared between Line #293 and Line #83, which runs between the Company's existing Craigsville and Staunton Substations.

Section C.2.9 of the Planning Criteria addresses electric transmission infrastructure approaching its end of life: [5]

> Electric transmission infrastructure reaches its end of life as a result of many factors. Some factors such as extreme weather and environmental conditions can *shorten* infrastructure life, while others such as maintenance activities can *lengthen* its life. Once end of life is recognized, in order to ensure continued reliability of the transmission grid, a decision must be made regarding the best way to address this end-of-life asset.
>
> For this criterion, "end of life" is defined as the point at which infrastructure is at risk of failure, and continued maintenance and/or refurbishment of the infrastructure is no longer a valid option to extend the life of the facilities consistent with Good Utility Practice and Dominion Energy Transmission Planning Criteria. The infrastructure to be evaluated under this end-of-life criteria are all regional transmission lines operated at 500 kV and above.
>
> The decision point of this criterion is based on satisfying two

[5] The Company's Transmission Planning Criteria (effective April 1, 2021) can be found in Attachment 1 of the Company's Facility Interconnection Requirements document, which is available online at https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/virginia/parallel-generation/facility-connection-requirements.pdf?la=en&rev=f280781e90cf47f69ea526c944c9c347&hash=82DD2567D0B033C47536134B8C4D5C5E. The Company's Planning Criteria regarding infrastructure to be evaluated under end-of-life ("EOL") criteria was updated effective March 24, 2020. However, the process for determining that an asset has reached its EOL remains the same; therefore, the Company continues to use the criteria evaluation process outlined in Section C.2.9 of the Planning Criteria. See: http://www.pjm.com/-/media/committees-groups/committees/srrtep-s/2020/20200616/20200616-dominion-local-planning-assumptions-2020.ashx.

metrics:

1) *Facility is nearing, or has already passed, its end of life, and*
2) *Continued operation risks negatively impacting reliability of the transmission system.*

For facilities that satisfy both of these metrics, this criterion mandates either replacing these facilities with in-kind infrastructure that meets current Dominion standards or employing an alternative solution to ensure the Dominion transmission system satisfies all applicable reliability criteria.

The Rebuild Project would rebuild the entire 21.4-mile 230 kV Staunton-Valley Line #293, including 17.6 miles of single circuit 230 kV wood H-frame structures and 3.8 miles of double circuit weathering steel lattice structures also supporting 115 kV Craigsville-Staunton Line #83, which have been identified for rebuild based on the Company's assessment in accordance with Dominion Energy Virginia's Planning Criteria and consistent with sound engineering judgment.

1) *Facility is nearing, or has already passed, its end of life*

In regards to the first metric of the Company's Planning Criteria addressing end of life, approximately 17.6 miles of Line #293 is predominantly supported by single circuit wood H-frame structures that were erected between 1971 and 1981. Industry experience indicates that life for wood pole structures is approximately 35 to 55 years, for conductor and connectors is approximately 40 to 60 years, and for porcelain insulators is approximately 50 years. The majority of these structures are at least 40 years old, and the Company believes it is most cost-effective to rebuild Line #293 between the Staunton and Valley Substations and the partial Line #83 that is shared with Line #293 rather than replace individual components.

The remaining 3.8 miles of double circuit structures supporting both Line #293 and Line #83 consist mainly of COR-TEN® lattice towers that were erected in 1981. These COR-TEN® towers have been identified for replacement. COR-TEN® steel is now known to be problematic when used for lattice-type structures. The Company retained a third-party company, Quanta, to evaluate the condition of its COR-TEN® towers. After completing its evaluation, Quanta provided the Company with the 2016 Quanta Report, which confirmed the need to rebuild the 3.8-mile COR-TEN® section supporting Line #293 (as well as 115 kV Line #83), among other 230 kV COR-TEN® transmission lines on the Company's system. As indicated in the 2016 Quanta Report, these 230 kV Line #293 structures have been prioritized for replacement in the near term. The Company determined based on sound engineering judgment that it is prudent to take all required outages for Line #293 at one time, while the 17.6-mile section of predominantly wood structures are being replaced, and expedite the rebuild of these structures as part of this scheduled active Rebuild Project.

2) *Continued operation risks negatively impacting reliability of the transmission system*

With regard to the second metric of the Company's Planning Criteria addressing end of life, Line #293 provides service to Dominion Energy Virginia's West Staunton Substation, which in turn serves approximately 11,069 direct-connect customers in Augusta County. Additionally, Line #83 provides service to Shenandoah Valley Electric Cooperative ("SVEC") through Trimbles Mill Delivery Point ("DP"), which in turn serves approximately 2,639 cooperative customers located in Augusta County. The Company would be unable to continue to provide reliable transmission service to these customers unless it addresses the aging infrastructure at the end of its service life.

The Company submitted the Rebuild Project proposal as a supplemental project to the PJM RTEP process in September 2020 and November 2020 to address the end-of-life criteria. The Company further submitted an update to the scope of the Rebuild Project proposal in April 2021. Attachment I.A.2 contains the relevant slides presented at the September 2020 PJM TEAC meeting, Attachment I.A.3 contains the relevant slides that the Company prepared for presentation at the November 2020 PJM TEAC meeting, and Attachment I.A.4 contains the relevant slides that the Company prepared for updating the presentation at the April 2021 PJM TEAC meeting. No additional reliability studies were required by PJM in support of the need for the proposed Rebuild Project because service to customers fed from Dominion Energy Virginia's West Staunton Substation and SVEC's Trimbles Mill DP would be dropped absent the Rebuild Project.

***

In summary, the proposed Rebuild Project will replace aging infrastructure at the end of its service life in compliance with the Company's mandatory Planning Criteria and consistent with sound engineering judgment, thereby enabling the Company to maintain the overall long-term reliability of its transmission system, as well as to provide important system reliability benefits to the Company's entire network.

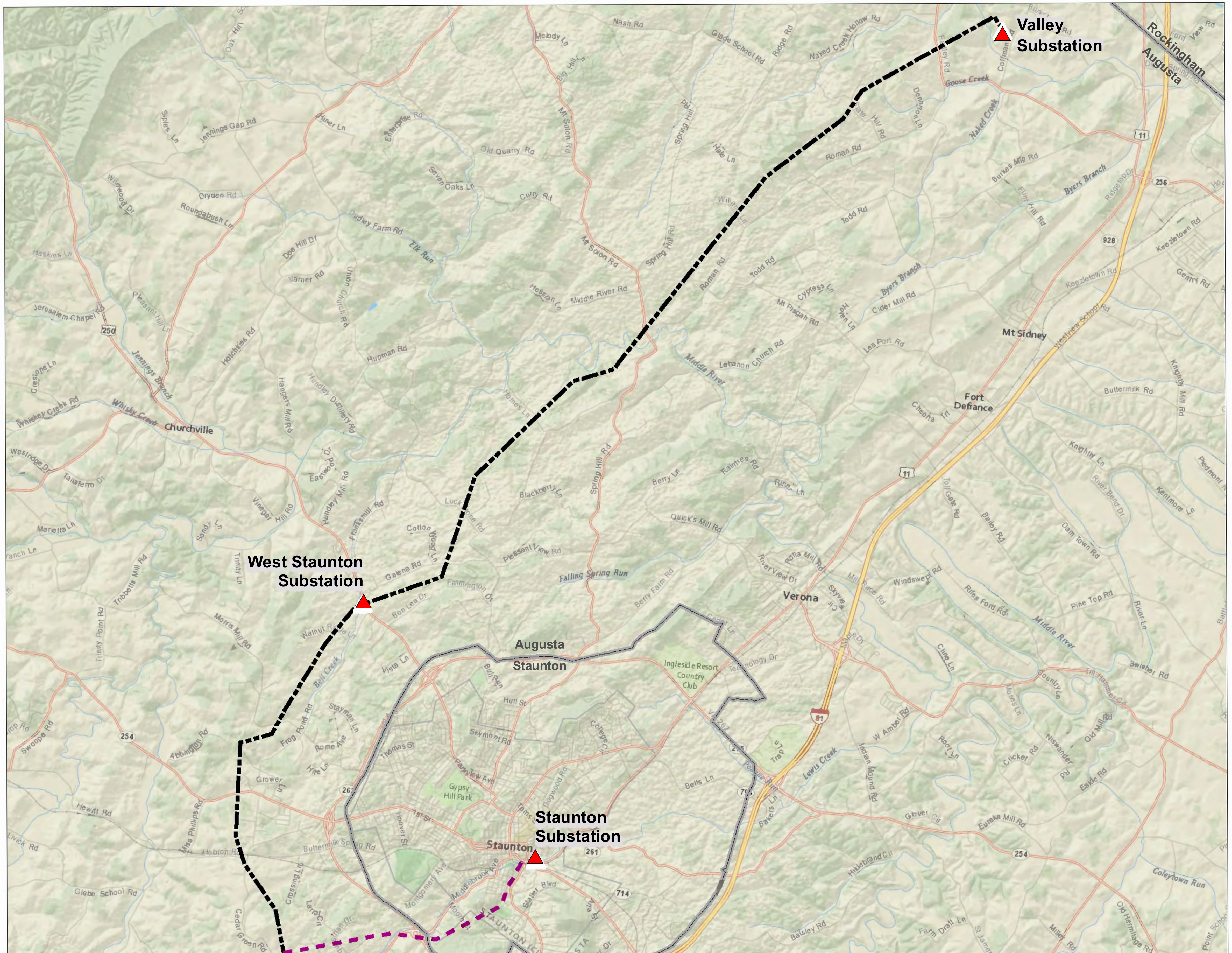


Figure No.
I.A.1
Title
Overview Map

Client/Project 203401607
Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

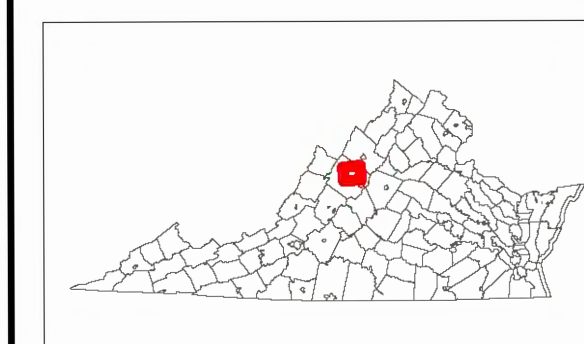
Project Location
Augusta County and City of Staunton, Virginia

Prepared by LJJ on 2021-06-29
TR by MGS on 2021-06-29
IR by MK on 2021-08-03

N

0 7,000 14,000 Feet
(At original document size of 11x17)
1:84,000

Substation
Lines #293 and #83 Project Centerline
Line #293 Project Centerline



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, DCR
3. Base Map © National Geographic

Stantec

Page 01 of 01

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Dominion Supplemental Projects

Transmission Expansion Advisory Committee
September 1, 2020

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

Dominion Transmission Zone: Supplemental
End of Life – Transmission Lines Below 500 kV

Need Number: DOM-2020-0028

Process Stage: Need Meeting 9/1/2020

Project Driver: End of Life – Transmission Lines Below 500 kV

Specific Assumption References:

See details on Equipment Material Condition, Performance and Risk in Dominion's Planning Assumptions presented in December 2019 and updated in June 2020

Problem Statement:

Dominion Energy has identified a need to replace 47 existing transmission towers (Staunton – Valley) of Line#293.

- The 293 line was constructed largely on wood H-frame structures in timeframe between 1971 and 1981. Approximately 17.8 miles of 21.27 miles of this line was constructed on wood H-frame structures and these structures are at the end of their useful life.
- Industry guidelines indicate equipment life for wood structures is 35-55 years.
- The Line #293 provides service to West Staunton substations (Dominion Distribution) with approximately 46.6 MW tapped load.

Dominion Energy

Revision History

8/20/2020 – V1 – Original version posted to pjm.com.

Dominion Supplemental Projects

Transmission Expansion Advisory Committee
November 4, 2020

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

Dominion Transmission Zone: Supplemental Equipment Material Condition, Performance and Risk

Need Number: DOM-2020-0028

Process Stage: Solution Meeting 11/04/2020

Previously Presented: Need Meeting 9/1/2020

Project Driver: Equipment Material Condition, Performance and Risk

Specific Assumption References:
See details on Equipment Material Condition, Performance and Risk in Dominion's Planning Assumptions presented in December 2019 and updated in June 2020

Problem Statement:
Dominion Energy has identified a need to replace 47 existing transmission towers (Staunton – Valley) of Line#293.

- The 293 line was constructed largely on wood H-frame structures in timeframe between 1971 and 1981. Approximately 17.8 miles of 21.27 miles of this line was constructed on wood H-frame structures and these structures are at the end of their useful life.
- Industry guidelines indicate equipment life for wood structures is 35-55 years.
- The Line #293 provides service to West Staunton Substation (Dominion Distribution) with approximately 46.6 MW tapped load.

Dominion Transmission Zone: Supplemental
230kV Line #293 – EOL Rebuild

Need Number: DOM-2020-0028

Process Stage: Solutions Meeting 11/04/2020

Proposed Solution:
Approximately 17.8 miles involving wood H-frame structures and weathering steel Corten lattice towers will be replaced with steel monopoles and new conductor with a normal summer rating of 1047 MVA.

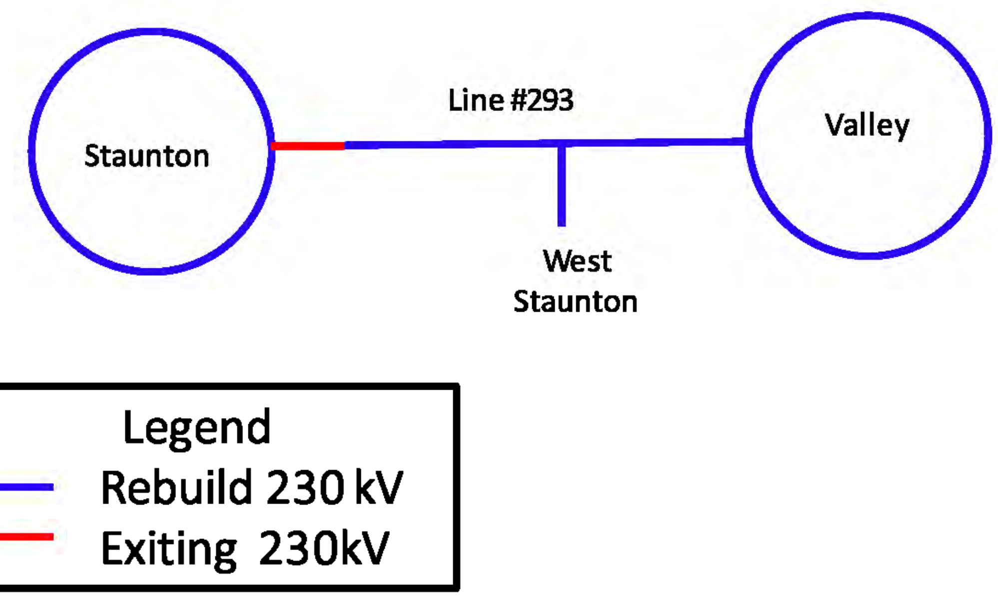
Estimated Project Cost: $35.6 M

14 **Alternatives Considered:**
No feasible alternatives

Projected In-service Date: 12/15/2024

Project Status: Conceptual

Model:



Revision History

10/23/2020 – V1 – Original version posted to pjm.com.

11/02/2020 – V2 – Removed Pacific Loop and Poland Loop DNH

11/04/2020 – V3 – Updated DOM-2020-0019 project cost, DOM-2020-0044 wording update.

12/07/2020 – V4 – Updated DOM-2020-0019 to include an estimated distribution cost to give perspective on the total project cost. A note was also added after the "Alternatives Considered" section to clarify why the proposed solution was selected over the alternative to run a distribution circuit under the Mattaponi River.

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

Dominion Transmission Zone: Supplemental
Equipment Material Condition, Performance and Risk

Need Number: DOM-2020-0028 UPDATE

Process Stage: Solution Meeting 04/06/2021

Previously Presented: Solution Meeting 11/04/2020

Project Driver: Equipment Material Condition, Performance and Risk

Specific Assumption References:
See details on Equipment Material Condition, Performance and Risk in Dominion's Planning Assumptions presented in December 2019 and updated in June 2020

Problem Statement:
Dominion Energy has identified a need to replace ~~47~~ 17.8 miles of existing single-circuit wood transmission towers ~~(Staunton – Valley)~~ of 230 kV Line #293 (Staunton and Valley), -and 3.5 miles of double-circuit painted/weathering steel structures that are shared between Line #293 and 115 kV Line #83 (Craigsville-Staunton).

- The 293 line was constructed largely on wood H-frame structures in timeframe between 1971 and 1981. Approximately 17.8 miles of ~~21.27~~ 21.3 miles of this line was constructed on wood H-frame structures and these structures are at the end of their useful life.
- The remaining 3.5 miles of double-circuit structures were constructed in 1981 and consist mainly of weathering steel lattice structures that are at the end of their useful life.
- Industry guidelines indicate equipment life for wood structures is 35-55 years.
- The Line #293 provides service to West Staunton Substation (Dominion Distribution) with approximately 46.6 MW tapped load.

Dominion Transmission Zone: Supplemental
230kV Line #293 & 115 kV Partial Line #83 – EOL Rebuild

Need Number: DOM-2020-0028 UPDATE

Process Stage: Solutions Meeting ~~11/04/2020~~ 04/04/2021

Proposed Solution:
Replace ~~A~~approximately 17.8 miles of existing single-circuit ~~involving~~ wood H-frame structures on Line #293 and 3.5 miles of double-circuit painted/weathering steel structures shared between Line #293 and Line #83 ~~weathering steel Corten lattice towers will be replaced~~ with single and double-circuit steel monopoles, as appropriate. ~~and n~~New conductor with a normal summer rating of 1047 MVA will be used for the entire Line #293. The 3.5-mile segment of Line#83 that is being replaced will use new conductor with a normal summer rating of 261 MVA.

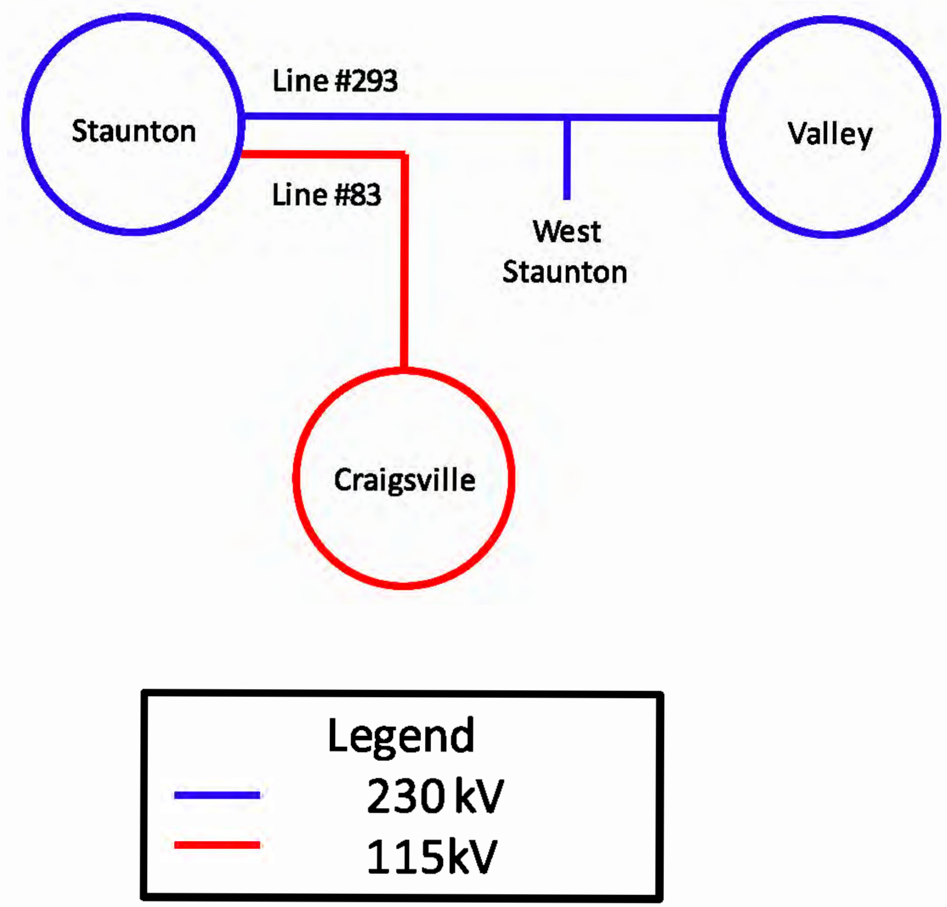
Estimated Project Cost: ~~$35.6~~ 44.8 M

Alternatives Considered:
No feasible alternatives

Projected In-service Date: 12/15/2025

Project Status: ~~Conceptual~~ Engineering

Model: 2025 RTEP



Revision History

03/26/2021 – V1 – Original version posted to pjm.com.

04/05/2021 – V2 – Updated Project Status for DOM-2020-0028 to Engineering (slide 18). Updated Alternatives for DOM-2021-0014 (slide 24).

04/22/2021 – V3 – Updated the Projected In-service Date for DOM-2020-0028 to 12/15/2025.

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**

For a detailed description of the engineering justification for the Rebuild Project, see Section I.A.

(2) Known Future Projects

There are no known future projects that require the Rebuild Project to be constructed. The Rebuild Project is required by the Company's end-of-life criteria as described in Section I.A.

(3) Planning Studies

Not applicable.

(4) Facilities List

Not applicable.

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: Attachment I.G.1 shows the portion of the Company's transmission system in the area of the proposed Rebuild Project. The existing Line #293 is part of the Company's 230 kV network, and Line #83 is part of the Company's 115 kV network, both of which support the delivery of generation to retail and wholesale customers. These lines support the network in the western Virginia area.

The table in Attachment I.C.1 provides 10 years of historical system peak loads for the Company's Valley load area, which includes Line #293 and Line #83. The table in Attachment I.C.1 also provides the anticipated summer and winter peak loads from 2021 to 2030 for this area. The projected loads in Attachment I.C.1 represent the Company's forecasted peaks based on actual load and the PJM 2021 Load Forecast, and demonstrate stable load demand in the area. Over the period from 2021 to 2030, the summer peak electrical demand for this area is projected to change from 762 MW to 765 MW, and the winter peak electrical demand for this area is projected to change from 924 MW to 926 MW.

The existing Line #293 and Line #83 cannot adequately serve the needs of the Company and its customers because of the aging infrastructure, as discussed in Section I.A. The Company has created a plan to address its end-of-life facilities, setting target completion dates for end-of-life projects based on the condition of the facilities, the Company's resources, and the need to schedule outages. The desired in-service date for completion of the proposed Rebuild Project is December 15, 2025.

Completing the Rebuild Project will support Dominion Energy Virginia's continued reliable electric service to retail and wholesale customers and will support the future overall growth and system generation capability in the area.

Historical load (MW)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Valley - Summer	749.3	737.4	707.7	691.4	714.0	713.0	703.4	743.9	689.1	730.0
Valley - Winter	749.5	682.1	765.2	850.6	898.1	828.3	831.2	889.7	820.3	752.1

Projected load (MW)*

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Valley - Summer	762	759	755	750	744	729	734	741	756	765
Valley - Winter	924	909	901	892	881	875	885	897	910	926

*Forecasted values are based on the PJM 2021 Load Forecast

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: Not applicable.

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: No feasible alternatives have been submitted to PJM. As stated in Section I.A, not rebuilding 230 kV Line #293 and 115 kV Line #83 between the Staunton and Valley Substations results in not serving approximately 13,708 customers located in Augusta County.

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, the Company has identified a need for the Rebuild Project based on the need to replace aging infrastructure at the end of its service life in order to comply with the Company's mandatory Planning Criteria and consistent with sound engineering judgment, thereby enabling the Company to maintain the overall long-term reliability of its transmission system.[6] 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 Rebuild Project. Based on these considerations, the evaluation of the Rebuild Project demonstrated that despite accounting for DSM consistent with PJM's methods, the Rebuild Project is necessary.

Incremental DSM also will not absolve the need for the Rebuild Project. As reflected in Attachment I.C.1, the load area for this Rebuild Project (historic and projected) ranges from 682.1 to 926 MW (summer and winter). By way of comparison, statewide, the Company achieved demand savings of 120.4 MW from its DSM Programs in 2020.

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[6] 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 PJM'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.

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 Rebuild Project includes the removal and replacement of existing facilities on existing Lines #293 and #83 as described below. There will be no lines permanently taken out of service as part of the proposed Rebuild Project.

The existing capacity of Line #293 between Staunton and Valley Substations has normal/emergency ratings of 608/608 megavolt amperes ("MVA") summer and 769/769 MVA winter.[7] With the Rebuild Project, the capacity of the rebuilt line will have normal/emergency ratings of 1047/1047 MVA summer and 1160/1160 MVA winter.

The existing capacity of the 3.8-mile section of Line #83 between Structures #83/1 (#293/88) and #83/23 (#293/110) has normal/emergency ratings of 152/152 MVA summer and 192/192 MVA winter. With the Rebuild Project, the capacity of the rebuilt line within this 3.8-mile section will have normal/emergency ratings of 262/262 MVA summer and 290/290 MVA winter.

Structure #293/111 to Valley Substation (Structure #293/261)

For the 17.6-mile segment of the Rebuild Project containing Line #293, one-hundred twenty-two 230 kV wood/wood pole equivalent H-frame structures, fourteen 230 kV wood/wood pole equivalent three-pole structures, and one 230 kV concrete three-pole structure supporting Line #293 will be replaced with one-hundred twenty-five 230 kV weathering steel H-frame structures and twelve 230 kV weathering steel three-pole structures.

Two 230 kV galvanized steel self-supporting switch structures supporting Line #293 will be installed outside of West Staunton Substation. These structures will facilitate the replacement and relocation of two 230 kV Line Switches #29356 and #29359 from existing West Staunton Substation backbone Structure #293/150A.

The existing Line #293 is co-located on double circuit structures with Line #253 within existing transmission line right-of-way for approximately 0.2 mile north of the Valley Substation. One 230 kV double-circuit weathering steel monopole

[7] Apparent power, measured in megavolt amperes (MVA), is made up of real power (megawatt or "MW") and reactive power megavolt ampere reactive ("MVAR"). The power factor ("pf") is the ratio of real power to apparent power. For loads with a high pf (approaching unity), real power will approach apparent power and the two can be used interchangeably. Load loss criteria specify real power (MW) units because that represents the real power that will be dropped; however, MVA is used to describe the equipment ratings to handle the apparent power, which includes the real and reactive load components.

structure supporting Lines #293 and #253 will be replaced with one 230 kV double-circuit weathering steel monopole structure.[8]

In addition to the structure replacements, the existing 3-phase twin-bundled 545.6 ACAR conductors on Line #293 will be replaced with 3-phase twin-bundled 636 ACSR conductors. The two 3#6 alumoweld shield wires will be replaced with two optical ground wire ("OPGW") fiber optic shield wires.

Staunton Substation (Structures #293/88, 83/1 and 293/87A) to Structure #293/110, 83/23)

For the 3.8-mile segment of the Rebuild Project containing Lines #293 and #83, fifteen 230 kV double-circuit COR-TEN® towers, and one 230 kV painted steel double-circuit monopole structure supporting Lines #293 and #83 will be replaced with fifteen 230 kV weathering steel double-circuit monopole structures and one 230 kV galvanized steel double-circuit monopole structure.

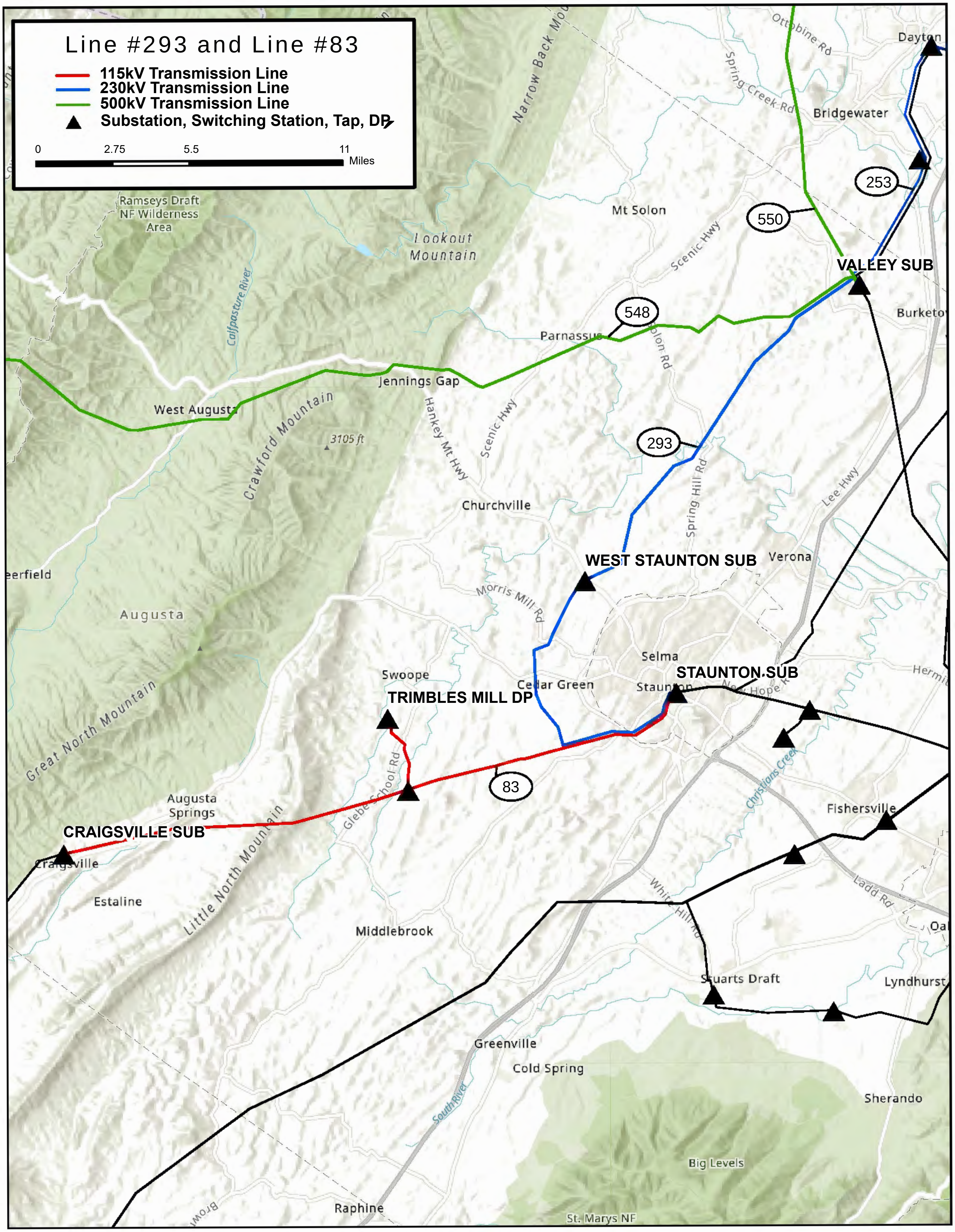
In addition to the structure replacements, the existing 3-phase twin-bundled 545.6 ACAR conductors on Line #293 will be replaced with 3-phase twin-bundled 636 ACSR conductors. On Line #83, the existing 3-phase 545.6 ACAR conductors will be replaced with 3-phase 636 ACSR conductors. The two 3#6 alumoweld shield wires will be replaced with two OPGW fiber optic shield wires.

[8] The Company considers the work associated with Line #253, which includes removing one 230 kV double-circuit weathering steel monopole structure supporting Lines #293 and #253 and replacing it with one 230 kV double-circuit weathering steel monopole structure, to qualify as "ordinary extensions or improvements in the usual course of business" pursuant to Va. Code § 56-265.2 A 1 and therefore, does not require approval pursuant to Va. Code § 56-46.1 B or a certificate of public convenience and necessity ("CPCN") from the Commission. Should the Commission determine that a CPCN is required for the work associated with Line #253 as described herein, the Company requests that the Commission grant such CPCN as part of its final order in this proceeding.

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.


Line #293 and Line #83
115kV Transmission Line
230kV Transmission Line
500kV Transmission Line
Substation, Switching Station, Tap, DP
0
2.75
5.5
11
Miles
VALLEY SUB
WEST STAUNTON SUB
STAUNTON SUB
TRIMBLES MILL DP
CRAIGSVILLE SUB
253
550
548
293
83
Dayton
Bridgewater
Mt Solon
Parnassus
Jennings Gap
West Augusta
Churchville
Verona
Selma
Staunton
Swoope
Cedar Green
Augusta Springs
Craigsville
Estaline
Middlebrook
Fishersville
Stuarts Draft
Lyndhurst
Greenville
Cold Spring
Sherando
Big Levels
Raphine
Burketown
Ramseys Draft NF Wilderness Area
Lookout Mountain
Crawford Mountain
Great North Mountain
Little North Mountain
Narrow Back Mountain
Augusta
3105 ft
St. Marys NF

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 date for the Rebuild Project is December 15, 2025.

The Company estimates it will take approximately 38 months for detailed engineering, materials procurement, permitting, and construction after a final order from the Commission. Accordingly, to support this estimated pre-construction activity timeline and construction plan, the Company respectfully requests a final order by October 20, 2022. Should the Commission issue a final order by October 20, 2022, the Company estimates that construction should begin in August 2023 and be completed in December 2025. This construction timeline will enable the Company to meet the targeted in-service date for the Rebuild Project. This schedule is contingent upon obtaining the necessary permits; dates may need to be adjusted based on permitting 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: The estimated conceptual cost of the Rebuild Project is approximately $40.8 million, which includes approximately $40.4 million for transmission-related work, and approximately $0.4 million for substation-related work (2021 dollars).

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 proposed Rebuild Project will be incorporated into PJM's RTEP process as a supplemental project (s2497). See Section I.A.

The Rebuild Project is presently 100% cost allocated to the DOM Zone.

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: The need for the Rebuild Project is not driven by outage history, but rather by the need to replace transmission infrastructure approaching its end of life. See Section I.A of this Appendix.

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: The proposed Rebuild Project will replace aging infrastructure that is at the end of its service life in order to comply with the Company's mandatory planning criteria and consistent with sound engineering judgment, thereby enabling the Company to maintain the overall long-term reliability of its transmission system.

See Attachment I.L.1 for representative photographs of the deterioration of structures supporting Lines #293 and #83 identified for rebuild.

See Attachment I.L.2 for a list of wood structures identified by the Company for replacement within the next five years supporting Line #293. The 2016 Quanta Report, discussed in Section I.A, details the condition of the COR-TEN® structures supporting Lines #293 and #83.

Structure 293/94, 83/7

Structure 293/112

Structure 293/113

Structure 293/118

Structure 293/121

Structure 293/124

Structure 293/127

Structure 293/131

Structure 293/136

Structure 293/139

Structure 293/185

Structure 293/241

Structure 293/250

Line 293 - Structures Requiring Replacement within the next Five Years	
LINE/STR	**Reported Structure Damage**
293/111	Pole Rot/Decay
293/112	Woodpecker Damage
293/113	Woodpecker Damage, Pole Rot/Decay
293/120	Pole Splitting
293/121	Structure Shelf Gain
293/122	Pole Rot/Decay
293/123	Woodpecker Damage, Pole Rot/Decay
293/124	Woodpecker Damage
293/125	Woodpecker Damage
293/126	Woodpecker Damage, Pole Rot/Decay
293/127	Woodpecker Damage, Pole Rot/Decay, Pole Splitting
293/128	Woodpecker Damage, Pole Rot/Decay
293/130	Woodpecker Damage, Pole Rot/Decay
293/131	Woodpecker Damage
293/133	Woodpecker Damage, Pole Rot/Decay
293/134	Woodpecker Damage
293/136	Woodpecker Damage
293/137	Pole Splitting
293/139	Woodpecker Damage
293/141	Woodpecker Damage
293/142	Pole Rot/Decay
293/160	Woodpecker Damage, Pole Rot/Decay, Pole Splitting
293/161	Woodpecker Damage, Pole Rot/Decay
293/164	Pole Rot/Decay
293/185	Woodpecker Damage, Pole Rot/Decay, Pole Cracking
293/206	Woodpecker Damage, Pole Rot/Decay
293/208	Woodpecker Damage
293/213	Woodpecker Damage, Pole Rot/Decay
293/215	Woodpecker Damage, Pole Rot/Decay
293/216	Woodpecker Damage
293/217	Pole Splitting, Pole Rot/Decay
293/223	Woodpecker Damage, Pole Rot/Decay
293/230	Woodpecker Damage
293/234	Woodpecker Damage, Pole Rot/Decay
293/236	Woodpecker Damage
293/238	Woodpecker Damage
293/240	Woodpecker Damage
293/241	Woodpecker Damage
293/242	Woodpecker Damage
293/243	Woodpecker Damage
293/248	Woodpecker Damage

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: Not applicable.

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 Rebuild Project transmission corridor is approximately 21.4 miles. No alternative routes are proposed for the Rebuild Project. See Section II.A.9 of the Appendix 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 21.4-mile right-of-way is proposed to be quitclaimed or relinquished.

The Company will make the digital Geographic Information Systems ("GIS") shape file available to interested persons upon request to counsel for the Company as listed in the Rebuild Project Application.

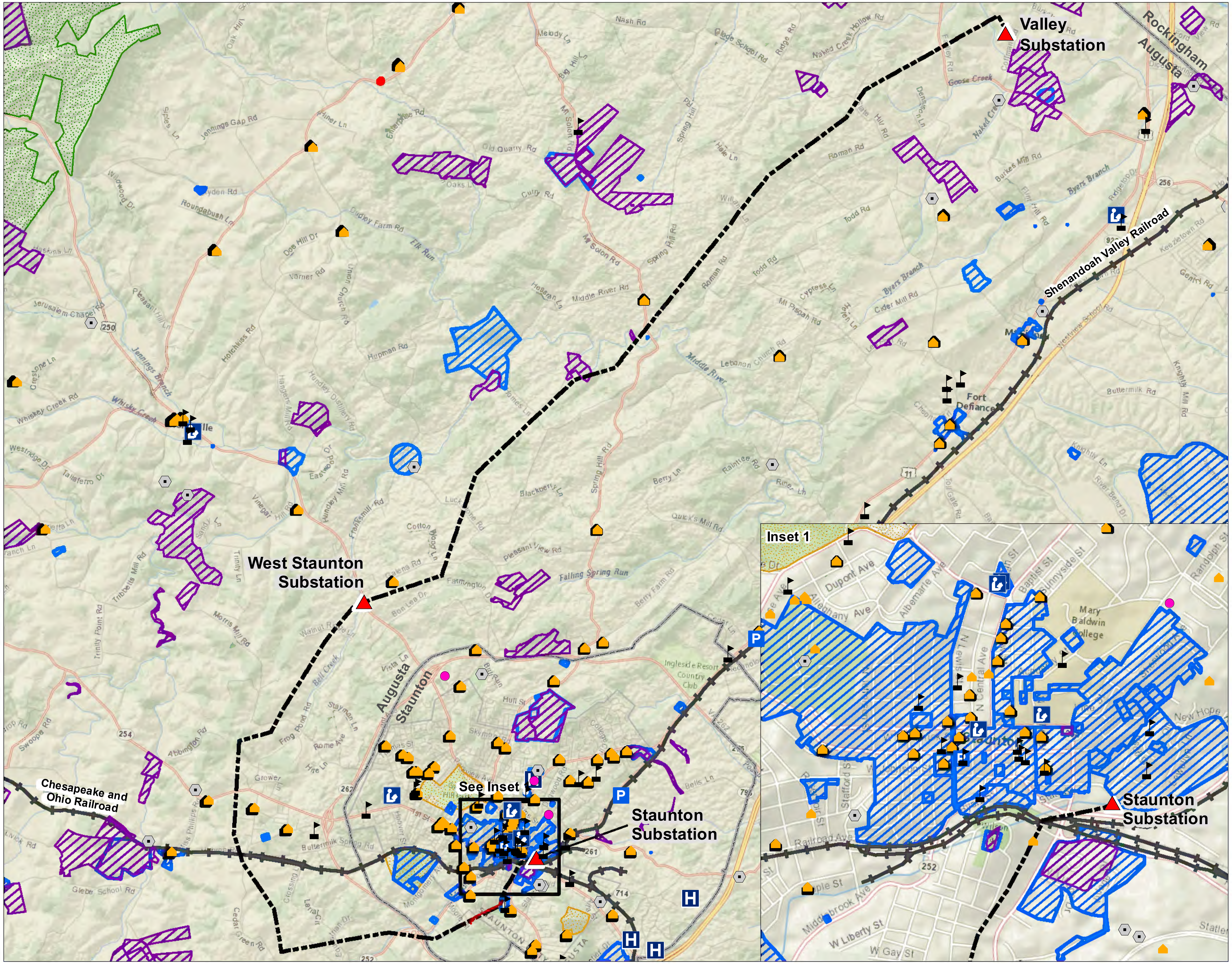


Figure No.
II.A.2

Title
Environmental Constraints Map

Client/Project 203401607
Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

Project Location
Augusta County and City of Staunton, Virginia

Prepared by LJJ on 2021-06-29
TR by MGS on 2021-06-30
IR by CPG on 2021-07-01

N

0 7,000 14,000 Feet

(At original document size of 11x17)
1:18,000

- Substation
- Cemetery
- Convalescent Center
- Hospital
- Library
- Place of Worship
- Police
- School
- Archaeological Resource
- Architectural Resource
- Conservation Easement
- Conservation Land
- George Washington and Jefferson National Forest
- Project Centerline
- Railroad
- Distribution Line

Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, DCR, ESRI, National Transporation Atlas Railroads, Virginia Department of Historic Resources, Virginia Cultural Resources Information System (VCRIS)
3. Base Map © National Geographic

Stantec

Page 01 of 01

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: Not applicable.

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;

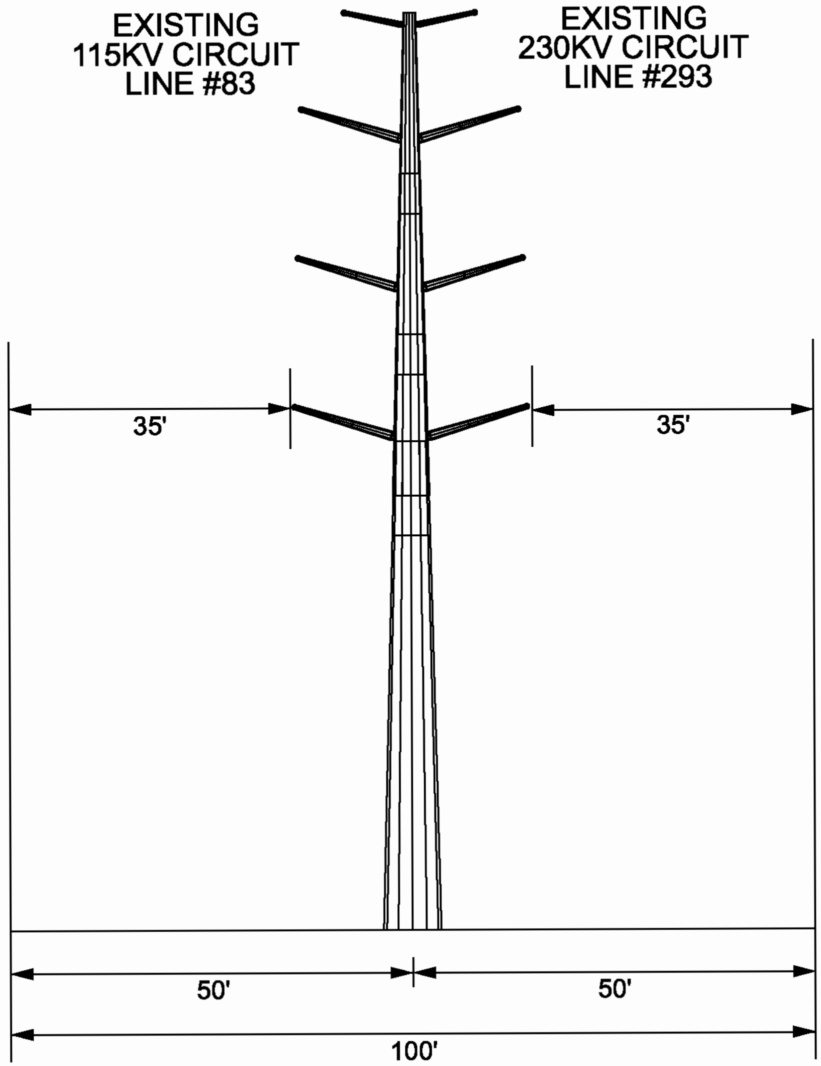
c. Existing utility facilities on the ROW; and

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 Attachments II.A.5.a-t.

TESBORD3 $DGNSPEC$ $SYTIME$

SECTION 1: EXISTING



Dominion Energy
10900 Nuckols Road
Glen Allen, VA 23060

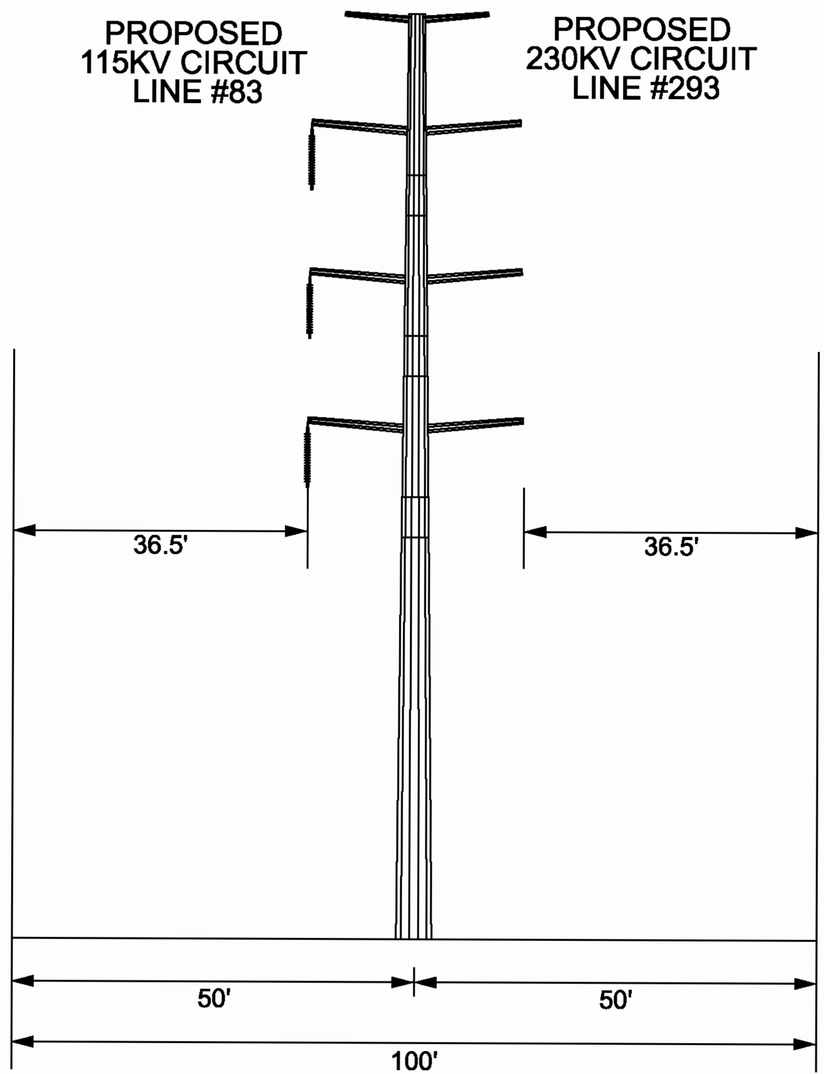
STR. 293/89, 83/2 - 293/93, 83/6

TYPICAL RIGHT OF WAY LOOKING TOWARDS WEST STAUNTON SUBSTATION

	ORIG.	REV.	REV.	DRAWING NO.
DRAWN	ALS			ATTACHMENT II.A.5.a
CHECKED				
APPROVED				
DATE				

TESBORD3 $DGNSPEC$ $SYTIME$

SECTION 1: PROPOSED



NOTE: INFORMATION CONTAINED ON DRAWING IS CONSIDERED PRELIMINARY IN NATURE AND SUBJECT TO CHANGE BASED ON FINAL DESIGN

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Glen Allen, VA 23060

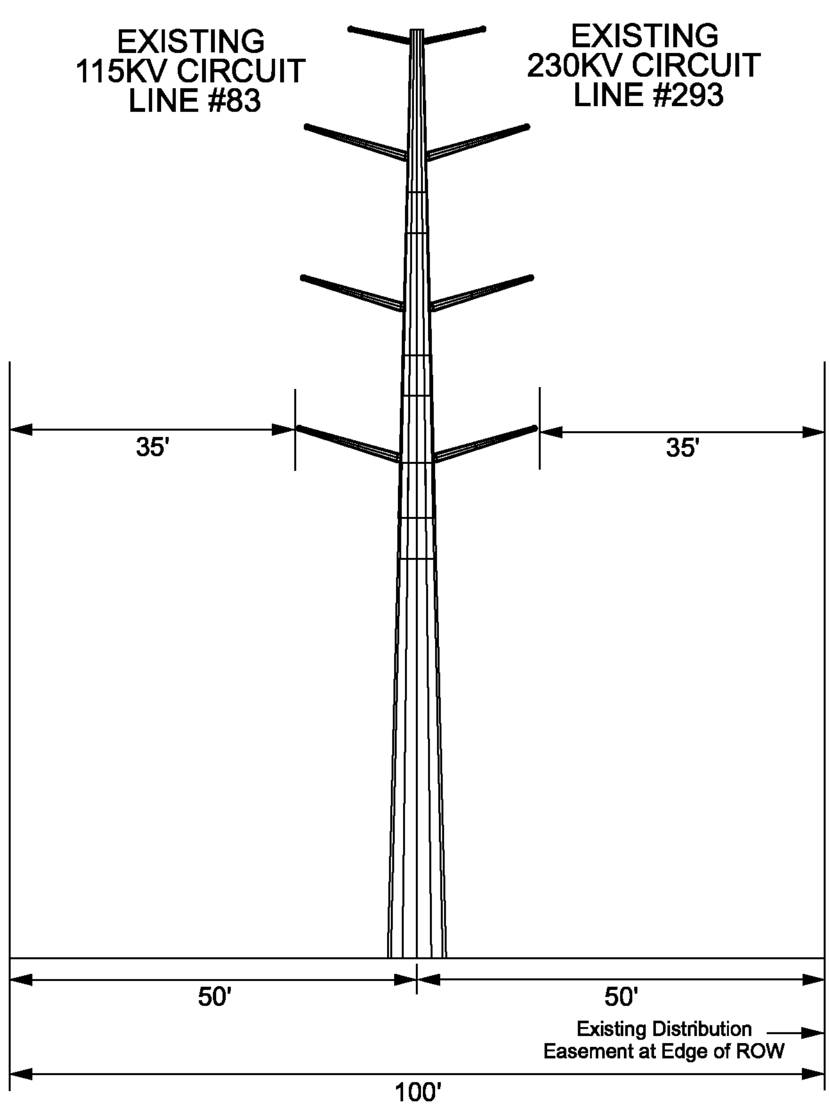
STR. 293/89, 83/2 - 293/93, 83/6

TYPICAL RIGHT OF WAY LOOKING TOWARDS WEST STAUNTON SUBSTATION

	ORIG.	REV.	REV.	DRAWING NO.
DRAWN	ALS			ATTACHMENT II.A.5.b
CHECKED				
APPROVED				
DATE				

TESBORD3 $DGNSPEC$ $SYTIME$

SECTION 2: EXISTING



Dominion Energy
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Glen Allen, VA 23060

STR. 293/94, 83/7 - 293/96, 83/9

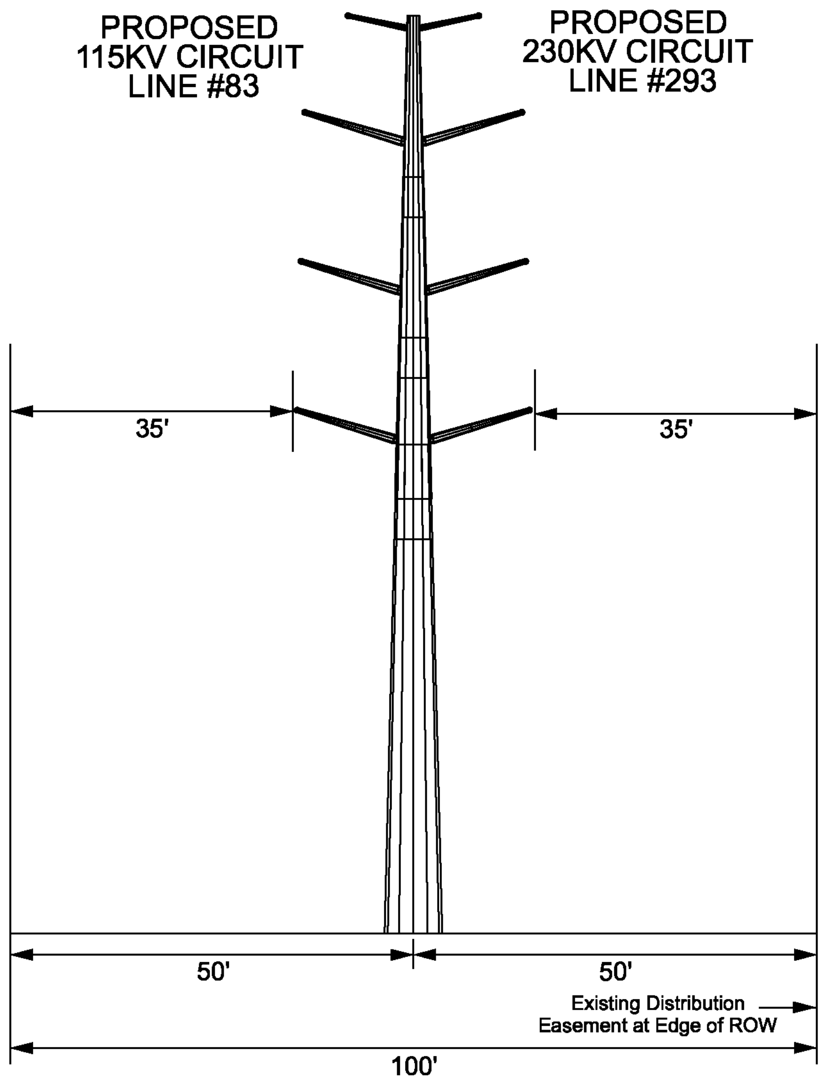
TYPICAL RIGHT OF WAY LOOKING TOWARDS WEST STAUNTON SUBSTATION

	ORIG.	REV.	REV.	DRAWING NO.
DRAWN	ALS			ATTACHMENT II.A.5.c
CHECKED				
APPROVED				
DATE				

TESBORD3 $DGNSPEC$

$SYTIME$

SECTION 2: PROPOSED



NOTE: INFORMATION CONTAINED ON DRAWING IS CONSIDERED PRELIMINARY IN NATURE AND SUBJECT TO CHANGE BASED ON FINAL DESIGN

Dominion Energy
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STR. 293/94, 83/7 - 293/96, 83/9

TYPICAL RIGHT OF WAY LOOKING TOWARDS WEST STAUNTON SUBSTATION

	ORIG.	REV.	REV.	DRAWING NO.
DRAWN	ALS			ATTACHMENT II.A.5.d
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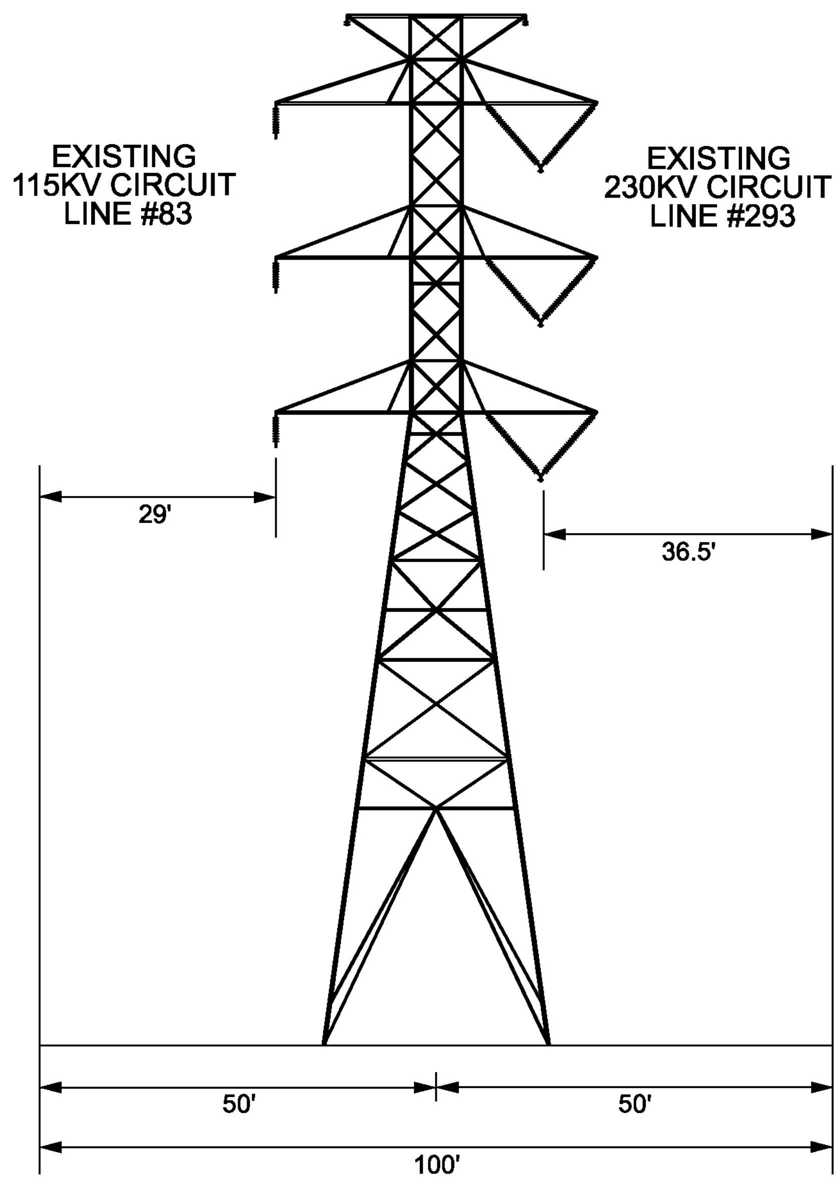
APPROVED				
DATE				

TESBORD3 $DGNSPEC$ $SYTIME$

SECTION 3: EXISTING



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STR. 293/97, 83/10 - 293/106, 83/19

TYPICAL RIGHT OF WAY LOOKING TOWARDS WEST STAUNTON SUBSTATION

	ORIG.	REV.	REV.	DRAWING NO.
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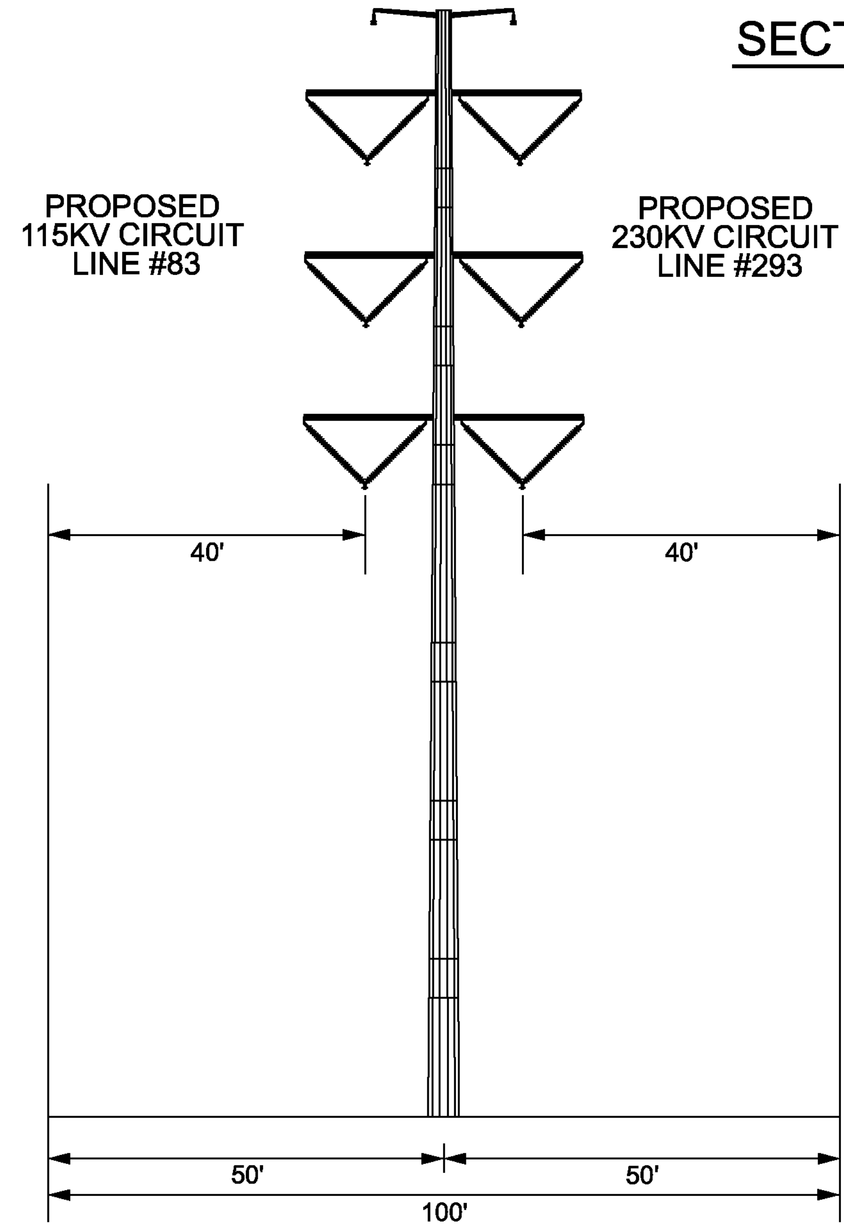
TESBDRD3 $DGNSPEC$

$SYTIME$

SECTION 3: PROPOSED



NOTE: INFORMATION CONTAINED ON DRAWING IS CONSIDERED PRELIMINARY IN NATURE AND SUBJECT TO CHANGE BASED ON FINAL DESIGN

Dominion Energy
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STR. 293/97, 83/10 - 293/106, 83/19

TYPICAL RIGHT OF WAY LOOKING TOWARDS WEST STAUNTON SUBSTATION

	ORIG.	REV.	REV.	DRAWING NO.
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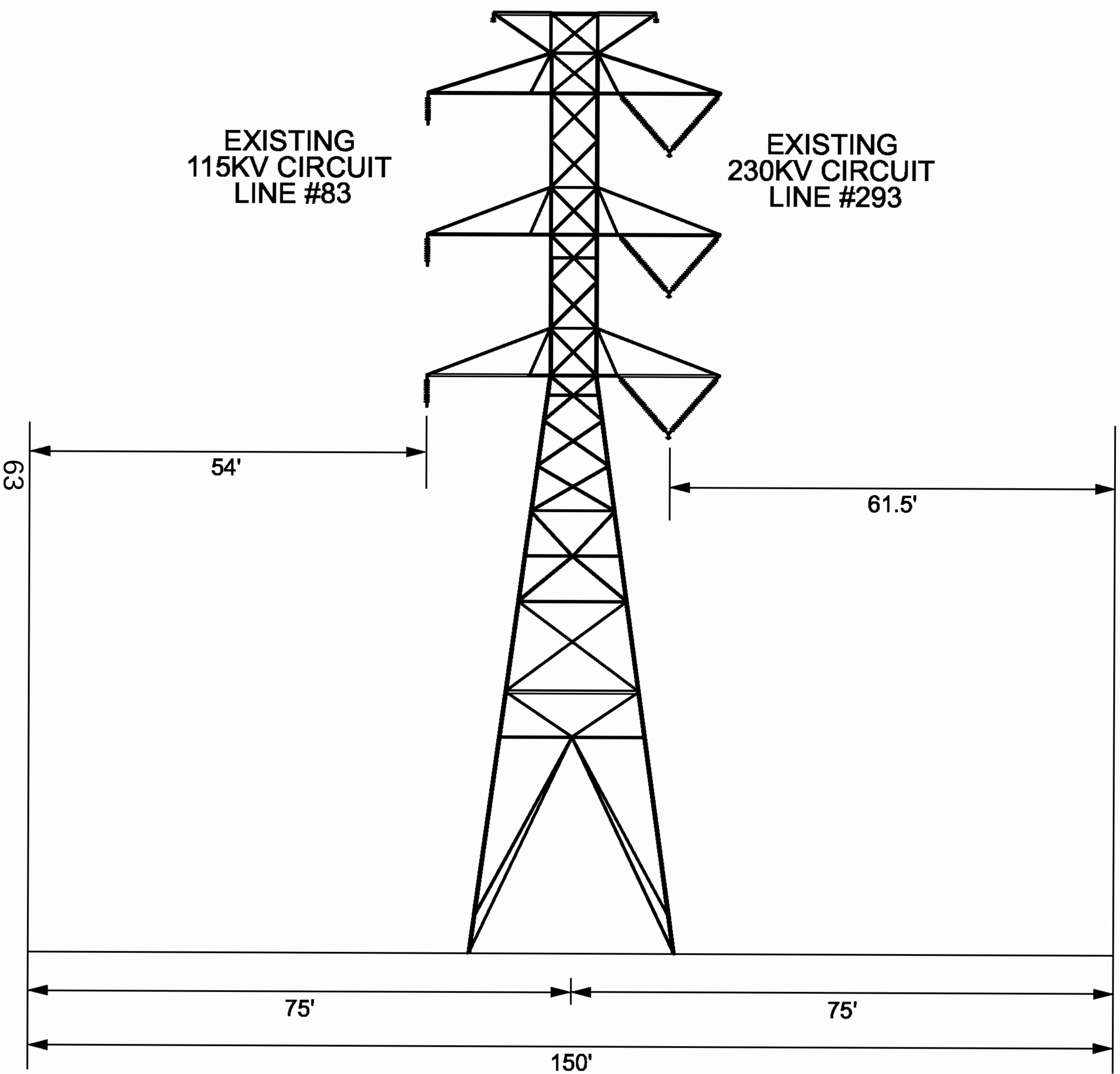
APPROVED				
DATE				

TESBORD3 $DGNSPEC$ $SYTIME$

SECTION 4: EXISTING



	ORIG.	REV.	REV.	DRAWING NO.
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APPROVED				
DATE				

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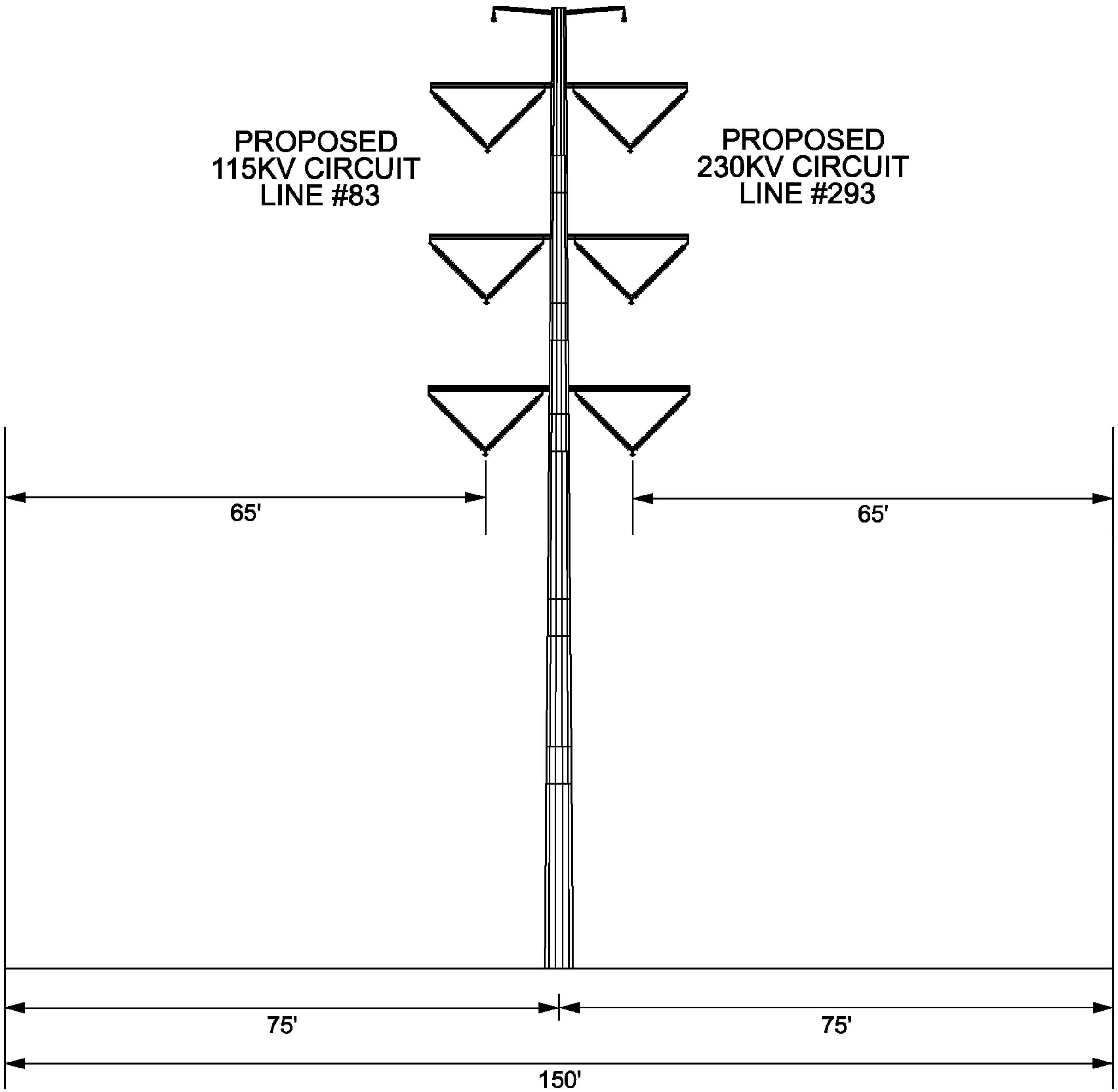
STR. 293/107, 83/20 - 293/110, 83/23

TYPICAL RIGHT OF WAY LOOKING TOWARDS WEST STAUNTON SUBSTATION

TESBDRD3 $DGNSPEC$ $SYTIME$

SECTION 4: PROPOSED



NOTE: INFORMATION CONTAINED ON DRAWING IS CONSIDERED PRELIMINARY IN NATURE AND SUBJECT TO CHANGE BASED ON FINAL DESIGN

Dominion Energy
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STR. 293/107, 83/20 - 293/110, 83/23

TYPICAL RIGHT OF WAY LOOKING TOWARDS WEST STAUNTON SUBSTATION

	ORIG.	REV.	REV.	DRAWING NO.
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APPROVED				
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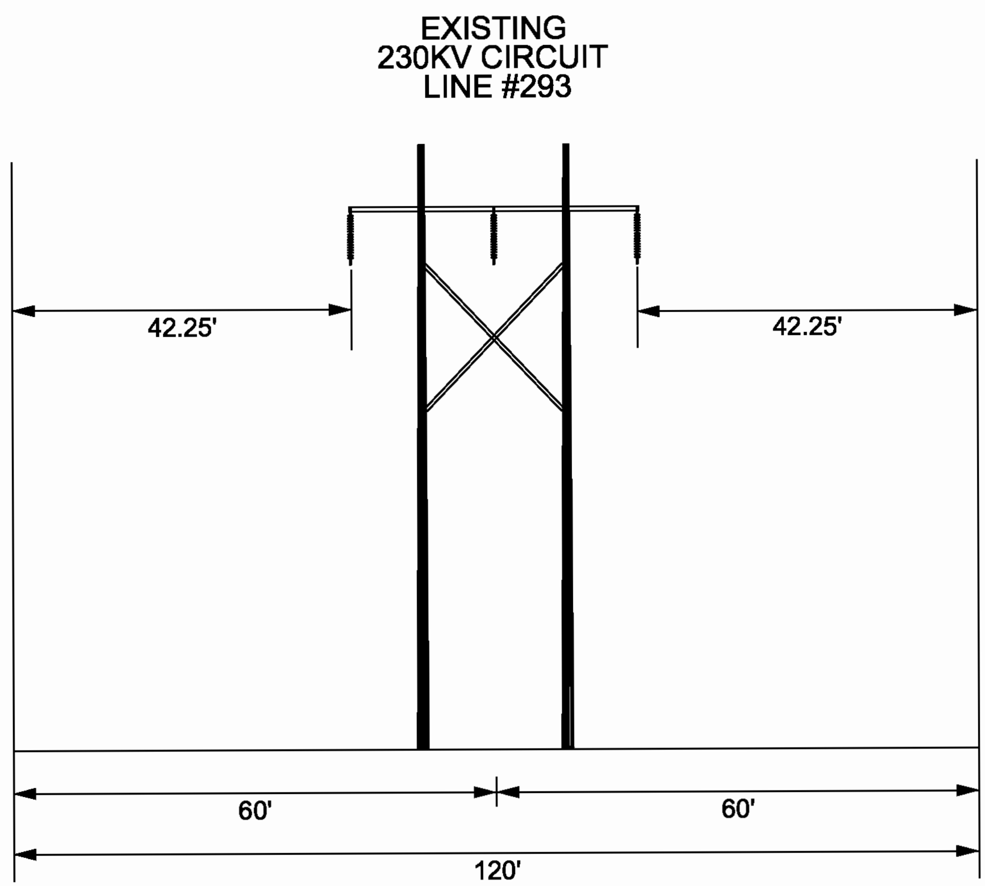
TESBORD3 $DGNSPEC$ $SYTIME$

SECTION 5: EXISTING



Dominion Energy	Dominion Energy 10900 Nuckols Road Glen Allen, VA 23060			
STR. 293/111 - 293/127 TYPICAL RIGHT OF WAY LOOKING TOWARDS WEST STAUNTON SUBSTATION				
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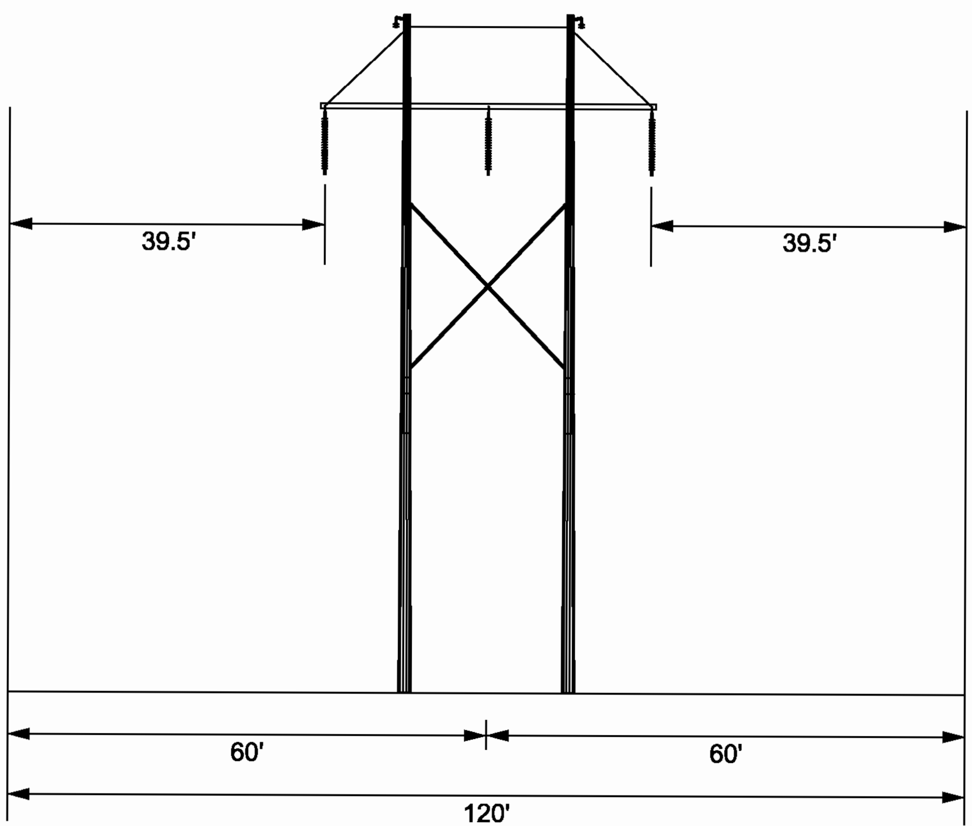
TESBORD3 $DGNSPEC$ $SYTIME$

SECTION 5: PROPOSED



NOTE: INFORMATION CONTAINED ON DRAWING IS CONSIDERED PRELIMINARY IN NATURE AND SUBJECT TO CHANGE BASED ON FINAL DESIGN

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STR. 293/111 - 293/127

TYPICAL RIGHT OF WAY LOOKING TOWARDS WEST STAUNTON SUBSTATION

	ORIG.	REV.	REV.	DRAWING NO.
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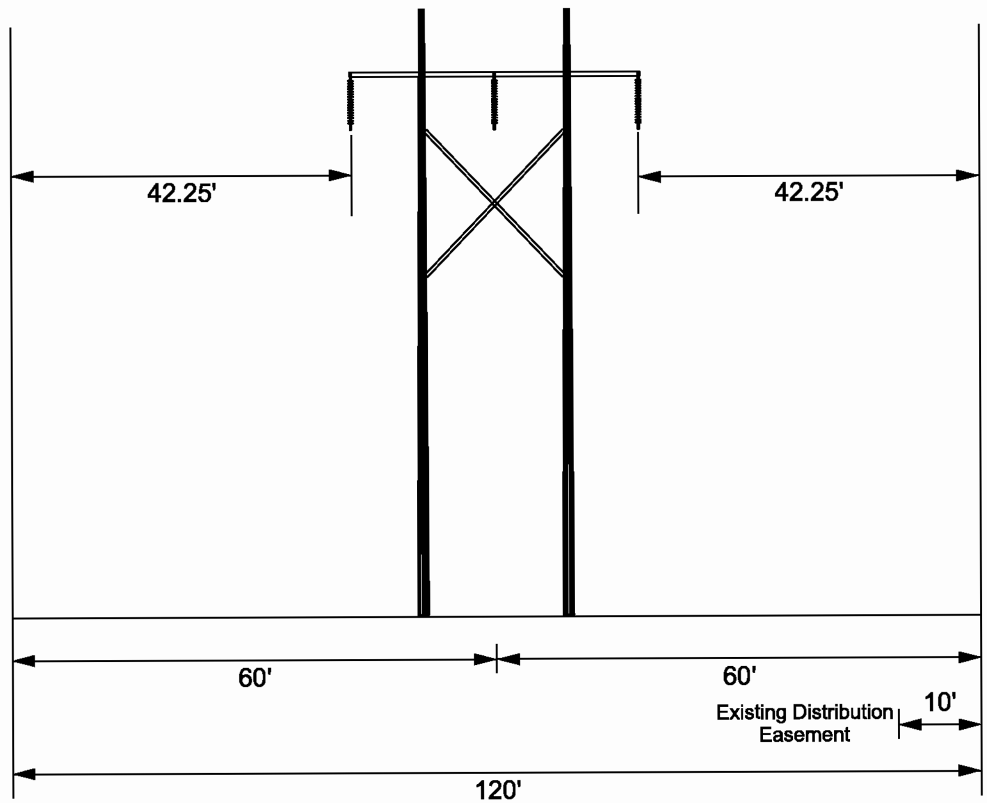
TESBORD3 $DGNSPEC$ $SYTIME$

SECTION 6: EXISTING



Dominion Energy®		Dominion Energy 10900 Nuckols Road Glen Allen, VA 23060
STR. 293/128 - 293/150 TYPICAL RIGHT OF WAY LOOKING TOWARDS WEST STAUNTON SUBSTATION		

	ORIG.	REV.	REV.	DRAWING NO.
DRAWN	ALS			ATTACHMENT II.A.5.k
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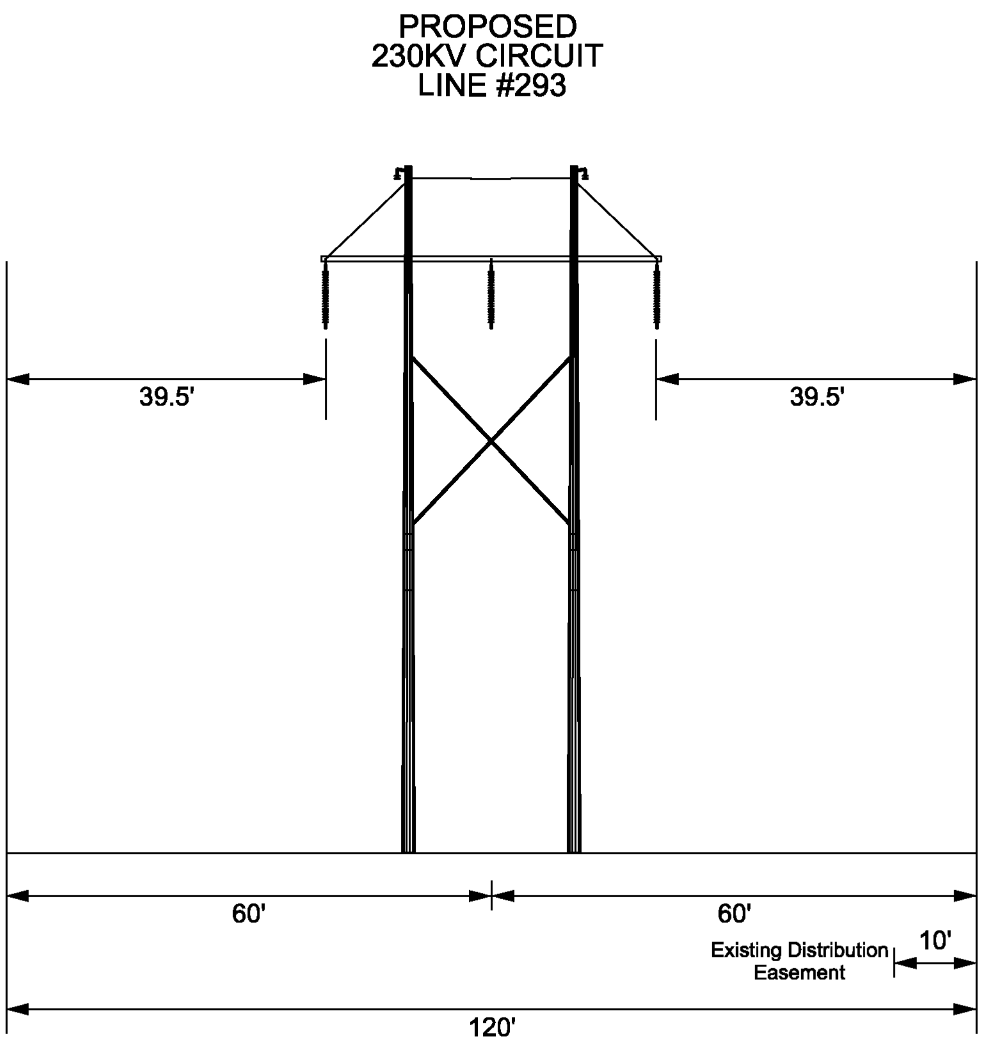
TESBORD3 $DGNSPEC$ $SYTIME$

SECTION 6: PROPOSED



NOTE: INFORMATION CONTAINED ON DRAWING IS CONSIDERED PRELIMINARY IN NATURE AND SUBJECT TO CHANGE BASED ON FINAL DESIGN

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STR. 293/128 - 293/150

TYPICAL RIGHT OF WAY LOOKING TOWARDS
WEST STAUNTON SUBSTATION

	ORIG.	REV.	REV.	DRAWING NO.
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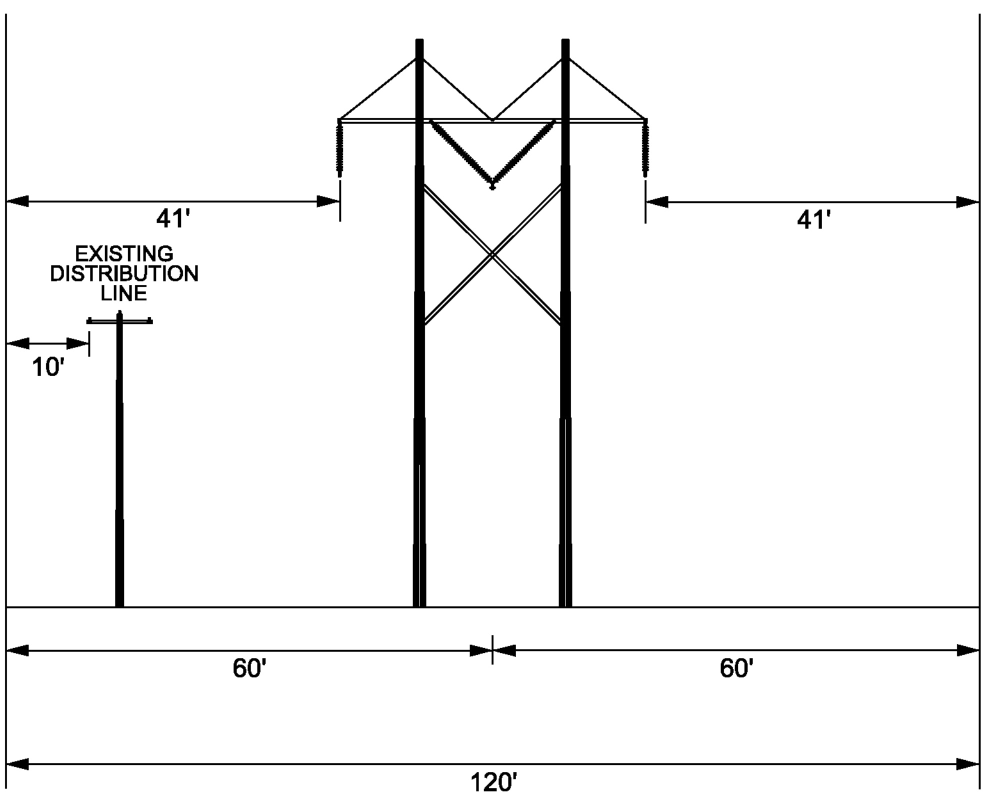
DATE				

TESBORD3 $DGNSPEC$ $SYTIME$

SECTION 7: EXISTING



Dominion Energy	Dominion Energy 10900 Nuckols Road Glen Allen, VA 23060	

STR. 293/151 - 293/163

TYPICAL RIGHT OF WAY LOOKING TOWARDS VALLEY SUBSTATION

	ORIG.	REV.	REV.	DRAWING NO.
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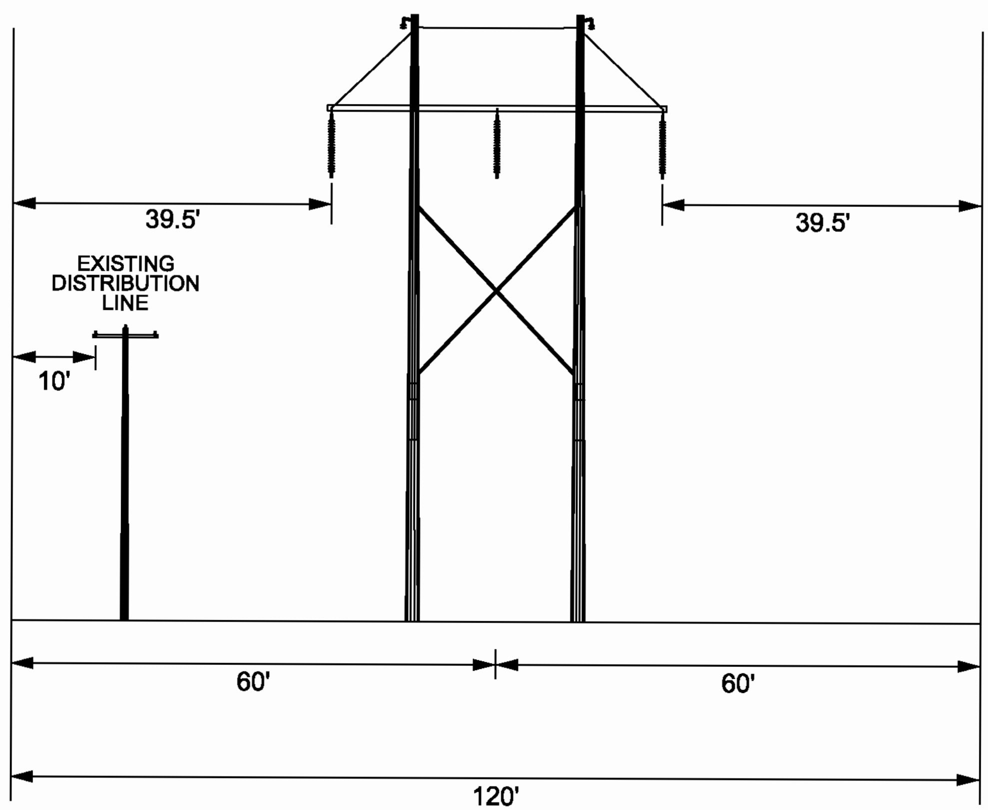
TESBORD3 $DGNSPEC$ $SYTIME$

SECTION 7: PROPOSED



NOTE: INFORMATION CONTAINED ON DRAWING IS CONSIDERED PRELIMINARY IN NATURE AND SUBJECT TO CHANGE BASED ON FINAL DESIGN

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STR. 293/151 - 293/163

TYPICAL RIGHT OF WAY LOOKING TOWARDS VALLEY SUBSTATION

	ORIG.	REV.	REV.	DRAWING NO.
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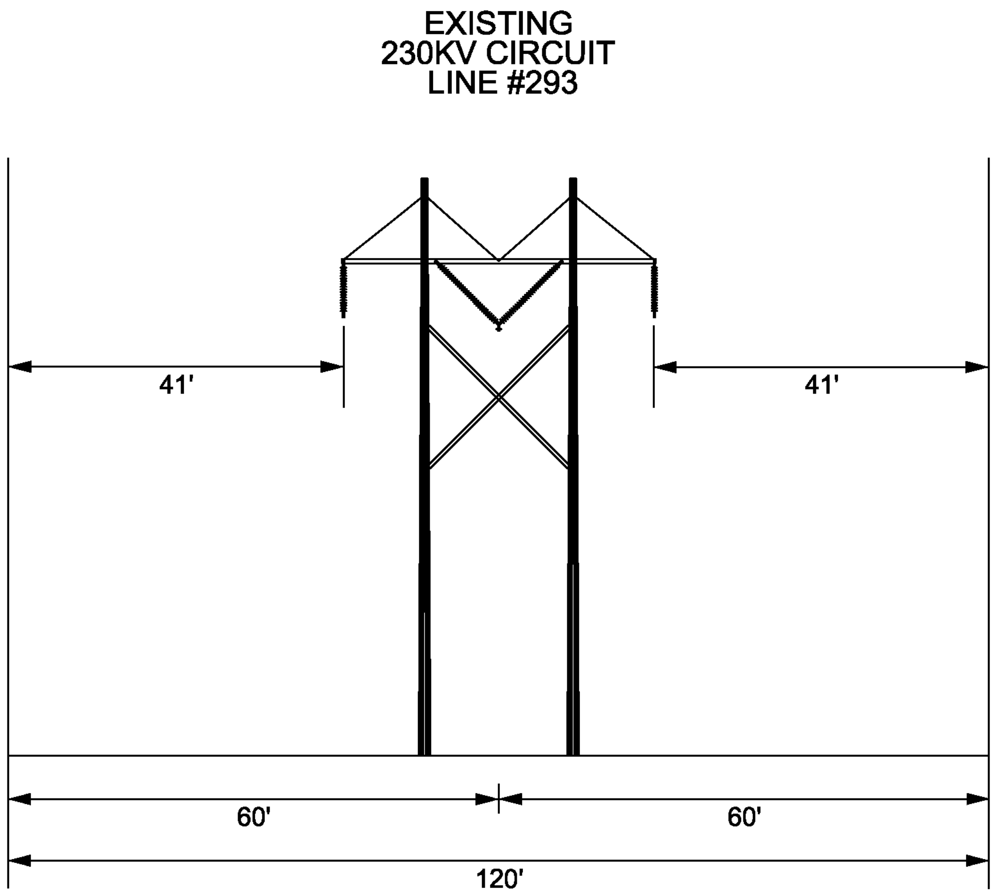
DATE				

TESBORD3 $DGNSPEC$

$SYTIME$

SECTION 8: EXISTING



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STR. 293/164 - 293/236

TYPICAL RIGHT OF WAY LOOKING TOWARDS VALLEY SUBSTATION

	ORIG.	REV.	REV.	DRAWING NO.
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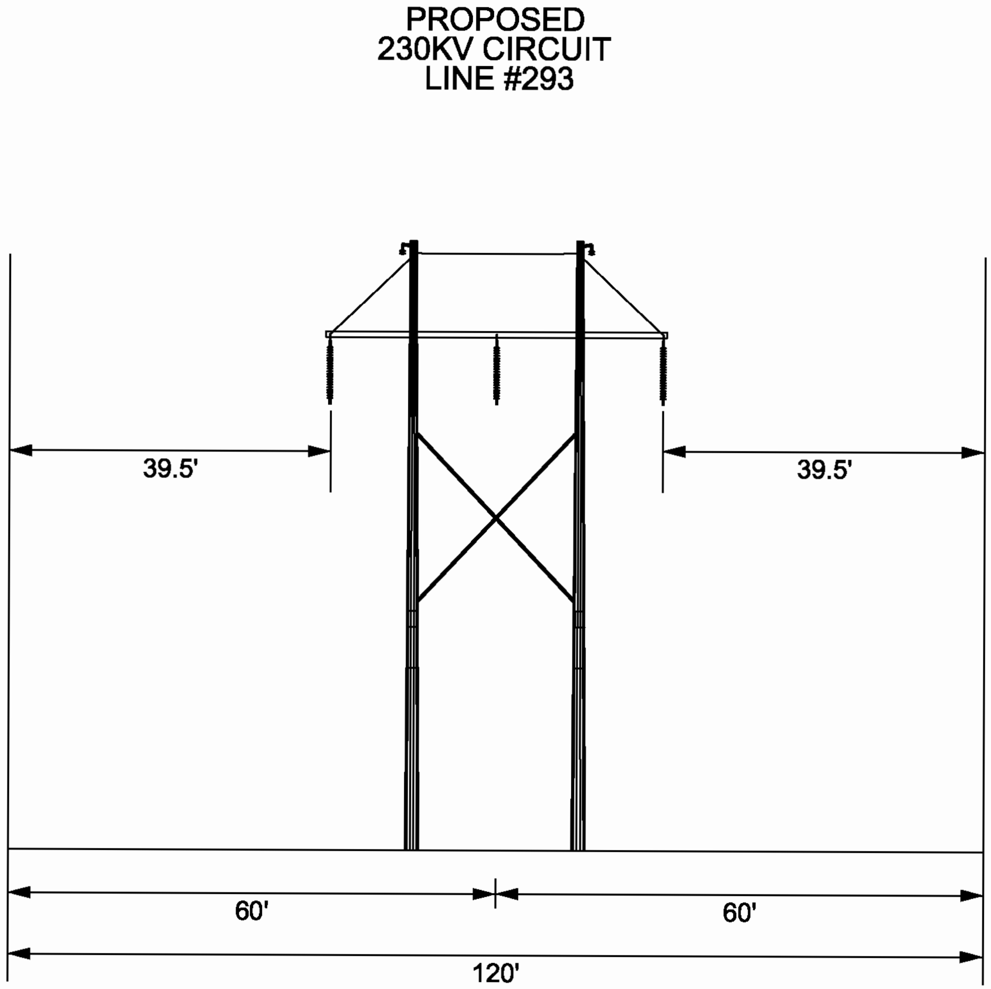
DATE				

TESBDRD3 $DGNSPEC$ $SYTIME$

SECTION 8: PROPOSED



NOTE: INFORMATION CONTAINED ON DRAWING IS CONSIDERED PRELIMINARY IN NATURE AND SUBJECT TO CHANGE BASED ON FINAL DESIGN

Dominion Energy
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STR. 293/164 - 293/236

TYPICAL RIGHT OF WAY LOOKING TOWARDS VALLEY SUBSTATION

	ORIG.	REV.	REV.	DRAWING NO.
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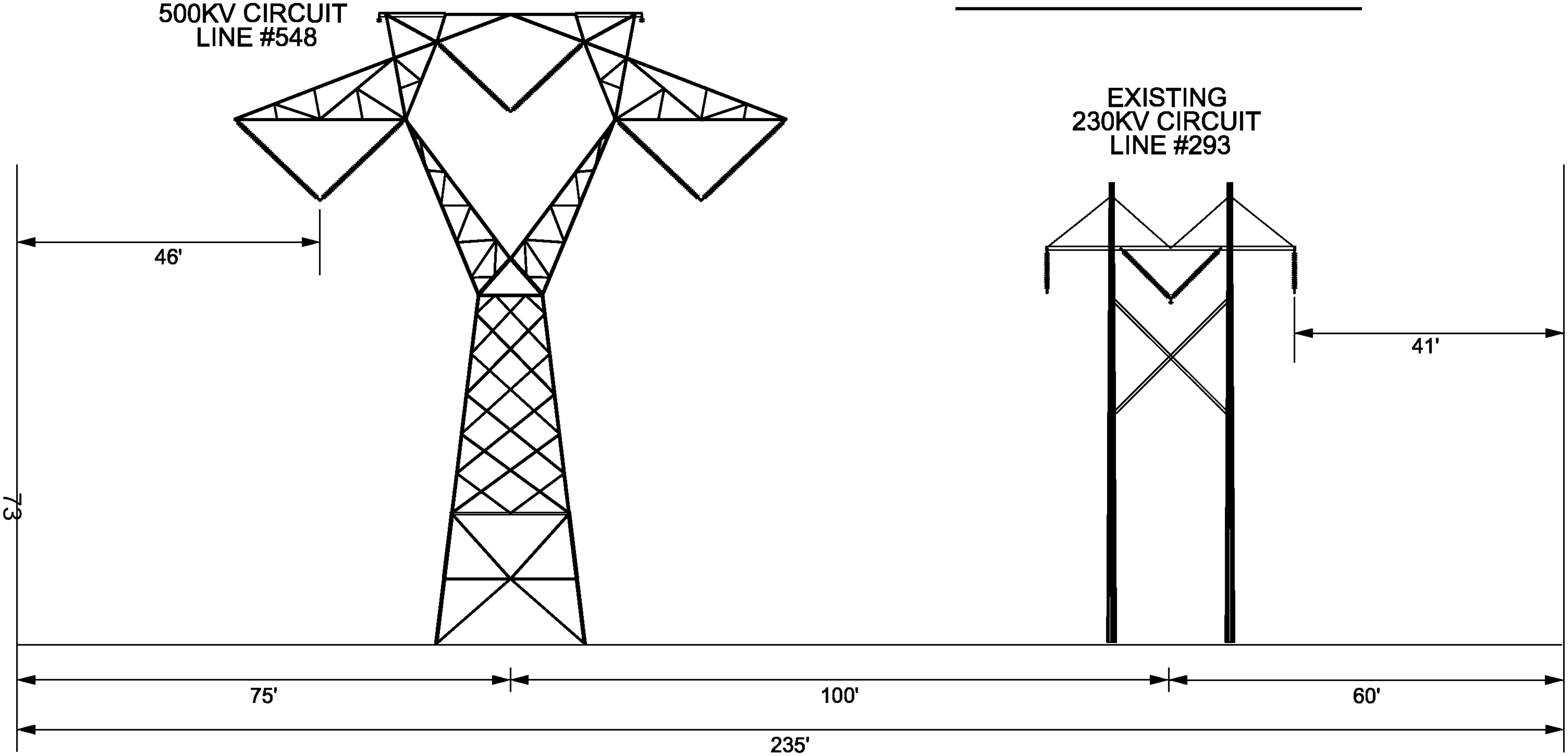
APPROVED				
DATE				

TESBORD3 $DGNSPEC$ $SYTIME$

SECTION 9: EXISTING



Dominion Energy		Dominion Energy 10900 Nuckols Road Glen Allen, VA 23060		
STR. 293/237 - 293/255 TYPICAL RIGHT OF WAY LOOKING TOWARDS VALLEY SUBSTATION				
	ORIG.	REV.	REV.	DRAWING NO.
DRAWN	ALS			ATTACHMENT II.A.5.q
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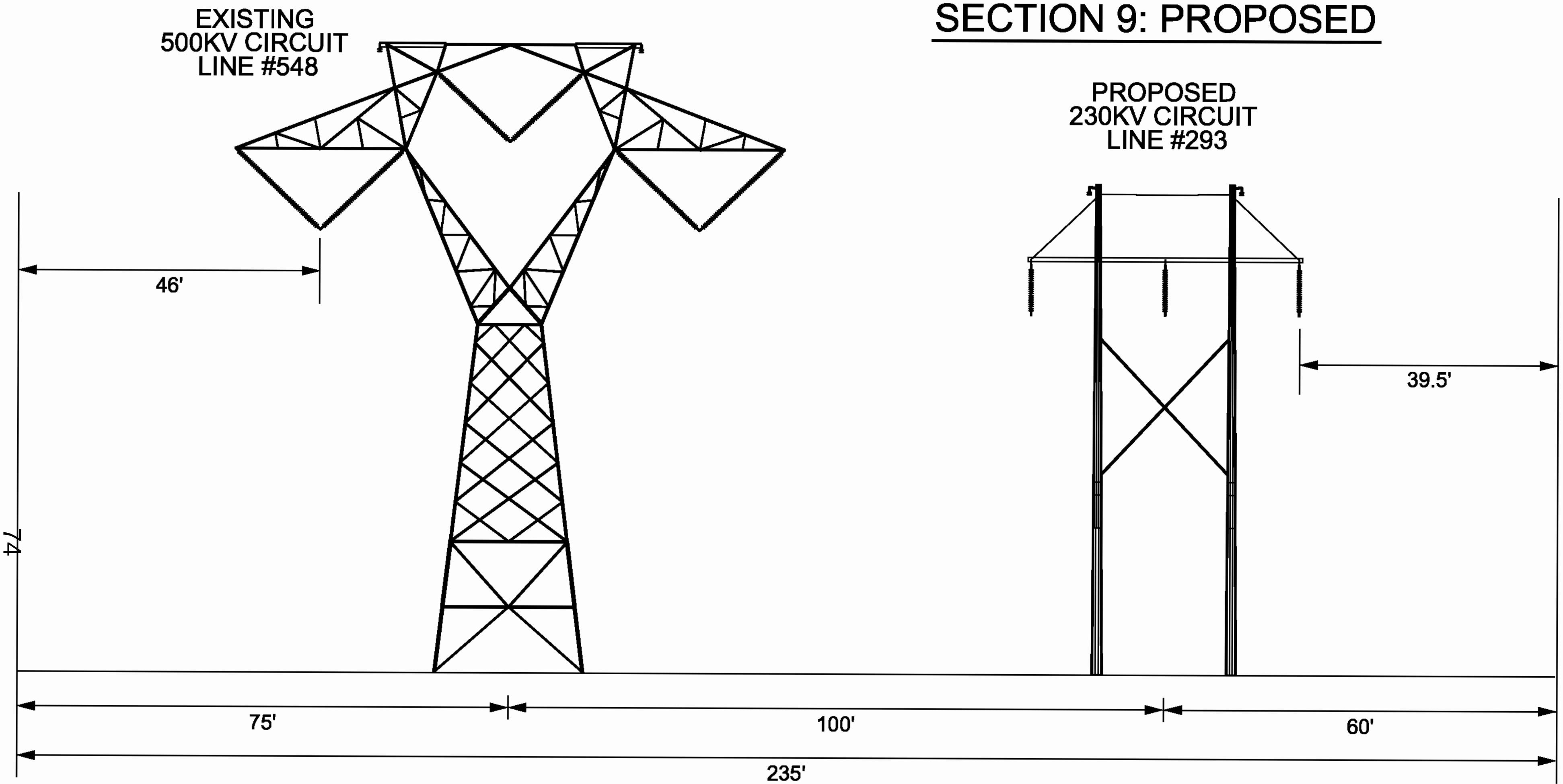
APPROVED				
DATE				

TESBORD3 $DGNSPEC$ $SYTIME$

SECTION 9: PROPOSED



Dominion Energy	Dominion Energy 10900 Nuckols Road Glen Allen, VA 23060			
STR. 293/237 - 293/255 TYPICAL RIGHT OF WAY LOOKING TOWARDS VALLEY SUBSTATION				
	ORIG.	REV.	REV.	DRAWING NO.
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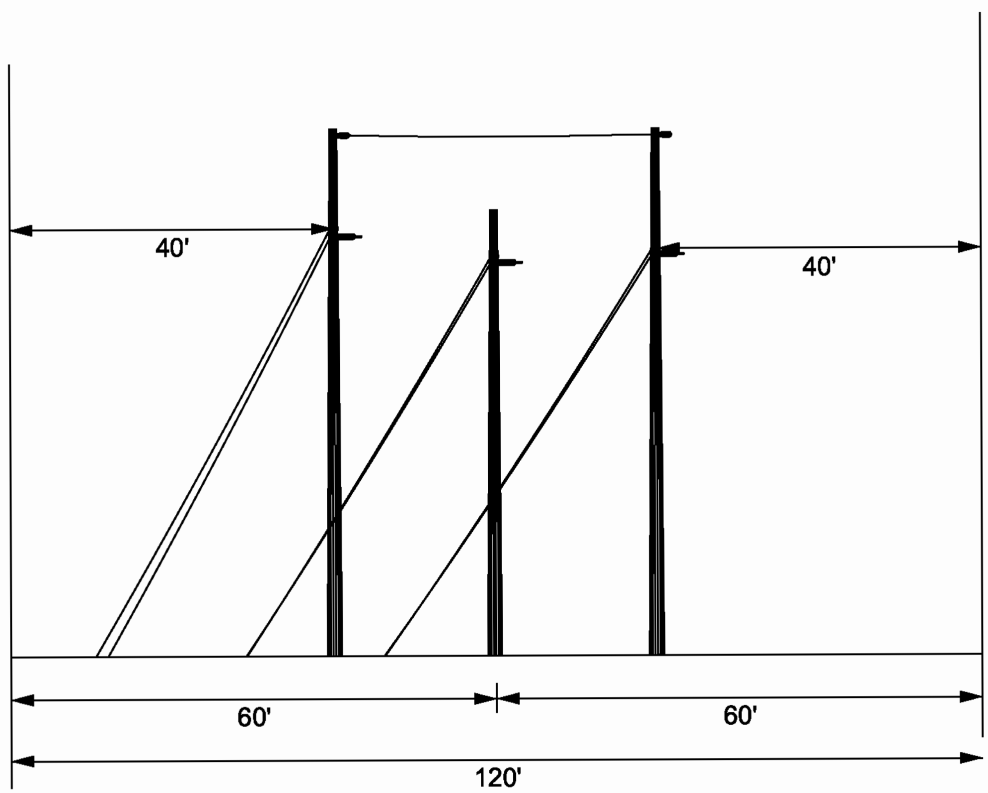
DATE				

NOTE: INFORMATION CONTAINED ON DRAWING IS CONSIDERED PRELIMINARY IN NATURE AND SUBJECT TO CHANGE BASED ON FINAL DESIGN

TESBORD3 $DGNSPEC$ $SYTIME$

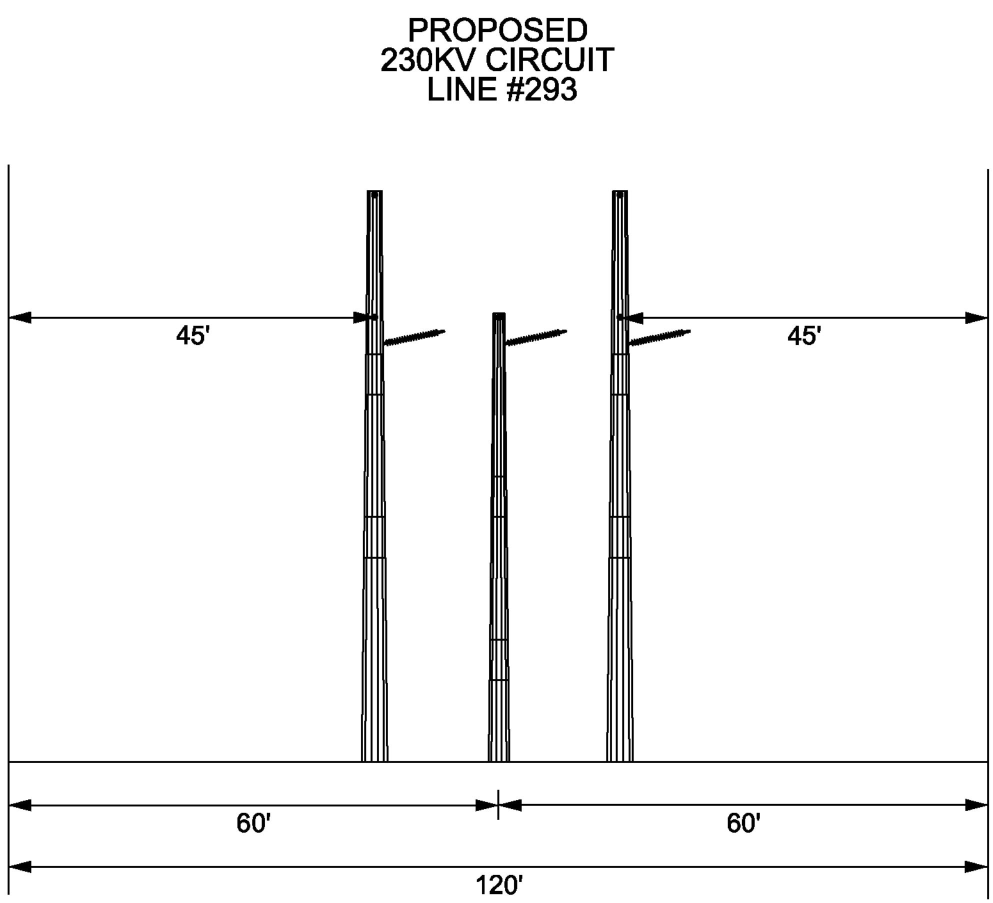
SECTION 10: EXISTING



Dominion Energy	Dominion Energy 10900 Nuckols Road Glen Allen, VA 23060			
STR. 293/256 TYPICAL RIGHT OF WAY LOOKING TOWARDS VALLEY SUBSTATION				
	ORIG.	REV.	REV.	DRAWING NO.
DRAWN	ALS			ATTACHMENT II.A.5.s
CHECKED				
APPROVED				
DATE				

TESBORD3 $DGNSPEC$ $SYTIME$

SECTION 10: PROPOSED



NOTE: INFORMATION CONTAINED ON DRAWING IS CONSIDERED PRELIMINARY IN NATURE AND SUBJECT TO CHANGE BASED ON FINAL DESIGN

Dominion Energy

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STR. 293/256

TYPICAL RIGHT OF WAY LOOKING TOWARDS VALLEY SUBSTATION

	ORIG.	REV.	REV.	DRAWING NO.
DRAWN	ALS			ATTACHMENT II.A.5.t
CHECKED				
APPROVED				
DATE				

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: The easements for this approximately 21.4-mile transmission right-of-way corridor—which includes at various points 500 kV Lines #548 and #550, 230 kV Lines #253 and #293, and 115 kV Line #83—were acquired primarily in the late 1960s and early 1970s.

There is one Virginia Outdoors Foundation ("VOF") conservation easement and one Valley Conservation Council conservation easement crossed by the right-of-way for Line #293 and the proposed Rebuild Project. See Attachment II.A.6.a. These conservation easements were established after the construction of Line #293. Therefore, the Company anticipates there will be minimal impacts to these easements.

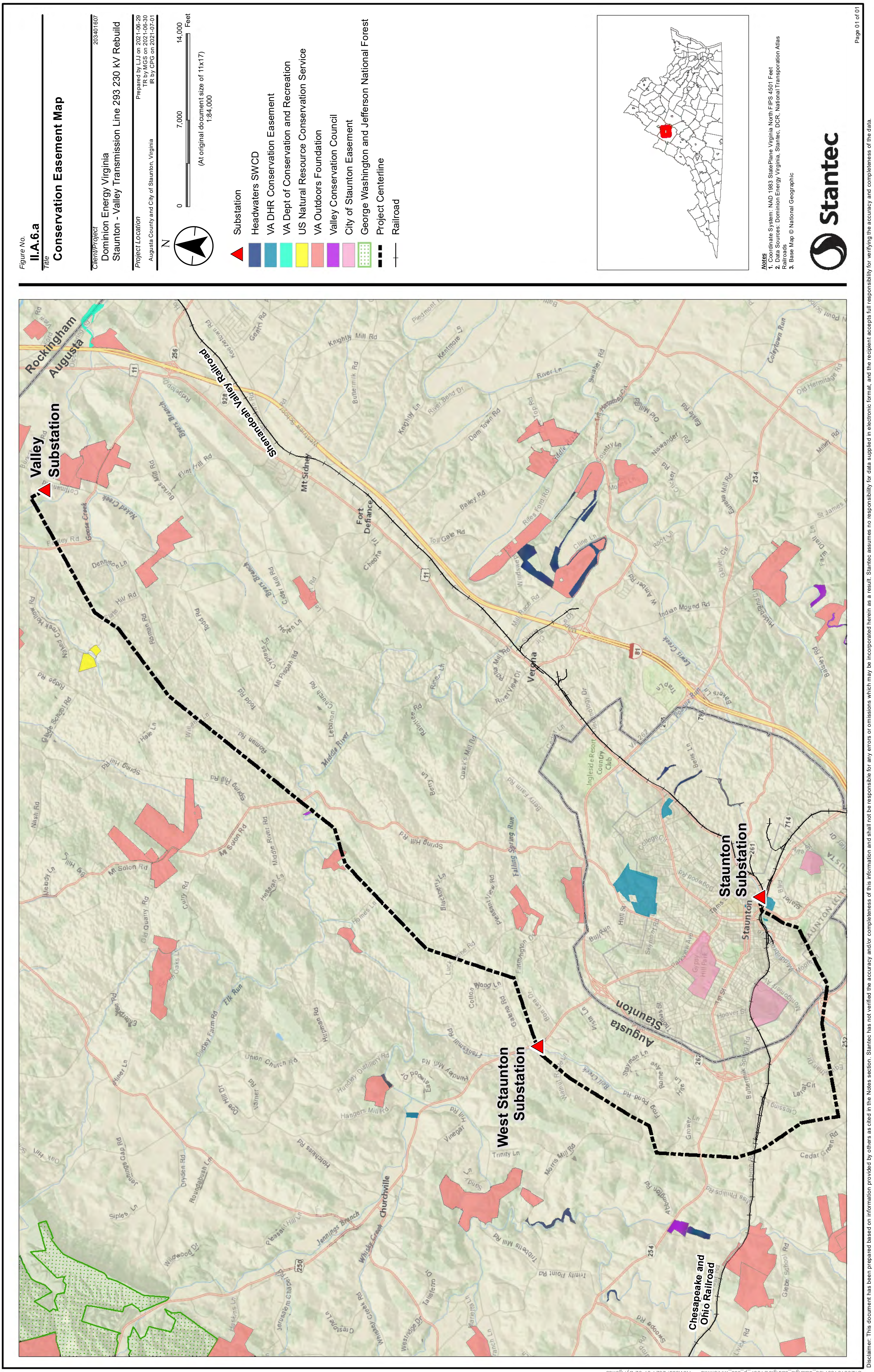
Figure No.
II.A.6.a
Title
Conservation Easement Map
Client/Project
203401607
Dominion Energy Virginia
Staunton - Valley Transmission Line 293 230 kV Rebuild
Project Location
Augusta County and City of Staunton, Virginia
Prepared by LJJ on 2021-06-29
TR by MGS on 2021-06-30
IR by CPG on 2021-07-01
N
0
7,000
14,000
Feet
(At original document size of 11x17)
1:84,000
Substation
Headwaters SWCD
VA DHR Conservation Easement
VA Dept of Conservation and Recreation
US Natural Resource Conservation Service
VA Outdoors Foundation
Valley Conservation Council
City of Staunton Easement
George Washington and Jefferson National Forest
Project Centerline
Railroad
Valley Substation
West Staunton Substation
Staunton Substation
Shenandoah Valley Railroad
Chesapeake and Ohio Railroad
Rockingham
Augusta
Staunton
Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, DCR, National Transporation Atlas Railroads
3. Base Map © National Geographic
Stantec
Page 01 of 01
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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: The existing right-of-way for the 21.4-mile Rebuild Project has a variable width ranging from 100 to 150 feet, with the exception of an approximately 2.0-mile segment that is approximately 235-feet-wide where Line #293 shares the right-of-way corridor with Line #548. This existing right-of-way corridor, as shown in Attachments II.A.5.a-t, is currently maintained for operation of the existing transmission facilities.

Trimming of tree limbs along the edge of the right-of-way may be conducted to support construction activities for the Rebuild Project. 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 felled. 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 Rebuild Project, 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 (TE VEP 8000)* 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 line;
- Will not restrict future line design flexibility; and
- Will not permanently interfere with future construction.

Examples of typical permitted uses include, subject to the terms of the easement, but are not limited to:

- Agriculture
- Hiking Trails
- Fences
- Perpendicular road crossings
- Perpendicular Utility Crossings
- Residential Driveways
- 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 rebuild projects begins with a review of 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 Va. Code §§ 56-46.1 and 56-259, which promote the use of existing rights-of-way for new transmission facilities. For the proposed Rebuild Project, the existing transmission corridor that currently contains Line #293 and Line #83 is adequate.

Because the existing right-of-way is adequate to construct the proposed Rebuild Project, no new right-of-way is necessary. 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 new right-of-way for this Rebuild Project.

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: No service to customers will be interrupted during construction of the Rebuild Project, as the Company has the ability to switch all load to alternate sources. Assuming a final order from the Commission by October 20, 2022, as requested in Section I.H of this Appendix, the Company estimates that construction should begin by August 2023, and be completed by December 2025.

The Company plans to take the following sequential outages for the Rebuild Project:

Rebuild Project Outages

- Foundation installations for engineered structures—no outages required
- New structure erection, installation of conductor and removal of existing structures—Fall 2023 – Winter 2025 – outages on Line #293 and Line #83

The Company will request line outages from PJM prior to the date of such outages. It is customary for PJM to not grant approval of the outages until shortly before the outages are expected to occur and, therefore, they may be subject to change.

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: 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 proposed Rebuild Project within an existing transmission corridor.

By utilizing the existing transmission corridor, the proposed Rebuild Project 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). See Section III.A for a description of the resources identified in the Stage I Pre-Application Analysis prepared by Stantec Consulting Services Inc. ("Stantec") on behalf of the Company, which is included with the DEQ Supplement as Attachment 2.H.1. Consistent with its customary practice, the Company will coordinate with the Virginia Department of Historic Resources ("VDHR") regarding the findings of the Stage I Pre-Application Analysis.

The Company has communicated with a number of local, state, and federal agencies prior to filing this application consistent with Guideline #4 (where government land is involved the Company should contact the agencies early in the planning process). See Sections III.B, III.J, and V.D of this Appendix, and the DEQ Supplement.

The Company follows recommended construction methods 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 the clearing of 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 Rebuild Project is located within the City of Staunton and Augusta County, Virginia, for a total of approximately 21.4 miles. Approximately 9.05 miles of the Rebuild Project are located within Dominion Energy Virginia's service territory, and approximately 12.35 miles are located within SVEC's service territory. The Company has confirmed that SVEC does not object to the Rebuild Project.

b. Copies of the map of the Virginia Department of Transportation "General Highway Map" for Augusta County and the City of Staunton are marked as required and filed with the Application. A reduced copy of the map is provided as <u>Attachment II.A.12.b</u>.

Augusta County Road Map

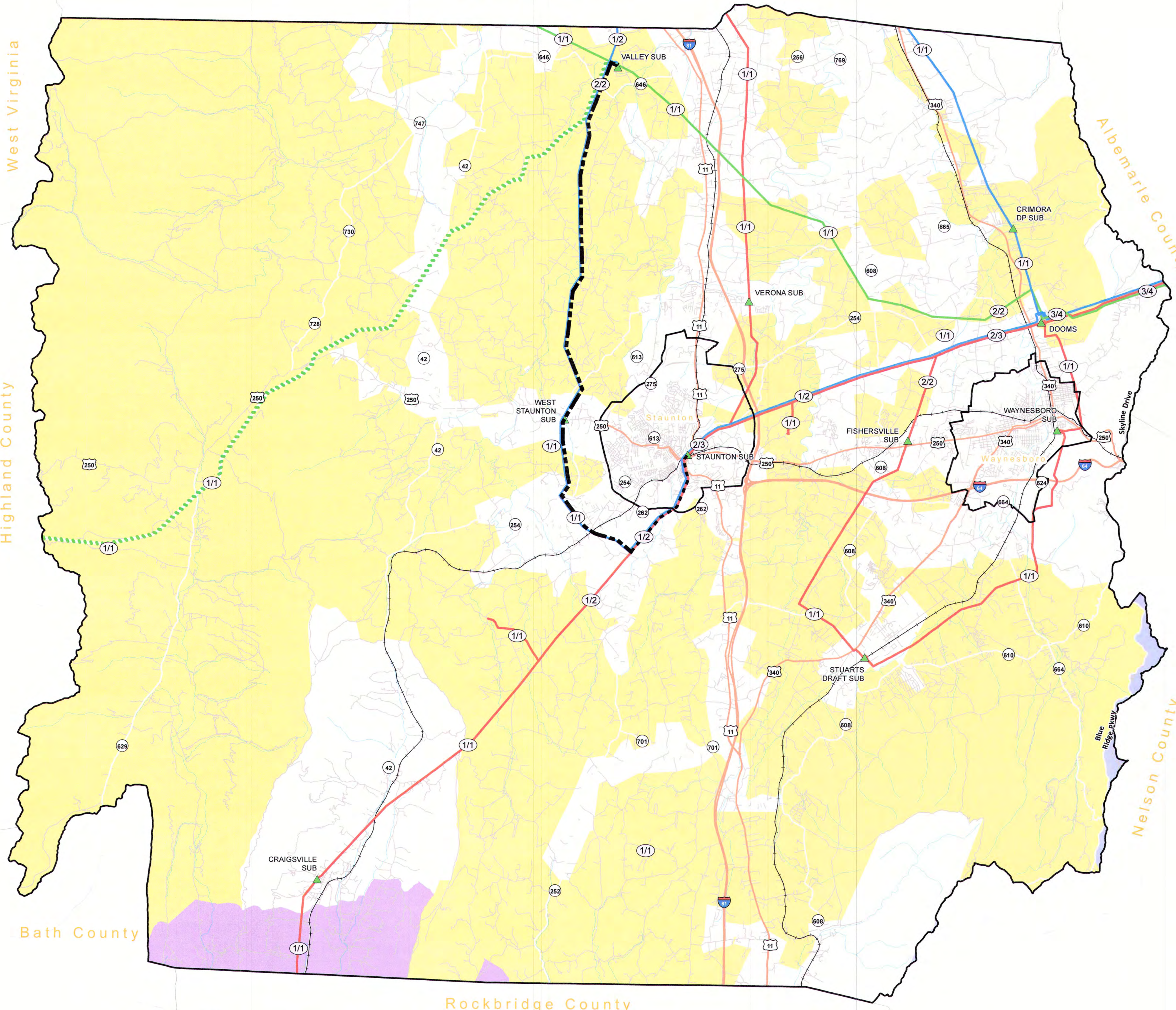
This digital map depicts the Virginia Electric and Power Company ("Company") transmission facilities in this county as approved by the Virginia State Corporation Commission ("SCC"), and any proposed transmission facilities in this county, as of 09.09.2021. Other Company facilities previously authorized 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.

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

SIGNATURE [signature]

DATE 9/21/2021 TITLE PRESIDENT & CEO



Legend

- Proposed Line #293 230 kV and #83 115 kV Rebuild
- Proposed Line #293 230 kV Rebuild
- Number of Lines of Structures/Number of Circuits
- Proposed Substation
- Existing Substation
- 115 kV
- 230 kV
- 500 kV
- 500 kV

BATH COUNTY POWER PROJECT JOINT TRANSMISSION FACILITIES STATE CORPORATION COMMISSION APPROVED JOINT OWNERSHIP BY ORDER DATED 9-11-81 JOINTLY OWNED LINE VIRGINIA ELECTRIC & POWER COMPANY 60% ALLEGHENY ENERGY 40%

Provider Service Territory

- BARC
- CVEC
- SVEC
- VEPCO

Miles 2 1 0 2 4 6

*VDOT and other road data obtained from Navteq and County data, current as of September 2012.

Attachment II.A.12.b

Augusta and Staunton

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 21.4-mile 230 kV Line #293 will be designed and operated at 230 kV with no anticipated voltage upgrade and have a summer transfer capability of 1047 MVA.

The 3.8-mile section of 115 kV Line #83 proposed for rebuild will be designed and operated at 115 kV with no anticipated voltage upgrade and have a summer transfer capability of 262 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 proposed conductor for 230 kV Line #293 will have three-phase twin-bundled 636 ACSR conductors arranged with two fiber optic shield wires. The proposed conductor for 115 kV Line #83 will have three-phase single 636 ACSR conductors. See Attachments II.B.3.a-w.

Twin-bundled 636 ACSR conductors are the Company's standard for new 230 kV construction. Single 636 ACSR conductors are the Company's standard for new 115 kV construction.

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;

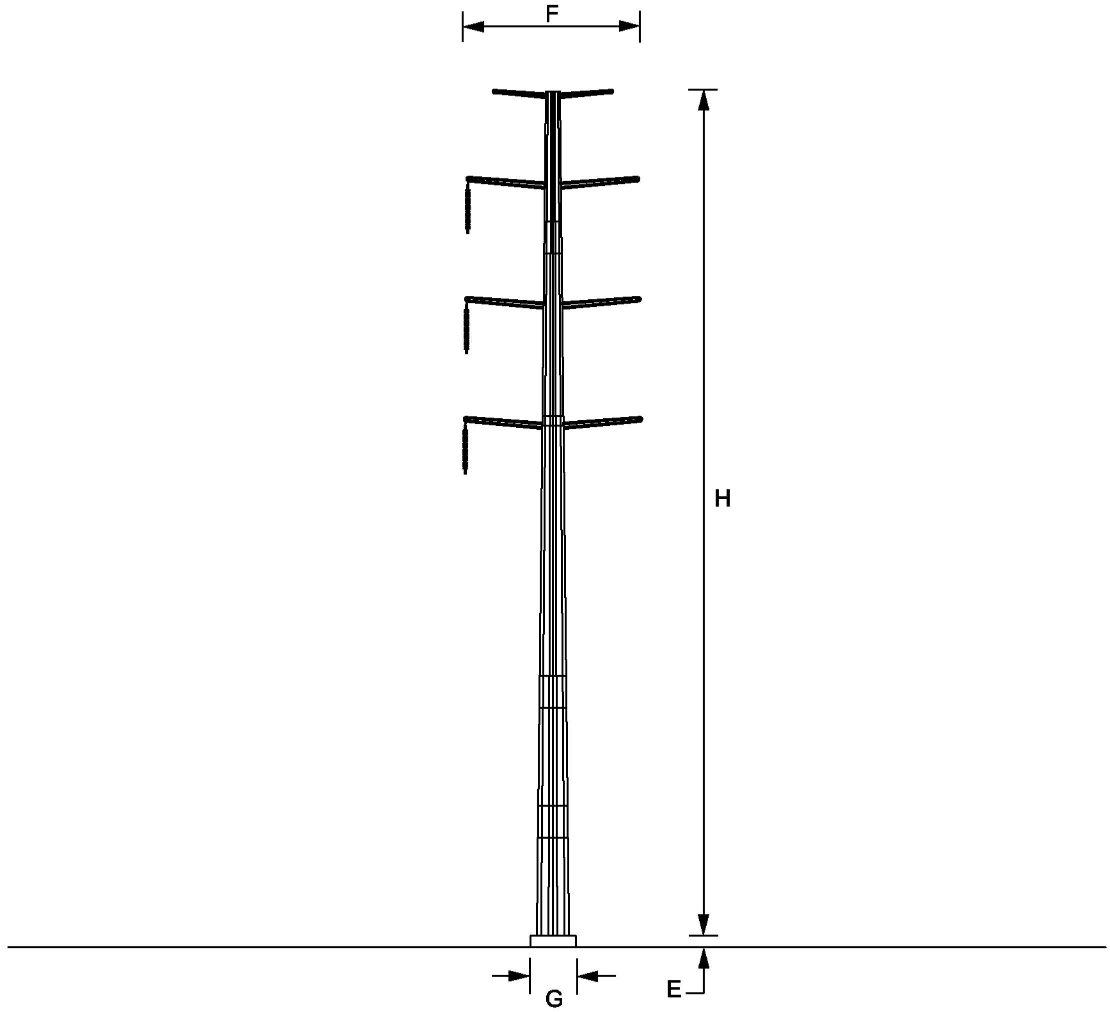
i. the average span length; and

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

Response: (a) See Attachment II.B.5.a.

(b)-(j) See Attachments II.B.3.a through II.B.3.w.

SECTION 1



DOUBLE CIRCUIT MONOPOLE DOUBLE DEAD-END STRUCTURE

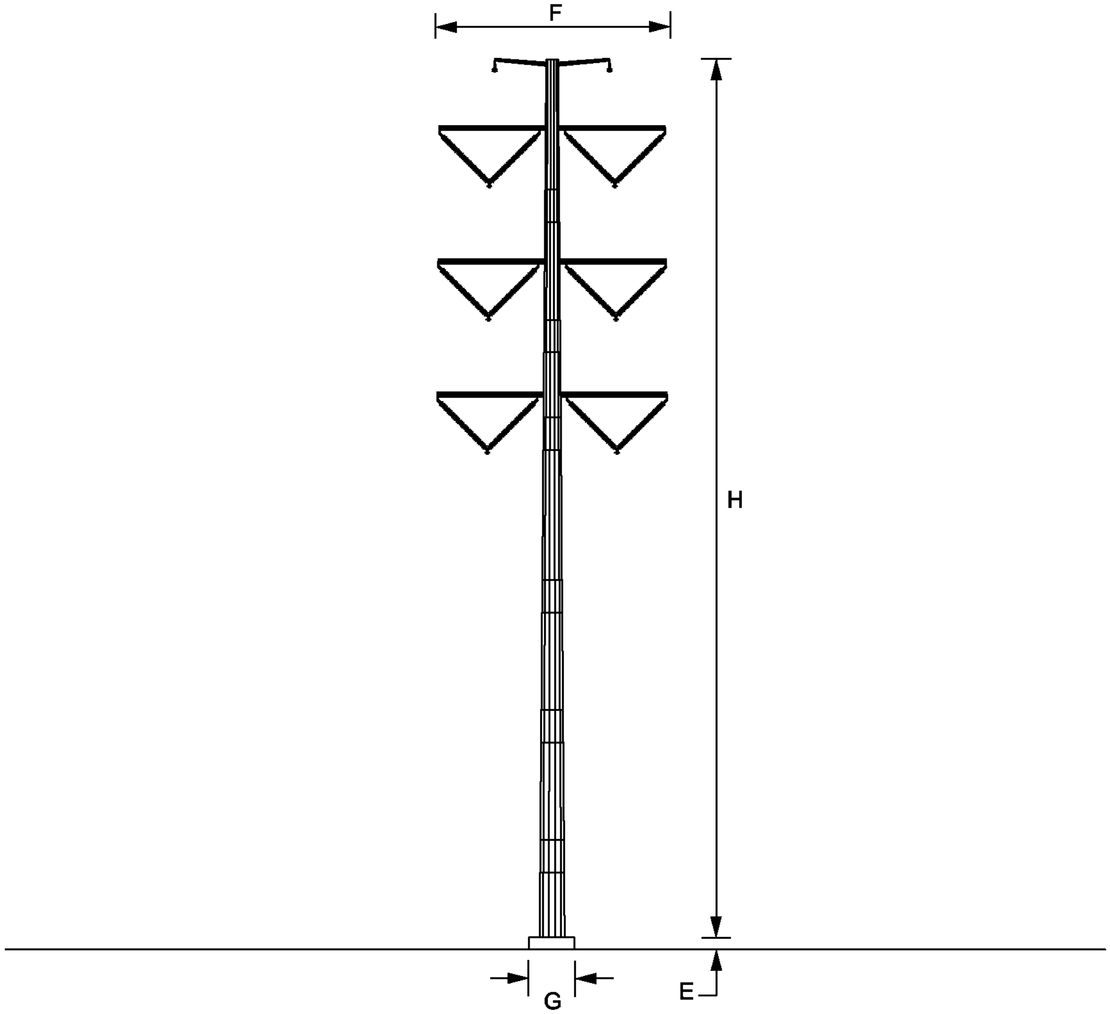
B. RATIONALE FOR STRUCTURE TYPE:	CLOSELY RESEMBLES GEOMETRY OF EXISTING STRUCTURES
C. LENGTH OF R/W (STRUCTURE QUANTITY):	0.63 MILES (1 STRUCTURE)
D. STRUCTURE MATERIAL:	GALVANIZED STEEL
RATIONALE FOR STRUCTURE MATERIAL:	GALVANIZED STEEL WAS SELECTED TO CLOSELY MATCH THE EXISTING PAINTED STEEL STRUCTURES CARRYING LINES #83 AND #293
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	27'
G. AVERAGE WIDTH AT BASE:	7' DIAMETER FOUNDATION (SEE NOTE 1)
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	130' 130' 130'
I. AVERAGE SPAN LENGTH:	660'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. INDIVIDUAL POLE HEIGHTS ABOVE GROUND MAY VARY SUBJECT TO FINAL LOCATION AND TERRAIN
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

Electric Transmission	SECTION 1:	DRAWING NO. ATTACHMENT II.B.3.a
Dominion Energy Dominion Energy 10900 Nuckols Road Glen Allen, VA 23060	STRUCTURES 293/89, 83/2 - 293/93, 83/6	DRAWN ALS

$SYTIME$
$DGNSPEC$
TESBORD1

SECTION 2



DOUBLE CIRCUIT MONOPOLE SUSPENSION STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	CLOSELY RESEMBLES GEOMETRY OF EXISTING STRUCTURES
C. LENGTH OF R/W (STRUCTURE QUANTITY):	0.57 MILES (1 STRUCTURE)
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONALE FOR STRUCTURE MATERIAL:	WEATHERING STEEL WAS SELECTED TO MATCH THE EXISTING STRUCTURES CARRYING LINES #83 AND #293
E. FOUNDATION MATERIAL:	CONCRETE
AVERAGE FOUNDATION REVEAL:	SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	35'
G. AVERAGE WIDTH AT BASE:	6' DIAMETER FOUNDATION (SEE NOTE 1)
H. MINIMUM STRUCTURE HEIGHT:	135'
MAXIMUM STRUCTURE HEIGHT:	135'
AVERAGE STRUCTURE HEIGHT:	135'
I. AVERAGE SPAN LENGTH:	997'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. INDIVIDUAL POLE HEIGHTS ABOVE GROUND MAY VARY SUBJECT TO FINAL LOCATION AND TERRAIN
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

Electric Transmission

Dominion Energy®

Dominion Energy
10900 Nuckols Road
Glen Allen, VA 23060

SECTION 2:

STRUCTURES 293/94, 83/7 - 293/96, 83/9

DRAWING NO. ATTACHMENT II.B.3.b

DRAWN ALS

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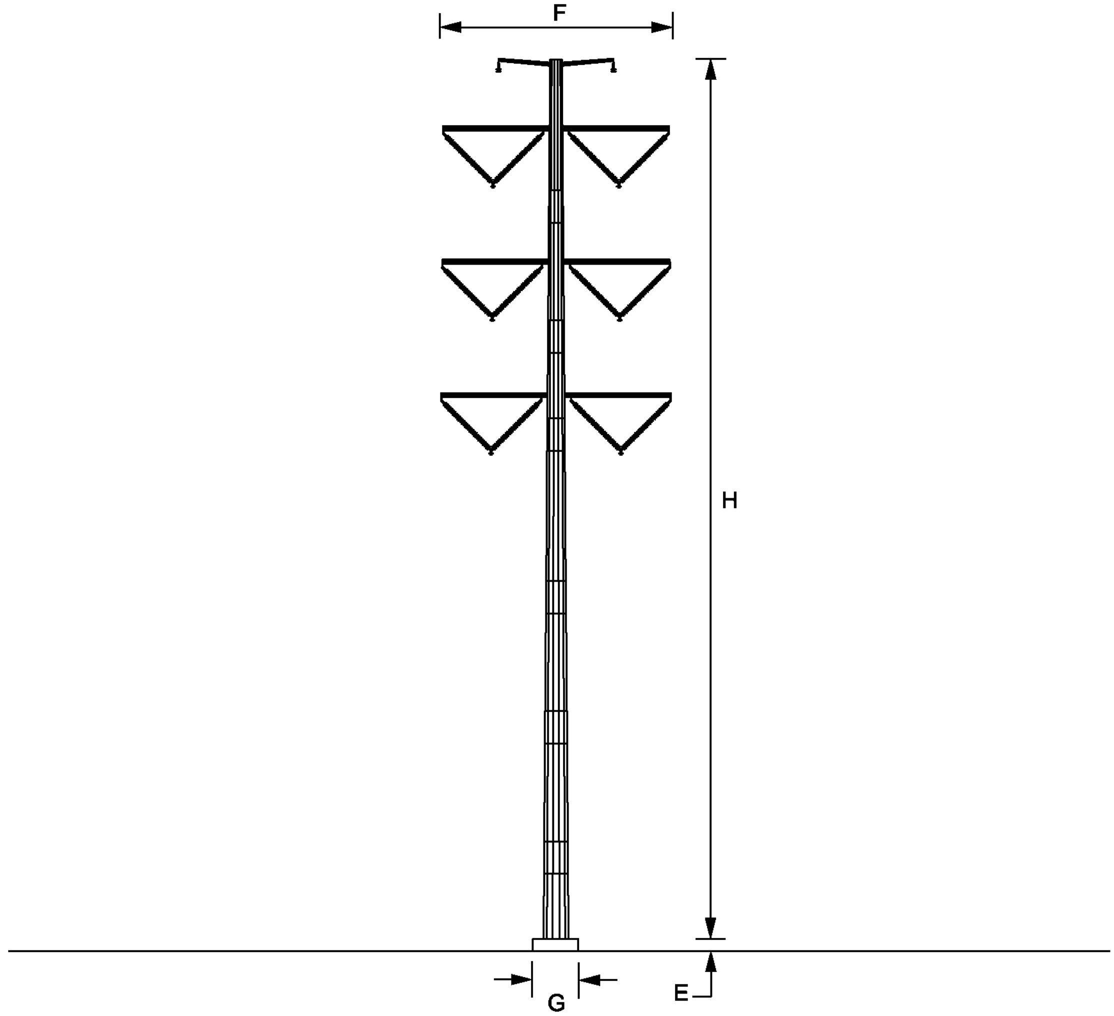
SECTION 3



DOUBLE CIRCUIT MONOPOLE SUSPENSION STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	CLOSELY RESEMBLES GEOMETRY OF EXISTING STRUCTURES
C. LENGTH OF R/W (STRUCTURE QUANTITY):	1.94 MILES (6 STRUCTURES)
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONALE FOR STRUCTURE MATERIAL:	WEATHERING STEEL WAS SELECTED TO MATCH THE EXISTING STRUCTURES CARRYING LINES #83 AND #293
E. FOUNDATION MATERIAL:	CONCRETE
AVERAGE FOUNDATION REVEAL:	SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	35'
G. AVERAGE WIDTH AT BASE:	6' DIAMETER FOUNDATION (SEE NOTE 1)
H. MINIMUM STRUCTURE HEIGHT:	130'
MAXIMUM STRUCTURE HEIGHT:	155'
AVERAGE STRUCTURE HEIGHT:	141'
I. AVERAGE SPAN LENGTH:	1,024'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES

1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. INDIVIDUAL POLE HEIGHTS ABOVE GROUND MAY VARY SUBJECT TO FINAL LOCATION AND TERRAIN
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

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Glen Allen, VA 23060

SECTION 3:

STRUCTURES 293/97, 83/10 - 293/106, 83/19

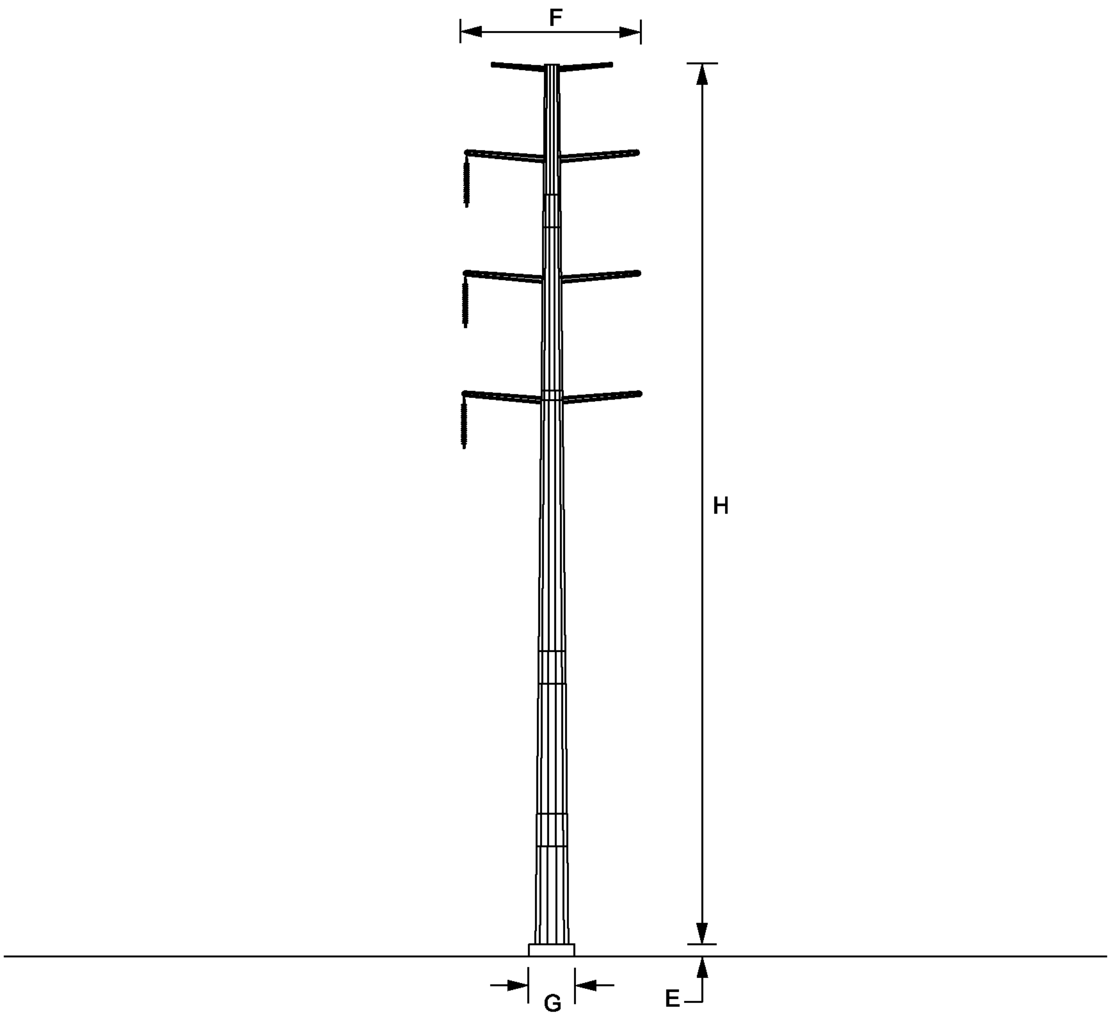
DRAWING NO. ATTACHMENT II.B.3.c

DRAWN ALS

$SYTIME$

Attachment II.B.3.d

SECTION 3



DOUBLE CIRCUIT MONOPOLE DOUBLE DEAD-END STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	CLOSELY RESEMBLES GEOMETRY OF EXISTING STRUCTURES
C. LENGTH OF R/W (STRUCTURE QUANTITY):	1.94 MILES (4 STRUCTURES)
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONALE FOR STRUCTURE MATERIAL:	WEATHERING STEEL WAS SELECTED TO MATCH THE EXISTING STRUCTURES CARRYING LINES #83 AND #293
E. FOUNDATION MATERIAL:	CONCRETE
AVERAGE FOUNDATION REVEAL:	SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	27'
G. AVERAGE WIDTH AT BASE:	8'-9" DIAMETER FOUNDATION (SEE NOTE 1)
H. MINIMUM STRUCTURE HEIGHT:	115'
MAXIMUM STRUCTURE HEIGHT:	155'
AVERAGE STRUCTURE HEIGHT:	139'
I. AVERAGE SPAN LENGTH:	1,024'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. INDIVIDUAL POLE HEIGHTS ABOVE GROUND MAY VARY SUBJECT TO FINAL LOCATION AND TERRAIN
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

Electric Transmission

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SECTION 3:

STRUCTURES 293/97, 83/10 - 293/106, 83/19

92

DRAWING NO.
ATTACHMENT II.B.3.d

DRAWN ALS

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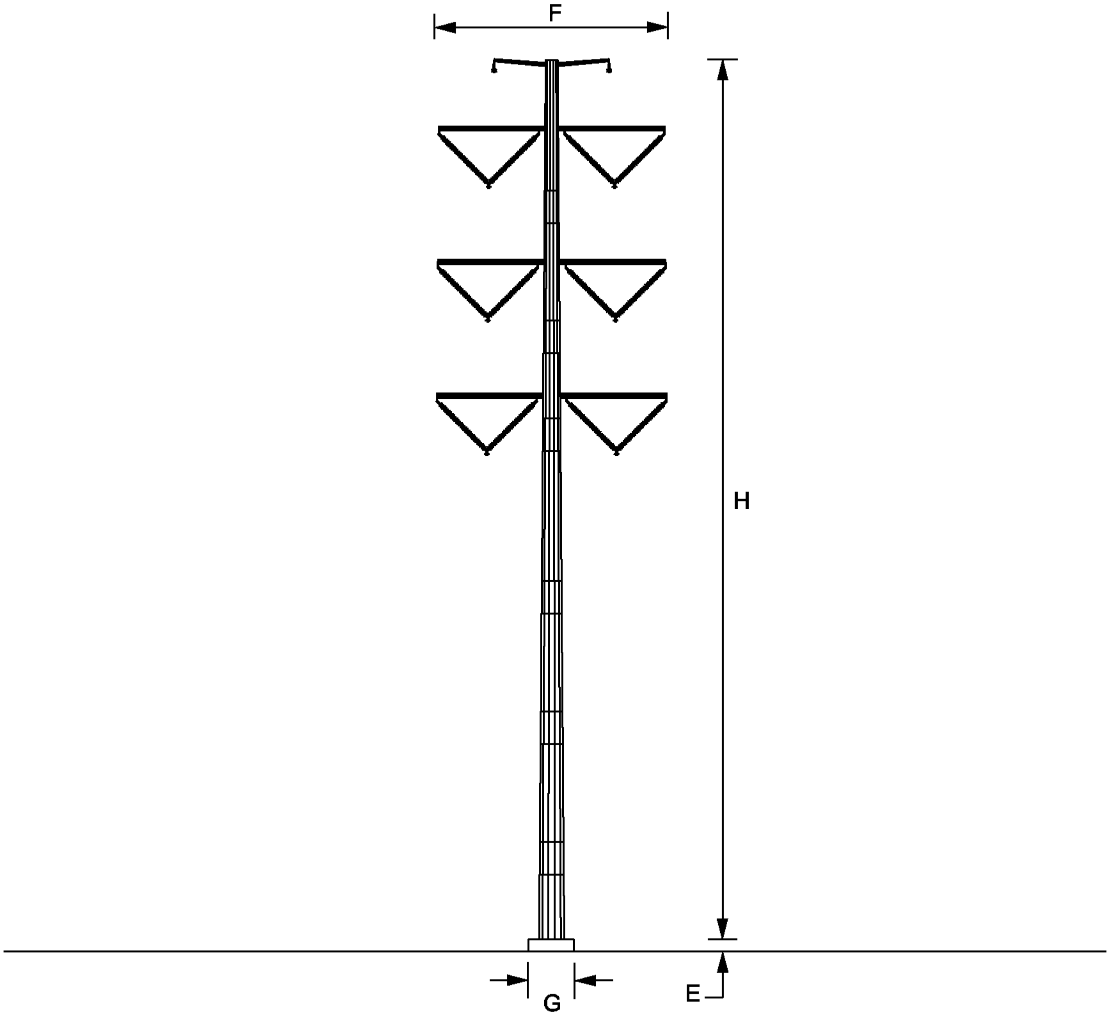
SECTION 4



DOUBLE CIRCUIT MONOPOLE SUSPENSION STRUCTURE

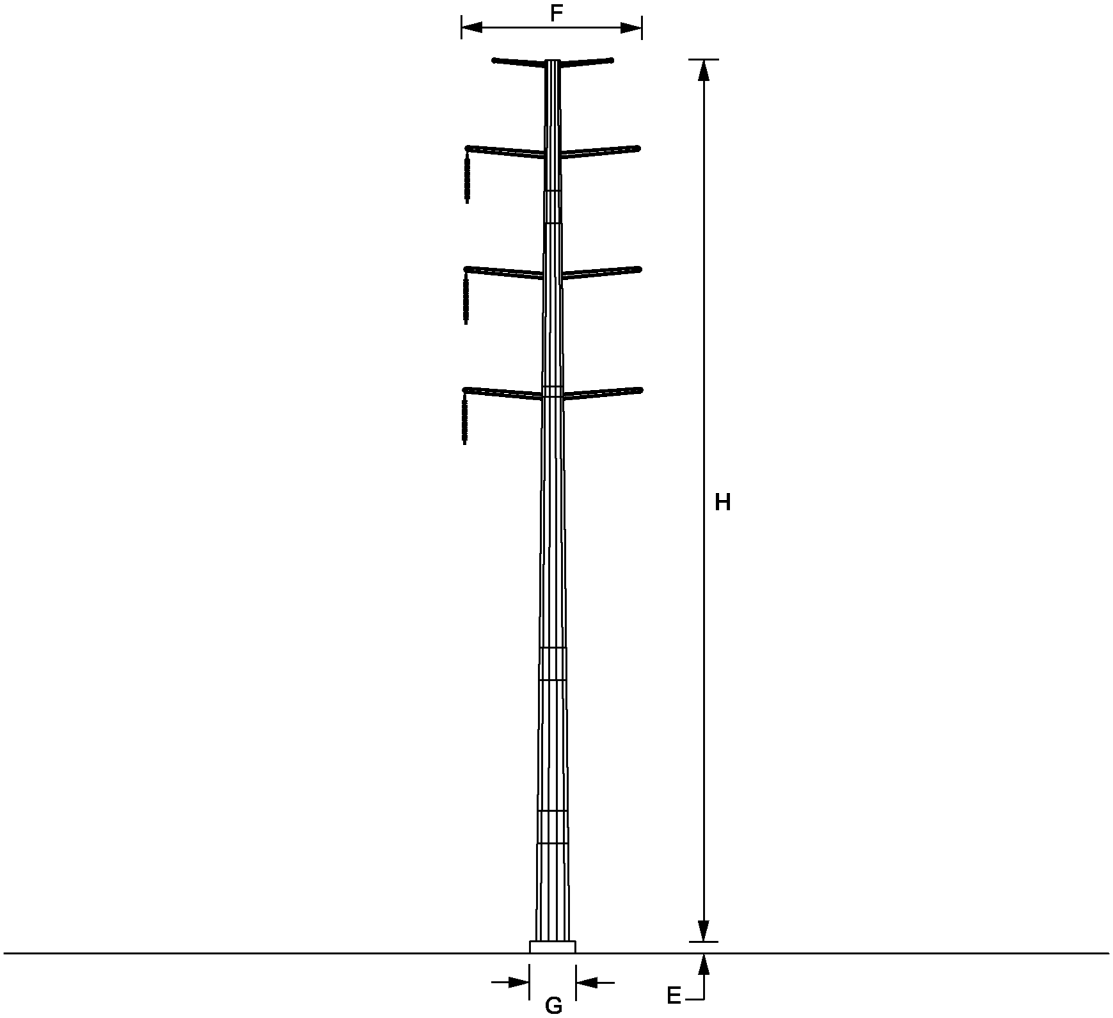
B. RATIONALE FOR STRUCTURE TYPE:	CLOSELY RESEMBLES GEOMETRY OF EXISTING STRUCTURES
C. LENGTH OF R/W (STRUCTURE QUANTITY):	0.59 MILES (3 STRUCTURES)
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONALE FOR STRUCTURE MATERIAL:	WEATHERING STEEL WAS SELECTED TO MATCH THE EXISTING STRUCTURES CARRYING LINES #83 AND #293
E. FOUNDATION MATERIAL:	CONCRETE
AVERAGE FOUNDATION REVEAL:	SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	35'
G. AVERAGE WIDTH AT BASE:	5'-8" DIAMETER FOUNDATION (SEE NOTE 1)
H. MINIMUM STRUCTURE HEIGHT:	120'
MAXIMUM STRUCTURE HEIGHT:	150'
AVERAGE STRUCTURE HEIGHT:	133'
I. AVERAGE SPAN LENGTH:	785'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. INDIVIDUAL POLE HEIGHTS ABOVE GROUND MAY VARY SUBJECT TO FINAL LOCATION AND TERRAIN
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

Electric Transmission	SECTION 4:	DRAWING NO.
Dominion Energy Dominion Energy 10900 Nuckols Road Glen Allen, VA 23060	STRUCTURES 293/107, 83/20 - 293/110, 83/23	ATTACHMENT II.B.3.e
	93	DRAWN ALS

$SYTIME$ $DGNSPEC$ TESBORD1

SECTION 4



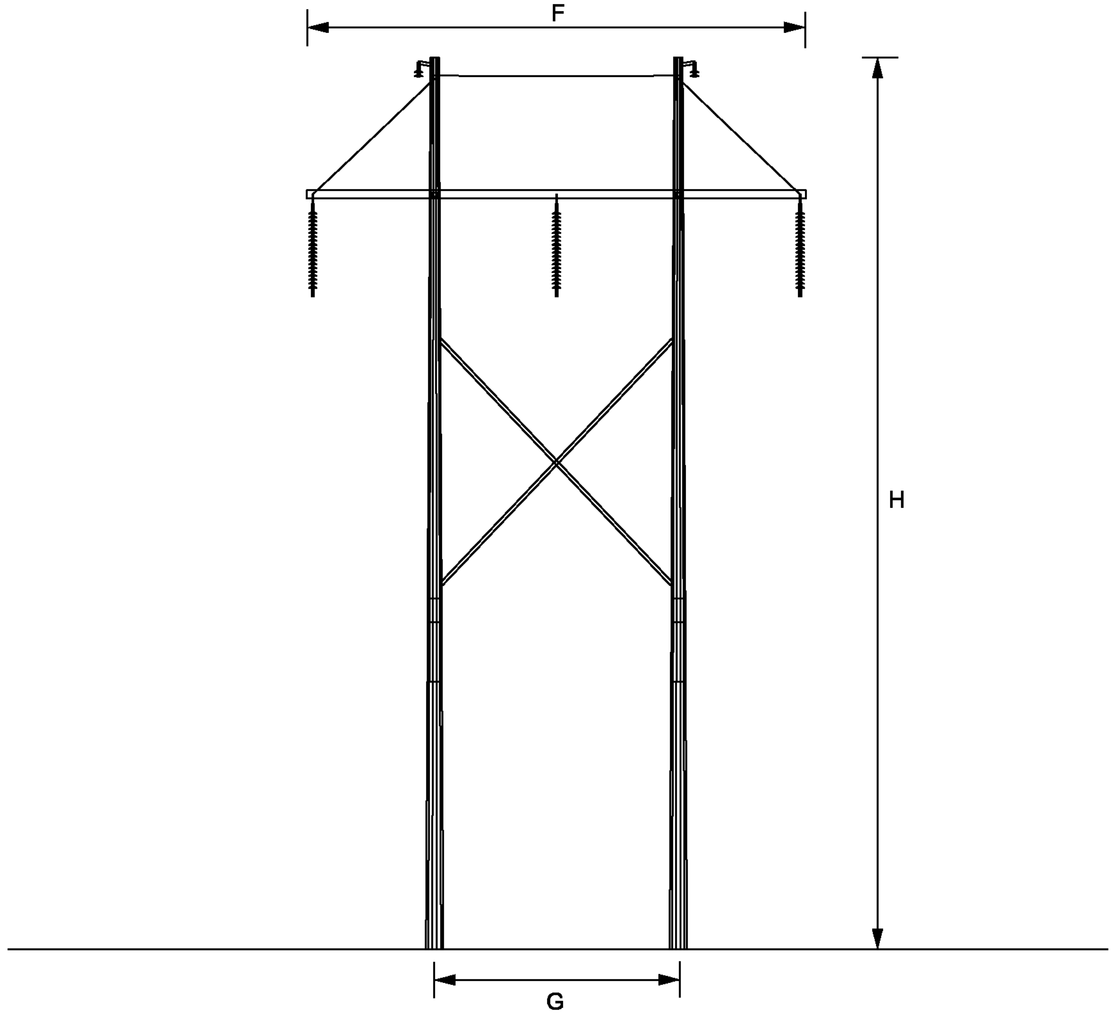
DOUBLE CIRCUIT MONOPOLE DOUBLE DEAD-END STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	CLOSELY RESEMBLES GEOMETRY OF EXISTING STRUCTURES
C. LENGTH OF R/W (STRUCTURE QUANTITY):	0.59 MILES (1 STRUCTURE)
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONALE FOR STRUCTURE MATERIAL:	WEATHERING STEEL WAS SELECTED TO MATCH THE EXISTING STRUCTURES CARRYING LINES #83 AND #293
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	27'
G. AVERAGE WIDTH AT BASE:	10'-6" DIAMETER FOUNDATION (SEE NOTE 1)
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	110' 110' 110'
I. AVERAGE SPAN LENGTH:	785'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. INDIVIDUAL POLE HEIGHTS ABOVE GROUND MAY VARY SUBJECT TO FINAL LOCATION AND TERRAIN
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

Electric Transmission	SECTION 4: STRUCTURES 293/107, 83/20 - 293/110, 83/23	DRAWING NO. ATTACHMENT II.B.3.f
Dominion Energy Dominion Energy 10900 Nuckols Road Glen Allen, VA 23060	94	DRAWN ALS

SECTION 5



SINGLE CIRCUIT H-FRAME SUSPENSION STRUCTURE

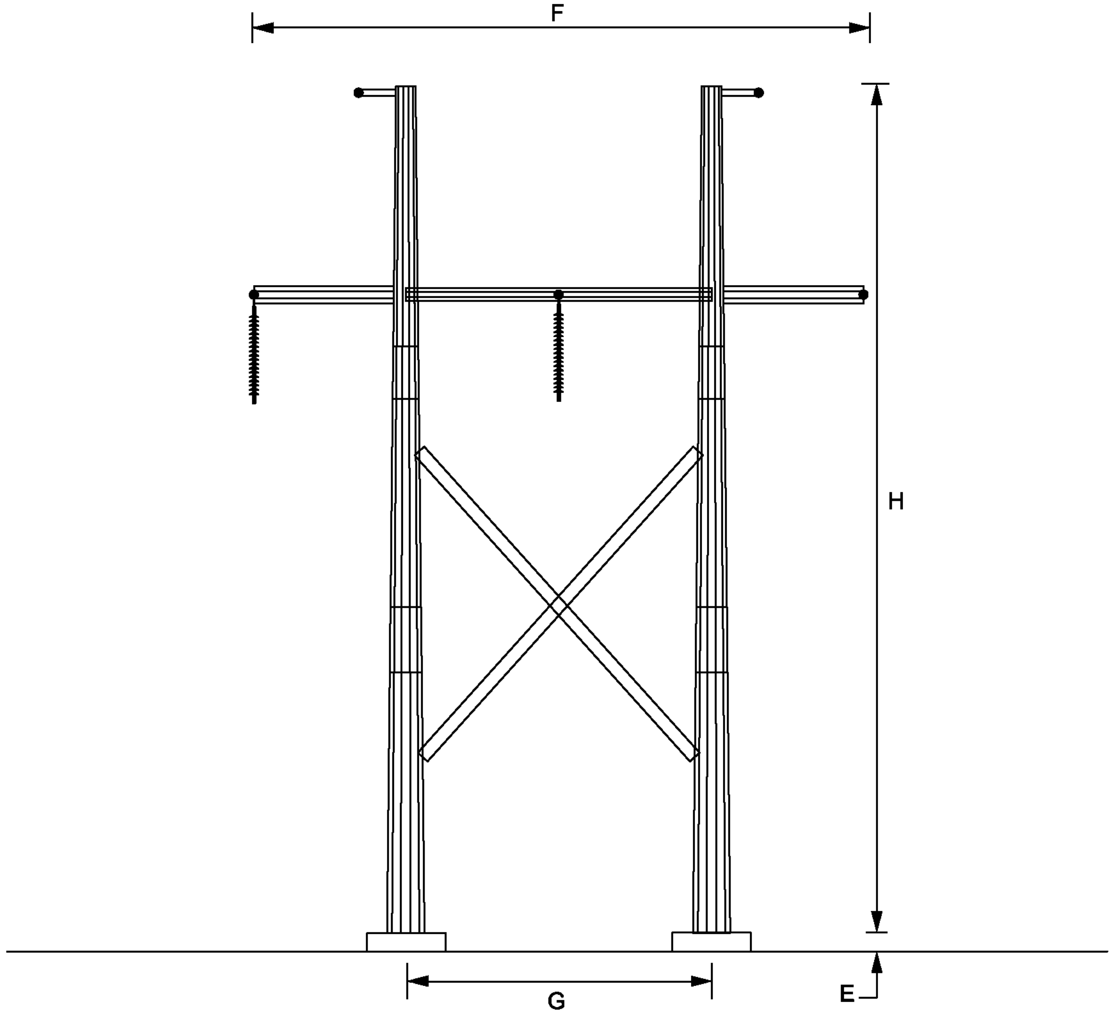
B. RATIONALE FOR STRUCTURE TYPE:	CLOSELY RESEMBLES GEOMETRY OF EXISTING STRUCTURES
C. LENGTH OF R/W (STRUCTURE QUANTITY):	2.28 MILES (13 STRUCTURES)
D. STRUCTURE MATERIAL:	WEATHERING STEEL POLES AND GALVANIZED STEEL CROSS ARMS & CROSS BRACING
RATIONALE FOR STRUCTURE MATERIAL:	THE COMPANY'S STANDARD FOR DIRECT EMBED H-FRAME CONSTRUCTION IS WEATHERING STEEL
E. FOUNDATION MATERIAL:	N/A - DIRECT EMBED (SEE NOTE 4)
AVERAGE FOUNDATION REVEAL:	N/A - DIRECT EMBED
F. AVERAGE WIDTH AT CROSSARM:	42'
G. AVERAGE WIDTH AT BASE:	20.5'
H. MINIMUM STRUCTURE HEIGHT:	61'
MAXIMUM STRUCTURE HEIGHT:	93'
AVERAGE STRUCTURE HEIGHT:	79'
I. AVERAGE SPAN LENGTH:	709'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. INDIVIDUAL POLE HEIGHTS ABOVE GROUND MAY VARY SUBJECT TO FINAL LOCATION AND TERRAIN
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. IN WETLAND OR SWAMP AREAS - DIRECT EMBED INTO STEEL PIPE PILES

Electric Transmission	SECTION 5:	DRAWING NO. ATTACHMENT II.B.3.g
Dominion Energy — Dominion Energy, 10900 Nuckols Road, Glen Allen, VA 23060	STRUCTURES 293/111 - 293/127	DRAWN ALS

$SYTIME$ $DGNSPEC$ TESBORD1

SECTION 5



SINGLE CIRCUIT H-FRAME DOUBLE DEAD-END STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	CLOSELY RESEMBLES GEOMETRY OF EXISTING STRUCTURES
C. LENGTH OF R/W (STRUCTURE QUANTITY):	2.28 MILES (1 STRUCTURE)
D. STRUCTURE MATERIAL:	WEATHERING STEEL POLES AND GALVANIZED STEEL CROSS ARM & CROSS BRACING
RATIONALE FOR STRUCTURE MATERIAL:	TO MATCH MATERIAL SELECTED FOR THE TYPICAL H-FRAME SUSPENSION STRUCTURES
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	47'
G. AVERAGE WIDTH AT BASE:	23.5'
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	65' 65' 65'
I. AVERAGE SPAN LENGTH:	709'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. INDIVIDUAL POLE HEIGHTS ABOVE GROUND MAY VARY SUBJECT TO FINAL LOCATION AND TERRAIN
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

Electric Transmission

Dominion Energy
Dominion Energy
10900 Nuckols Road
Glen Allen, VA 23060

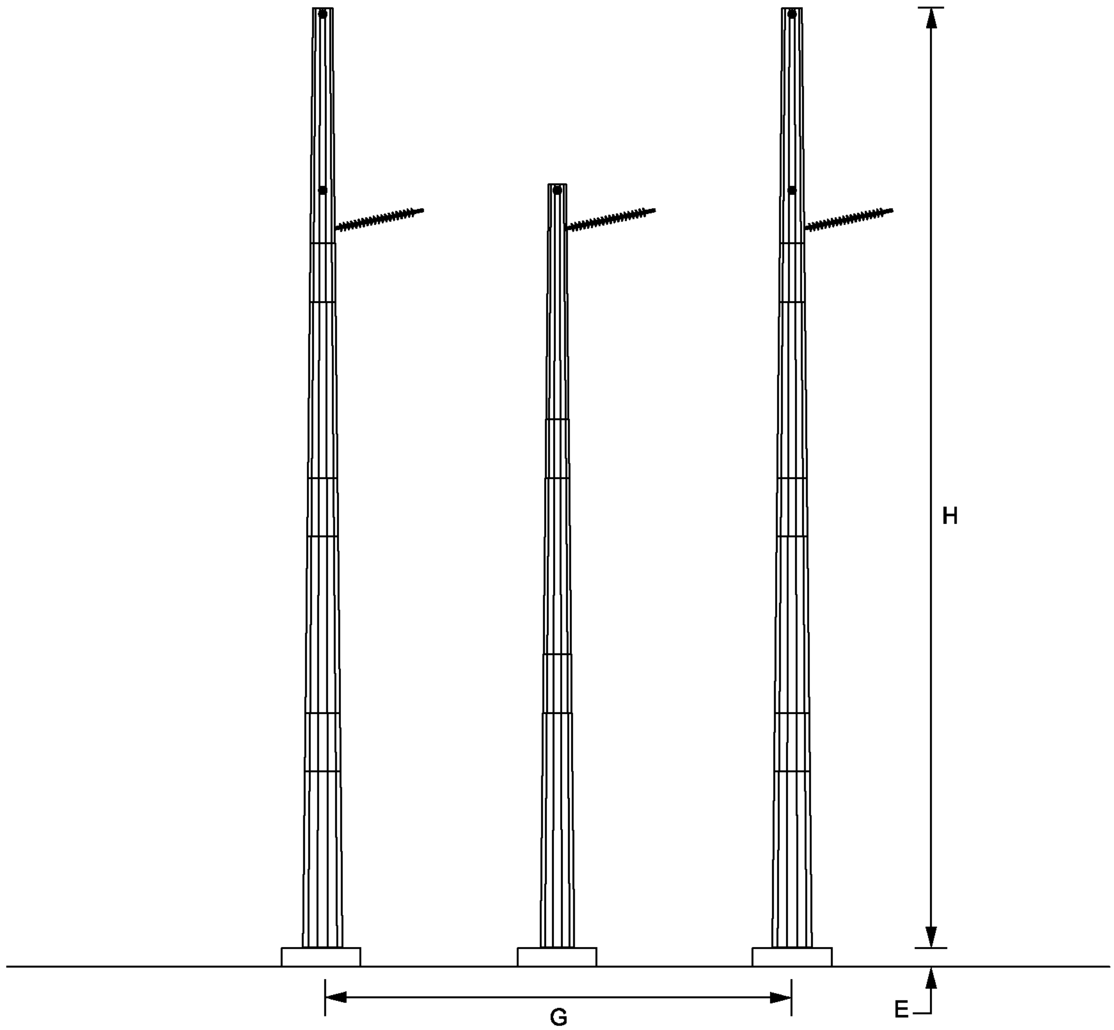
SECTION 5:

STRUCTURES 293/111 - 293/127

DRAWING NO.
ATTACHMENT II.B.3.h

DRAWN ALS

SECTION 5



SINGLE CIRCUIT 3-POLE DOUBLE DEAD-END STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	CLOSELY RESEMBLES GEOMETRY OF EXISTING STRUCTURES
C. LENGTH OF R/W (STRUCTURE QUANTITY):	2.28 MILES (3 STRUCTURES)
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONALE FOR STRUCTURE MATERIAL:	TO MATCH MATERIAL SELECTED FOR THE TYPICAL H-FRAME SUSPENSION STRUCTURES
E. FOUNDATION MATERIAL:	CONCRETE
AVERAGE FOUNDATION REVEAL:	SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	N/A
G. AVERAGE WIDTH AT BASE:	40'
H. MINIMUM STRUCTURE HEIGHT:	55'
MAXIMUM STRUCTURE HEIGHT:	80'
AVERAGE STRUCTURE HEIGHT:	72'
I. AVERAGE SPAN LENGTH:	709'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. INDIVIDUAL POLE HEIGHTS ABOVE GROUND MAY VARY SUBJECT TO FINAL LOCATION AND TERRAIN
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

Electric Transmission

Dominion Energy

Dominion Energy
10900 Nuckols Road
Glen Allen, VA 23060

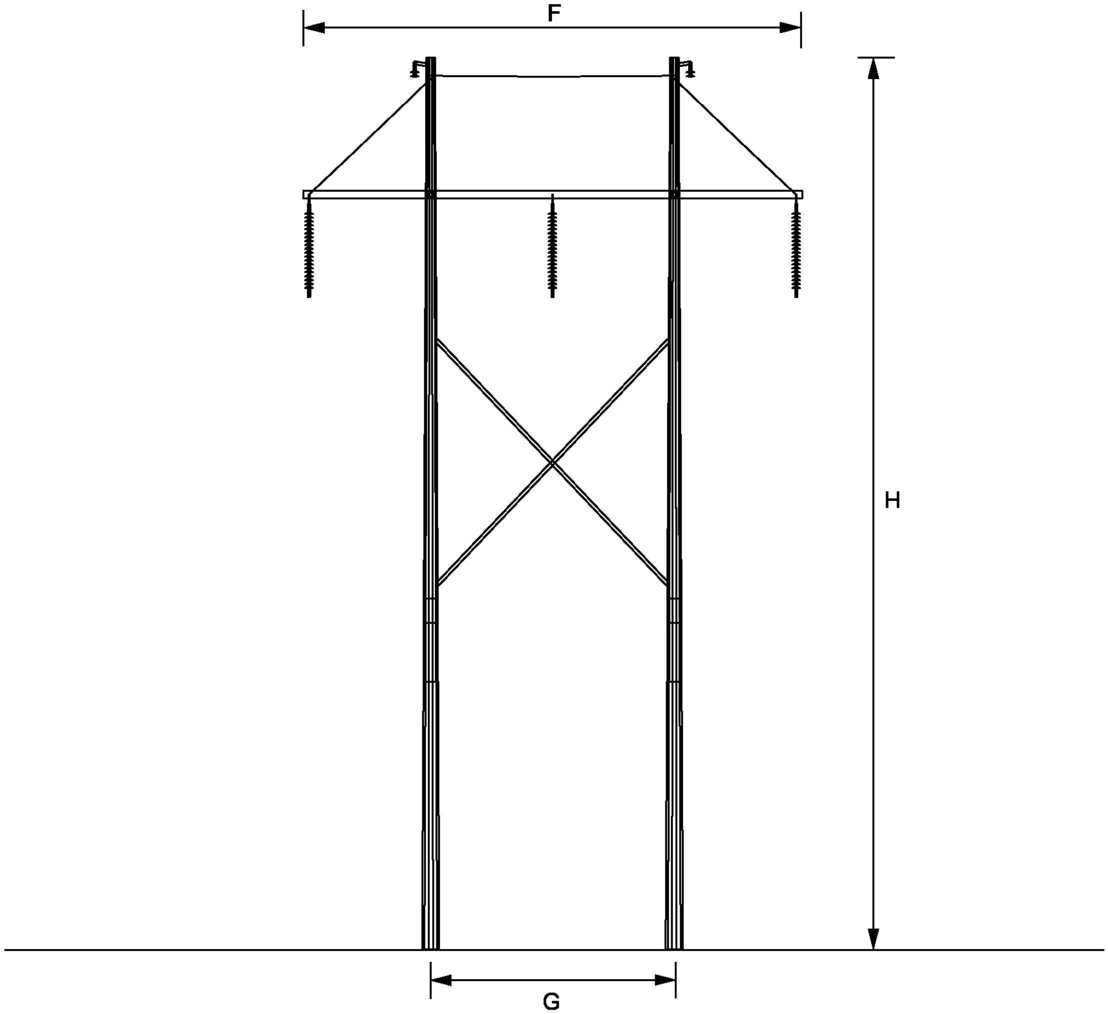
SECTION 5:

STRUCTURES 293/111 - 293/127

DRAWING NO. ATTACHMENT II.B.3.i

DRAWN ALS

SECTION 6



SINGLE CIRCUIT H-FRAME SUSPENSION STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	CLOSELY RESEMBLES GEOMETRY OF EXISTING STRUCTURES
C. LENGTH OF R/W (STRUCTURE QUANTITY):	3.12 MILES (15 STRUCTURES)
D. STRUCTURE MATERIAL:	WEATHERING STEEL POLES AND GALVANIZED STEEL CROSS ARMS & CROSS BRACING
RATIONALE FOR STRUCTURE MATERIAL:	THE COMPANY'S STANDARD FOR DIRECT EMBED H-FRAME CONSTRUCTION IS WEATHERING STEEL
E. FOUNDATION MATERIAL:	N/A - DIRECT EMBED (SEE NOTE 4)
AVERAGE FOUNDATION REVEAL:	N/A - DIRECT EMBED
F. AVERAGE WIDTH AT CROSSARM:	42'
G. AVERAGE WIDTH AT BASE:	20.5'
H. MINIMUM STRUCTURE HEIGHT:	66'
MAXIMUM STRUCTURE HEIGHT:	93'
AVERAGE STRUCTURE HEIGHT:	77'
I. AVERAGE SPAN LENGTH:	717'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. INDIVIDUAL POLE HEIGHTS ABOVE GROUND MAY VARY SUBJECT TO FINAL LOCATION AND TERRAIN
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. IN WETLAND OR SWAMP AREAS - DIRECT EMBED INTO STEEL PIPE PILES

Electric Transmission	SECTION 6:	DRAWING NO. ATTACHMENT II.B.3.j
Dominion Energy Dominion Energy 10900 Nuckols Road Glen Allen, VA 23060	STRUCTURES 293/128 - 293/150	DRAWN ALS

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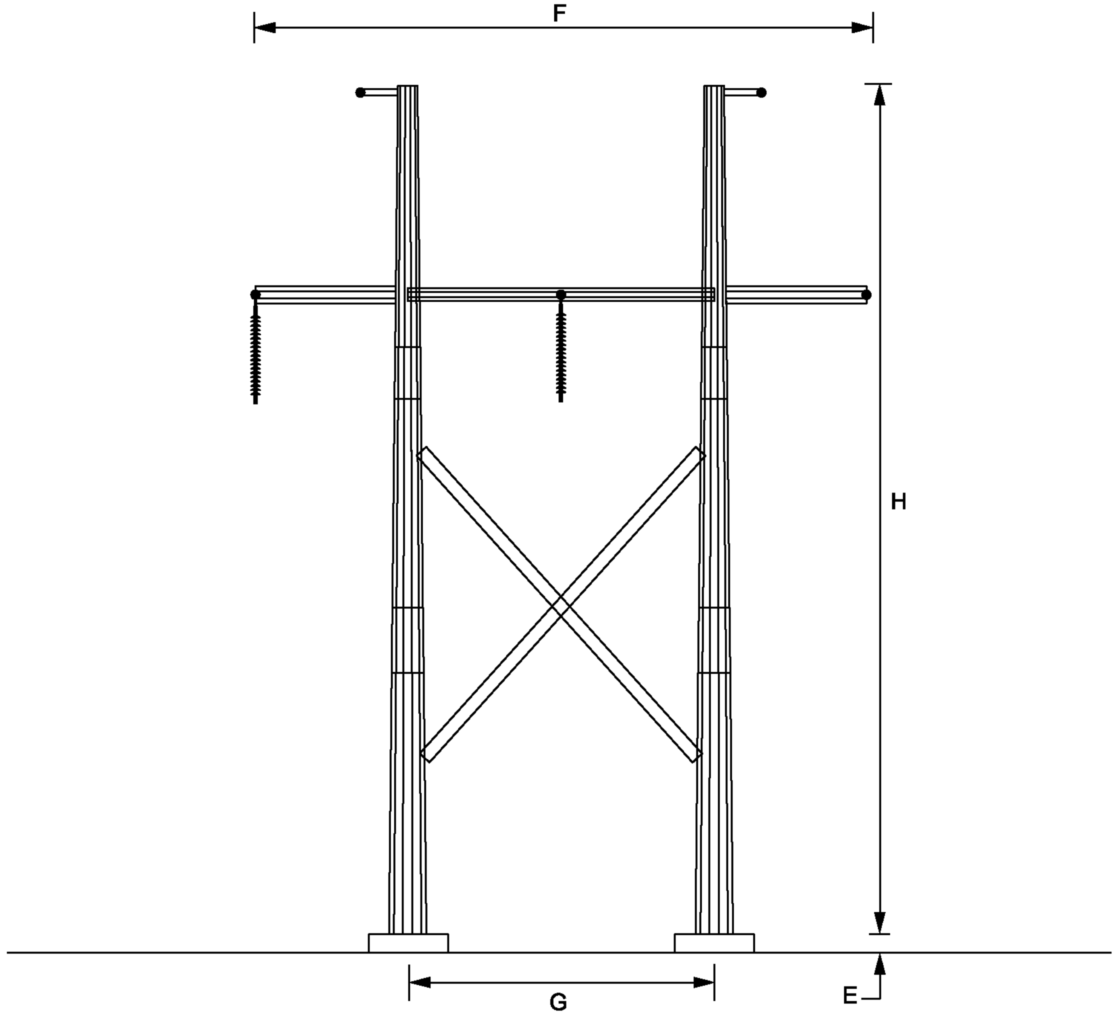
SECTION 6



SINGLE CIRCUIT H-FRAME DOUBLE DEAD-END STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	CLOSELY RESEMBLES GEOMETRY OF EXISTING STRUCTURES
C. LENGTH OF R/W (STRUCTURE QUANTITY):	3.12 MILES (4 STRUCTURES)
D. STRUCTURE MATERIAL:	WEATHERING STEEL POLES AND GALVANIZED STEEL CROSS ARM & CROSS BRACING
RATIONALE FOR STRUCTURE MATERIAL:	TO MATCH MATERIAL SELECTED FOR THE TYPICAL H-FRAME SUSPENSION STRUCTURES
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	47'
G. AVERAGE WIDTH AT BASE:	23.5'
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	80' 90' 84'
I. AVERAGE SPAN LENGTH:	717'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. INDIVIDUAL POLE HEIGHTS ABOVE GROUND MAY VARY SUBJECT TO FINAL LOCATION AND TERRAIN
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

Electric Transmission

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SECTION 6:

STRUCTURES 293/128 - 293/150

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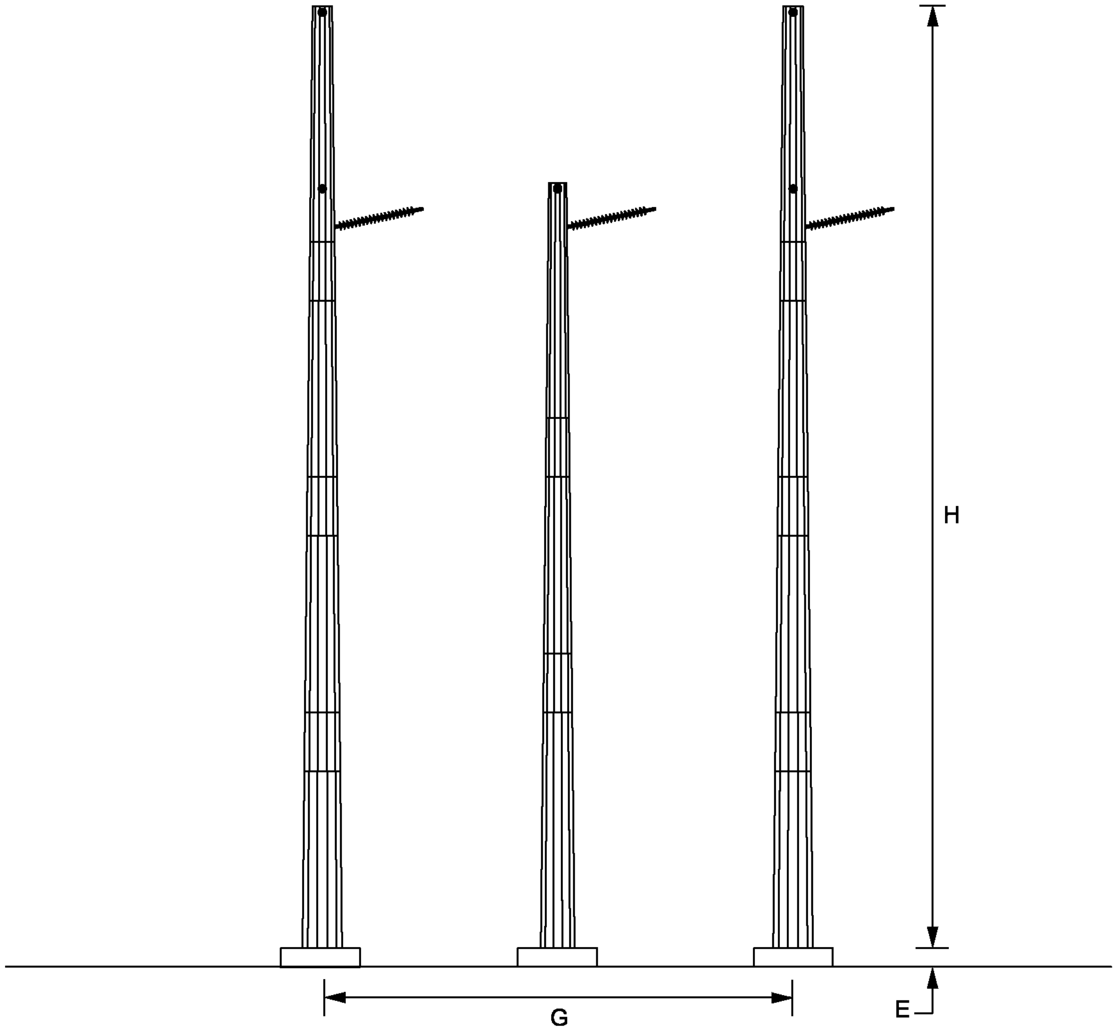
SECTION 6



SINGLE CIRCUIT 3-POLE DOUBLE DEAD-END STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	CLOSELY RESEMBLES GEOMETRY OF EXISTING STRUCTURES
C. LENGTH OF R/W (STRUCTURE QUANTITY):	3.12 MILES (3 STRUCTURES)
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONALE FOR STRUCTURE MATERIAL:	TO MATCH MATERIAL SELECTED FOR THE TYPICAL H-FRAME SUSPENSION STRUCTURES
E. FOUNDATION MATERIAL:	CONCRETE
AVERAGE FOUNDATION REVEAL:	SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	N/A
G. AVERAGE WIDTH AT BASE:	40'
H. MINIMUM STRUCTURE HEIGHT:	55'
MAXIMUM STRUCTURE HEIGHT:	70'
AVERAGE STRUCTURE HEIGHT:	63'
I. AVERAGE SPAN LENGTH:	717'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. INDIVIDUAL POLE HEIGHTS ABOVE GROUND MAY VARY SUBJECT TO FINAL LOCATION AND TERRAIN
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

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SECTION 6:

STRUCTURES 293/128 - 293/150

DRAWING NO. ATTACHMENT II.B.3.l

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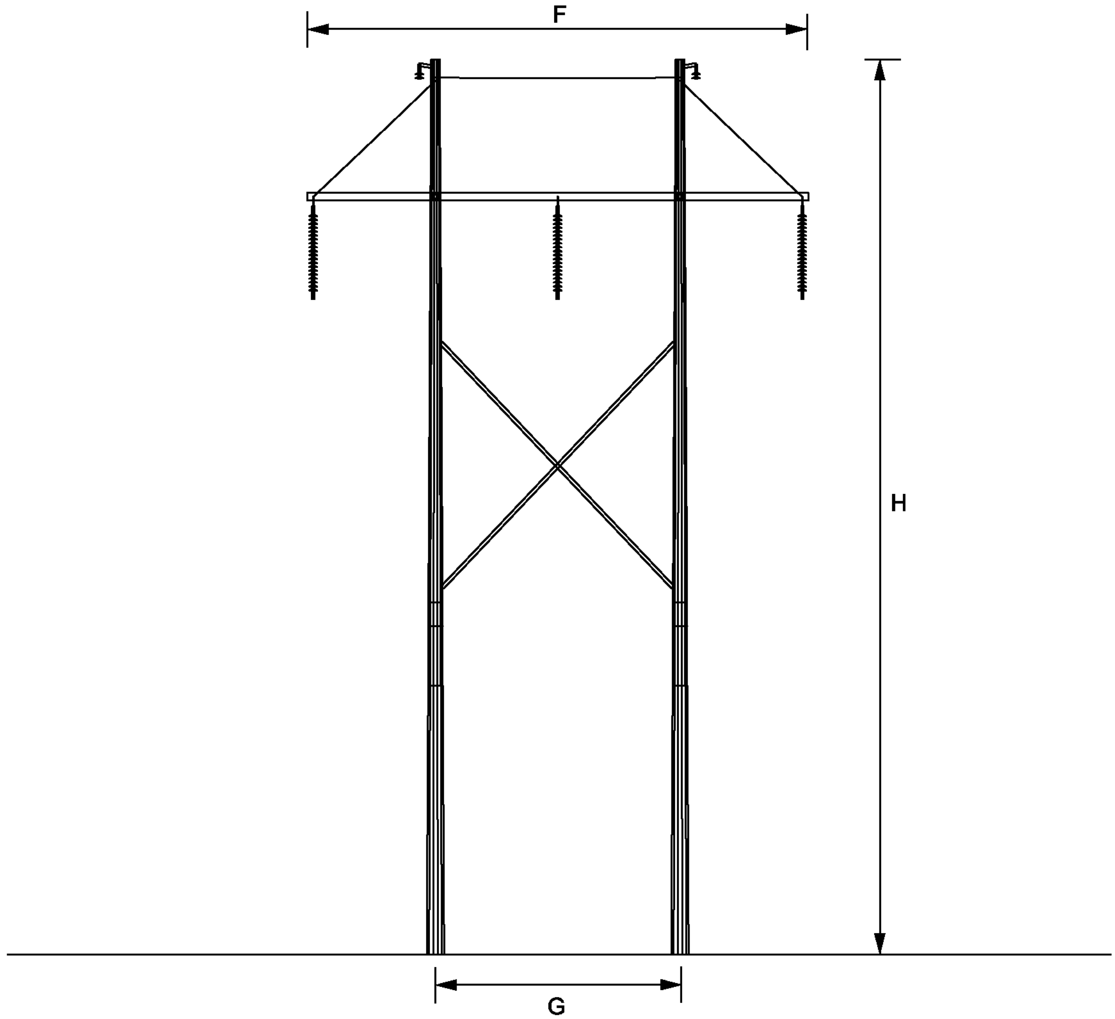
SECTION 7



SINGLE CIRCUIT H-FRAME SUSPENSION STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	CLOSELY RESEMBLES GEOMETRY OF EXISTING STRUCTURES
C. LENGTH OF R/W (STRUCTURE QUANTITY):	1.42 MILES (11 STRUCTURES)
D. STRUCTURE MATERIAL:	WEATHERING STEEL POLES AND GALVANIZED STEEL CROSS ARMS & CROSS BRACING
RATIONALE FOR STRUCTURE MATERIAL:	THE COMPANY'S STANDARD FOR DIRECT EMBED H-FRAME CONSTRUCTION IS WEATHERING STEEL
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	N/A - DIRECT EMBED (SEE NOTE 4) N/A - DIRECT EMBED
F. AVERAGE WIDTH AT CROSSARM:	42'
G. AVERAGE WIDTH AT BASE:	20.5'
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	52' 88' 75'
I. AVERAGE SPAN LENGTH:	576'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. INDIVIDUAL POLE HEIGHTS ABOVE GROUND MAY VARY SUBJECT TO FINAL LOCATION AND TERRAIN
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. IN WETLAND OR SWAMP AREAS - DIRECT EMBED INTO STEEL PIPE PILES

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SECTION 7:

STRUCTURES 293/151 - 293/163

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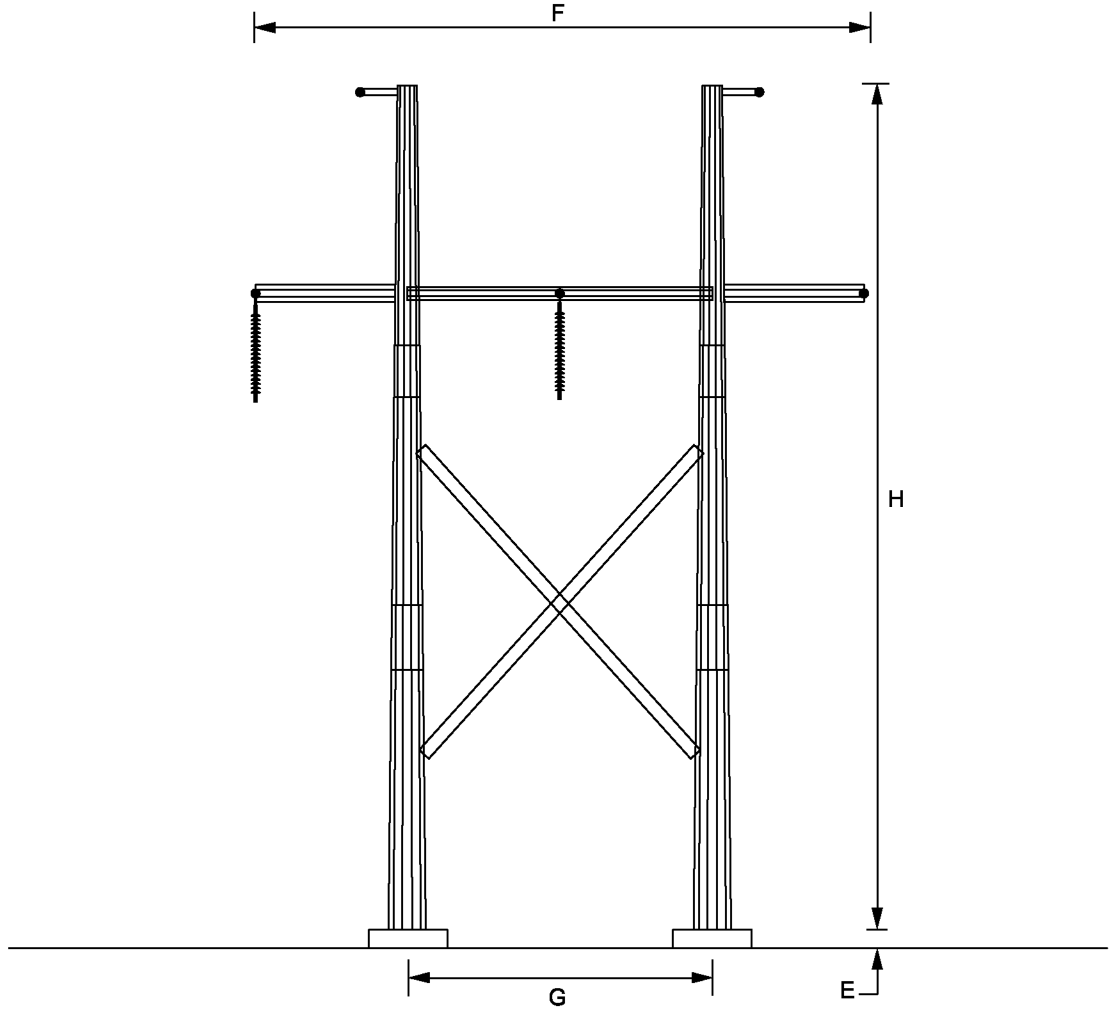
SECTION 7



SINGLE CIRCUIT H-FRAME DOUBLE DEAD-END STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	CLOSELY RESEMBLES GEOMETRY OF EXISTING STRUCTURES
C. LENGTH OF R/W (STRUCTURE QUANTITY):	1.42 MILES (1 STRUCTURE)
D. STRUCTURE MATERIAL:	WEATHERING STEEL POLES AND GALVANIZED STEEL CROSS ARM & CROSS BRACING
RATIONALE FOR STRUCTURE MATERIAL:	TO MATCH MATERIAL SELECTED FOR THE TYPICAL H-FRAME SUSPENSION STRUCTURES
E. FOUNDATION MATERIAL:	CONCRETE
AVERAGE FOUNDATION REVEAL:	SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	47'
G. AVERAGE WIDTH AT BASE:	23.5'
H. MINIMUM STRUCTURE HEIGHT:	60'
MAXIMUM STRUCTURE HEIGHT:	60'
AVERAGE STRUCTURE HEIGHT:	60'
I. AVERAGE SPAN LENGTH:	576'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. INDIVIDUAL POLE HEIGHTS ABOVE GROUND MAY VARY SUBJECT TO FINAL LOCATION AND TERRAIN
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

Electric Transmission	SECTION 7:	DRAWING NO. ATTACHMENT II.B.3.n
Dominion Energy — Dominion Energy, 10900 Nuckols Road, Glen Allen, VA 23060	STRUCTURES 293/151 - 293/163	DRAWN ALS

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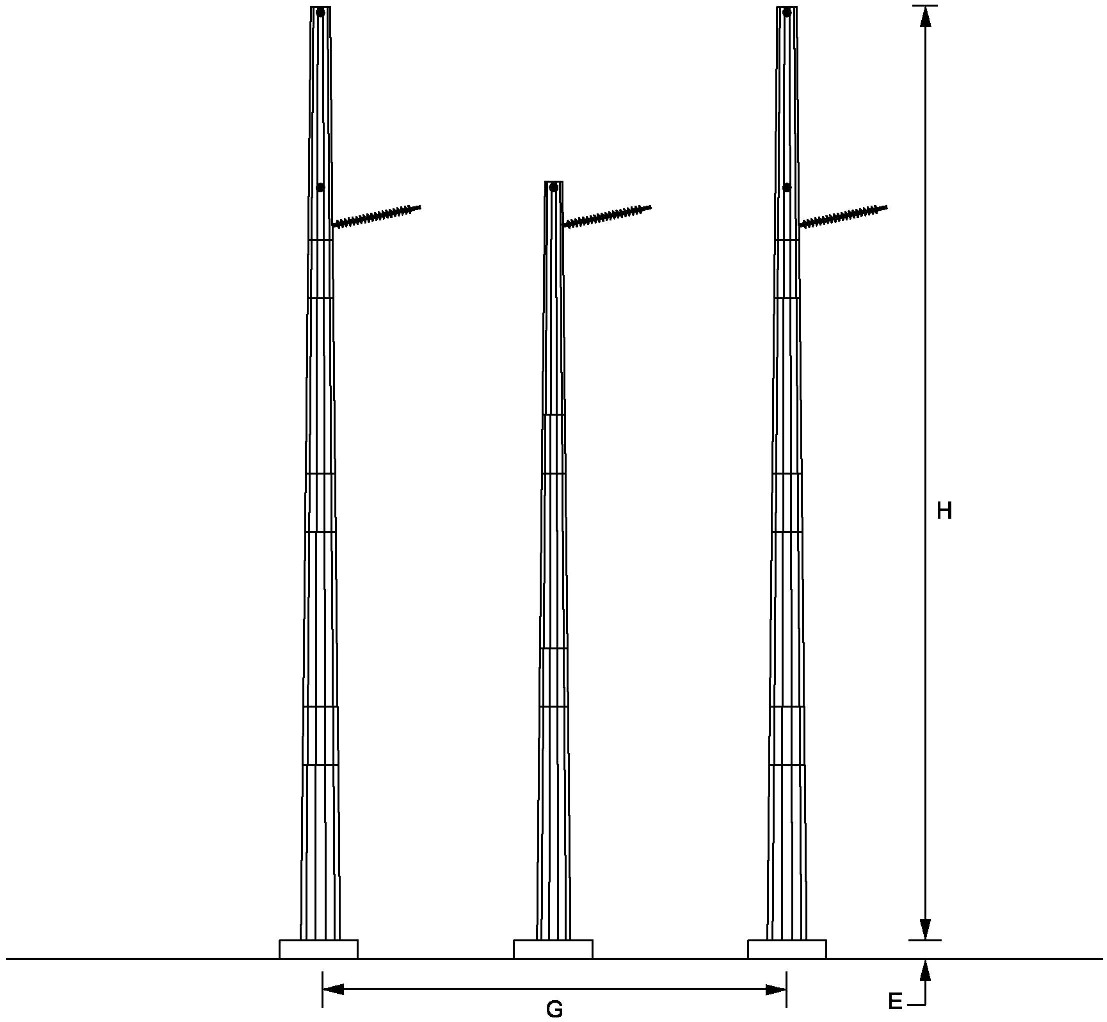
SECTION 7



SINGLE CIRCUIT 3-POLE DOUBLE DEAD-END STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	CLOSELY RESEMBLES GEOMETRY OF EXISTING STRUCTURES
C. LENGTH OF R/W (STRUCTURE QUANTITY):	1.42 MILES (1 STRUCTURE)
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONALE FOR STRUCTURE MATERIAL:	TO MATCH MATERIAL SELECTED FOR THE TYPICAL H-FRAME SUSPENSION STRUCTURES
E. FOUNDATION MATERIAL:	CONCRETE
AVERAGE FOUNDATION REVEAL:	SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	N/A
G. AVERAGE WIDTH AT BASE:	40'
H. MINIMUM STRUCTURE HEIGHT:	55'
MAXIMUM STRUCTURE HEIGHT:	55'
AVERAGE STRUCTURE HEIGHT:	55'
I. AVERAGE SPAN LENGTH:	576'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. INDIVIDUAL POLE HEIGHTS ABOVE GROUND MAY VARY SUBJECT TO FINAL LOCATION AND TERRAIN
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

Electric Transmission	SECTION 7:	DRAWING NO.
Dominion Energy Dominion Energy 10900 Nuckols Road Glen Allen, VA 23060	STRUCTURES 293/151 - 293/163	ATTACHMENT II.B.3.o
		DRAWN ALS

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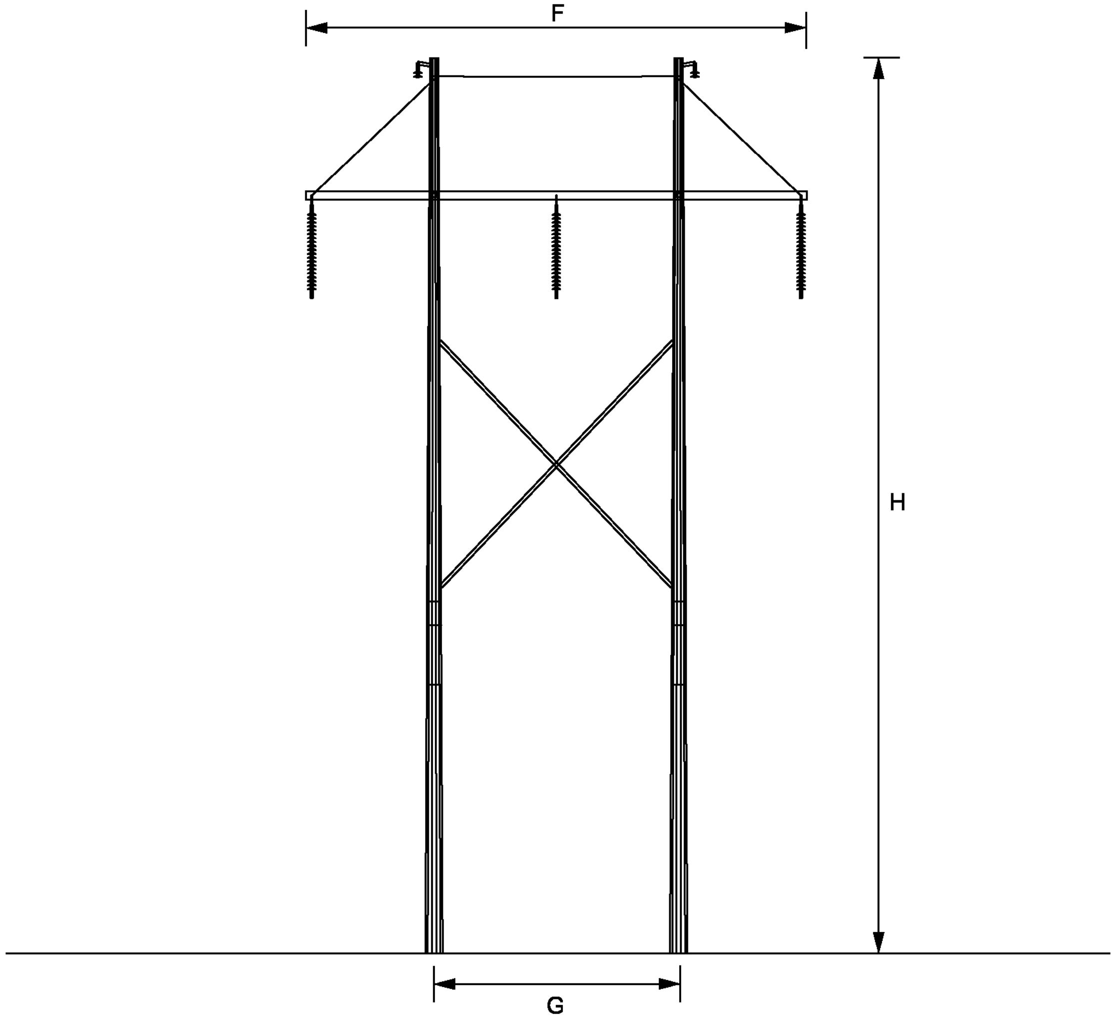
SECTION 8



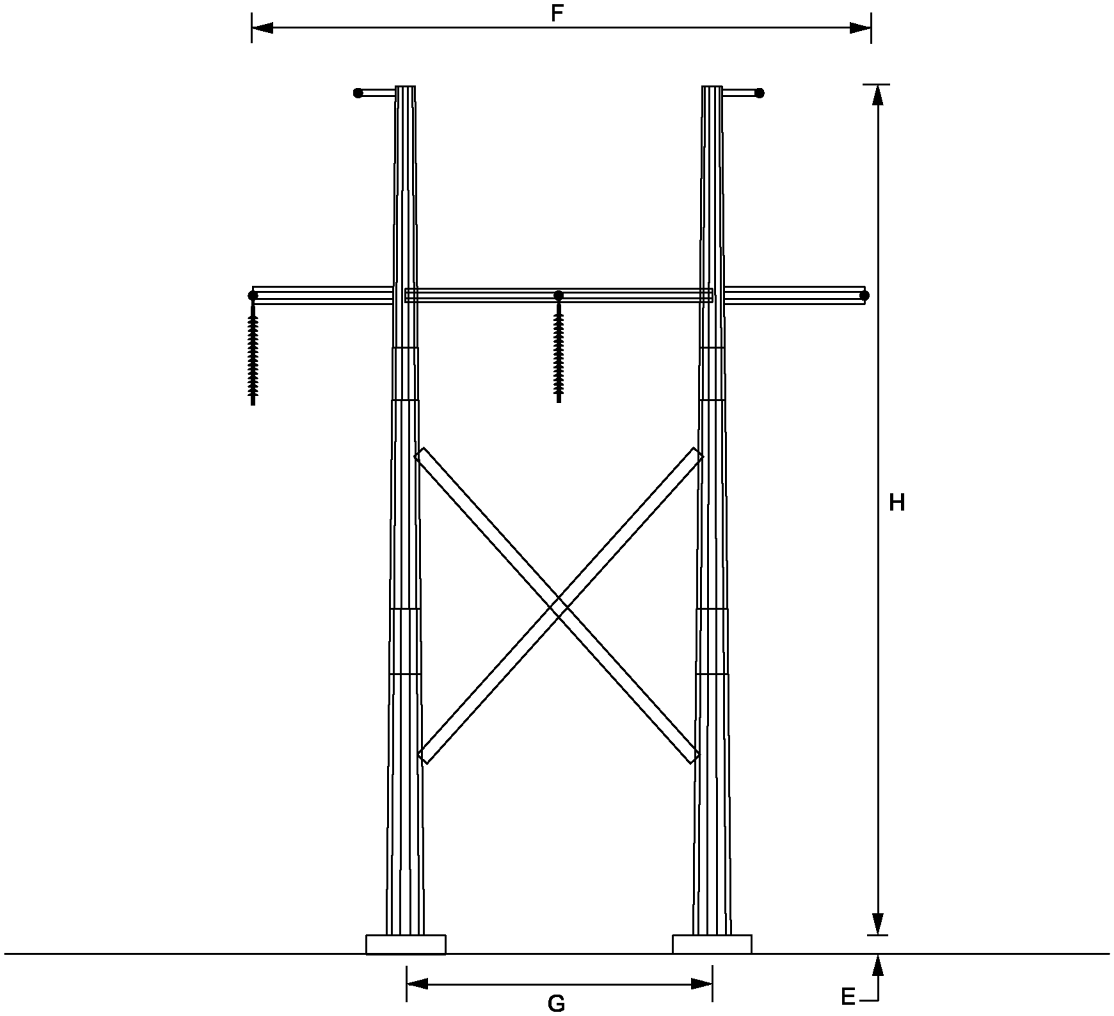
SINGLE CIRCUIT H-FRAME SUSPENSION STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	CLOSELY RESEMBLES GEOMETRY OF EXISTING STRUCTURES
C. LENGTH OF R/W (STRUCTURE QUANTITY):	8.34 MILES (53 STRUCTURES)
D. STRUCTURE MATERIAL:	WEATHERING STEEL POLES AND GALVANIZED STEEL CROSS ARMS & CROSS BRACING
RATIONALE FOR STRUCTURE MATERIAL:	THE COMPANY'S STANDARD FOR DIRECT EMBED H-FRAME CONSTRUCTION IS WEATHERING STEEL
E. FOUNDATION MATERIAL:	N/A - DIRECT EMBED (SEE NOTE 4)
AVERAGE FOUNDATION REVEAL:	N/A - DIRECT EMBED
F. AVERAGE WIDTH AT CROSSARM:	42'
G. AVERAGE WIDTH AT BASE:	20.5'
H. MINIMUM STRUCTURE HEIGHT:	57'
MAXIMUM STRUCTURE HEIGHT:	88'
AVERAGE STRUCTURE HEIGHT:	69'
I. AVERAGE SPAN LENGTH:	603'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. INDIVIDUAL POLE HEIGHTS ABOVE GROUND MAY VARY SUBJECT TO FINAL LOCATION AND TERRAIN
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. IN WETLAND OR SWAMP AREAS - DIRECT EMBED INTO STEEL PIPE PILES

Electric Transmission	SECTION 8:	DRAWING NO. ATTACHMENT II.B.3.p
Dominion Energy Dominion Energy 10900 Nuckols Road Glen Allen, VA 23060	STRUCTURES 293/164 - 293/236	DRAWN ALS

SECTION 8



SINGLE CIRCUIT H-FRAME DOUBLE DEAD-END STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	CLOSELY RESEMBLES GEOMETRY OF EXISTING STRUCTURES
C. LENGTH OF R/W (STRUCTURE QUANTITY):	8.34 MILES (9 STRUCTURES)
D. STRUCTURE MATERIAL:	WEATHERING STEEL POLES AND GALVANIZED STEEL CROSS ARM & CROSS BRACING
RATIONALE FOR STRUCTURE MATERIAL:	TO MATCH MATERIAL SELECTED FOR THE TYPICAL H-FRAME SUSPENSION STRUCTURES
E. FOUNDATION MATERIAL:	CONCRETE
AVERAGE FOUNDATION REVEAL:	SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	47'
G. AVERAGE WIDTH AT BASE:	23.5'
H. MINIMUM STRUCTURE HEIGHT:	65'
MAXIMUM STRUCTURE HEIGHT:	90'
AVERAGE STRUCTURE HEIGHT:	76'
I. AVERAGE SPAN LENGTH:	603'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. INDIVIDUAL POLE HEIGHTS ABOVE GROUND MAY VARY SUBJECT TO FINAL LOCATION AND TERRAIN
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

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SECTION 8:

STRUCTURES 293/164 - 293/236

DRAWING NO. ATTACHMENT II.B.3.q

DRAWN ALS

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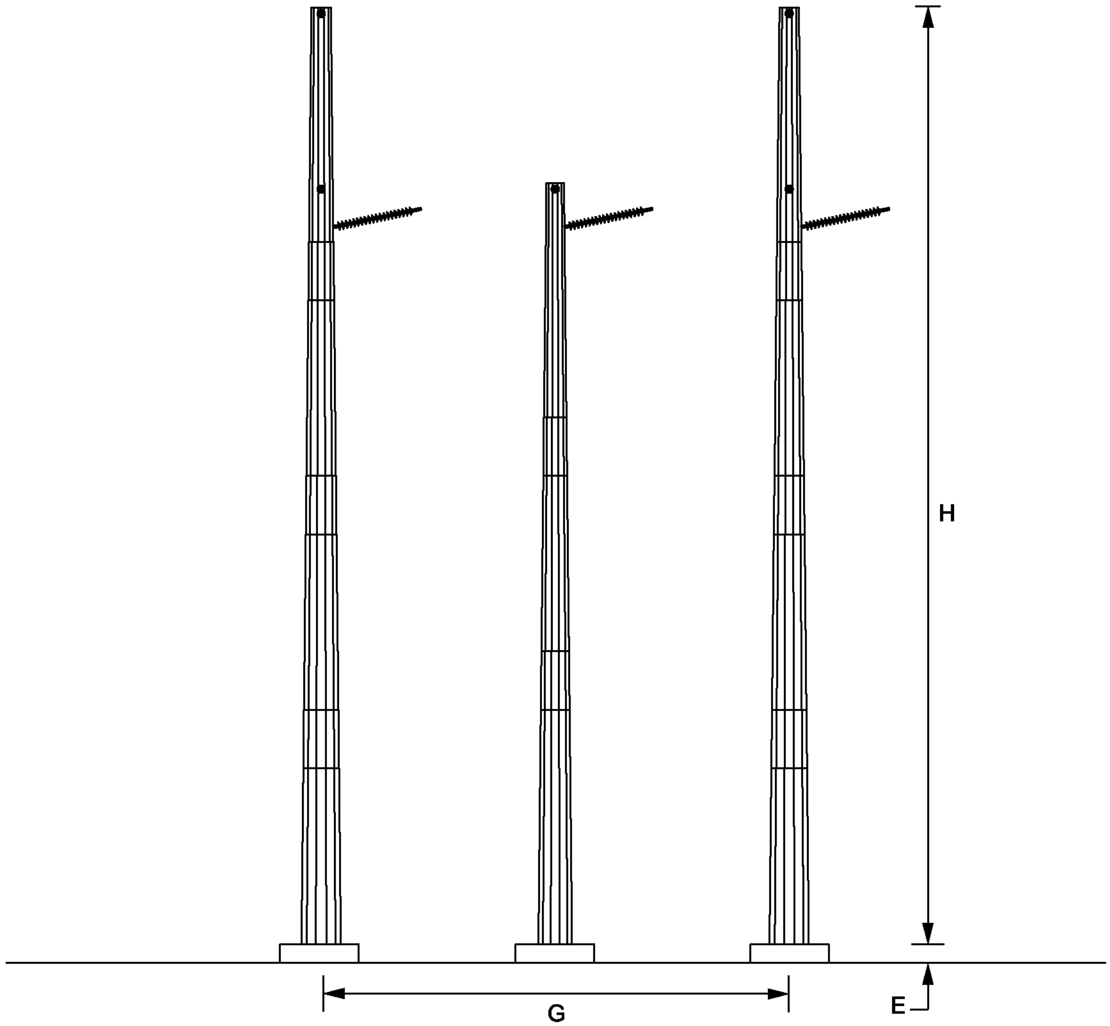
SECTION 8



SINGLE CIRCUIT 3-POLE DOUBLE DEAD-END STRUCTURE

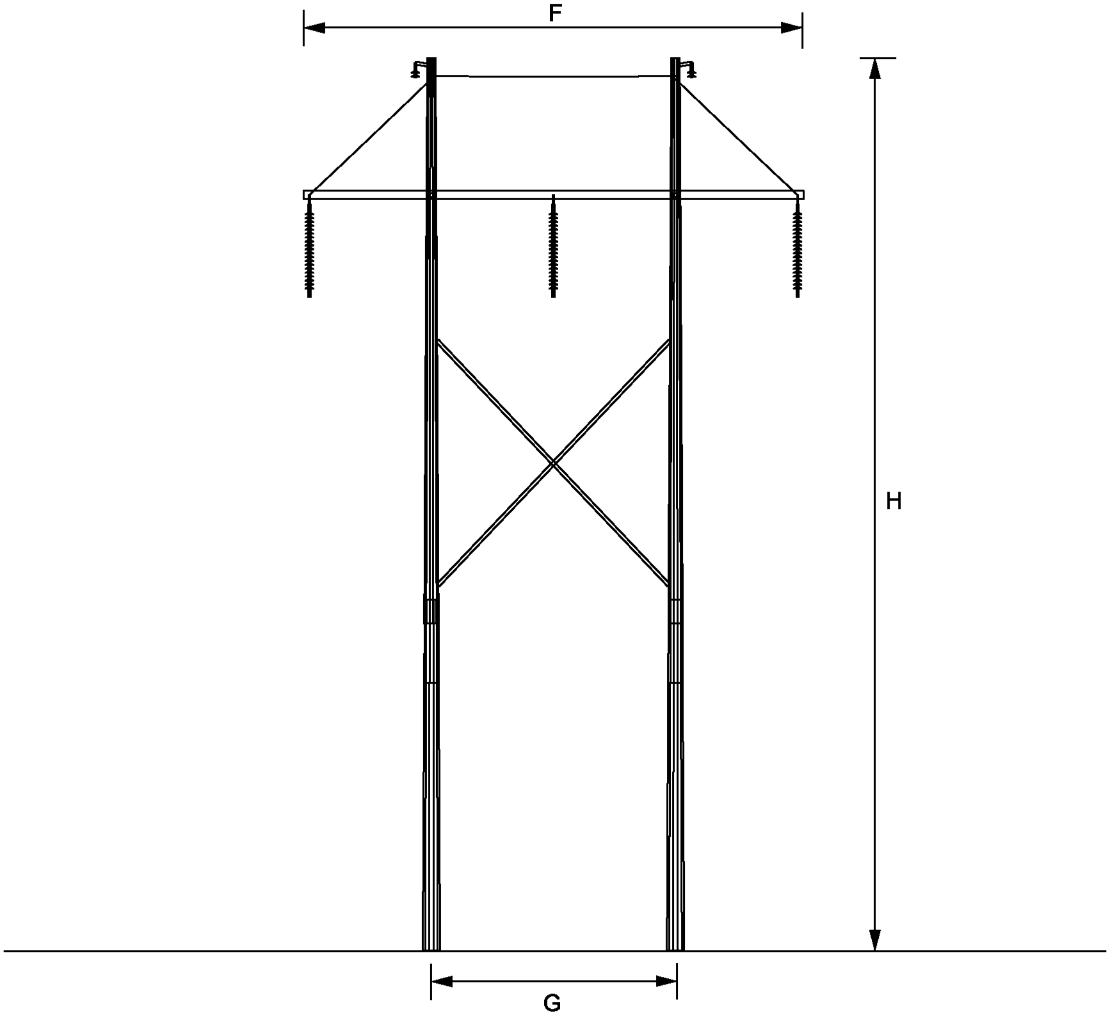
B. RATIONALE FOR STRUCTURE TYPE:	CLOSELY RESEMBLES GEOMETRY OF EXISTING STRUCTURES
C. LENGTH OF R/W (STRUCTURE QUANTITY):	8.34 MILES (3 STRUCTURES)
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONALE FOR STRUCTURE MATERIAL:	TO MATCH MATERIAL SELECTED FOR THE TYPICAL H-FRAME SUSPENSION STRUCTURES
E. FOUNDATION MATERIAL:	CONCRETE
AVERAGE FOUNDATION REVEAL:	SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	N/A
G. AVERAGE WIDTH AT BASE:	40'
H. MINIMUM STRUCTURE HEIGHT:	55'
MAXIMUM STRUCTURE HEIGHT:	75'
AVERAGE STRUCTURE HEIGHT:	67'
I. AVERAGE SPAN LENGTH:	603'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. INDIVIDUAL POLE HEIGHTS ABOVE GROUND MAY VARY SUBJECT TO FINAL LOCATION AND TERRAIN
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

Electric Transmission	SECTION 8:	DRAWING NO. ATTACHMENT II.B.3.r
Dominion Energy — Dominion Energy, 10900 Nuckols Road, Glen Allen, VA 23060	STRUCTURES 293/164 - 293/236	DRAWN ALS

$SYTIME$ $DGNSPEC$ TESBORD1

SECTION 9



SINGLE CIRCUIT H-FRAME SUSPENSION STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	CLOSELY RESEMBLES GEOMETRY OF EXISTING STRUCTURES
C. LENGTH OF R/W (STRUCTURE QUANTITY):	2.01 MILES (16 STRUCTURES)
D. STRUCTURE MATERIAL:	WEATHERING STEEL POLES AND GALVANIZED STEEL CROSS ARMS & CROSS BRACING
RATIONALE FOR STRUCTURE MATERIAL:	THE COMPANY'S STANDARD FOR DIRECT EMBED H-FRAME CONSTRUCTION IS WEATHERING STEEL
E. FOUNDATION MATERIAL:	N/A - DIRECT EMBED (SEE NOTE 4)
AVERAGE FOUNDATION REVEAL:	N/A - DIRECT EMBED
F. AVERAGE WIDTH AT CROSSARM:	42'
G. AVERAGE WIDTH AT BASE:	20.5'
H. MINIMUM STRUCTURE HEIGHT:	61'
MAXIMUM STRUCTURE HEIGHT:	84'
AVERAGE STRUCTURE HEIGHT:	72'
I. AVERAGE SPAN LENGTH:	560'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. INDIVIDUAL POLE HEIGHTS ABOVE GROUND MAY VARY SUBJECT TO FINAL LOCATION AND TERRAIN
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. IN WETLAND OR SWAMP AREAS - DIRECT EMBED INTO STEEL PIPE PILES

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SECTION 9:

STRUCTURES 293/237 - 293/255

DRAWING NO. ATTACHMENT II.B.3.s

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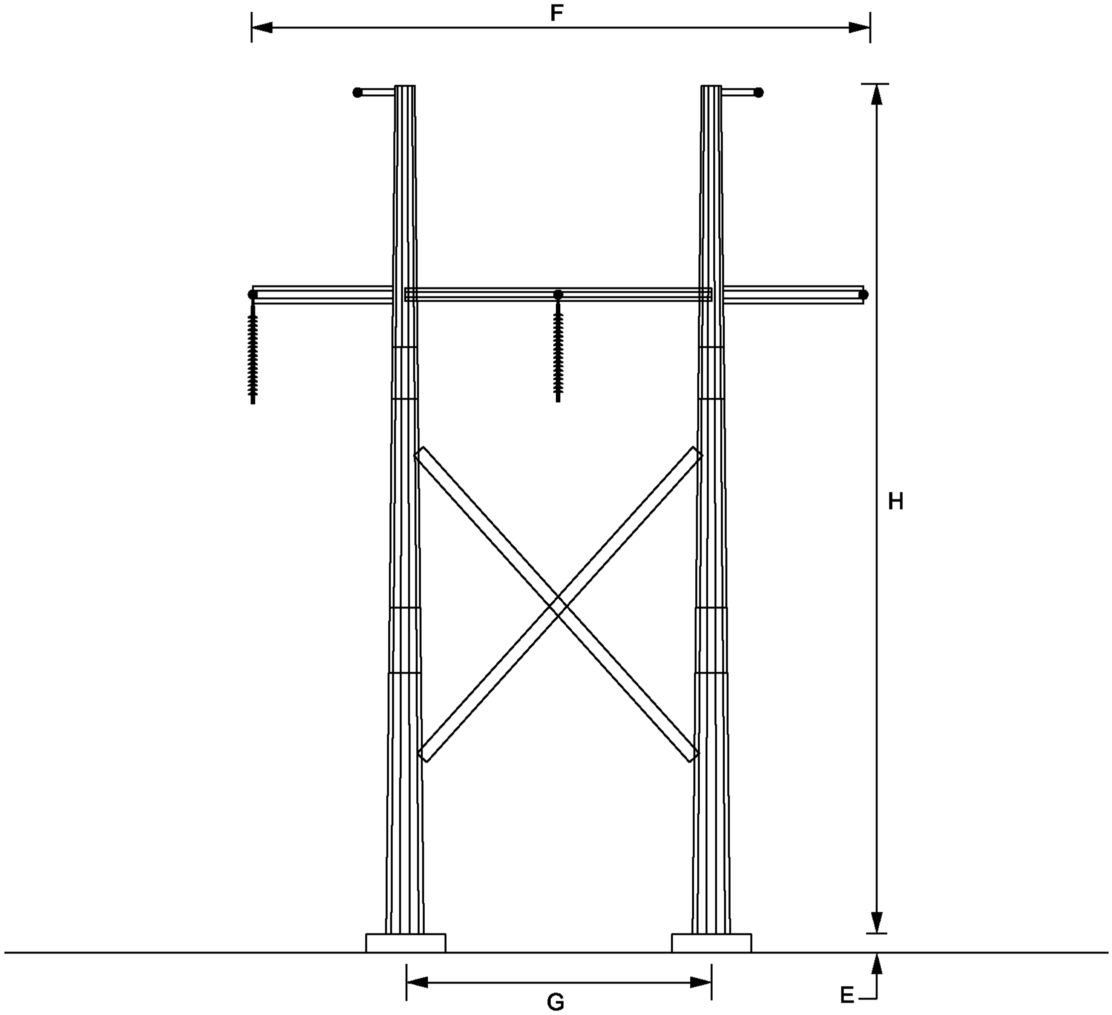
SECTION 9



SINGLE CIRCUIT H-FRAME DOUBLE DEAD-END STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	CLOSELY RESEMBLES GEOMETRY OF EXISTING STRUCTURES
C. LENGTH OF R/W (STRUCTURE QUANTITY):	2.01 MILES (2 STRUCTURES)
D. STRUCTURE MATERIAL:	WEATHERING STEEL POLES AND GALVANIZED STEEL CROSS ARM & CROSS BRACING
RATIONALE FOR STRUCTURE MATERIAL:	TO MATCH MATERIAL SELECTED FOR THE TYPICAL H-FRAME SUSPENSION STRUCTURES
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	47'
G. AVERAGE WIDTH AT BASE:	23.5'
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	55' 70' 63'
I. AVERAGE SPAN LENGTH:	560'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. INDIVIDUAL POLE HEIGHTS ABOVE GROUND MAY VARY SUBJECT TO FINAL LOCATION AND TERRAIN
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

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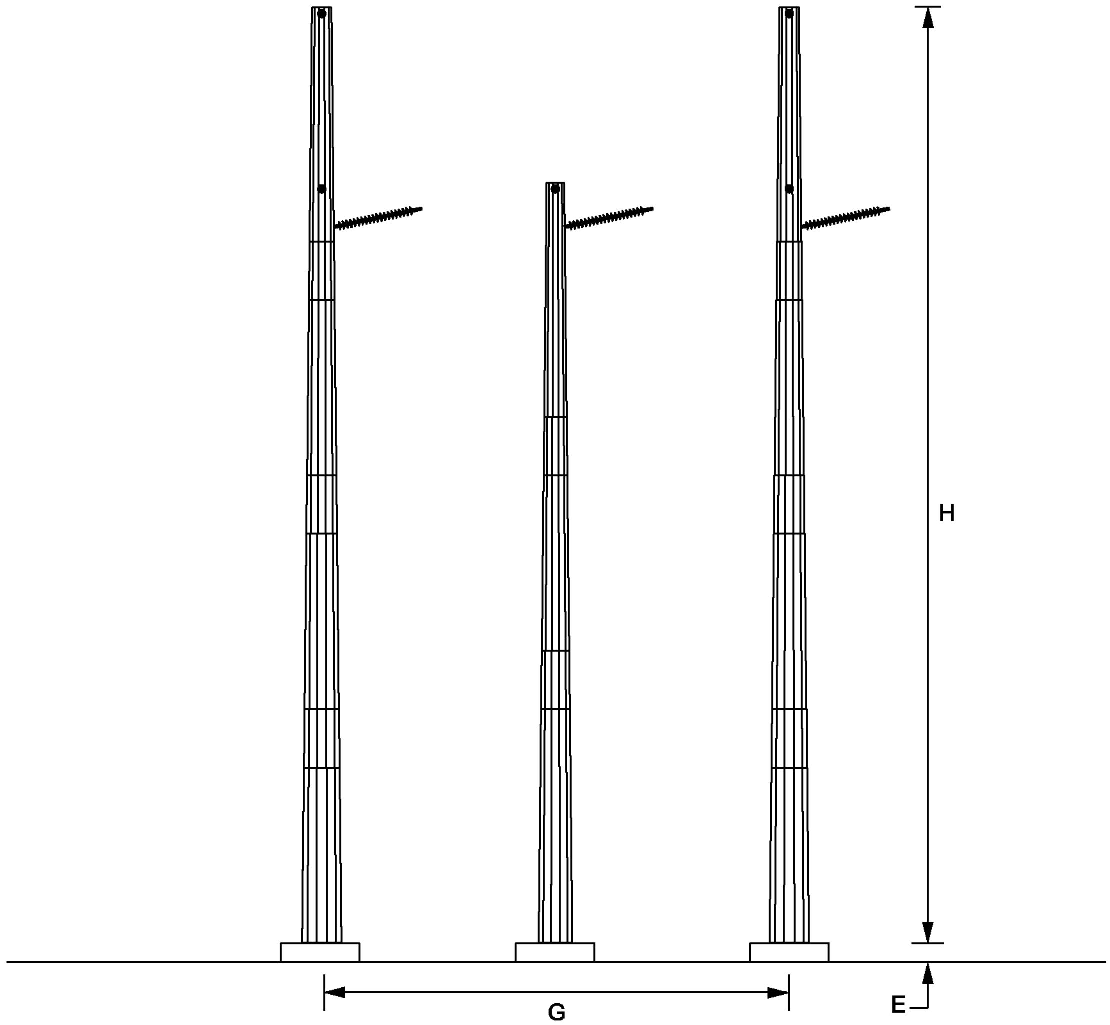
SECTION 9:

STRUCTURES 293/237 - 293/255

DRAWING NO. ATTACHMENT II.B.3.t

DRAWN ALS

SECTION 9



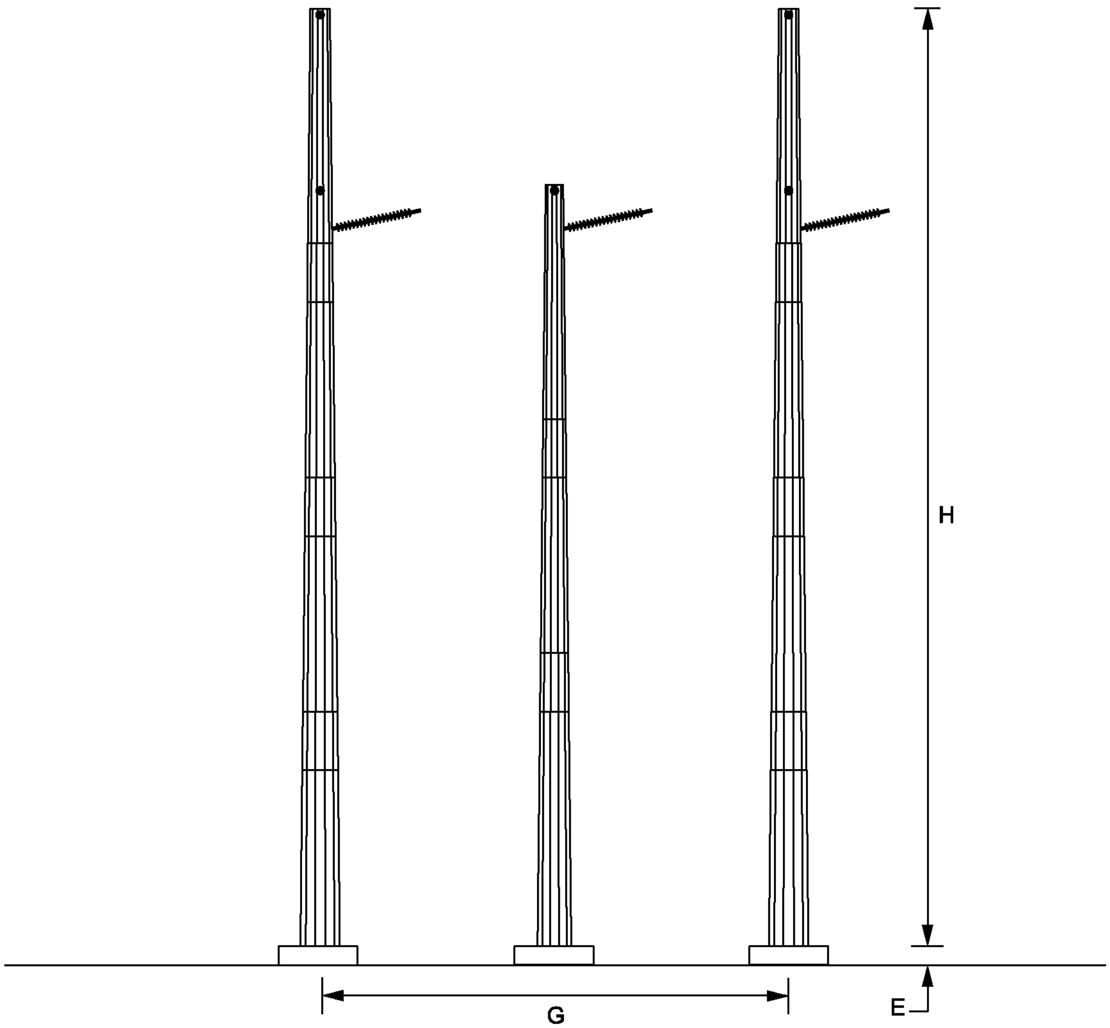
SINGLE CIRCUIT 3-POLE DOUBLE DEAD-END STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	CLOSELY RESEMBLES GEOMETRY OF EXISTING STRUCTURES
C. LENGTH OF R/W (STRUCTURE QUANTITY):	2.01 MILES (1 STRUCTURE)
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONALE FOR STRUCTURE MATERIAL:	TO MATCH MATERIAL SELECTED FOR THE TYPICAL H-FRAME SUSPENSION STRUCTURES
E. FOUNDATION MATERIAL:	CONCRETE
AVERAGE FOUNDATION REVEAL:	SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	N/A
G. AVERAGE WIDTH AT BASE:	40'
H. MINIMUM STRUCTURE HEIGHT:	65'
MAXIMUM STRUCTURE HEIGHT:	65'
AVERAGE STRUCTURE HEIGHT:	65'
I. AVERAGE SPAN LENGTH:	560'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. INDIVIDUAL POLE HEIGHTS ABOVE GROUND MAY VARY SUBJECT TO FINAL LOCATION AND TERRAIN
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

Electric Transmission	SECTION 9:	DRAWING NO. ATTACHMENT II.B.3.u
Dominion Energy — Dominion Energy, 10900 Nuckols Road, Glen Allen, VA 23060	STRUCTURES 293/237 - 293/255	DRAWN ALS

SECTION 10



SINGLE CIRCUIT 3-POLE DOUBLE DEAD-END STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	CLOSELY RESEMBLES GEOMETRY OF EXISTING STRUCTURES
C. LENGTH OF R/W (STRUCTURE QUANTITY):	0.13 MILES (1 STRUCTURE)
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONALE FOR STRUCTURE MATERIAL:	TO MATCH MATERIAL SELECTED FOR THE TYPICAL H-FRAME SUSPENSION STRUCTURES
E. FOUNDATION MATERIAL:	CONCRETE
AVERAGE FOUNDATION REVEAL:	SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	N/A
G. AVERAGE WIDTH AT BASE:	40'
H. MINIMUM STRUCTURE HEIGHT:	70'
MAXIMUM STRUCTURE HEIGHT:	70'
AVERAGE STRUCTURE HEIGHT:	70'
I. AVERAGE SPAN LENGTH:	708'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. INDIVIDUAL POLE HEIGHTS ABOVE GROUND MAY VARY SUBJECT TO FINAL LOCATION AND TERRAIN
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

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SECTION 10:

STRUCTURE 293/256

DRAWING NO. ATTACHMENT II.B.3.v

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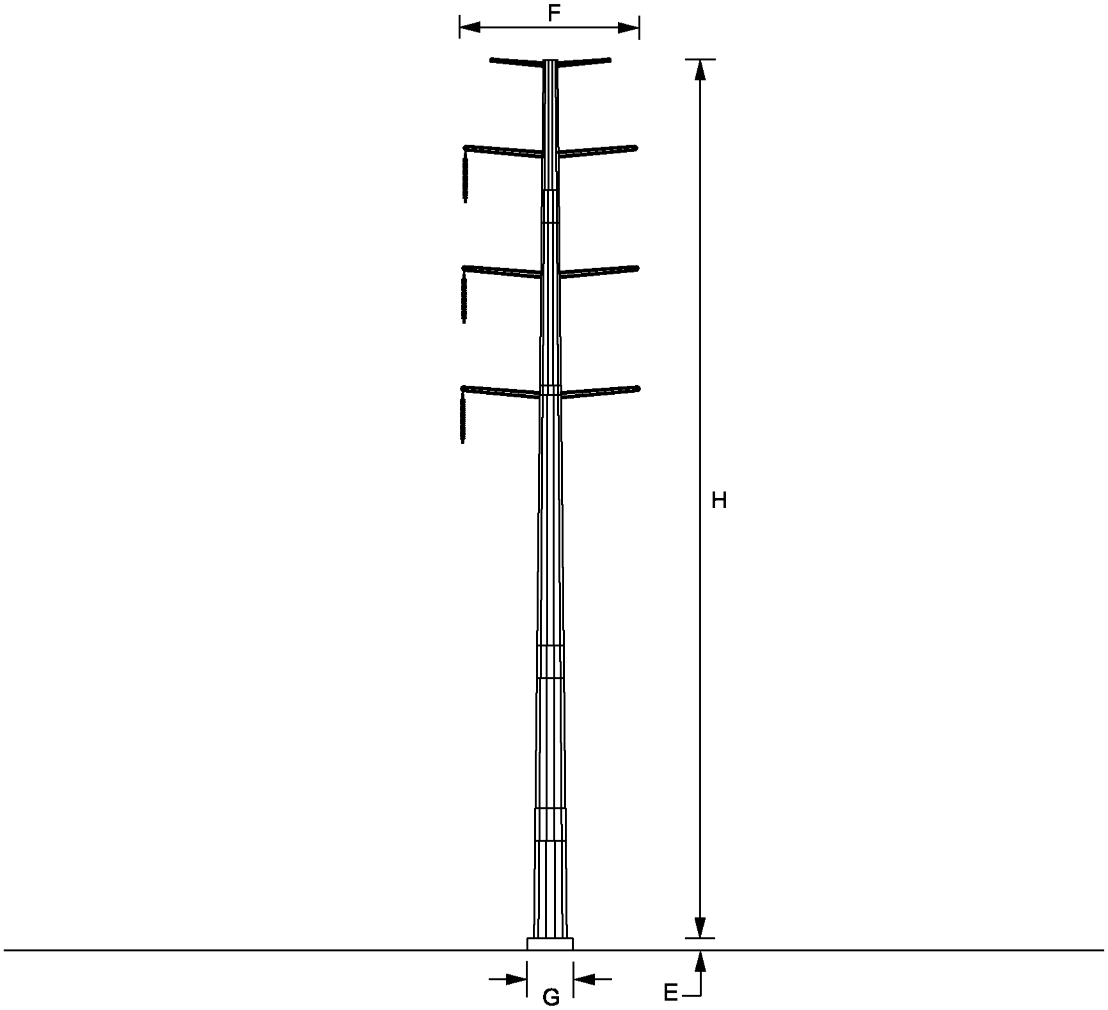
VALLEY SUBSTATION PROPERTY



DOUBLE CIRCUIT MONOPOLE DOUBLE DEAD-END STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	CLOSELY RESEMBLES GEOMETRY OF EXISTING STRUCTURES
C. LENGTH OF R/W (STRUCTURE QUANTITY):	0.13 MILES (1 STRUCTURE)
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONALE FOR STRUCTURE MATERIAL:	WEATHERING STEEL WAS SELECTED TO MATCH THE EXISTING STRUCTURES CARRYING LINES #253 AND #293
E. FOUNDATION MATERIAL:	CONCRETE
AVERAGE FOUNDATION REVEAL:	SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	27'
G. AVERAGE WIDTH AT BASE:	9'-6" DIAMETER FOUNDATION (SEE NOTE 1)
H. MINIMUM STRUCTURE HEIGHT:	100'
MAXIMUM STRUCTURE HEIGHT:	100'
AVERAGE STRUCTURE HEIGHT:	100'
I. AVERAGE SPAN LENGTH:	331'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. INDIVIDUAL POLE HEIGHTS ABOVE GROUND MAY VARY SUBJECT TO FINAL LOCATION AND TERRAIN
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

Electric Transmission	VALLEY SUBSTATION PROPERTY: STRUCTURES 293/259 (253/64) - 293/261	DRAWING NO. ATTACHMENT II.B.3.w
Dominion Energy — Dominion Energy, 10900 Nuckols Road, Glen Allen, VA 23060	111	DRAWN ALS

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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.a for structure mapping.

See the table below for the existing and proposed heights of permanent structures related to the Rebuild Project. The proposed approximate structure heights are from the conceptual design created to estimate the cost of the Rebuild Project and are subject to change based on 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
2156/87A, 293/87A*	97	97	N/A
293/88, 83/1*	131	131	N/A
293/89, 83/2*	115	115	N/A
293/90, 83/3	124	130	II.B.3.a
293/91, 83/4*	115	115	N/A
293/92, 83/5*	115	115	N/A
293/93, 83/6*	100	100	N/A
293/94, 83/7*	131	131	N/A
293/95, 83/8*	131	131	N/A
293/96, 83/9	126	135	II.B.3.b
293/97, 83/10	148	140	II.B.3.c
293/98, 83/11	117	130	II.B.3.c
293/99, 83/12	114	115	II.B.3.d
293/100, 83/13	121	140	II.B.3.c
293/101, 83/14	127	145	II.B.3.c
293/102, 83/15	121	135	II.B.3.d
293/103, 83/16	134	155	II.B.3.d
293/104, 83/17	146	150	II.B.3.d
293/105, 83/18	130	135	II.B.3.c
293/106, 83/19	145	155	II.B.3.c
293/107, 83/20	147	150	II.B.3.e
293/108, 83/21	117	120	II.B.3.e
293/109, 83/22	127	130	II.B.3.e
293/110, 83/23	117	110	II.B.3.f
293/111	55	65	II.B.3.h
293/112	79	84	II.B.3.g

Structure Number	Existing Structure Height (ft.)	Proposed Structure Height (ft.)	Attachment II.B.3 Structure Type
293/113	66	79	II.B.3.g
293/114	57	75	II.B.3.g
293/115	55	55	II.B.3.i
293/116	69	79	II.B.3.g
293/117	47	75	II.B.3.g
293/118	60	66	II.B.3.g
293/119	69	75	II.B.3.g
293/120	48	61	II.B.3.g
293/121	73	80	II.B.3.i
293/122	79	93	II.B.3.g
293/123	78	88	II.B.3.g
293/124	69	80	II.B.3.i
293/125	62	84	II.B.3.g
293/126	70	79	II.B.3.g
293/127	83	88	II.B.3.g
293/128	84	90	II.B.3.k
293/129	78	84	II.B.3.j
293/130	56	85	II.B.3.k
293/131	67	84	II.B.3.j
293/132	68	55	II.B.3.l
293/133	69	70	II.B.3.j
293/134	62	79	II.B.3.j
293/135	69	70	II.B.3.j
293/136	60	65	II.B.3.l
293/137	65	80	II.B.3.k
293/138	79	70	II.B.3.j
293/139	57	70	II.B.3.j
293/140	52	66	II.B.3.j
293/141	74	80	II.B.3.k
293/142	76	88	II.B.3.j
293/143	66	75	II.B.3.j
293/144	63	75	II.B.3.j
293/145*	69	69	N/A
293/146	78	75	II.B.3.j
293/147	86	93	II.B.3.j
293/148	76	79	II.B.3.j
293/149	72	79	II.B.3.j
293/149A	N/A	39	N/A
293/150	65	70	II.B.3.l
293/150A*	65	65	N/A
293/151	61	60	II.B.3.n
293/151A	N/A	39	N/A

Structure Number	Existing Structure Height (ft.)	Proposed Structure Height (ft.)	Attachment II.B.3 Structure Type
293/152	78	84	II.B.3.m
293/153	60	66	II.B.3.m
293/154	65	66	II.B.3.m
293/155	65	70	II.B.3.m
293/156	66	79	II.B.3.m
293/157	70	70	II.B.3.m
293/158	55	88	II.B.3.m
293/159	65	84	II.B.3.m
293/160	55	55	II.B.3.o
293/161	70	84	II.B.3.m
293/162	50	52	II.B.3.m
293/163	53	84	II.B.3.m
293/164	74	79	II.B.3.p
293/165	53	57	II.B.3.p
293/166	53	57	II.B.3.p
293/167	65	70	II.B.3.p
293/168	66	70	II.B.3.p
293/169	74	79	II.B.3.p
293/170	66	70	II.B.3.p
293/171	51	61	II.B.3.p
293/172	60	66	II.B.3.p
293/173	75	84	II.B.3.p
293/174	75	75	II.B.3.r
293/175	62	66	II.B.3.p
293/176	62	66	II.B.3.p
293/177	58	70	II.B.3.p
293/178	59	75	II.B.3.p
293/179	64	70	II.B.3.p
293/180*	77	77	N/A
293/181*	68	68	N/A
293/182*	71	71	N/A
293/183	70	84	II.B.3.p
293/184	63	75	II.B.3.p
293/185	60	66	II.B.3.p
293/186	63	66	II.B.3.p
293/187*	72	72	N/A
293/188*	61	61	N/A
293/189	58	66	II.B.3.p
293/190*	59	59	N/A
293/191*	77	77	N/A
293/192	81	84	II.B.3.p
293/193	62	75	II.B.3.p

Structure Number	Existing Structure Height (ft.)	Proposed Structure Height (ft.)	Attachment II.B.3 Structure Type
293/194	58	75	II.B.3.p
293/195	60	65	II.B.3.q
293/196*	77	77	N/A
293/197	53	61	II.B.3.p
293/198	69	70	II.B.3.p
293/199	60	75	II.B.3.p
293/200	73	75	II.B.3.p
293/201	69	79	II.B.3.p
293/202	61	66	II.B.3.p
293/203	79	85	II.B.3.q
293/204	52	66	II.B.3.p
293/205	60	66	II.B.3.p
293/206	59	61	II.B.3.p
293/207	59	66	II.B.3.p
293/208	53	61	II.B.3.p
293/209	52	61	II.B.3.p
293/210	54	57	II.B.3.p
293/211	68	70	II.B.3.p
293/212	68	66	II.B.3.p
293/213	67	61	II.B.3.p
293/214	80	84	II.B.3.p
293/215	60	61	II.B.3.p
293/216	72	79	II.B.3.p
293/217	57	70	II.B.3.p
293/218	63	75	II.B.3.p
293/219	70	80	II.B.3.q
293/220	58	66	II.B.3.p
293/221	80	90	II.B.3.q
293/222	53	57	II.B.3.p
293/223	67	88	II.B.3.p
293/224	52	70	II.B.3.r
293/225	66	57	II.B.3.p
293/226	54	65	II.B.3.q
293/227	62	61	II.B.3.p
293/228	51	79	II.B.3.p
293/229	61	61	II.B.3.p
293/230	65	66	II.B.3.p
293/231	60	66	II.B.3.p
293/232	67	70	II.B.3.q
293/233	71	55	II.B.3.r
293/234	62	85	II.B.3.q
293/235	51	65	II.B.3.q

Structure Number	Existing Structure Height (ft.)	Proposed Structure Height (ft.)	Attachment II.B.3 Structure Type
293/236	66	70	II.B.3.p
293/237	56	65	II.B.3.u
293/238	58	61	II.B.3.s
293/239	59	66	II.B.3.s
293/240	80	79	II.B.3.s
293/241	52	75	II.B.3.s
293/242	62	84	II.B.3.s
293/243	66	75	II.B.3.s
293/244	74	84	II.B.3.s
293/245	67	84	II.B.3.s
293/246	58	61	II.B.3.s
293/247	76	84	II.B.3.s
293/248	58	66	II.B.3.s
293/249	69	70	II.B.3.s
293/250	64	70	II.B.3.s
293/251	53	61	II.B.3.s
293/252	61	66	II.B.3.s
293/253	62	70	II.B.3.s
293/254	71	70	II.B.3.t
293/255	66	55	II.B.3.t
293/256	70	70	II.B.3.v
253/64, 293/259	101	100	II.B.3.w
253/65, 293/260*	91	91	N/A
293/261*	70	70	N/A
Minimum**	47	39	
Maximum**	148	155	
Average**	73	80	

* Existing structure included as part of the Rebuild Project but not to be replaced.
** Inclusive of structures not being replaced.

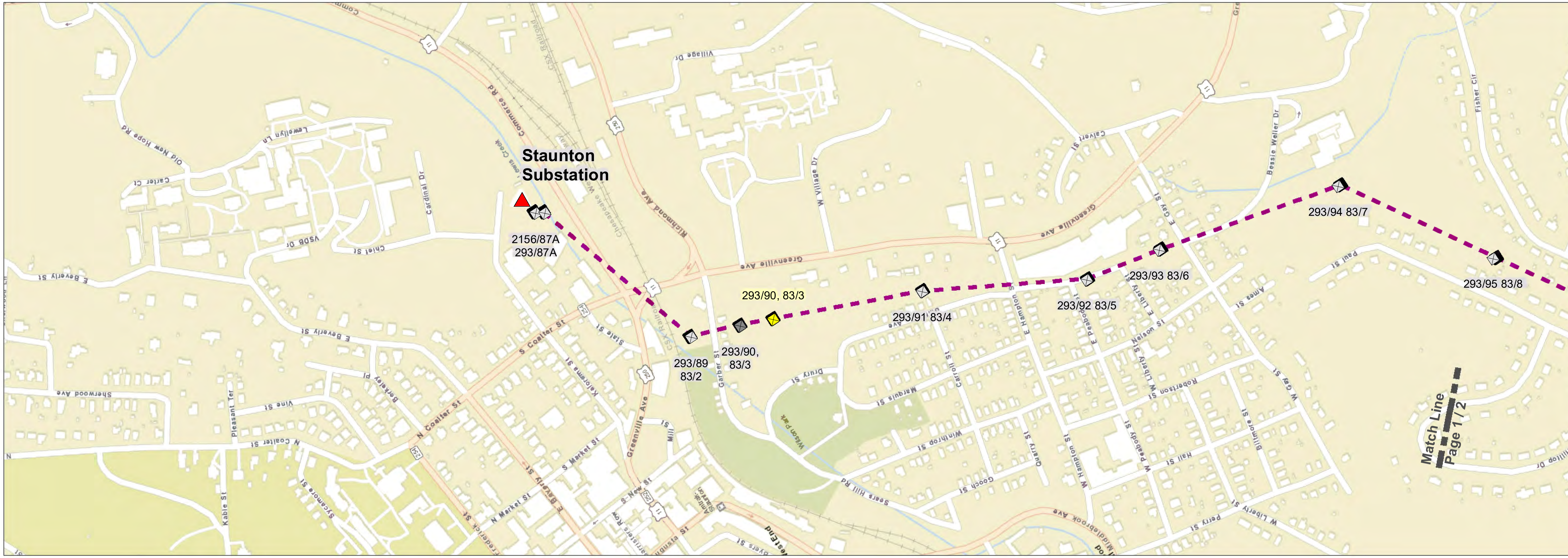

Table II.B.5

Existing Structure Number	293/90, 83/3
Existing Structure Height (Feet)	124

Proposed Structure Number	293/90, 83/3
Proposed Structure Height (Feet)	130

*Structure heights do not include foundation reveal. Proposed heights based on preliminary engineering

Notes
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- Substation
- Proposed Structure
- Existing Structure to Remain
- Existing Structure to be Replaced
- Lines #293 and #83 Project Centerline
- Line #293 Project Centerline

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Augusta County and City of Staunton, Virginia

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Client/Project
203401607
Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

Figure No.
II.B.5

Title
Existing and Proposed Structures

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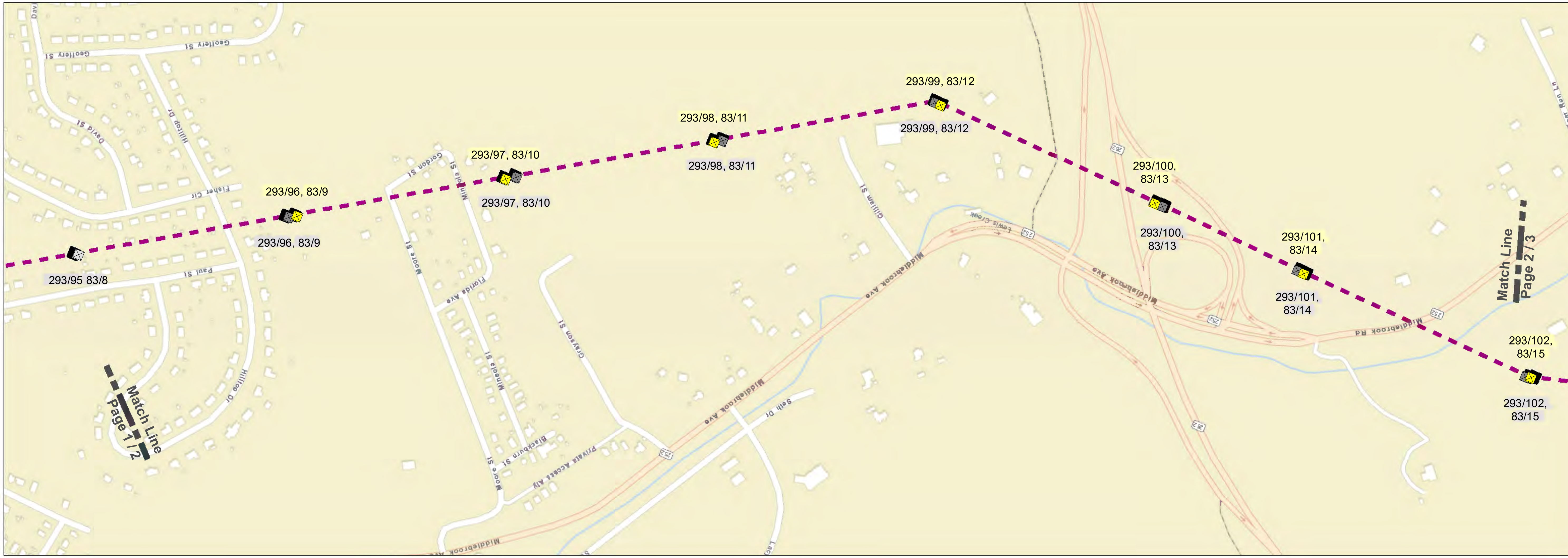
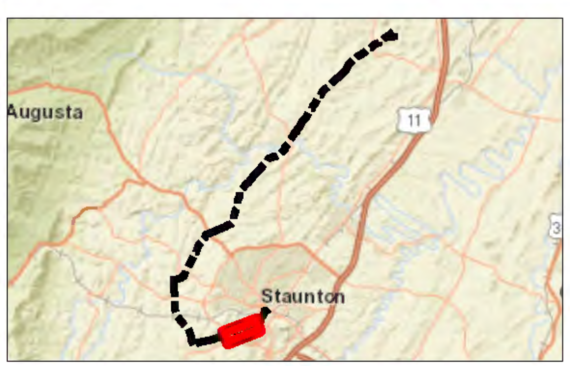


Table II.B.5

Existing Structure Number	293/96, 83/9	293/97, 83/10	293/98, 83/11	293/99, 83/12	293/100, 83/13	293/101, 83/14	293/102, 83/15
Existing Structure Height (Feet)	126	148	117	114	121	127	121

Proposed Structure Number	293/96, 83/9	293/97, 83/10	293/98, 83/11	293/99, 83/12	293/100, 83/13	293/101, 83/14	293/102, 83/15
Proposed Structure Height (Feet)	135	140	130	115	140	145	135

*Structure heights do not include foundation reveal. Proposed heights based on preliminary engineering



Substation
Proposed Structure
Existing Structure to Remain
Existing Structure to be Replaced
Lines #293 and #83 Project Centerline
Line #293 Project Centerline

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Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

Figure No.
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Title
Existing and Proposed Structures

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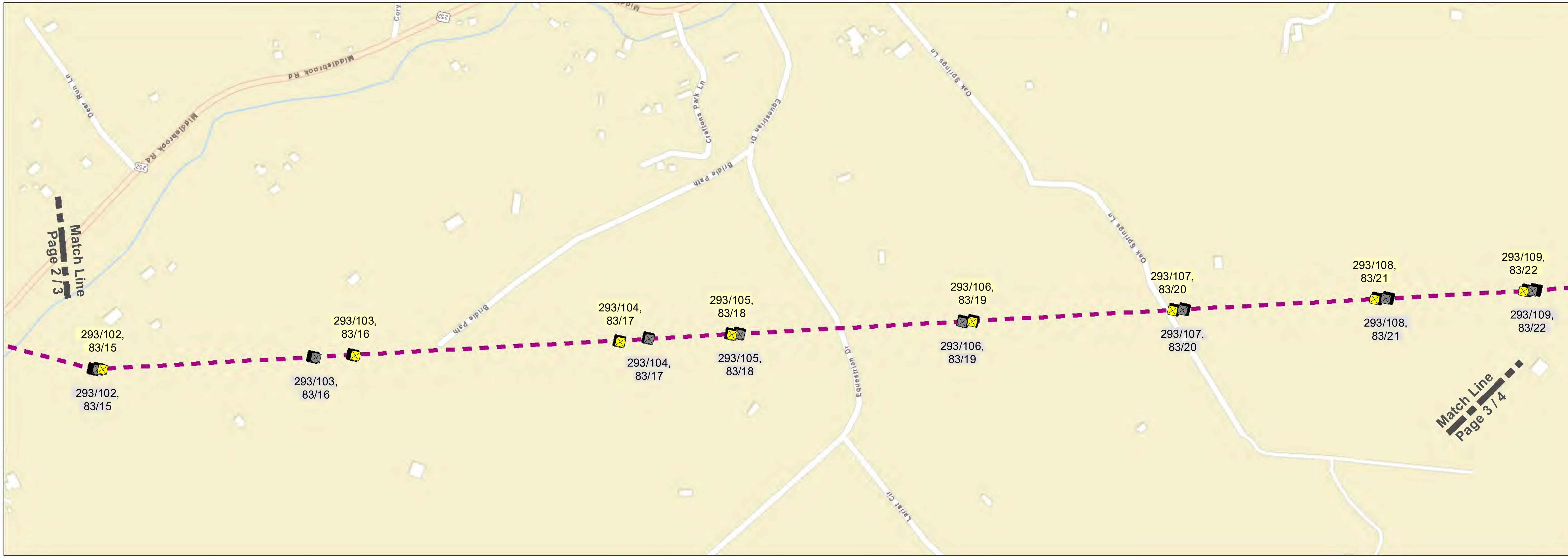
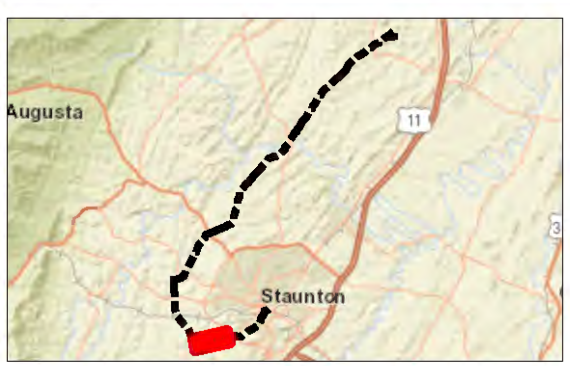


Table II.B.5

Existing Structure Number	293/102, 83/15	293/103, 83/16	293/104, 83/17	293/105, 83/18	293/106, 83/19	293/107, 83/20	293/108, 83/21	293/109, 83/22
Existing Structure Height (Feet)	121	134	146	130	145	147	117	127

Proposed Structure Number	293/102, 83/15	293/103, 83/16	293/104, 83/17	293/105, 83/18	293/106, 83/19	293/107, 83/20	293/108, 83/21	293/109, 83/22
Proposed Structure Height (Feet)	135	155	150	135	150	150	120	130

*Structure heights do not include foundation reveal. Proposed heights based on preliminary engineering



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- Proposed Structure
- Existing Structure to Remain
- Existing Structure to be Replaced
- Lines #293 and #83 Project Centerline
- Line #293 Project Centerline

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Client/Project
203401607
Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

Figure No.
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Title
Existing and Proposed Structures

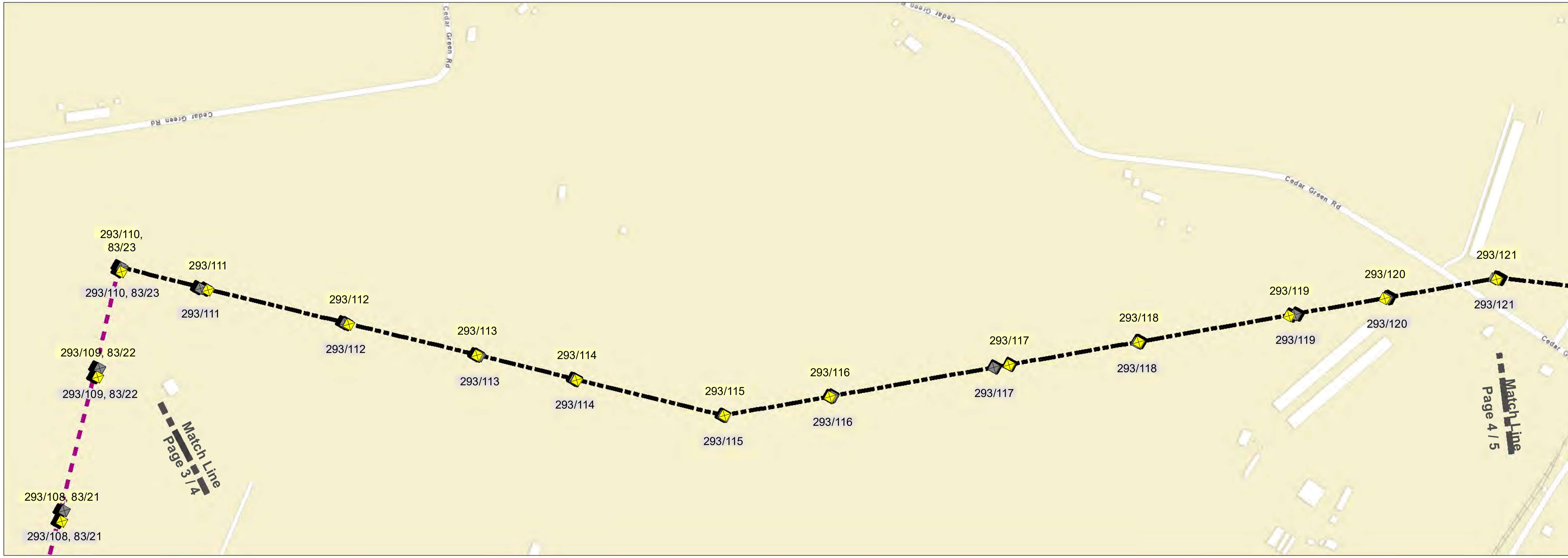
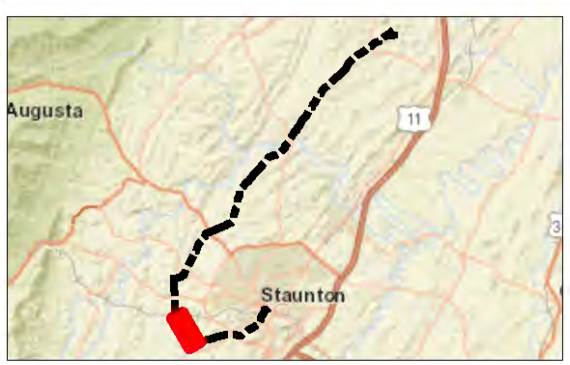


Table II.B.5

Existing Structure Number	293/108, 83/21	293/109, 83/22	293/110, 83/23	293/111	293/112	293/113	293/114	293/115	293/116	293/117	293/118	293/119	293/120	293/121
Existing Structure Height (Feet)	117	127	117	55	79	66	57	55	69	47	60	69	48	73

Proposed Structure Number	293/108, 83/21	293/109, 83/22	293/110, 83/23	293/111	293/112	293/113	293/114	293/115	293/116	293/117	293/118	293/119	293/120	293/121
Proposed Structure Height (Feet)	120	130	110	65	84	79	75	55	79	75	66	75	61	80

*Structure heights do not include foundation reveal. Proposed heights based on preliminary engineering



Substation
Proposed Structure
Existing Structure to Remain
Existing Structure to be Replaced
Lines #293 and #83 Project Centerline
Line #293 Project Centerline

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Client/Project 203401607
Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

Figure No.
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Title
Existing and Proposed Structures

Notes
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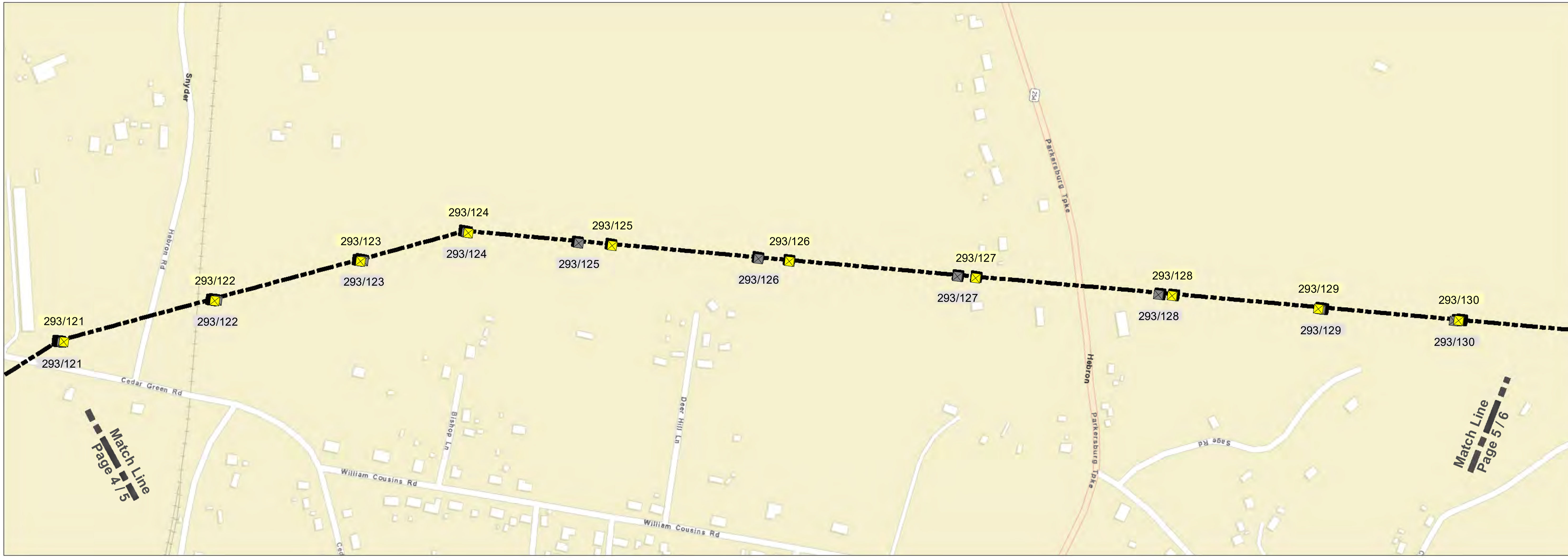
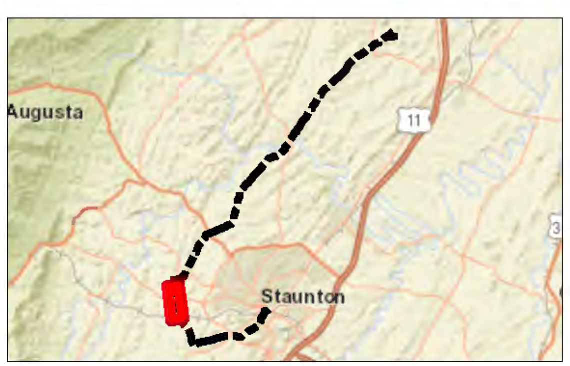


Table II.B.5

Existing Structure Number	293/121	293/122	293/123	293/124	293/125	293/126	293/127	293/128	293/129	293/130
Existing Structure Height (Feet)	73	79	78	69	62	70	83	84	78	56

Proposed Structure Number	293/121	293/122	293/123	293/124	293/125	293/126	293/127	293/128	293/129	293/130
Proposed Structure Height (Feet)	80	93	88	80	84	79	88	90	84	85

*Structure heights do not include foundation reveal. Proposed heights based on preliminary engineering



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Substation
Proposed Structure
Existing Structure to Remain
Existing Structure to be Replaced
Lines #293 and #83 Project Centerline
Line #293 Project Centerline

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Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

Figure No.
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Title
Existing and Proposed Structures

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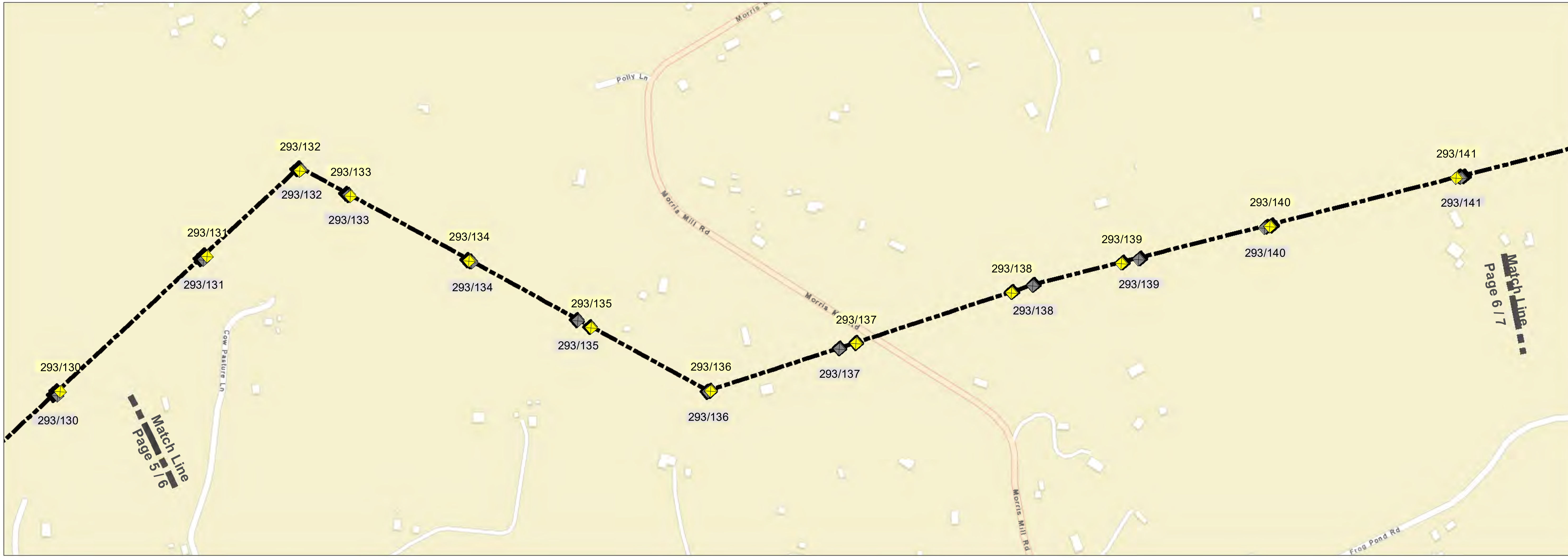
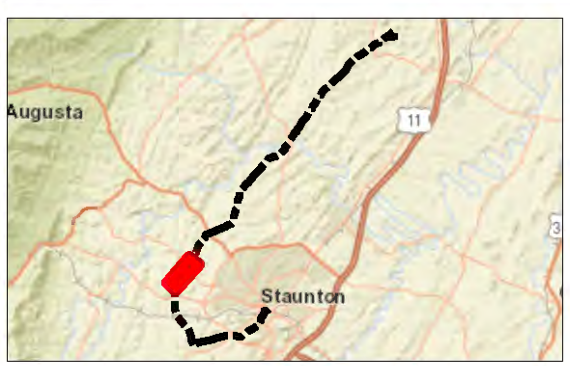


Table II.B.5

Existing Structure Number	293/130	293/131	293/132	293/133	293/134	293/135	293/136	293/137	293/138	293/139	293/140	293/141
Existing Structure Height (Feet)	56	67	68	69	62	69	60	65	79	57	52	74

Proposed Structure Number	293/130	293/131	293/132	293/133	293/134	293/135	293/136	293/137	293/138	293/139	293/140	293/141
Proposed Structure Height (Feet)	85	84	55	70	79	70	65	80	70	70	66	80

*Structure heights do not include foundation reveal. Proposed heights based on preliminary engineering



Substation
Proposed Structure
Existing Structure to Remain
Existing Structure to be Replaced
Lines #293 and #83 Project Centerline
Line #293 Project Centerline

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230 kV Line #293 and 115 kV Line #83 Rebuild Project

Figure No.
II.B.5

Title
Existing and Proposed Structures

Notes
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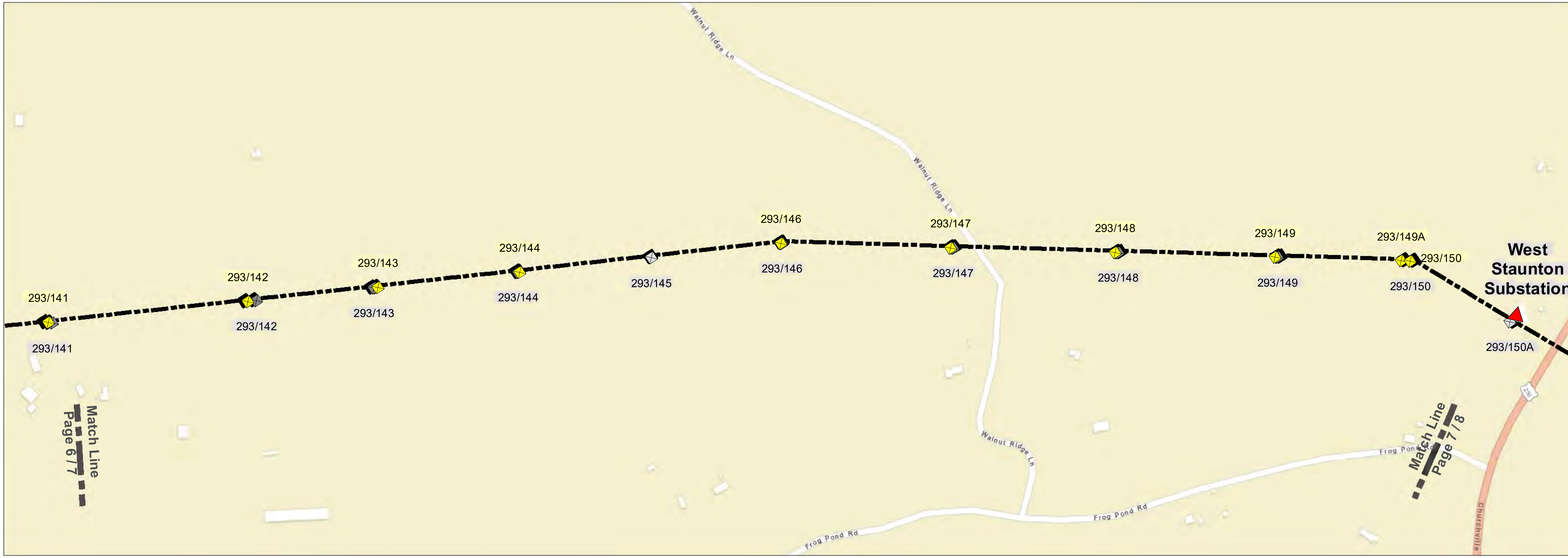
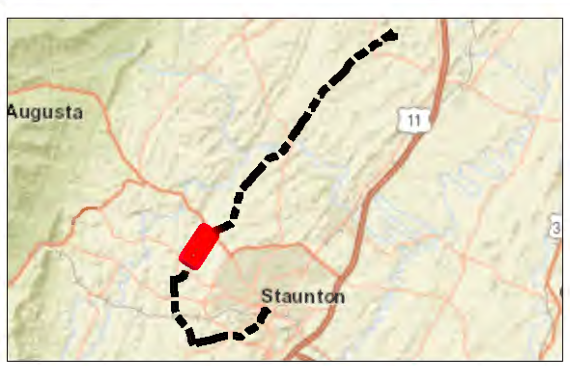


Table II.B.5

Existing Structure Number	293/141	293/142	293/143	293/144	293/146	293/147	293/148	293/149	293/149A	293/150
Existing Structure Height (Feet)	74	76	66	63	78	86	76	72	N/A	65

Proposed Structure Number	293/141	293/142	293/143	293/144	293/146	293/147	293/148	293/149	293/149A	293/150
Proposed Structure Height (Feet)	80	88	75	75	75	93	79	79	39	70

*Structure heights do not include foundation reveal. Proposed heights based on preliminary engineering



- Substation
- Proposed Structure
- Existing Structure to Remain
- Existing Structure to be Replaced
- Lines #293 and #83 Project Centerline
- Line #293 Project Centerline

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Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

Figure No.
II.B.5

Title
Existing and Proposed Structures

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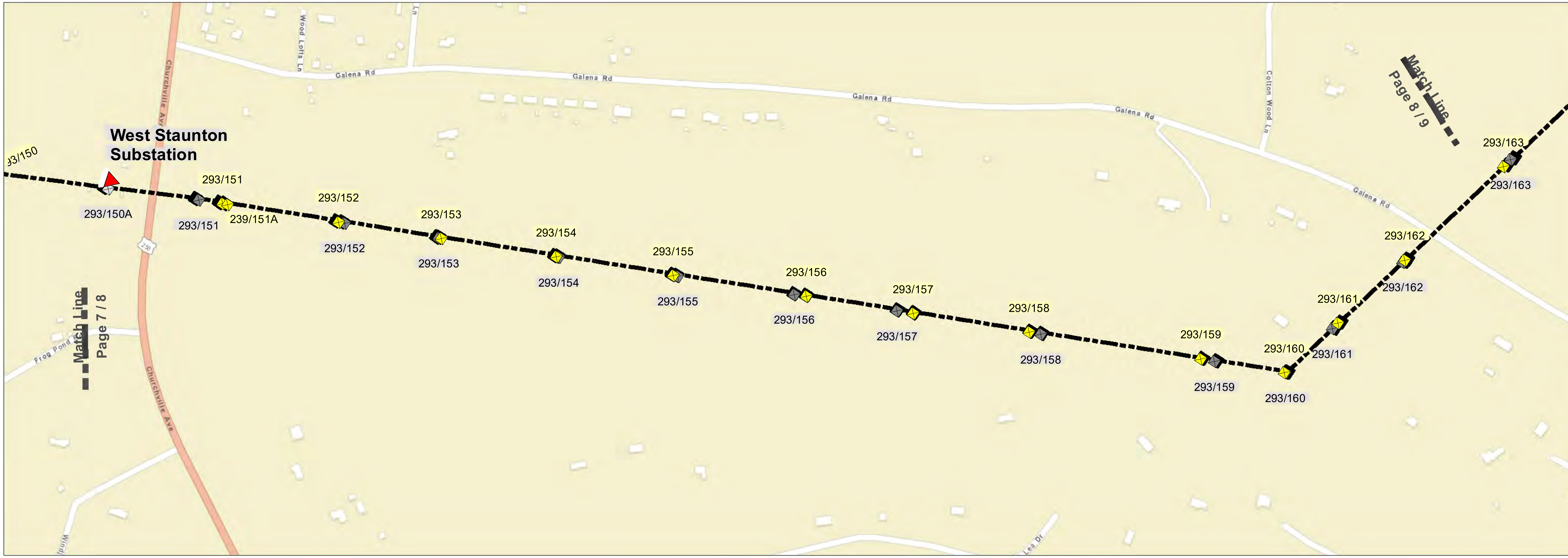
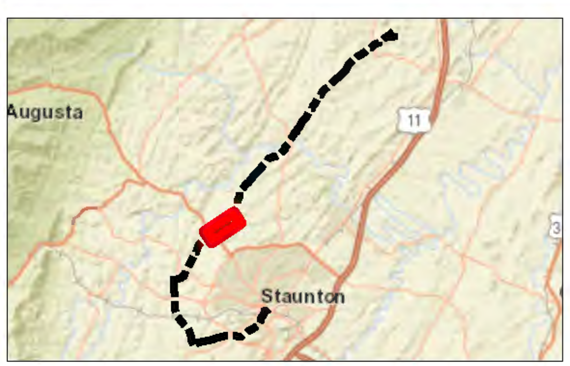


Table II.B.5

Existing Structure Number	293/151	293/151A	293/152	293/153	293/154	293/155	293/156	293/157	293/158	293/159	293/160	293/161	293/162	293/163
Existing Structure Height (Feet)	61	N/A	78	60	65	65	66	70	55	65	55	70	50	53

Proposed Structure Number	293/151	293/151A	293/152	293/153	293/154	293/155	293/156	293/157	293/158	293/159	293/160	293/161	293/162	293/163
Proposed Structure Height (Feet)	60	39	84	66	66	70	79	70	88	84	55	84	52	84

*Structure heights do not include foundation reveal. Proposed heights based on preliminary engineering



- Substation
- Proposed Structure
- Existing Structure to Remain
- Existing Structure to be Replaced
- Lines #293 and #83 Project Centerline
- Line #293 Project Centerline

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Project Location
Augusta County and City of Staunton, Virginia

Prepared by MGS on 2021-08-03
TR by TPS on 2021-08-10
IR by CPG on 2021-08-09

Client/Project
203401607
Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

Figure No.
II.B.5

Title
Existing and Proposed Structures

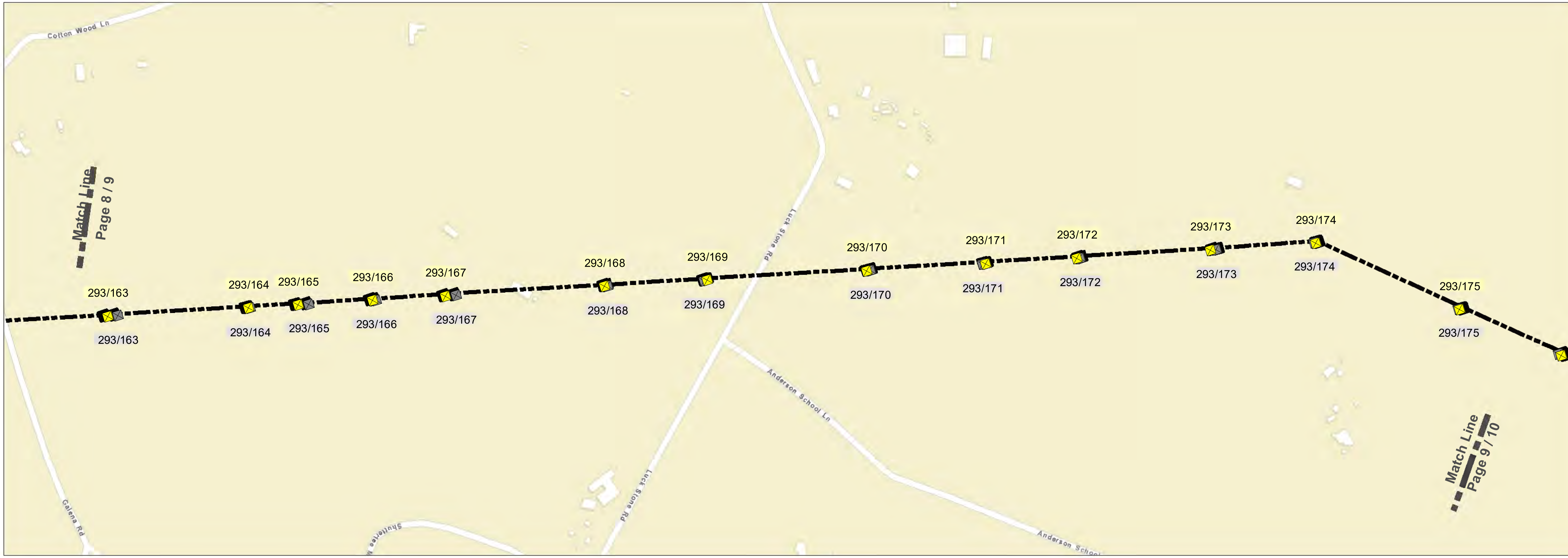
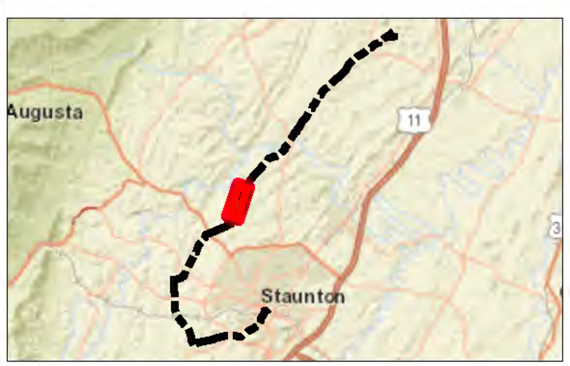


Table II.B.5

Existing Structure Number	293/163	293/164	293/165	293/166	293/167	293/168	293/169	293/170	293/171	293/172	293/173	293/174	293/175	293/176
Existing Structure Height (Feet)	53	74	53	53	65	68	74	66	51	60	75	75	62	62

Proposed Structure Number	293/163	293/164	293/165	293/166	293/167	293/168	293/169	293/170	293/171	293/172	293/173	293/174	293/175	293/176
Proposed Structure Height (Feet)	84	79	57	57	70	70	79	70	61	66	84	75	66	66

*Structure heights do not include foundation reveal. Proposed heights based on preliminary engineering



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Structure locations provided by Dominion Energy Virginia
3. Base Map © ESRI World Street Map

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Project Location
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Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

Figure No.
II.B.5

Title
Existing and Proposed Structures

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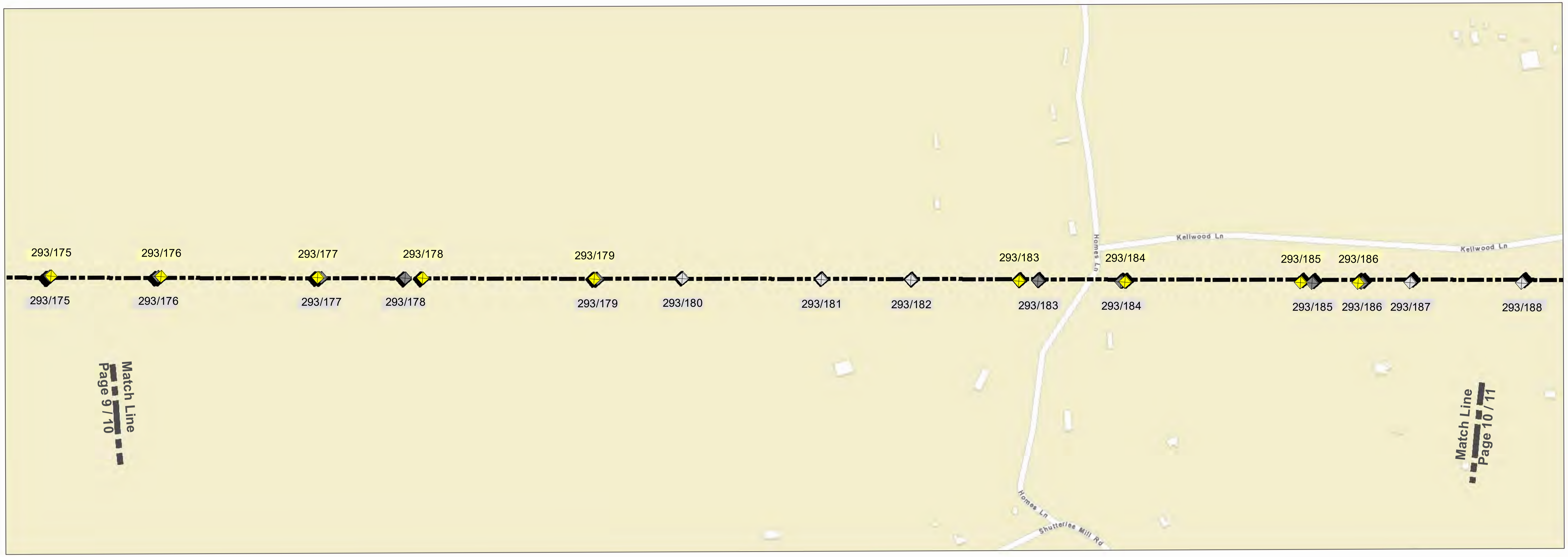
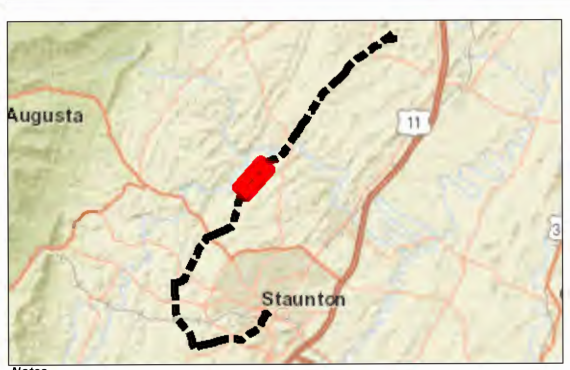


Table II.B.5

Existing Structure Number	293/175	293/176	293/177	293/178	293/179	293/183	293/184	293/185	293/186
Existing Structure Height (Feet)	62	62	58	59	64	70	63	60	63

Proposed Structure Number	293/175	293/176	293/177	293/178	293/179	293/183	293/184	293/185	293/186
Proposed Structure Height (Feet)	66	66	70	75	70	84	75	66	66

*Structure heights do not include foundation reveal. Proposed heights based on preliminary engineering



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Structure locations provided by Dominion Energy Virginia
3. Base Map © ESRI World Street Map

Substation
Proposed Structure
Existing Structure to Remain
Existing Structure to be Replaced
Lines #293 and #83 Project Centerline
Line #293 Project Centerline

0 500 1,000 Feet
(At original document size of 11x17)
1:6,000

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Project Location
Augusta County and City of Staunton, Virginia

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Client/Project
203401607
Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

Figure No.
II.B.5

Title
Existing and Proposed Structures

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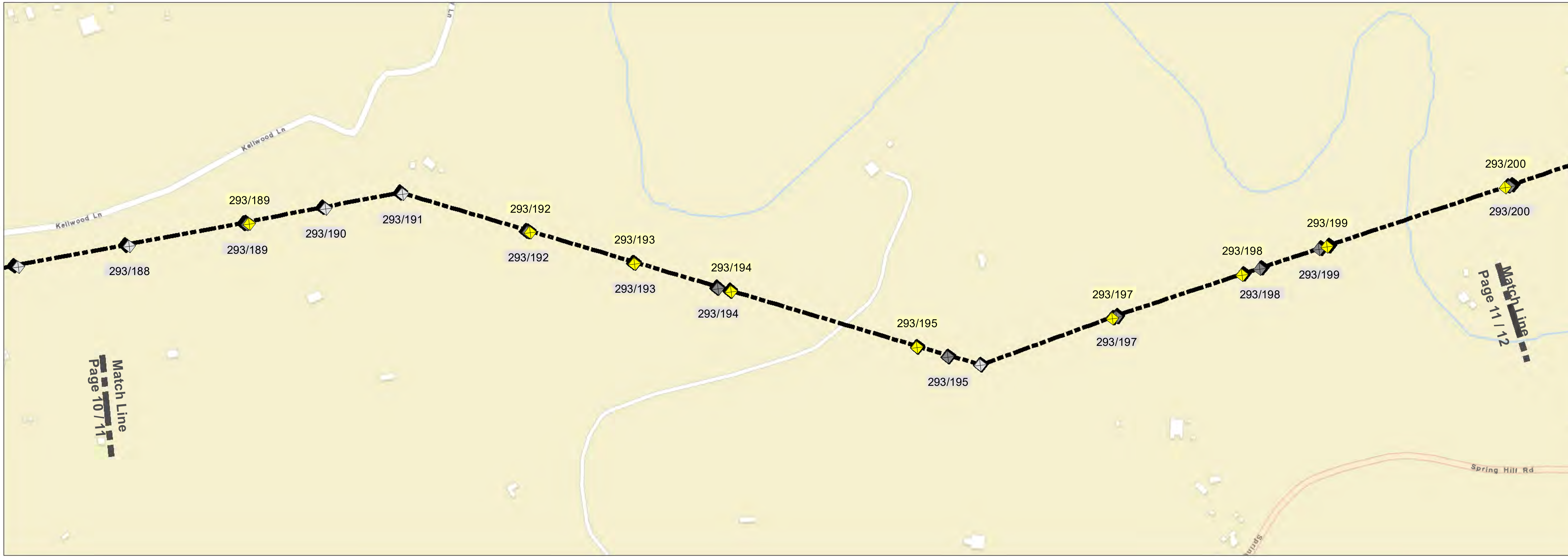
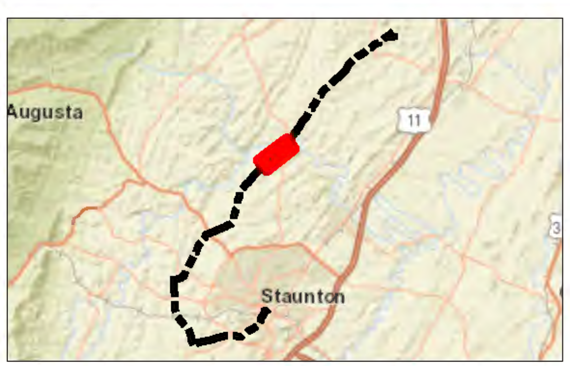


Table II.B.5

Existing Structure Number	293/189	293/192	293/193	293/194	293/195	293/197	293/198	293/199	293/200	293/201
Existing Structure Height (Feet)	58	81	62	58	60	53	69	60	73	69

Proposed Structure Number	293/189	293/192	293/193	293/194	293/195	293/197	293/198	293/199	293/200	293/201
Proposed Structure Height (Feet)	66	84	75	75	65	61	70	75	75	79

*Structure heights do not include foundation reveal. Proposed heights based on preliminary engineering



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Structure locations provided by Dominion Energy Virginia
3. Base Map © ESRI World Street Map

- Substation
- Proposed Structure
- Existing Structure to Remain
- Existing Structure to be Replaced
- Lines #293 and #83 Project Centerline
- Line #293 Project Centerline

0 500 1,000 Feet
(At original document size of 11x17)
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N

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Project Location
Augusta County and City of Staunton, Virginia

Prepared by MGS on 2021-08-03
TR by TPS on 2021-08-10
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Client/Project
203401607
Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

Figure No.
II.B.5

Title
Existing and Proposed Structures

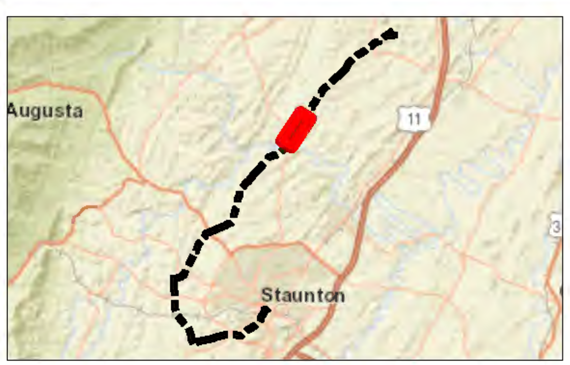
Page 11 of 16

Table II.B.5

Existing Structure Number	293/200	293/201	293/202	293/203	293/204	293/205	293/206	293/207	293/208	293/209	293/210	293/211	293/212	293/213
Existing Structure Height (Feet)	73	69	61	79	52	60	59	59	53	52	54	68	68	67

Proposed Structure Number	293/200	293/201	293/202	293/203	293/204	293/205	293/206	293/207	293/208	293/209	293/210	293/211	293/212	293/213
Proposed Structure Height (Feet)	75	79	66	85	66	66	61	66	61	61	57	70	66	61

*Structure heights do not include foundation reveal. Proposed heights based on preliminary engineering



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Structure locations provided by Dominion Energy Virginia
3. Base Map © ESRI World Street Map

- Substation
- Proposed Structure
- Existing Structure to Remain
- Existing Structure to be Replaced
- Lines #293 and #83 Project Centerline
- Line #293 Project Centerline

0 500 1,000 Feet
(At original document size of 11x17)
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Augusta County and City of Staunton, Virginia

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Client/Project 203401607
Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

Figure No.
II.B.5

Title
Existing and Proposed Structures

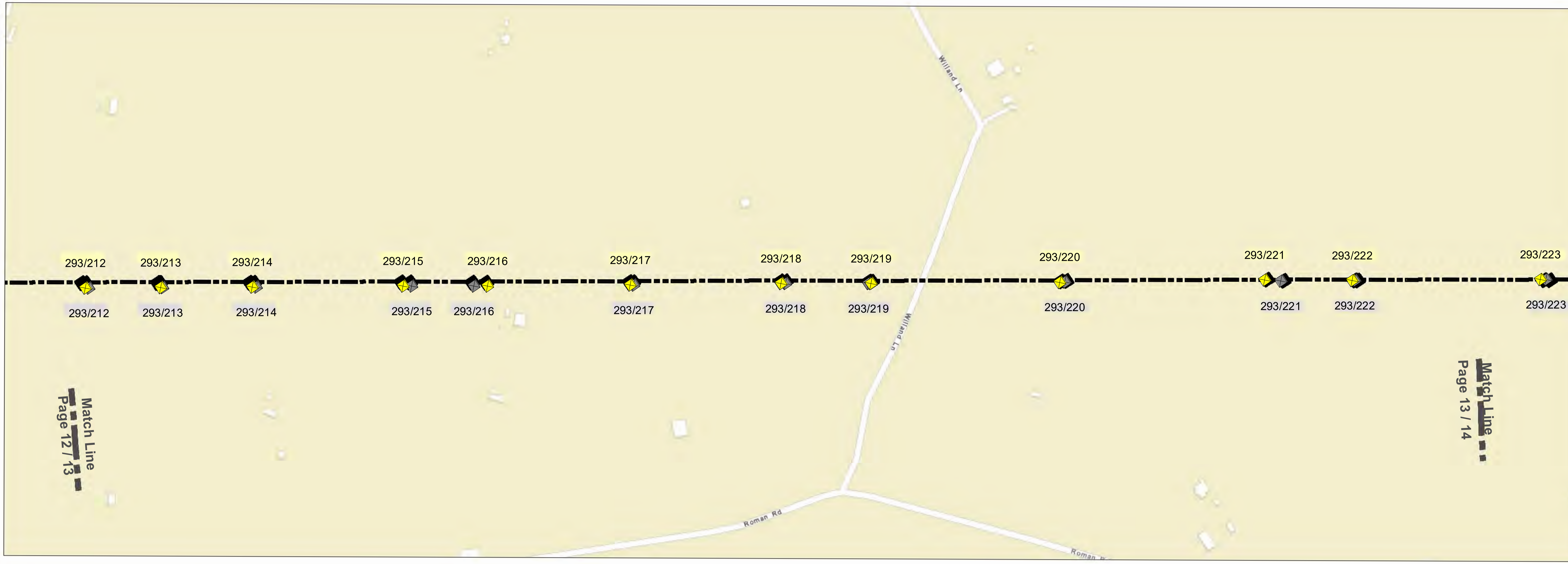
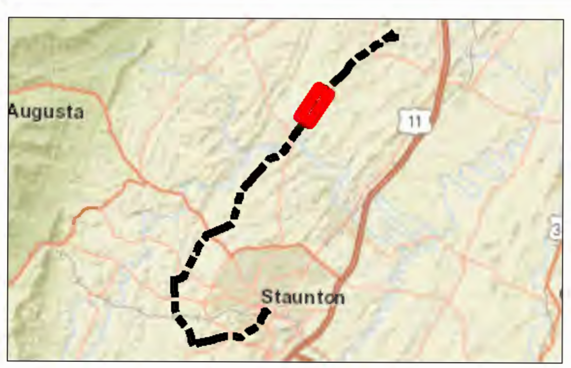


Table II.B.5

Existing Structure Number	293/212	293/213	293/214	293/215	293/216	293/217	293/218	293/219	293/220	293/221	293/222	293/223
Existing Structure Height (Feet)	68	67	80	60	72	57	63	70	58	80	53	67

Proposed Structure Number	293/212	293/213	293/214	293/215	293/216	293/217	293/218	293/219	293/220	293/221	293/222	293/223
Proposed Structure Height (Feet)	66	61	84	61	79	70	75	80	66	90	57	88

*Structure heights do not include foundation reveal. Proposed heights based on preliminary engineering



Substation
Proposed Structure
Existing Structure to Remain
Existing Structure to be Replaced
Lines #293 and #83 Project Centerline
Line #293 Project Centerline

0 500 1,000 Feet
(At original document size of 11x17)
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Client/Project
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Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

Figure No.
II.B.5

Title
Existing and Proposed Structures

Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
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3. Base Map © ESRI World Street Map

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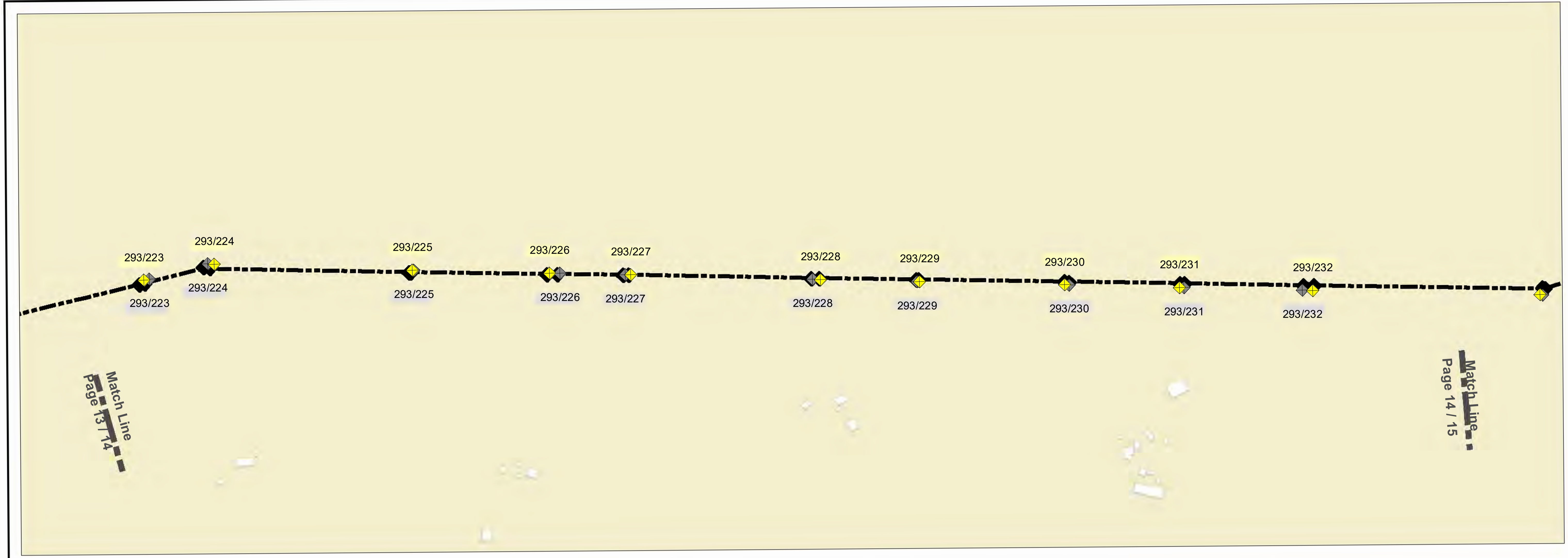

Table II.B.5

Existing Structure Number	293/223	293/224	293/225	293/226	293/227	293/228	293/229	293/230	293/231	293/232	293/233
Existing Structure Height (Feet)	67	52	66	54	62	51	61	65	60	67	71

Proposed Structure Number	293/223	293/224	293/225	293/226	293/227	293/228	293/229	293/230	293/231	293/232	293/233
Proposed Structure Height (Feet)	88	70	57	65	61	79	61	66	66	70	55

*Structure heights do not include foundation reveal. Proposed heights based on preliminary engineering

Notes
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2. Structure locations provided by Dominion Energy Virginia
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Substation
Proposed Structure
Existing Structure to Remain
Existing Structure to be Replaced
Lines #293 and #83 Project Centerline
Line #293 Project Centerline

0 500 1,000 Feet
(At original document size of 11x17)
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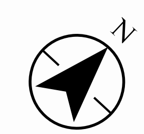

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Project Location
Augusta County and City of Staunton, Virginia
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Client/Project
203401607
Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

Figure No.
II.B.5

Title
Existing and Proposed Structures

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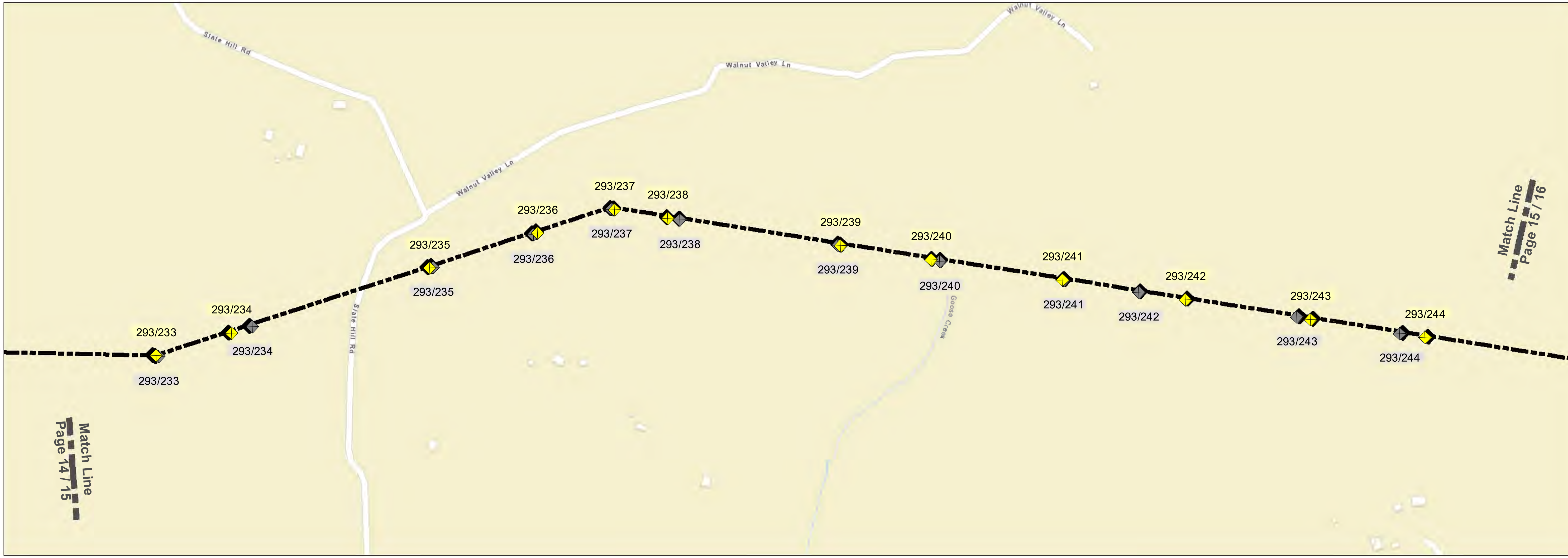
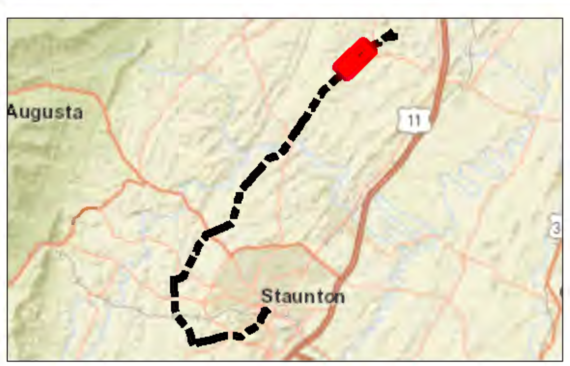


Table II.B.5

Existing Structure Number	293/233	293/234	293/235	293/236	293/237	293/238	293/239	293/240	293/241	293/242	293/243	293/244
Existing Structure Height (Feet)	71	62	51	66	56	58	59	80	52	62	66	74

Proposed Structure Number	293/233	293/234	293/235	293/236	293/237	293/238	293/239	293/240	293/241	293/242	293/243	293/244
Proposed Structure Height (Feet)	55	85	65	70	65	61	66	79	75	84	75	84

*Structure heights do not include foundation reveal. Proposed heights based on preliminary engineering



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Structure locations provided by Dominion Energy Virginia
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- Substation
- Proposed Structure
- Existing Structure to Remain
- Existing Structure to be Replaced
- Lines #293 and #83 Project Centerline
- Line #293 Project Centerline

0 500 1,000 Feet
(At original document size of 11x17)
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N

Stantec

Project Location
Augusta County and City of Staunton, Virginia

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Client/Project
203401607
Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

Figure No.
II.B.5

Title
Existing and Proposed Structures

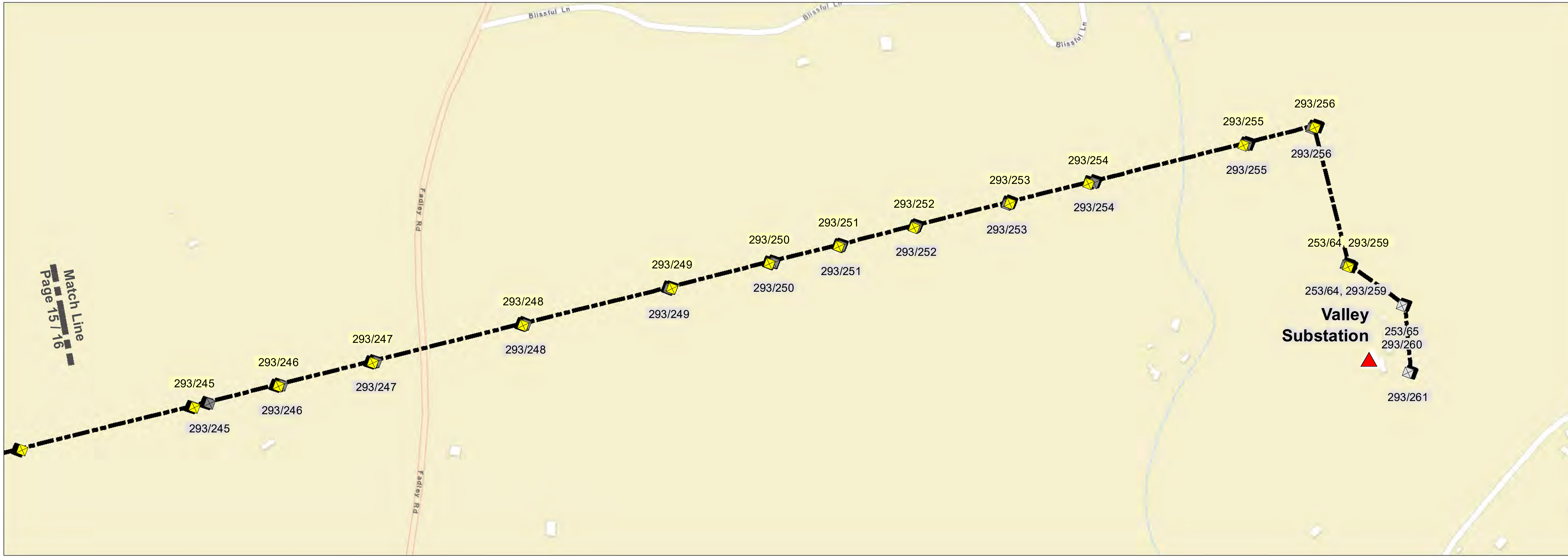
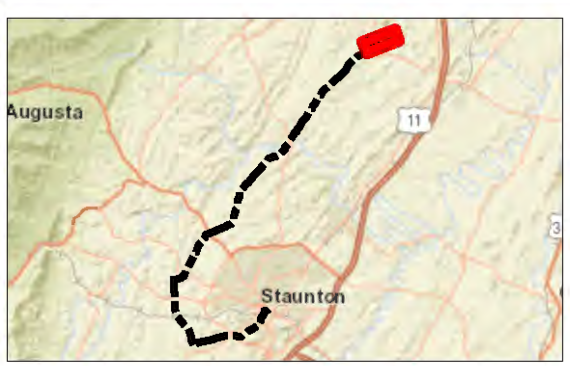


Table II.B.5

Existing Structure Number	293/244	293/245	293/246	293/247	293/248	293/249	293/250	293/251	293/252	293/253	293/254	293/255	293/256	253/64, 293/259
Existing Structure Height (Feet)	74	67	58	76	58	69	64	53	61	62	71	66	70	101

Proposed Structure Number	293/244	293/245	293/246	293/247	293/248	293/249	293/250	293/251	293/252	293/253	293/254	293/255	293/256	253/64, 293/259
Proposed Structure Height (Feet)	84	84	61	84	66	70	70	61	66	70	70	55	70	100

*Structure heights do not include foundation reveal. Proposed heights based on preliminary engineering



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Structure locations provided by Dominion Energy Virginia
3. Base Map © ESRI World Street Map

Substation
Proposed Structure
Existing Structure to Remain
Existing Structure to be Replaced
Lines #293 and #83 Project Centerline
Line #293 Project Centerline

0 500 1,000 Feet
(At original document size of 11x17)
1:6,000

N

Stantec

Project Location
Augusta County and City of Staunton, Virginia

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Client/Project 203401607
Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

Figure No.
II.B.5

Title
Existing and Proposed Structures

Page 16 of 16

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: *(a) Photographs for typical existing facilities to be removed*

Representative photographs of typical existing structures on Lines #293 and #83 are provided in Attachment II.B.6.a.

(b) Comparable photographs or representations for proposed structures

Representative photographs of the structures proposed for the Rebuild Project are provided in Attachment II.B.6.b.

(c) Visual simulations from historic and other key locations

Visual simulations showing the appearance of proposed transmission structures are provided for historic properties where the Rebuild Project will be visible. See Attachments II.B.6.c.i and II.B.6.c.ii, which provide viewshed maps and visual simulations, respectively, of proposed structures at identified historic locations within 1.0 mile of the proposed centerline of the Rebuild Project. Attachment II.B.6.c.ii was created using GIS modeling to depict whether the existing and proposed structures are or will be visible from historic properties. Observation Points ("OPs") used for the simulations are indicated on the maps. Attachment II.B.6.c.ii includes existing photographs and simulations of the proposed structures from the selected OPs. The below table identifies historic properties.

Historic Property	OP[9]	Comments
Mount Pleasant (VDHR #007-0024)	1	No visibility of existing or proposed structures.
Augusta County Training School/Cedar Green School (VDHR #007-0755)	2	Shares same boundary as #007-1175. No visibility of existing or proposed structures.
Public Schools in Augusta County, Virginia, 1870-1940 (VDHR #007-1175)	2	Shares same boundary as #007-0755. No visibility of existing or proposed structures.
Montgomery Hall Park (VDHR #132-5023)	3	No visibility of existing or proposed structures.
A.M. Bruce House/Ashton	4	Only existing and proposed wires visible. No structures

[9] There are no simulations from OP12, OP15, and OP34.

(VDHR #007-1283)		visible.
Bear Wallow Farm (VDHR #132-0055)	5	Only existing and proposed wires visible. No structures visible.
Stack House/John J. F. White House (VDHR #132-0057)	6	No visibility of existing or proposed structures.
Booker T. Washington High School for Coloreds/Booker T. Washington Community Center (VDHR #132-5011)	7	Existing and proposed structures 293/97 and 293/98 visible.
Newtown Historic District (VDHR #132-0034)	8, 24, 25, 26	OP8: existing and proposed structure 293/105 visible. OP24 and OP26: no visibility of existing or proposed structures. OP25: existing structure 293/87A visible (not being replaced)
C.W. Miller House/Mary Baldwin College Music Building (VDHR #132-0018)	9	No visibility of existing or proposed structures.
Stuart Addition Historic District (VDHR #132-0036)	9, 31	OP9: no visibility of existing or proposed structures. OP31: existing and proposed structure 293/90 visible.
Rose Terrace (VDHR #132-0017)	10	Existing and proposed structure 293/90 visible as well as structure 293/89 not being replaced.
Hill Top (VDHR #132-0002)	11	Existing structures 293/87 and 293/88 visible. No structures being replaced visible.
Kable House (VDHR #132-0022)	13	No visibility of existing or proposed structures
Woodrow Wilson Birthplace/The Manse (VDHR #132-0004)	14	No visibility of existing or proposed structures.
Gospel Hill Historic District (VDHR #132-0035)	14, 16, 17, 19, 20	OP14, OP16, OP17, OP19: No visibility of existing or proposed structures. OP20: visibility of existing structure 293/90 and partial visibility of proposed structure 293/90. Visibility of existing structure 293/89 (not being replaced).
Catlett House (VDHR #132-0032)	14	No visibility of existing or proposed structures.
The Oaks (VDHR #132-0021)	16	No visibility of existing or proposed structures.
Oakdene (VDHR #132-0027)	17	No visibility of existing or proposed structures.
J.C.M. Merrillat House/Hunter House (VDHR #132-0028)	17	No visibility of existing or proposed structures.
Virginia School for the Deaf and Blind (VDHR #132-0008)	18	Visibility of existing and proposed structure 293/90. Visibility of other existing structures not being replaced.

Thomas J. Michie House (VDHR #132-0033)	19	No visibility of existing or proposed structures.
Arista Hoge House (VDHR #132-0015)	20	Visibility of existing structure 293/90 and partial visibility of proposed structure 293/90. Visibility of existing structure 293/89 (not being replaced).
Wharf Area Historic District (VDHR #132-0014)	21	No visibility of existing or proposed structures.
Augusta County Court House (VDHR #132-0001)	22	No visibility of existing or proposed structures.
Beverley Historic District (VDHR #132-0024)	22, 23, 31	OP22 and OP23: no visibility of existing or proposed structures. OP31: existing and proposed structure 293/90 visible.
United Virginia Bank/National Valley/Museum of Bank History (VDHR #132-0023)	23	No visibility of existing or proposed structures.
Trinity Episcopal Church (VDHR #132-0007)	24	No visibility of existing or proposed structures.
Stuart House/Robertson Home (VDHR #132-0006)	25	Only existing structure 293/87A visible (not being replaced)
Old Main/Stuart Hall (VDHR #132-0011)	26	No visibility of existing or proposed structures.
Robert E. Lee High School (VDHR #132-0037)	27	No visibility of existing or proposed structures.
Thomas Jefferson Grammar School/Staunton Public Library[10] (VDHR #132-5019)	28	Existing and proposed structure 293/95 visible.
Breezy Hill (VDHR #132-0030)	29	No visibility of existing or proposed structures.
Edgewood (VDHYR #132-0040)[1]	30	No visibility of existing or proposed structures.
Mary Baldwin College Main Building (VDHR #132-0016)	32	No visibility of existing structures. Proposed structure 293/90 visible.
Western State Lunatic Asylum/Western State Hospital/Staunton Correctional Center/Old Site Antebellum Complex (VDHR #132-0009)	33	Existing structure 293/90 partially visible, proposed structure 293/90 fully visible.
Sears House (VDHR #132-0013)	35	Existing and proposed wires visible. No structures visible.

Simulations of the Rebuild Project from key locations are provided in Attachment III.B.5.

[10] This property is eligible for listing on the NRHP and between 0.5 and 1.0 mile from the Rebuild Project centerline. Therefore, it was not included in the Stage I Pre-Application Analysis per VDHR guidance.

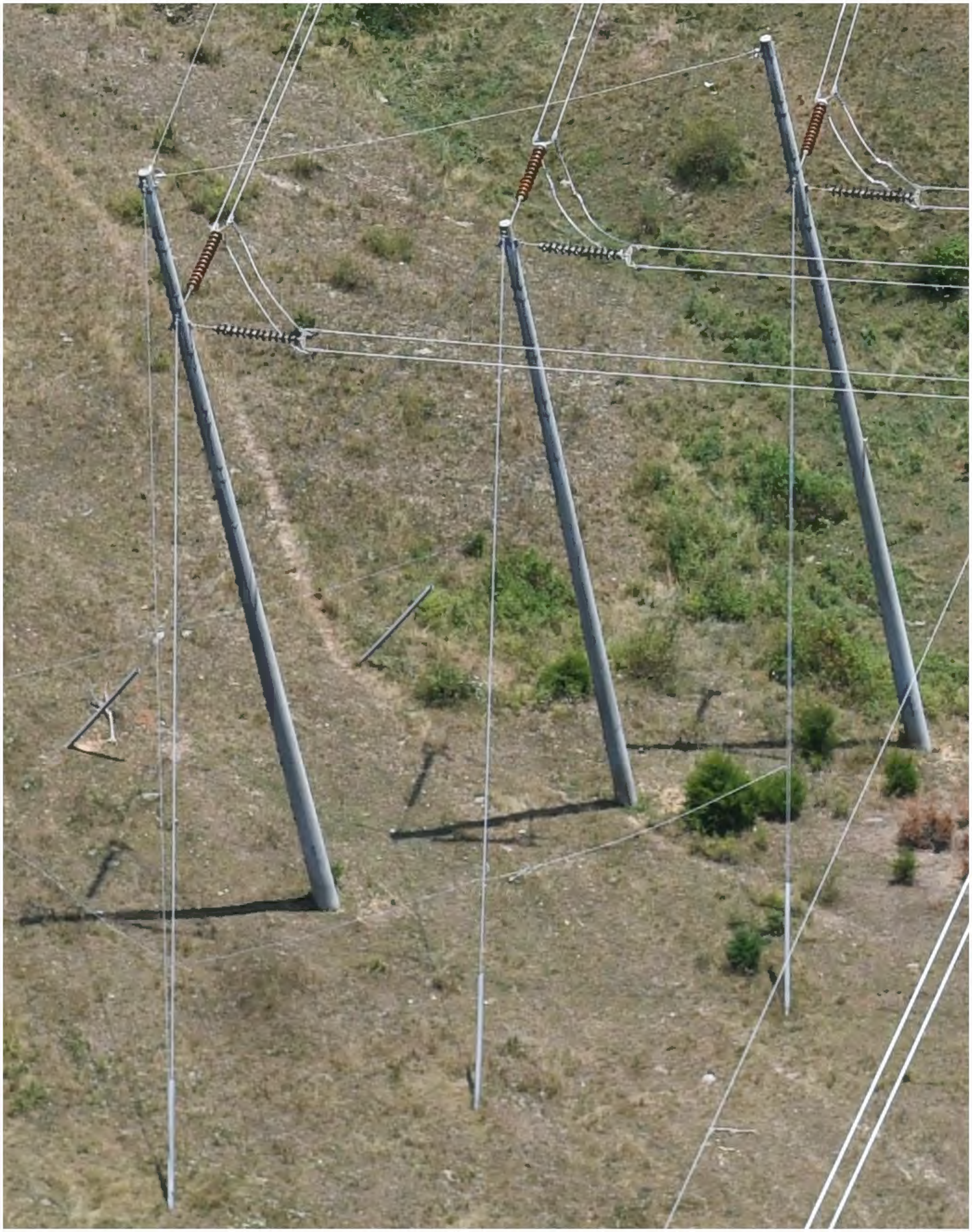
Existing Structure Type for Lines #293 and #83: COR-TEN® Tower

Existing Structure Type for Lines #293 and #83: Painted Steel Monopole

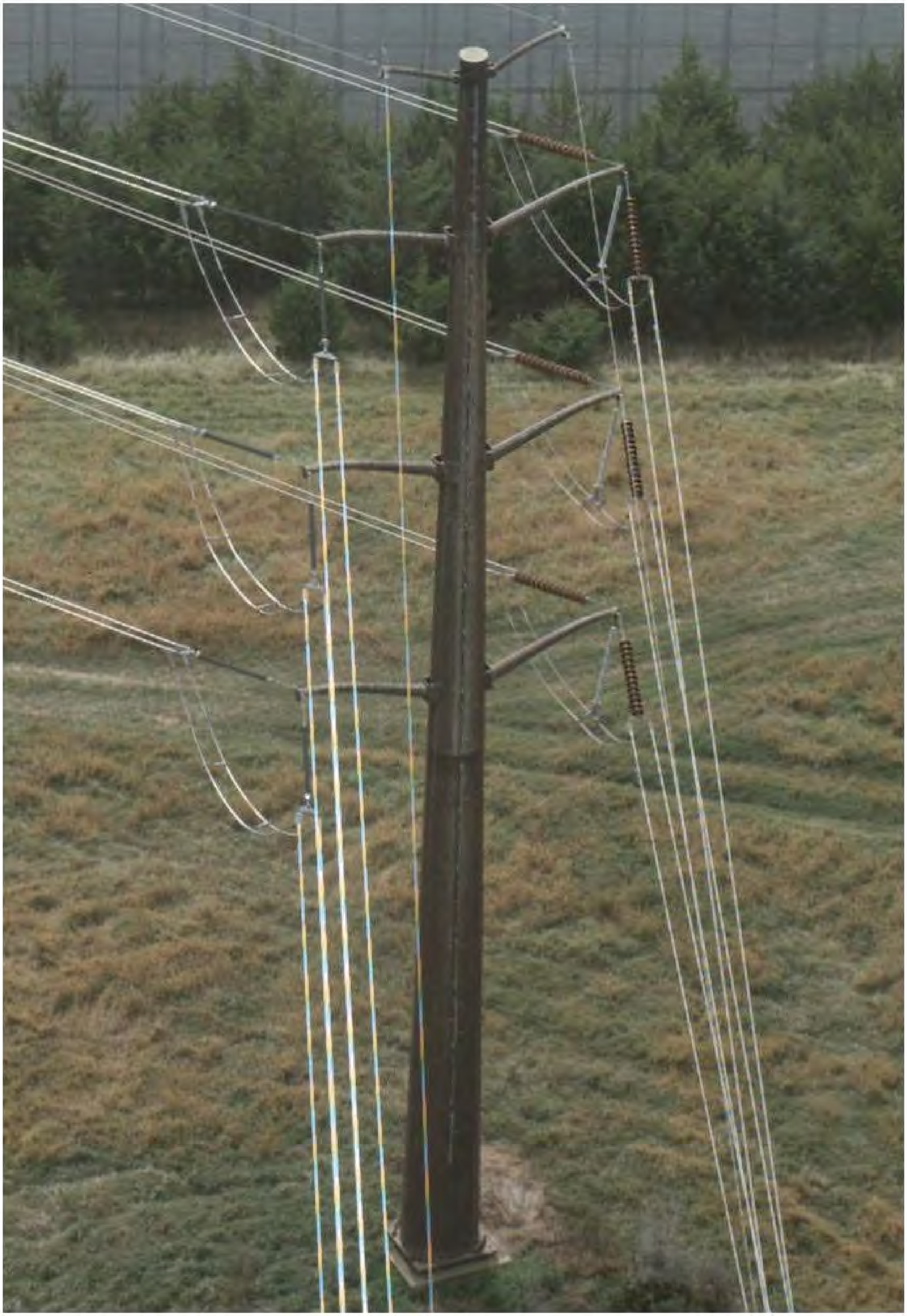
Existing Structure Type for Line #293: Wood H-Frame

Existing Structure Type for Line #293: Wood Three-Pole

Existing Structure Type for Line #293: Concrete Three-Pole



Existing Structure Type for Line #293: Weathering Steel Monopole



Proposed Structure Type for Lines #293 and #83: Weathering Steel Monopole

Proposed Structure Type for Lines #293 and #83: Galvanized Steel Monopole

Proposed Suspension Structure Type for Line #293: Weathering Steel H-Frame

Proposed Double-Deadend Structure Type for Line #293: Weathering Steel H-Frame

Proposed Structure Type for Line #293: Weathering Steel Three-Pole

Proposed Structure Type for Line #293: Self-Supporting Switch Structure

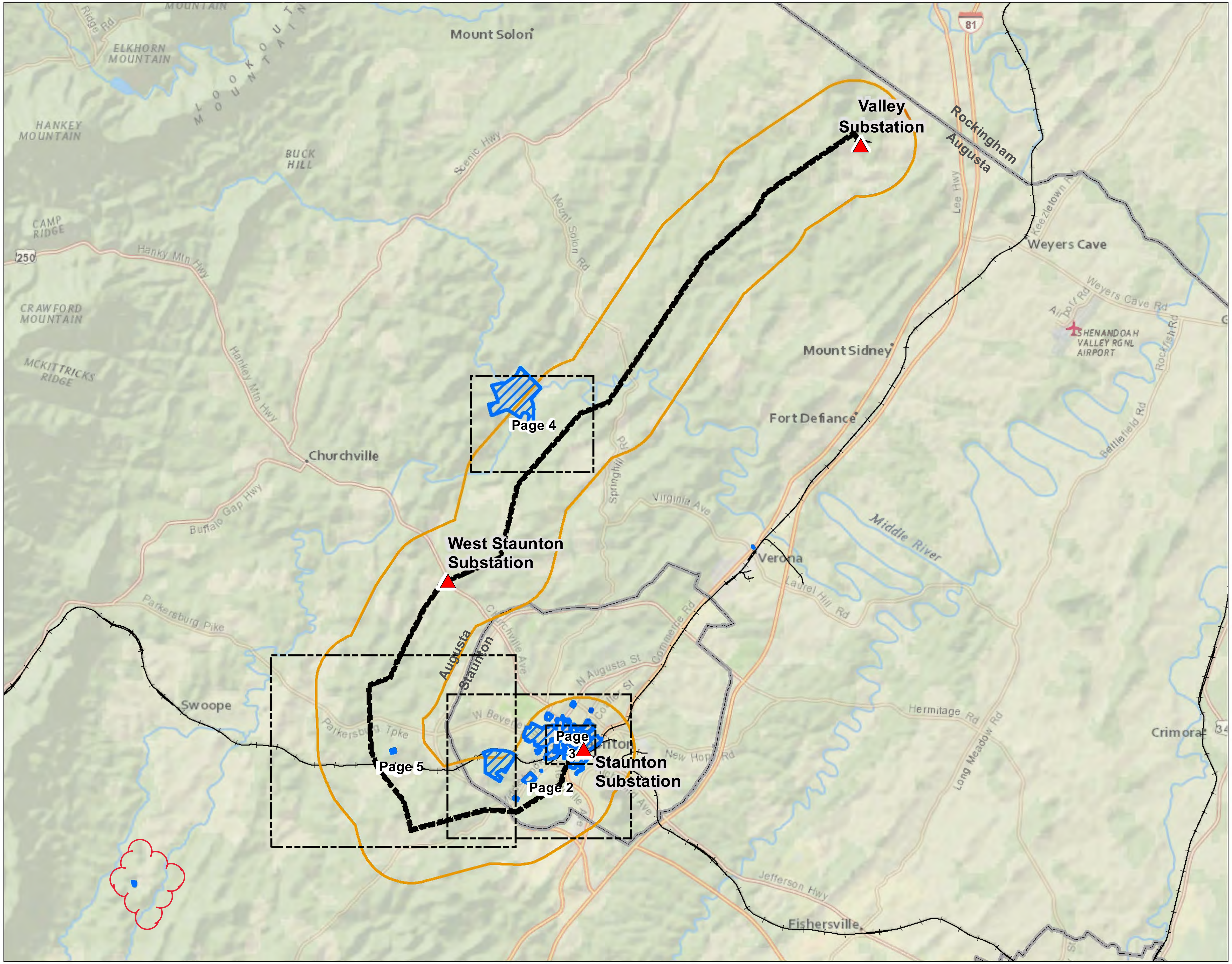


Figure No.
II.B.6

Title
Viewshed Map

Client/Project
Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

203401607

Project Location
Augusta County and City of Staunton, Virginia

Prepared by MGS on 2021-08-25
TR by TPS on 2021-09-02
IR by CPG on 2021-09-02

N

0 | 10,000 | 20,000 Feet

(At original document size of 11x17)
1:120,000

- Substation
- Project Limits
- Architectural Resource
- Page Index
- 1-Mile Buffer
- Railroad

Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Historic resource data provided by Virginia Department of Historic Resources, Virginia Cultural Resources Information System (VCRIS)
3. Viewshed analysis produced from digital elevation model and digital surface model derived from VGIN LiDAR
4. Base Map © National Geographic

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Page 01 of 05

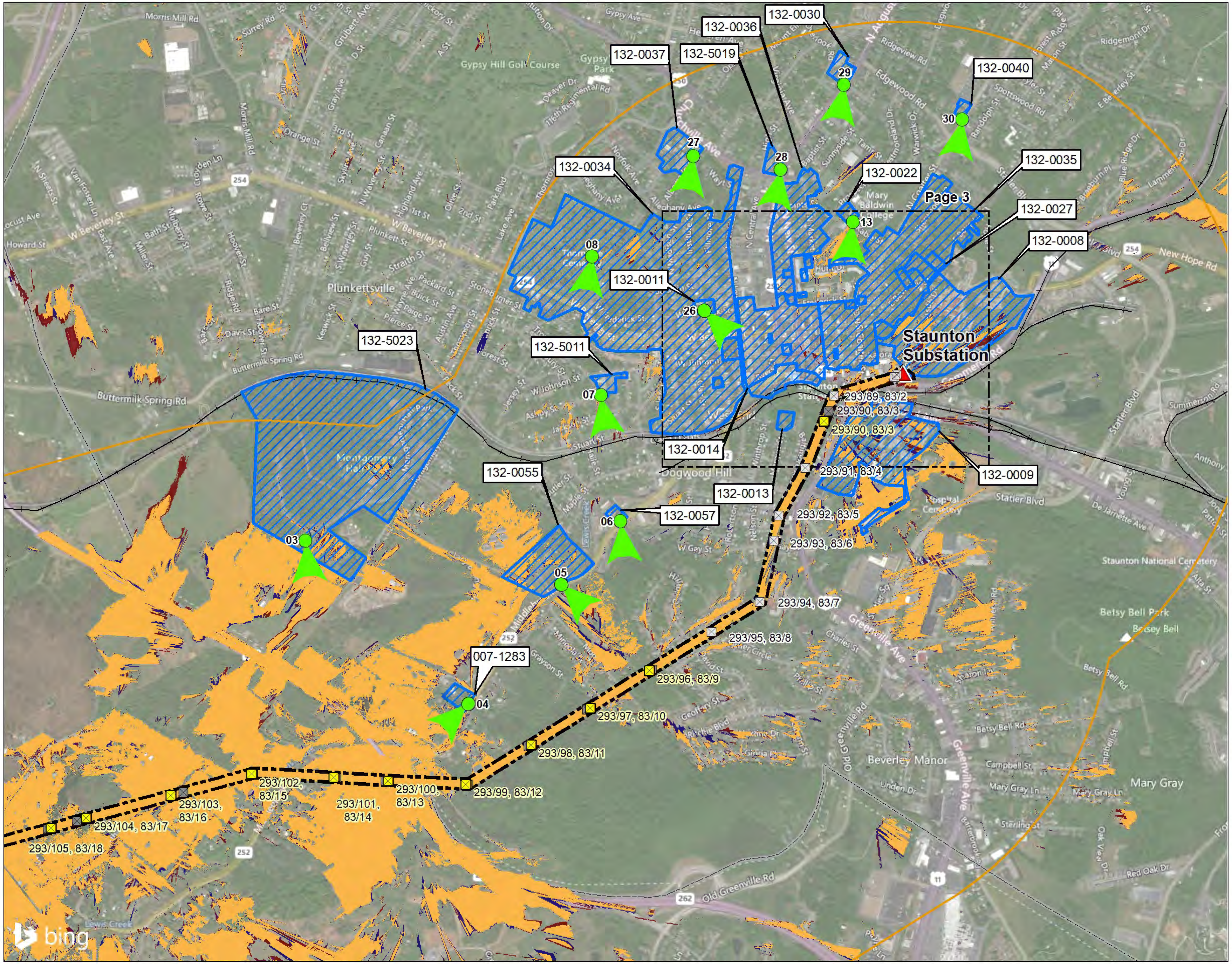

Figure No.

II.B.6

Title

Viewshed Map

Client/Project 203401607

Dominion Energy Virginia

230 kV Line #293 and 115 kV Line #83 Rebuild Project

Project Location

Augusta County and City of Staunton, Virginia

Prepared by MGS on 2021-08-25
TR by TPS on 2021-09-02
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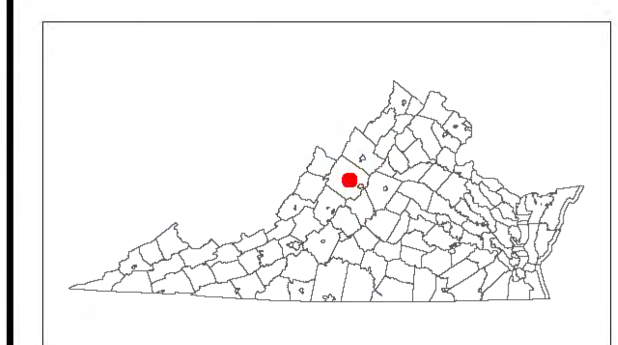
N

0 1,500 3,000 Feet

(At original document size of 11x17)
1:18,000

- Substation
- Photo Observation Point
- Proposed Structure
- Existing Structure to Remain
- Existing Structure to be Replaced
- Project Limits
- 1-Mile Buffer
- Architectural Resource
- Existing Visible, Proposed Not Visible
- Both Existing and Proposed Visible
- Existing Not Visible, Proposed Visible
- Railroad

Existing Structures to Remain were omitted from this model.



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Historic resource data provided by Virginia Department of Historic Resources, Virginia Cultural Resources Information System (VCRIS)
3. Viewshed analysis produced from digital elevation model and digital surface model derived from VGIN LiDAR
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Page 02 of 05

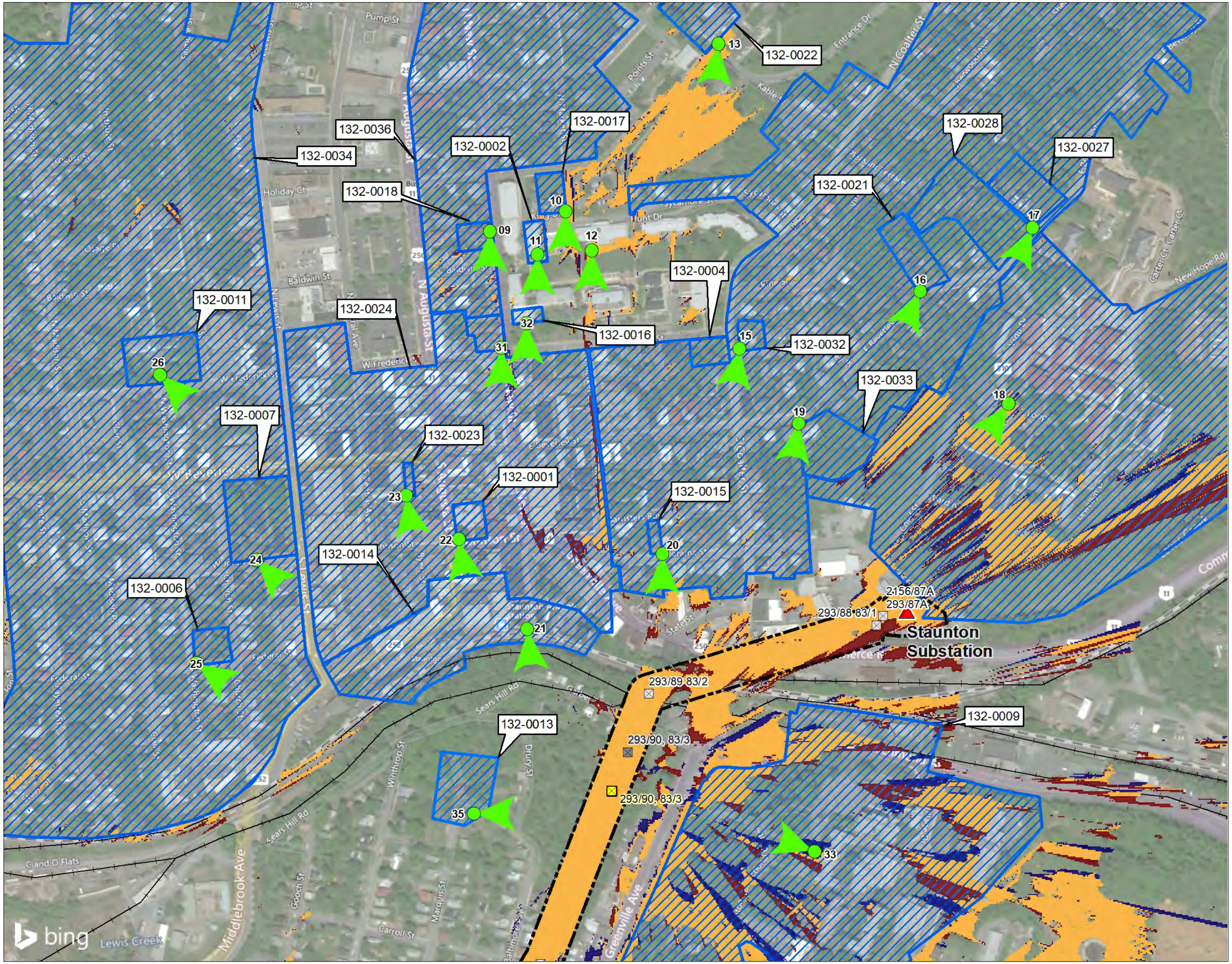


Figure No.
II.B.6

Title
Viewshed Map

Client/Project
203401607
Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

Project Location
Augusta County and City of Staunton, Virginia

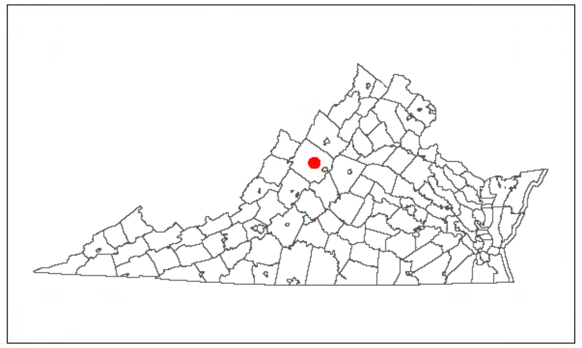
Prepared by MGS on 2021-08-25
TR by TPS on 2021-09-02
IR by CPG on 2021-09-02

N

0 400 800 Feet
(At original document size of 11x17)
1:4,800

- Substation
- Photo Observation Point
- Proposed Structure
- Existing Structure to Remain
- Existing Structure to be Replaced
- Project Limits
- 1-Mile Buffer
- Architectural Resource
- Existing Visible, Proposed Not Visible
- Both Existing and Proposed Visible
- Existing Not Visible, Proposed Visible
- Railroad

Existing Structures to Remain were omitted from this model.



Notes
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Figure No.
II.B.6
Title
Viewshed Map

Client/Project 203401607
Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

Project Location
Augusta County and City of Staunton, Virginia

Prepared by MGS on 2021-08-25
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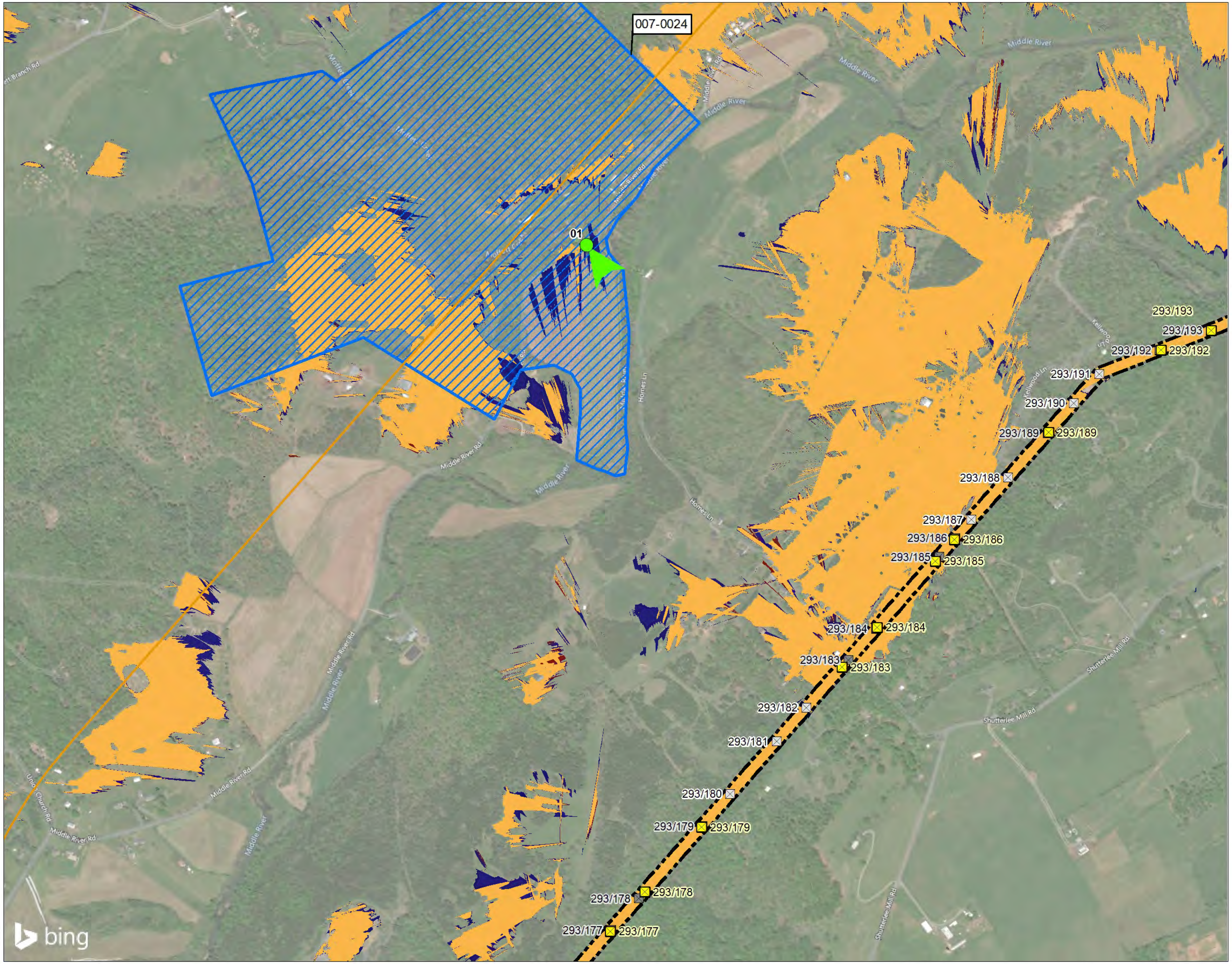
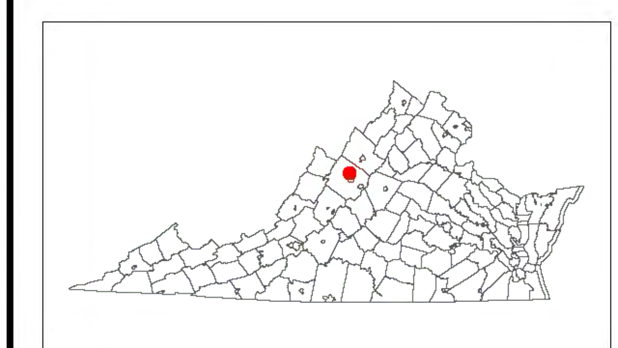


Existing Structures to Remain were omitted from this model.



Notes
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2. Data Sources: Dominion Energy Virginia, Historic resource data provided by Virginia Department of Historic Resources, Virginia Cultural Resources Information System (VCRIS)
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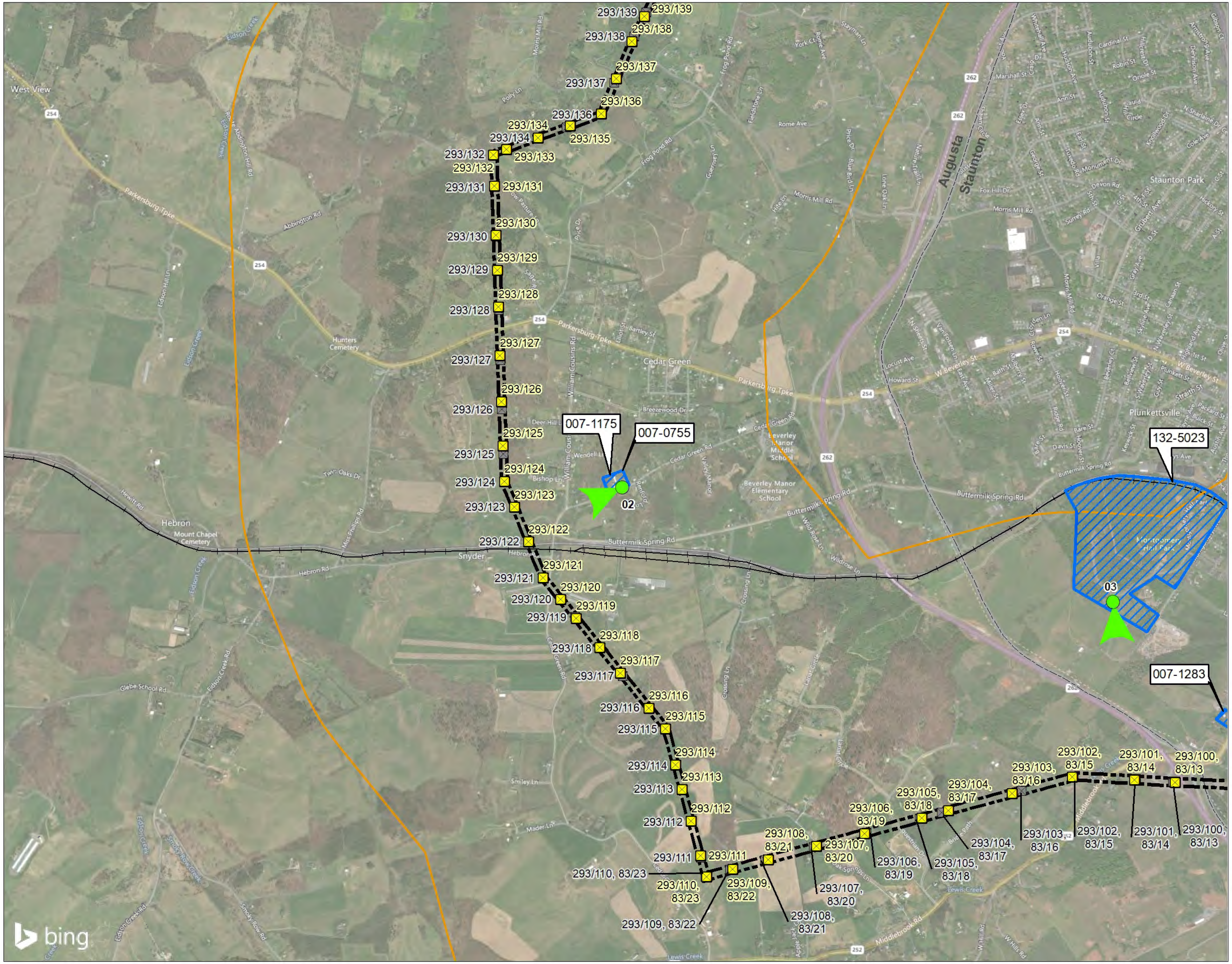


Figure No.

II.B.6

Title

Viewshed Map

Client/Project 203401607

Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

Project Location

Augusta County and City of Staunton, Virginia

Prepared by MGS on 2021-08-25
TR by TPS on 2021-09-02
IR by CPG on 2021-09-02

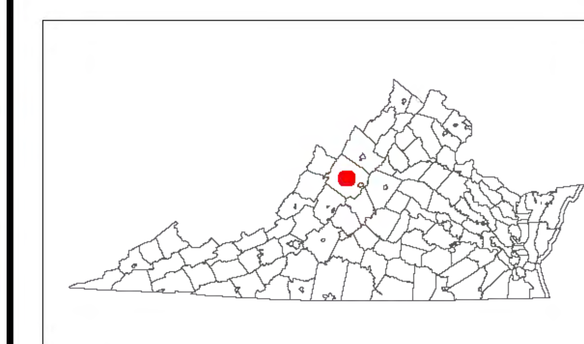
N

0 2,000 4,000 Feet

(At original document size of 11x17)
1:24,000

Photo Observation Point
Proposed Structure
Existing Structure to be Replaced
Project Limits
1-Mile Buffer
Architectural Resource
Railroad

LiDAR coverage was not available for the area; therefore, no viewshed is shown for this map



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2. Data Sources: Dominion Energy Virginia, Historic resource data provided by Virginia Department of Historic Resources, Virginia Cultural Resources Information System (VCRIS)
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OP 1 Existing (No Existing Structures Visible)
Mount Pleasant (VDHR #007-0024)
Looking south

Photograph provided by Stantec

Stantec Dominion Energy

Photograph provided by Stantec

OP 1 Proposed (No Proposed Structures Visible)
Mount Pleasant (VDHR #007-0024)

Looking south

Stantec Dominion Energy

Photograph provided by Stantec

OP 2 Existing (No Existing Structures Visible)

Augusta County Training School/Cedar Green School (VDHR #007-0755) &
Public Schools in Augusta County, Virginia, 1870-1940 (VDHR #007-1175)

Looking west

Photograph provided by Stantec

OP 2 Proposed (No Proposed Structures Visible)

Augusta County Training School/Cedar Green School (VDHR #007-0755) &
Public Schools in Augusta County, Virginia, 1870-1940 (VDHR #007-1175)

Looking west

Stantec Dominion Energy

Photograph provided by Stantec

OP 3 Existing (No Existing Structures Visible)
Montgomery Hall Park (VDHR #132-5023)

Looking south

Photograph provided by Stantec

OP 3 Proposed (No Proposed Structures Visible)
Montgomery Hall Park (VDHR #132-5023)

Looking south

Stantec Dominion Energy

Photograph provided by Stantec

OP 4 Existing (Existing Wires Visible)

A.M. Bruce House/Ashton (VDHR #007-1283)

Looking south

Photograph provided by Stantec

OP 4 Proposed (Proposed Wires Visible)
A.M. Bruce House/Ashton (VDHR #007-1283)

Looking south

Photograph provided by Stantec

OP 5 Existing (Existing Wires Visible)
Bear Wallow Farm (VDHR #132-0055)

Looking south

Photograph provided by Stantec

OP 5 Proposed (Proposed Wires Visible)
Bear Wallow Farm (VDHR #132-0055)

Looking south

Photograph provided by Stantec

OP 6 Existing (No Existing Structures Visible)
Stack House/John J. F. White House (VDHR #132-0057)

Looking south

Photograph provided by Stantec

OP 6 Proposed (No Proposed Structures Visible)
Stack House/John J. F. White House (VDHR #132-0057

Looking south

Photograph provided by Stantec

OP 7 Existing

Booker T. Washington High School for Coloreds/
Booker T. Washington Community Center (VDHR #132-5011)

Looking south

Photograph provided by Stantec

OP 7 Proposed

Booker T. Washington High School for Coloreds/
Booker T. Washington Community Center (VDHR #132-5011)

Looking south

Photograph provided by Stantec

OP 8 Existing

Newtown Historic District (VDHR #132-0034)

Looking south

Photograph provided by Stantec

OP 8 Proposed
Newtown Historic District (VDHR #132-0034)

Looking south

Photograph provided by Stantec

OP 9 Existing (No Existing Structures Visible)
Stuart Addition Historic District (VDHR #132-0036) &
Mary Baldwin College Music Building (DHR #132-0018)

Looking south

Stantec Dominion Energy

Photograph provided by Stantec

OP 9 Proposed (No Proposed Structures Visible)

Stuart Addition Historic District (VDHR #132-0036) &
Mary Baldwin College Music Building (DHR #132-0018)

Looking south

Photograph provided by Stantec

OP 10 Existing
Rose Terrace (VDHR #132-0017)

Looking south

Photograph provided by Stantec

Stantec Dominion Energy

OP 10 Proposed
Rose Terrace (VDHR #132-0017)

Looking south

Photograph provided by Stantec

OP 11 Existing

Hill Top (VDHR #132-0002)

Looking south

Stantec Dominion Energy

Photograph provided by Stantec

OP 11 Proposed
Hill Top (VDHR #132-0002)

Looking south

Photograph provided by Stantec

OP 13 Existing (No Existing Structures Visible)
Kable House (VDHR #132-0022)

Looking south

Photograph provided by Stantec

OP 13 Proposed (No Proposed Structures Visible)
Kable House (VDHR #132-0022)

Looking south

Stantec
Dominion Energy

Photograph provided by Stantec

OP 14 Existing (No Existing Structures Visible)

Woodrow Wilson Birthplace/The Manse (VDHR #132-0004),
Gospel Hill Historic District (VDHR #132-0035) & Catlett House (VDHR #132-0032)

Looking south

Photograph provided by Stantec

OP 14 Proposed (No Proposed Structures Visible)
Woodrow Wilson Birthplace/The Manse (VDHR #132-0004),
Gospel Hill Historic District (VDHR #132-0035) & Catlett House (VDHR #132-0032)

Looking south

Photograph provided by Stantec

OP 16 Existing (No Existing Structures Visible)

The Oaks (VDHR #132-0021) &
Gospel Hill Historic District (VDHR #132-0035)

Looking south

Stantec Dominion Energy

Photograph provided by Stantec

OP 16 Proposed (No Proposed Structures Visible)

The Oaks (VDHR #132-0021) &
Gospel Hill Historic District (VDHR #132-0035)

Looking south

Stantec Dominion Energy

Photograph provided by Stantec

OP 17 Existing (No Existing Structures Visible)

Oakdene (VDHR #132-0027), J.C.M. Merrillat House/Hunter House (VDHR #132-0028) & Gospel Hill Historic District (VDHR #132-0035)

Looking southwest

Photograph produced by Stantec

OP 17 Proposed (No Proposed Structures Visible)

Oakdene (VDHR #132-0027), J.C.M. Merrillat House/Hunter House (VDHR #132-0028) & Gospel Hill Historic District (VDHR #132-0035)

Looking southwest

Stantec Dominion Energy

Photograph provided by Stantec

OP 18 Existing

Virginia School for the Deaf and Blind (VDHR #132-0008)

Looking southwest

Photograph provided by Stantec

OP 18 Proposed

Virginia School for the Deaf and Blind (VDHR #132-0008)

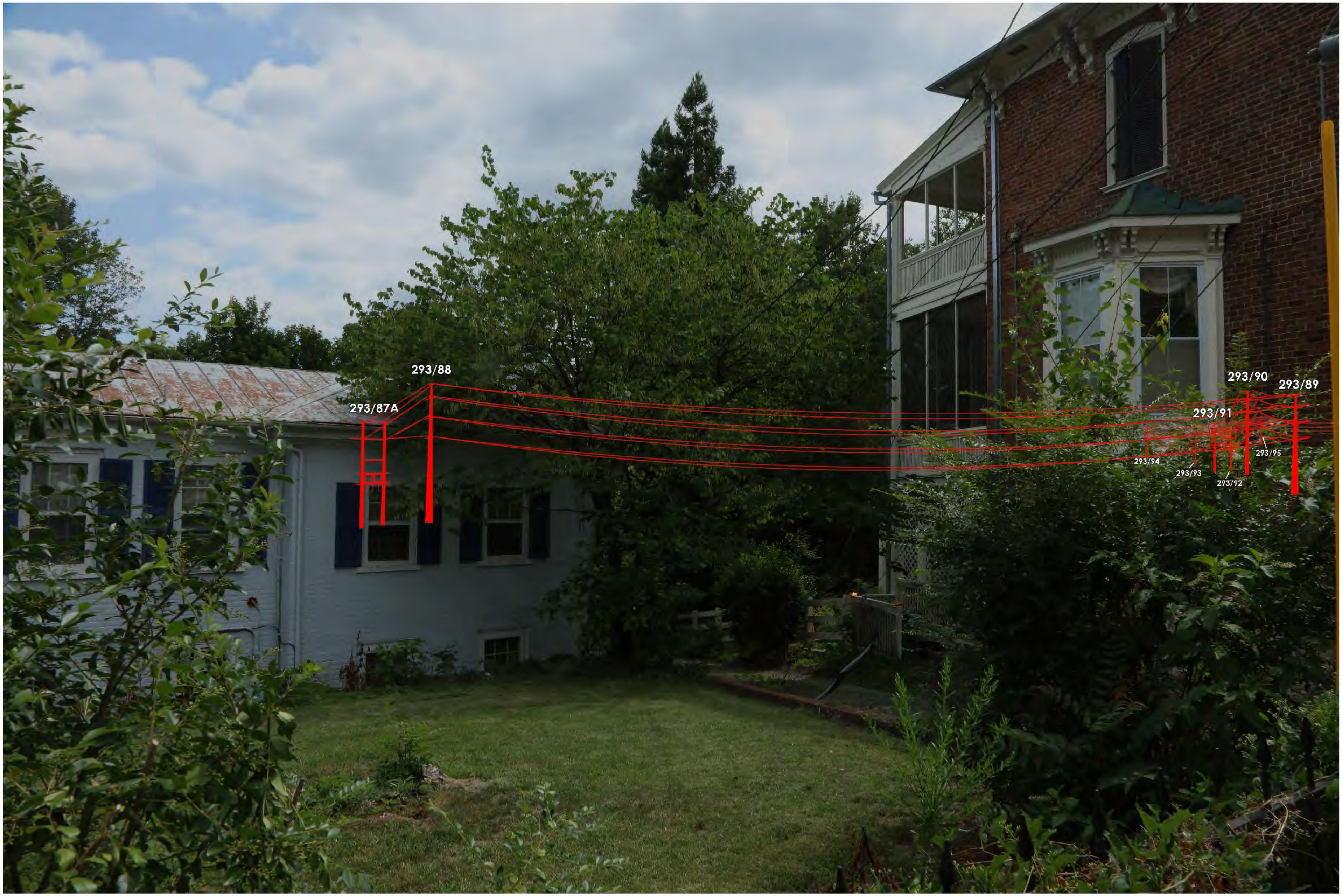
Looking southwest

Photograph provided by Stantec

OP 19 Existing (No Existing Structures Visible)
Thomas J. Michie House (VDHR #132-0033) &
Gospel Hill Historic District (VDHR #132-0035)

Looking southwest

Stantec Dominion Energy



Photograph provided by Stantec

OP 19 Proposed (No Proposed Structures Visible)
Thomas J. Michie House (VDHR #132-0033) &
Gospel Hill Historic District (VDHR #132-0035)

Looking southwest

Stantec Dominion Energy

Photograph provided by Stantec

OP 20 Existing

Arista Hoge House (VDHR #132-0015) &
Gospel Hill Historic District (VDHR #132-0035)

Looking south

Photograph provided by Stantec

OP 20 Proposed
Arista Hoge House (VDHR #132-0015) &
Gospel Hill Historic District (VDHR #132-0035)

Looking south

Stantec Dominion Energy

Photograph provided by Stantec

OP 21 Existing (No Existing Structures Visible)
Wharf Area Historic District (VDHR #132-0014)

Looking south

Photograph provided by Stantec

OP 21 Proposed (No Proposed Structures Visible)
Wharf Area Historic District (VDHR #132-0014)

Looking south

Stantec Dominion Energy

Photograph provided by Stantec

OP 22 Existing (No Existing Structures Visible)
Augusta County Court House (VDHR #132-0001) &
Beverley Historic District (VDHR #132-0024)

Looking south

Photograph provided by Stantec

OP 22 Proposed (No Proposed Structures Visible)
Augusta County Court House (VDHR #132-0001) &
Beverley Historic District (VDHR #132-0024)

Looking south

Photograph provided by Stantec

OP 23 Existing (No Existing Structures Visible)

United Virginia Bank/National Valley/Museum of Bank History (VDHR #132-0023) &
Beverley Historic District (VDHR #132-0024)

Looking south

Photograph provided by Stantec

OP 23 Proposed (No Proposed Structures Visible)

United Virginia Bank/National Valley/Museum of Bank History (VDHR #132-0023) &
Beverley Historic District (VDHR #132-0024)

Looking south

Photograph provided by Stantec

OP 24 Existing (No Existing Structures Visible)

Trinity Episcopal Church (VDHR #132-0007) &
Newtown Historic District (VDHR #132-0034

Looking southeast

Photograph provided by Stantec

OP 24 Proposed

Trinity Episcopal Church (VDHR #132-0007) &
Newtown Historic District (VDHR #132-0034

Looking southeast

Stantec Dominion Energy

Photograph provided by Stantec

OP 25 Existing

Stuart House/Robertson Home (VDHR #132-0006) &
Newtown Historic District (VDHR #132-0034)

Looking east-southeast

Photograph provided by Stantec

OP 25 Proposed

Stuart House/Robertson Home (VDHR #132-0006) &
Newtown Historic District (VDHR #132-0034)

Looking east-southeast

Stantec Dominion Energy

Photograph provided by Stantec

OP 26 Existing (No Existing Structures Visible)
Old Main/Stuart Hall (VDHR #132-0011) &
Newtown Historic District (VDHR #132-0034)

Looking east-southeast

Photograph provided by Stantec

OP 26 Proposed (No Proposed Structures Visible)
Old Main/Stuart Hall (VDHR #132-0011) &
Newtown Historic District (VDHR #132-0034)

Looking east-southeast

Photograph provided by Stantec

OP 27 Existing (No Existing Structures Visible)
Robert E. Lee High School (VDHR #132-0037)

Looking southeast

Stantec Dominion Energy

Photograph provided by Stantec

OP 27 Proposed (No Proposed Structures Visible)
Robert E. Lee High School (VDHR #132-0037)

Looking southeast

Photograph provided by Stantec

OP 28 Existing

Thomas Jefferson Grammar School/Staunton Public Library (VDHR #132-5019) looking south

Attachment II.B.6.c.2

Stantec Dominion Energy

Photograph provided by Stantec

OP 28 Proposed

Thomas Jefferson Grammar School/Staunton Public Library (VDHR #132-5019) looking south

Attachment II.B.6.c.2

Photograph provided by Stantec

OP 29 Existing (No Existing Structures Visible)
Breezy Hill (VDHR #132-0030)

Looking south

Stantec Dominion Energy

Photograph provided by Stantec

OP 29 Proposed (No Proposed Structures Visible)
Breezy Hill (VDHR #132-0030)

Looking south

Photograph provided by Stantec

OP 30 Existing (No Existing Structures Visible)
Edgewood (VDHR #132-0040)

Looking southwest

Photograph provided by Stantec

OP 30 Proposed (No Proposed Structures Visible)
Edgewood (VDHR #132-0040)

Looking southwest

Photograph provided by Stantec

OP 31 Existing

Beverley Historic District (VDHR #132-0024)

Looking south

Photograph provided by Stantec

OP 31 Proposed
Beverley Historic District (VDHR #132-0024)

Looking south

Photograph provided by Stantec

OP 32 Existing (No Existing Structures Visible)
Mary Baldwin College Main Building (VDHR #132-0016)

Looking south

Photograph provided by Stantec

OP 32 Proposed

Mary Baldwin College Main Building (VDHR #132-0016)

Looking south

Photograph provided by Stantec

OP 33 Existing

Western State Lunatic Asylum/Western State Hospital/
Staunton Correctional Center/Old Site Antebellum Complex (VDHR #132-0009)

Looking west

Photograph provided by Stantec

OP 33 Proposed

Western State Lunatic Asylum/Western State Hospital/
Staunton Correctional Center/Old Site Antebellum Complex (VDHR #132-0009)

Looking west

Photograph provided by Stantec

OP 35 Existing (Existing Wires Visible)
Sears House (VDHR #132-0013)

Looking south

Photograph provided by Stantec

OP 35 Proposed (Proposed Wires Visible)
Sears House (VDHR #132-0013)

Looking south

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: There are no new substations, switching stations, or other ground facilities associated with the proposed Rebuild Project, nor are any of the impacted stations being expanded. The Rebuild Project will require the following station work:

At Staunton Substation, the Company will replace line risers to support the new line rating. In addition, the Company will replace Line #83 terminal equipment, including wave trap and line risers.

At West Staunton Substation, the Company will replace line risers to support the new line rating.

At Valley Substation, the Company will replace line risers to support the new line rating.

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: **Land Use**

The Rebuild Project area is contained within the City of Staunton and Augusta County for a total project length of approximately 21.4 miles. The vicinity of the Rebuild Project at the Staunton Substation is urban; however, the majority of the Rebuild Project area is largely characterized as rural.

Farmland/Forests

A total of 21.00 acres of prime farmland and 164.05 acres of farmland of statewide importance occurs within a predominantly 100-150 foot-wide corridor encompassing the Line #293 and Line #83 Rebuild Project area. See Attachment III.A.1. Augusta County and the City of Staunton do not have designated farmlands of local importance.

The 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 no forested areas exist within the existing right-of-way, no impact to forestland is expected.

The *Augusta County Comprehensive Plan* identifies four agricultural and forestal districts, which are authorized by Va. Code § 15.2-4312; however, the Rebuild Project does not pass through any of these districts. Prime farmland and farmlands of statewide importance are also discussed within the *Augusta County Comprehensive Plan*. Prime farmland and farmlands of statewide importance account for 12% and 16% of Augusta County's soils, respectively. Although these soils tend to be found in isolated patches throughout the county and along alluvial deposits near rivers, much of the county's soils, not classified as prime farmland or farmland of statewide importance by the United States Department of Agriculture Natural Resource Conservation Service, are very productive. Attachment III.A.1 displays prime farmland and farmlands of statewide importance in relation to the Rebuild Project.

The construction of construction access roads and pads for structure erection may represent a temporary effect to farming operations that are occurring within the Company's easements. The Company utilizes timber mats to access transmission structures within agricultural fields to minimize the impact to the soil, thereby avoiding permanent impact to farmlands. Farming operations currently exist within the Company's easements and the Company will work with landowners on final structure placement to minimize the effect on farming operations. Therefore, prime farmland and agricultural and forestal districts should not be incrementally impacted by the construction of the Rebuild Project.

Wetlands

According to the U.S. Geological Survey ("USGS") topographic quadrangles (Staunton [2019], Churchville [2019], Parnassus [2019], and Mount Sidney [2019]), the 21.4-mile section of Line #293 proposed for rebuild crosses Lewis Creek, Bell Creek, Middle River, North Fork Naked Creek, and several perennial and intermittent streams.

The Company delineated wetlands and other waters of the United States within a predominantly 100-150 foot-wide corridor encompassing the Line #293 and Line #83 Rebuild Project area using the *Routine Determination Method* as outlined in the *1987 Corps of Engineers Wetland Delineation Manual* and methods described in the *2012 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountain and Piedmont Region* (Version 2.0). The Company submitted the results of this delineation to the U.S. Army Corps of Engineers (the "Corps") on August 30, 2021, for confirmation. Total jurisdictional resources within the proposed Rebuild Project right-of-way are provided in the table below.

Jurisdictional Resources Within Rebuild Project Right-of-Way

Resource	Acreage (±)
Palustrine Emergent Wetland	0.93
Palustrine Scrub Shrub Wetland	0.09
Open Water	1.06
Upper Perennial Stream Channels (R3)	0.65 (1,597 Linear Feet)
Intermittent Stream Channels (R4)	0.05 (647 Linear Feet)
Ephemeral Stream Channels (R6)	0.01 (204 Linear Feet)

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

Historic Features

In accordance with the *Guidelines for Assessing Impacts of Proposed Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of*

Virginia (2008), a Stage I Pre-Application Analysis was conducted by Stantec. This analysis, which is included as Attachment 2.H.1 to the DEQ Supplement, was submitted to VDHR on November 5, 2021.

One National Historic Landmark ("NHL")-listed architectural resource is located within the 1.5-mile radius of the Rebuild Project centerline. Including the NHL, which is also listed on the NRHP, 32 NRHP-listed resources are located within 1.0 mile and three NRHP-eligible resources were identified within 0.5 mile of the Rebuild Project centerline.

Based upon the proposed changes to structure heights, it is anticipated that the Rebuild Project will have no impact to historic properties with no view of the Rebuild Project, and a minimal impact to those historic properties that will view the Rebuild Project, as shown in the table below. Consistent with its customary practice, the Company will coordinate with VDHR regarding the findings of the Stage I Pre-Application Analysis.

Previously Recorded Architectural Resources Considered under the Stage I Pre-Application Guidelines

VDHR #	Resource Name	VDHR/NRHP Status	Distance to Centerline (Feet)	Impact
007-0024	Mount Pleasant/Mount Pleasant Farm	NRHP-Listed, VLR Listed	2,898	Minimal
007-0755	Augusta County Training School/Cedar Green School, Route 693	NRHP-Listed, VLR Listed	1,828	None
007-1175	Public Schools in Augusta County, Virginia, 1870-1940	NRHP-Listed, VLR Listed	1,830	None
007-1283	Ashton/A.M. Bruce House	NRHP-Eligible	957	Minimal
132-0001/ 132-0024-0161	Augusta County Courthouse, 1 East Johnson Street	NRHP-Listed, VLR Listed	898	None
132-0002	Hill Top, Mary Baldwin Campus	NRHP-Listed, VLR Listed	1,770	None
132-0004/ 132-0035-0229	The Manse/Woodrow Wilson Birthplace, 24 North Coalter Street	NHL Listed, NRHP-Listed, VLR Listed	1,172	None
132-0006/ 132-0034-0513	Stuart House, 120 Church Street	NRHP-Listed, VLR Listed	1,598	Minimal
132-0007/ 132-0034-0514	Trinity Episcopal Church, 214 West Beverly Street	NRHP-Listed, VLR Listed	1,513	None
132-0008	Virginia School for the Deaf and Blind Historic District, East Beverley Street	NRHP-Listed, VLR Listed	153	Minimal

VDHR #	Resource Name	VDHR/NRHP Status	Distance to Centerline (Feet)	Impact
132-0009	Old Site Antebellum Complex/ Staunton Correctional Center/The Blackburn Inn/ Western State Lunatic Asylum/ , 301 Greenville Avenue	NRHP-Listed, VLR Listed	210	Minimal
132-0011/ 132-0034-0515	Old Main/Stuart Hall, 235 West Frederick Street	NRHP-Listed, VLR Listed	2,185	None
132-0013	Sears House, 400 Marquis Street	NRHP-Listed, VLR Listed	427	Minimal
132-0014	Wharf Area Historic District	NRHP-Listing, VLR Listing	301	None
132-0015/ 132-0035-0230	Arista Hoge House/Kalorama Castle, 215 Kalorama Street	NRHP-Listing, VLR Listing	525	Minimal
132-0016	Mary Baldwin College Main Building, Mary Baldwin College	NRHP-Listing, VLR Listing	1,547	Minimal
132-0017	Rose Terrace, 150 North Market Street	NRHP-Listing, VLR Listing	1,937	Minimal
132-0018/ 132-0036-0116	C.W. Miller House/Mary Baldwin College Music Building, 210 North New Street	NRHP-Listing, VLR Listing	1,885	None
132-0021/ 132-0035-0231	The Oaks, 437 East Beverley Street	NRHP-Listing, VLR Listing	1,289	None
132-0022	Kable House, 310 Prospect Street	NRHP-Listing, VLR Listing	2,352	None
132-0023/ 132-0024-0162	National Valley Bank/United Virginia Bank/National Valley, 12 West Beverley Street	NRHP-Listing, VLR Listing	1,224	None
132-0024	Beverley Historic District	NRHP-Listing, VLR Listing	286	Minimal
132-0027/ 132-0035-0232	Oakdene, 605 East Beverley Street	NRHP-Listing, VLR Listing	1,656	Minimal
132-0028/ 132-0035-0233	J.C.M. Merrillat House/Hunter House, 521 East Beverley Street	NRHP-Listing, VLR Listing	1,454	None
132-0030	Breezy Hill, 1220 North Augusta Street	NRHP-Listing, VLR Listing	4,397	None
132-0032/ 132-0035-0234	Catlett House, 303 Berkeley Place	NRHP-Listing, VLR Listing	1,168	None

VDHR #	Resource Name	VDHR/NRHP Status	Distance to Centerline (Feet)	Impact
132-0033/ 132-0035-0235	Thomas J. Michie House, 324 East Beverley Street	NRHP-Listing, VLR Listing	573	None
132-0034	Newtown Historic District	NRHP-Listing, VLR Listing	1,240	Minimal
132-0035	Gospel Hill Historic District	NRHP-Listing, VLR Listing	263	Minimal
132-0036	Stuart Addition Historic District	NRHP-Listing, VLR Listing	1,489	None
132-0037	Robert E. Lee High School, 274 Churchville Avenue	NRHP-Listing, VLR Listing	4,007	None
132-0055	Bear Wallow Farm/Willoughby, 919 Middlebrook Avenue	DHR Staff-Eligible	1,760	Minimal
132-0057	John J.F. White House, 865 Middlebrook Avenue	DHR Staff-Eligible	2,092	None
132-5011	Booker T. Washington High School for Coloreds, 1114 West Johnson Street	NRHP-Listing, VLR Listing	2,982	Minimal
132-5023	Montgomery Hall Park/Montgomery Hall Park Historic District, 1000 Montgomery Avenue	NRHP-Listing, VLR Listing	2,952	Minimal
132-5025	Bessie Weller Elementary School, 600 Greenville Avenue	Potentially Eligible	0	Minimal

One recorded archaeological resource was identified within the Rebuild Project right-of-way.

Previously Recorded Archeological Resources Considered under the Stage I Pre-Application Guidelines

VDHR #	Resource Name	VDHR/NRHP Status	Distance to ROW (Feet)	Impact
44AU1012	Late 19th Century to Early 20th Century Railroad Water Tower and Pumps	Not Evaluated	0	Investigate During Archaeological Survey

Wildlife

A search of the U.S. Fish and Wildlife ("USFWS") Information, Planning, and Consultation ("IPaC") system, the Virginia Department of Wildlife Resources ("DWR") Virginia Fish and Wildlife Information Service ("VAFWIS"), and the

Virginia Department of Conservation and Recreation ("DCR") Natural Heritage Data Explorer ("NHDE") public databases identified several federal and state listed species that have the potential to occur within the project area. These resources are identified in the report included as Attachment 2.F.1 to the DEQ Supplement. The Company intends to reasonably minimize any impact on these resources and coordinate with DWR as appropriate.

Dwellings

According to Augusta County and the City of Staunton GIS data, there are 328 dwellings located within 500 feet of the centerline of the Rebuild Project, 151 dwellings located within 250 feet of the centerline, 54 dwellings located within 100 feet of the centerline, and 11 dwellings located within the right-of-way. Of the dwellings located within the right-of-way, 10 are within the City of Staunton and one is in Augusta County.

Figure No.
III.A.1
Title
Prime Farmland Map

Client/Project
Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project
203401607

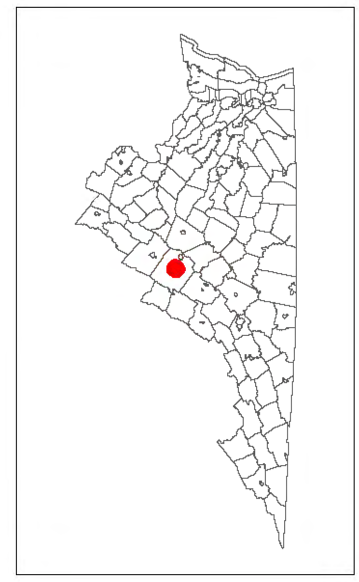
Project Location
Augusta County and City of Staunton, Virginia

Prepared by LJJ on 2021-06-29
TR by MGS on 2021-07-01
IR by CPG on 2021-07-01

0 1,500 3,000 Feet
(At original document size of 11x17)
1:18,000

N

- Substation
- Project Limits
- All Areas Are Prime Farmland (21.00 Acres ±)
- Farmland of Statewide Importance (164.05 Acres ±)



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, DCR, USDA NRCS SSURGO Soil Survey, ESRI, NADS
3. Orthoimagery © Bing Maps
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Page 01 of 07

Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

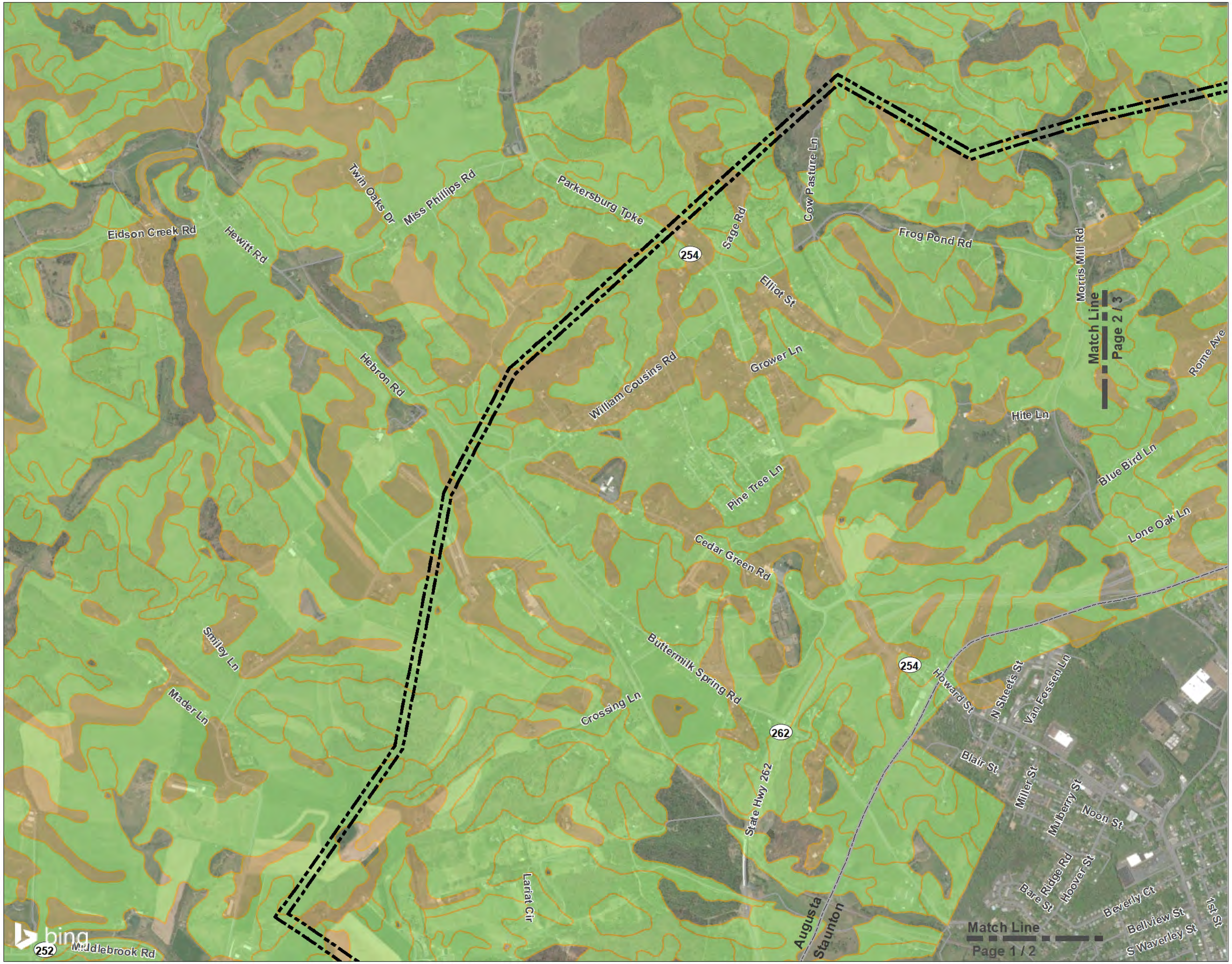

Figure No.
III.A.1

Title
Prime Farmland Map

Client/Project 203401607
Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

Project Location
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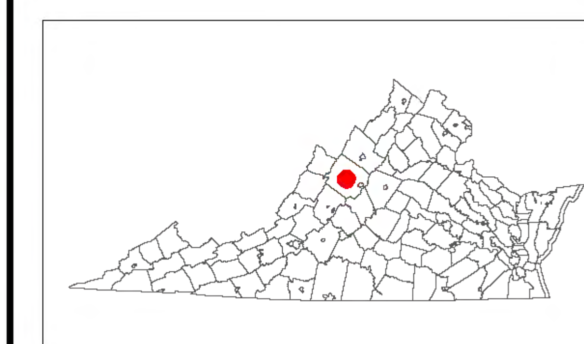

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Page 02 of 07

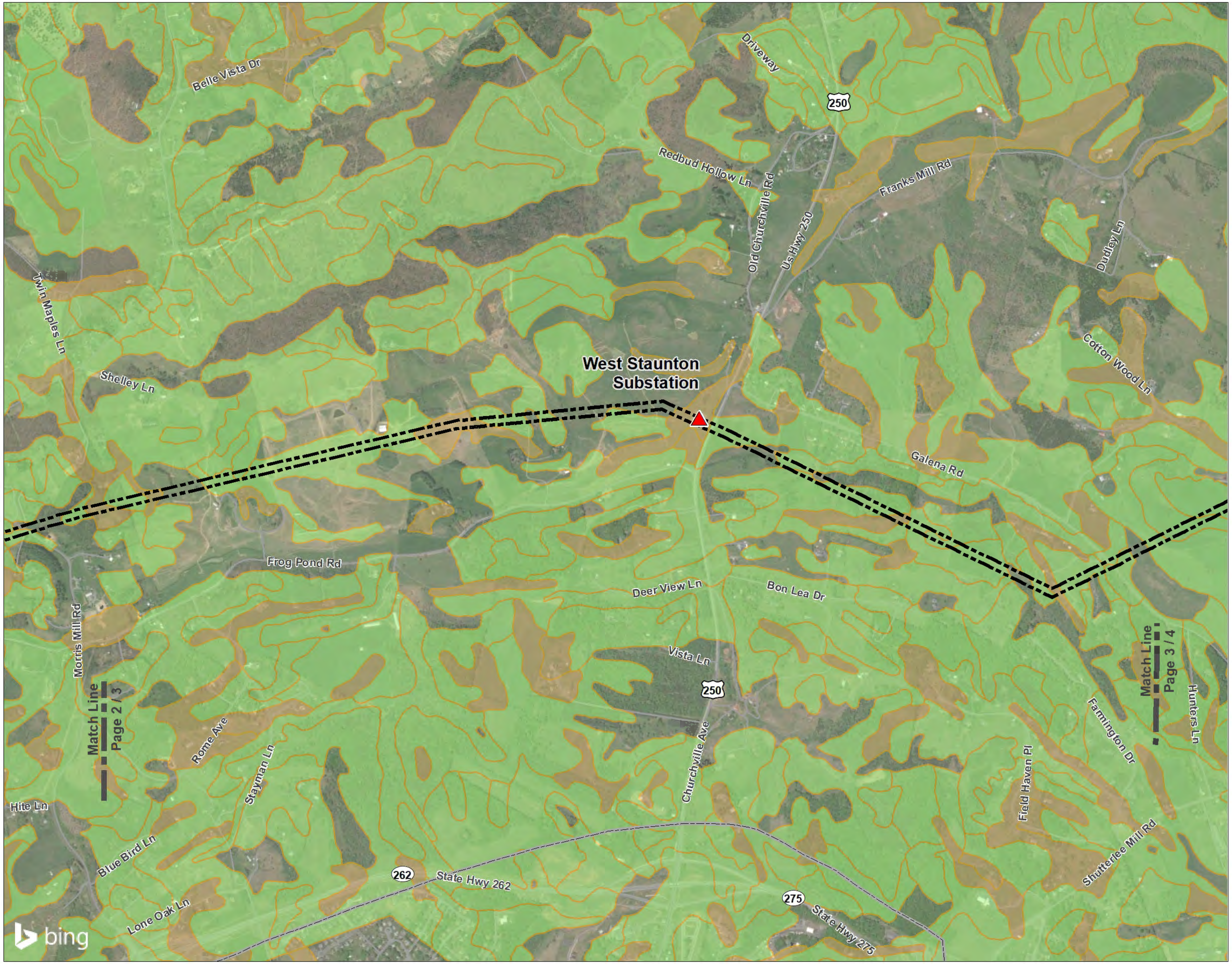

Figure No.

III.A.1

Title

Prime Farmland Map

Client/Project 203401607

Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

Project Location

Augusta County and City of Staunton, Virginia

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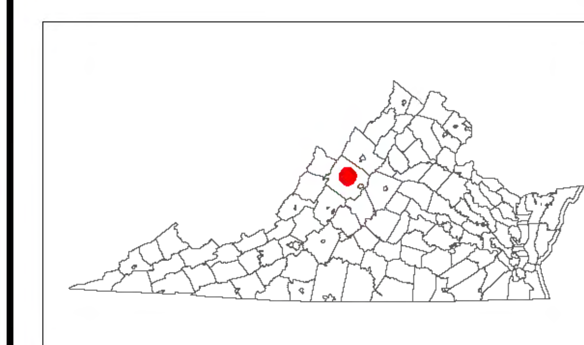
Farmland of Statewide Importance (164.05 Acres ±)



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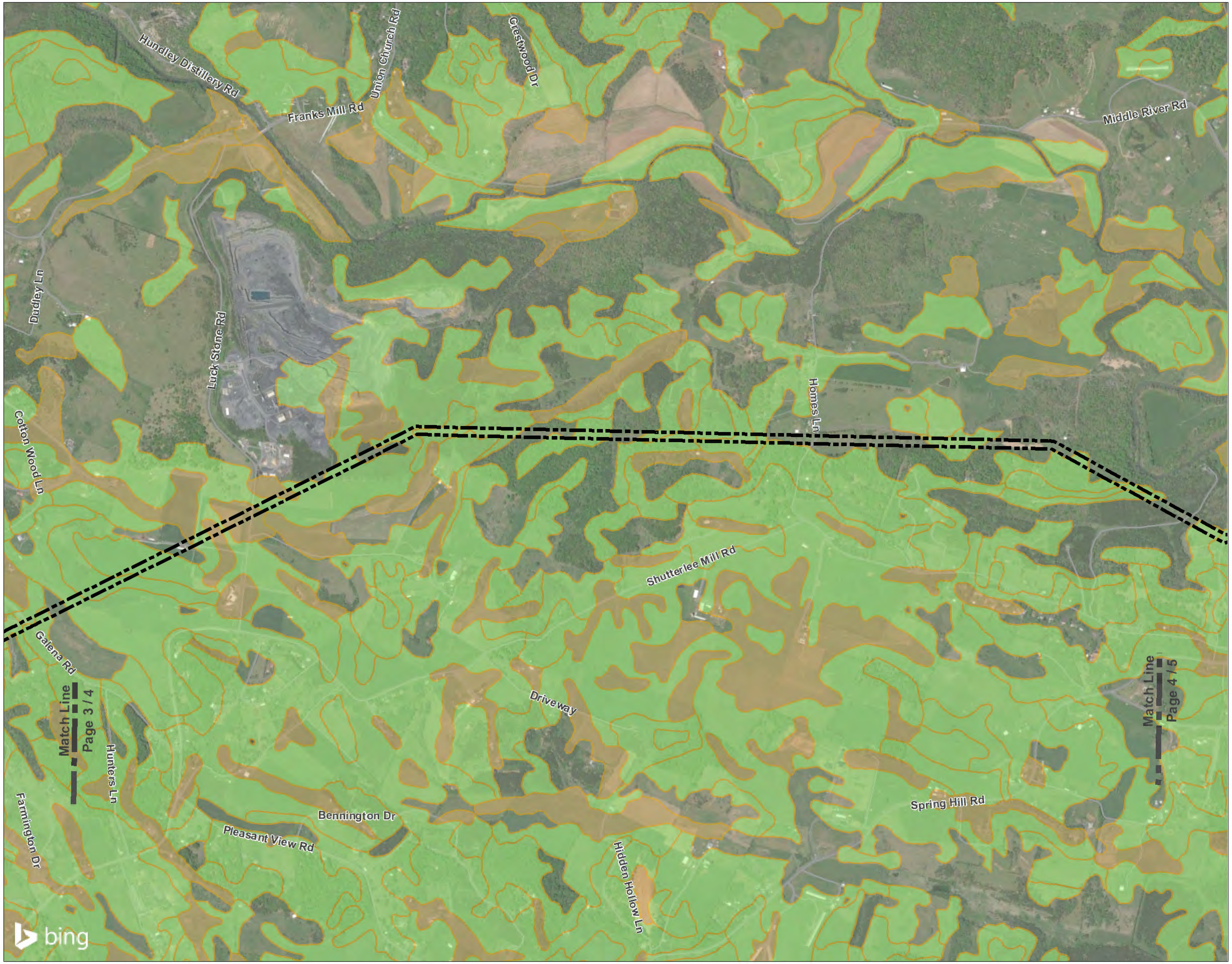

Figure No.
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Prime Farmland Map

Client/Project 203401607
Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

Project Location
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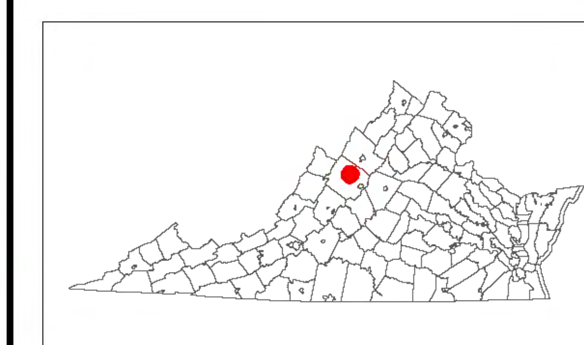

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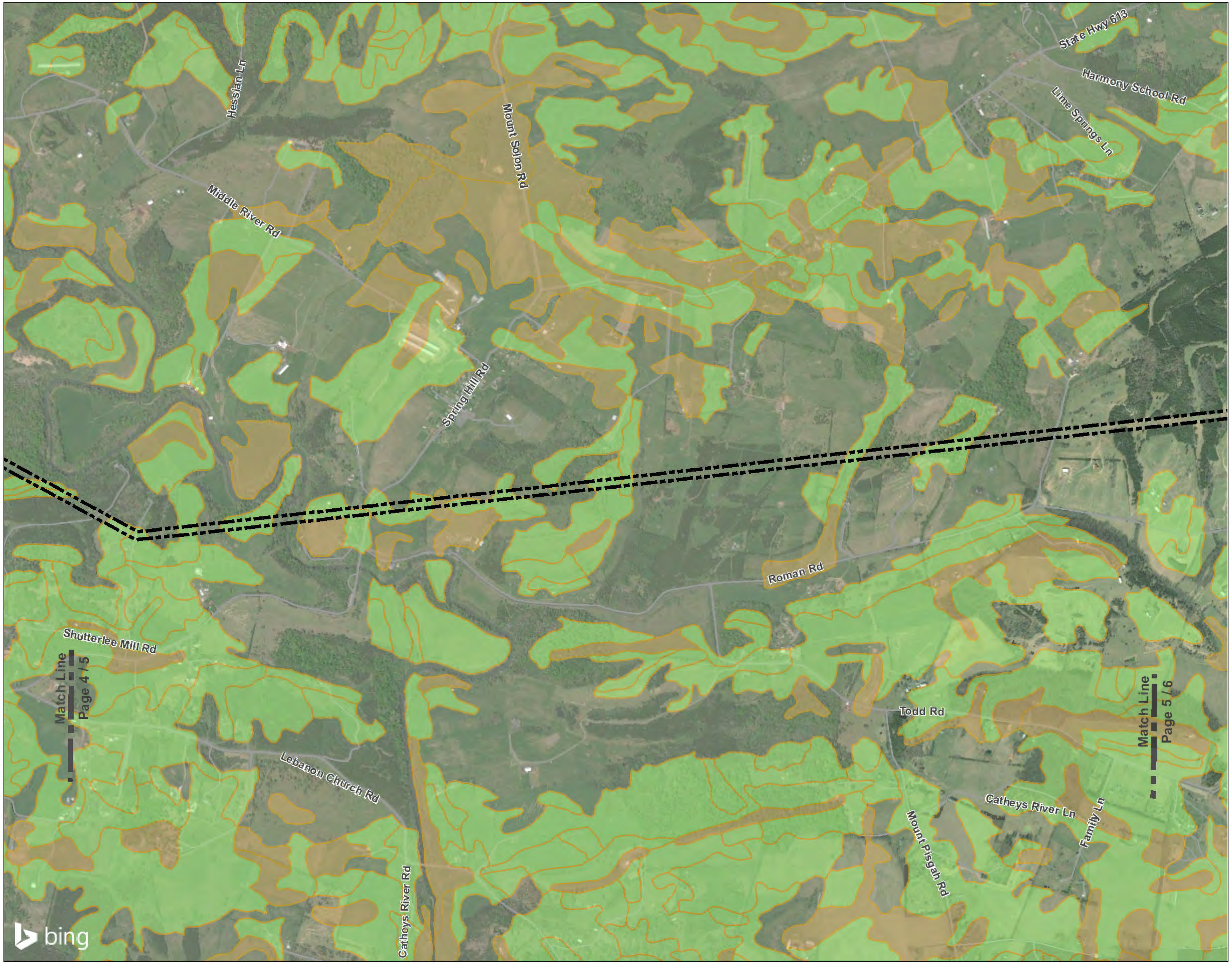

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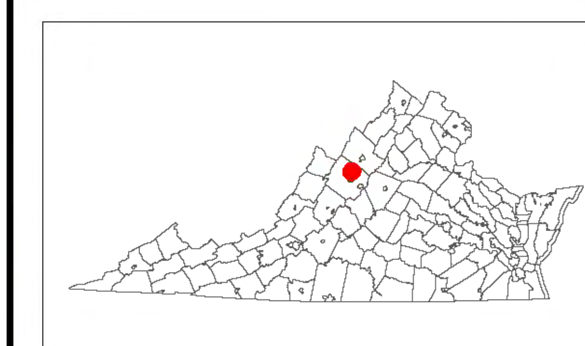

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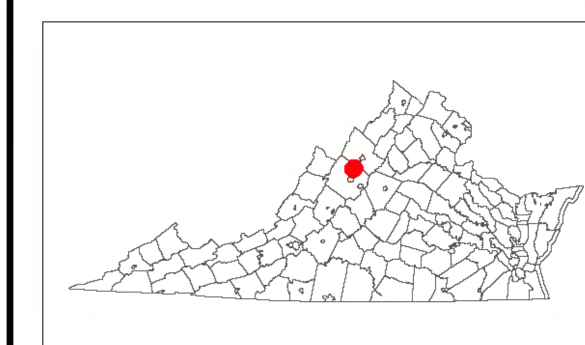

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III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

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: In late April 2021, the Company launched an internet website dedicated to the proposed Rebuild Project: www.dominionenergy.com/stauntonvalley. The website includes a description and benefits of the proposed Rebuild Project, an explanation of need, route map, photo simulations, a project overview video, and information on the Commission review process.

In early April 2021, the Company sent project announcement mailers to approximately 1,800 property owners and residents within 500 feet of the Rebuild Project. Each mailer included a postcard with overview map. The postcard provided a brief overview of the proposed Rebuild Project and advised that due to COVID-19, the Company would not host a traditional in-person open house event, but would a virtual community meeting. In addition, the communication indicated that detailed materials would be posted to the dedicated Rebuild Project website and how to contact the project team to provide any feedback or questions. Copies of the postcard with overview map are included as Attachment III.B.1.

In August 2021, the Company sent informational postcards to the same property owners inviting them to attend the virtual community meeting and to visit the dedicated Rebuild Project page. The postcard is included as Attachment III.B.2.

Newspaper print advertisements regarding the Rebuild Project and virtual open house were placed in the News Leader (circ. 7,098). See Attachment III.B.3. In addition, digital and social media advertisements ran in the same print publications as well as NextDoor, Google AdWords, Twitter, and Facebook targeting resident and property owners in Staunton and Augusta zip codes within close proximity to the Rebuild Project. Examples of these advertisements are included as Attachment III.B.4.

A virtual open house was held on September 14, 2021, at 6:00 p.m. At the virtual open house, the Company made available details about construction, project timing, and the Commission approval process. There have been 1,306 unique page views on the Rebuild Project webpage since the virtual open house event and a total of 6 clicks on the posted YouTube link of the question and answer sessions of the virtual open house. Traditional open house materials have been posted on the website for the proposed Rebuild Project, including simulations of the proposed Rebuild Project from key locations and a fact sheet with overview map. The key location simulations are included as Attachment III.B.5 and the fact sheet is included as Attachment III.B.6.

In addition, the Company researched the demographics of the surrounding communities using the 2020/2025 Esri Updated Demographics data and EPA's EJScreen to determine that there are 24 Census Block Groups within the Rebuild Project area that fall within a mile of the existing transmission line. A review of minority, income, and education census data identified populations within the study area that meet the U.S. Environmental Protection Agency defined threshold for Environmental Justice protections ("EJ Communities").

Pursuant to Va. Code §§ 56-46.1 C and 56-259 C, as well as Attachment 1 of these Guidelines, there is a strong preference for the use of existing utility right-of-way whenever feasible. The Rebuild Project is within existing right-of-way and will not require an increase in operating voltage. Based on the analysis of the Rebuild Project, 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 Rebuild Project 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 in a manner that allows them to meaningfully participate in the Rebuild Project development and approval process so that the Company can take their views and input into consideration. See Attachment III.B.7 for a copy of the Company's Environmental Justice Policy.

Electric Transmission
P.O. Box 26666
Richmond, VA 23261

Dominion Energy®
Actions Speak Louder

Investing in Our Communities

Dominion Energy image.

Dominion Energy®

IMPORTANT

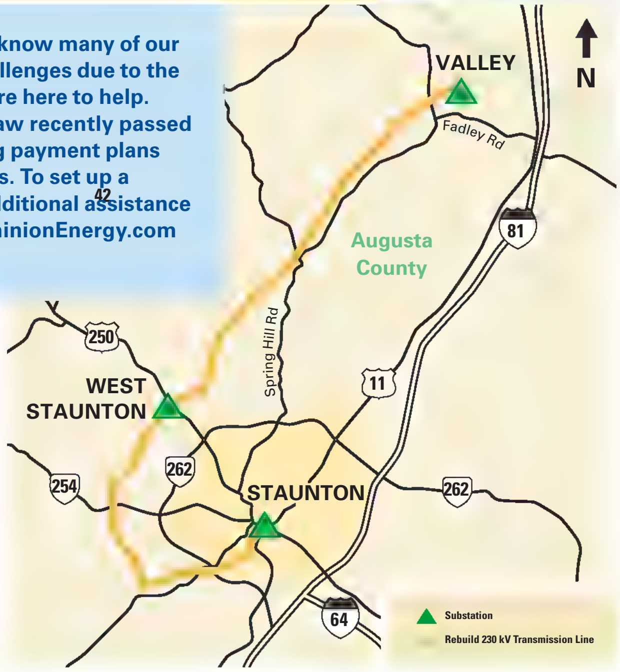
Local Power Line Project Information

Use your iPhone camera or the QR reader app on other smartphones to visit the project page on our website.

Staunton-Valley 230 kV Electric Transmission Line Rebuild

AT DOMINION ENERGY, we are committed to continually reviewing and analyzing our energy infrastructure to provide safe, reliable, and affordable electricity to our neighbors. We are currently preparing to partially rebuild a 230 kilovolt (kV) electric transmission line between our Staunton and Valley substations in the city of Staunton and Augusta County, Virginia.

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.



This map is intended to serve as a representation of the project area and is not intended for detailed engineering purposes.

After nearly five decades of reliable service, many of the existing structures and components on this 21.5-mile line are at the end of their service life and need to be rebuilt to bring facilities up to current safety and reliability standards.

We are currently in the planning and conceptual phase of the project and plan to submit an application to the Virginia State Corporation Commission (SCC) for project approval in fall 2021. Prior to submitting an application, we will hold a virtual community meeting to receive input and answer questions from homeowners. More information will be sent once details are finalized.

Construction is scheduled to begin in 2023 and project completion at the end of 2025. We will continue to keep you updated as activities progress.

CONTACT US — Visit our website at DominionEnergy.com/stauntonvalley for project updates or powerlines101.dominionenergy.com to learn more about our project processes. Or contact us by calling 888-291-0190 or sending an email to powerline@dominionenergy.com.

WHAT:

This project will partially rebuild the existing 230 kV Staunton-Valley electric transmission line. No new right of way is needed for this project.

WHY:

The existing weathering steel lattice structures and wooden H-frame structures were originally installed in 1971 and 1981. We are planning to replace the lattice structures primarily with brown, weathering-steel poles and the wooden H-frame structures primarily with brown, weathering-steel H-frames with galvanized cross arms and x-braces. New structures will be in the same general location as the existing structures.

WHERE:

This 21.5-mile line is located in the city of Staunton and Augusta County, Virginia.

TIMELINE

April 2021 — Announce project to community

Q2 2021– Q2 2023 — Develop project plans and coordinate with localities and stakeholders

Q3 2021 — Hold virtual community meeting

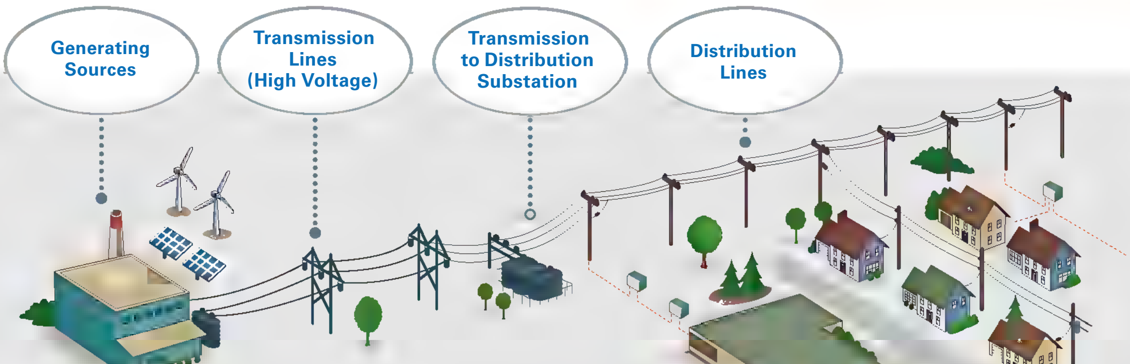
Q4 2021 — Submit SCC application

Q3 2023 — Begin construction

End of 2025 — Complete construction

Delivering Clean, Safe, Affordable and Sustainable Energy

Transmission lines are the tall, high-voltage lines that carry electricity over long distances from power generation facilities to substations.



For a video, visit powerlines101.dominionenergy.com.

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

Attachment III.B.2

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.

Staunton-Valley 230 kV Electric Transmission Line Rebuild

AT DOMINION ENERGY, we are committed to staying connected with our customers and providing the latest information on work being done in the communities we serve.

You are receiving this postcard because we would like to invite you to our virtual community meeting for the partial rebuild of our 230 kilovolt (kV) electric transmission line between our Staunton and Valley substations in the city of Staunton and Augusta County, Virginia. During this meeting you can ask questions and interact with our team as they present important information about the project, which is set to begin construction in 2023.

You can access our virtual community meeting for free using a mobile device, tablet, computer or you can simply dial-in with your telephone. Please visit DominionEnergy.com/stauntonvalley for details. Your attendance is an important part of our commitment to engage the community in our project development.

In addition, we want to inform you that in the wake of the ongoing public health concerns from the spread of the coronavirus, we are mindful of our activities and maintaining property owner interactions with the appropriate social distancing. The work we do is integral to maintaining grid reliability and our crews will continue to perform work as needed to provide reliable electric service.

CONTACT US — For project updates, visit our website at DominionEnergy.com/stauntonvalley. Or contact us by sending an email to powerline@dominionenergy.com or calling 888-291-0190.

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 flexible payment arrangements up to 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, Sept. 14, 2021 • 6–7 p.m.

Join the meeting by visiting our website, DominionEnergy.com/stauntonvalley.

A recording will be available on the project website after the meeting.

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 the rebuilding of the Staunton-Valley 230 kV line connecting Dominion Energy substations in in the city of Staunton and Augusta County. This project will ensure our community has access to affordable, reliable energy for years to come.

Use your phone's camera or QR reader app to visit the project page directly.

Join us live online on Tuesday, September 14 at 6 p.m.

You can find event details at DominionEnergy.com/stauntonvalley

Dominion Energy®

Actions Speak Louder

Dominion Energy
Staunton-Valley Transmission Line Project
dominion003767

Virtual Community Meeting – Pre-Event Copy

Pre-Event Social Copy

These ads will run beginning Tuesday, September 6 and conclude September 14 at 6 p.m. Each ad will feature a short video featuring event details and will link to the www.dominionenergy.com/stauntonvalley project page where event details are hosted.

Facebook:

V1 Message: Join us for a Virtual Community Meeting to learn about the rebuilding of the Staunton-Valley Electric Transmission Line. This project will help strengthen our electric grid and maintain reliable service in the region.

Link Headline: Virtual Community Meeting

Link Description: September 14, 6-7 p.m.

Call to Action Button: Learn More

V2 Message: Curious about upcoming work on the Staunton-Valley Electric Transmission Line? Join us for a live Virtual Community Meeting.

Link Headline: Virtual Community Meeting

Link Description: September 14, 6-7 p.m.

Call to Action Button: Learn More

Twitter:

V1 Tweet: Join us for a Virtual Community Meeting to learn about the rebuilding of the Staunton-Valley Electric Transmission Line. This project will help strengthen our electric grid and maintain reliable service in the region.

V2 Tweet: Curious about upcoming work on the Staunton-Valley Electric Transmission Line? Join us for a live Virtual Community Meeting.

Nextdoor:

Headline (Character Limit: 70)
Virtual Community Meeting

Body Text (Character Limit: 90)
Join us to learn more about the Staunton-Valley Electric Transmission Line Project.

Offer Text (Character Limit: 50)
September 14, 6-7 p.m.

CTA
Learn More

Note: Character limits on the Nextdoor platform are restrictive. Please review before adding additional verbiage.

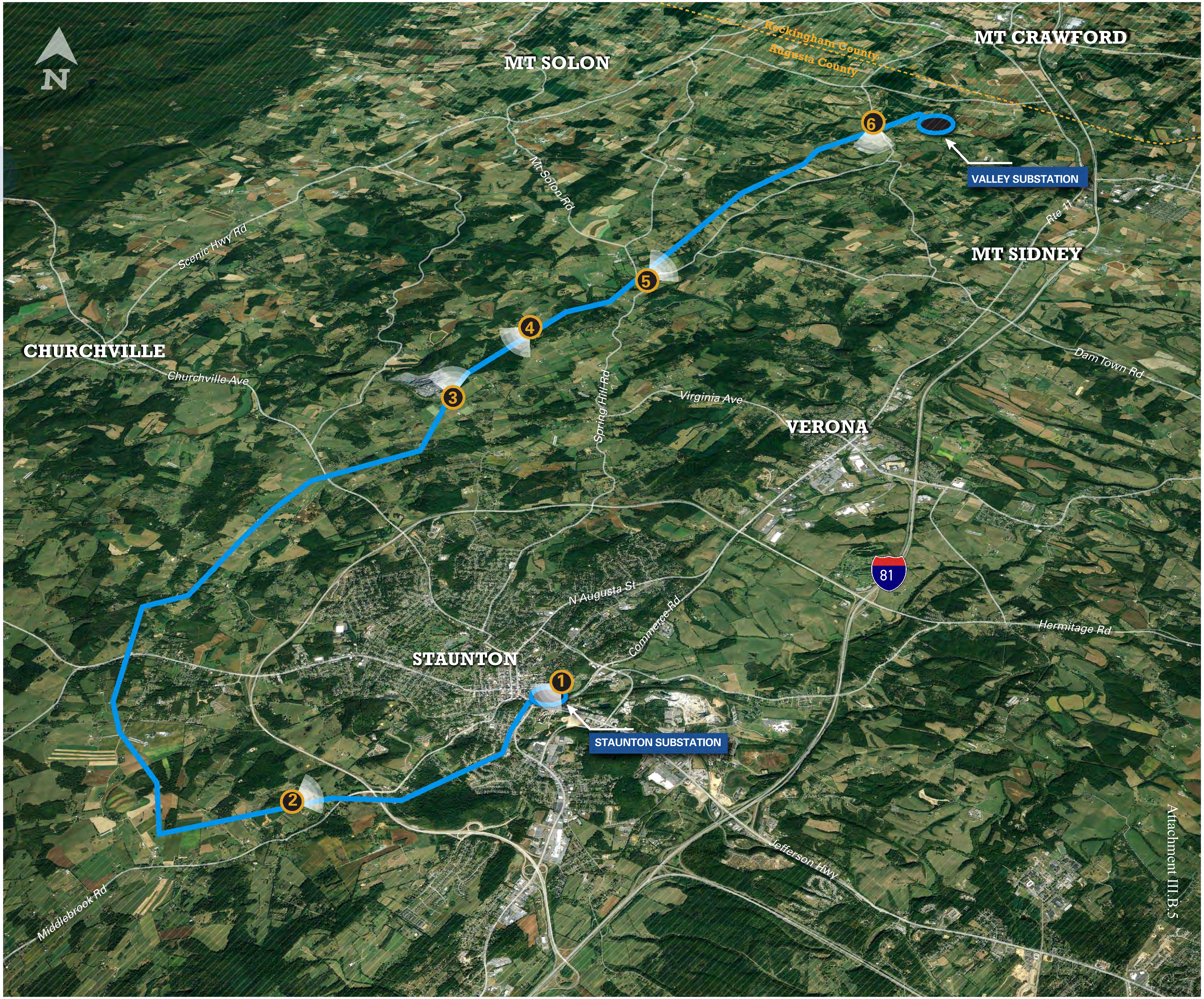
STAUNTON -VALLEY

230kv Transmission line rebuild project

VIEWPOINT MAP

- Proposed Transmission Line
- Substation
- Photo Location
- County Boundary

Dominion Energy®



Attachment III.B.5

STAUNTON -VALLEY

230kv Transmission line rebuild project

VIEWPOINT 1

Date: 06/16/2021

Time: 11:14 AM

Direction: Southwest

- Proposed Transmission Line
- Substation
- Photo Location
- County Boundary

Photo Simulation is for demonstrative purposes only. Final design is subject to change pending public, utility, and regulatory review.

STAUNTON -VALLEY

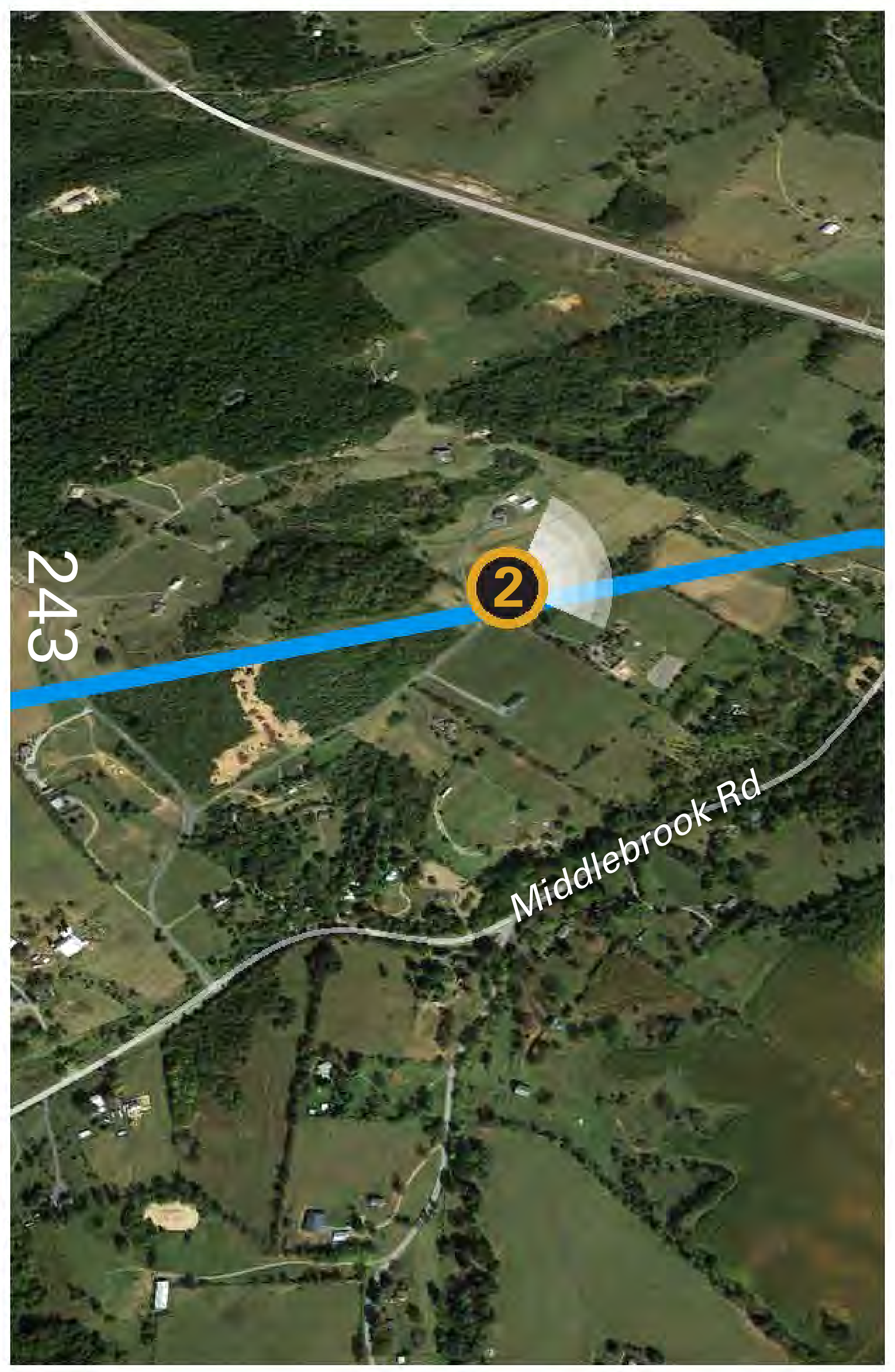
230kv Transmission line rebuild project

VIEWPOINT 2

Date: 06/16/2021

Time: 1:37 PM

Direction: East



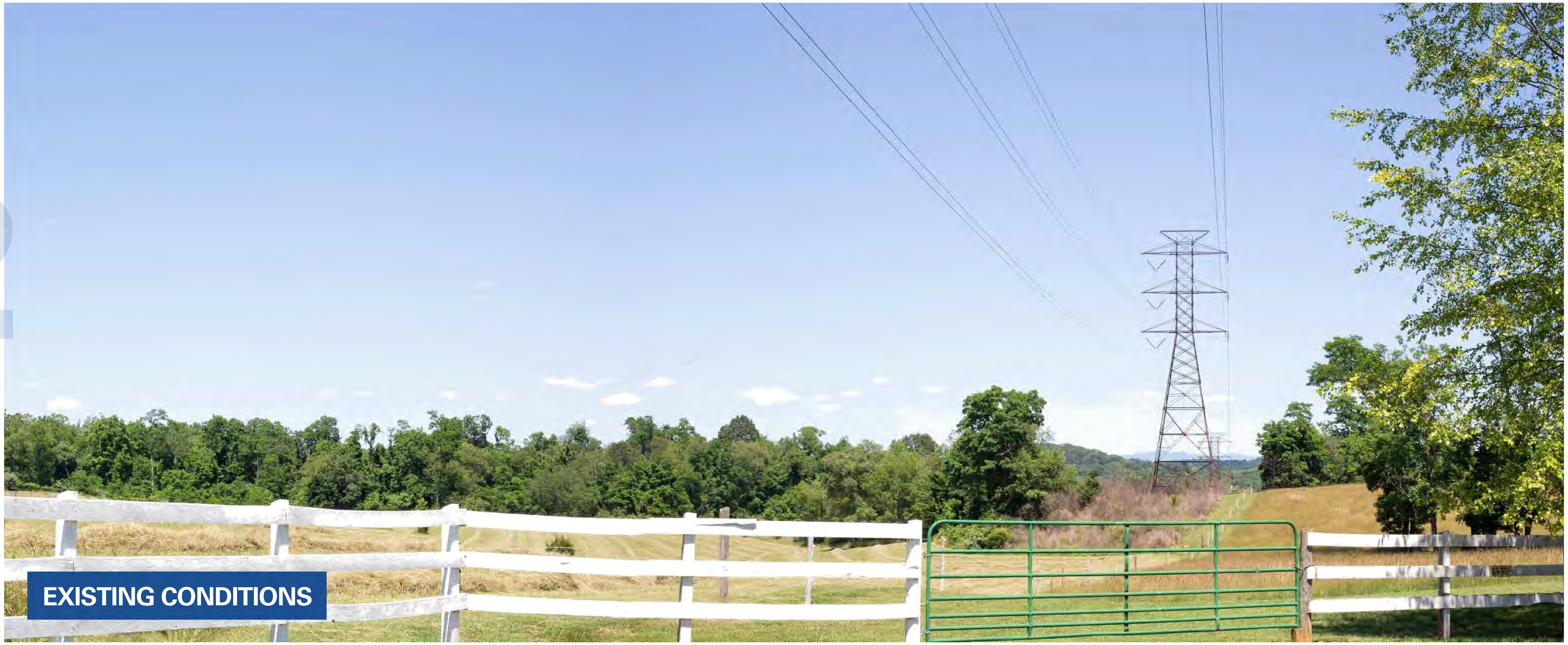
Proposed Transmission Line

Substation

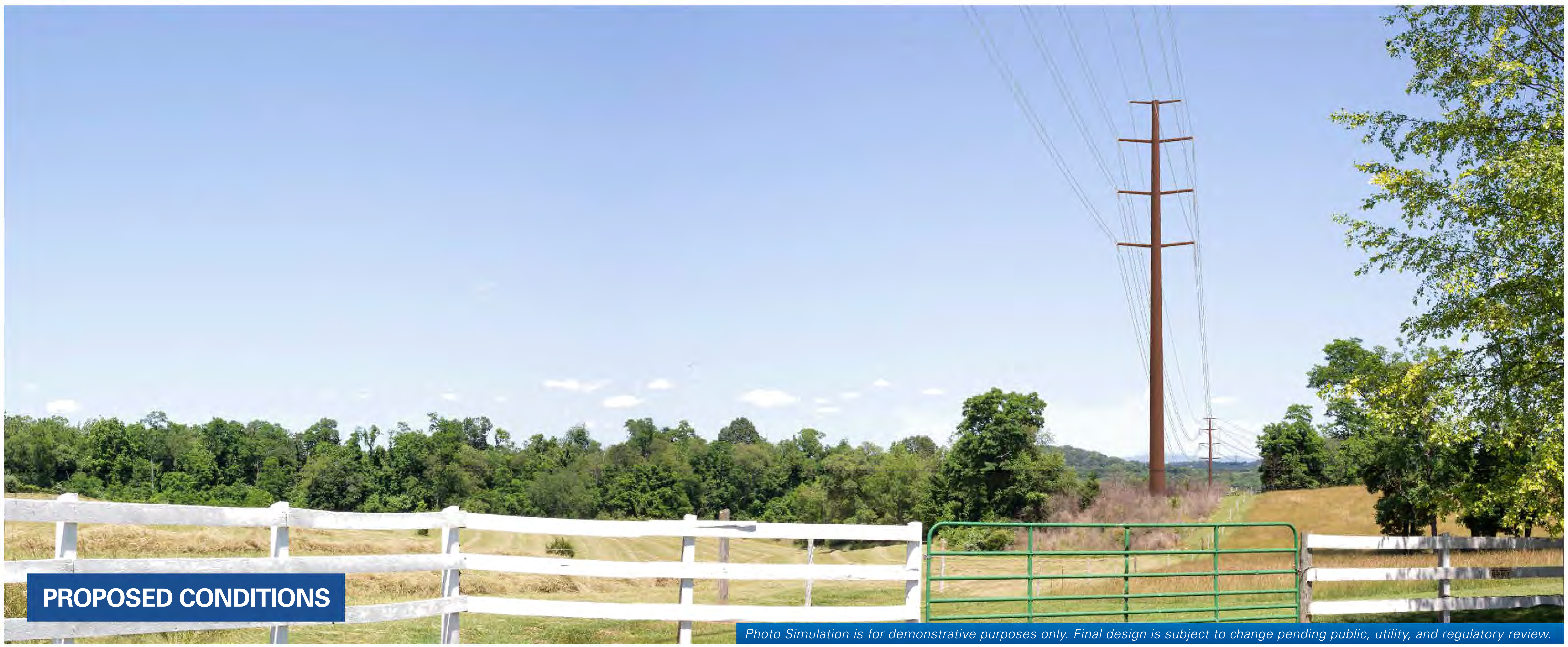
Photo Location

County Boundary

Dominion Energy®



EXISTING CONDITIONS



PROPOSED CONDITIONS

Photo Simulation is for demonstrative purposes only. Final design is subject to change pending public, utility, and regulatory review.

STAUNTON -VALLEY

230kv Transmission line rebuild project

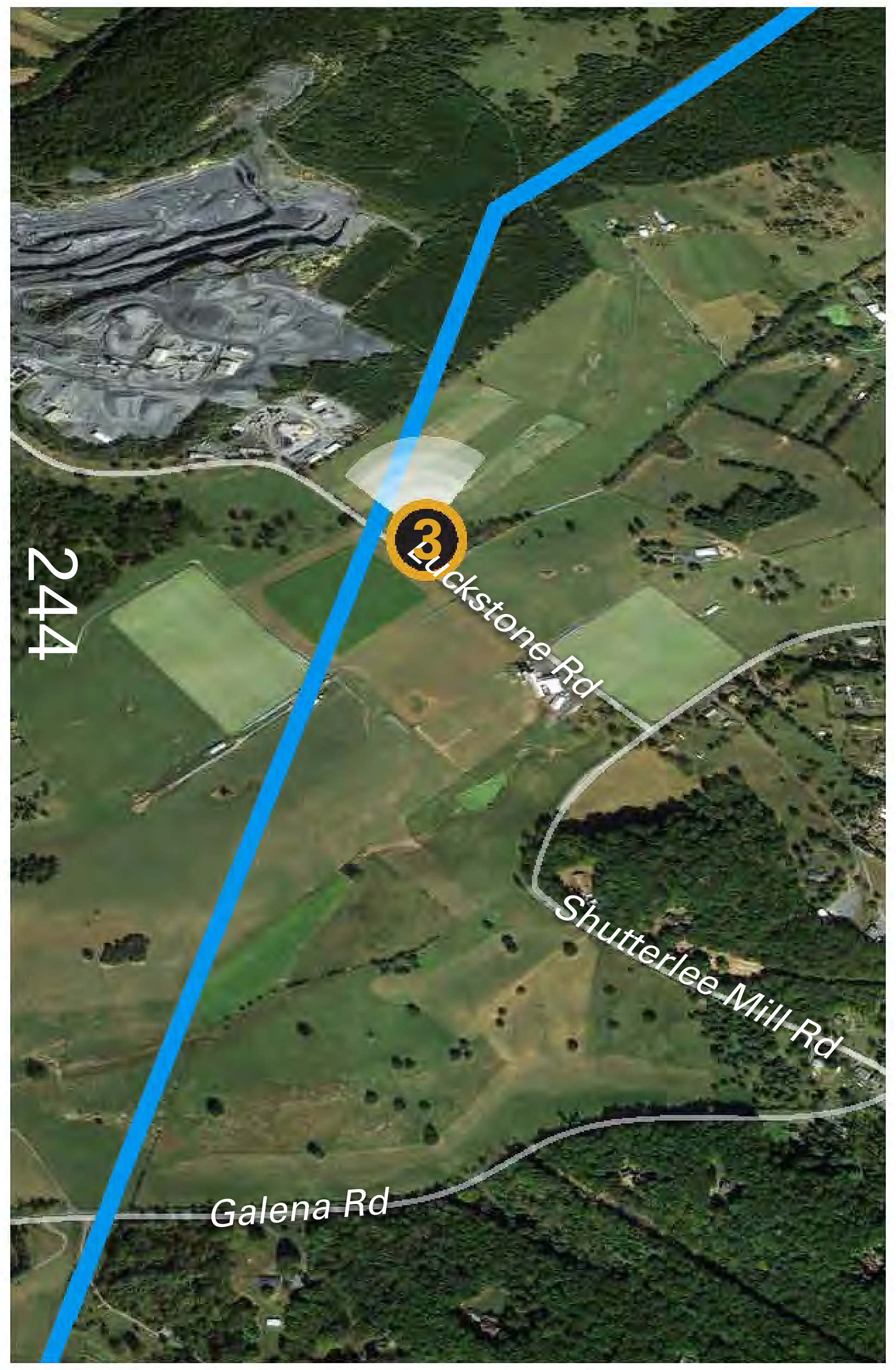
VP3

VIEWPOINT 3

Date: 06/16/2021

Time: 5:18 PM

Direction: North



- Proposed Transmission Line
- Substation
- Photo Location
- County Boundary

Dominion Energy®

Photo Simulation is for demonstrative purposes only. Final design is subject to change pending public, utility, and regulatory review.

STAUNTON -VALLEY

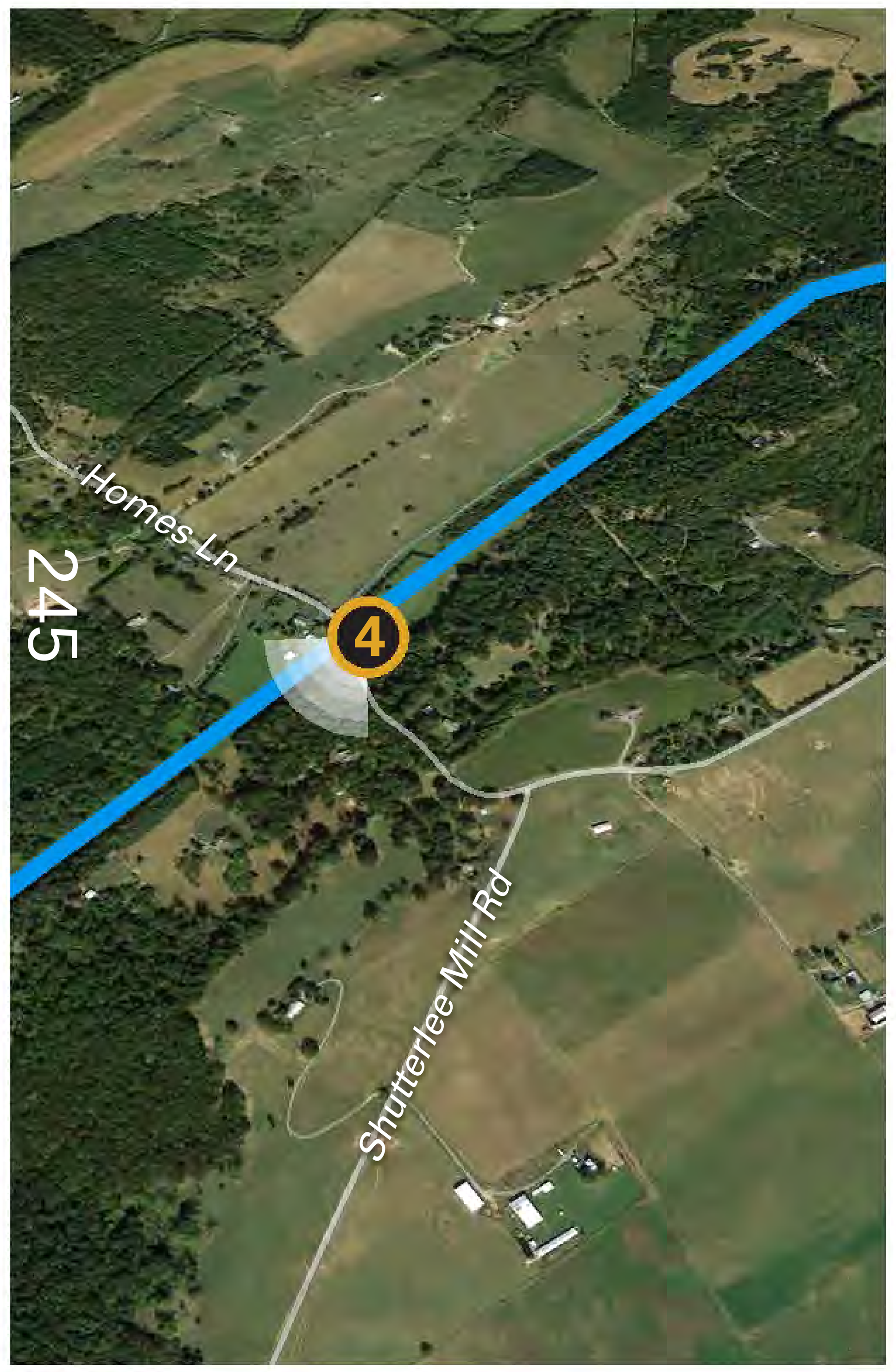
230kv Transmission line rebuild project

VIEWPOINT 4

Date: 06/17/2021

Time: 9:52 AM

Direction: Southwest



Proposed Transmission Line

Substation

Photo Location

County Boundary

Dominion Energy®

EXISTING CONDITIONS

PROPOSED CONDITIONS

Photo Simulation is for demonstrative purposes only. Final design is subject to change pending public, utility, and regulatory review.

STAUNTON -VALLEY

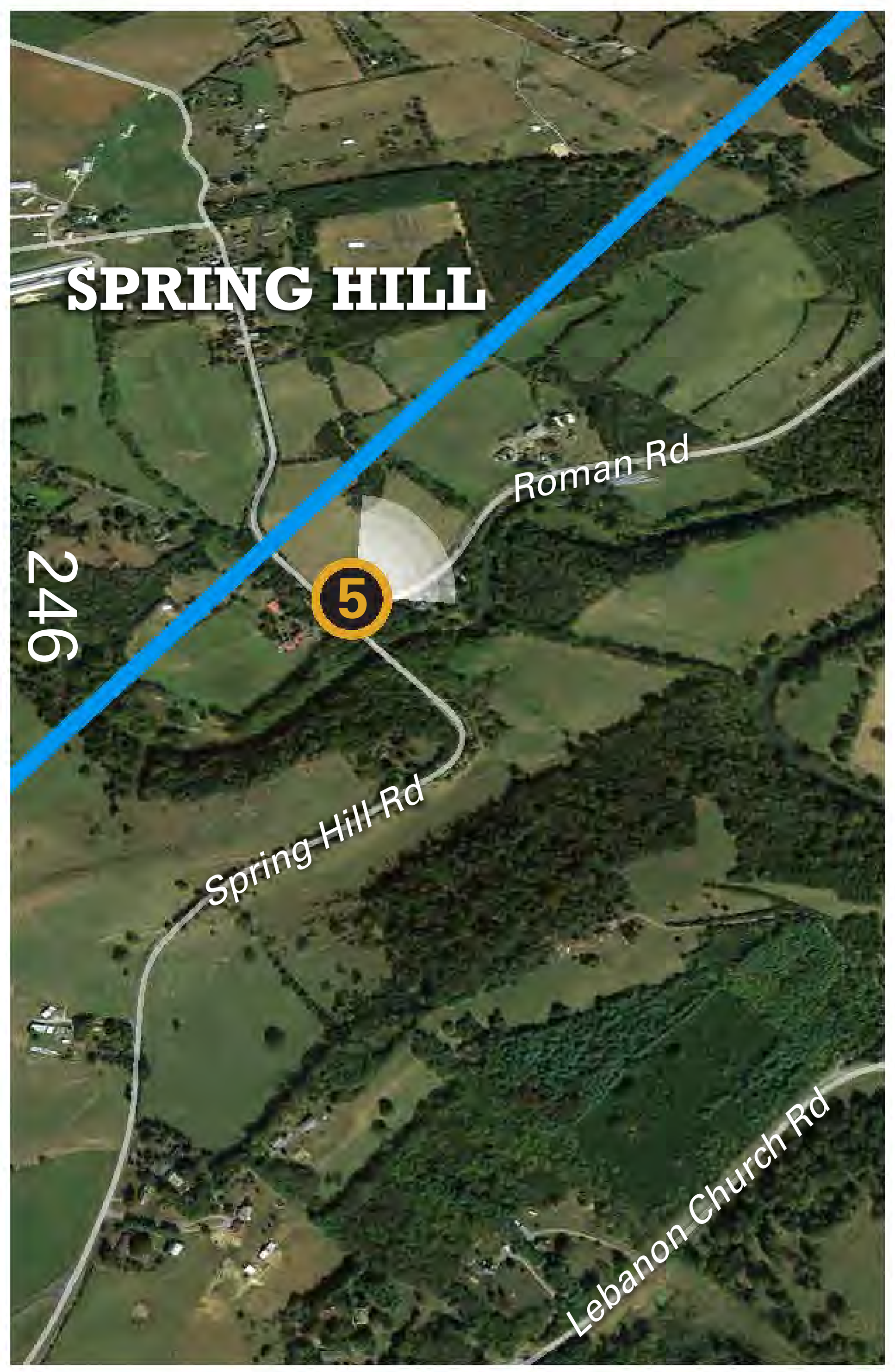
230kv Transmission line rebuild project

VIEWPOINT 5

Date: 06/17/2021

Time: 10:27 AM

Direction: Northeast



- Proposed Transmission Line
- Substation
- Photo Location
- County Boundary

Photo Simulation is for demonstrative purposes only. Final design is subject to change pending public, utility, and regulatory review.

STAUNTON -VALLEY

230kv Transmission line rebuild project

VIEWPOINT 6

Date: 06/15/2021

Time: 2:55 PM

Direction: South

- Proposed Transmission Line
- Substation
- Photo Location
- County Boundary

Dominion Energy®

Photo Simulation is for demonstrative purposes only. Final design is subject to change pending public, utility, and regulatory review.

Staunton-Valley 230 kV
Electric Transmission Rebuild Project

Augusta County and City of Staunton, Virginia

At Dominion Energy, we are committed to providing safe, reliable electricity to our neighbors. The electric transmission line that runs from our Staunton Substation to our Valley Substation is at the end of its service life and needs to be rebuilt to maintain reliability for our customers.

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Existing Conditions

- Project area is 21.5 miles long
- Right of way is primarily 120 feet wide with some 100-foot sections
- Double circuit monopoles and lattice structures.
- Single circuit wood H-frames
- Existing average structure height: 73.3’
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Proposed Conditions

- Utilize existing right of way corridor
- Brown, weathering-steel H-frames with galvanized cross arms and x-braces
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- Proposed average structure height: 79.3’
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Staunton-Valley 230 kV
Electric Transmission Rebuild Project

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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 approximately 44 unauthorized encroachments within the Rebuild Project right-of-way. The majority of these encroachments are sheds in the easement. The encroachments will need to be addressed with the respective property owners as the Company continues to investigate the right-of-way.

In support of the Rebuild Project, 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 existing Line #293 is co-located on double circuit structures with Line #253 and runs parallel to Line #550 within existing transmission line right-of-way for approximately 0.2 mile north of the Valley Substation. Line #548 parallels the existing Line #293 for approximately 2.0 miles west from the Valley Substation. The existing Line #293 is co-located on double circuit structures with Line #83 within existing transmission right-of-way for approximately 3.8 miles from the Staunton Substation. There is also an existing electric distribution line within this section of right-of-way. The easements for the transmission right-of-way have been in use since acquired primarily in the late 1960s and early 1970s.

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 Company reviewed the *City of Staunton, Virginia Comprehensive Plan* and the *Augusta County Comprehensive Plan* to evaluate the potential effect the Rebuild Project could have on future development. The placement and construction of electric transmission lines is not addressed within the plans. The Rebuild Project is not expected to impact the character of these localities or the surrounding land use since the transmission corridor has been in use for at least 50 years and the structure heights are only increasing incrementally.

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. The City of Staunton and Augusta County have no designated important farmlands or agricultural districts within their jurisdiction.

2. Not applicable.

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 six NRHP-listed architectural resources within 500 feet of the centerline of the existing right-of-way for the Rebuild Project. The table below provides NRHP listed historic resources within and adjacent to the Rebuild Project right-of-way.

Architectural Resource Listed on the NRHP Within or Adjacent to the Rebuild Project Right-of-Way

VDHR#	Resource Name	VDHR Determination	Distance to Line (feet)
132-0008	Virginia School for the Deaf and Blind Historic District	NRHP-listed	153
132-0009	Western State Hospital	NRHP-listed	210
132-0013	Sears House	NRHP-listed	427
132-0014	Wharf Area Historic District	NRHP-listed	301
132-0024	Beverley Historic District	NRHP-listed	286
132-0035	Gospel Hill Historic District	NRHP-listed	263

2. NRHP-listed resources within and adjacent to the right-of-way are provided in the table above. No NRHP-eligible are adjacent to the existing right-of-way.

3. The City of Staunton has designated five historic districts, which correspond to the NRHP-listed historic districts within the City. The City of Staunton designated historic districts within 500 feet of the centerline of the existing right-of-way includes the Wharf Area Historic District, as provided in the table above.

4. One archaeological site has been identified within the existing right-of-way but has not been evaluated for listing on the NRHP. Site 44AU1012 is associated with a railroad water tower.

5. None.

6. None.

7. None.

8. None.

9. There is one VOF conservation easement and one Valley Conservation Council conservation easement crossed by the existing right-of-way for Line #293 and the proposed Rebuild Project (see Attachment II.A.6.a).

10. None.

11. None.

12. Other than those listed in items 1 through 11, the proposed Rebuild Project does not cross any federal or state parks or forests, game preserves, Wildlife Management Areas, Conservation Sites, or Managed Conservation Lands.

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/external/portal.jsp) was reviewed to identify airports within 10 nautical miles of the proposed Rebuild Project. The following airports were identified:

- Augusta Medical Center Heliport, approximately 4.9 miles southeast of Staunton Substation,
- Eagle's Nest Airport, approximately 7.17 miles southeast of Line #293,
- Shenandoah Valley Regional Airport, approximately 4.63 miles southeast of Valley Substation
- Bridgewater Air Park, approximately 3.15 miles north of Valley Substation

Based on a preliminary review, impacts to air navigation are not anticipated but FAA filings are required for construction cranes. The Company has filed for obstruction evaluation determinations for these structures. No structures exceed obstruction standards, but all require submission of Form 7460-2 Part 2 within 5 days of construction reaching its greatest height.

In an email dated September 13, 2021, the Virginia Department of Aviation (the "DOAv") stated that after review, it was determined that the proposed Rebuild Project is within 20,000 linear feet of Bridgewater Airport. This email is provided as Attachment 2.N.1 in the DEQ Supplement. The DOAv commented that a Form 7460 must be submitted to the FAA if any proposed transmission structures or the crane that will be used to remove or replace the structures will reach a height of 200 feet above the ground level ("agl"). The Company will file Form 7460 with the FAA for each proposed structure or crane that will exceed 200 feet agl.

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: The Rebuild Project does not cross any scenic Virginia byways. Use of the existing project corridor minimizes or eliminates permanent incremental impacts at road crossings.

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

J. Identify coordination with appropriate municipal, state, and federal agencies.

Response: As described in detail in Sections III.B and V.D of the Appendix, the Company solicited feedback from Augusta County and the City of Staunton regarding the proposed Rebuild Project. Below is a list of coordination that has occurred with municipal, state, and federal agencies:

- Coordination with the Corps, DEQ, and the Virginia Department of Transportation ("VDOT") will take place as appropriate to obtain necessary approvals for the Rebuild Project.

- Letters dated September 7, 2021, were submitted to Augusta County and the City of Staunton to describe the Rebuild Project and request comment. See Section V.D.

- Letters were submitted to the agencies listed in Section V.C prior to filing, describing the Rebuild Project and requesting comment. See Attachment 2 to the DEQ Supplement.

- A Stage I Pre-Application Analysis has been prepared and was submitted to VDHR on November 5, 2021. See Attachment 2.H.1 to the DEQ Supplement.

- In April 2021, the Company solicited comments via letter from several federally recognized Native American tribes, including the Chickahominy, Eastern Chickahominy, Nansemond, Pamunkey, Rappahannock, and Upper Mattaponi, and several state recognized Native American tribes, including the Cheroenhaka, Mattaponi, Nottoway of Virginia, and Patawomeck. Additionally, the Company consulted the Housing and Urban Development ("HUD") Tribal Directory Assessment Tool ("TDAT") database to identify Native American tribes with specific interests in the Rebuild Project area. Letters were also sent to the Monacan, Catawba and Delaware Nation as identified in the database. A copy of the letter template, which included a project fact sheet and overview map, is included as Attachment III.J.1. The Catawba Indian Nation provided a response dated May 19, 2021. See Attachment III.J.2.

See also Sections III.B, III.K and V.D of this Appendix, and the DEQ Supplement.

Dominion Energy Virginia
Electric Transmission
P.O. Box 26666, Richmond, VA 23261-6666
DominionEnergy.com

April 19, 2021

Staunton-Valley 230 kV Electric Transmission Line Rebuild Project

At Dominion Energy, we are dedicated to maintaining reliable electric service 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 an upcoming electric transmission rebuild project in Augusta County and the city of Staunton, Virginia.

We are currently planning to rebuild an aging 230 kilovolt (kV) electric transmission line between our Staunton and Valley substations. After nearly five decades of service, the existing structures and components on the 21.5-mile line are at the end of their service life and need to be replaced to maintain reliability for our customers. The line is built primarily on wooden H-frame structures with brown, weathering steel lattice structures and monopole structures in some locations. We are proposing to rebuild this line using a combination of brown, weathering steel H-frame structures, 3-pole structures, and monopoles.

We are currently in the conceptual phase of the project and are seeking your input prior to submitting an application with the Virginia State Corporation Commission (SCC) in fall 2021. Doing so allows us to consider any concerns you may have as we work to meet the project's needs. Enclosed is a project overview map to help in your review. Please feel free to notify other relevant organizations that may have an interest in the project area. For reference, other recipients of this letter include countywide and statewide historic, cultural, and scenic organizations, as well as Native American tribes.

Please provide your comments by June 30, 2021 so we have adequate time to consider your comments in our project design and as part of our SCC application. We appreciate your assistance as we move through the planning process.

Due to the ongoing public health concerns resulting from the coronavirus, we do not plan to host an in-person community event at this time. In lieu of our traditional open house, we will host a virtual community meeting prior to submitting the SCC application in the fall. Please visit the project webpage at DominionEnergy.com/stauntonvalley for meeting updates and more project information.

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 me by calling 804-201-8145 or sending an email to maxwell.s.payeur@dominionenergy.com. You may also contact Tribal Relations Manager Ken Custalow by sending an email to Ken.Custalow@dominionenergy.com or calling 804-837-2067.

Sincerely,

Max Payeur
Communications Specialist
The Electric Transmission Project Team

Staunton-Valley 230 kV
Electric Transmission Rebuild Project

Augusta County and City of Staunton, Virginia

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Existing Conditions

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Proposed Conditions

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Dominion Energy®

Catawba Indian Nation
Tribal Historic Preservation Office
1536 Tom Steven Road
Rock Hill, South Carolina 29730

Office 803-328-2427
Fax 803-328-5791

May 19, 2021

Attention: Max Payeur
Dominion Energy
P.O. Box 26666
Richmond, VA 23261

Re. THPO #	TCNS #	Project Description
2021-1108-5		Staunton-Valley 230 kV Electric Transmission Line Rebuild Project

Dear Mr. Payeur,

The Catawba have no immediate concerns with regard to traditional cultural properties, sacred sites or Native American archaeological sites within the boundaries of the proposed project areas. **However, the Catawba are to be notified if Native American artifacts and / or human remains are located during the ground disturbance phase of this project.**

If you have questions please contact Caitlin Rogers at 803-328-2427 ext. 226, or e-mail Caitlin.Rogers@catawba.com.

Sincerely,

Caitlin Rogers for

Wenonah G. Haire
Tribal Historic Preservation Officer

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

K. Identify coordination with any non-governmental organizations or private citizen groups.

Response: In April 2021, the Company solicited comments via letter from the community leaders, environmental groups, business groups identified below. A copy of the letter template, which included a project fact sheet and overview map, is included as Attachment III.K.1.

Name	Organization
Ms. Elizabeth S. Kostelny	Preservation Virginia
Mr. Jack Gary	Council of Virginia Archaeologists
Ms. Leighton Powell	Scenic Virginia
Ms. Sharee Williamson	National Trust for Historic Preservation
Mr. Dan Holmes	Piedmont Environmental Council
Dr. Newby- Alexander, Dean	Norfolk State University
Ms. Nancy Sorrells	Augusta County Historical Society
Mr. Thomas Gilmore	Civil War Trust
Mr. Steven Williams	Colonial National Historical Park
Mr. Alexander Macaulay	Macaulay & Jamerson
Mr. Keven Walker	Shenandoah Valley Battlefields Foundation

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

L. Identify any environmental permits or special permissions anticipated to be needed.

Response: See the table below for potential permits anticipated for the proposed Rebuild Project.

Potential Permits

Activity	**Permit**	**Agency**
Impacts to wetlands and waters of the U.S.	Nationwide Permit 57	U.S. Army Corps of Engineers
Impacts to wetlands and waters of the state	Virginia Water Protection Permit	Virginia Department of Environmental Quality
Encroachment over subaqueous bottom	VMRC	Virginia Marine Resources Commission
Discharge of Stormwater from Construction	Construction General Permit	Virginia Department of Environmental Quality
Work within VDOT right-of-way	Land Use Permit	Virginia Department of Transportation
Aerial crossing over railroad	Right of Entry Permit	CSX Railroad

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 electric and magnetic field ("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 and proposed transmission lines. EMF levels are provided for both historical (2020) and future (2026) 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 of 80.008 amps for Line #293, 25.646 amps for Line #83, and 500.797 amps for Line #548. Line #293 has a maximum operating voltage of 241.5 kV, Line #83 has a maximum operating voltage of 120.75 kV, and Line #548 has a maximum operating voltage of 525 kV when supported on existing structures. See Attachments II.A.5.a, c, e, g, i, k, m, o, q, and s.

These field levels were calculated at mid-span where the conductors are closest to the ground and the conductors are at a historical average load operating temperature.

EMF levels at the edge of the rights-of-way for the existing lines at the historical average loading:

Attachment	**Left Edge Looking Towards Valley Substation**		**Right Edge Looking Towards Valley Substation**	
	Electric Field (kV/m)	**Magnetic Field (mG)**	**Electric Field (kV/m)**	**Magnetic Field (mG)**
II.A.5.a	0.305	1.050	0.545	2.349
II.A.5.c	0.305	1.048	0.548	2.344
II.A.5.e	0.466	1.609	0.494	2.380
II.A.5.g	0.130	0.503	0.177	1.127
II.A.5.i	1.119	2.133	1.119	2.133

II.A.5.k	1.118	2.136	1.118	2.136
II.A.5.m	1.210	2.309	1.210	2.309
II.A.5.o	1.210	2.308	1.210	2.308
II.A.5.q	2.727	15.185	1.206	4.426
II.A.5.s	1.287	2.452	1.287	2.452

Existing Lines – Historical Peak Loading

EMF levels were calculated for the existing line at the ***historical peak*** load condition of 698.881 amps for Line #293, 152 amps for Line #83, and 2240 amps for Line #548. Line #293 has a maximum operating voltage of 241.5 kV, Line #83 has a maximum operating voltage of 120.75 kV, and Line #548 has a maximum operating voltage of 525 kV when supported on existing structures. See Attachments II.A.5.a, c, e, g, i, k, m, o, q, and s.

These field levels were calculated at mid-span where the conductors are closest to the ground at a historical peak load operating temperature.

The EMF levels at the edge of the rights-of-way for the existing lines at the historical peak loading:

Attachment	**Left Edge Looking Towards Valley Substation**		**Right Edge Looking Towards Valley Substation**	
	Electric Field (kV/m)	**Magnetic Field (mG)**	**Electric Field (kV/m)**	**Magnetic Field (mG)**
II.A.5.a	0.304	5.788	0.548	22.339
II.A.5.c	0.304	5.772	0.550	22.299
II.A.5.e	0.464	8.916	0.498	22.402
II.A.5.g	0.129	2.610	0.178	11.124
II.A.5.i	1.118	18.650	1.118	18.650
II.A.5.k	1.119	18.633	1.119	18.633
II.A.5.m	1.209	20.183	1.209	20.183
II.A.5.o	1.209	20.176	1.209	20.176
II.A.5.q	2.728	68.929	1.206	25.344
II.A.5.s	1.289	21.395	1.289	21.395

Proposed Project - Historical Average Loading

EMF levels were calculated for the proposed Rebuild Project at the ***historical average*** load condition of 80.008 amps for Line #293, 25.646 amps for Line #83, and 500.797 amps for Line #548. Line #293 has a maximum operating voltage of 241.5 kV, Line #83 has a maximum operating voltage of 120.75 kV, and Line #548 has a maximum operating voltage of 525 kV when supported on existing structures. See Attachments II.A.5.b, d, f, h, j, l, n, p, r, and t.

These field levels were calculated at mid-span where the conductors are closest to the ground and the conductors are at a historical average load operating temperature.

EMF levels at the edge of the rights-of-way for the proposed Rebuild Project at the historical average loading:

Attachment	**Left Edge Looking Towards Valley Substation**		**Right Edge Looking Towards Valley Substation**	
	Electric Field (kV/m)	**Magnetic Field (mG)**	**Electric Field (kV/m)**	**Magnetic Field (mG)**
II.A.5.b	0.281	0.883	0.468	2.157
II.A.5.d	0.309	1.049	0.557	2.346
II.A.5.f	0.228	0.560	0.355	1.840
II.A.5.h	0.130	0.158	0.170	0.899
II.A.5.j	1.346	2.525	1.346	2.525
II.A.5.l	1.345	2.527	1.345	2.527
II.A.5.n	1.346	2.525	1.346	2.525
II.A.5.p	1.346	2.526	1.346	2.526
II.A.5.r	2.720	12.573	1.603	5.643
II.A.5.t	0.950	1.766	0.950	1.766

Proposed Project – Historical Peak Loading

EMF levels were calculated for the proposed Rebuild Project at the ***historical peak*** load condition of 698.881 amps for Line #293, 152 amps for Line #83, and 2240 amps for Line #548. Line #293 has a maximum operating voltage of 241.5 kV, Line #83 has a maximum operating voltage of 120.75 kV, and Line #548 has a maximum operating voltage of 525 kV when supported on existing structures. See Attachments II.A.5.b, d, f, h, j, l, n, p, r, and t.

These field levels were calculated at mid-span where the conductors are closest to the ground at a historical peak load operating temperature.

The EMF levels at the edge of the rights-of-way for the proposed Rebuild Project at the historical peak loading:

Attachment	**Left Edge Looking Towards Valley Substation**	**Right Edge Looking Towards Valley Substation**

	Electric Field (kV/m)	Magnetic Field (mG)	Electric Field (kV/m)	Magnetic Field (mG)
II.A.5.b	0.281	5.194	0.467	20.877
II.A.5.d	0.309	5.791	0.560	22.306
II.A.5.f	0.228	5.209	0.357	18.657
II.A.5.h	0.130	3.110	0.170	9.571
II.A.5.j	1.347	22.047	1.347	22.047
II.A.5.l	1.346	22.055	1.346	22.055
II.A.5.n	1.346	22.059	1.346	22.059
II.A.5.p	1.345	22.085	1.345	22.085
II.A.5.r	2.719	57.060	1.603	35.817
II.A.5.t	0.951	15.416	0.951	15.416

Proposed Project - Projected Average Loading in 2026

EMF levels were calculated for the proposed Rebuild Project at the ***projected average*** load condition of 107.4 amps for Line #293, 22.98 amps for Line #83, and 1007.82 amps for Line #548. Line #293 has a maximum operating voltage of 241.5 kV, Line #83 has a maximum operating voltage of 120.75 kV, and Line #548 has a maximum operating voltage of 525 kV when supported on existing structures. See Attachments II.A.5.b, d, f, h, j, l, n, p, r, and t.

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 Rebuild Project at the projected average loading:

Attachment	**Left Edge Looking Towards Valley Substation**		**Right Edge Looking Towards Valley Substation**	
	Electric Field (kV/m)	**Magnetic Field (mG)**	**Electric Field (kV/m)**	**Magnetic Field (mG)**
II.A.5.b	0.281	0.798	0.467	3.219
II.A.5.d	0.309	0.885	0.557	3.446
II.A.5.f	0.229	0.824	0.356	2.884
II.A.5.h	0.130	0.491	0.170	1.480
II.A.5.j	1.346	3.389	1.346	3.389
II.A.5.l	1.345	3.392	1.345	3.392
II.A.5.n	1.345	3.393	1.345	3.393
II.A.5.p	1.345	3.394	1.345	3.394

II.A.5.r	2.719	25.161	1.602	9.716
II.A.5.t	0.950	2.372	0.950	2.372

Proposed Project – Projected Peak Loading in 2026

EMF levels were calculated for the proposed Rebuild Project at the ***projected peak*** load condition of 179 amps for Line #293, 38.3 amps for Line #83, and 1679.7 amps for Line #548. Line #293 has a maximum operating voltage of 241.5 kV, Line #83 has a maximum operating voltage of 120.75 kV, and Line #548 has a maximum operating voltage of 525 kV when supported on existing structures. See Attachments II.A.5.b, d, f, h, j, l, n, p, r, and t.

These field levels were calculated at mid-span where the conductors are closest to the ground at a projected peak load operating temperature.

The EMF levels at the edge of the rights-of-way for the proposed Rebuild Project at the projected peak loading:

Attachment	**Left Edge Looking Towards Valley Substation**		**Right Edge Looking Towards Valley Substation**	
	Electric Field (kV/m)	**Magnetic Field (mG)**	**Electric Field (kV/m)**	**Magnetic Field (mG)**
II.A.5.b	0.281	1.335	0.465	5.373
II.A.5.d	0.309	1.474	0.557	5.743
II.A.5.f	0.228	1.361	0.358	4.796
II.A.5.h	0.130	0.814	0.169	2.464
II.A.5.j	1.345	5.654	1.345	5.654
II.A.5.l	1.346	5.649	1.346	5.649
II.A.5.n	1.345	5.655	1.345	5.655
II.A.5.p	1.346	5.561	1.346	5.561
II.A.5.r	2.719	41.928	1.603	16.189
II.A.5.t	0.950	3.952	0.950	3.952

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 Rebuild 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 Rebuild Project, the Company has determined that no adverse health effects are anticipated to result from the operation of the proposed Rebuild Project.

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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."[11]

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

[11] *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[12] 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 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

[12] 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).

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 existing route to be used for the Rebuild Project is provided as Attachment V.A. A written description of the route is as follows:

The proposed route for the Rebuild Project is located within an approximately 21.4 -mile existing transmission corridor right-of-way, which includes at various points 500 kV Lines #548 and #550, 230 kV Lines #253 and #293, and 115 kV Line #83. The existing corridor varies in width from 100 to 150 feet, with the exception of an approximately 2.0-mile segment of 235-foot-wide right-of-way that is occupied by Lines #293 and #548. The existing transmission line right-of-way for the proposed route of the Rebuild Project originates at the Staunton Substation in the City of Staunton on the north side of Commerce Road, continues in a southwestern direction along the easement for 3.8 miles, and then continues northerly for 17.6 miles, concluding at the Valley Substation in Augusta County on the west side of Coffman Road.

For the proposed Rebuild Project, the existing wooden poles, wooden H-frames, and lattice towers are proposed to be replaced with new weathering steel monopole and H-frame structures. The minimum proposed structure height is approximately 39 feet, the maximum proposed structure height is approximately 155 feet, and the average proposed structure height is approximately 80 feet, based on preliminary conceptual design, excluding foundation reveal and subject to change based on final engineering design.

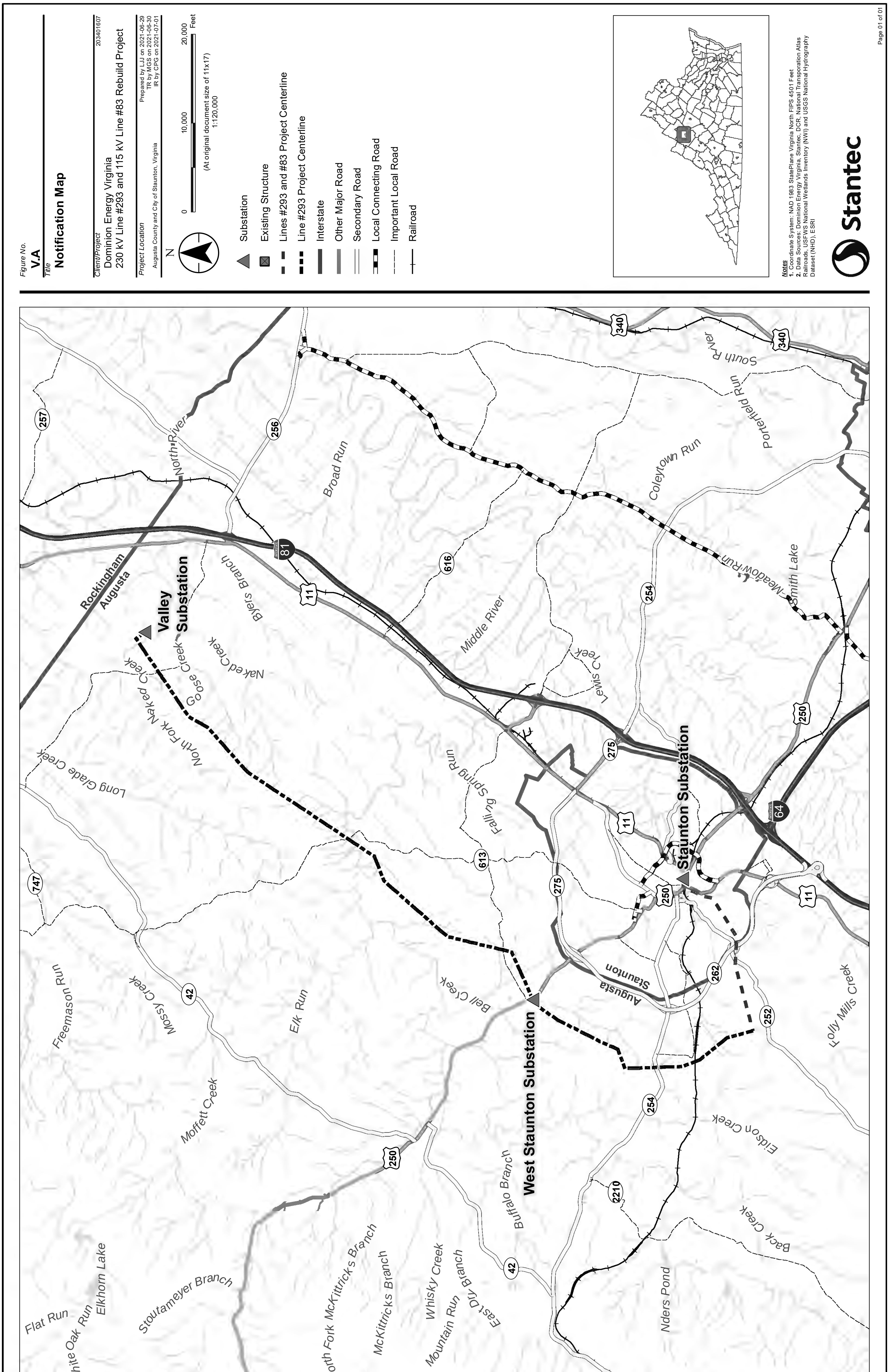
Figure No.
V.A
Title
Notification Map
Client/Project
Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project
203401607
Project Location
Augusta County and City of Staunton, Virginia
Prepared by LJJ on 2021-06-29
TR by MGS on 2021-06-30
IR by CPG on 2021-07-01
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20,000
Feet
(At original document size of 11x17)
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Substation
Existing Structure
Lines #293 and #83 Project Centerline
Line #293 Project Centerline
Interstate
Other Major Road
Secondary Road
Local Connecting Road
Important Local Road
Railroad
Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, DCR, National Transportation Atlas Railroads, USFWS National Wetlands Inventory (NWI) and USGS National Hydrography Dataset (NHD), ESRI
Stantec
Page 01 of 01
Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.
U:\203401607\03_data\gis_cad\gis\01607_p_scc_V.A.mxd Revised: 2021-11-08 By: MGSanderson
Valley Substation
Staunton Substation
West Staunton Substation
Rockingham
Augusta
Staunton
North River
Broad Run
Middle River
Coleytown Run
Porterfield Run
South River
Meadow Run
Smith Lake
Lewis Creek
Byers Branch
Naked Creek
Goose Creek
North Fork Naked Creek
Long Glade Creek
Falling Spring Run
Bell Creek
Elk Run
Moffett Creek
Freemason Run
Mossy Creek
Folly Mills Creek
Eidson Creek
Back Creek
Buffalo Branch
Flat Run
White Oak Run
Elkhorn Lake
Stoutameyer Branch
North Fork McKittricks Branch
McKittricks Branch
Whisky Creek
Mountain Run
East Dry Branch
Nders Pond
81
64
11
250
340
257
256
616
254
275
613
747
42
262
252
2210

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 https://www.dominionenergy.com/staunton.

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: Ms. Bettina Rayfield
Office of Environmental Impact Review
Department of Environmental Quality
P.O. Box 1105
Richmond, Virginia 23218

Ms. S. Rene Hypes
Virginia Department of Conservation and Recreation
Division of Natural Heritage
600 East Main Street, 24th Floor
Richmond, Virginia 23219

Ms. Robbie Rhur
Department of Conservation and Recreation, Planning Bureau
600 East Main Street, 17th Floor
Richmond, Virginia 23219

Mr. Roger Kirchen
Department of Historic Resources
Review and Compliance Division
2801 Kensington Avenue
Richmond, Virginia 23221

Ms. Amy M. Ewing
Virginia Department of Wildlife Resources
7870 Villa Park, Suite 400
Henrico, Virginia 23228

Mr. Keith Tignor
Virginia Department of Agriculture and Consumer Affairs
102 Governor Street
Richmond, Virginia 23219

Mr. Terry Lasher
Virginia Department of Forestry
Forestland Conservation Division
900 Natural Resources Drive, Suite 800
Charlottesville, Virginia 22903

Mr. Mark Eversole
Virginia Marine Resources Commission
Habitat Management Division
Building 96, 380 Fenwick Road
Ft. Monroe, Virginia 23651

Mr. Troy Andersen
US Fish and Wildlife Service
Virginia Field Office, Ecological Services
6669 Short Lane
Gloucester, Virginia 23061

Regulator of the Day
US Army Corps of Engineers
Norfolk District
803 Front Street
Norfolk, Virginia 23510

Mr. Doug Felix
Federal Aviation Administration
Obstruction Evaluation Group, AJV-A520, Tetra Tech AMT Support
10101 Hillwood Parkway
Fort Worth, Texas 76177

Mr. Scott Denny
Virginia Department of Aviation
Airport Services Division
5702 Gulfstream Road
Richmond, Virginia 23250

Ms. Martha Little
Virginia Outdoors Foundation
600 East Main Street, Suite 402
Richmond, Virginia 23219

Mr. Randy Kiser
Staunton District Engineer
Virginia Department of Transportation
Staunton District Office
811 Commerce Road
Staunton, Virginia 24401

Mr. Don Komara
Harrisonburg Resident Engineer
Virginia Department of Transportation
Harrisonburg Residency
3536 North Valley Pike
Harrisonburg, Virginia 22802

Mr. Timothy Fitzgerald
Augusta County Administrator
P.O. Box 5910
Verona, Virginia 24482

Mr. Steven Rosenberg
Staunton City Manager
P.O. Box 58
Staunton, Virginia 24402

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 September 7, 2021, were delivered to Mr. Timothy Fitzgerald, Administrator of Augusta County, and Mr. Steven Rosenberg, City Manager of the City of Staunton, where the Rebuild Project is located. The letters stated the Company's intention to file this Application and invited the County and City to consult with the Company about the Rebuild Project. These letters to the County and City are included as Attachments V.D.1 and V.D.2, respectively.

Dominion Energy Virginia
10900 Nuckols Road, 4th Floor Glen Allen, Virginia 23060

Dominion Energy

September 7, 2021

Mr. Timothy Fitzgerald
Augusta County Administrator
P.O. Box 5910
Verona, Virginia 24482

**RE: Dominion Energy Virginia's 230 kV Line #293 and 115 kV Line #83 Rebuild Project
City of Staunton and Augusta County, Virginia**

Dear Mr. Fitzgerald,

Dominion Energy Virginia (the "Company") is proposing to rebuild the existing approximately 21.4-mile 230 kV Staunton-Valley Line #293, which is inclusive of a 3.8-mile section of 115 kV Craigsville-Staunton Line #83 (the "Project"). Specifically, the Project will replace 17.6 miles of Line #293, which is supported primarily by single circuit wood H-frame structures, with primarily weathering steel H-frame structures; also replace 3.8 miles of Line #293, which is supported primarily by double circuit COR-TEN® lattice structures that also support 115 kV Line #83, with primarily weathering steel double circuit monopole structures. As part of the Project, the Company also intends to perform minor related substation work at the Company's existing Staunton, West Staunton, and Valley Substations.

The Company is in the process of preparing an application for a certificate of public convenience and necessity from the State Corporation Commission ("SCC"), which may be necessary for the Project. At this time, in advance of an SCC filing, the Company respectfully requests that you submit any comments or additional information that would have bearing on the proposed Project within 30 days of the date of this letter.

If you would like to receive a GIS shapefile of the transmission line routes to assist in the project review or if there are any questions, please do not hesitate to contact Nancy Reid at 434.532.7579 or nancy.r.reid@dominionenergy.com.

We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Sincerely,

Nancy Reid

Nancy Reid
Siting and Permitting Specialist

Enclosed: Attachment I.A.1: Project Notice Map

Figure No.
I.A.1

Title
Overview Map

Client/Project 203401607
Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

Project Location
Augusta County and City of Staunton, Virginia

Prepared by LJJ on 2021-06-29
TR by MGS on 2021-06-29
IR by MK on 2021-08-03

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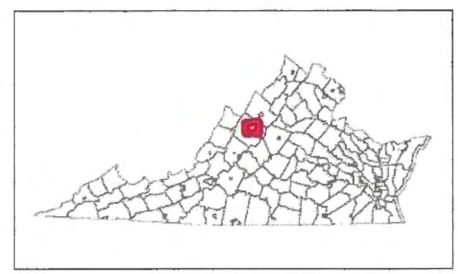
▲ Substation
Lines #293 and #83 Project Centerline
Line #293 Project Centerline



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, DCR
3. Base Map © National Geographic

Stantec

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Dominion Energy Virginia
10900 Nuckols Road, 4th Floor Glen Allen, Virginia 23060

Dominion Energy

September 7, 2021

Mr. Steven Rosenberg
Staunton City Manager
P.O. Box 58
Staunton, Virginia 24402

RE: Dominion Energy Virginia's 230 kV Line #293 and 115 kV Line #83 Rebuild Project City of Staunton and Augusta County, Virginia

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Sincerely,

Nancy Reid

Nancy Reid
Siting and Permitting Specialist

Enclosed: Attachment I.A.1 Project Notice Map

Figure No.
I.A.1
Title
Overview Map

Client/Project 203401607
Dominion Energy Virginia
230 kV Line #293 and 115 kV Line #83 Rebuild Project

Project Location
Augusta County and City of Staunton, Virginia
Prepared by LJJ on 2021-06-29
TR by MGS on 2021-06-29
IR by MK on 2021-06-03

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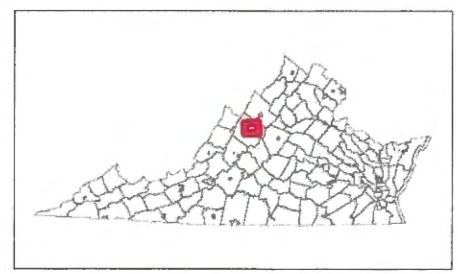
Substation
Lines #293 and #83 Project Centerline
Line #293 Project Centerline



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, DCR
3. Base Map © National Geographic

Stantec

COMMONWEALTH OF VIRGINIA

STATE CORPORATION COMMISSION

APPLICATION OF	)	
	)	
VIRGINIA ELECTRIC AND POWER COMPANY	)	Case No. PUR-2021-00272
	)	
For approval and certification of electric	)	
transmission facilities: 230 kV Line #293	)	
and 115 kV Line #83 Rebuild Project	)	

IDENTIFICATION, SUMMARIES AND TESTIMONY OF DIRECT WITNESSES OF VIRGINIA ELECTRIC AND POWER COMPANY

Mohsen Mahoor

Witness Direct Testimony Summary
Direct Testimony
Appendix A: Background and Qualifications

Amanda L. Savage

Witness Direct Testimony Summary
Direct Testimony
Appendix A: Background and Qualifications

Antoenette Yanev

Witness Direct Testimony Summary
Direct Testimony
Appendix A: Background and Qualifications

Nancy R. Reid

Witness Direct Testimony Summary
Direct Testimony
Appendix A: Background and Qualifications

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Mohsen Mahoor

Title: Engineer III – Electric Transmission Planning

Summary:

Company Witness Mohsen Mahoor sponsors those portions of the Appendix describing the Company's transmission system and need for, and benefits of, the proposed Rebuild Project, as follows:

- Section I.B: This section details the engineering justifications for the proposed project.
- Section I.C: This section describes the present system and details how the proposed Project will effectively satisfy present and projected future load demand requirements.
- Section I.D: Although not applicable, 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 project and the estimated construction time.
- Section I.J: This section provides information about the project if approved by the RTO.
- Section I.K: Although not applicable, this section 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, this section contains information for transmission lines interconnecting a non-utility generator.
- Section I.N: Although not applicable, this section, when applicable, 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 project.
- Section II.A.10: This section provides details of the construction plans for the proposed project, including requested and approved line outage schedules.

Additionally, Company Witness Mahoor co-sponsors the following portions of the Appendix:

- Section I.A (co-sponsored with Company Witness Amanda L. Savage): This section details the primary justifications for the proposed project.
- Section I.F (co-sponsored with Company Witness Amanda L. Savage): This section describes 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.
- Section I.G (co-sponsored with Company Witness Nancy R. Reid): This section provides a system map for the affected area.
- Section II.A.3 (co-sponsored with Company Witness Nancy R. Reid): This section provides color maps of existing or proposed rights-of-way in the vicinity of the project.

A statement of Dr. Mahoor's background and qualifications is attached to his testimony as Appendix A.

DIRECT TESTIMONY
OF
MOHSEN MAHOOR
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2021-00272

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 Mohsen Mahoor, 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 maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, the Company proposes the following rebuild project located within existing right-of-way or on Company-owned property along an approximately 21.4-mile existing transmission corridor in the City of Staunton and Augusta County, Virginia (the "Rebuild Project"):

- Rebuild the approximately 21.4-mile 230 kV Staunton-Valley Line #293, which is inclusive of a 3.8-mile section of the 115 kV Craigsville-Staunton Line #83. Specifically, replace 17.6 miles of Line #293, which are supported primarily by single circuit wood H-frame structures, with primarily weathering steel H-frame

structures; also replace 3.8 miles of Line #293, which is supported primarily by double circuit COR-TEN®[1] lattice structures that also support 115 kV Line #83, with primarily weathering steel double circuit monopole structures. Additionally, replace the Lines #293 and #83 conductors and shield wires for the entire 21.4 miles.

- Perform minor related substation work at the Company's existing Staunton, West Staunton, and Valley Substations.

The purpose of my testimony is to describe the Company's transmission system and the need for, and benefits of, the proposed Rebuild Project. 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 the Executive Summary with Company Witnesses Amanda L. Savage, Antoenette Yanev, and Nancy R. Reid; Sections I.A and I.F with Company Witness Amanda L. Savage; and Sections I.G and II.A.3 with Company Witness Nancy R. Reid.

Q. Does this conclude your pre-filed direct testimony?

A. Yes, it does.

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BACKGROUND AND QUALIFICATIONS
OF
MOHSEN MAHOOR

Mohsen Mahoor works as an Engineer III in the Electric Transmission Planning department of Dominion Energy Virginia. He received his Ph.D. in Electrical Engineering from the University of Denver in 2019. Before joining the Company in 2021, Dr. Mahoor worked as a Power System Consultant in DNV Company.

Dr. Mahoor has not previously provided testimony before the Virginia State Corporation Commission.

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Amanda L. Savage

Title: Line Engineer II – Electric Transmission Line Engineering

Summary:

Company Witness Amanda L. Savage sponsors those portions of the Appendix providing an overview of the design characteristics of the transmission facilities for the proposed Rebuild Project, and discussing electric and magnetic field levels, as follows:

- Section I.L: This section 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.

- Sections II.B.1 to II.B.3: These sections provide the line design and operational features of the proposed project.

- Section II.B.4: Although not applicable, this section 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 Savage co-sponsors the following portions of the Appendix:

- Section I.A (co-sponsored with Company Witness Mohsen Mahoor): This section details the primary justifications for the proposed project.

- Section I.F (co-sponsored with Company Witness Mohsen Mahoor): This section describes 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.

- Section I.I (co-sponsored with Company Witness Antoenette Yanev): This section provides the estimated total cost of the proposed project.

- Section II.B.5 (co-sponsored with Company Witness Nancy R. Reid): This section provides the mapping and structure heights for the existing overhead structures.

- Section V.A (co-sponsored with Company Witness Nancy R. Reid): This section provides information related to public notice of the proposed project

A statement of Ms. Savage's background and qualifications is attached to her testimony as Appendix A.

DIRECT TESTIMONY
OF
AMANDA L. SAVAGE
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2021-00272

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 Amanda L. Savage, and I am a Transmission Line Engineer II 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 maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, the Company proposes the following rebuild project located within existing right-of-way or on Company-owned property along an approximately 21.4-mile existing transmission corridor in the City of Staunton and Augusta County, Virginia (the "Rebuild Project"):

- Rebuild the approximately 21.4-mile 230 kV Staunton-Valley Line #293, which is inclusive of a 3.8-mile section of the 115 kV Craigsville-Staunton Line #83. Specifically, replace 17.6 miles of Line #293, which are supported primarily by single circuit wood H-frame structures, with primarily weathering steel H-frame

structures; also replace 3.8 miles of Line #293, which is supported primarily by double circuit COR-TEN®[1] lattice structures that also support 115 kV Line #83, with primarily weathering steel double circuit monopole structures. Additionally, replace the Lines #293 and #83 conductors and shield wires for the entire 21.4 miles.

- Perform minor related substation work at the Company's existing Staunton, West Staunton, and Valley Substations.

The purpose of my testimony is to describe the design characteristics of the transmission facilities for the proposed Rebuild Project, and also to discuss electric and magnetic field 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 the Executive Summary with Company Witnesses Mohsen Mahoor, Antoenette Yanev, and Nancy R. Reid; Sections I.A and I.F of the Appendix with Company Witness Mohsen Mahoor; Section I.I of the Appendix with Company Witness Antoenette Yanev; and Sections II.B.5 and V.A with Company Witness Nancy R. Reid.

Q. Does this conclude your pre-filed direct testimony?

A. Yes, it does.

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APPENDIX A

**BACKGROUND AND QUALIFICATIONS
OF
AMANDA L. SAVAGE**

Ms. Amanda L. Savage earned her bachelor's degree from Tufts University in Electrical Engineering. Her past work experience includes working as an RF Engineer at MIT Lincoln Laboratory in Lexington, Massachusetts, and then as an Electrical Engineer responsible for the Power Distribution of a PET film plant in Chester, Virginia. Ms. Savage joined Dominion Energy Virginia in 2019 as an Engineer II in the Transmission Overhead Lines Engineering Group that oversees all projects involving the design of Transmission Overhead Lines.

Ms. Savage has previously provided testimony before the Virginia State Corporation Commission.

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Antoenette Yanev

Title: Engineering Technical Specialist III

Summary:

Company Witness Antoenette Yanev sponsors or co-sponsors the following portions of the Appendix describing the work to be performed at the existing substations for the proposed Rebuild Project, as follows:

- Section I.I (co-sponsored with Company Witness Amanda L. Savage): This section provides the estimated total cost of the proposed project.

- Section II.C: This section describes and furnishes a one-line diagram of the substation(s) associated with the proposed project.

A statement of Ms. Yanev's background and qualifications is attached to her testimony as Appendix A.

**DIRECT TESTIMONY
OF
ANTOENETTE YANEV
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2021-00272**

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 Antoenette Yanev, and I am an Engineering Technical Specialist III. 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 area 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 maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, the Company proposes the following rebuild project located within existing right-of-way or on Company-owned property along an approximately 21.4-mile existing transmission corridor in the City of Staunton and Augusta County, Virginia (the "Rebuild Project"):

- Rebuild the approximately 21.4-mile 230 kV Staunton-Valley Line #293, which is inclusive of a 3.8-mile section of the 115 kV Craigsville-Staunton Line #83. Specifically, replace 17.6 miles of Line #293, which are supported primarily by single circuit wood H-frame structures, with primarily weathering steel H-frame

structures; also replace 3.8 miles of Line #293, which is supported primarily by double circuit COR-TEN®[1] lattice structures that also support 115 kV Line #83, with primarily weathering steel double circuit monopole structures. Additionally, replace the Lines #293 and #83 conductors and shield wires for the entire 21.4 miles.

- Perform minor related substation work at the Company's existing Staunton, West Staunton, and Valley Substations.

The purpose of my testimony is to describe the work to be performed at the proposed Rebuild Project's various substations. I sponsor Section II.C of the Appendix and co-sponsor the Executive Summary with Company Witnesses Mohsen Mahoor, Amanda L. Savage, and Nancy R. Reid, and Section I.I of the Appendix with Company Witness Amanda L. Savage, specifically, as those sections pertain to substation work.

Q. Does this conclude your pre-filed direct testimony?

A. Yes, it does.

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APPENDIX A

BACKGROUND AND QUALIFICATIONS
OF
ANTOENETTE YANEV

Antoenette Yanev received her Bachelor of Science degree in electrical engineering from the Technical University of Sofia, Bulgaria in 1991, with a major in Electric Power, Stations, Networks and Systems. Ms. Yanev joined the Company in 2008. Her previous responsibilities at the Company included developing detailed physical construction drawings, bill of material, grounding studies, electrical schematics, and wiring diagrams.

Ms. Yanev has not previously provided testimony before the Virginia State Corporation Commission.

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Nancy R. Reid

Title: Siting and Permitting Specialist

Summary:

Company Witness Nancy R. Reid sponsors those portions of the Appendix providing an overview of the design of the route for the proposed Rebuild Project, and related permitting, as follows:

- Section II.A.1: This section provides the length of the proposed corridor and viable alternatives to the proposed project.
- Section II.A.2: This section provides a map showing the route of the proposed project in relation to notable points close to the proposed project.
- 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 project.
- 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 project follows 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 project 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 project on scenic, environmental, and historic features.

Additionally, Ms. Reid co-sponsors the following portions of the Appendix:

- Section I.G (co-sponsored with Company Witness Mohsen Mahoor): This section provides a system map for the affected area.
- Section II.A.3 (co-sponsored with Company Witness Mohsen Mahoor): This section provides color maps of existing or proposed rights-of-way in the vicinity of the proposed project.
- Section II.B.5 (co-sponsored with Company Witness Amanda L. Savage): This section provides the mapping and structure heights for the existing overhead structures.
- Section V.A (co-sponsored with Company Witness Amanda L. Savage): This section provides information related to public notice of the proposed project.

Finally, Ms. Reid sponsors the DEQ Supplement filed with the Application.

A statement of Ms. Reid's background and qualifications is attached to her testimony as Appendix A.

DIRECT TESTIMONY
OF
NANCY R. REID
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2021-00272

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 Nancy R. Reid, 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 maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, the Company proposes the following rebuild project located within existing right-of-way or on Company-owned property along an approximately 21.4-mile existing transmission corridor in the City of Staunton and Augusta County, Virginia (the

"Rebuild Project"):

- Rebuild the approximately 21.4-mile 230 kV Staunton-Valley Line #293, which is inclusive of a 3.8-mile section of the 115 kV Craigsville-Staunton Line #83. Specifically, replace 17.6 miles of Line #293, which are supported primarily by single circuit wood H-frame structures, with primarily weathering steel H-frame structures; also replace 3.8 miles of Line #293, which is supported primarily by double circuit COR-TEN®[1] lattice structures that also support 115 kV Line #83, with primarily weathering steel double circuit monopole structures. Additionally, replace the Lines #293 and #83 conductors and shield wires for the entire 21.4 miles.

- Perform minor related substation work at the Company's existing Staunton, West Staunton, and Valley Substations.

The purpose of my testimony is to provide an overview of the route and permitting for the proposed Rebuild Project. 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 the Executive Summary with Company Witnesses Mohsen Mahoor, Amanda L. Savage, and Antoenette Yanev; Sections I.G and II.A.3 with Company Witness Mohsen Mahoor; and Sections II.B.5 and V.A of the Appendix with Company Witness Amanda L. Savage.

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 September 7, 2021, were sent to Mr. Timothy Fitzgerald, County Administrator of Augusta County, Virginia, and Mr. Steven Rosenberg, Staunton City Manager, advising of the Company's intention to file this Application and inviting the County and City to consult with the Company about the Rebuild Project. Copies of the letters are included as Appendix Attachments V.D.1

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and V.D.2, respectively.

Q. Does this conclude your pre-filed direct testimony?

A. Yes, it does.

APPENDIX A

BACKGROUND AND QUALIFICATIONS
OF
NANCY R. REID

Nancy R. Reid earned her Bachelor's degree from Christopher Newport University in environmental biology with a minor in chemistry and her Master's degree in Safety and Environmental Management from Columbia Southern University. Her past work experience includes working for the City of Franklin and Southampton County as the Environmental Specialist where she developed the areas stormwater management and permitting programs. Mrs. Reid joined Dominion Energy in 2017 as an Environmental Compliance Coordinator where she assisted in developing the environmental program for the most efficient combined-cycle gas plant in the country and is now a Sitting and Permitting Specialist for Electric Transmission.

Mrs. Reid has previously provided testimony before the Virginia State Corporation Commission.