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October 11, 2024

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:
Meadowville 230 kV Electric Transmission Project
Case No. PUR-2024-00179

Dear Mr. Logan:

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

As indicated in Section II.A.12.b of the Appendix, an electronic copy of the map of the Virginia Department of Transportation "General Highway Map" for Chesterfield County, 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 Public Utility Regulation on October 10, 2024.

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

Highest regards,

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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Dominion Energy®

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

Before the State Corporation Commission of Virginia

Meadowville 230 kV Electric Transmission Project

Application No. 343

Case No. PUR-2024-00179

Filed: October 11, 2024

Volume 1 of 3

COMMONWEALTH OF VIRGINIA
BEFORE THE
STATE CORPORATION COMMISSION

APPLICATION OF

VIRGINIA ELECTRIC AND POWER COMPANY

FOR APPROVAL AND CERTIFICATION OF ELECTRIC TRANSMISSION FACILITIES

Meadowville 230 kV Electric Transmission Project

Application No. 343

Case No. PUR-2024-00179

Filed: October 11, 2024

COMMONWEALTH OF VIRGINIA

STATE CORPORATION COMMISSION

APPLICATION OF	)	
	)	
VIRGINIA ELECTRIC AND POWER COMPANY	)	Case No. PUR-2024-00179
	)	
For approval and certification of electric transmission facilities: Meadowville 230 kV Electric Transmission Project	)	

APPLICATION OF VIRGINIA ELECTRIC AND POWER COMPANY FOR APPROVAL AND CERTIFICATION OF ELECTRIC TRANSMISSION FACILITIES: MEADOWVILLE 230 kV ELECTRIC TRANSMISSION PROJECT

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 states as follows:

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

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

3. In this Application, in order to provide service requested by two data center customers, Customers A and B (collectively, the "Customers"), to maintain reliable service for the overall load growth in the area, and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company") proposes in Chesterfield County, Virginia to:

(1) Bermuda Hundred and Sloan Drive

Construct the Bermuda Hundred Switching Station ("Bermuda Hundred Station") on Customer A's[1] property in Chesterfield County, Virginia, west of Discovery Road and the Company's existing Line #2050, cut into the adjacent Line #2050 (Bermuda Hundred – Chickahominy) to the east of the proposed Bermuda Hundred Station, and loop Line #2050 in and out of the Bermuda Hundred Station on two new weathering steel structures, traveling approximately 0.2 mile along new 100-foot-wide right-of-way ("ROW"). Once Line #2050 is looped in and out of the Bermuda Hundred Station, Line #2050 will then be renumbered as Line #2368 from existing structure #2050/13 to Allied Substation. The Company will then construct two structures outside the fence of the Bermuda Hundred Station on property owned by Customer A, which Customer A will use to interconnect to its data center campus.[2] The Company will also construct the proposed Sloan

[1] Pursuant to the Company's privacy policy and/or a specific customer non-disclosure agreement, the Company is obligated to maintain the confidentiality of customer information and obtain customer consent for public disclosure.

[2] To avoid an additional outage, if the construction of Sloan Drive Switching Station is not yet complete at the time of the construction of these two structures, the Company will install an additional structure, Structure 2366/2, and pull Line #2366 to temporarily terminate at this structure until it can be tied into Sloan Drive Switching Station. The new ROW to be voluntarily obtained from Customer A for the additional structure will be 130 feet in width. Although a potential component of the proposed Project as defined herein, the Company considers the potential installation of this additional structure an "ordinary extension[] or improvement[] in the usual course of business" pursuant to § 56-265.2 A 1 of the Code of Virginia ("Va. Code") 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. This is consistent with the Commission Staff's July 6, 2017 guidance (available at

Drive Switching Station ("Sloan Drive Station"), located to the west of the Bermuda Hundred Station on Customer A's property, and construct two new double-circuit 230 kV lines (Line #2366 and Line #2367) that will extend approximately 1.0 mile west from the proposed Bermuda Hundred Station along new 100-foot ROW on double-circuit weathering steel poles to the proposed Sloan Drive Station.

(2) Meadowville and White Mountain

Construct the proposed Meadowville Switching Station ("Meadowville Station") east of Interstate 95 ("I-95") and west of Meadowville Technology Parkway on Customer B's property, construct the proposed White Mountain Substation northeast of the Meadowville Station and Meadowville Technology Parkway on Chesterfield County Economic Development Authority ("EDA")-owned property, which will be purchased by the Company, and construct new 230 kV lines (Line #2363 and Line #2364) on double-circuit weathering steel structures traveling northwest from the Sloan Drive Station along new 100-foot-wide ROW, with single-circuit Line #2363 traveling approximately 1.6 miles terminating in the proposed Meadowville Station and single-circuit Line #2364 traveling approximately 1.4 miles terminating at the proposed White Mountain Substation. In addition, the Company will also connect Meadowville Station and White Mountain Substation with a new single-circuit 230 kV line (Line #2365) on double-circuit weathering steel structures traveling approximately 0.6 mile between the stations within the same proposed 100-foot-wide ROW as Line #2363 and Line #2364. The Company also proposes to cut the existing 230 kV Line #2049 (Sycamore Springs – Allied) to connect to the Sloan Drive Station. The extension from the existing Line #2049 corridor to Meadowville Station will be renumbered Line #2361. The existing Line #2049 from Enon Substation to Allied Substation will be renumbered Line #2370. Line #2361 will be constructed on double-circuit weathering steel structures, in new 100-foot-wide ROW from Enon Substation[3] for approximately 2.2 miles on a direct route north towards the Sloan Drive Station where it will converge with Lines #2363 and #2364 terminating in the proposed Meadowville Station.

https://scc.virginia.gov/getdoc/7f6ec0f6-7d14-4ca9-bd8a-9bd2511c5cdb/StaffGuidanceOrdvsNonOrd.pdf), as only one structure will be installed and the new ROW will be voluntarily supplied by the customer requesting service.

[3] The expansion of Enon Substation is part of a separate project with a separate driver and an anticipated in-service date in the fourth quarter of 2028. To cut lines into Enon Substation as discussed in Components 2 and 3, the substation will need to be expanded and backbones will need to be installed. Please note that Structures 2049/48-52 are currently slated to be replaced as part of the Enon Substation expansion project. The costs for the expansion and backbone installations are not included in the costs for the proposed Project in this Application. As such, the proposed Project ends two structures outside of the Enon Substation and resumes on the other side of Enon Substation.

(3) Sycamore Springs

> Construct the Sycamore Springs Switching Station ("Sycamore Springs Station") to the east of Bermuda Orchard Lane and west of Interstate 295 ("I-295") on Chesterfield County-owned property, which will be purchased by the Company, and cut existing Lines #211, #228, and #2049 in and out of the proposed Sycamore Springs Station. Once Line #2049 is looped into Sycamore Springs Station, the line from Sycamore Springs Station to Enon Substation will then be renumbered as Line #2406 from Sycamore Springs Station to Enon Substation, and Line #2370 from Enon Substation to Allied Substation. The Company will partially rebuild existing Line #2049 from the proposed Sycamore Springs Station to existing structure #2049/55 for approximately 1.8 miles on an existing 130-foot-wide ROW on new double-circuit weathering steel structures. In addition, the Company proposes to construct new 230 kV Line #2360. Line #2360 will travel along the same existing 130-foot-wide ROW and on the same double-circuit weathering steel structures as Line #2406 (formerly Line #2049) from the proposed Sycamore Springs Station to existing structure #2049/55 for approximately 1.8 miles. The Company also proposes to expand the proposed 100-foot ROW to 160 feet in width from Enon Substation to Meadowville Station to construct a new approximately 2.2-miles 230 kV line, Line #2362, on double-circuit weathering steel monopoles adjacent to the corridor described in Component 2, extending the convergence of Line #2361 and Line #2362 with Line #2363 and Line #2364, with Line #2361 and Line #2362 ultimately terminating at Meadowville Station.

Components (1) through (3) described above are collectively referred to as the "Project."

4. The Project is needed to interconnect and provide service requested by two data center customers in the Chesterfield Load Area, and to maintain compliance with mandatory NERC Reliability Standards. The combination of competitive collocation/cloud environment, fiber connectivity, strategic geographic location, low risk of business disruptions, affordable and reliable power, and the business climate in Virginia has created the largest market for data center capacity in the United States. The data center market continues to rapidly expand in Virginia, and the growing demand for data center space in Virginia has led the industry to locations in the central Virginia region. Between 2022 and 2023 the Company received delivery point ("DP") requests in the Project area for approximately 800 MW requiring four new switching stations, one new substation, and associated networked transmission lines.

5. The Company identified an approximately 0.2-mile proposed route to loop Line #2050 in and out of Bermuda Hundred Station and an approximately 1.0-mile proposed route to construct Line #2366 and Line #2367 from Bermuda Hundred Station to Sloan Drive Station ("Component 1 Proposed Route"). This route is located entirely on the Customer's parcel. No electrical or routing alternatives were considered because the proposed Bermuda Hundred Station will be located entirely on Customer A's property and adjacent to Line #2050. Similarly, the Sloan Drive Station will also be located on Customer A's property. As a result, the Component 1 Proposed Route minimizes the need for additional ROW, minimizes environmental impacts, and mitigates the need to cross other landowners' private property.

6. For Component 2, the Company identified the following for the proposed Route for Component 2 ("Component 2 Proposed Route"): (i) an approximately 1.6-mile route for Line #2363 traveling northwest from the proposed Sloan Drive Station to the proposed Meadowville Station; (ii) an approximately 1.4-mile route for Line # 2364 traveling northeast from the proposed Sloan Drive Station to the White Mountain Substation; (iii) an approximately 0.6-mile route for Line #2365 to connect Meadowville Station and White Mountain Substation; and (iv) an approximately 2.2-mile route for Line #2361 from Enon Substation to the proposed Meadowville Station. No electrical or route alternatives were considered for Component 2, as the proposed Meadowville Station is the closest source to the White Mountain Substation. Moreover, the Component 2 Proposed Route will travel through property that is primarily owned by Customer B and Chesterfield County EDA, with limited sections of the proposed route traveling across private property. As a result, the Component 2 Proposed Route minimizes the need for additional ROW, mitigates environmental impacts, and limits the need to acquire property interests from adjacent landowners.

7. For Component 3, the Company identified the following for the proposed Route for Component 3 ("Component 3 Proposed Route"): (i) an approximately 0.2-mile route to cut existing Lines #211 and #228 in and out of the proposed Sycamore Springs Station; (ii) an approximately 0.1-mile route to cut existing Line #2049 in and out of the proposed Sycamore Springs Station; (iii) an approximately 1.8-mile route for the Line #2406 (formerly Line #2049) rebuild and new Line #2360, both traveling from the proposed Sycamore Springs Station to existing structure #2049/55; and (iv) an approximately 2.2-mile route for Line #2362 traveling from Enon Substation to the proposed Meadowville Station. To the extent Component 3 includes the rebuild of existing facilities, the Company did not consider alternative routes. The remaining scope for proposed Component 3 utilizes existing ROW as much as possible and Chesterfield County-owned property to minimize impacts to surrounding property owners and resources.

8. The desired in-service target date for the proposed Project is December 31, 2028. The Company estimates it will take approximately 45 months for detailed engineering, materials procurement, permitting, real estate, and construction after a final order from the Commission. Accordingly, to support this estimated construction timeline and construction plan, the Company respectfully requests a final order by March 31, 2025. Should the Commission issue a final order by March 31, 2025, to accommodate long-lead materials procurement, the Company estimates that construction should begin around August 15, 2025, and be completed by December 31, 2028. This schedule is contingent upon obtaining the necessary permits and outages, the latter of which may be particularly challenging due to the amount of new load growth, rebuilds, and new builds scheduled to occur in this load area. 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, as well as the ability to schedule outages, and unpredictable delays

due to labor shortages or materials/supply issues. This schedule is also contingent upon the Company's ability to negotiate for easements with property owners along the approved route and to purchase land for substation use without the need for additional litigation.

9. In addition, the Company is actively monitoring regulatory changes and requirements associated with the Northern long-eared bat ("NLEB") and how they could potentially impact construction timing associated with time of year restrictions ("TOYRs"). The U.S. Fish and Wildlife Service ("USFWS") previously indicated that it planned to issue final NLEB guidance to replace the interim guidance by April 1, 2024; however, the interim guidance has been extended by USFWS until late summer 2024. The Company is actively tracking updates from the USFWS with respect to the final guidance. Once issued, the Company plans to review and follow the final guidance to the extent it applies to the Company's projects. Until the final guidance is issued, the Company will continue following the interim guidance. For projects that may require additional coordination, the Company will coordinate with the USFWS.

10. The Company is also monitoring potential regulatory changes associated with the potential up-listing of the Tricolored bat ("TCB"). On September 14, 2022, the USFWS published the proposed rule to the Federal Register to list the TCB as endangered under the Endangered Species Act. USFWS extended its Final Rule issuance target from September 2023 to September 2024. The Company is actively tracking this ruling and evaluating the effects of potential outcomes on Company projects' permitting, construction, and in-service dates, including electric transmission projects.

11. Any adjustments to this Project schedule resulting from these or similar challenges could necessitate a minimum of a six- to twelve-month delay in the targeted in-service date. Accordingly, for purposes of judicial economy, the Company requests that the Commission issue

a final order approving both a desired in-service target date (*i.e.*, December 31, 2028) and an authorization sunset date (*i.e.*, December 31, 2029) for energization of the Project.

12. The estimated conceptual cost of the Project utilizing the Proposed Route is approximately $189 million, which includes approximately $75.9 million for transmission-related work and approximately $113.1 million for substation-related work (2024 dollars).[4]

13. 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.

14. 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.

15. 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.

16. 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 Jason S. Whitlow, Shannon L. Snare, George C. Brimmer, Laura P. Meadows, and B. Clark Chappell filed with this Application.

17. Finally, Dominion Energy Virginia requests that, to the extent the Commission

[4] The substation related costs are discussed and broken down in Section I.I. of the Appendix.

modifies the deadline for responses to interrogatories and requests for production of documents in 5 VAC 5-20-260, the Commission grant the parties seven calendar days to afford the Company adequate time to provide comprehensive responses to discovery.

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 Project; and,

(c) grant a certificate of public convenience and necessity for the 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*_____
Counsel for Applicant

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Counsel for Applicant Virginia Electric and Power Company

October 11, 2024

COMMONWEALTH OF VIRGINIA
BEFORE THE
STATE CORPORATION COMMISSION

APPLICATION OF

VIRGINIA ELECTRIC AND POWER COMPANY

FOR APPROVAL AND CERTIFICATION
OF ELECTRIC TRANSMISSION FACILITIES

Meadowville 230 kV Electric Transmission Project

Application No. 343

Appendix

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

Case No. PUR-2024-00179

Filed: October 11, 2024

TABLE OF CONTENTS

EXECUTIVE SUMMARY

In order to provide service requested by two data center customers (collectively, the "Customers"), to maintain reliable service for the overall load growth in the area, and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company") proposes in Chesterfield County, Virginia, to:

(1) Bermuda Hundred and Sloan Drive

Construct the Bermuda Hundred Switching Station ("Bermuda Hundred Station") on Customer A's[1] property in Chesterfield County, Virginia, west of Discovery Road and the Company's existing Line #2050, cut into the adjacent Line #2050 (Bermuda Hundred – Chickahominy) to the east of the proposed Bermuda Hundred Station, and loop Line #2050 in and out of the Bermuda Hundred Station on two new weathering steel structures, traveling approximately 0.2 mile along new 100-foot-wide right-of-way ("ROW"). Once Line #2050 is looped in and out of the Bermuda Hundred Station, Line #2050 will then be renumbered as Line #2368 from existing structure #2050/13 to Allied Substation. The Company will then construct two structures outside the fence of the Bermuda Hundred Station on property owned by Customer A, which Customer A will use to interconnect to its data center campus.[2] The Company will also construct the proposed Sloan Drive Switching Station ("Sloan Drive Station"), located to the west of the Bermuda Hundred Station on Customer A's property, and construct two new double-circuit 230 kV lines (Line #2366 and Line #2367) that will extend approximately 1.0 mile west from the proposed Bermuda Hundred Station along new 100-foot ROW on double-circuit weathering steel poles to the proposed Sloan Drive Station.

(2) Meadowville and White Mountain

Construct the proposed Meadowville Switching Station ("Meadowville Station") east of Interstate 95 ("I-95") and west of Meadowville Technology Parkway on Customer B's property, construct the proposed White Mountain Substation northeast of the Meadowville Station and Meadowville Technology Parkway on Chesterfield County Economic Development Authority ("EDA")-

[1] Pursuant to the Company's privacy policy and/or a specific customer non-disclosure agreement, the Company is obligated to maintain the confidentiality of customer information and obtain customer consent for public disclosure.

[2] To avoid an additional outage, if the construction of Sloan Drive Switching Station is not yet complete at the time of the construction of these two structures, the Company will install an additional structure, Structure 2366/2, and pull Line #2366 to temporarily terminate at this structure until it can be tied into Sloan Drive Switching Station. The new ROW to be voluntarily obtained from Customer A for the additional structure will be 130 feet in width. Although a potential component of the proposed Project as defined herein, the Company considers the potential installation of this additional structure an "ordinary extension[] or improvement[] in the usual course of business" pursuant to § 56-265.2 A 1 of the Code of Virginia ("Va. Code") 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. This is consistent with the Commission Staff's July 6, 2017 guidance (available at https://scc.virginia.gov/getdoc/7f6ec0f6-7d14-4ca9-bd8a-9bd2511c5cdb/StaffGuidanceOrdvsNonOrd.pdf), as only one structure will be installed and the new ROW will be voluntarily supplied by the customer requesting service.

owned property, which will be purchased by the Company, and construct new 230 kV lines (Line #2363 and Line #2364) on double-circuit weathering steel structures traveling northwest from the Sloan Drive Station along new 100-foot-wide ROW, with single-circuit Line #2363 traveling approximately 1.6 miles terminating in the proposed Meadowville Station and single-circuit Line #2364 traveling approximately 1.4 miles terminating at the proposed White Mountain Substation. In addition, the Company will also connect Meadowville Station and White Mountain Substation with a new single-circuit 230 kV line (Line #2365) on double-circuit weathering steel structures traveling approximately 0.6 mile between the stations within the same proposed 100-foot-wide ROW as Line #2363 and Line #2364. The Company also proposes to cut the existing 230 kV Line #2049 (Sycamore Springs – Allied) to connect to the Sloan Drive Station. The extension from the existing Line #2049 corridor to Meadowville Station will be renumbered Line #2361. The existing Line #2049 from Enon Substation to Allied Substation will be renumbered Line #2370. Line #2361 will be constructed on double-circuit weathering steel structures, in new 100-foot-wide ROW from Enon Substation[3] for approximately 2.2 miles on a direct route north towards the Sloan Drive Station where it will converge with Lines #2363 and #2364 terminating in the proposed Meadowville Station.

(3) Sycamore Springs

Construct the Sycamore Springs Switching Station ("Sycamore Springs Station") to the east of Bermuda Orchard Lane and west of Interstate 295 ("I-295") on Chesterfield County-owned property, which will be purchased by the Company, and cut existing Lines #211, #228, and #2049 in and out of the proposed Sycamore Springs Station. Once Line #2049 is looped into Sycamore Springs Station, the line from Sycamore Springs Station to Enon Substation will then be renumbered as Line #2406 from Sycamore Springs Station to Enon Substation, and Line #2370 from Enon Substation to Allied Substation. The Company will partially rebuild existing Line #2049 from the proposed Sycamore Springs Station to existing structure #2049/55 for approximately 1.8 miles on an existing 130-foot-wide ROW on new double-circuit weathering steel structures. In addition, the Company proposes to construct new 230 kV Line #2360. Line #2360 will travel along the same existing 130-foot-wide ROW and on the same double-circuit weathering steel structures as Line #2406 (formerly Line #2049) from the proposed Sycamore Springs Station to existing structure #2049/55 for approximately 1.8 miles. The Company also proposes to expand the proposed 100-foot right-of-way to 160 feet in width from Enon Substation to Meadowville Station to construct a new approximately 2.2-miles 230 kV line, Line #2362, on double-circuit weathering steel monopoles

[3] The expansion of Enon Substation is part of a separate project with a separate driver and an anticipated in-service date in the fourth quarter of 2028. To cut lines into Enon Substation as discussed in Components 2 and 3, the substation will need to be expanded and backbones will need to be installed. Please note that Structures 2049/48-52 are currently slated to be replaced as part of the Enon Substation expansion project. The costs for the expansion and backbone installations are not included in the costs for the proposed Project in this Application. As such, the proposed Project ends two structures outside of the Enon Substation and resumes on the other side of Enon Substation.

adjacent to the corridor described in Component 2, extending the convergence of Line #2361 and Line #2362 with Line #2363 and Line #2364, with Line #2361 and Line #2362 ultimately terminating at Meadowville Station.

Components (1) through (3) described above are collectively referred to as the "Project." The Project is needed to interconnect and provide service requested by two data center customers in the Chesterfield Load Area, and to maintain compliance with mandatory NERC Reliability Standards. The combination of competitive collocation/cloud environment, fiber connectivity, strategic geographic location, low risk of business disruptions, affordable and reliable power, and the business climate in Virginia has created the largest market for data center capacity in the United States. The data center market continues to rapidly expand in Virginia, and the growing demand for data center space in Virginia has led the industry to locations in the central Virginia region.

The need for the Project can be broken down into three main drivers for the stations above and associated networked transmission lines. The separate drivers result in three distinct Project components, described in more detail below.

Component 1: Bermuda Hundred and Sloan Drive ("Component 1")

The first component of the Project involves tying into the network the Company's proposed Bermuda Hundred Station on Customer A's property in Chesterfield County, Virginia, west of Discovery Road and the Company's existing Line #2050.[4] The Bermuda Hundred Station will be constructed with an ultimate arrangement of six 230 kV breakers arranged in two rows with a breaker and a half scheme. The conductor and equipment for this substation will have a minimum summer rating of 1573 MVA[5] using 4000 Ampere ("A") substation equipment.

The Company will cut into the adjacent Line #2050 (Bermuda Hundred – Chickahominy) to the east of the proposed Bermuda Hundred Station, and loop Line #2050 in and out of the Bermuda Hundred Station on two new weathering steel structures, traveling approximately 0.20 mile along new 100-foot-wide ROW. Once Line #2050 is looped in and out of the Bermuda Hundred Station, Line #2050 will then be renumbered as Line #2368 from existing structure #2050/13 to Allied Substation. The Company will then

[4] The Company considers this portion of the Project an "ordinary extension[] or improvement[] 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. This is consistent with the Commission Staff's July 6, 2017 guidance (available at https://scc.virginia.gov/getdoc/7f6ec0f6-7d14-4ca9-bd8a-9bd2511c5cdb/StaffGuidanceOrdvsNonOrd.pdf), as the new line will be less than 0.5 mile and the new ROW will be voluntarily supplied by the customer requesting service.

[5] Apparent power, measured in megavolt amperes ("MVA"), is made up of real power (megawatt or "MW") and reactive power (megavolt ampere reactive or "MVAR"). The power factor ("pf") is the ratio of real power to apparent power. For loads with a high pf (approaching unity), such as data centers, 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 may be used to describe retail customer projected load, reflecting representative pf, and the equipment ratings to handle the apparent power, which includes the real and reactive load components.

construct two structures outside the fence of the Bermuda Hundred Station on property owned by Customer A, which Customer A will use to interconnect to their data center campus.[6]

In addition, the Company will construct the proposed Sloan Drive Station, located to the west of the Bermuda Hundred Station on Customer A's property. The Sloan Drive Station will be constructed with an arrangement of six 230 kV breakers in two rows with a breaker and a half scheme. The conductor and substation equipment used to interconnect this request with the transmission system will have a minimum summer rating of 1573 MVA using 4000 A substation equipment.

For this first component, the Company will construct two new double-circuit 230 kV lines (Line #2366 and Line #2367) that will extend approximately 1.0 mile west from the proposed Bermuda Hundred Station along new 100-foot-wide ROW on double-circuit weathering steel poles to the proposed Sloan Drive Substation.

The Company identified an approximately 0.2-mile proposed route to loop Line #2050 in and out of Bermuda Hundred Station and an approximately 1.0-mile proposed route to construct Line #2366 and Line #2367 from Bermuda Hundred Station to Sloan Drive Station ("Component 1 Proposed Route"). This route is located entirely on the Customer's parcel. No electrical or routing alternatives were considered because the proposed Bermuda Hundred Station will be located entirely on Customer A's property and adjacent to Line #2050. Similarly, the Sloan Drive Station will also be located on Customer A's property. As a result, the Component 1 Proposed Route minimizes the need for additional ROW, minimizes environmental impacts, and mitigates the need to cross other landowners' private property.

Component 2: Meadowville and White Mountain ("Component 2")

The Company will construct new 230 kV lines (Line #2363 and #2364) on double-circuit weathering steel structures traveling northwest approximately 1.6 miles and 1.4 miles, respectively, from the Sloan Drive Station along new 100-foot-wide ROW, with single-circuit Line #2363 terminating in the proposed Meadowville Station and single-circuit Line #2364 terminating at White Mountain Substation. In addition, the Company will also connect Meadowville Station and White Mountain Substation with a new single-circuit 230 kV line (Line #2365) on double-circuit weathering steel structures traveling approximately 0.6 mile between the stations within the same proposed 100-foot-wide ROW as Line # 2363 and Line #2364.

The Company also proposes to cut existing 230 kV Line #2049 (Sycamore Springs – Allied) to connect to the Sloan Drive Station. The extension from the existing Line #2049 corridor to Meadowville Station will be renumbered Line #2361. The existing Line #2049 from Enon Substation to Allied Substation will be renumbered Line #2370. Line #2361 will be constructed on double-circuit weathering steel structures, in new 100-foot-wide

[6] *See, supra* n.2.

ROW from Enon Substation[7] for approximately 2.2 miles on a direct route north towards the Sloan Drive Station where it will converge with Lines #2363 and #2364 ultimately terminating in the proposed Meadowville Station.

The Company also proposes to construct the proposed Meadowville Station east of I-95 and west of Meadowville Technology Parkway on Customer B's property. The Meadowville Station will be designed with a 230 kV delivery, with a ring bus arrangement of six 230 kV breakers with a breaker and a half scheme. The conductor and substation equipment will have a minimum summer rating of 1573 MVA using 4000 A substation equipment. Customer B's existing data center is located south of the Meadowville Station, and three future data center development areas are located on Customer B's property for future development and use.

In addition, the Company proposes to construct the White Mountain Substation northeast of the Meadowville Station and Meadowville Technology Parkway on Chesterfield County EDA-owned property, which will be purchased by the Company. The White Mountain Substation will be constructed with an initial four breaker ring bus with a breaker and a half scheme, with the ability to expand to a six-breaker ring bus in the future as needed. The conductor and substation equipment will have a minimum summer rating of 1573 MVA using 4000 A substation equipment.

For Component 2, the Company identified the following for the proposed Route for Component 2 ("Component 2 Proposed Route"): (i) an approximately 1.6-mile route for Line #2363 traveling northwest from the proposed Sloan Drive Station to the proposed Meadowville Station; (ii) an approximately 1.4-mile route for Line # 2364 traveling northeast from the proposed Sloan Drive Station to the White Mountain Substation; (iii) an approximately 0.6-mile route for Line #2365 to connect Meadowville Station and White Mountain Substation; and (iv) an approximately 2.2-mile route for Line #2361 from Enon Substation to the proposed Meadowville Station. No electrical or route alternatives were considered for Component 2, as the proposed Meadowville Station is the closest source to the White Mountain Substation. Moreover, the Component 2 Proposed Route will travel through property that is primarily owned by Customer B and Chesterfield County EDA, with limited sections of the proposed route traveling across private property. As a result, the Component 2 Proposed Route minimizes the need for additional ROW, mitigates environmental impacts, and limits the need to acquire property interests from adjacent landowners.

Component 3: Sycamore Springs ("Component 3")

To maintain compliance with mandatory NERC Reliability Standards and address potential load drop violations caused by the construction of Components 1 and 2, the Company proposes to construct the Sycamore Springs Station to the east of Bermuda Orchard Lane and west of Interstate 295 ("I-295") on Chesterfield County-owned property, which will be purchased by the Company. The proposed Sycamore Springs Station will be constructed with an initial eleven breaker ring bus with a breaker and a half scheme, with

[7] *See, supra* n. 3.

the ability to expand to a twelve-breaker ring bus in the future as needed. The conductor and substation equipment used will have a minimum summer rating of 1573 MVA using 4000 A substation equipment.

The Company also proposes to cut existing Lines #211, #228, and #2049 in and out of the proposed Sycamore Springs Station. Once line #2049 is looped into Sycamore Springs Station, the line from Sycamore Springs Station to Enon Substation will then be renumbered as Line #2406 from Sycamore Springs Station to Enon Substation, and Line #2370 from Enon Substation to Allied Substation. The Company will then partially rebuild Line #2049 from the proposed Sycamore Springs Station to structure #2049/55 for approximately 1.8 miles on an existing 130-foot-wide ROW on new double-circuit weathering steel structures. In addition, the Company proposes to construct new 230 kV Line #2360. Line #2360 will travel along the same existing 130-foot-wide ROW and on the same double-circuit weathering steel structures as Line #2406 (formerly Line #2049) from the proposed Sycamore Springs Station to existing structure #2049/55 for approximately 1.8 miles.

As a part of Component 3, the Company also proposes to expand the proposed 100-foot-wide ROW to 160 feet in width and construct a new 230 kV Line #2362 from Enon Substation on double-circuit weathering steel poles adjacent to the corridor described in Component 2, extending the convergence of Line #2361 and Line #2362 with Line #2363 and Line #2364, with Line #2361 and Line #2362 terminating at Meadowville Station.

For Component 3, the Company identified the following for the proposed Route for Component 3 ("Component 3 Proposed Route"): (i) an approximately 0.2-mile route to cut existing Lines #211 and #228 in and out of the proposed Sycamore Springs Station; (ii) an approximately 0.1-mile route to cut existing Line #2049 in and out of the proposed Sycamore Springs Station; (iii) an approximately 1.8-mile route for the Line #2406 (formerly Line #2049) rebuild and new Line #2360, both traveling from the proposed Sycamore Springs Station to existing structure #2049/55; and (iv) an approximately 2.2-mile route for Line #2362 traveling from Enon Substation to the proposed Meadowville Station. To the extent Component 3 includes the rebuild of existing facilities, the Company did not consider alternative routes. The remaining scope for proposed Component 3 utilizes existing ROW as much as possible and Chesterfield County-owned property to minimize impacts to surrounding property owners and resources.

The Company is proposing Component 1 Proposed Route, Component 2 Proposed Route, and Component 3 Proposed Route (collectively referred to as the "Proposed Routes") for Commission consideration and notice. Discussion of these proposed routes is provided in Section II of the Appendix and the Environmental Routing Study.

The estimated conceptual cost of the Project utilizing the Proposed Routes is approximately $189 million which includes approximately $75.9 million for transmission-related work and approximately $113.1 million for substation-related work (2024 dollars).

The desired in-service target date for the Project is December 31, 2028. The Company estimates it will take approximately 45 months for detailed engineering, materials

procurement, permitting, real estate, and construction after a final order from the Commission. Accordingly, to support this estimated construction timeline and construction plan, the Company respectfully requests a final order by March 31, 2025. Should the Commission issue a final order by March 31, 2025, to accommodate long-lead materials procurement, the Company estimates that construction should begin around August 15, 2025, and be completed by December 31, 2028. Customer in-service dates occur within the total project duration and include December 31, 2026 (Bermuda Hundred), April 30, 2027 (Meadowville), December 31, 2027 (Sloan Drive), and April 30, 2028 (White Mountain). This schedule is contingent upon obtaining the necessary permits and outages. 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, as well as the ability to schedule outages, and unpredictable delays due to labor shortages, or materials/supply issues.

In addition, the Company is actively monitoring the regulatory changes and requirements associated with the Northern long-eared bat ("NLEB") and how they could potentially impact construction timing associated with time of year restrictions ("TOYRs"). The U.S. Fish and Wildlife Service ("USFWS") has indicated that it plans to issue final NLEB guidance to replace the interim guidance, which expired on March 31, 2024. The Company is actively tracking updates from the USFWS with respect to the final guidance. Once issued, the Company plans to review and follow the final guidance to the extent it applies to the Company's projects. Until the final guidance is issued, the Company will continue following the interim guidance. For projects that may require additional coordination, the Company will coordinate with the USFWS. The Company is also monitoring potential regulatory changes associated with the potential up-listing of the Tricolored bat ("TCB"). On September 14, 2022, the USFWS published the proposed rule to the Federal Register to list the TCB as endangered Under the Endangered Species Act ("ESA"). USFWS recently extended its Final Rule issuance target date from September 2023 to September 2024. The Company is actively tracking this ruling and evaluating the effects of potential outcomes on Company projects' permitting, construction, and in-service dates, including electric transmission projects.

Any adjustments to this Project schedule resulting from these or similar challenges could necessitate a minimum of a six- to twelve-month delay in the targeted in-service date. Accordingly, for purposes of judicial economy, the Company requests that the Commission issue a final order approving both a desired in-service target date (*i.e.*, December 2028) and an authorization sunset date (*i.e.*, December 2029) for energization of the Project.

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 Project is necessary to provide service requested by two Customers developing separate new data center campuses in Chesterfield County, Virginia; to maintain reliable service for the overall load growth in the Project area; and to comply with mandatory NERC Reliability Standards. See Attachment I.A.1. for an overview map of the proposed Project along the Proposed Routes in the Chesterfield Load Area.

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 "DOM Zone"). The Company needs to be able to maintain the overall, long-term reliability of its transmission system to meet its customers' evolving power needs in the future.

Dominion Energy Virginia is part of the PJM Interconnection, LLC ("PJM") regional transmission organization ("RTO"), which provides service to a large portion of the eastern United States. PJM is currently responsible for ensuring the reliability and coordinating the movement of electricity through all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and the District of Columbia. This service area has a population of approximately 65 million and, on August 2, 2006, set a record high of 165,563 MW for summer peak demand, of which Dominion Energy Virginia's load portion was approximately 19,256 MW. On August 2, 2024, the Company set a record high of 22,654 MW for summer peak demand. On December 24, 2022, the Company set a winter and all-time record demand of 22,189 MW. Based on the 2024 PJM Load Forecast, the DOM Zone is expected to grow with average growth rates of 5.6% summer and 5.1% winter over the next 10 years compared to the PJM average of 1.7% and 2.0% over the same period for the summer and winter, respectively.[8]

Dominion Energy Virginia is also part of the Eastern Interconnection transmission

[8] A copy of the 2024 PJM Load Report is available at the following: https://www.pjm.com/-/media/library/reports-notices/load-forecast/2024-load-report.ashx. *See, in particular,* page 3 (PJM) and pages 28, 35, 39 (DOM Zone).

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.[9]

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 must follow these NERC Reliability Standards and imposes fines on utilities found to be in noncompliance up to $1.3 million a 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.[10] 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.[11] 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, which is then presented for approval to 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

[9] The Company's Transmission Planning Criteria (effective January 1, 2024) can be found in Attachment 1 of the Company's Facility Interconnection Requirements ("FIR") 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.

[10] PJM Manual 14B (effective June 27, 2024) focuses on the RTEP process and can be found at https://www.pjm.com/-/media/documents/manuals/m14b.ashx.

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

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. The Project is classified as a supplemental project initiated by the TO to interconnect new customer load. While supplemental projects are included in the RTEP, the PJM Board does not actually approve such projects. See Section I.J for a discussion of the PJM process as it relates to this Project.

NEED FOR THE PROJECT

As discussed in more detail below, the Project is needed to interconnect and provide service requested by two data center customers in the Chesterfield Load Area, and to maintain compliance with mandatory NERC Reliability Standards. The combination of competitive collocation/cloud environment, fiber connectivity, strategic geographic location, low risk of business disruptions, affordable and reliable power, and the business climate in Virginia has created the largest market for data center capacity in the United States. The data center market continues to rapidly expand in Virginia, and the growing demand for data center space in Virginia has led the industry to locations within central Virginia.

Between 2022 and 2023, the Company's Distribution Planning group submitted delivery point ("DP") requests to the Transmission Planning group for approximately 800 MW requiring four new switching stations and one new substation in the Project area, as described below.

To serve the Customers' projected load**,** the Company is proposing to construct four switching stations and one substation with the targeted sequencing as follows:

Driver	**Station**	**DP Requested Load (by ~2029)**	**DP Requested ISD Ramp Start Year and Target Sequencing of Substation In-Service**	**Bridging Power**
Customer A (400 MW)	Bermuda Hundred	300 MW	*Dec. 2026*	No
	Sloan Drive	100 MW	*Dec. 2027*	No
Customer B (400 MW)	Meadowville	300 MW	*April 2027*	30 MVA, starting Q3/Q4 2025[12]
	White Mountain	56 MW	*Jan. 2028*	
Projected NERC Violation	Sycamore Springs	*N/A*	*June 2028*	*N/A*

[12] There will be up to 20 MVA of bridging power provided from Enon Substation and up to 10 MVA of bridging power from Tyler Substation.

The need for the Project can be broken down into the three main drivers for the stations above and associated networked transmission lines. The separate drivers result in three distinct Project components, described in detail below. It is anticipated that Components 1 and 2 will be constructed simultaneously.

Component 1: Bermuda Hundred and Sloan Drive

The Distribution Planning group submitted a revised DP request dated December 4, 2023, to the Transmission Planning group to request construction of the Bermuda Hundred Switching Station ("Bermuda Hundred Station") to serve Customer A's data center campus. The DP request projected a total load of 200 MW in 2027, with the Bermuda Hundred Station serving all 200 MW of this load, with a requested in-service date of December 31, 2026. The total load at Bermuda Hundred Station is projected to reach 300 MW by 2028.

The Distribution Planning group submitted a second, revised DP request, dated December 29, 2023, to construct the Sloan Drive Switching Station ("Sloan Drive Station") to also serve Customer A's data center campus. The DP Request projected an expected load of 100 MW in 2027, with a requested in-service date of December 31, 2027. Line #2050 will be cut and looped into the Bermuda Hundred Station with two 230 kV delivery points to the customer and two 230 kV single circuits on double-circuit weathering steel structures extending from the Bermuda Hundred Station to the Sloan Drive Station.

Customer A's new data center campus will be served by the proposed Bermuda Hundred Station and the Sloan Drive Station. The data center campus will be located on Customer A's property in Chesterfield County, Virginia, and the data center buildings will be constructed and owned by Customer A.

See Section I.C. for Customer A's projected load.

Component 2: Meadowville and White Mountain

The Distribution Planning group submitted a DP request dated February 22, 2024, to construct the Meadowville Switching Station ("Meadowville Station") and a DP request dated March 20, 2024, to construct the White Mountain Substation, both to serve Customer B's data center campus. A third DP request dated July 2, 2024, to construct White Mountain Substation indicates an initial load of 12 MW in 2028, growing to approximately 56 MW in 2029.

Customer B's new data center campus will be served by the proposed Meadowville Station and the White Mountain Substation. The data center campus will be located on Customer B's property in eastern Chesterfield County, Virginia, and the data center buildings will be constructed and owned by Customer B.

See Section I.C. for Customer B's projected load.

Component 3: Sycamore Springs

The proposed Sycamore Springs Switching Station ("Sycamore Springs Station") is needed to resolve the NERC 300 MW load drop N-1-1 violation caused by the projected loading at Bermuda Hundred Station and Sloan Drive Station. These stations will serve a total combined load of 400 MW, which violates NERC 300 MW N-1-1 reliability criteria, because the Company's ICI, Bermuda Hundred, Sloan Drive, Allied, Alpine, National Welders and Enon stations would only be fed by two sources – Line #2049 and Line #2050. See Attachment I.C.1.a which provides existing and future load growth in this area on Line #2049 and Line #2050.

To maintain compliance with the mandatory NERC Reliability Standards, the Company intends to construct the proposed Sycamore Springs Station, cut existing Line #211, Line #228, and #2049 in and out of the Sycamore Springs Station, and extend new 230 kV Line #2360, which will provide a third source to Bermuda Hundred and Sloan Drive Stations. Line #2049 (currently spanning from the proposed Sycamore Springs Station site to the existing National Welders Substation) will also be rebuilt on new, double-circuit monopoles and reconductored on the same structures as the new proposed Line #2360 from Sycamore Springs Station to Enon Substation. This will mitigate the need to expand the existing ROW and limit environmental impacts.

In addition, the DP requests for the Meadowville Station and the White Mountain Substation indicate a combined total load of 500 MW by 2032. This would violate the 300 MW N-1-1 reliability criteria as these substations would only be fed by two single-circuit sources – future Line #2361 from Enon Substation and Line #2364 from Sloan Drive Station.

To maintain compliance with mandatory NERC Reliability Standards, the Company proposes to build new 230 kV Line #2362 from the Enon Substation to the Meadowville Station. This will provide a third source to Customer B's data center campus.

THE PROPOSED PROJECT

To provide service requested by data center Customers in Chesterfield County, Virginia, to maintain reliable service for the overall load growth in the area and to maintain compliance with mandatory NERC Reliability Standards, the Company is proposing to construct the Project as follows:

Component 1: Bermuda Hundred and Sloan Drive

First, the Company proposes to construct the Bermuda Hundred Station on Customer A's property in Chesterfield County, Virginia, west of Discovery Road and the Company's existing Line #2050.[13] The Bermuda Hundred Station will be constructed with an ultimate arrangement of six 230 kV breakers arranged in two rows with a breaker and a half scheme. The conductor and substation equipment for the Project will have a minimum summer rating of 1573 MVA using 4000 A substation equipment.

The Company will then cut into the adjacent Line #2050 (Bermuda Hundred – Chickahominy) to the east of the proposed Bermuda Hundred Station, and loop Line #2050 in and out of the Bermuda Hundred Station on two new weathering steel structures, traveling approximately 0.2 mile along new100-feet-wide ROW. Once Line #2050 is looped in and out of the Bermuda Hundred Station, Line #2050 will then be renumbered as Line #2368 from existing structure #2050/13 to Allied Substation. The Company will then construct two structures outside the fence of the Bermuda Hundred Station on property owned by Customer A, which Customer A will use to interconnect to their data center campus.[14]

In addition, the Company will construct the proposed Sloan Drive Station, located to the west of the Bermuda Hundred Station on Customer A's property. The Sloan Drive Station will be constructed with an arrangement of six 230 kV breakers in two rows with a breaker and a half scheme. The conductor and substation equipment used to interconnect this request with the transmission system will have a minimum summer rating of 1573 MVA using 4000 A substation equipment.

The Company will construct two new double-circuit 230 kV lines (Line #2366 and Line #2367) that will extend approximately 1.0 mile west from the proposed Bermuda Hundred Station along new 100-feet-wide ROW on double-circuit weathering steel poles to the proposed Sloan Drive Station.

With respect to Component 1, no electrical or route alternatives were considered because the proposed Bermuda Hundred Station will be located entirely on Customer A's property and adjacent to Line #2050. Similarly, the Sloan Drive Station will also be located on Customer A's property. As a result, the Component 1 Proposed Route minimizes the need for additional ROW, minimizes environmental impacts, and mitigates any need for other landowners' private property to be utilized.

Component 2: Meadowville and White Mountain

The Company will construct new 230 kV lines (Line #2363 and #2364) on double-circuit weathering steel structures traveling northwest approximately 1.6 miles and

[13] *See*, *supra* n. 4.
[14] *See*, *supra* n. 2.

1.4 miles, respectively, from the Sloan Drive Station along new 100-foot-wide ROW, with single-circuit Line #2363 terminating in the proposed Meadowville Station and single-circuit Line #2364 terminating at White Mountain Substation. In addition, the Company will also connect Meadowville Station and White Mountain Substation with a new single-circuit 230 kV line (Line #2365) on double-circuit weathering steel structures traveling approximately 0.6 mile between the stations within the same proposed 100-foot-wide ROW as Line # 2363 and Line #2364.

The Company also proposes to cut the existing 230 kV Line #2049 (Sycamore Springs – Allied) to connect to the Sloan Drive Station. The extension from the existing Line #2049 corridor will be renumbered Line #2361. The existing Line #2049 from Enon Substation to Allied substation will be renumbered Line #2370. Line #2361 will be constructed on double-circuit weathering steel structures, in new 100-foot-wide ROW from Enon Substation,[15] for approximately 2.2 miles on a direct route north towards the Sloan Drive Station where it will converge with Lines #2363 and #2364 ultimately terminating in the proposed Meadowville Station. See Attachment I.A.4.

The Company also proposes to construct the proposed Meadowville Station east of I-95 and west of Meadowville Technology Parkway on Customer B's property. The Meadowville Station will be designed with a 230 kV delivery, with a ring bus arrangement of six 230 kV breakers with a breaker and a half scheme. The conductor and substation equipment used will have a minimum summer rating of 1573 MVA using 4000 A substation equipment. Customer B's existing data center is located south of the Meadowville Station, and three future data center development areas are located on Customer B's property for future development and use.

The Company also proposes to construct the White Mountain Substation northeast of the Meadowville Station and Meadowville Technology Parkway on Chesterfield County EDA-owned property, which will be purchased by the Company. The White Mountain Substation will be constructed with an initial four breaker ring bus with a breaker and a half scheme, with the ability to expand to a six-breaker ring bus in the future as needed. The conductor and substation equipment will have a minimum summer rating of 1573 MVA using 4000 A substation equipment.

With respect to Component 2, no electrical or route alternatives were considered, as the proposed Meadowville Station is the closest source to the White Mountain Substation. Moreover, the Component 2 Proposed Route will travel through property that is primarily owned by Customer B and Chesterfield County EDA, with limited sections of the proposed route crossing private property. As a result, the Component 2 Proposed Route minimizes the need for additional ROW, mitigates environmental impacts and limits the need to acquire property interests from adjacent landowners.

[15] *See*, *supra* n. 3.

Component 3: Sycamore Springs

To maintain compliance with mandatory NERC Reliability Standards and address potential load drop violations caused by the construction of Components 1 and 2, the Company proposes to construct the Sycamore Springs Station to the east of Bermuda Orchard Lane and west of I-295 on Chesterfield County-owned property, which will be purchased by the Company. The Sycamore Springs Station will be constructed with an initial eleven--breaker ring bus with a breaker and a half scheme, with the ability to expand to a twelve-breaker ring bus in the future as needed. The conductor and substation equipment used will have a minimum summer rating of 1573 MVA using 4000 A substation equipment.

The Company also proposes to cut existing Lines #211, #228, and #2049 in and out of the proposed Sycamore Springs Station. Once Line #2049 is looped into Sycamore Springs Station, the line from Sycamore Springs Station to Enon Substation will then be renumbered as Line #2406 from Sycamore Springs Station to Enon Substation, and Line #2370 from Enon Substation to Allied Substation. The Company will then partially rebuild Line #2049 from the proposed Sycamore Springs Station to Structure #2049/55 for approximately 1.8 miles on an existing 130-feet-wide ROW on new double-circuit weathering steel structures. In addition, the Company proposes to construct a new 230 kV line, Line #2360. Line #2360 will travel along the same 130-feet-wide ROW and on the same double-circuit weathering steel structures as Line # 2406 (formerly Line #2049) from the proposed Sycamore Springs Station to Structure 2049/55 for approximately 1.8 miles.

As a part of Component 3, the Company also proposes to expand the proposed 100-foot ROW to 160-feet and construct a new 230 kV Line #2362 from Enon Substation on double-circuit weathering steel poles adjacent to the corridor described in Component 2, extending the convergence of Line #2361 and Line #2362 with Line #2363 and Line #2364, with Line #2361 and Line #2362 terminating at Meadowville Station.

To the extent Component 3 includes the rebuild of existing facilities, the Company considered no alternative routes. The remaining scope for proposed Component 3 utilizes existing ROW as much as possible and Chesterfield County-owned property to minimize impacts to surrounding property owners and resources.

See Section II.A.9 for more details regarding the route selection process.

Attachment I.A.2 provides a one-line diagram of the existing transmission system in the Project Area. Attachment I.A.3 provides a one-line diagram of the transmission system in the Project Area with the proposed Project, including future substations presented to PJM in the Chesterfield Load Area. Attachment I.A.4 provides a visual depiction of all three components of the Project with the final configuration.

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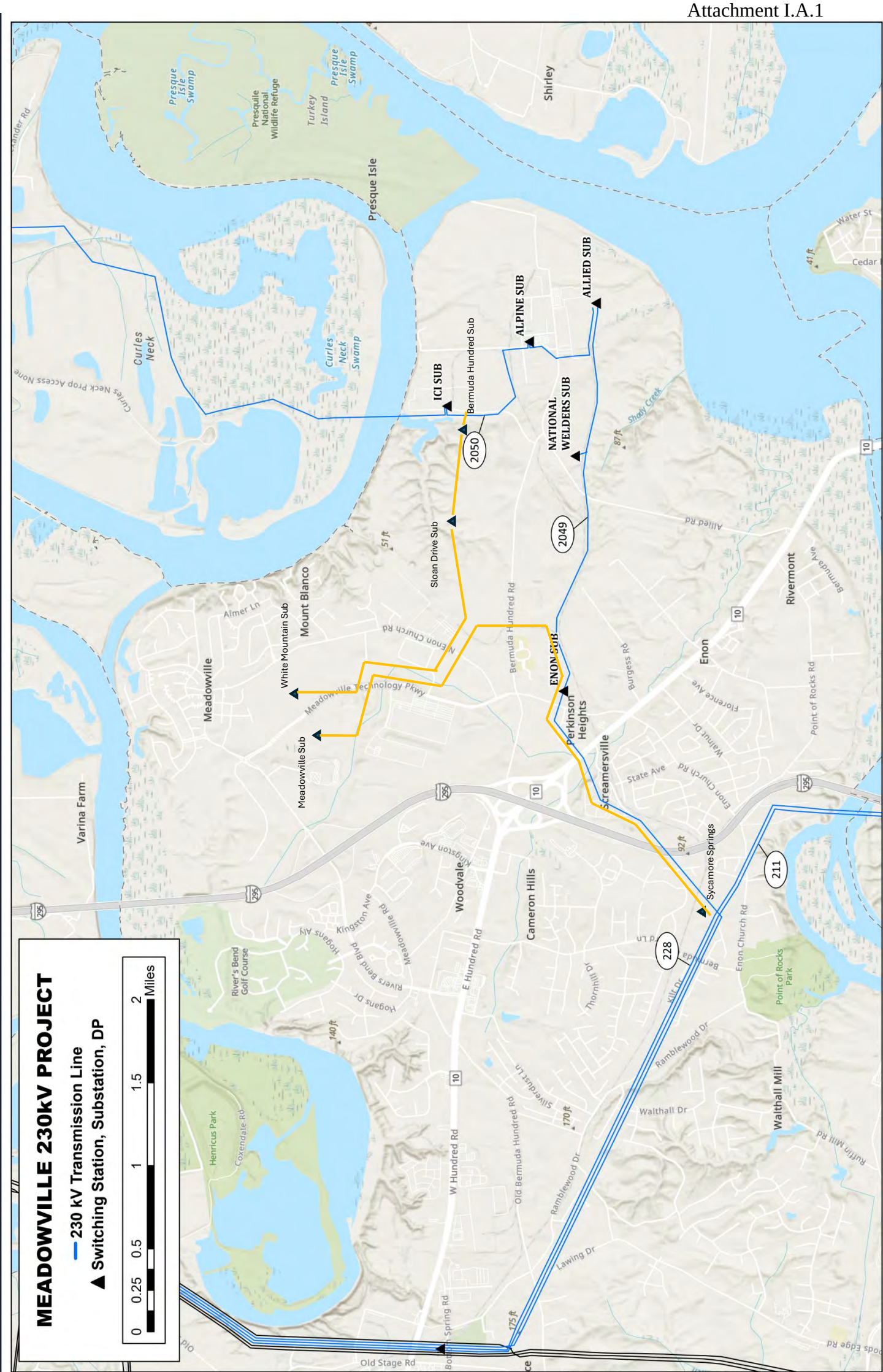
In summary, the proposed Project will provide service requested by the Customers, maintain reliable service for the overall load growth in the area, and comply with mandatory NERC Reliability Standards.


MEADOWVILLE 230kV PROJECT
230 kV Transmission Line
Switching Station, Substation, DP
0 0.25 0.5 1 1.5 2 Miles
ICI SUB
Bermuda Hundred Sub
ALPINE SUB
ALLIED SUB
NATIONAL WELDERS SUB
2050
2049
Sloan Drive Sub
ENON SUB
White Mountain Sub
Meadowville Sub
211
228
Presque Isle
Curles Neck
Curles Neck Swamp
Presque Isle Swamp
Presquile National Wildlife Refuge
Turkey Island
Shirley
Mount Blanco
Meadowville
Varina Farm
Perkinsonville Heights
Screamersville
Enon
Rivermont
Woodvale
Cameron Hills
Sycamore Springs
Walthall Mill
Point of Rocks Park
River's Bend Golf Course
Henricus Park
Old Stage Rd
W Hundred Rd
E Hundred Rd
Bermuda Hundred Rd
Meadowville Technology Pkwy
Enon Church Rd
Ramblewood Dr
Walthall Dr
Lawing Dr
Shady Creek
Water St
Cedar
Allied Rd
Burgess Rd
Florence Ave
Walnut Dr
State Ave
Point of Rocks Rd
Kingston Ave
Meadowville Rd
Rivers Bend Blvd
Hogans Dr
Hogans Aly
Thornhill Dr
Kill Dr
Silverdust Ln
Old Bermuda Hundred Rd
Coxendale Rd
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140 ft
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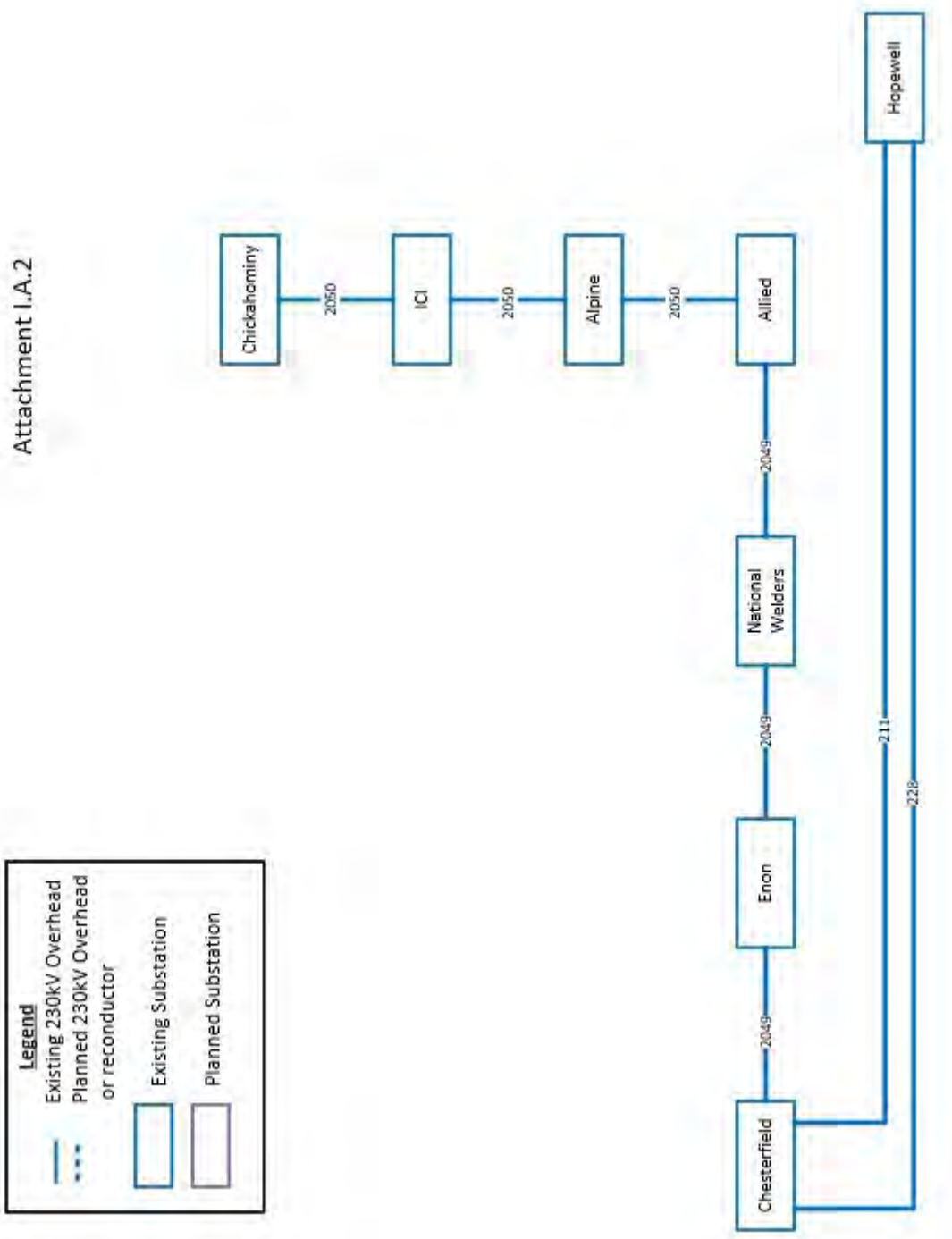
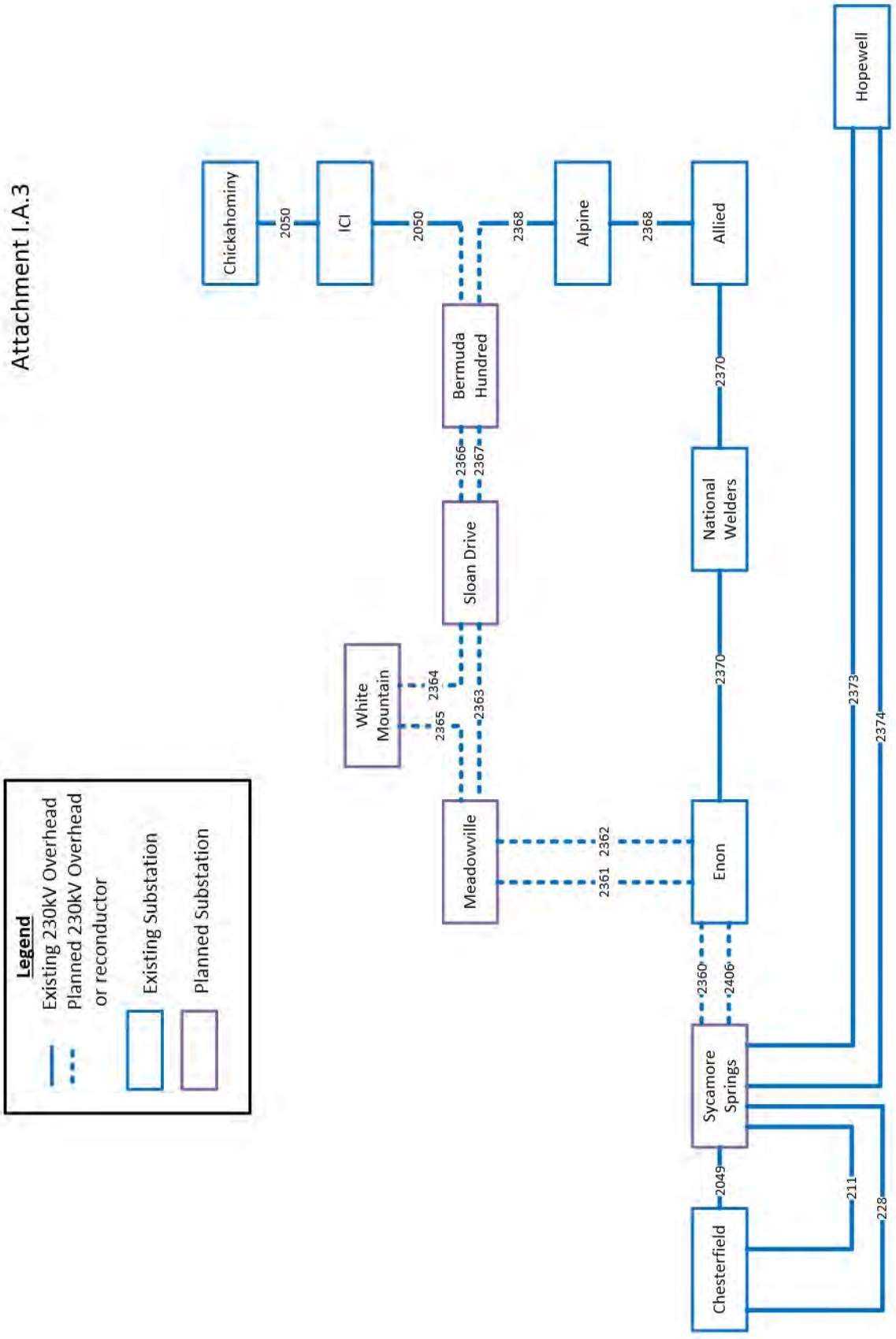
175 ft
295
10

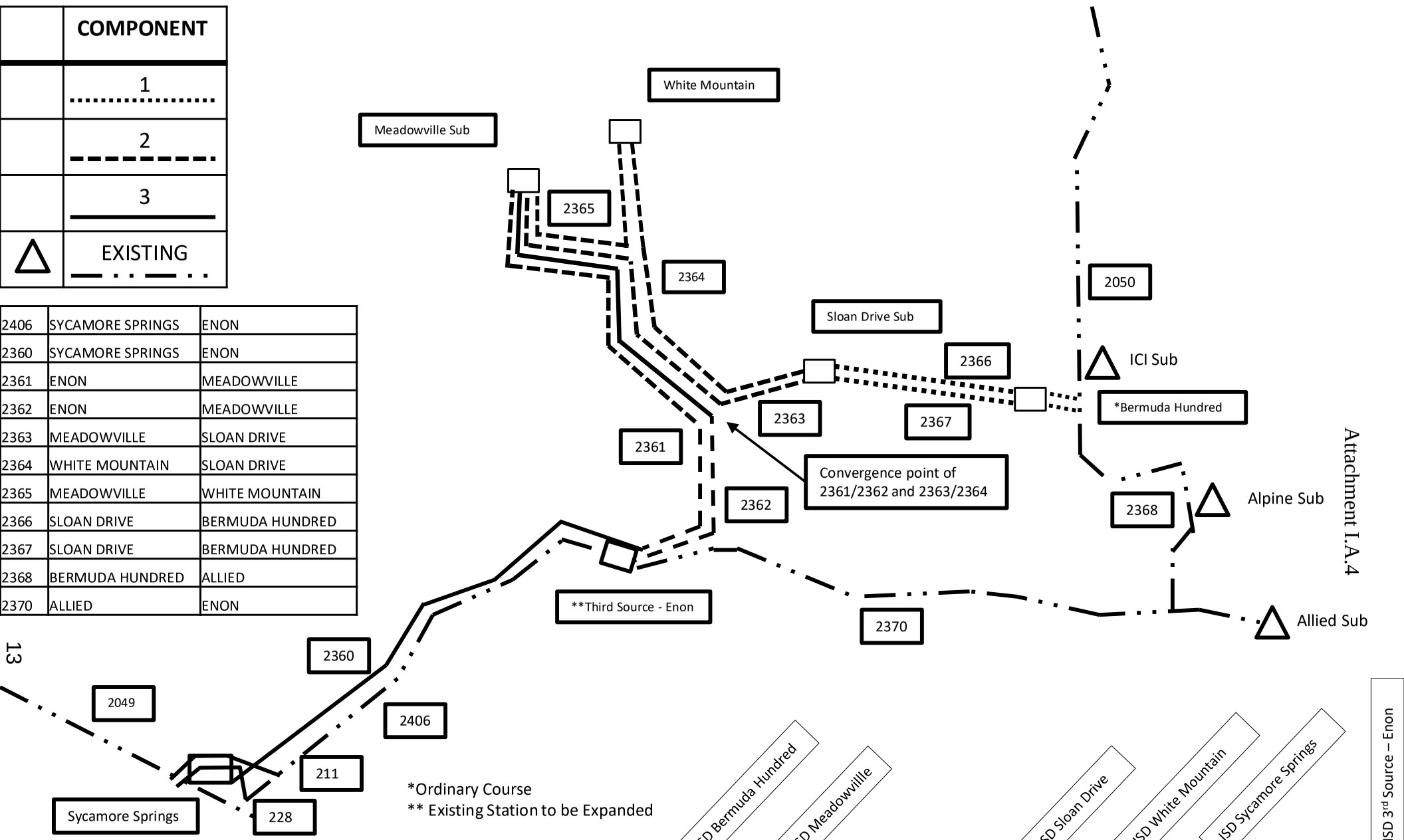

Attachment I.A.2
Legend
Existing 230kV Overhead
Planned 230kV Overhead or reconductor
Existing Substation
Planned Substation
Chickahominy
2050
ICI
2050
Alpine
2050
Allied
2049
National Welders
2049
Enon
2049
Chesterfield
211
228
Hopewell


Attachment I.A.3
Legend
Existing 230kV Overhead
Planned 230kV Overhead or reconductor
Existing Substation
Planned Substation
Chickahominy
2050
ICI
2050
Bermuda Hundred
2368
Alpine
2368
Allied
2370
National Welders
2370
Enon
2360
2406
Sycamore Springs
2049
Chesterfield
211
228
2373
2374
Hopewell
2366
2367
Sloan Drive
2364
2365
White Mountain
2363
Meadowville
2362
2361

Meadowville 230kV Projects – Final Configuration

	COMPONENT
	1
	2
	3
△	EXISTING

2406	SYCAMORE SPRINGS	ENON
2360	SYCAMORE SPRINGS	ENON
2361	ENON	MEADOWVILLE
2362	ENON	MEADOWVILLE
2363	MEADOWVILLE	SLOAN DRIVE
2364	WHITE MOUNTAIN	SLOAN DRIVE
2365	MEADOWVILLE	WHITE MOUNTAIN
2366	SLOAN DRIVE	BERMUDA HUNDRED
2367	SLOAN DRIVE	BERMUDA HUNDRED
2368	BERMUDA HUNDRED	ALLIED
2370	ALLIED	ENON



Attachment I.A.4

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**

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.).

See Section I.A of the Appendix.

(2) Known Future Projects

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.

The proposed Project is needed to serve emerging data center development in the Project area as described in Section I.A. See Attachment I.A.1 for existing and future distribution facilities in the affected load area, including the proposed Project, which will work together to reliably serve existing and future customers in the vicinity. While future Company projects are located generally within the same load area as the proposed switching stations and substations (as shown on Attachment I.A.1), each has its own unique load growth drivers, and as such, these future projects do not *require* the proposed Project to be constructed so are not responsive to this prompt.

(3) Planning Studies

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.

For this Project, the Company's Distribution Planning group first analyzed

Customer A and Customer B's contract load information for the data center developments. Based on this total combined contract load, the Distribution Planning group determined that it was not feasible to serve this amount of load from any of the Company's primary sources of distribution power in the load area. Specifically, the Company determined that connecting the Customers' total combined contract load to the existing transmission system would result in transformer overloads and violations of the NERC 300 MW reliability criteria, as discussed in Section I.C.

See also Section I.C for discussion of the interconnection requirements for transmission facilities, and Section I.A as to load at full build out at the various substations and bridging power offered, as available.

(4) Facilities List

Provide a list of those facilities that are not yet in service.

See Attachment I.A.3 for transmission infrastructure planned for the affected area of Chesterfield County, Virginia. See Attachment I.A.1 for existing and future transmission facilities.

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: The Chesterfield Load Area where the two new data center campuses are located in the eastern Chesterfield area in Chesterfield, Virginia. For purposes of this Application, the Chesterfield County Load Area is defined generally as the area within Chesterfield County. See Attachment I.A.1 for a map of the general locations of the data center projects that comprise the need for the Project, and Attachment I.G.1 for the portion of the Company's transmission facilities in the area of the proposed Project.

The total load at the Customers' new data center campuses is projected to be approximately 800 MW[16] in 10 years. Adding the load from the Customers' planned data centers to the existing substations would result in overload conditions and NERC transmission system reliability criteria violations, as discussed below. As a result, the proposed Bermuda Hundred Station, Sloan Drive Station, Sycamore Springs Station, Meadowville Station, and White Mountain Substation are needed to provide the primary sources of distribution power for the Customers' new data center developments. Attachment 1.C.1.a shows the five-year historical and 10-year projected loads in the Chesterfield Load Area. Attachment 1.C.1.b shows the projected loads at Bermuda Hundred, Sloan Drive, Meadowville, and White Mountain Stations.

Note that all of the Section I.C attachments include only normal feed circuits; they do not include any alternate feed loads. To be clear, that means there are no alternate feed loads from the two Customers or from other customers that have existing alternate feed contracts in any of the Section I.C attachments. Also note that the load tables in the Section I.C attachments show actual and projected peak loading in MVA based on the Customers' contracted load, exclusive of emerging load in the Chesterfield Load Area.

Each substation transformer has a normal overload ("NOL") rating that cannot be exceeded. These distribution circuits each have a thermal overload rating that is

[16] Distribution load forecasts for data centers typically involve use of customer-requested load ramps to project load growth based on historical knowledge of the customer requesting service for the new data center. The data center customer typically requests the full maximum capacity that their data center building can support to ensure they are able to fully utilize or lease their building investment. The Company has applied a diversification factor to the Customers' block load request to project load at full build out.

based on the type of equipment and the configuration of the equipment in the field. To prevent overloads that could cause equipment damage or failure, the maximum capacity limits of the distribution circuits and the substation transformers cannot be exceeded.

To ensure reliability to its customers, the Company maintains a substation transformer contingency plan. Because of the negative impact to customers due to the outage duration if a substation transformer were to fail, the Company creates a switching plan that allows customer load to be picked up on other equipment for the loss of any substation transformer. There are various switching methods that can be used for these substation transformer contingency plans. If the contingency plan creates overloads in other equipment because of the switching, new substation capacity, such as constructing the five new stations proposed herein, is necessary.

In order to maintain reliable service to the Company's customers and to comply with mandatory NERC Reliability Standards, specifically Facility Connection ("FAC") standard FAC-001, the Company's Facilities Interconnection Requirement ("FIR")[17] document addresses the interconnection requirements of generation, transmission, and electricity end-user facilities. The purpose of the NERC FAC standards is to avoid adverse impacts on reliability by requiring that each TO establish facility connection and performance requirements in accordance with FAC-001, and the TO's and end-users meet and adhere to the established facility connection and performance requirements in accordance with FAC-002.[18]

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

The Company's FIR document (Section C.2.8) requires that the total load in any distribution substation not exceed 300 MW to ensure system reliability and to remain in compliance with NERC mandated reliability criteria. If the projected load inside a given substation will exceed 300 MW, the Company must create a project that eliminates the overload, such as constructing new substations as proposed herein.

The four major criteria considered as part of this Project were:

[17] The Company's FIR document (effective Jan.1, 2024) is available at: https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/virginia/parallel-generation/facility-connection-requirements.pdf?rev=7033a44d48d04ed897371fa7dd83239b.

[18] *See* https://www.nerc.com/pa/Stand/Reliability%20Standards/FAC-002-2.pdf.

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

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

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

4) The minimum load levels within a 10-year planning horizon for the direct interconnection to existing transmission lines is 30 MW for a 230 kV delivery (Company's FAC-001 Section 6, Load Criteria – End User).[19]

[19] *See* the Company's Electric Transmission Planning Criteria, available at: https://www.pjm.com/-/media/planning/planning-criteria/dominion-planning-criteria.ashx.

Loads taken from 2023-2038 MW / MVAR Load Projection Spreadsheet

Forecast Load MW

	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	MAX	MIN
Chesterfield Area Summer	1796	1799	1802	1803	1804	1805	1806	1807	1808	1809	**1809**	**1796**
Chesterfield Area Winter	2092	2099	2101	2103	2104	2105	2106	2107	2108	2109	**2109**	**2092**

Historic Load MW

	2019	2020	2021	2022	2023						MAX	MIN
Chesterfield Area Summer	1618	1734	1714	1704	1791						**1791**	**1618**
Chesterfield Area Winter	1774	1666	1687	1890	2053						**2053**	**1666**

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		Existing Load Forecast (MW)						
	Year	2024	2025	2026	2027	2028	2029	2030
PROJECT LOAD AREA (existing load MW)								
Future Load (MW)		Loads from Delivery Point Requests (MW)						
DOM-2019-0021 Bermuda Hundred		0	0	100	200	300	300	300
DOM-2024-0022 Sloan Drive		0	0	0	100	100	100	100
DOM-2024-0023 Meadowville		0	0	80	180	300	300	300
DOM-2024-0024 White Mountain		0	0	0	0	12	56	128
Area Total		0	0	180	480	712	756	828

*All delivery points above are fed from either Line 2049 or Line 2050. This load ramp indicates the need for an additional transmission source to the Meadowville area by the year 2026.

I. NECESSITY FOR THE PROPOSED PROJECT

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

Response: The Project load area is currently sourced by only two 230 kV transmission lines (Line #2049 and Line #2050). In an N-1-1 contingency situation, with the loss of both Lines #2049 and #2050, the Project load area, with a combined projected load of 317.6 MW by year 2026, would not have a remaining source of power. See Attachment I.D.1 for Project Area load ramp which indicates the need for an additional transmission source to the Chesterfield Load Area by the year 2026.

		Existing Load Forecast (MW)						
	Year	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
CHESTER AREA (existing load MW)								
Enon TX 2		6.1	6.1	6.1	6.1	6.1	6.1	6.1
Enon TX 3		45.6	77.6	89.6	99.6	99.6	99.6	99.6
Burdet (Nat Welders) TX1		14.9	14.9	14.9	14.9	14.9	14.9	14.9
Allied TX1		8.8	8.8	8.8	8.8	8.8	8.8	8.8
Allied TX2		4.2	4.2	4.2	4.2	4.2	4.2	4.2
Allied TX3		0	0	0	0	0	0	0
Alpine TX1		0.3	0.3	0.3	0.3	0.3	0.3	0.3
Alpine TX2		0.6	0.6	0.6	0.6	0.6	0.6	0.6
Alpine TX3		0	0	0	0	0	0	0
ICI TX2		5.1	5.1	5.1	5.1	5.1	5.1	5.1
ICI TX3		8	8	8	8	8	8	8
Future Load (MW)		Loads from Delivery Point Requests (MW)						
DOM-2019-0021 Bermuda Hundred		0	0	100	200	300	300	300
DOM-2024-0022 Sloan Drive		0	0	0	100	100	100	100
DOM-2024-0023 Meadowville		0	0	80	180	300	300	300
DOM-2024-0024 White Mountain		0	0	0	0	100	100	100
Area Total		93.6	125.6	317.6	627.6	947.6	947.6	947.6

*All delivery points above are fed from either Line 2049 or Line 2050. This load ramp indicates the need for an additional transmission source to the Meadowville area by the year 2026.

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: **Component 1: Bermuda Hundred and Sloan Drive:**
No electrical alternatives were considered because Bermuda Hundred Station will be located on Customer A's property and adjacent to Line #2050. Likewise, the proposed Sloan Drive Station will also be located entirely on Customer A's property.

Component 2: Meadowville and White Mountain:
No electrical alternatives were considered for the line extension from the proposed Meadowville Station to the White Mountain Substation because the proposed Meadowville Station is the closest source to the White Mountain Substation. In addition, the Component 2 Proposed Route will travel through property that is primarily owned by Customer B and Chesterfield County EDA, with some smaller sections of the proposed route traveling across private property. As a result, the Component 2 Proposed Route minimizes the need for additional ROW, mitigates environmental impacts and minimizes the need to address potential property interests with adjacent landowners.

Component 3: Sycamore Springs:
Two electrical alternatives were considered but rejected.

(1) Obtain land and new ROW to construct a new 230 kV circuit from Chickahominy Substation to Customer A's data center campus and tie a new 230 kV line into the proposed Bermuda Hundred Station. This alternative was rejected because it would potentially require a greater land disturbance than the proposed Project and cross the James River.

(2) Obtain land and new ROW to construct a new 230 kV circuit from Chesterfield Substation to Customer A's data center campus and tie the new 230 kV line into the Sycamore Springs Station. This alternative was rejected because it would potentially require a greater land disturbance and a greater expansion of existing ROW.

Analysis of Demand-Side Resources:
Pursuant to the Commission's November 26, 2013, Order entered in Case No. PUE-2012-00029, and its November 1, 2018, Final Order entered in Case No. PUR-2018-00075, 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 Project in order to provide

requested service and comply with mandatory NERC Reliability Standards, thereby enabling the Company to maintain the overall long-term reliability of its transmission system.[20] Component 1 is needed to serve Customer A's data center campus, with a projected total load of 400 MW in 2027. Component 2 is needed to serve Customer B's data center campus. The DP request to construct the Meadowville Switching Station projected an initial load of 80 MW in 2026, growing to approximately 300 MW by 2028, and the DP request to construct White Mountain Substation indicates an initial load of 60 MW in 2028, growing to approximately 100 MW in 2029. Finally, Component 3 is needed to resolve the NERC 300 MW load drop N-1-1 violation caused by the projected loading at the Bermuda Hundred Station and Sloan Drive Station. Notwithstanding, when performing an analysis based on PJM's 50/50 load forecast, there is no adjustment in load for DR programs 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 previously into PJM's capacity market is not a factor in this particular Application because of the identified need for the Project. Based on these considerations, the evaluation of the Project demonstrated that despite accounting for DSM consistent with PJM's methods, the Project is necessary.

Incremental DSM also will not eliminate the need for the Project. As discussed in Section I.C, the need is based on the Company's obligation to interconnect the new Customers' Campuses consistent with the FIR document and mandatory NERC Reliability Standards. As reflected in Sections I.A and I.C, the Customers' projected load fully built out in the Project area is approximately 800 MW. By way of comparison, the Company achieved demand savings of 276.5 MW (net) / 350 MW (gross) statewide from its DSM Programs in 2023.

[20] 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: Existing single-circuit Line #2049 from structure #2049/38 to structure #2049/55 will be rebuilt with double-circuit weathering steel pole structures along with proposed Line #2360. Existing Line #2049 has a normal summer rating of 876 MVA and an emergency summer rating of 956 MVA. Line #2049 will be rebuilt to the Company's current 230 kV standards of 1573 MVA, 4000 A at 250 degrees Celsius along this section of the line.

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.

MEADOWVILLE 230kV PROJECT

230 kV Transmission Line

Switching Station, Substation, DP

0 0.25 0.5 1 1.5 2 Miles

ICI SUB

ENON SUB

NATIONAL WELDERS SUB

ALPINE SUB

ALLIED SUB

2050

2049

228

211

Varina Farm

Meadowville

Mount Blanco

Presque Isle

Curles Neck

Curles Neck Swamp

Presque Isle Swamp

Presquile National Wildlife Refuge

Turkey Island

Shirley

Henricus Park

River's Bend Golf Course

Coxendale Rd

Old Stage Rd

Botton Spring Rd

W Hundred Rd

E Hundred Rd

Meadowville Rd

Hogans Dr

Hogans Ave

River's Bend Blvd

Kingston Ave

Meadowville Technology Pkwy

N Enon Church Rd

Almer Ln

Woodvale

Cameron Hills

Old Bermuda Hundred Rd

Silverdust Ln

Ramblewood Dr

Lawing Dr

Thornhill Dr

Walthall Dr

Kilt Dr

Bermuda Hundred Rd

Perkinson Heights

Screamersville

Burgess Rd

State Ave

Enon Church Rd

Walnut Dr

Florence Ave

Enon

Allied Rd

Rivermont

Bermuda Ave

Point of Rocks Rd

Walthall Mill

Point of Rocks Park

Ruffin Mill Rd

Woods Edge Rd

Shady Creek

Water St

Cedar

140 ft

175 ft

170 ft

92 ft

51 ft

87 ft

41 ft

I. NECESSITY FOR THE PROPOSED PROJECT

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

Response: The desired in-service target date for the completion of the proposed Project is December 31, 2028.

The Company estimates it will take approximately 45 months for detailed engineering, materials procurement, permitting, real estate, and construction after a final order from the Commission. Accordingly, to support this estimated construction timeline and construction plan, the Company respectfully requests a final order by March 31, 2025. Should the Commission issue a final order by March 31, 2025, the Company estimates that construction should begin around August 15, 2025, and be completed by December 31, 2028. Customer in-service dates occur within the total project duration and include December 31, 2026 (Bermuda Hundred), April 30, 2027 (Meadowville), December 31, 2027 (Sloan Drive), and April 30, 2028 (White Mountain). This schedule is contingent upon obtaining the necessary permits and outages. 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, as well as the ability to schedule outages, and unpredictable delays due to labor shortages or materials/supply issues. This schedule is also contingent upon the Company's ability to negotiate for easements with property owners along the approved route and to purchase land for substation use without the need for additional litigation.

In addition, the Company is actively monitoring the regulatory changes and requirements associated with the Northern long-eared bat ("NLEB") and how they could potentially impact construction timing associated with time of year restrictions ("TOYRs"). The U.S. Fish and Wildlife Service ("USFWS") has indicated that it plans to issue final NLEB guidance to replace the interim guidance, which expired on March 31, 2024. The Company is actively tracking updates from the USFWS with respect to the final guidance. Once issued, the Company plans to review and follow the final guidance to the extent it applies to the Company's projects. Until the final guidance is issued, the Company will continue following the interim guidance. For projects that may require additional coordination, the Company will coordinate with the USFWS.

The Company is also monitoring potential regulatory changes associated with the potential up-listing of the Tri-colored bat ("TCB"). On September 14, 2022, the USFWS published the proposed rule to the Federal Register to list the TCB as endangered under the under the Endangered Species Act ("ESA"). USFWS recently extended its Final Rule issuance target from September 2023 to September 2024. The Company is actively tracking this ruling and evaluating the effects of potential outcomes on Company projects' permitting, construction, and in-service dates, including electric transmission projects.

Any adjustments to this Project schedule resulting from these or similar challenges could necessitate a minimum of a six- to twelve-month delay in the targeted in-service date. Accordingly, for purposes of judicial economy, the Company requests that the Commission issue a final order approving both a desired in-service target date (*i.e.*, December 31, 2028) and an authorization sunset date (*i.e.*, December 31, 2029) for energization of the Project.

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 total estimated conceptual cost of the Project utilizing the Proposed Route(s) is approximately $189 million, which includes approximately $75.9 million for transmission-related work and approximately $113.1 million for substation-related work (2024 dollars).

The project-related costs are broken out by station in the table below:

Project-Related Costs by Station
(Millions (approximate))

Station	Estimated Conceptual Costs ($M)
Bermuda Hundred	$21.6
Sloan Drive	$23.8
White Mountain	$48.8
Meadowville	$35.0
Sycamore Springs	$59.7
Total	**$188.9**

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 Project is classified as a supplemental project initiated by the Company as TO in order to reliably interconnect new customer load, as follows:

Component 1: Bermuda Hundred and Sloan Drive

The Company presented the need slides for Supplemental Project DOM-2019-0021 Bermuda Hundred and DOM-2024-0022 Sloan Drive at the April 30, 2024 TEAC Meeting (see Attachment I.J.1), and presented the solution slides at the June 4, 2024 TEAC Meeting (see Attachment I.J.2). Supplemental Project IDs will be provided once they are assigned by PJM.

Component 2: Meadowville and White Mountain

The Company presented the need slides for Supplemental Project DOM-2024-0023 Meadowville and DOM-2024-0024 White Mountain at the April 30, 2024 TEAC Meeting (see Attachment I.J.1), and plans to present the solution slides at a future TEAC Meeting. The Company also plans to present the DNH Solution slide for Supplemental Project DOM-2024-0043 to address the 300 MW load drop N-1-1 violation caused by these two projects once PJM has analyzed the needs and solutions information.

The Company is including Component 2 as part of the proposed Project because of the interrelated nature of the needs and the common routing study area, and to facilitate the Commission's review of the proposed Project.

Component 3: Sycamore Springs

Component 3 was developed as a Supplemental solution (DOM-2024-0042) to meet the Do No Harm ("DNH") 300 MW load drop N-1-1 NERC reliability criteria caused by combined loading at Bermuda Hundred and Sloan Drive Stations. This analysis did not require modeling due to the total projected load requests being over the 300 MW limitation while only having two transmission line sources (see Attachment I.D.1). However, as part of the PJM Attachment M-3 Process,[21] transmission operators first present the needs and solutions to delivery point requests that require transmission upgrades. PJM then analyzes these projects and issues Supplemental Project ID numbers and puts the project into the next RTEP model. From there, PJM analyzes whether there is harm done to the system and, if so, notifies the transmission operator. At that time, a DNH solution is created and

[21] *See PJM Transmission Owners Attachment M-3 Process Guidelines* available at Microsoft Word - Guidelines for Attachment M-3 Project Planning Process V0.2 081522 (pjm.com) (Aug. 15, 2022).

presented to PJM. PJM has not yet analyzed the Bermuda Hundred and Sloan Drive needs and solutions information presented by the Company, but the 300 MW load drop violation must be addressed to satisfy NERC N-1-1 reliability criteria.

The Company anticipates presenting Component 3 to PJM once PJM performs a DNH Study, which typically occurs one-to-two months after the solution causing the harm has been presented (*i.e.*, June 4, 2024). Consistent with the discussion above regarding Component 2, the Company is including Component 3 with the proposed Project because of the interrelated nature of the needs and the common routing study area, and to facilitate the Commission's review of the proposed Project.

Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2019-0021

Process Stage: Need Meeting 04/30/2024

Project Driver: Customer Service

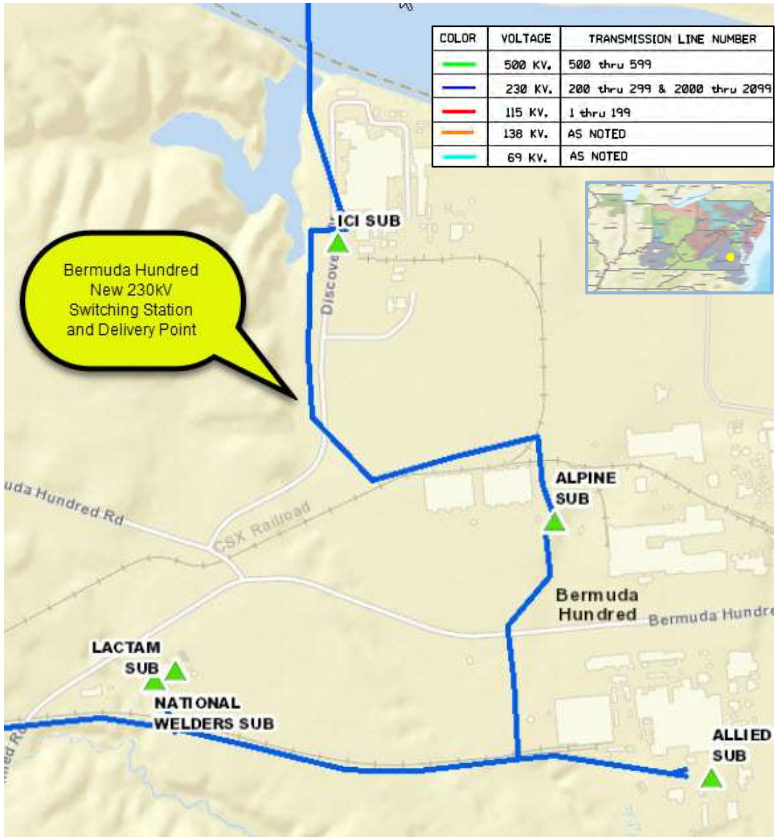
Specific Assumption References:

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

Problem Statement:

DEV Distribution has submitted a DP Request for a new substation (Bermuda Hundred) to serve a data center in Chesterfield County with a total load in excess of 100 MW. The requested in-service date is Q4 2026.

Initial In-Service Load	Projected 2028 Load
Summer: 100.0 MW Winter: 0.0 MW	Summer: 300.0 MW Winter: 300.0 MW



Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2024-0022

Process Stage: Need Meeting 04/30/2024

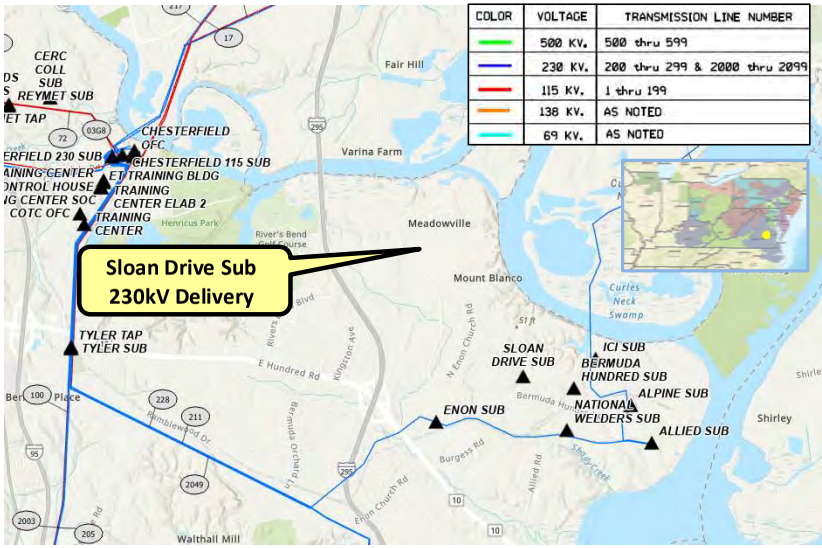
Project Driver: Customer Service

Specific Assumption References:

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

Problem Statement:

DEV Distribution has submitted a DP Request for a new substation (Sloan Drive) to serve a data center in Chesterfield County with a total load in excess of 100 MW. The requested in-service date is Q2 2027.



Initial In-Service Load	Projected 2029 Load
Summer: 100.0 MW Winter: 0.0 MW	Summer: 100.0 MW Winter: 100.0 MW

Dominion Transmission Zone: Supplemental Customer Load Request

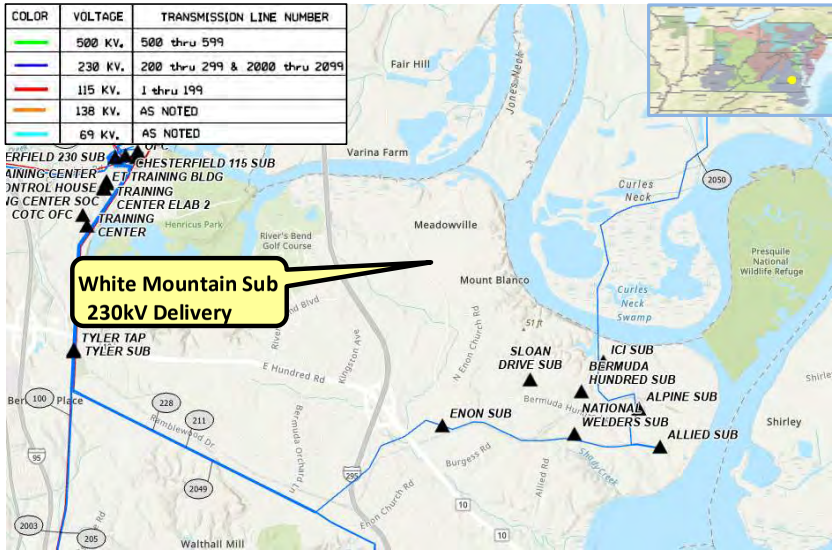
Need Number: DOM-2024-0024
Process Stage: Need Meeting 04/30/2024
Project Driver: Customer Service

Specific Assumption References:

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

Problem Statement:

DEV Distribution has submitted a DP Request for a new substation (White Mountain) to serve a data center in Chesterfield County with a total load in excess of 100 MW. The requested in-service date is 06/30/2028.



Initial In-Service Load	Projected 2029 Load
Summer: 100.0 MW Winter: 100.0 MW	Summer: 100.0 MW Winter: 100.0 MW

Dominion Transmission Zone: Supplemental Customer Load Request

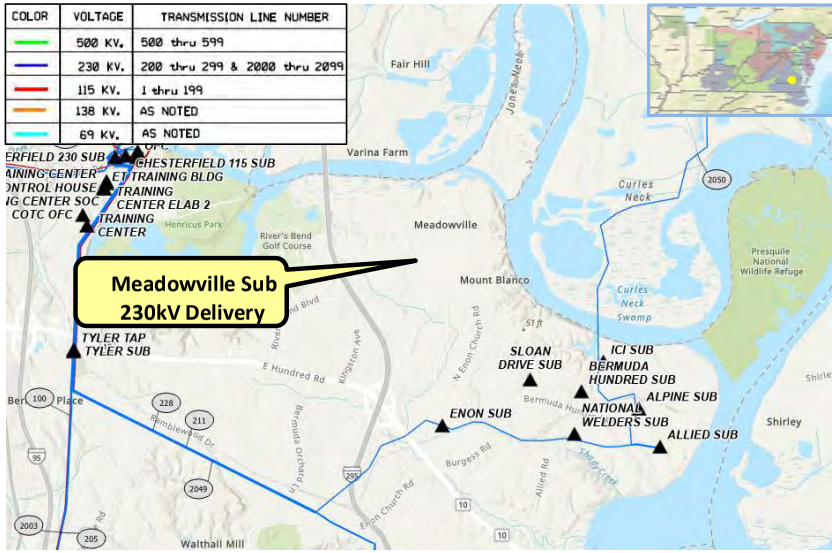
Need Number: DOM-2024-0023
Process Stage: Need Meeting 04/30/2024
Project Driver: Customer Service

Specific Assumption References:

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

Problem Statement:

DEV Distribution has submitted a DP Request for a new substation (Meadowville) to serve a data center in Chesterfield County with a total load in excess of 100 MW. The requested in-service date is 12/31/2027.



Initial In-Service Load	Projected 2029 Load
Summer: 80.0 MW Winter: 80.0 MW	Summer: 300.0 MW Winter: 300.0 MW

Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2019-0021
Process Stage: Solution Meeting 06/04/2024
Previously Presented: Need Meeting 04/30/2024
Project Driver: Customer Service

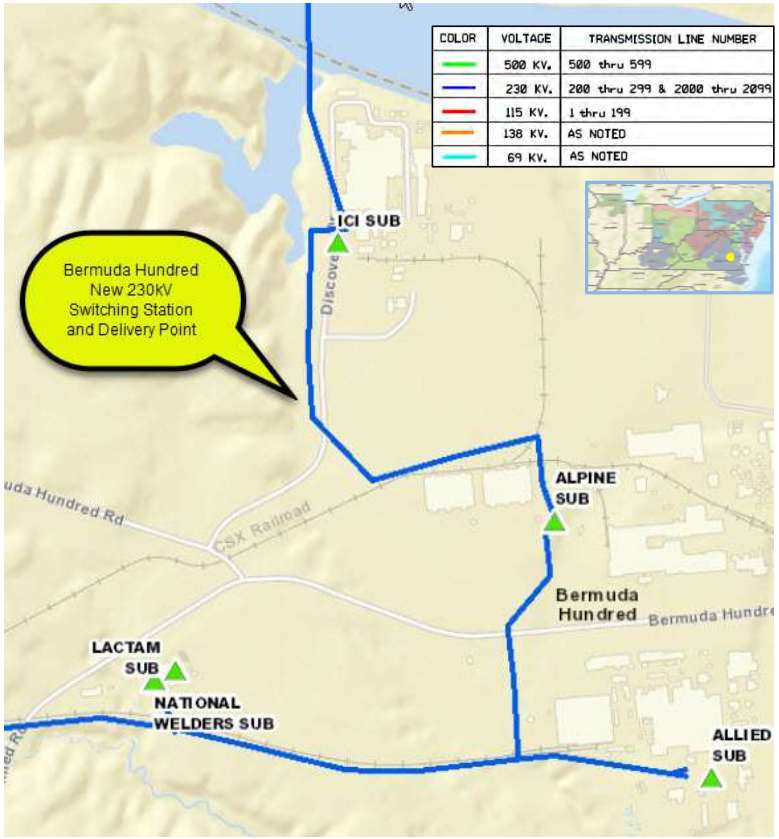
Specific Assumption References:

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

Problem Statement:

DEV Distribution has submitted a DP Request for a new substation (Bermuda Hundred) to serve a data center in Chesterfield County with a total load in excess of 100 MW. The requested in-service date is Q4 2026.

Initial In-Service Load	Projected 2028 Load
Summer: 100.0 MW Winter: 0.0 MW	Summer: 300.0 MW Winter: 300.0 MW



Dominion Transmission Zone: Supplemental Bermuda Hundred 230kV Delivery - DEV

Need Number: DOM-2019-0021

Process Stage: Solution Meeting 06/04/2024

Project Driver: Customer Service

Proposed Solution:
Connect the new substation by cutting existing 230kV Line 2050 (ICI to Allied) to proposed Bermuda Hundred Substation. Lines to terminate in a 230kV six-breaker ring arrangement.

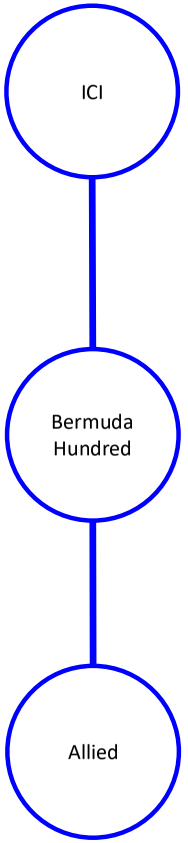
Estimated Project Cost: $15.0M

Alternatives Considered: None, new station is adjacent to existing transmission line

Projected In-service Date: Q4 2026

Project Status: Engineering

Model: 2029 RTEP



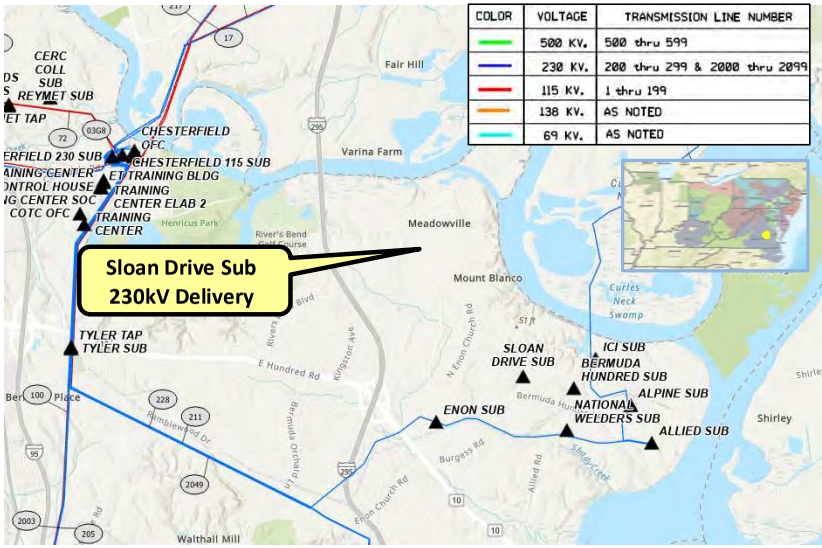
Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2024-0022

Process Stage: Solution Meeting 06/04/2024

Previously Presented: Need Meeting 4/30/2024

Project Driver: Customer Service



Specific Assumption References:

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

Problem Statement:

DEV Distribution has submitted a DP Request for a new substation (Sloan Drive) to serve a data center in Chesterfield County with a total load in excess of 100 MW. The requested in-service date is Q2 2027.

Initial In-Service Load	Projected 2029 Load
Summer: 100.0 MW Winter: 0.0 MW	Summer: 100.0 MW Winter: 100.0 MW

Dominion Transmission Zone: Supplemental Sloan Drive 230kV Delivery - DEV

Need Number: DOM-2024-0022

Process Stage: Solution Meeting 06/04/2024

Project Driver: Customer Service

Proposed Solution:
Connect the new substation by extending a new 230kV feed from future Bermuda Hundred Substation. Lines to terminate in a 230kV six-breaker ring arrangement.

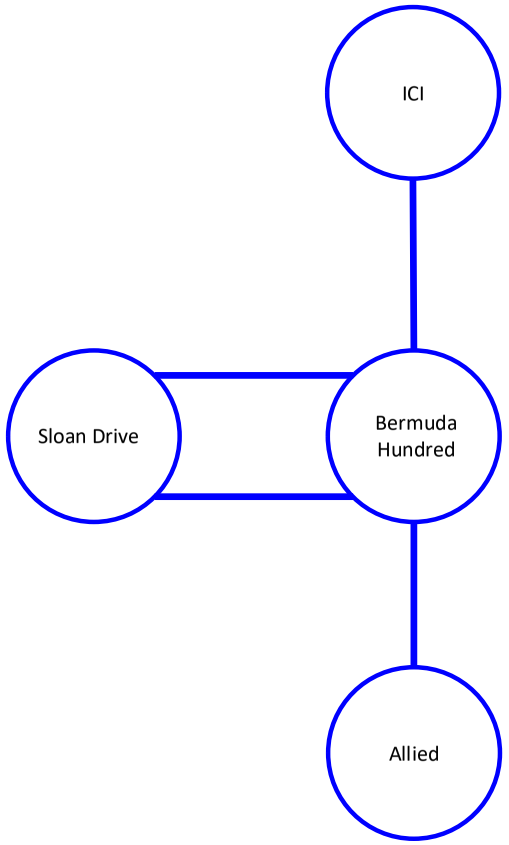
Estimated Project Cost: $25.0M

Alternatives Considered: None, new station is adjacent to future Bermuda Hundred Substation, both on Customer property.

Projected In-service Date: Q4 2027

Project Status: Engineering

Model: 2029 RTEP



I. NECESSITY FOR THE PROPOSED PROJECT

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

Response: Not applicable. See Section I.A.

I. NECESSITY FOR THE PROPOSED PROJECT

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

Response: Not applicable. See Sections I.A and I.C.

I. NECESSITY FOR THE PROPOSED PROJECT

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

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

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

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

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

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

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

Response: Not applicable.

I. NECESSITY FOR THE PROPOSED PROJECT

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

Response: The proposed Project will serve the Chesterfield Load Area, as described in Section I.C. and generally depicted in Attachment I.A.1. The Project may also be used to support future load in the area.

II. DESCRIPTION OF THE PROPOSED PROJECT

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

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

Response: The approximate lengths of the proposed route for each component are as follows:

Component 1 Proposed Route (Bermuda Hundred and Sloan Drive):

Line # 2050: 0.16 mile

Line # 2366: 1.01 miles

Line # 2367: 1.01 miles

Component 2 Proposed Route (Meadowville and White Mountain):

Line #2363: 1.60 miles

Line #2364: 1.36 miles

Line #2365: 0.57 mile

Component 3 Proposed Route (Sycamore Springs):

Line #211: 0.23 mile

Line #228: 0.23 mile

Line #2049: 0.08 mile

Line #2406: 1.76 miles

Line #2360: 1.76 miles

Line #2361: 2.16 miles

Line #2362: 2.16 miles

No alternatives were considered for Component 1 because the proposed Bermuda Hundred Station will be located entirely on Customer A's property and adjacent to Line #2050. Similarly, the Sloan Drive Station will be located on Customer A's property. As a result, Component 1 minimizes the need for additional ROW, minimizes environmental impacts, and limits the need to obtain property rights across other landowners' parcels.

With respect to Component 2, no alternatives were considered, as the proposed Meadowville Station is the closest source to the White Mountain Substation. Moreover, the Component 2 Proposed Route will travel through property that is primarily owned by Customer B and Chesterfield County EDA, with some smaller sections of the Proposed Route traveling across private property. As a result, the Component 2 Proposed Route minimizes the need for additional ROW, mitigates environmental impacts, and limits the need to obtain property rights from adjacent landowners.

With respect to the rebuild scope of Component 3, the Company considered no alternative routes. The proposed remaining scope for Component 3 utilizes existing ROW as much as possible, proposes to expand the proposed ROW outlined in Component 2 along mostly Customer B and Chesterfield County EDA-property, and County-owned property to minimize impacts to surrounding property owners and resources. Therefore, the Company is not proposing alternative routes for Component 3.

See Section II.A.9 for an explanation of the Company's route selection process, as well as the Environmental Routing Study referenced therein.

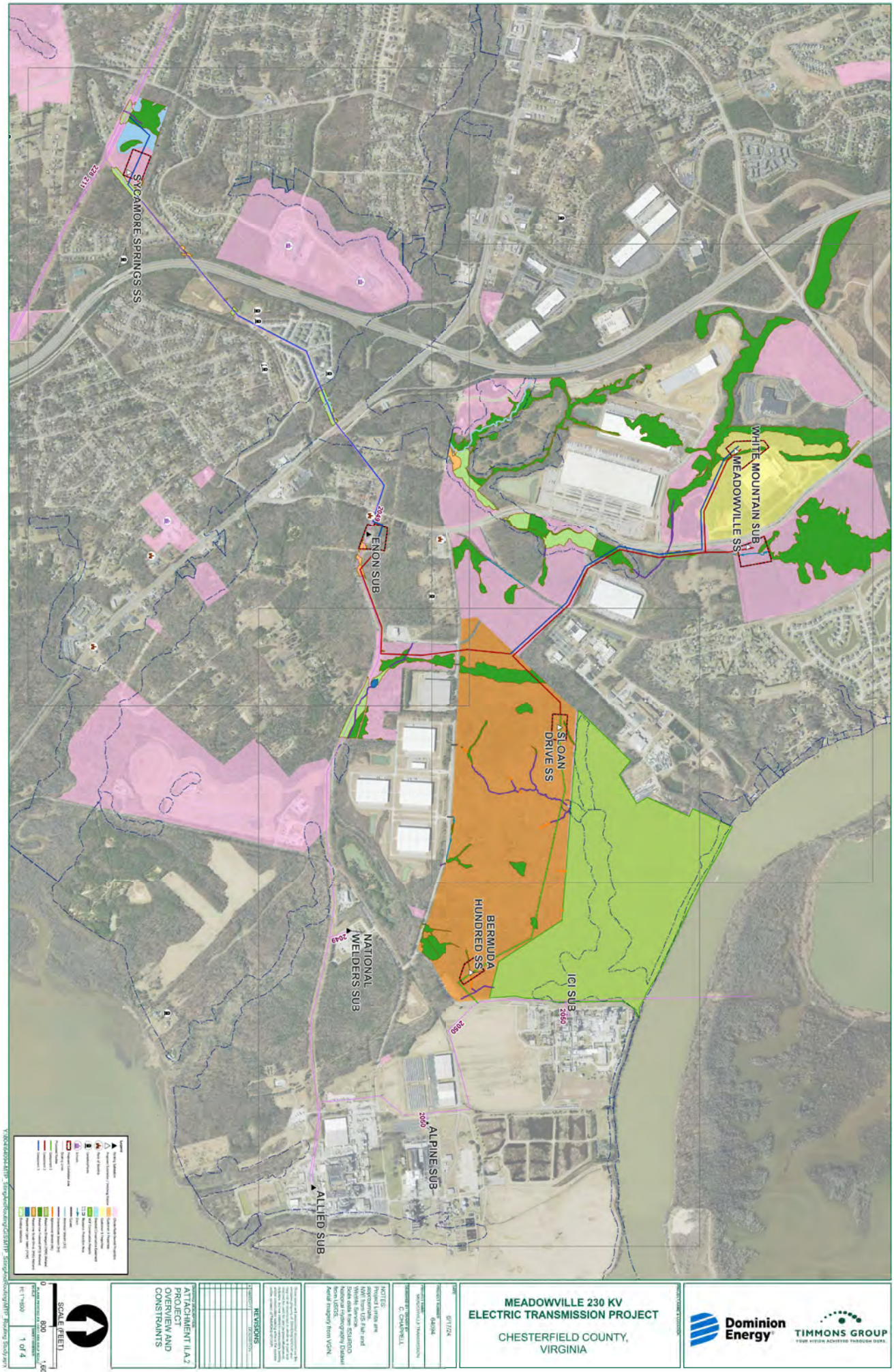
II. DESCRIPTION OF THE PROPOSED PROJECT

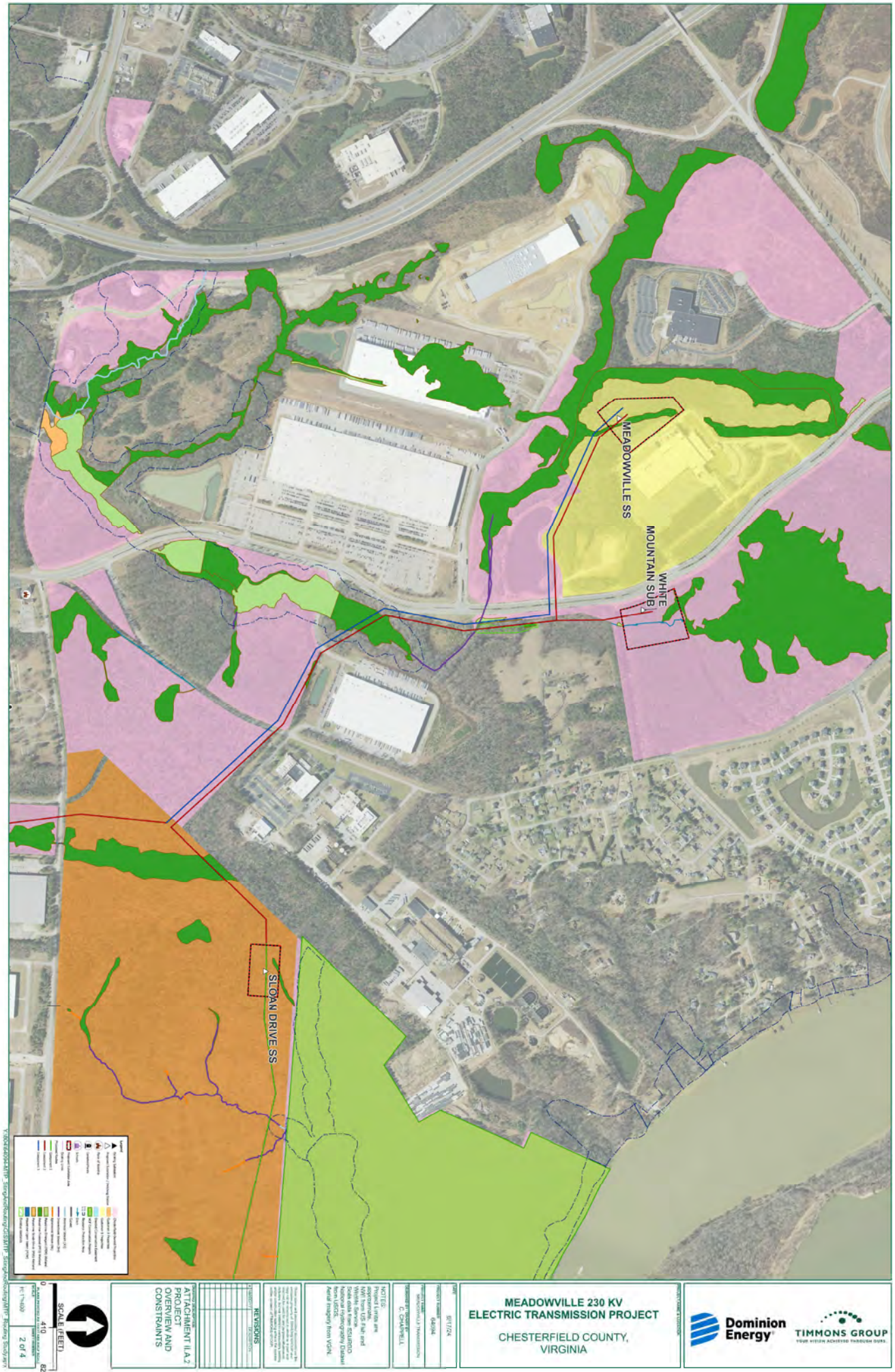
A. Right-of-way ("ROW")

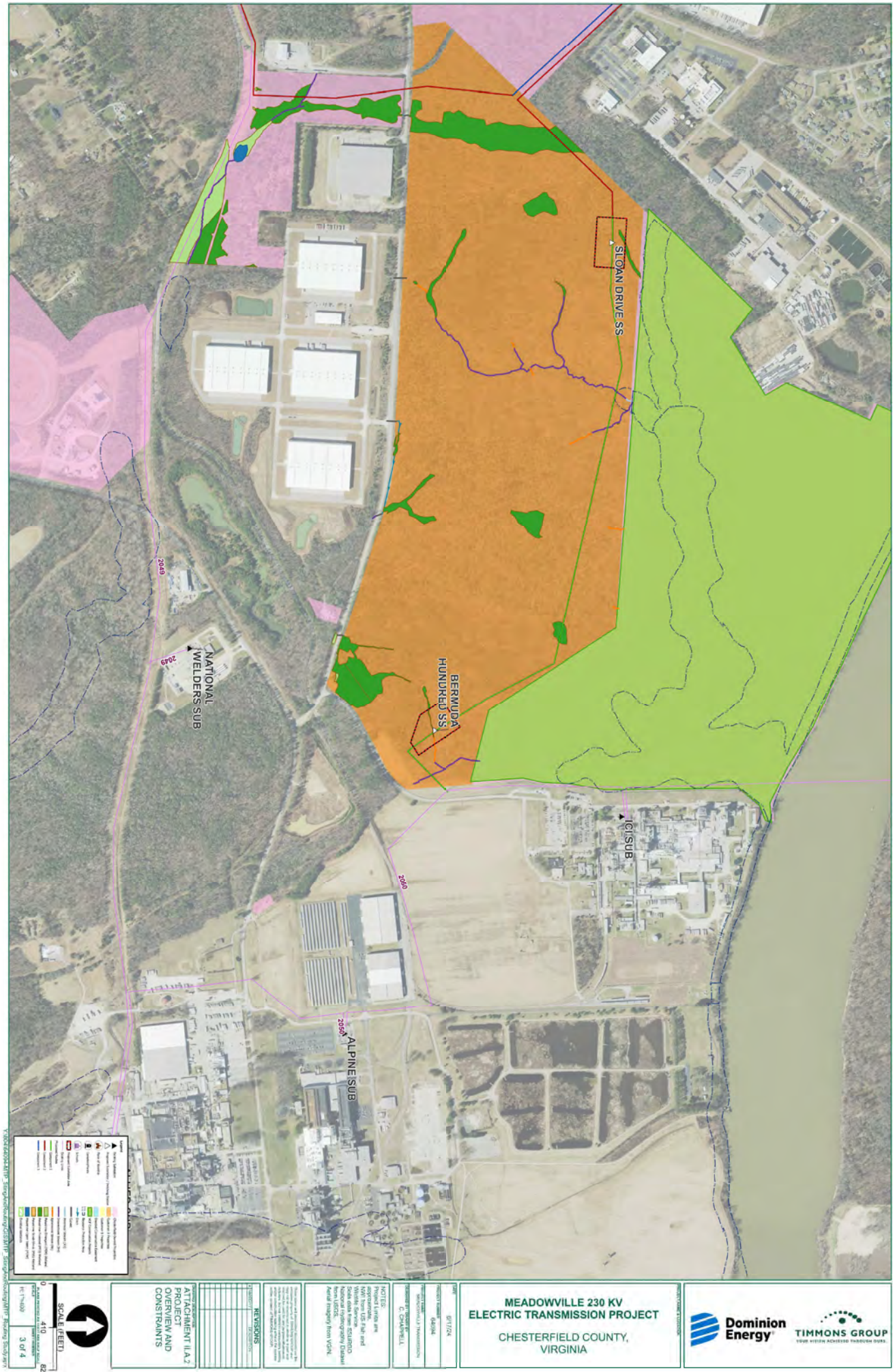
2. Provide color maps of suitable scale (including both general location mapping and more detailed GIS-based constraints mapping) showing the route of the proposed line and its relation to: the facilities of other public utilities that could influence the route selection, highways, streets, parks and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

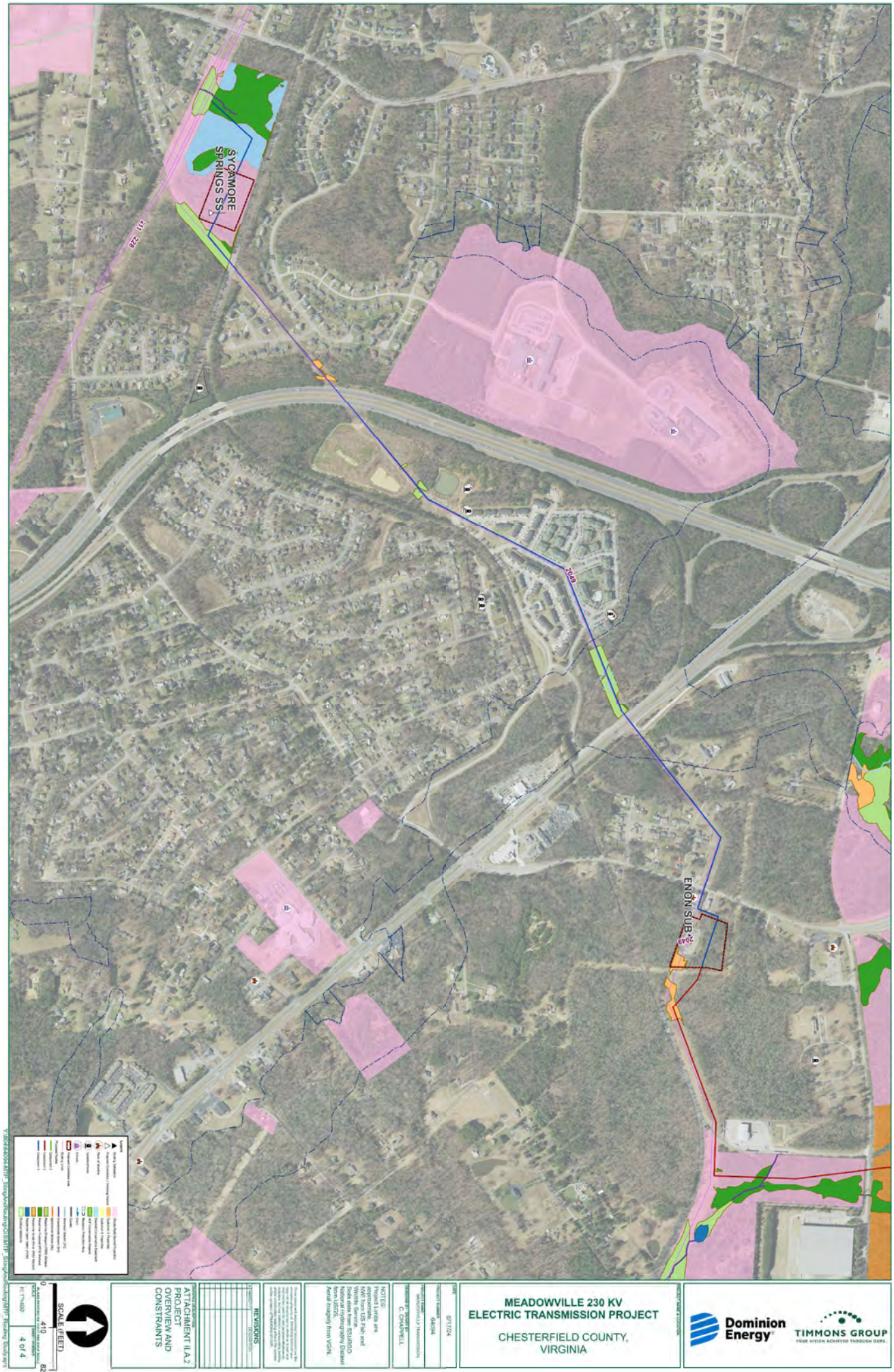
Response: See Attachment II.A.2. No portion of the right-of-way is proposed to be quitclaimed or relinquished.

Dominion Energy Virginia will make the digital Geographic Information Systems ("GIS") shape file available to interested persons upon request to the Company's legal counsel as listed in the Project Application.


SYCAMORE SPRINGS SS
228 211
ENON SUB
2049
WHITE MOUNTAIN SUB
MEADOWVILLE SS
SLOAN DRIVE SS
BERMUDA HUNDRED SS
NATIONAL WELDERS SUB
2049
ICI SUB
2050
2050
2050
ALPINE SUB
ALLIED SUB
MEADOWVILLE 230 KV
ELECTRIC TRANSMISSION PROJECT
CHESTERFIELD COUNTY,
VIRGINIA
Dominion Energy
TIMMONS GROUP
ATTACHMENT II.A.2
PROJECT
OVERVIEW AND
CONSTRAINTS
SCALE (FEET)
1 of 4


MEADOWVILLE SS
WHITE MOUNTAIN SUB
SLOAN DRIVE SS
MEADOWVILLE 230 KV
ELECTRIC TRANSMISSION PROJECT
CHESTERFIELD COUNTY,
VIRGINIA
Dominion Energy
TIMMONS GROUP
ATTACHMENT II.A.2
PROJECT
OVERVIEW AND
CONSTRAINTS
SCALE (FEET)
2 of 4


SLOAN DRIVE SS
BERMUDA HUNDRED SS
NATIONAL WELDERS SUB
IC SUB
ALPINE SUB
2049
2049
2050
2050
MEADOWVILLE 230 KV
ELECTRIC TRANSMISSION PROJECT
CHESTERFIELD COUNTY,
VIRGINIA
ATTACHMENT II.A.2
PROJECT
OVERVIEW AND
CONSTRAINTS
SCALE (FEET)
3 of 4
Dominion Energy
TIMMONS GROUP



MEADOWVILLE 230 KV
ELECTRIC TRANSMISSION PROJECT

CHESTERFIELD COUNTY, VIRGINIA

Dominion Energy

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

ATTACHMENT II.A.2
PROJECT OVERVIEW AND CONSTRAINTS

REVISIONS

NOTES:
Project features are approximate.
NAD 1983 StatePlane Virginia South FIPS 4502 Feet
Data sources: Roads from VGIN; National Hydrography Dataset from USGS; Aerial imagery from VGIN.

DESIGNED BY: C. CHAPPELL
DRAWN BY:
CHECKED BY:
DATE: 9/17/24
PROJECT NUMBER: 64264

SCALE: 1" = 400'
SCALE (FEET): 0, 410, 820
4 of 4

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 for existing transmission line rights-of-way and Attachment II.B.3 for proposed and future transmission line rights-of-way in the Project area.

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: **Component 1: Bermuda Hundred and Sloan Drive**

There is no existing Company ROW that connects the proposed Bermuda Hundred Station and Sloan Drive Station that is adequate to accommodate the Project as proposed.

Component 2: Meadowville and White Mountain

There is no existing Company ROW that connects the proposed Meadowville Station and White Mountain Substation adequate to accommodate the Project as proposed.

Component 3: Sycamore Springs

The proposed route includes a rebuild of the existing transmission line entirely within existing rights-of-way for approximately 1.8 miles. The remaining miles will require new ROW to be obtained adjacent to the corridor in Component 2, as there is no existing ROW that connects Meadowville Station and the convergence of Line #2361 and Line #2362 with Line #2363 and Line #2364.

II. DESCRIPTION OF THE PROPOSED PROJECT

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

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

a. ROW width for each cross section drawing;

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

c. Existing utility facilities on the ROW; and

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

Response: See Attachment II.A.5.a through II.A.5.c.

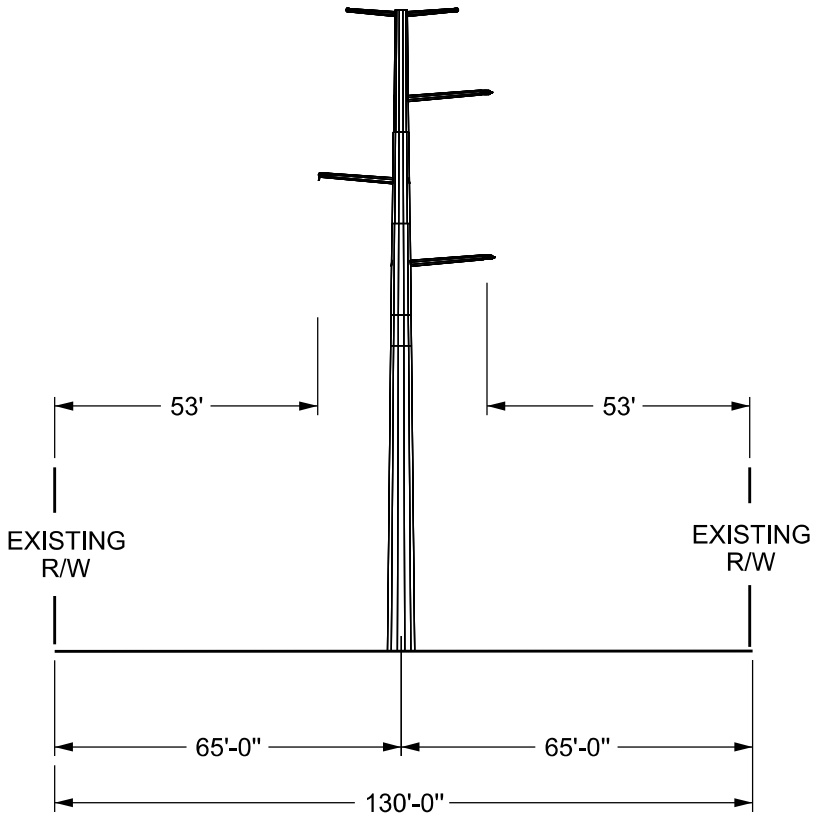
For additional information on the structures, see Section II.B.3.

$SYTIME$
$DATE$

EXISTING CONFIGURATION
LINE 2049

STRUCTURES #2049/38 - 2049/47
STRUCTURES #2049/53 - 2049/55

EXISTING
230KV CIRCUIT LINE #2049



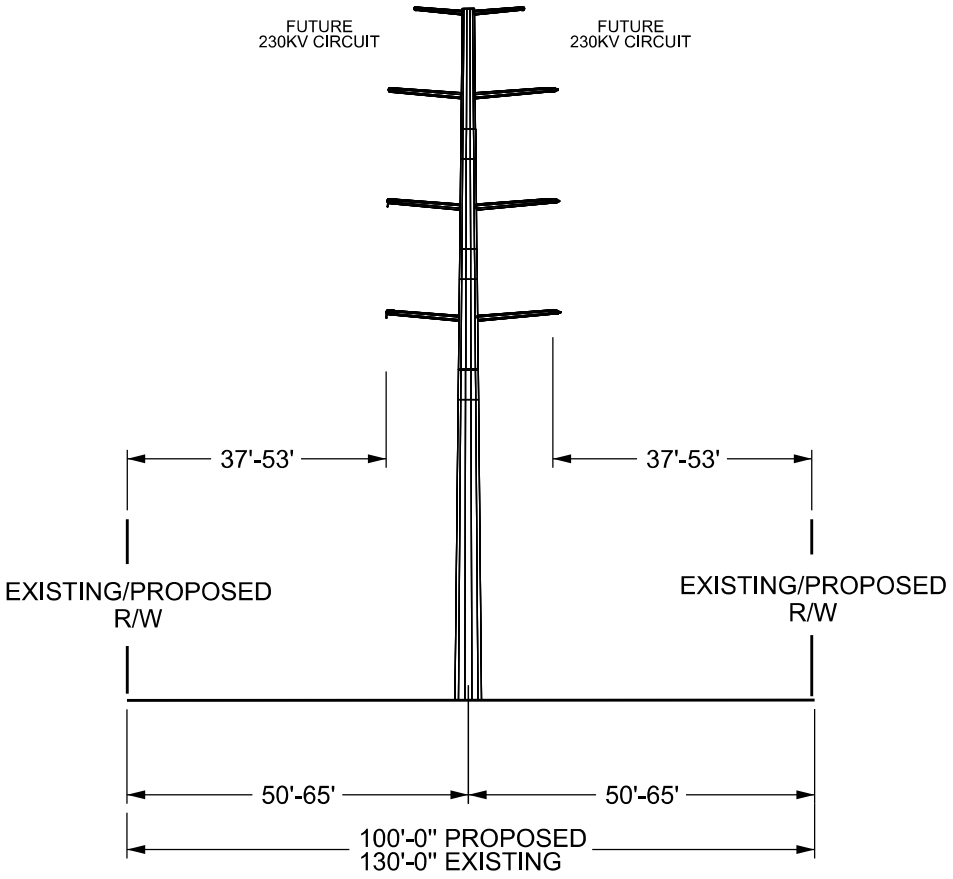
EXISTING CONFIGURATION
TYPICAL RIGHT OF WAY

TDBDIAG $DGNSPEC$

$SYTIME$
$DATE$
TDBDIAG $DGNSPEC$

PROPOSED CONFIGURATION
LINE 2049

STRUCTURES #2049/38 - 2049/47
STRUCTURES #2361/2 - 2361/8
STRUCTURES #2366/2 - 2366/8
STRUCTURES #2363/1 - 2363/2
STRUCTURE #2364/10



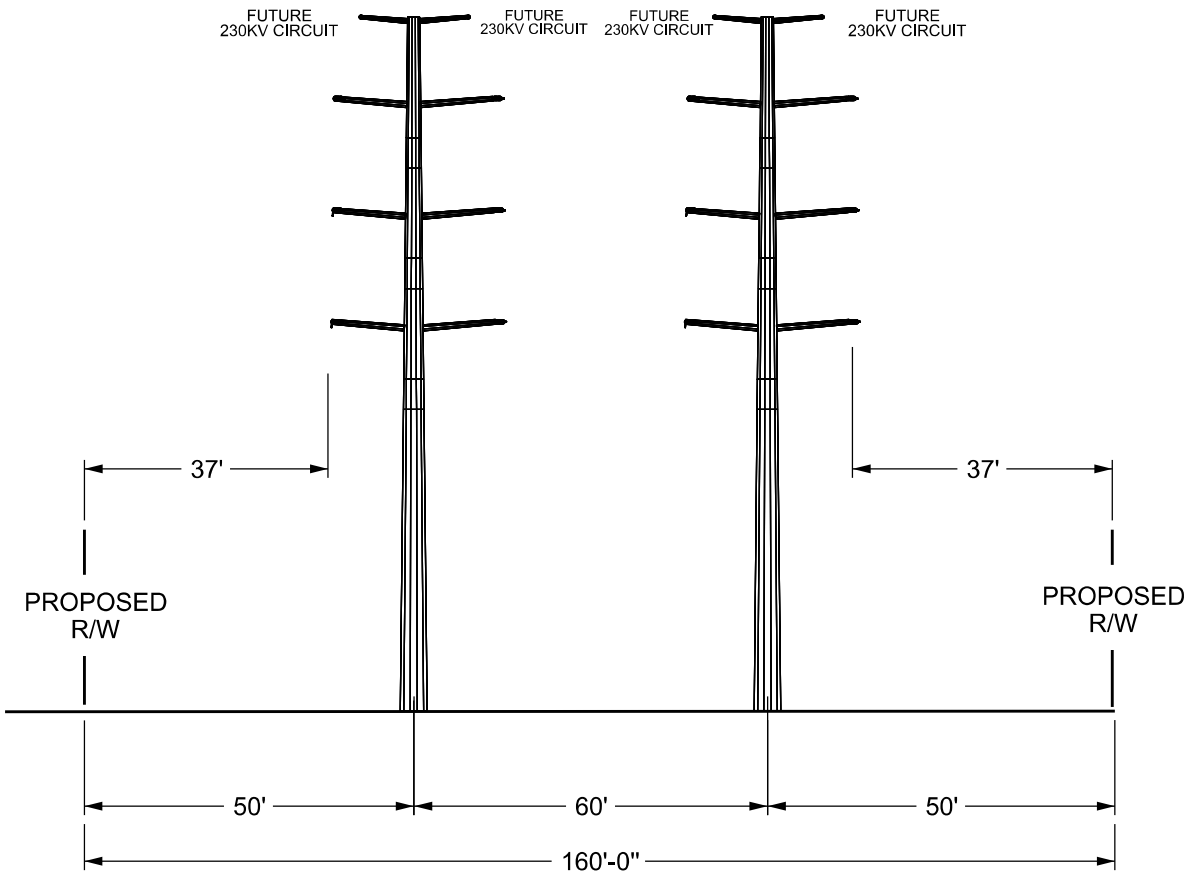
PROPOSED CONFIGURATION
TYPICAL RIGHT OF WAY

$SYTIME$

$DATE$

PROPOSED CONFIGURATION
LINES 2361, 2362, 2363, 2364

STRUCTURES #2361/9, 2363/3 - 2361/18, 2363/12



PROPOSED CONFIGURATION
TYPICAL RIGHT OF WAY

TDBDIAG $DGNSPEC$

II. DESCRIPTION OF THE PROPOSED PROJECT

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

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

Response: As discussed in Section II.A.4, there is no existing Company-owned ROW that connects the Project's proposed and existing switching stations and substations that is adequate to accommodate the Project as proposed. See Attachment II.A.6.

Component 1: Bermuda Hundred and Sloan Drive

The entire ROW of the Component 1 Proposed Route will require new easements. Customer A will be providing new easements to the Company.

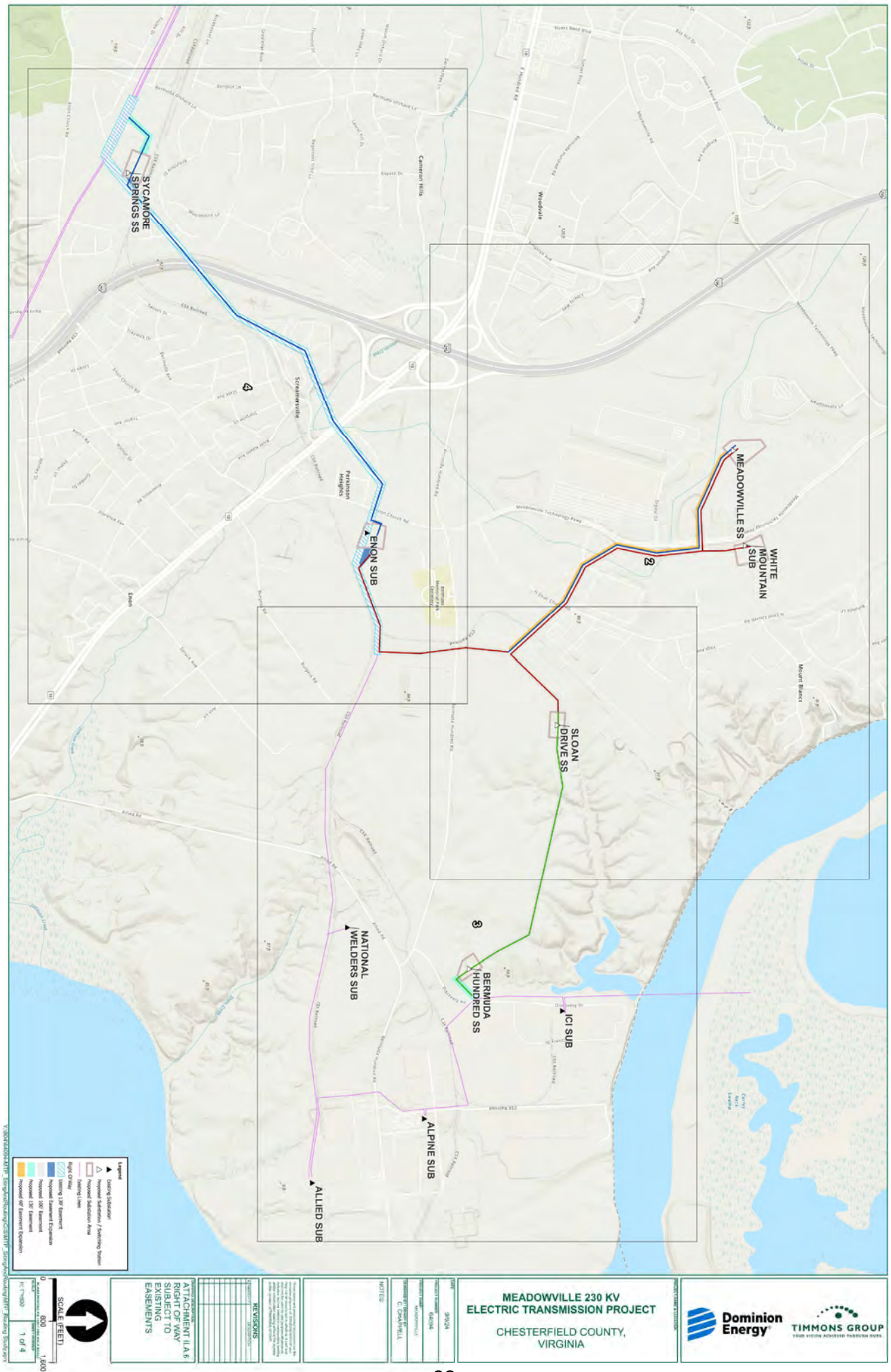
Component 2: Meadowville and White Mountain

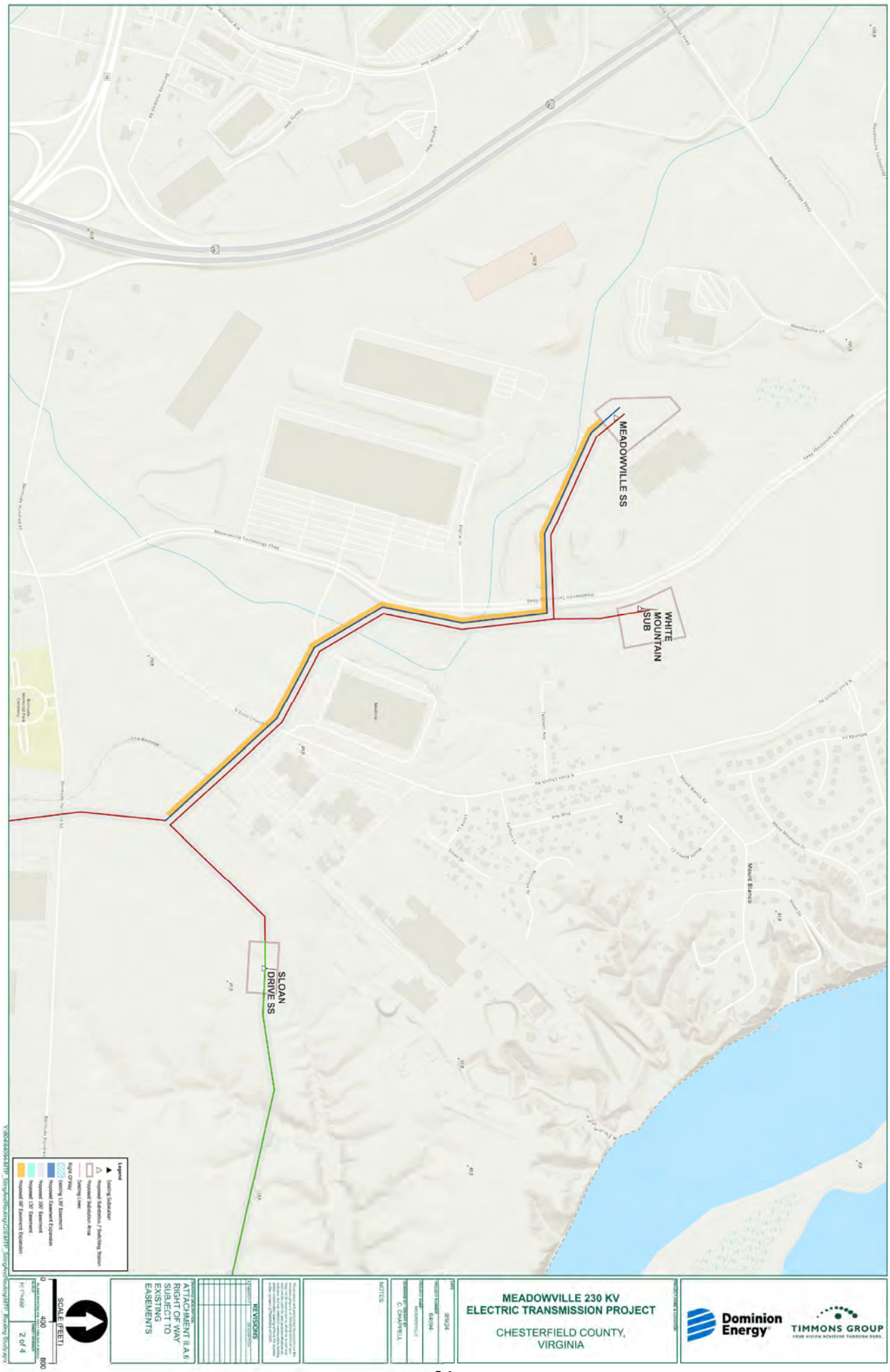
The entire ROW of the Component 2 Proposed Route will require new easements from Customer B, Chesterfield EDA, and private property owners.

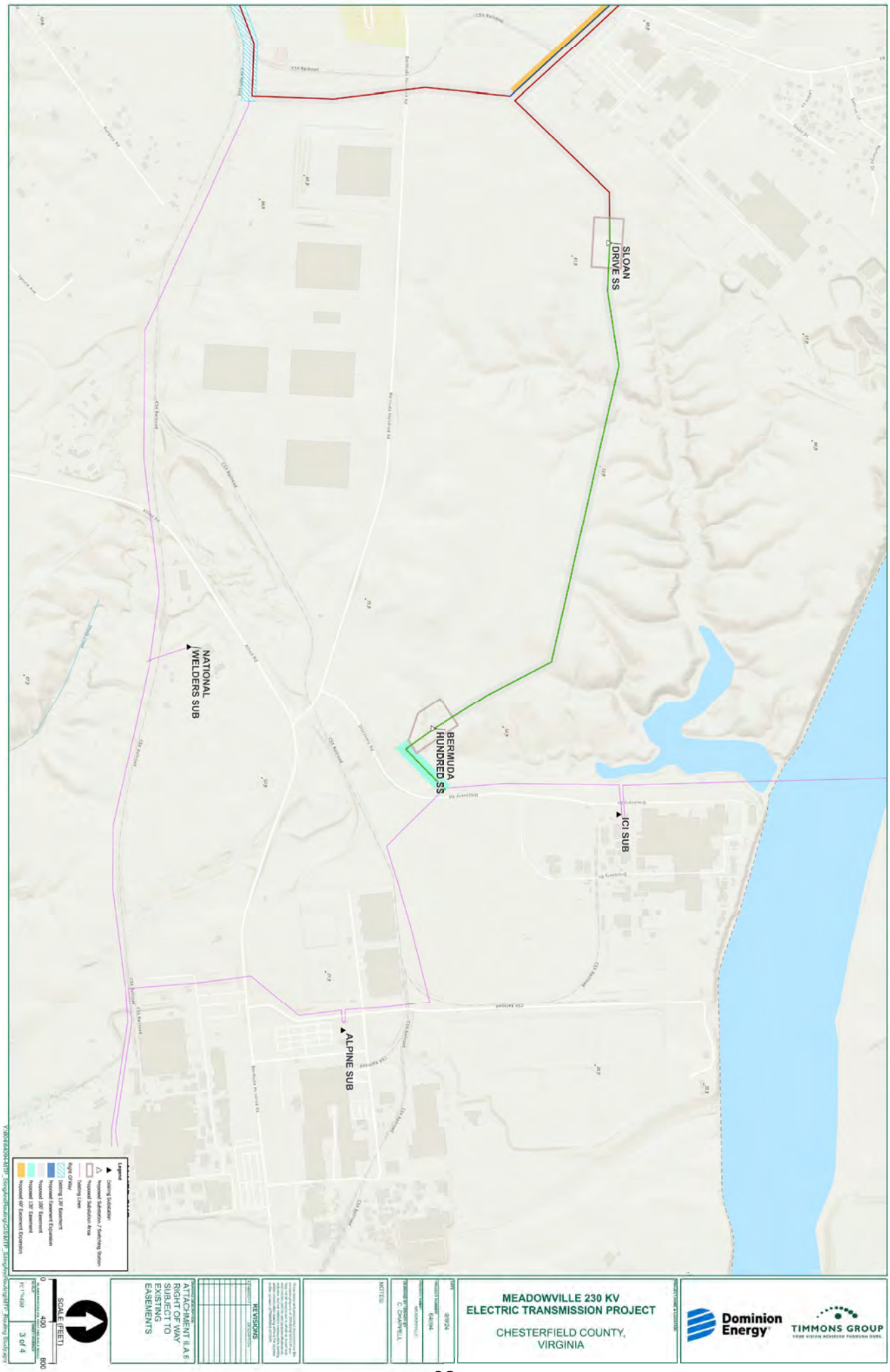
Accordingly, the entire ROW for the proposed route from Enon to both the Sloan Drive Station and Bermuda Hundred Station, and for Meadowville Station and White Mountain Substation will require easements for the new-build transmission line.

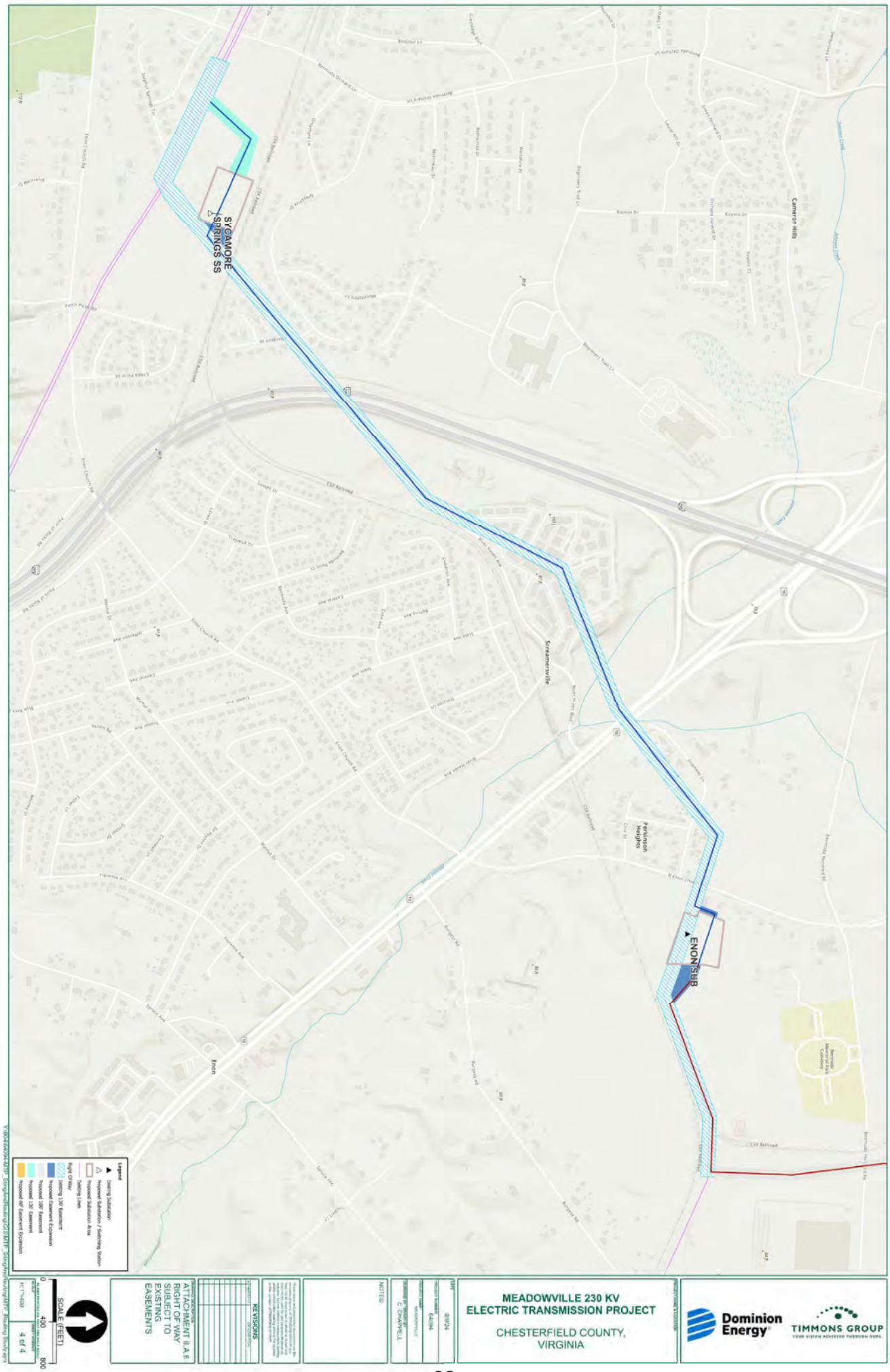
Component 3: Sycamore Springs

The rebuild scope for Component 3 is within existing easements and no new easements are anticipated. A new easement will need to be purchased from Chesterfield County for the proposed Sycamore Springs Station and ROW will need to be obtained from Customer B's property, the same private property owners as in Component 2, and Chesterfield EDA to connect to the proposed Meadowville Station and for the convergence of Line #2361 and Line #2362 with Line #2363 and Line #2364 as shown in Attachment I.A.4.


SYCAMORE SPRINGS SS
ENON SUB
MEADOWVILLE SS
WHITE MOUNTAIN SUB
SLOAN DRIVE SS
BERMUDA HUNDRED SS
ICI SUB
NATIONAL WELDERS SUB
ALPINE SUB
ALLIED SUB
Scheidersville
Enon
Persimon Heights
Cameron Hills
Woodvale
Mount Blanco
Legend
Existing Substation
Proposed Substation / Switching Station
Proposed Substation Area
Existing Lines
Right Of Way
Existing 1.3X Easement
Proposed Easement Expansion
Proposed 130' Easement
Proposed 100' Easement
Proposed 66' Easement Expansion
SCALE (FEET)
0
800
1,600
1 of 4
ATTACHMENT II.A.6
RIGHT OF WAY
SUBJECT TO
EXISTING
EASEMENTS
REVISIONS
NOTES:
C. CAMPBELL
MEADOWVILLE
64294
9/9/24
MEADOWVILLE 230 KV
ELECTRIC TRANSMISSION PROJECT
CHESTERFIELD COUNTY,
VIRGINIA
Dominion Energy
TIMMONS GROUP


MEADOWVILLE SS
WHITE MOUNTAIN SUB
SLOAN DRIVE SS
Meadowville Technology Pkwy
Mount Blanco
Legend
Existing Substation
Proposed Substation / Switching Station
Proposed Switchyard Expansion
Proposed Substation Area
Existing Lines
Right-Of-Way
Existing 138' Easement
Proposed Easement Expansion
Proposed 138' Easement
Proposed 230' Easement
Proposed 69' Easement Expansion
SCALE (FEET)
0
400
800
2 of 4
ATTACHMENT II.A.6
RIGHT OF WAY
SUBJECT TO
EXISTING
EASEMENTS
REVISIONS
NOTES:
C. CHAPPELL
MEADOWVILLE
MEADOWVILLE 230 KV
ELECTRIC TRANSMISSION PROJECT
CHESTERFIELD COUNTY,
VIRGINIA
Dominion Energy
TIMMONS GROUP


SLOAN DRIVE SS
NATIONAL WELDERS SUB
BERMUDA HUNDRED SS
ICI SUB
ALPINE SUB
Legend
Existing Substation
Proposed Substation / Switching Station
Proposed Substation Area
Existing Lines
Right Of Way
Existing 138' Easement
Proposed Easement Expansion
Proposed 230' Easement
Proposed 69' Easement Expansion
SCALE (FEET)
0
400
800
3 of 4
ATTACHMENT II.A.6
RIGHT OF WAY
SUBJECT TO
EXISTING
EASEMENTS
REVISIONS
NOTES:
MEADOWVILLE 230 KV
ELECTRIC TRANSMISSION PROJECT
CHESTERFIELD COUNTY,
VIRGINIA
Dominion Energy
TIMMONS GROUP


SYCAMORE SPRINGS SS
ENON SUB
Cameron Hills
Screamersville
Pennington Heights
Enon
Legend
Existing Substation
Proposed Substation / Switching Station
Proposed Switch Station Area
Existing Lines
Right Of Way
Existing 130' Easement
Proposed Easement Expansion
Proposed 100' Easement
Proposed 130' Easement
Proposed 66' Easement Expansion
SCALE (FEET)
1" = 1400'
0
400
800
4 of 4
ATTACHMENT II.A.6
RIGHT OF WAY
SUBJECT TO
EXISTING
EASEMENTS
REVISIONS
NOTES:
C. CAMPBELL
MEADOWVILLE 230 KV
ELECTRIC TRANSMISSION PROJECT
CHESTERFIELD COUNTY,
VIRGINIA
Dominion Energy
TIMMONS GROUP

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 ROW widths for the Proposed Routes predominantly will be 100 feet for Component 1 (the ROW for the first span from Bermuda Hundred Station to Sloan Drive Station is 130 feet), 100 feet for Component 2, and 160 feet for Component 3. A combined corridor for Lines #2360 and #2362 (Component 3) and for Lines #2363 and #2364 (Component 2) will be used to the east of North Enon Church Road and extend northwest to Meadowville Station. This right-of-way section will be 160 feet in width. Based on anticipated conditions and desktop analysis, tree clearing would be required along a portion of the Proposed Routes. Customers A and B will conduct tree clearing on their respective properties.

Trimming of tree limbs along the edge of the right-of-way also may be conducted to support construction activities for the Project. For any such minimal clearing within the right-of-way where development has already occurred, 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 where applicable 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 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* 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/or herbicide application.

II. DESCRIPTION OF THE PROPOSED PROJECT

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

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

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

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

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

- Agriculture
- Hiking Trails
- Fences
- Perpendicular Road Crossings
- Perpendicular Utility Crossings
- Residential Driveways
- 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 new transmission lines typically begins with identification of the project "origin" and "termination" points provided by the Company's Transmission Planning Department. This is followed by the development of a study area for the project. The study area represents a circumscribed geographic area from which potential routes suitable for a transmission line can be identified.

For this Project, the Company retained the services of Timmons Group ("Timmons") to help collect information within the study area, identify potential routes, perform a routing analysis comparing the route alternatives, and document the routing efforts in an Environmental Routing Study. After review of the new build options, the Company identified a preferred electrical option for the Project, which is located entirely within Chesterfield County, Virginia.

The study area encompasses an area containing the Project origin and termination points, and is bounded by the following features:

- Discovery Road to the east;
- James River to the north;
- I-295 and Bermuda Sycamore Springs Lane to the west; and
- The Company's existing Tyler-Hopewell Lines #211 and #228, and Chesterfield-Allied Line #2049 to the south.

The Company considered the facilities required to construct and operate the new infrastructure, the length of the new ROW that would be required for the Project, the amount of existing development in the area, the potential for environmental impacts and impacts on communities, and cost.

As discussed in more detail below and in the Environmental Routing Study, the Company proposed one viable overhead route for the proposed Sycamore Springs to Meadowville lines between the proposed Sycamore Springs Station and Meadowville Station. The route identified has been coordinated through direct communication with the developers, County representatives, and within existing rights-of-way.

Proposed Routes

Component 1 (Bermuda Hundred and Sloan Drive)

The Component 1 Proposed Route, consisting of Lines #2050, #2366, and #2367, is approximately 1.2 miles in length and is located entirely within Chesterfield County, Virginia. The Component 1 Proposed Route begins at the cut-in location just west of Discovery Road on Line #2050 and just north of structure #2050/13 and extends west along the edge of Customer A's proposed development to the proposed Bermuda Hundred Station, and further west from the Bermuda Hundred Station to the proposed Sloan Drive Station. This route is located entirely on the customer's parcel. This portion of the proposed route crosses undeveloped forested land just to the south of the Brown and Williamson Conservation Area and the Lower James River Linear Park trail. Component 1 does not cross these resources and it is not anticipated that the Component 1 Proposed Route will impact the use or function of the conservation area and trail. Construction of this component will require tree clearing of the proposed ROW and may have a visual impact on the Conservation area and park trail.

According to County parcel data, zoning data, and aerial photo analysis, no residences or associated outbuildings, residential areas, or commercial structures are crossed by, or located withing 500 feet of Component 1. The estimated conceptual cost of the Component 1 Proposed Route is approximately $45.4 million (2024) dollars.

Component 2 (Meadowville and White Mountain)

The Component 2 Proposed Route is approximately 1.6 miles in length for Line #2363 and approximately 1.4 miles in length for Line #2364, and is located entirely within Chesterfield County, Virginia. Line #2363 and #2364 extend south from the Sloan Drive Station and then heads west perpendicularly crossing N Enon Church Road and over undeveloped forested land owned by EDA for 0.88 mile until they reach Meadowville Technology Parkway. From Meadowville Technology Parkway, Line #2363 runs adjacent to the Parkway for 0.3 mile before turning west across Customer B and Chesterfield EDA property for 0.4 mile until reaching Meadowville Station. Line #2364 continues north along Meadowville Technology Parkway, where Line #2363 turns west to the Station, and continues another 0.17 mile north to White Mountain Station. Line #2365 connects White Mountain Station to Meadowville Station by following the same 0.17 mile corridor south and then 0.4 mile west to Meadowville Station.

According to County parcel data, zoning data, and aerial photo analysis, no residences or associated outbuildings, residential areas, or commercial structures are crossed by Component 2. However, there are two residential and associated outbuildings, one residential area (Tazewell James Single Family Subdivision), and six commercial structures within 500 feet of Component 2. The estimated conceptual cost of the Component 1 Proposed Route is approximately $83.8 million (2024) dollars.

Component 3 (Sycamore Springs)

The Component 3 Proposed Route is approximately 4.23 miles in total length and is located entirely within Chesterfield County, Virginia. Looping Lines #211, #228, and #2049 into Sycamore Springs Station, on property owned by Chesterfield County, and extending Line #2360 and Line #2406 (formerly Line #2049) north out of Sycamore Springs Station, which will require a rebuild of the existing transmission line within existing electric transmission right of way to Enon Substation. The existing right of way crosses one CSX railroad, Route I-295, E. Hundred Road, and North Enon church Road before reaching the existing Enon Substation. Line #2361 and #2362 continue from Enon Substation along the existing corridor for 0.43 mile before turning north into a new greenfield ROW corridor on Chesterfield County EDA and Customer A property for 0.47 mile to converge with Component 2. The Component 3 Proposed Route expands the corridor for Component 2 an additional 60 feet, widening the total ROW to 160 feet from the proposed ROW colocation point just south of Sloan Drive Substation, heading west and perpendicularly crossing North Enon Church Road and traversing undeveloped forested land owned by Chesterfield EDA for approximately 0.55 mile until they reach Meadowville Technology Parkway. From Meadowville Technology Parkway, Lines #2361 and #2362 run adjacent to the Parkway for 0.3 mile before turning west across Customer B and Chesterfield EDA property for 0.4 mile until reaching Meadowville Station.

According to County parcel data, zoning data, and aerial photo analysis, Component 3 crosses five existing residential areas: Montclair at Southbend (Single Family) Subdivision, Rivermont Crossing (Apartment) Subdivision, Rivermont Hills (Single Family) Subdivision, Perkinson Heights (Single Family) Subdivision, and Five Point Acres (Single Family) Subdivision. Within these residential areas, there are 11 residences and associated outbuildings crossed by the component. Additionally, there are 6 commercial structures, one church structure, and a multitude of residences and associated outbuildings within 500 feet of Component 3. The estimated conceptual cost of the Component 3 Proposed Route is approximately $59.7 million (2024) dollars.

The Proposed Routes for all three components will cross a total of 43 parcels (Component 1 involves 4 parcels, Component 2 involves 14 parcels, and Component 3 involves 48 parcels), affecting 52.2 acres of new ROW and 40.4 acres of existing ROW. All parcels in Component 1 are either crossed by existing ROW or owned by the Customer A. Customer A has agreed to convey property rights to

the Company along the proposed route.

The majority of property along Component 2 is Customer-owned property or Chesterfield EDA-owned parcels. These entities have agreed to convey property rights to the Company along the proposed route. There are three private property owners along Component 2 and the Company is actively coordinating with those property owners about the route.

Thirty-four parcels in Component 3 are encumbered by existing transmission rights-of-way. New ROW will need to be obtained from EDA, Customer A, Customer B, and the same three private property owners along Component 2. The Company is working proactively with these property owners on transmission line siting. The proposed Sycamore Springs Station is on Chesterfield County property and the County has agreed to convey property rights to the Company for the proposed station. See Section III.E.

Based on Timmons's field surveyed wetland and waterbody analysis, Component 1 crosses three unnamed intermittent waterbodies and a small portion of one perennial waterbody north of the westernmost intermittent waterbody. All waterbodies crossed by Component 1 are unnamed tributaries to Fishpond, which drains north to the James River.

Component 2 and the northern portion of Component 3 cross two unnamed intermittent waterbodies. The northern waterbody is an unnamed tributary to Johnson Creek, and the southern waterbody is an unnamed tributary to Shand Creek, both of which drain to the Appomattox River. In addition, a small portion of Components 2 and 3 crosses a constructed pond located north of Digital Drive and west of Meadowville Technology Parkway.

Component 3 crosses one unnamed intermittent tributary, four unnamed perennial tributaries to Johnson Creek, and Johnson Creek itself. The unnamed intermittent waterbody drains to Port Walthall Channel. All five perennial waterbodies drain to the Appomattox River.

No route alternatives were proposed for the Project. Based on wetlands field surveys conducted by Timmons in the Meadowville Technology Park area and proposed and submitted development plans, the Proposed Routes leveraged Customer property and existing rights-of-way while minimizing wetland impacts to the greatest extent practicable.

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: The Company plans to construct the Project in a manner that minimizes outage times on Line #2049 and Line #2050. Where possible, outages will be minimized by sequencing construction to eliminate the need to install transmission lines over energized stations. Component 1 should only require a cut-in outage to energize Sloan Drive Station. The outage to loop-in Bermuda Hundred Station will be performed under ordinary course and should require an outage less than 30 days. Component 2 should only require an outage of less than 30 days to loop-in Meadowville Station to existing Line #2049. Transmission lines connecting Meadowville, White Mountain and Sloan Drive stations should be able to be constructed without outages, or with short-duration outages of five (5) days or less. Component 3 will require an outage on Line #2049 with an estimated duration of 4 months to allow for the partial rebuild, expansion of ROW, and construction of the new Line #2362. Outages will also be required to cut-in Line #211 and Line #228 into Sycamore Springs and Enon stations. Assuming the Commission issues a final order by March 31, 2025, and Project construction commences in August 2025, the Company estimates that construction of the Project will be completed by December 31, 2028.

The Company intends to complete this work during requested outage windows, as described above. However, as with all outage scheduling, these outages may change depending on whether PJM approves the outages and other relevant considerations allow for it. It is customary for PJM to hold requests for outages and approve only shortly before the outages are expected to occur and, therefore, the requested outages are subject to change. Therefore, the Company will not have clarity on whether this work will be done as requested until very close in time to the requested outages. If PJM approves different outage dates, the Company will continue to diligently pursue timely completion of this work.

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 provide a tool routinely used by the Company in routing its transmission line projects.

The Company utilized Guideline #1 by minimizing conflict between the rights-of-way and present and prospective uses of the land on which the proposed Project is to be located (to the extent permitted by the property interest involved, rights-of-way should be selected with the purpose of minimizing conflict between the rights-of-way and present and prospective uses of the land on which they are to be located. To this end, existing rights-of-way should be given priority as the locations for additions to existing transmission facilities, and the joint use of existing rights-of-way by different kinds of utility services should be considered.). As discussed in Section II.A.6, the Project collocates along existing electric transmission rights-of-way between the Sycamore Springs Station and the Enon Substation to minimize the extent of new ROW required.

The proposed Project will have minimal to no impact to any site listed on the National Register of Historic Places ("NRHP"). Thus, it is consistent with Guideline #2 (where practical, rights of-way should avoid sites listed on the NRHP). A Stage I Pre-Application Analysis prepared by Dutton + Associates on behalf of the Company is included with the Environmental Routing Study as Appendix E and was submitted to VDHR on October 10, 2024.

The Company communicated with local, state, and federal agencies and relevant private organizations prior to filing this Application consistent with Guideline #4 (where government land is involved the applicant should contact the agencies early in the planning process). In particular, the Company consulted with Chesterfield County and the USACE. See Sections II.A.9, III.B, III.J, and V.D of this Appendix.

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

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

II. DESCRIPTION OF THE PROPOSED PROJECT

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

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

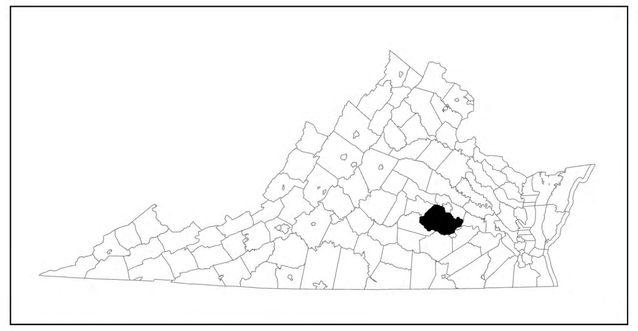
b. Provide three (3) color copies of the Virginia Department of Transportation "General Highway Map" for each county and city through which the line will pass. On the maps show the proposed line and all previously approved and certificated facilities of the Applicant. Also, where the line will be located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

Response:

a. The proposed Project is located entirely within Chesterfield County for a total of approximately 8.9 miles and is located entirely within Dominion Energy Virginia's service territory.

b. An electronic copy of the Virginia Department of Transportation ("VDOT") "General Highway Map" for Chesterfield County has been marked as required and submitted with the Application. A reduced copy of the map is provided as Attachment II.A.12.b.

Chesterfield County and Colonial Heights 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 _____. 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.

_____ IS NOT OPPOSED TO SUCH CONSTRUCTION IN ITS SERVICE TERRITORY.

SIGNATURE

DATE TITLE

Legend

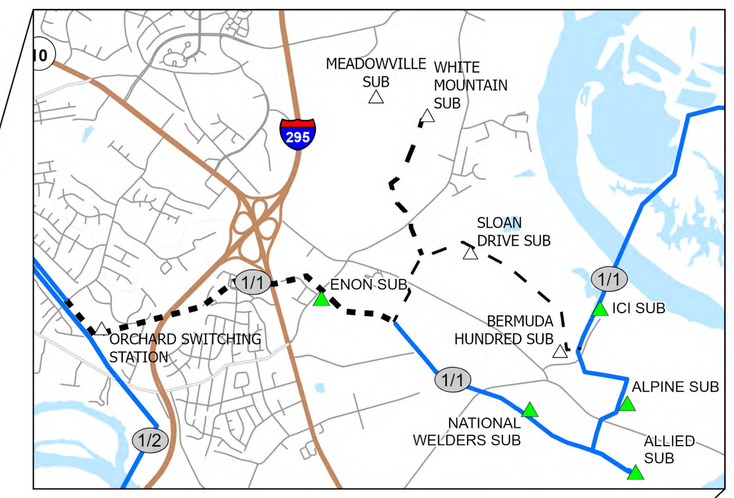
- Proposed Transmission Line
- Number of Lines of Structures/Number of Circuits
- Proposed Substation
- Existing Substation
- 115 kV
- 230 kV
- 500 kV

Provider Service Territory

- SSEC
- VEPCO

Powhatan County
Henrico County
Amelia County
Dinwiddie County
City of Richmond
Chesterfield Court House
Bellwood
Chester
Colonial Heights
Ettrick
Matoaca
Prince George County
City of Hopewell
Charles City County
City of Petersburg
Bon Air

MIDLOTHIAN 34.5 SUB
MIDLOTHIAN 500 SUB
MIDLOTHIAN MW
TRABUE SUB
STRATFORD HILLS SUB
SOUTHWEST SUB
PLANTATION SUB
HULL ST SUB
WINTERPOCK SUB
IRONBRIDGE SUB
DUPONT SUB
KEVLAR SUB
NATIONAL CYLINDER GAS SUB
BELLWOOD SUB
CENTRALIA SUB
KINGSLAND SUB
BROWN BOVERI SUB
REYMET SUB
CHESTERFIELD 230 SUB
CHESTERFIELD 115 SUB
COGC SUB
TYLER SUB
WALTHALL SUB
HARROWGATE SUB
ORCHARD SWITCHING STATION
MEADOWVILLE SUB
WHITE MOUNTAIN SUB
SLOAN DRIVE SUB
ENON SUB
BERMUDA HUNDRED SUB
ICI SUB
ALPINE SUB
NATIONAL WELDERS SUB
ALLIED SUB



Miles
2 1 0 2 4 6

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

Chesterfield

74

Attachment II.A.12.b

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: **Component 1: Bermuda Hundred and Sloan Drive**

The proposed lines cutting into to Bermuda Hundred station (Lines #2050 and #2368) will be designed and operated at 230 kV with no anticipated voltage upgrade and have a transfer capability of 1,573 MVA. The proposed lines from Bermuda Hundred Station to Sloan Drive Station (Line #2366 and Line #2367) will be designed and operated at 230 kV with no anticipated voltage upgrade and have a transfer capability of 1,573 MVA.

Component 2: Meadowville and White Mountain

The proposed lines from Meadowville Station to Sloan Drive Station and to White Mountain Substation (Line #2363, #2364 and Line #2365) will be designed and operated at 230 kV with no anticipated voltage upgrade and have a transfer capability of 1,573 MVA.

Component 3: Sycamore Springs

The proposed lines cutting into Sycamore Spring Station (Line #211, #228, #2373 and #2374)[22] will be designed and operated at 230 kV with no anticipated voltage upgrade and have a transfer capability of 1,573 MVA. The proposed lines from Sycamore Springs Station to Enon Substation (Line #2406 (formerly Line #2409) and Line #2360) and from Enon Substation to Meadowville (Line # 2361) Station will be designed and operated at 230 kV with no anticipated voltage upgrade and have a transfer capability of 1,573 MVA.

[22] When Line #s 211 and #228 split, they will become Line # 2373 and Line #2374, respectively.

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: **Component 1: Bermuda Hundred and Sloan Drive**

The proposed double-circuit 230 kV lines will include 3-phase twin bundled 768.2 ACSS/TW/HS (20/7) conductors arranged as shown in Attachment II.B.3.a through Attachment II.B.3.f. Twin-bundled 768.2 ACSS/TW/HS conductors are the Company's standard for new 230 kV construction.

Component 2: Meadowville and White Mountain

The proposed double-circuit 230 kV lines will include 3-phase twin bundled 768.2 ACSS/TW/HS (20/7) conductors arranged as shown in Attachment II.B.3.a through Attachment II.B.3.f. Twin-bundled 768.2 ACSS/TW/HS conductors are the Company's standard for new 230 kV construction.

Component 3: Sycamore Springs

The proposed double-circuit 230 kV lines will include 3-phase twin bundled 768.2 ACSS/TW/HS (20/7) conductors arranged as shown in Attachment II.B.3.a through Attachment II.B.3.f. Twin-bundled 768.2 ACSS/TW/HS conductors are the Company's standard for new 230 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: See Attachments II.B.3.a-f.

For subpart (a), see Attachment II.B.3 for approximate mapping of the proposed structures along the Proposed Routes, which is subject to change during final engineering.


MEADOWVILLE 230 KV
ELECTRIC TRANSMISSION PROJECT
CHESTERFIELD COUNTY,
VIRGINIA
Dominion Energy
TIMMONS GROUP
ATTACHMENT II.B.3
STRUCTURE LOCATIONS ALONG THE PROPOSED ROUTE
REVISIONS
NOTES:
SCALE (FEET)
1 of 4
MEADOWVILLE SS
WHITE MOUNTAIN SUB
ENON SUB
SLOAN PRIME SS
SYCAMORE SPRINGS SS
BERMUDA HUNDRED SS
NATIONAL WELDERS SUB
CI SUB
ALPINE SUB
ALLIED SUB
P2049/34
P2049/35
P2373/33
P2049/37A
P2049/36
P2049/39
P2049/40
P2049/41
P2049/42
P2049/43
P2049/44
P2049/45
P2049/46
P2049/47
P2049/51
P2049/50
P2049/49
P2049/52
P2361/2
P2361/5
P2361/3
P2361/4
P2361/6
P2361/7
P2361/8
P2361/9
P2361/10
P2361/11
P2361/12
P2361/13
P2361/14
P2361/15
P2361/16
P2361/17
P2361/18
P2363/1
P2363/2
P2363/3
P2363/4
P2363/5
P2363/6
P2363/7
P2363/8
P2363/9
P2363/10
P2363/11
P2363/12
P2364/9
P2364/10
P2366/2
P2366/3
P2366/4
P2366/5
P2366/7
P2366/8
P2050/12
P2050/13
23617


MEADOWVILLE 230 KV
ELECTRIC TRANSMISSION PROJECT
CHESTERFIELD COUNTY, VIRGINIA
Dominion Energy
TIMMONS GROUP
ATTACHMENT II.B.3
STRUCTURE LOCATIONS ALONG THE PROPOSED ROUTE
SCALE (FEET)
2 of 4
MEADOWVILLE SS
WHITE MOUNTAIN SUB
SLOAN DRIVE SS
2361/18
2363/12
2361/17
2363/11
2363/10
2361/16
2363/9
2361/14
2361/13
2361/12
2363/7
2363/8
2361/15
2364/9
2364/10
2363/6
2361/10
2361/11
2363/5
2361/9
2361/4
2361/8
2363/3
2363/2
2363/1
2366/8
2366/7
2366/6
2366/5

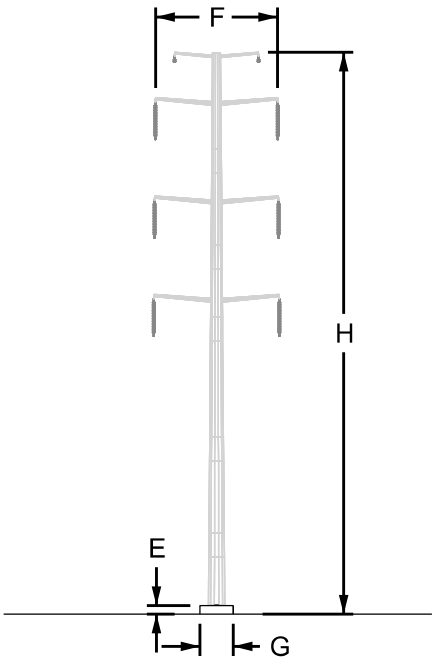

P23615
P23616
236117
236118
236119
236110
236111
236112
236113
236114
SLOAN DRIVE SS
236118
236117
236116
236115
236114
236113
236112
236111
236110
236109
236108
236107
236106
236105
236104
236103
236102
236101
NATIONAL WELDERS SUB
BERMUDA HUNDRED SS
205012
P20501/3
161 SUB
ALPINE SUB
Legend
Existing Substation
Proposed Substation / Switching Station
Proposed Structure
Proposed Substation Area
Proposed Lines
Existing Lines
Right Of Way
Existing 100' Easement
Proposed Easement Expansion
Proposed 100' Easement
Proposed 130' Easement
Proposed 150' Easement Expansion
SCALE (FEET)
0
400
800
1" = 1"=400'
3 of 4
ATTACHMENT II.B.3
STRUCTURE LOCATIONS ALONG THE PROPOSED ROUTE
REVISIONS
NOTES:
C. CHAPPELL
MEADOWVILLE 230 KV
ELECTRIC TRANSMISSION PROJECT
CHESTERFIELD COUNTY, VIRGINIA
Dominion Energy
TIMMONS GROUP


P211/34
2049/35
SYCAMORE SPRINGS SS
P211/35
P237/33
P2049/37A
P2049/38
P2049/39
P2049/40
P2049/41
P2049/42
P2049/43
P2049/44
P2049/45
P2049/46
P2049/47
2049/48
2049/50
2049/51
2049/52
ENON SUB.
P236/12
P236/13
P236/14
P236/15
P236/16
236/17
236/18
Legend
Existing Substation
Proposed Substation / Switching Station
Proposed Structure
Proposed Substation Area
Proposed Lines
Existing Lines
Right Of Way
Existing 138' Easement
Proposed Easement Expansion
Proposed 138' Easement
Proposed 200' Easement
Proposed 230' Easement
Proposed 60' Easement Expansion
SCALE (FEET)
0
400
800
ATTACHMENT II.B.3
STRUCTURE LOCATIONS ALONG THE PROPOSED ROUTE
REVISIONS
NOTES:
C. CHAPPELL
MEADOWVILLE 230 KV
ELECTRIC TRANSMISSION PROJECT
CHESTERFIELD COUNTY, VIRGINIA
Dominion Energy
TIMMONS GROUP
4 of 4

$SYTIME$

$DATE$

LINES: 2049, 2361, 2363 & 2366



TYPICAL DC ENGINEERED MONOPOLE SUSPENSION

A. STRUCTURE MAPPING	SEE ATTACHMENT II.B.3.g
B. RATIONALE FOR STRUCTURE TYPE:	MINIMIZES RIGHT OF WAY ACQUISITION FOR DC CONFIGURATION
C. LENGTH OF R/W (STRUCTURE QTY):	5.6 MILES (13) - SEE NOTE 1
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONALE FOR STRUCTURE MATERIAL:	WEATHERING STEEL WAS SELECTED TO MATCH CURRENT STANDARDS
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 2
F. AVERAGE WIDTH AT CROSSARM:	26'
G. AVERAGE WIDTH AT BASE:	SEE NOTE 3
H. MINIMUM STRUCTURE HEIGHT (SEE NOTE 4): MAXIMUM STRUCTURE HEIGHT (SEE NOTE 4): AVERAGE STRUCTURE HEIGHT (SEE NOTE 4):	110' 130' 118'
I. AVERAGE SPAN LENGTH (RANGE):	671'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (PER THE NATIONAL ELECTRICAL SAFETY CODE)

NOTES:
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN
3. FOUNDATION DIAMETER SHALL BE BASED ON GEOTECHNICAL FINDINGS DURING FINAL ENGINEERING

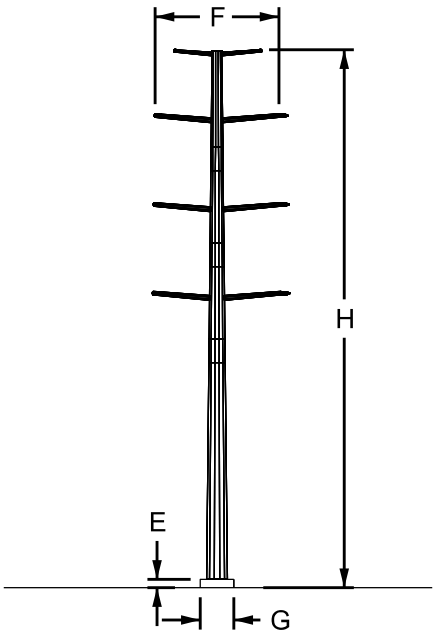
$DGNSPEC$

TESBORD1

	DESCRIPTION & VIEW	ATTACHMENT
Electric Transmission	LINE: 2049, 2361, 2363 & 2366 TYPICAL DC ENGINEERED MONOPOLE SUSPENSION STRUCTURE	II.B.3.a
Dominion Energy Dominion Energy 5000 Dominion Blvd Glen Allen, VA 23060		DRAWN BY: RAW

$SYTIME$
$DATE$

LINES: 2049, 2361, 2363, 2364 & 2366



TYPICAL DC ENGINEERED MONOPOLE DEADEND STRUCTURE

A. STRUCTURE MAPPING	SEE ATTACHMENT II.B.3.g
B. RATIONALE FOR STRUCTURE TYPE:	MINIMIZES RIGHT OF WAY ACQUISITION FOR DC CONFIGURATION
C. LENGTH OF R/W (STRUCTURE QTY):	5.6 MILES (22) - SEE NOTE 1
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONALE FOR STRUCTURE MATERIAL:	WEATHERING STEEL WAS SELECTED TO MATCH CURRENT STANDARDS
E. FOUNDATION MATERIAL:	CONCRETE
AVERAGE FOUNDATION REVEAL:	SEE NOTE 2
F. AVERAGE WIDTH AT CROSSARM:	26'
G. AVERAGE WIDTH AT BASE:	SEE NOTE 3
H. MINIMUM STRUCTURE HEIGHT (SEE NOTE 4):	100'
MAXIMUM STRUCTURE HEIGHT (SEE NOTE 4):	130'
AVERAGE STRUCTURE HEIGHT (SEE NOTE 4):	115'
I. AVERAGE SPAN LENGTH (RANGE):	647'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (PER THE NATIONAL ELECTRICAL SAFETY CODE)

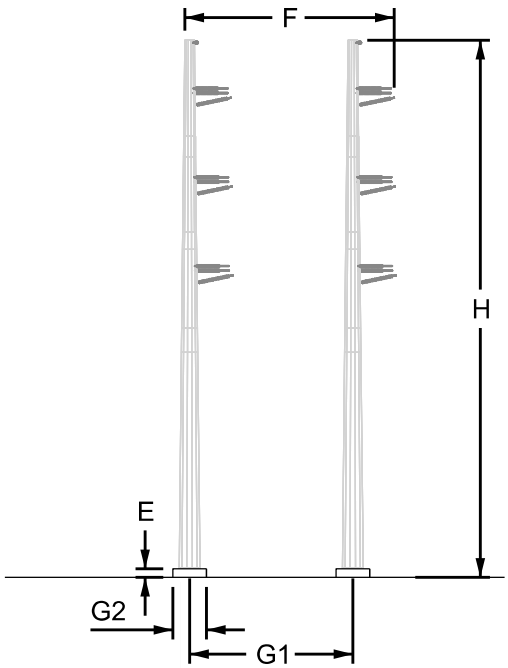
NOTES:
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN
3. FOUNDATION DIAMETER SHALL BE BASED ON GEOTECHNICAL FINDINGS DURING FINAL ENGINEERING

$DGNSPEC$
TESBORD1

	DESCRIPTION & VIEW	ATTACHMENT
Electric Transmission	LINES: 2049, 2361, 2363, 2364 & 2366 TYPICAL DC ENGINEERED MONOPOLE DEADEND STRUCTURE	II.B.3.b
Dominion Energy Dominion Energy 5000 Dominion Blvd Glen Allen, VA 23060		DRAWN BY: RAW

$SYTIME$
$DATE$

LINES: 211, 2049, 2361, 2363, 2366 & 2373



TYPICAL DC ENGINEERED 2-POLE DEADEND STRUCTURE

A. STRUCTURE MAPPING	SEE ATTACHMENT II.B.3.g
B. RATIONALE FOR STRUCTURE TYPE:	MINIMIZES RIGHT OF WAY ACQUISITION. TWO POLES TO REDUCE LOADING ON FOUNDATIONS.
C. LENGTH OF R/W (STRUCTURE QUANTITY):	5.6 MILES (15) - SEE NOTE 1
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONALE FOR STRUCTURE MATERIAL:	WEATHERING STEEL WAS SELECTED TO MATCH CURRENT STANDARDS
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 2
F. AVERAGE WIDTH AT CROSSARM:	40'
G. AVERAGE WIDTH AT BASE:	G1: 30' POLE SPACING, G2: SEE NOTE 2
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	100' 120' 113'
I. AVERAGE SPAN LENGTH:	706'
J. MINIMUM CONDUCTOR-TO-GROUND AT MAXIMUM OPERATING TEMPERATURE:	22.5' (PER THE NATIONAL ELECTRICAL SAFETY CODE)

NOTES:
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN
3. FOUNDATION DIAMETER SHALL BE BASED ON GEOTECHNICAL FINDINGS DURING FINAL ENGINEERING

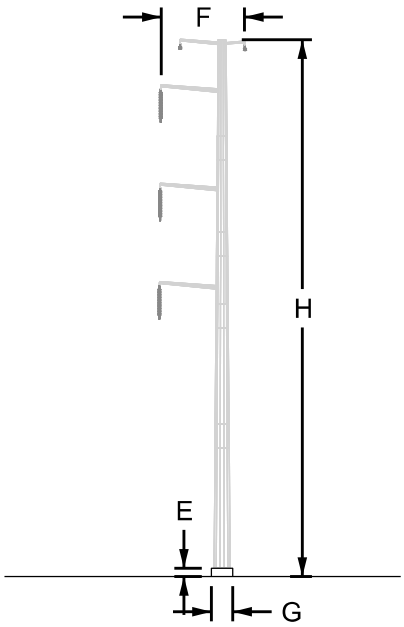
$DGNSPEC$
TESBORD1

	DESCRIPTION & VIEW	ATTACHMENT
Electric Transmission	LINES: 221, 2049, 2361, 2363, 2366 & 2373 TYPICAL DC ENGINEERED 2-POLE DEADEND STRUCTURE	II.B.3.c
Dominion Energy Dominion Energy 5000 Dominion Blvd Glen Allen, VA 23060		DRAWN BY: RAW

$SYTIME$

$DATE$

LINES: 2XXX



TYPICAL SC ENGINEERED MONOPOLE SUSPENSION STRUCTURE

A. STRUCTURE MAPPING	SEE ATTACHMENT II.B.3.g
B. RATIONALE FOR STRUCTURE TYPE:	MINIMIZES RIGHT OF WAY ACQUISITIONE
C. LENGTH OF R/W (STRUCTURE QTY):	5.6 MILES (1) - SEE NOTE 1
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONALE FOR STRUCTURE MATERIAL:	WEATHERING STEEL WAS SELECTED TO MATCH CURRENT STANDARDS
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 2
F. AVERAGE WIDTH AT CROSSARM:	17'
G. AVERAGE WIDTH AT BASE:	SEE NOTE 3
H. MINIMUM STRUCTURE HEIGHT (SEE NOTE 4): MAXIMUM STRUCTURE HEIGHT (SEE NOTE 4): AVERAGE STRUCTURE HEIGHT (SEE NOTE 4):	110' 110' 110'
I. AVERAGE SPAN LENGTH (RANGE):	584'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (PER THE NATIONAL ELECTRIC SAFETY CODE)

NOTES:
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN
3. FOUNDATION DIAMETER SHALL BE BASED ON GEOTECHNICAL FINDINGS DURING FINAL ENGINEERING

$DGNSPEC$

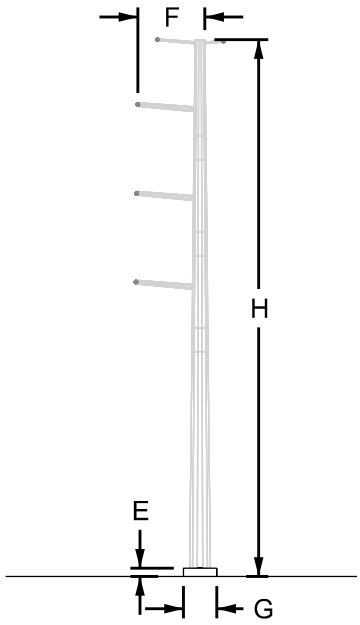
TESBORD1

	DESCRIPTION & VIEW	ATTACHMENT
Electric Transmission	LINES: 2XXX TYPICAL SC ENGINEERED MONOPOLE SUSPENSION STRUCTURE	II.B.3.d
Dominion Energy Dominion Energy 5000 Dominion Blvd Glen Allen, VA 23060		DRAWN BY: RAW

$SYTIME$

$DATE$

LINES: 2XXX & 2364



TYPICAL SC ENGINEERED MONOPOLE DEADEND STRUCTURE

A. STRUCTURE MAPPING	SEE ATTACHMENT II.B.3.g
B. RATIONALE FOR STRUCTURE TYPE:	MINIMIZES RIGHT OF WAY ACQUISITION
C. LENGTH OF R/W (STRUCTURE QTY):	5.6 MILES (3) - SEE NOTE 1
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONALE FOR STRUCTURE MATERIAL:	WEATHERING STEEL WAS SELECTED TO MATCH CURRENT STANDARDS
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 2
F. AVERAGE WIDTH AT CROSSARM:	17'
G. AVERAGE WIDTH AT BASE:	SEE NOTE 3
H. MINIMUM STRUCTURE HEIGHT (SEE NOTE 4): MAXIMUM STRUCTURE HEIGHT (SEE NOTE 4): AVERAGE STRUCTURE HEIGHT (SEE NOTE 4):	100' 110' 107'
I. AVERAGE SPAN LENGTH (RANGE):	537'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (PER THE NATIONAL ELECTRIC SAFETY CODE)

NOTES:
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN
3. FOUNDATION DIAMETER SHALL BE BASED ON GEOTECHNICAL FINDINGS DURING FINAL ENGINEERING

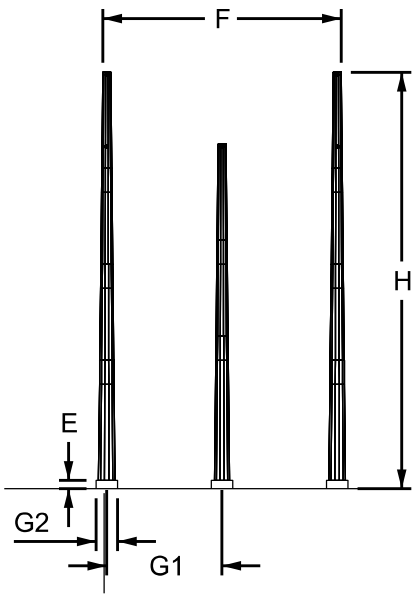
$DGNSPEC$

TESBORD1

	DESCRIPTION & VIEW	ATTACHMENT
Electric Transmission	LINE: 2XXX & 2364 TYPICAL SC ENGINEERED MONOPOLE DEADEND STRUCTURE	II.B.3.e
Dominion Energy Dominion Energy 5000 Dominion Blvd Glen Allen, VA 23060		DRAWN BY: RAW

$SYTIME$ $DATE$ $DGNSPEC$ TESBORD1

LINES: 2049



TYPICAL SC ENGINEERED 3-POLE DEADEND STRUCTURE

A. STRUCTURE MAPPING	SEE ATTACHMENT II.B.3.g
B. RATIONALE FOR STRUCTURE TYPE:	SHORTER STRUCTURES NEEDED FOR CROSSING UNDER TRANSMISSION LINE
C. LENGTH OF R/W (STRUCTURE QTY):	5.6 MILES (1) - SEE NOTE 1
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONALE FOR STRUCTURE MATERIAL:	WEATHERING STEEL WAS SELECTED TO MATCH CURRENT STANDARDS
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 2
F. AVERAGE WIDTH AT CROSSARM:	G1: 24' POLE SPACING, G2: SEE NOTE 2
G. AVERAGE WIDTH AT BASE:	SEE NOTE 3
H. MINIMUM STRUCTURE HEIGHT (SEE NOTE 4): MAXIMUM STRUCTURE HEIGHT (SEE NOTE 4): AVERAGE STRUCTURE HEIGHT (SEE NOTE 4):	75' 75' 75'
I. AVERAGE SPAN LENGTH (RANGE):	414'
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (PER THE NATIONAL ELECTRICAL SAFETY CODE)

NOTES:
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN
3. FOUNDATION DIAMETER SHALL BE BASED ON GEOTECHNICAL FINDINGS DURING FINAL ENGINEERING

	DESCRIPTION & VIEW	ATTACHMENT
Electric Transmission	LINES: 2049 TYPICAL SC ENGINEERED 3-POLE DEADEND STRUCTURE	II.B.3.f
Dominion Energy Dominion Energy 5000 Dominion Blvd Glen Allen, VA 23060		DRAWN BY: RAW

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: There are no alternate routes for the Project being proposed. See Section II.A.9 for a discussion of the route selection process.

Component 1 (Bermuda Hundred and Sloan Drive)

The approximate structure heights along the Proposed Route are provided in the table below, based on preliminary conceptual design, not including foundation reveal and subject to change based on final engineering design.

Route	Minimum (ft.)	Maximum (ft.)	Average (ft.)
Component 1 Proposed Route	110	120	118

Component 2 (Meadowville and White Mountain)

The approximate structure heights along the Proposed Route are provided in the table below, based on preliminary conceptual design, not including foundation reveal and subject to change based on final engineering design.

Route	Minimum (ft.)	Maximum (ft.)	Average (ft.)
Component 2 Proposed Route	110	120	115

Component 3 (Sycamore Springs)

The approximate structure heights along the Proposed Route are provided in the table below, based on preliminary conceptual design, not including foundation reveal and subject to change based on final engineering design.

Route	Minimum (ft.)	Maximum (ft.)	Average (ft.)
Component 3 Proposed Route	85	120	113

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:

Structure Number	Existing Structure Height (ft)	Proposed Structure Height (ft)
211/34	120	110
2049/38	95	110
2049/39	100	130
2049/40	115	130
2049/41	110	130
2049/42	80	110
2049/43	90	120
2049/44	85	110
2049/45	85	115
2049/46	80	120
2049/47	85	120
2049/53	75	110
2049/54	75	110
2049/55	75	100

II. DESCRIPTION OF THE PROPOSED PROJECT

B. Line Design and Operational Features

6. Provide photographs for [a] typical existing facilities to be removed, [b] comparable photographs or representations for proposed structures, and [c] 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] typical existing facilities to be removed

See Attachments II.B.6.a.i-v

[b] comparable photographs or representations for proposed structures

See Attachments II.B.6.b.i-v for representative photographs of the proposed structures. Note that the Company has proposed weathering steel as the structure material for Project structures. See Attachments II.B.3.a-f.

[c] 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.

Visual simulations showing the appearance of the proposed transmission structures at identified historic locations within 1.0 mile of the proposed centerline of the Proposed Routes are provided. See Attachment II.B.6.c for a map of the simulation locations, the existing views at the historic locations, and simulated proposed views. These simulations were created using Geographic Information Systems modeling to depict whether the proposed structures will be visible from the identified historic location. The historic locations evaluated are described below. See also the Stage I Pre-Application Analysis Report contained in Appendix E of the Routing Study.

Historic Property	Viewpoint(s)	Comments
Point of Rocks (VDHR ID# 020-0123)	5	The Proposed Routes will have no impact on 020-0123.
Earthworks, Enon Park (VDHR ID# 020-0506)	9	The Proposed Routes will have no impact on 020-0506.
Swift Creek Battlefield (VDHR ID#020-5318)	5, 8, 9	The Proposed Routes will have a minimal impact on 020-5318.
Ware Bottom Church Battlefield (VDHR ID #020-5319)	6, 7B, 8	The Proposed Routes will have a minimal impact on 020-5319.

Historic Property	Viewpoint(s)	Comments
Dale's Pale Archaeological Historic District (VDHR ID# 020-5371)	--	The Proposed Routes will cross 020-5371 but no structures will be placed in the feature.
New Market Heights/Chaffins Farm Battlefield (VDHR ID# 043-0307)	1, 2	The Proposed Routes will have no impact on 043-0307.
First Deep Bottom Battlefield (VDHR ID# 043-5074)	1	The Proposed Route will have no impact on 043-5074.
Second Deep Bottom Battlefield (VDHR ID# 043-5080)	1	The Proposed Route will have no impact on 043-5080.
Petersburg Battlefield II (VDHR ID# 123-5025)	--	The Proposed Route will have a minimal impact on 123-5025.

Dominion Energy

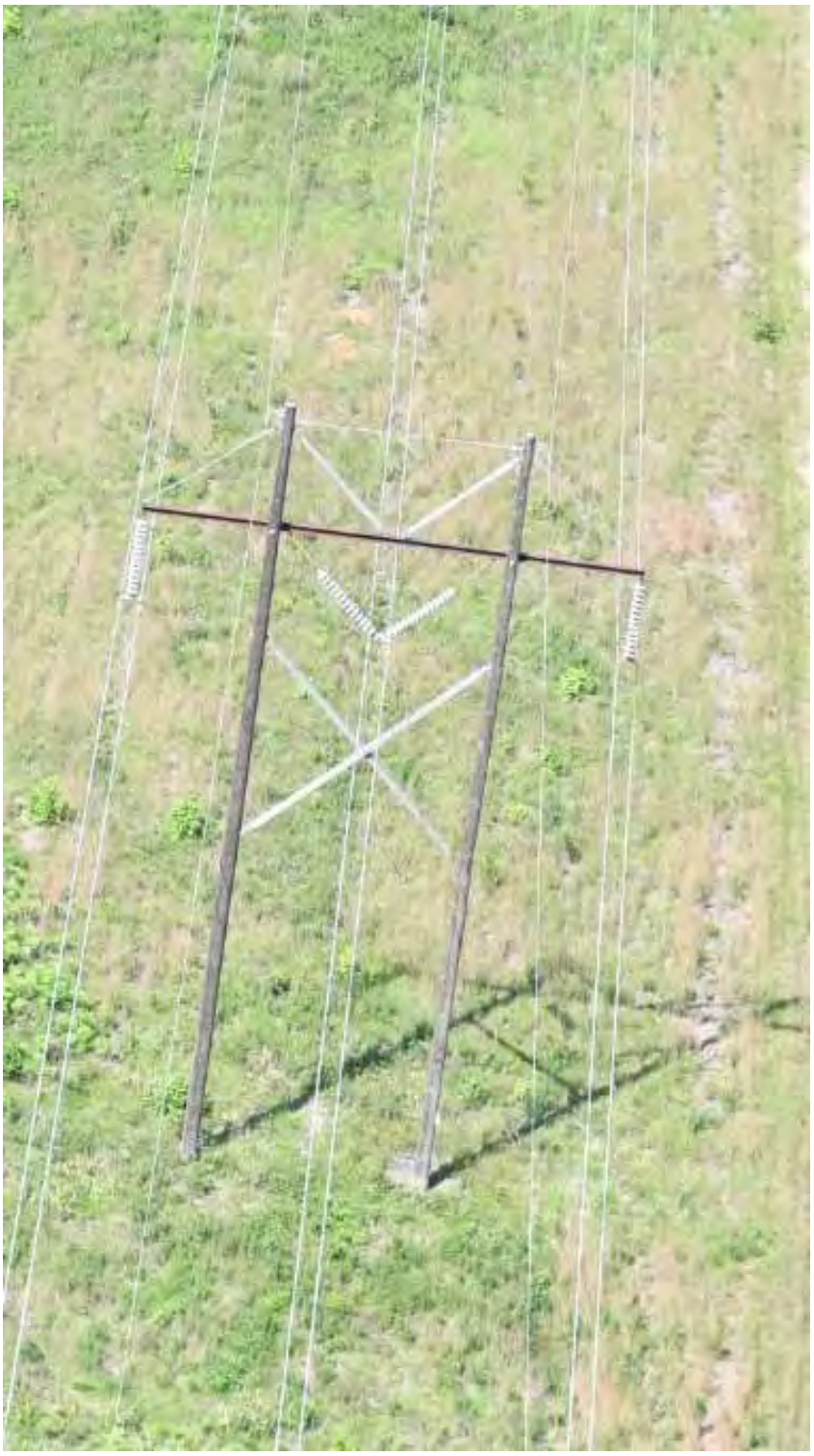
Existing Structure Type:
230 kV DC Engineered Monopole - Suspension
Attachment II.B.6.a.i

Dominion Energy

Existing Structure Type:
230 kV SC Engineered Monopole - DDE
Attachment II.B.6.a.ii

Dominion Energy

Existing Structure Type:
230 kV SC Engineered Monopole - Susp
Attachment II.B.6.a.iii



Existing Structure Type:
230 kV SC Wood 3-Pole - DDE
Attachment II.B.6.a.v

Dominion Energy

Proposed Structure Type:
230 kV DC Engineered 2-Pole - DDE
Attachment II.B.6.b.iii

MEADOWVILLE
230 kV Electric Transmission Project

Photo Location Map

1 Viewpoint Location ▲ Proposed Switching Station ▲ Proposed Substation ▲ Existing Substation

Project Area 1
Rebuild Section Sycamore Springs to Enon.
Construct Sycamore Springs Switching Station.

*Sycamore Springs Switching Station is formerly known as Orchard Switching Station.

Project Area 2
New Corridor
Enon to Meadowville.

Project Area 3
New Corridor
Bermuda Hundred to White Mountain

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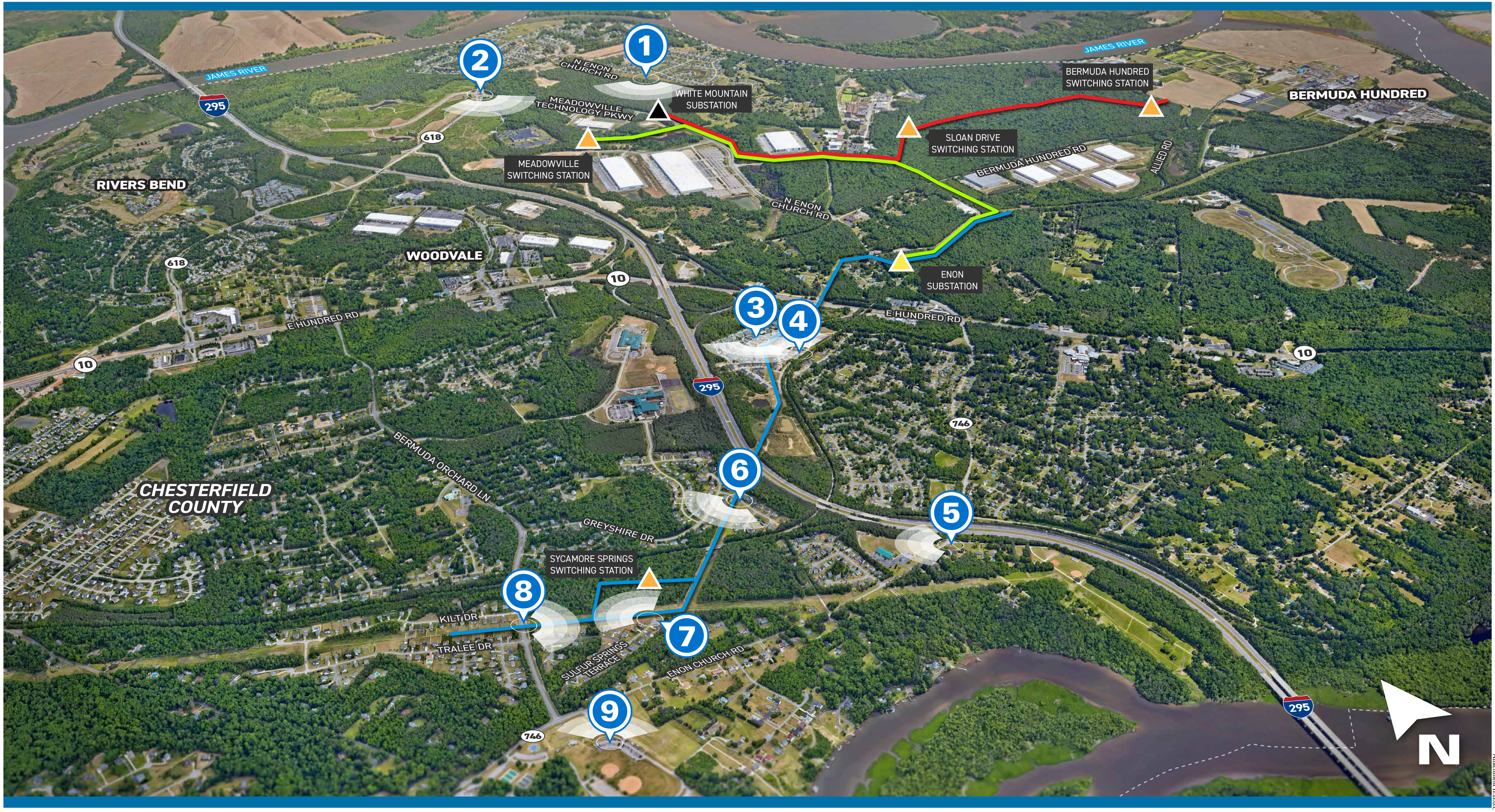


MEADOWVILLE
230 kV Electric Transmission Project

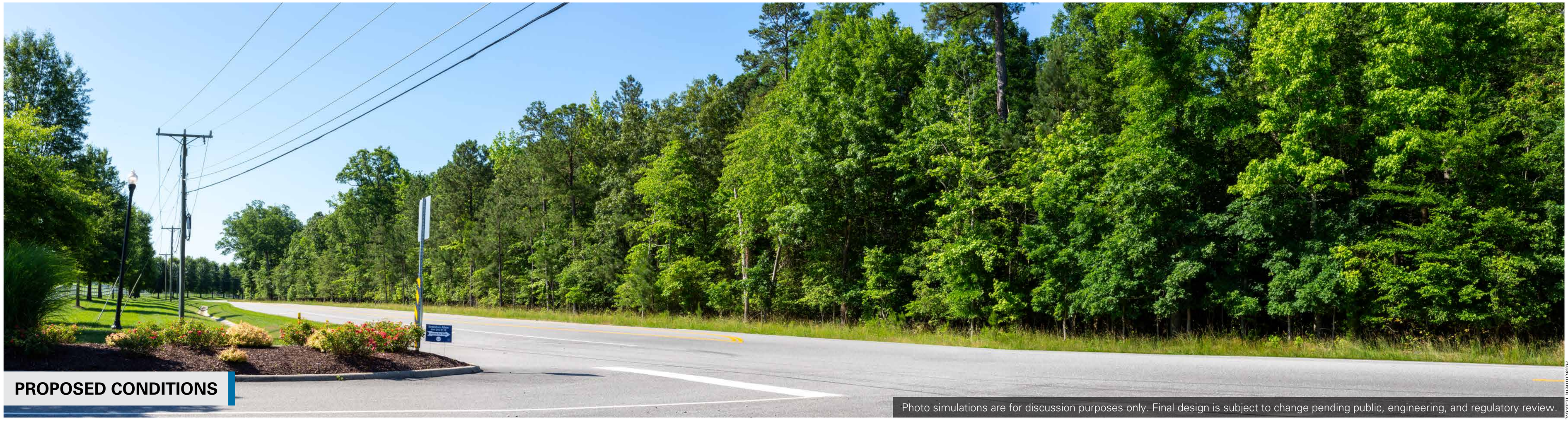
Viewpoint 1

Date: 05/29/2024 **Time:** 8:47 am **Viewing Direction:** South

1 Viewpoint Location — Project Area 2
Project Area 3 — Proposed Switching Station — Proposed Substation

Dominion Energy®

EXISTING CONDITIONS



PROPOSED CONDITIONS

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

MEADOWVILLE
230 kV Electric Transmission Project

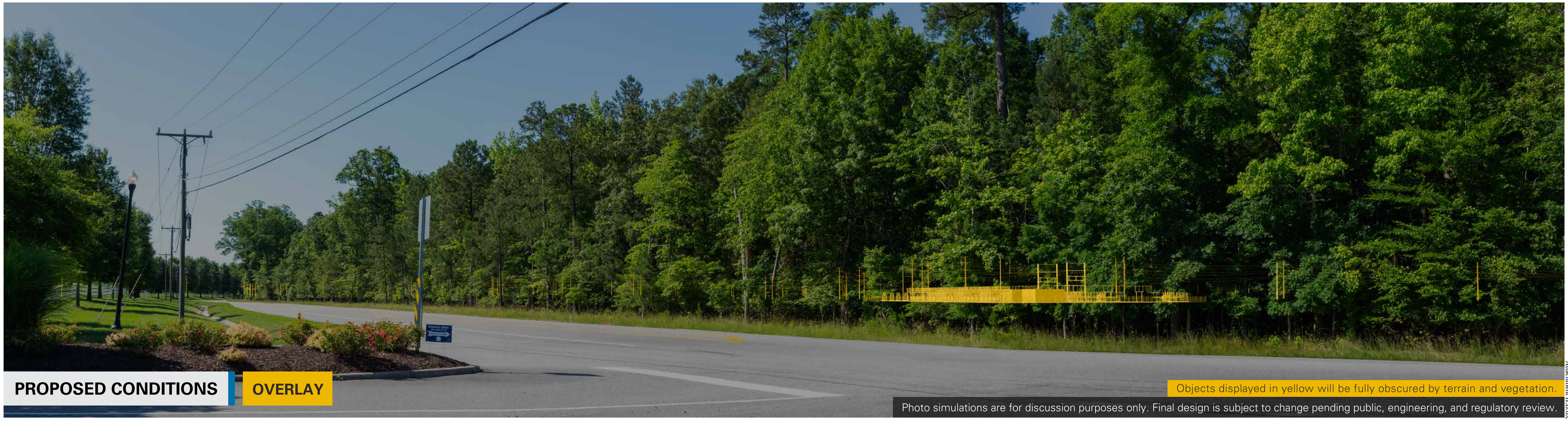
Viewpoint 1

Date: 05/29/2024 **Time:** 8:47 am **Viewing Direction:** South

1 Viewpoint Location — Project Area 2
Project Area 3 — Proposed Switching Station — Proposed Substation

Dominion Energy®

EXISTING CONDITIONS



PROPOSED CONDITIONS **OVERLAY**

Objects displayed in yellow will be fully obscured by terrain and vegetation.

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

MEADOWVILLE

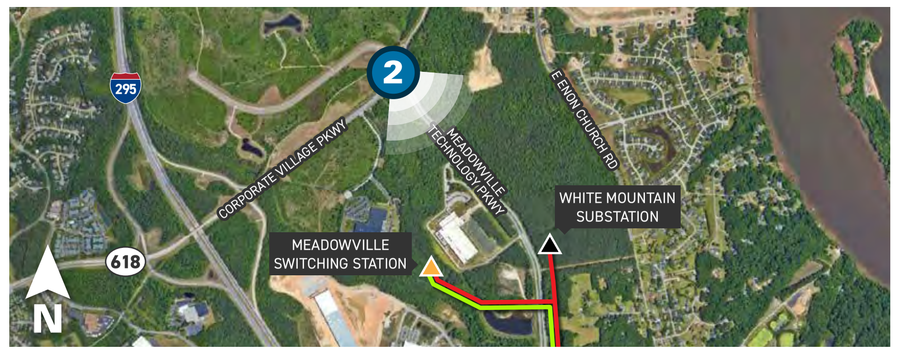
230 kV Electric Transmission Project

Viewpoint 2

Date: 05/29/2024 **Time:** 8:28 am **Viewing Direction:** Southeast

2 Viewpoint Location — Project Area 2

Project Area 3 ▲ Proposed Switching Station ▲ Proposed Substation



Dominion Energy®

EXISTING CONDITIONS

PROPOSED CONDITIONS

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

MEADOWVILLE

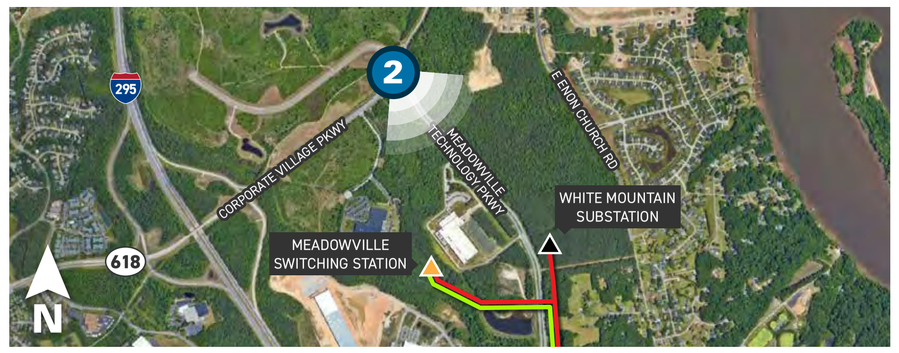
230 kV Electric Transmission Project

Viewpoint 2

Date: 05/29/2024 **Time:** 8:28 am **Viewing Direction:** Southeast

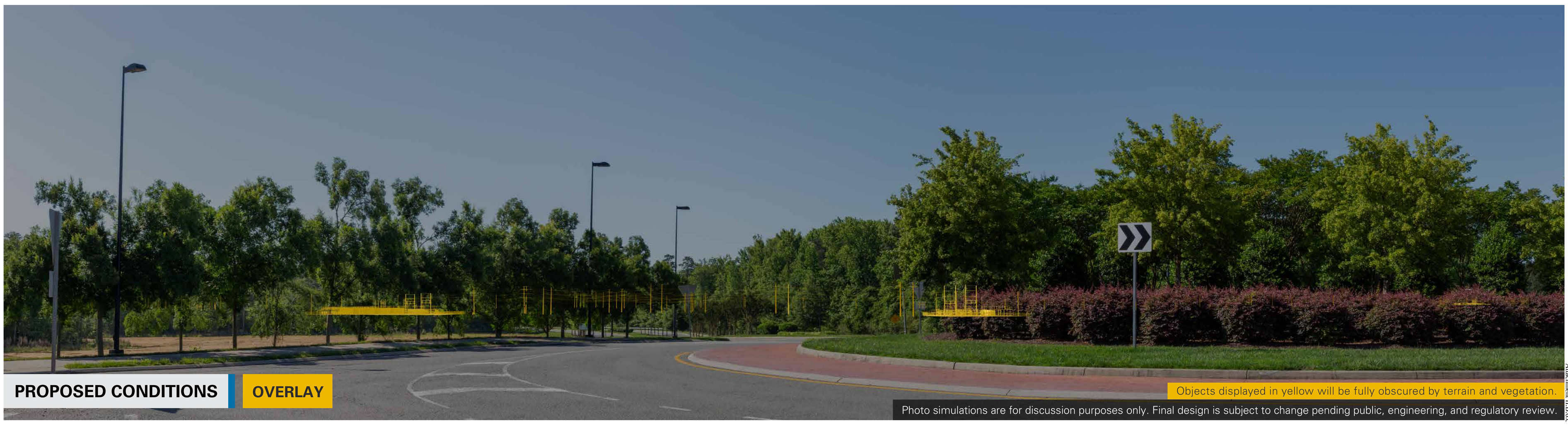
2 Viewpoint Location — Project Area 2

Project Area 3 — Proposed Switching Station — Proposed Substation



Dominion Energy®

EXISTING CONDITIONS



PROPOSED CONDITIONS — OVERLAY

Objects displayed in yellow will be fully obscured by terrain and vegetation.

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

MEADOWVILLE
230 kV Electric Transmission Project

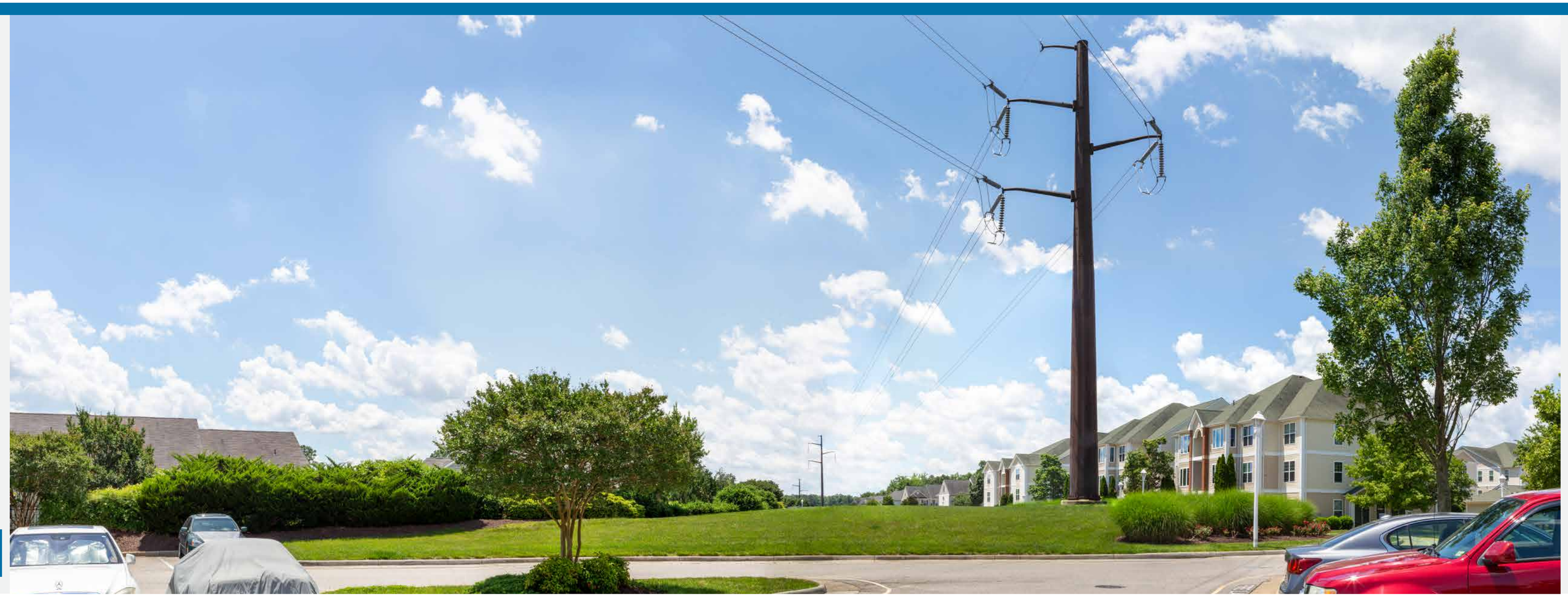
Viewpoint 3

Date: 05/29/2024 **Time:** 11:29 am **Viewing Direction:** Southwest

3 Viewpoint Location — Project Area 1

Dominion Energy®

EXISTING CONDITIONS



PROPOSED CONDITIONS

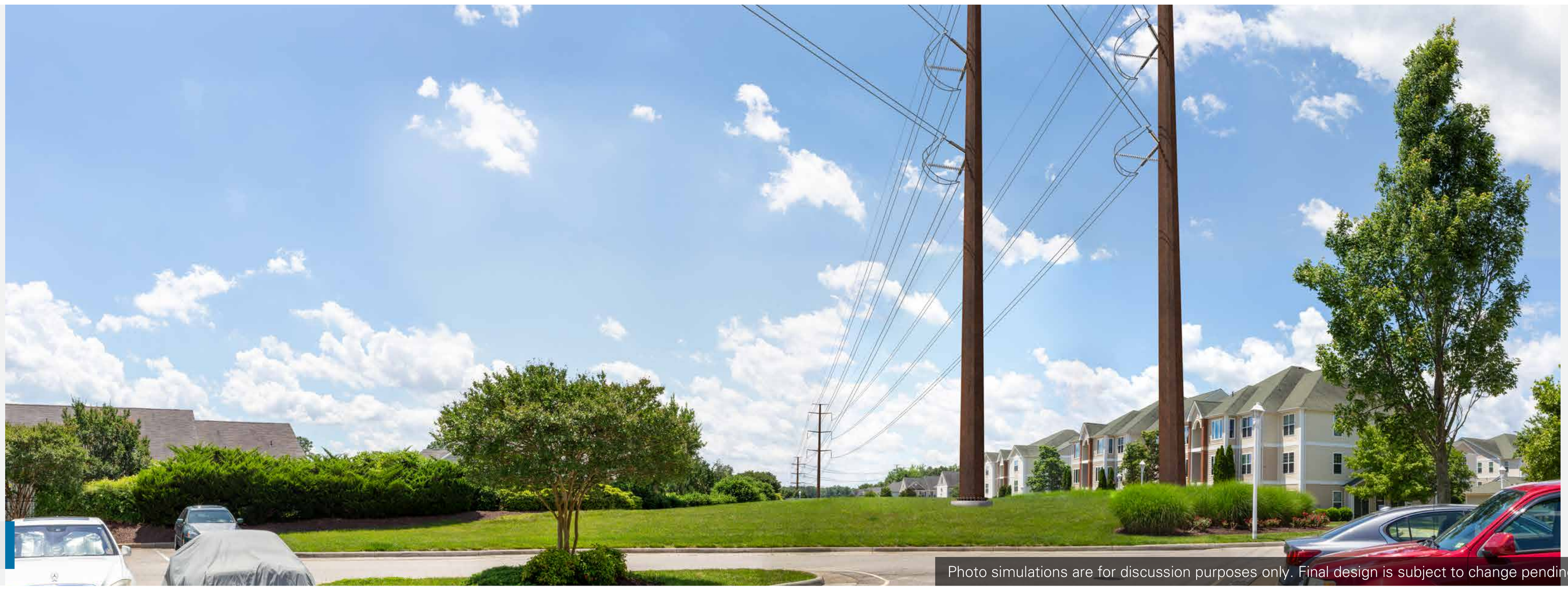


Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

MEADOWVILLE
230 kV Electric Transmission Project

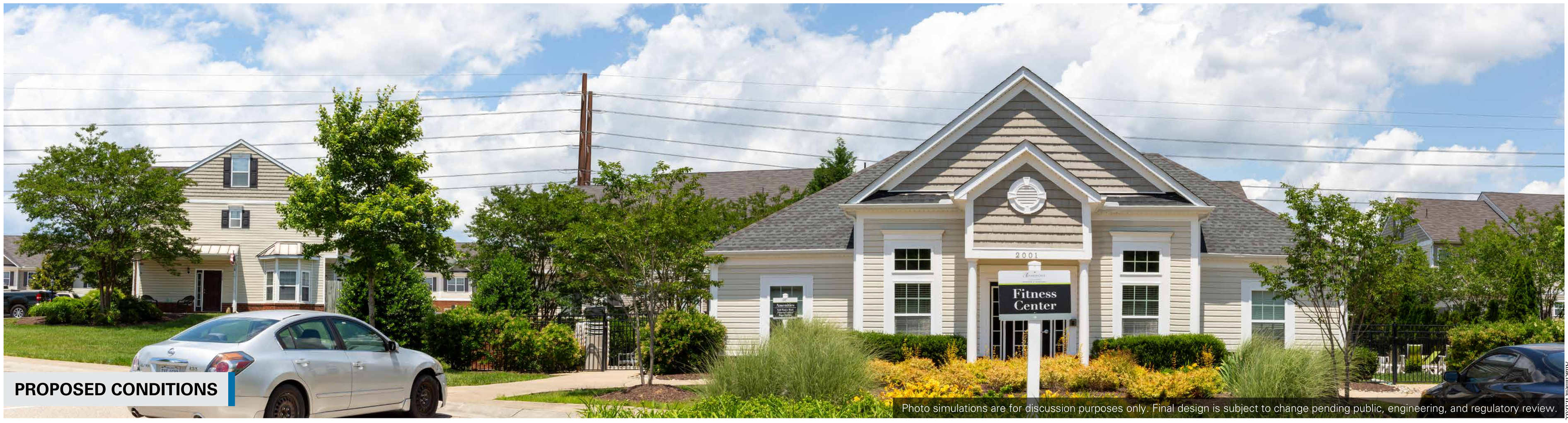
Viewpoint 4

Date: 05/29/2024 **Time:** 11:39 am **Viewing Direction:** Northwest

4 Viewpoint Location — Project Area 1

Dominion Energy®

EXISTING CONDITIONS



PROPOSED CONDITIONS

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

MEADOWVILLE
230 kV Electric Transmission Project

Viewpoint 5

Date: 05/29/2024 **Time:** 9:28 am **Viewing Direction:** West

5 Viewpoint Location — Project Area 1 ▲ Proposed Switching Station

Dominion Energy®

EXISTING CONDITIONS

PROPOSED CONDITIONS

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

MEADOWVILLE
230 kV Electric Transmission Project

Viewpoint 5

Date: 05/29/2024 **Time:** 9:28 am **Viewing Direction:** West

5 Viewpoint Location — Project Area 1 ▲ Proposed Switching Station

Dominion Energy®

EXISTING CONDITIONS

PROPOSED CONDITIONS **OVERLAY**

Objects displayed in yellow will be fully or partially obscured by terrain and vegetation.

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

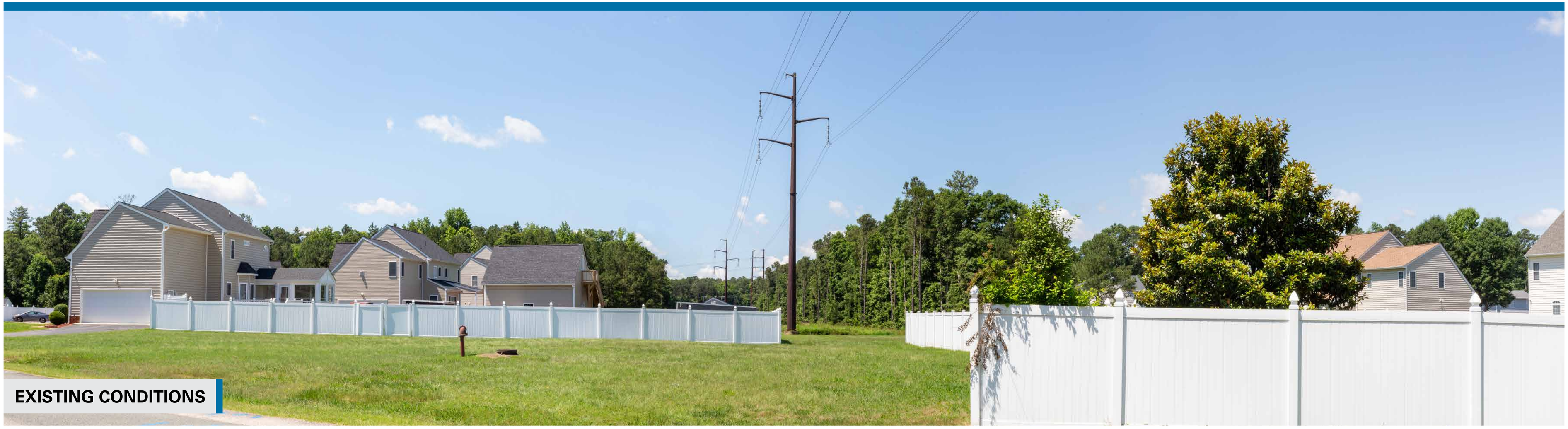
MEADOWVILLE
230 kV Electric Transmission Project

Viewpoint 6

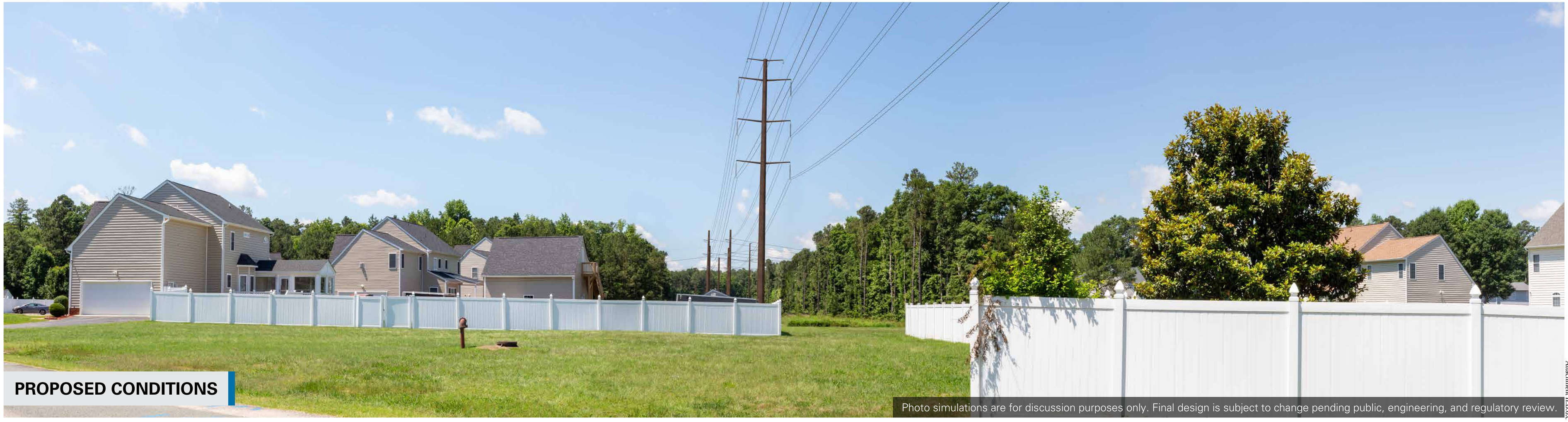
Date: 05/29/2024 **Time:** 10:43 am **Viewing Direction:** Southwest

6 Viewpoint Location — Project Area 1

Dominion Energy®



EXISTING CONDITIONS



PROPOSED CONDITIONS

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

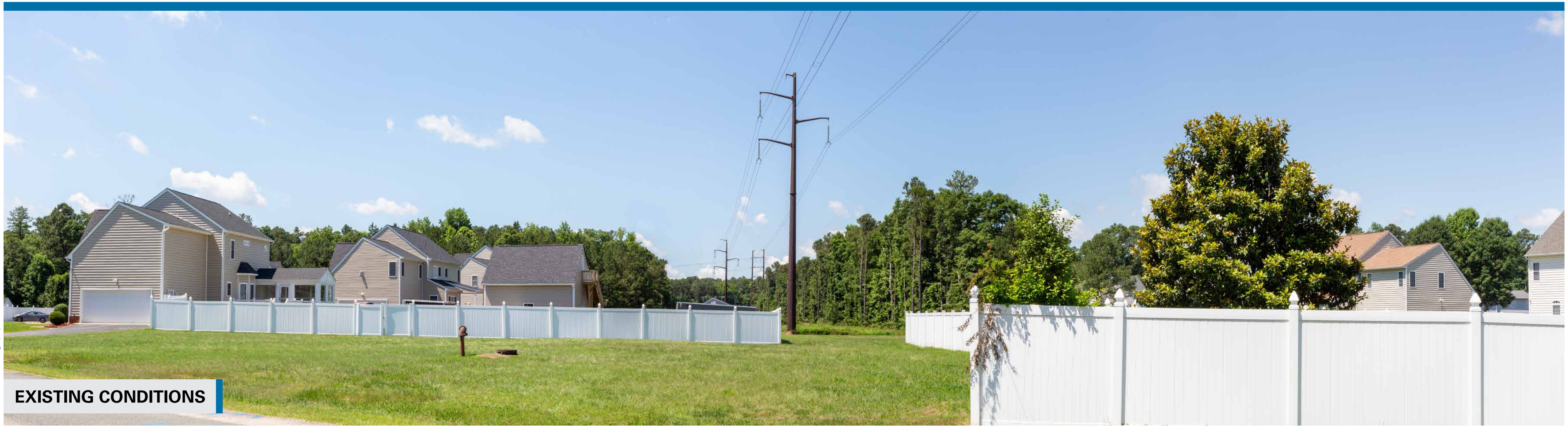
MEADOWVILLE
230 kV Electric Transmission Project

Viewpoint 6

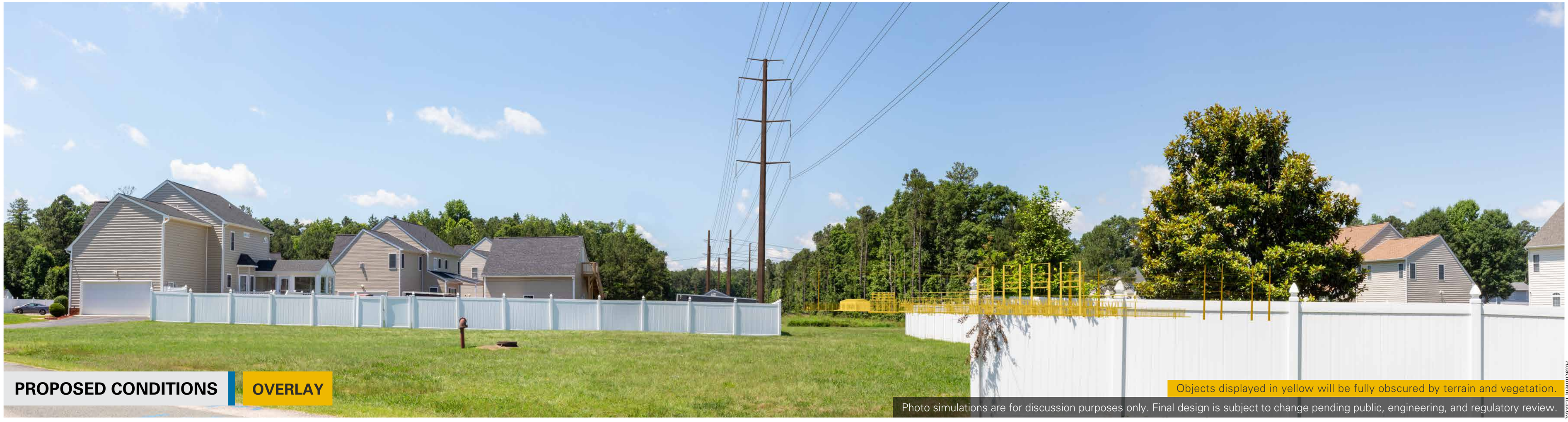
Date: 05/29/2024 **Time:** 10:43 am **Viewing Direction:** Southwest

6 Viewpoint Location — Project Area 1

Dominion Energy®



EXISTING CONDITIONS



PROPOSED CONDITIONS | OVERLAY

Objects displayed in yellow will be fully obscured by terrain and vegetation.

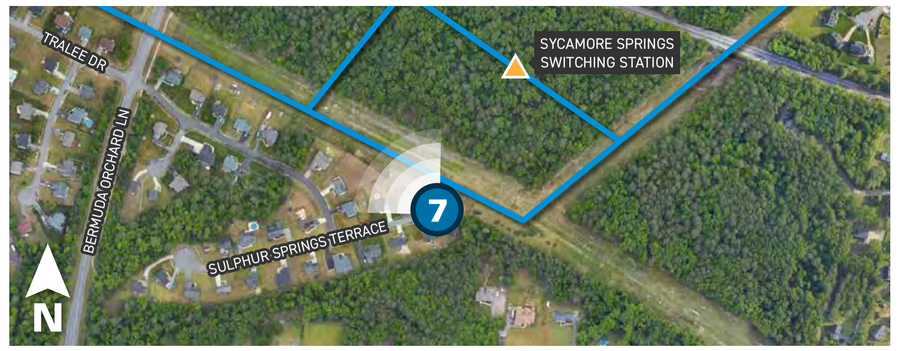
Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

MEADOWVILLE
230 kV Electric Transmission Project

Viewpoint 7A

Date: 05/29/2024 **Time:** 9:53 am **Viewing Direction:** Northwest

7 Viewpoint Location — Project Area 1 ▲ Proposed Switching Station



Dominion Energy®

EXISTING CONDITIONS

PROPOSED CONDITIONS

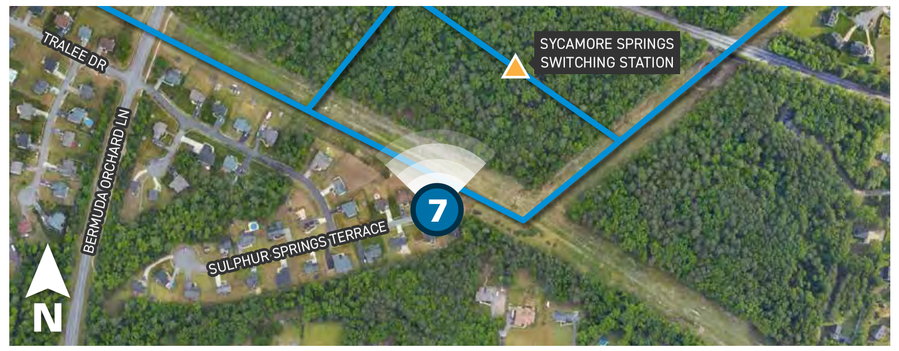
Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

MEADOWVILLE
230 kV Electric Transmission Project

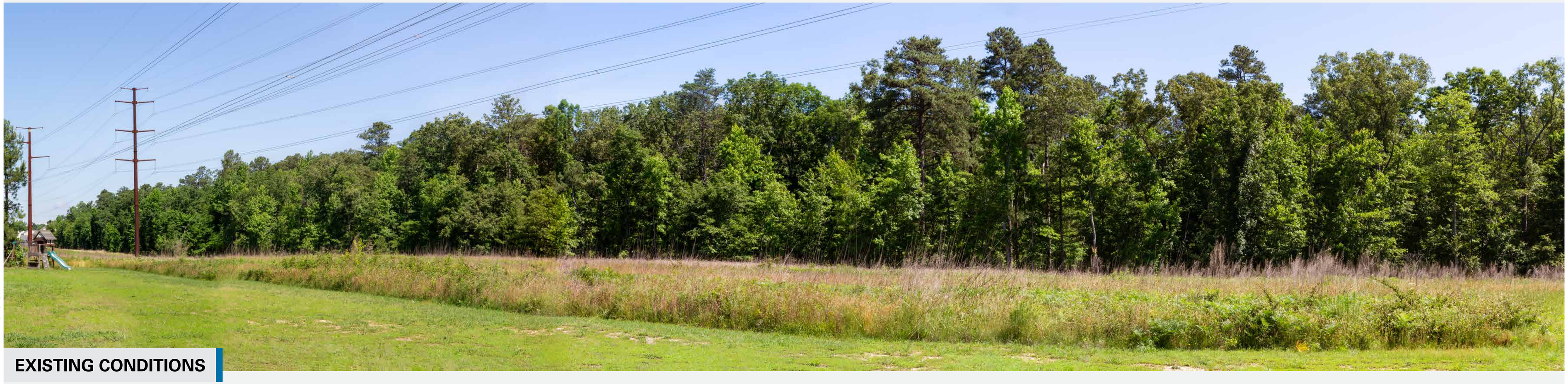
Viewpoint 7B

Date: 05/29/2024 **Time:** 9:53 am **Viewing Direction:** North

7 Viewpoint Location — Project Area 1 ▲ Proposed Switching Station



Dominion Energy®



EXISTING CONDITIONS

PROPOSED CONDITIONS **OVERLAY**

Objects displayed in yellow will be fully obscured by terrain and vegetation.

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

MEADOWVILLE
230 kV Electric Transmission Project

Viewpoint 8

Date: 05/29/2024 **Time:** 10:17 am **Viewing Direction:** Southeast

8 Viewpoint Location — Project Area 1 ▲ Proposed Switching Station

Dominion Energy®

EXISTING CONDITIONS

PROPOSED CONDITIONS

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

MEADOWVILLE
230 kV Electric Transmission Project

Viewpoint 8

Date: 05/29/2024 **Time:** 10:17 am **Viewing Direction:** Southeast

8 Viewpoint Location — Project Area 1 ▲ Proposed Switching Station

Dominion Energy®

EXISTING CONDITIONS

PROPOSED CONDITIONS OVERLAY

Objects displayed in yellow will be fully obscured by terrain and vegetation.

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

MEADOWVILLE
230 kV Electric Transmission Project

Viewpoint 9

Date: 05/29/2024 **Time:** 9:45 am **Viewing Direction:** North

9 Viewpoint Location — Project Area 1

Dominion Energy®

EXISTING CONDITIONS

PROPOSED CONDITIONS

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

MEADOWVILLE
230 kV Electric Transmission Project

Viewpoint 9

Date: 05/29/2024 **Time:** 9:45 am **Viewing Direction:** North

9 Viewpoint Location — Project Area 1

Dominion Energy®

EXISTING CONDITIONS

PROPOSED CONDITIONS OVERLAY

Objects displayed in yellow will be fully obscured by terrain and vegetation.

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

II. DESCRIPTION OF THE PROPOSED PROJECT

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

Response: The proposed Project involves construction of four new switching stations and one new substation in Chesterfield County, Virginia, as follows.

Bermuda Hundred Station

The proposed Bermuda Hundred Station will be constructed with an ultimate arrangement of six 230 kV breakers in two rows of breaker-and-half configuration, utilizing four 230 kV line terminals and two 230 kV delivery points. The total area required to build the Bermuda Hundred Station is approximately 3.4 acres. The point of demarcation between the Company and the Customer will be the 230 kV switch terminals inside the Bermuda Hundred Station.

The one-line and general arrangement diagrams for the proposed Bermuda Hundred Station are provided as Attachment II.C.1 and Attachment II.C.2, respectively.

Sloan Drive Station.

The proposed Sloan Drive Station will be constructed with an arrangement of six 230 kV breakers in two rows of breaker-and-half configuration, utilizing four 230 kV line terminals and two 230 kV delivery points. The total area required to build the Sloan Drive Station is approximately 3.7 acres. The point of demarcation between the Company and the Customer will be the 230 kV switch terminals inside the Sloan Drive Station.

The one-line and general arrangement diagrams for the proposed Sloan Drive Station are provided as Attachment II.C.3 and Attachment II.C.4, respectively.

Meadowville Station.

The proposed Meadowville Station will be constructed with a ring bus arrangement of six 230 kV breakers in a breaker-and-half configuration, utilizing four 230 kV line terminals and two 230 kV delivery points. The total area required to build the Meadowville Station is approximately 2.1 acres. The point of demarcation between the Company and the Customer will be the 230 kV switch terminals inside the Meadowville Station.

The one-line and general arrangement diagrams for the proposed Meadowville Station are provided as Attachment II.C.5 and Attachment II.C.6, respectively.

White Mountain Substation

The proposed White Mountain Substation will be constructed with an initial four breaker ring bus in a breaker-and-half configuration utilizing two 230 kV line terminals, three 230-34.5 kV transformers, and four 34.5 kV distribution circuits. The proposed White Mountain Substation will be designed to incorporate two additional 230 kV circuit breakers for future use, creating two additional 230 kV line terminal points, two additional 230-34.5 kV transformers, and up to twenty-four 34.5 kV distribution circuits. The total area required to build the White Mountain Substation is approximately 5.3 acres.

The one-line and general arrangement diagrams for the proposed White Mountain Substation are provided as Attachment II.C.7 and Attachment II.C.8, respectively.

Sycamore Springs Station

The proposed Sycamore Springs Station will be constructed with eleven 230 kV breakers in a breaker-and-half configuration utilizing seven 230 kV line terminals. The proposed Sycamore Springs Station will be designed to incorporate one additional 230 kV circuit breaker for future use, creating one additional 230 kV line terminal point. The total area required to build the Sycamore Springs Station is approximately 3.7 acres.

The one-line and general arrangement diagrams for the proposed Sycamore Springs Station are provided as Attachment II.C.9 and Attachment II.C.10, respectively.

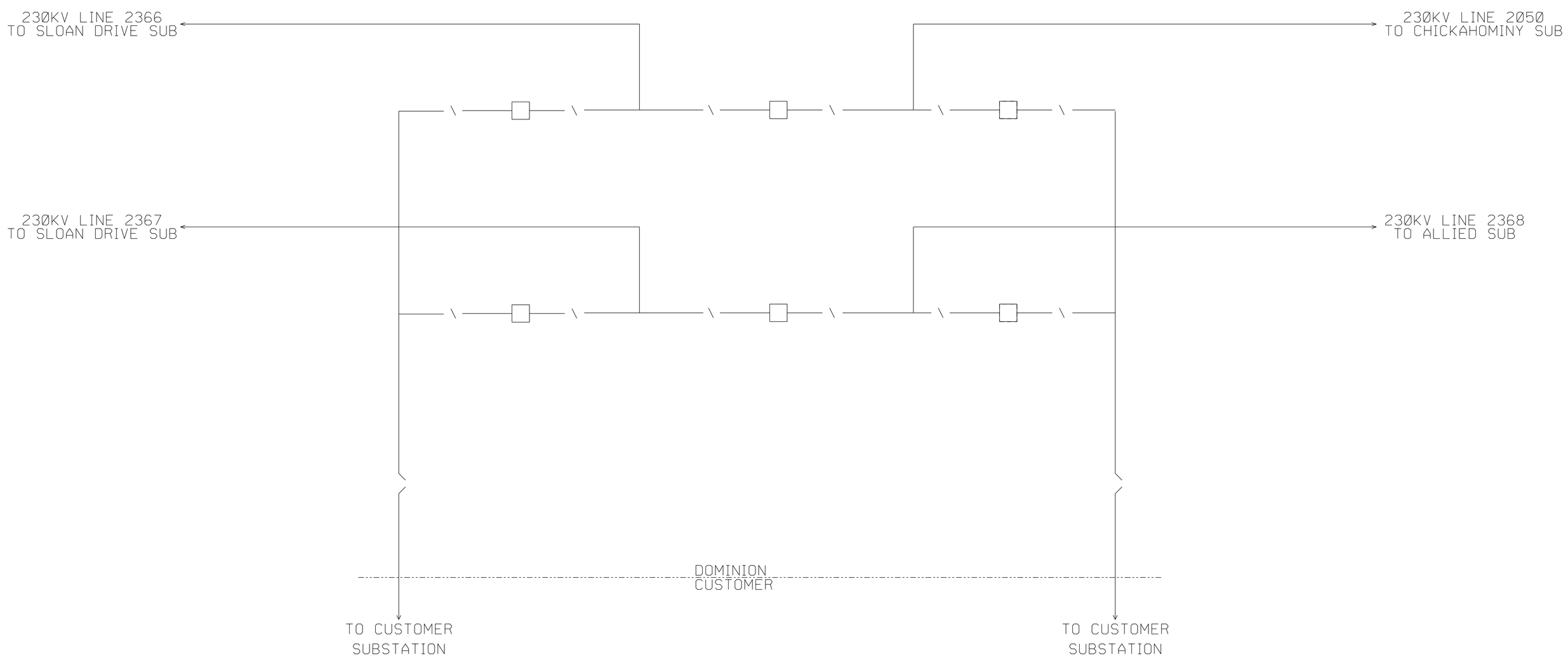
ATTACHMENT II.C.1

LEGEND

CIRCUIT BREAKER

DISCONNECT SWITCH

DISCONNECT SWITCH



PRELIMINARY
NOT FOR CONSTRUCTION

By:	Approval
Date:	
Project No.	
Network No.	
BH No.	
Description	

Revisions

98	5	DEMARCATION INDICATOR - SEE SUB. OL.	
99	7	DEMARCATION INDICATOR - SEE TLIN. OL.	
98	D	DEMARCATION INDICATOR - SEE DIST. OL.	
97	C	DEMARCATION INDICATOR - SEE CUST. DOC.	

Dominion Energy

ONE LINE DIAGRAM

Drawn By: GCB	Date 08-15-24	Substation	BERMUDA HUNDRED SUB
Approval	Date	Drawing No.	

$USERNAME$

$MTIS$$$$$$$$$$

Attachment II.C.1

PRELIMINARY
NOT FOR CONSTRUCTION

TO CUSTOMER SUBSTATION

TO CUSTOMER SUBSTATION

230kV LINE 2368
TO ALLIED SUB

230kV LINE 2050
TO CHICKAHOMINY SUB

230kV LINE 2367
TO SLOAN DRIVE SUB

230kV LINE 2366
TO SLOAN DRIVE SUB

ATTACHMENT II.C.2

122

Typical Drawing Information

Library Location	Cell Name	B/M Assembly	Pipe Stand Foundation Cells (Pier)	Pipe Stand Foundation Cells (Spread)	Foundation Cells For Other Typical Structures (Pier) (Spread)	Steel Detail & Assembly

Revisions

No.	Date	By	Description	Project Number B/M	Checked/Appr.

GENERAL ARRANGEMENT
BERMUDA HUNDRED SUBSTATION
CHESTERFIELD COUNTY, VIRGINIA

Dominion Energy

	Name	Date	Project No.	Sheet No.
Designed by:	GCB	08/15/24		
Approvals			Scale	1 of 1
Approvals				

Revisions		
	B/M No.	

Cad File Name

Drawing No.

PLOTTED: $$$$$$$$$$$$SYTIME

Attachment II.C.2

$FILENAME$
PLOTTED: $$$$$$$$$$$$SYTIME
$USERNAME$

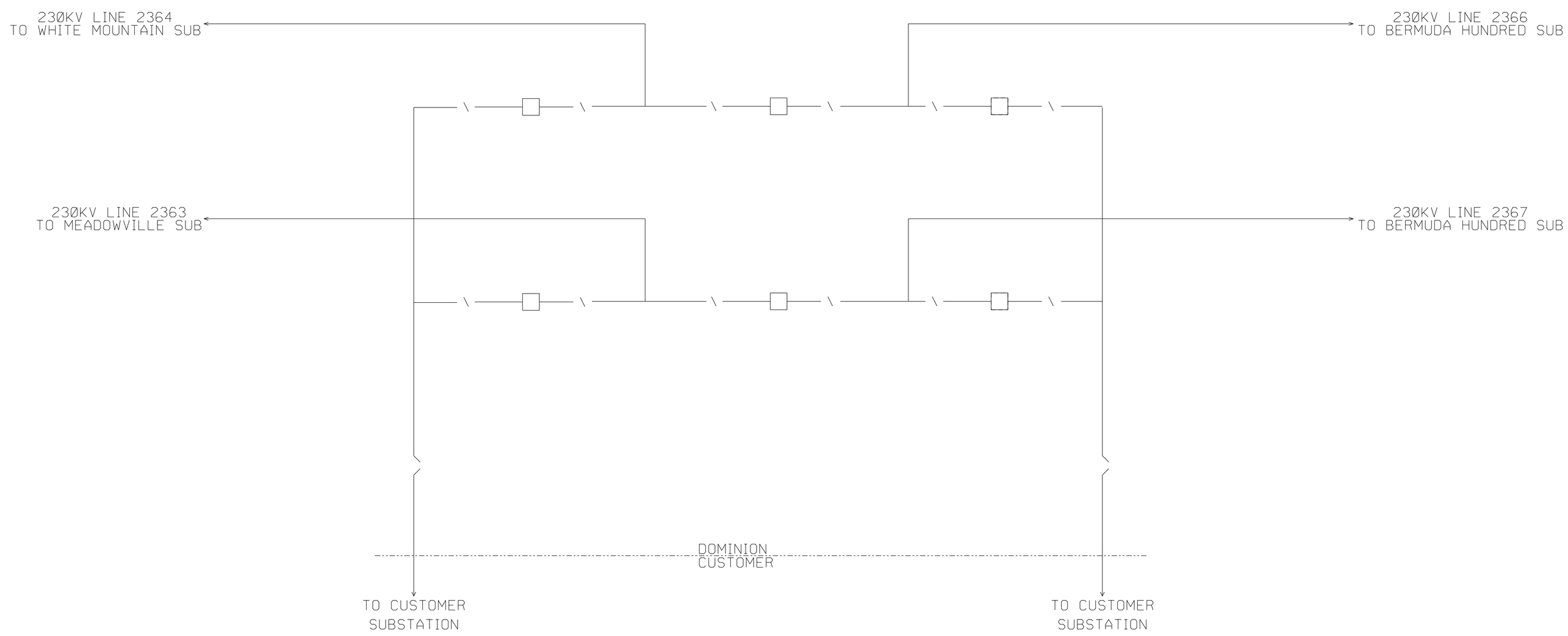
ATTACHMENT II.C.3

LEGEND

CIRCUIT BREAKER

DISCONNECT SWITCH

DISCONNECT SWITCH



PRELIMINARY
NOT FOR CONSTRUCTION

By:	Approval
Date:	
Project No.	
Network No.	
BH No.	
Description	

Revisions

98	5	DEMARCATION INDICATOR - SEE SUB. OL.	
99	7	DEMARCATION INDICATOR - SEE TLIN. OL.	
98	0	DEMARCATION INDICATOR - SEE DIST. OL.	
97	C	DEMARCATION INDICATOR - SEE CUST. DOC.	

Dominion Energy

ONE LINE DIAGRAM

Drawn By: GCB	Date 08-15-24	Substation	SLOAN DRIVE SUB
Approval	Date	Drawing No.	

$USERNAME$

$MTIS$$$$$$$$$$$$$$

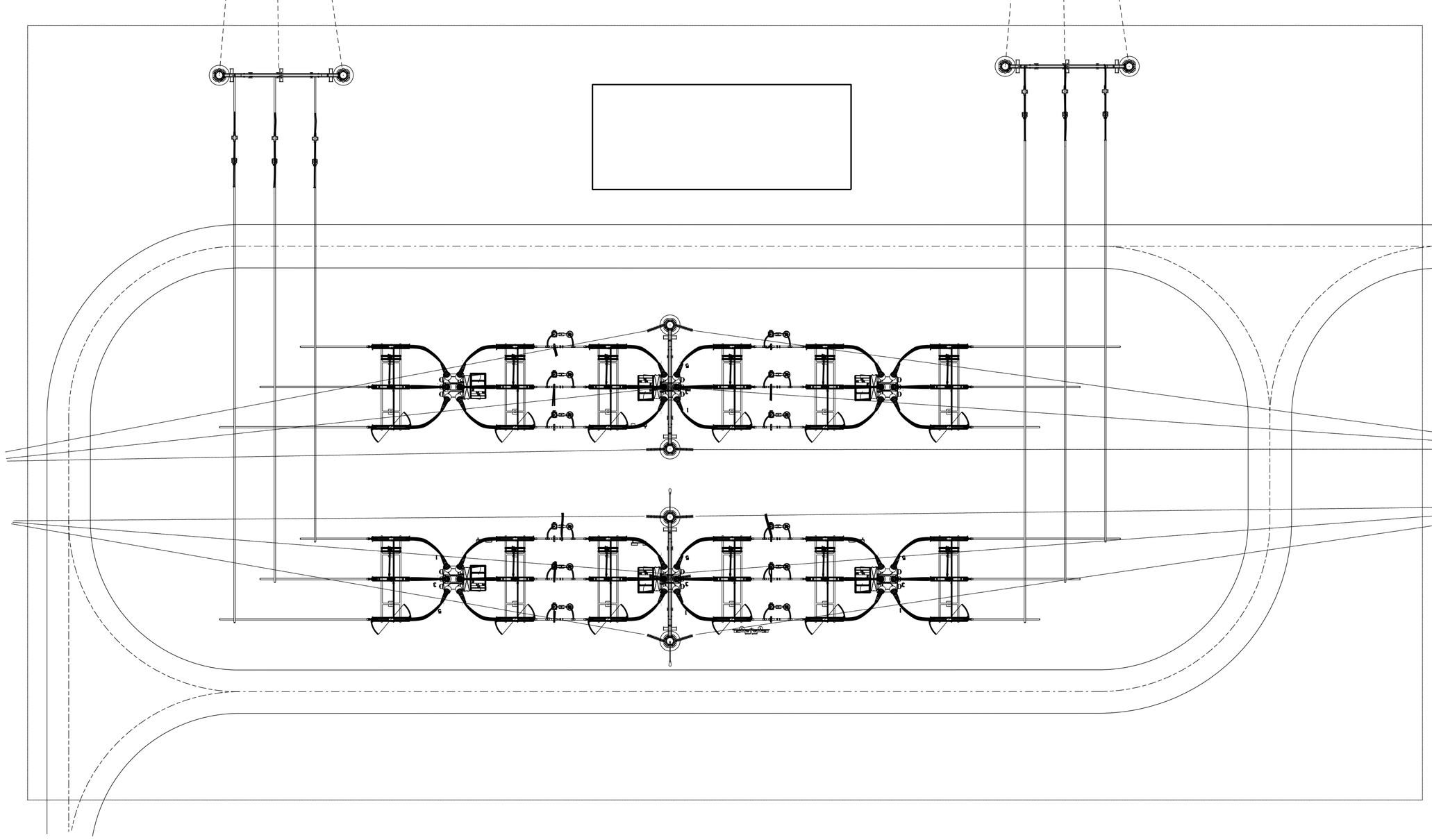
Attachment II.C.3

Attachment II.C.4

PRELIMINARY
NOT FOR CONSTRUCTION

TO CUSTOMER SUBSTATION

TO CUSTOMER SUBSTATION



230kV LINE 2367
TO BERMUDA HUNDRED SUB

230kV LINE 2366
TO BERMUDA HUNDRED SUB

230kV LINE 2363
TO MEADOWVILLE SUB

230kV LINE 2364
TO WHITE MOUNTAIN SUB

ATTACHMENT II.C.4

GENERAL ARRANGEMENT
SLOAN DRIVE SUBSTATION
CHESTERFIELD COUNTY, VIRGINIA

Dominion Energy

	Name	Date	Project No.	Sheet No.
Designed by:	GCB	08/15/24		
Approvals			Scale	1 OF 1
Approvals				
Approvals				

	B/M No.	Revisions

Cad File Name

Drawing No.

PLOTTED: $$$$$$$$$$$$SYTIME

$FILENAME$
PLOTTED: $$$$$$$$$$$$SYTIME
$USERNAME$

Revisions

No.	Date	By	Description	Project Number B/M	Checked/Appr.

$USERNAME$

Typical Drawing Information

Library Location	Cell Name	B/M Assembly	Pipe Stand Foundation Cells (Pier)	Pipe Stand Foundation Cells (Spread)	Foundation Cells For Other Typical Structures					Steel Detail & Assembly
					(Pier)	(Spread)				

124

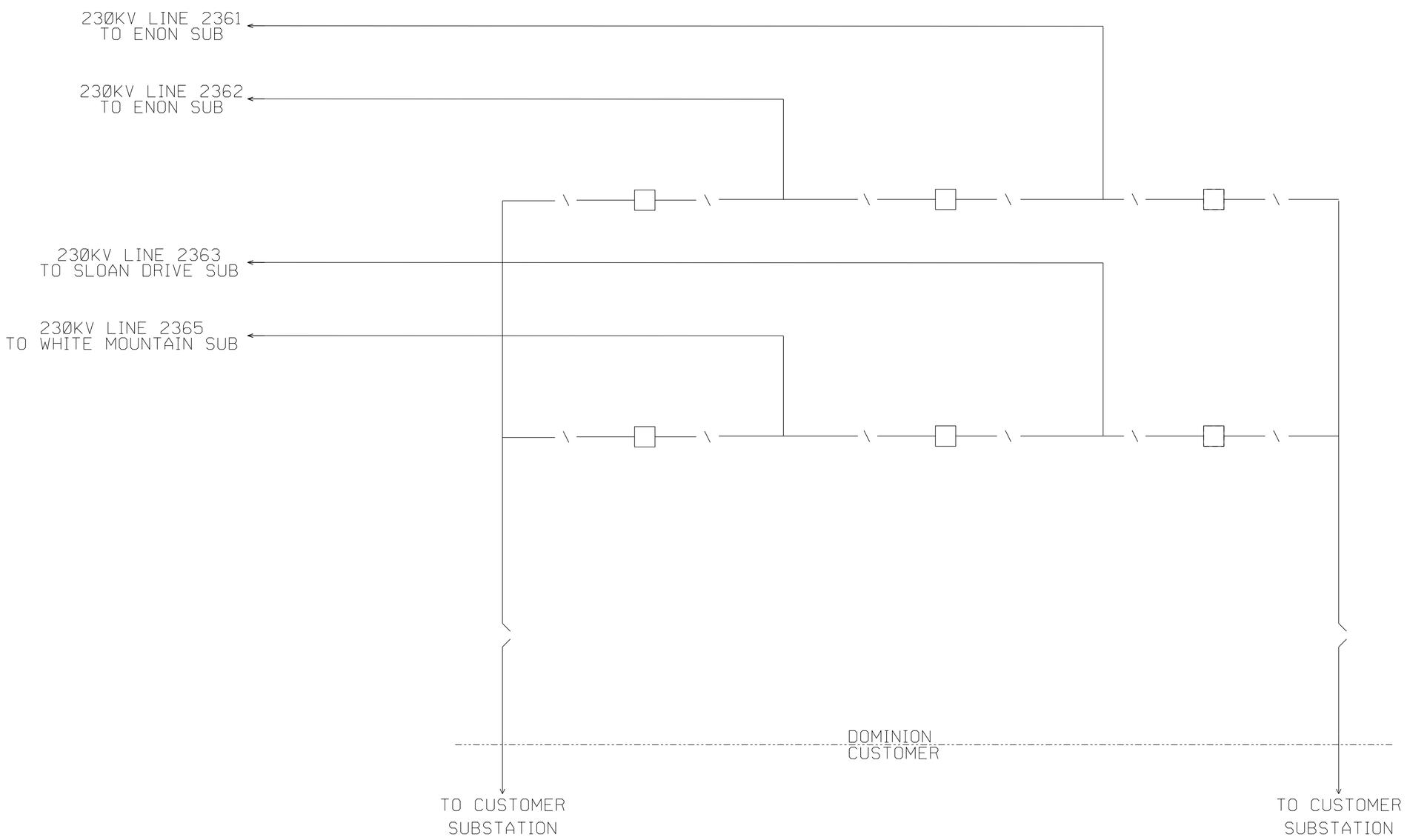
ATTACHMENT II.C.5

LEGEND

CIRCUIT BREAKER

DISCONNECT SWITCH

DISCONNECT SWITCH



PRELIMINARY
NOT FOR CONSTRUCTION

By:	Approval
Date:	
Project No.	
Network No.	
BM No.	
Description	

Revisions

98	S	DEMARCATION INDICATOR - SEE SUB. OL.	
98	T	DEMARCATION INDICATOR - SEE TLIN. OL.	
98	D	DEMARCATION INDICATOR - SEE DIST. OL.	
97	C	DEMARCATION INDICATOR - SEE CUST. DOC.	

Drawn By: GCB	Date 05-15-24	Substation	MEADOWVILLE SUB
Approval	Date	Drawing No.	

Dominion Energy

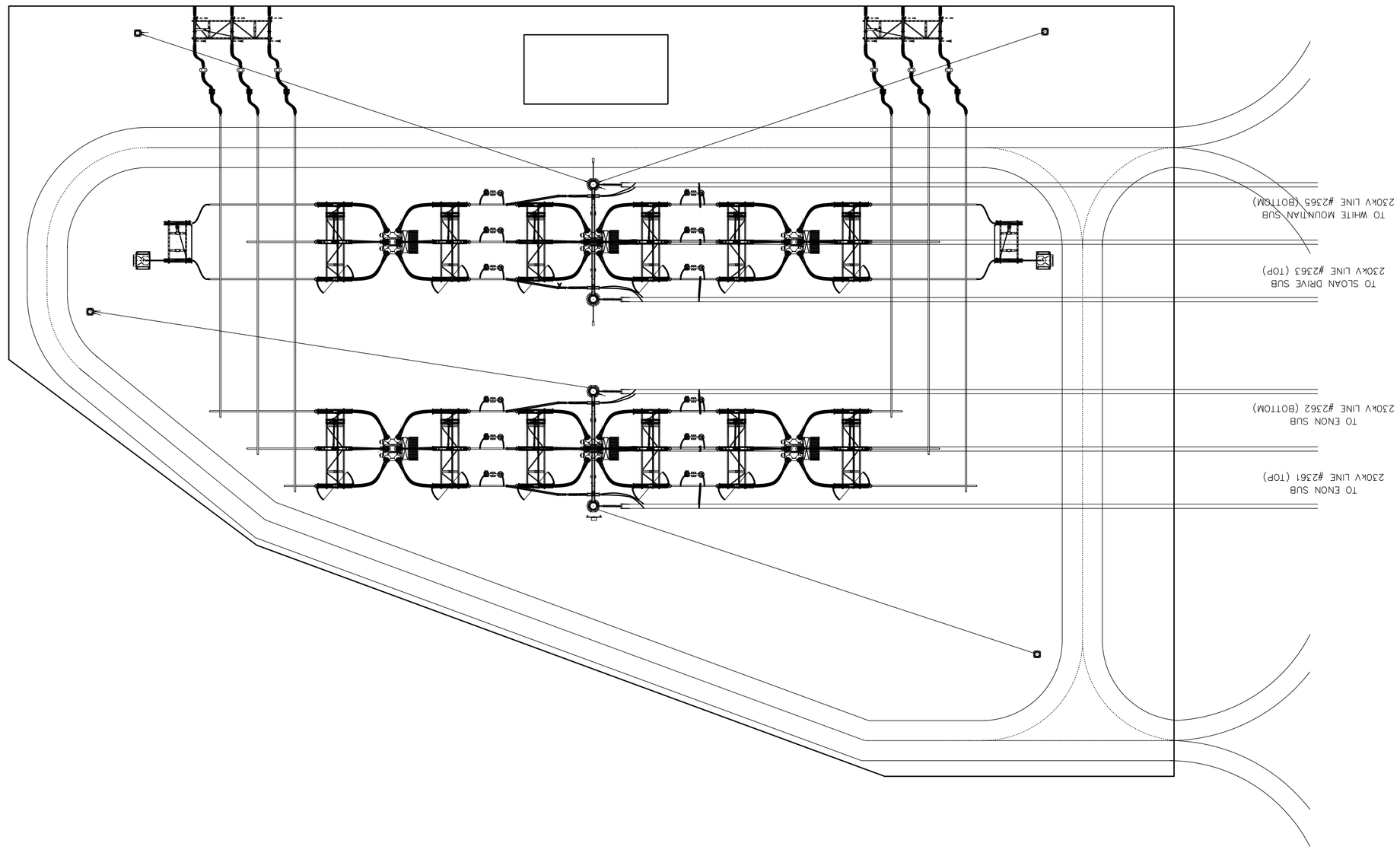
ONE LINE DIAGRAM

$USERNAME$

$MILLISECONDS$

Attachment II.C.6

PRELIMINARY
NOT FOR CONSTRUCTION



ATTACHMENT II.C.6

GENERAL ARRANGEMENT
MEADOWVILLE SUBSTATION
CHESTERFIELD COUNTY, VIRGINIA

Dominion Energy

	Name	Date	Project No.	Sheet No.
Designed by:	GCB	01/24/24	–	1 of 1
Approved/s			Scale	
Approved/s				

		B/M No.	Revisions

Cad File Name: $$$$$$$$$$$SYTIME

PLOTTED: $$$$$$$$$$$$$SYTIME

Drawing No.

$FILENAME$
PLOTTED: $$$$$$$$$$$$$SYTIME
$USERNAME$

Revisions					
No.	Date	By	Description	Project Number	B/M
	Checked/Appr.				

$USERNAME$

Typical Drawing Information

Library Location		Cell Name		B/M Assembly		Pipe Stand Foundation Cells (Pier)		Pipe Stand Foundation Cells (Spread)		Foundation Cells for Other Typical Structures	
										(Pier)	(Spread)

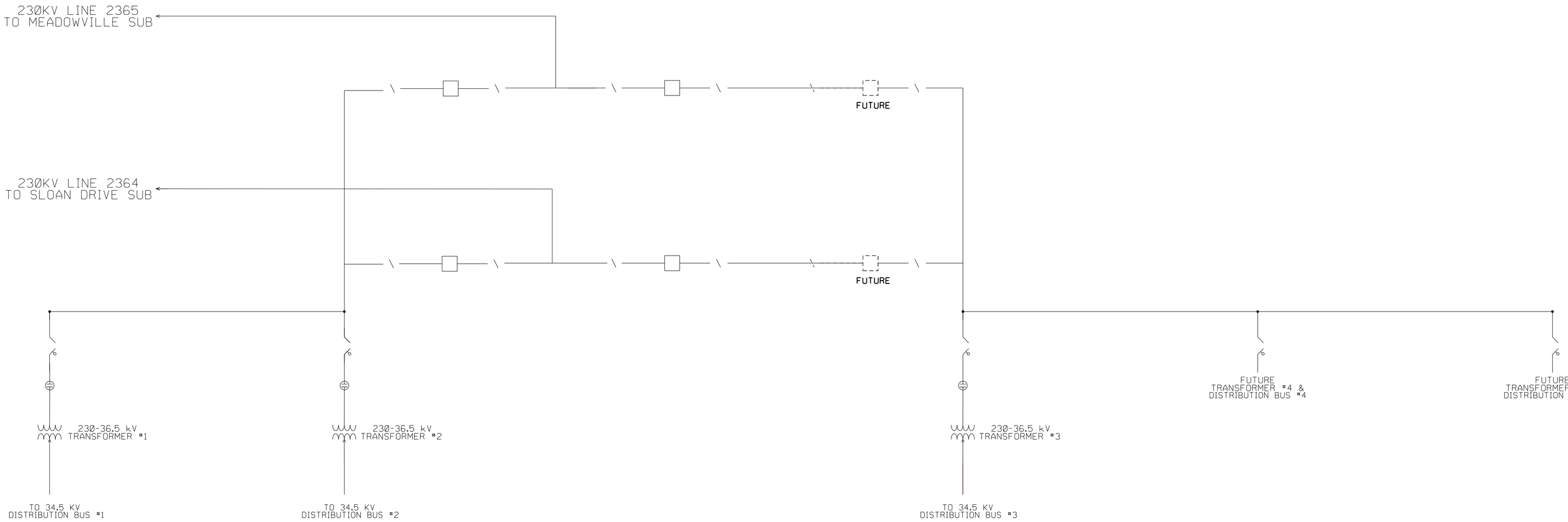
Steel Detail & Assembly

126

ATTACHMENT II.C.7

LEGEND

- CIRCUIT BREAKER
- POWER TREANSFOREMR
- DISCONNECT SWITCH
- DISCONNECT SWITCH WITH MOTOR OPERATOR
- CIRCUIT SWITCHER



PRELIMINARY
NOT FOR CONSTRUCTION

Revisions	By:	Date:	Project No.	Network No.	BM No.	Description
Approval						

98	5	DEMARCATION INDICATOR - SEE SUB. OL.	
99	7	DEMARCATION INDICATOR - SEE TLIN. OL.	
98	0	DEMARCATION INDICATOR - SEE DIST. OL.	
97	C	DEMARCATION INDICATOR - SEE CUST. DOC.	

Dominion Energy

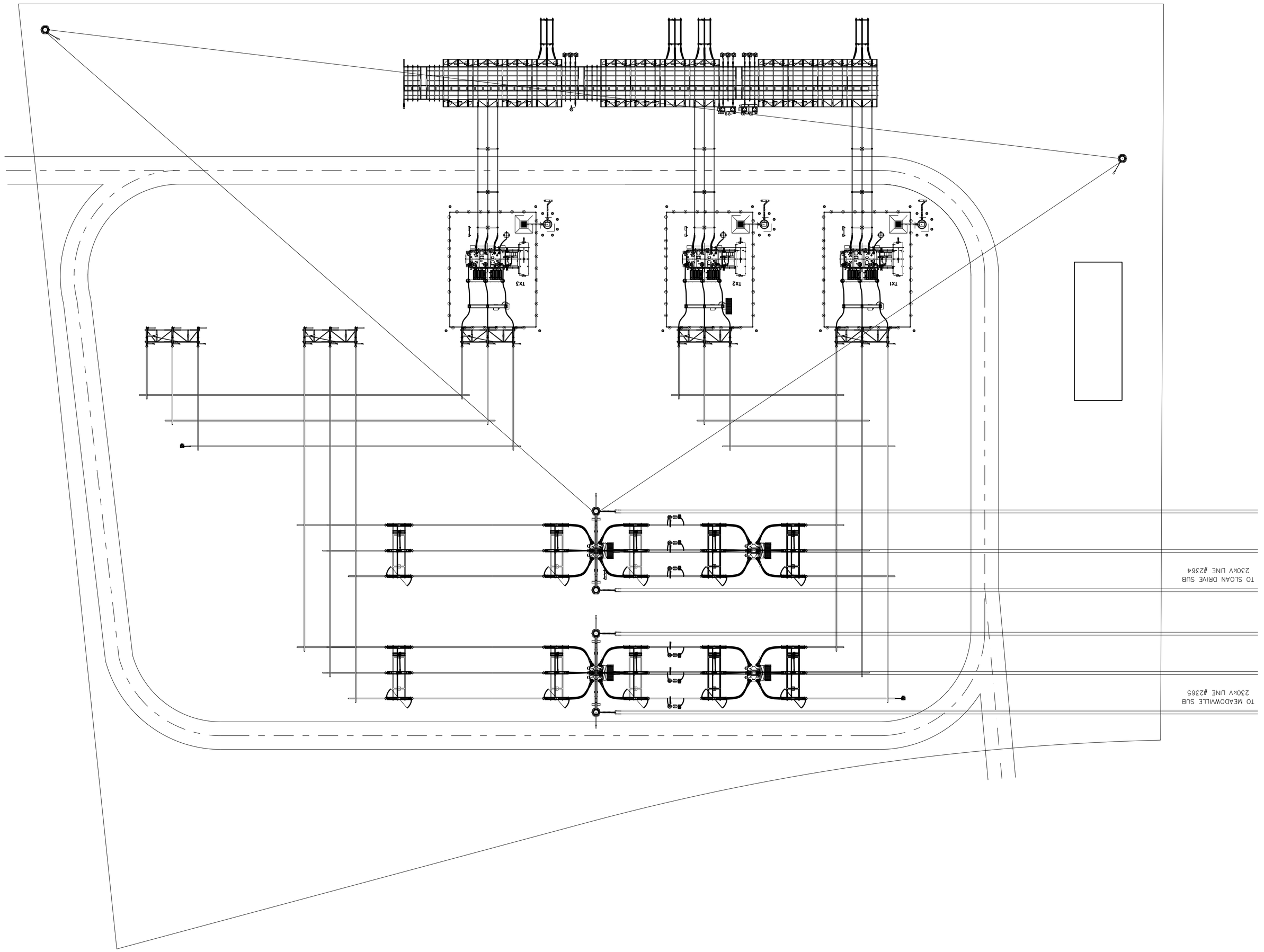
ONE LINE DIAGRAM

Drawn By: GCB	Date 08-13-24	Substation	WHITE MOUNTAIN SUB
Approval	Date	Drawing No.	

$USERNAME$

$MILLISECONDS$

PRELIMINARY
NOT FOR CONSTRUCTION



ATTACHMENT II.C.8

Revisions				
No.	Date	By	Description	Project Number B/M

Checked/Appr.

Typical Drawing Information	Library Location	Cell Name	B/M Assembly	Pipe Stand Foundation Cells (Pier)	Pipe Stand Foundation Cells (Spread)	Foundation Cells for Other Typical Structures (Pier) (Spread)	Steel Detail & Assembly
$USERNAME$							

$FILENAME$	Cad File Name	Drawing No.
PLOTTED: $$$$$$$$$$SYSTIME		
$USERNAME$ $$$$$$$$$$SYSTIME		

Revisions		B/M No.

	Name	Date	Project No.	Sheet No.
Designed by:	GCB	01/24/24	Scale	1 of 1
Approvals		-		
Approvals				

Dominion Energy

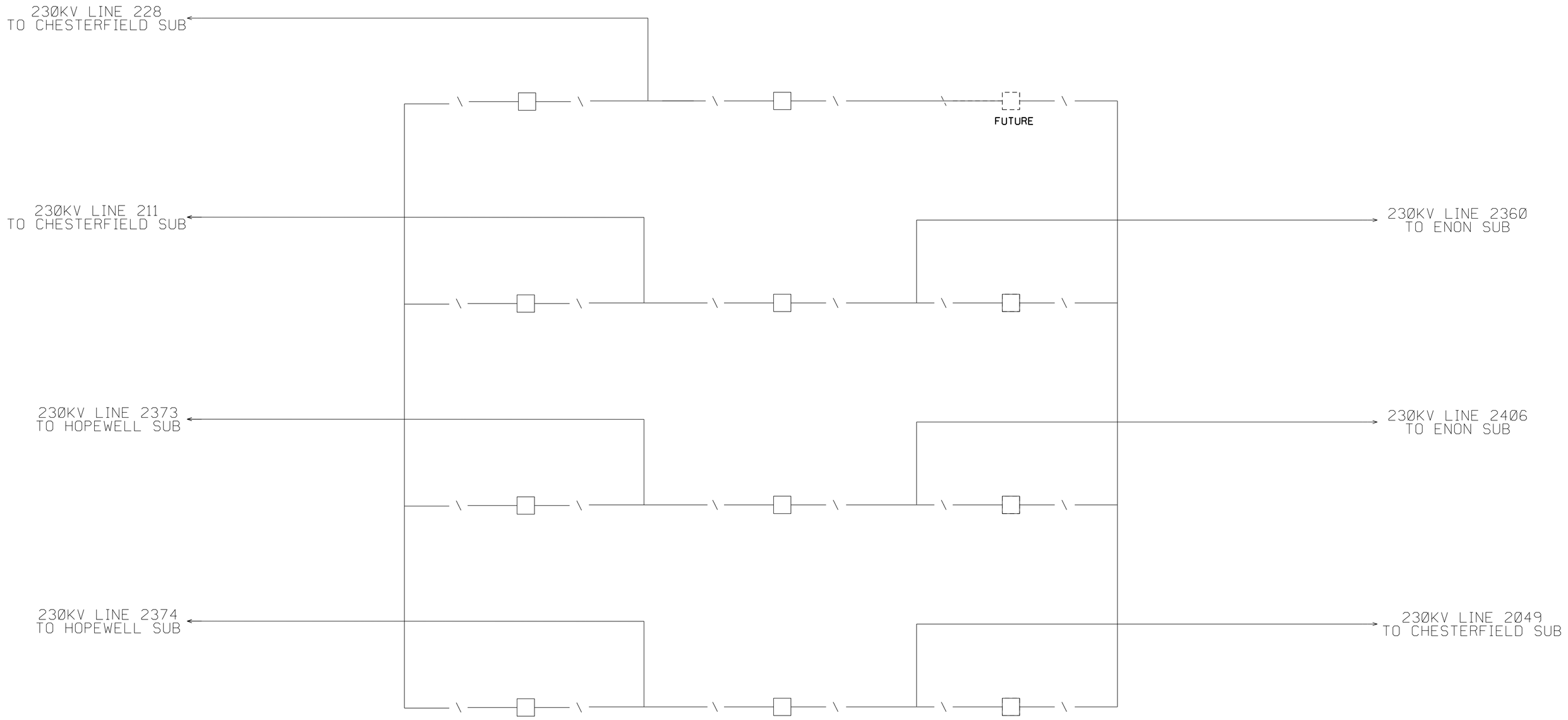
GENERAL ARRANGEMENT
WHITE MOUNTAIN SUBSTATION
CHESTERFIELD COUNTY, VIRGINIA

ATTACHMENT II.C.9

LEGEND

CIRCUIT BREAKER

DISCONNECT SWITCH



PRELIMINARY
NOT FOR CONSTRUCTION

By:	Approval
Date:	
Project No.	
Network No.	
BH No.	
Description	

Revisions

98	5	DEMARCATION INDICATOR - SEE SUB. DL.	
99	7	DEMARCATION INDICATOR - SEE TLIN. DL.	
98	0	DEMARCATION INDICATOR - SEE DIST. DL.	
97	C	DEMARCATION INDICATOR - SEE CUST. DOC.	

Dominion Energy

ONE LINE DIAGRAM

Drawn By: GCB	Date 05/22/24	Substation	SYCAMORE SPRINGS SUB
Approval	Date	Drawing No.	

$USERNAME$

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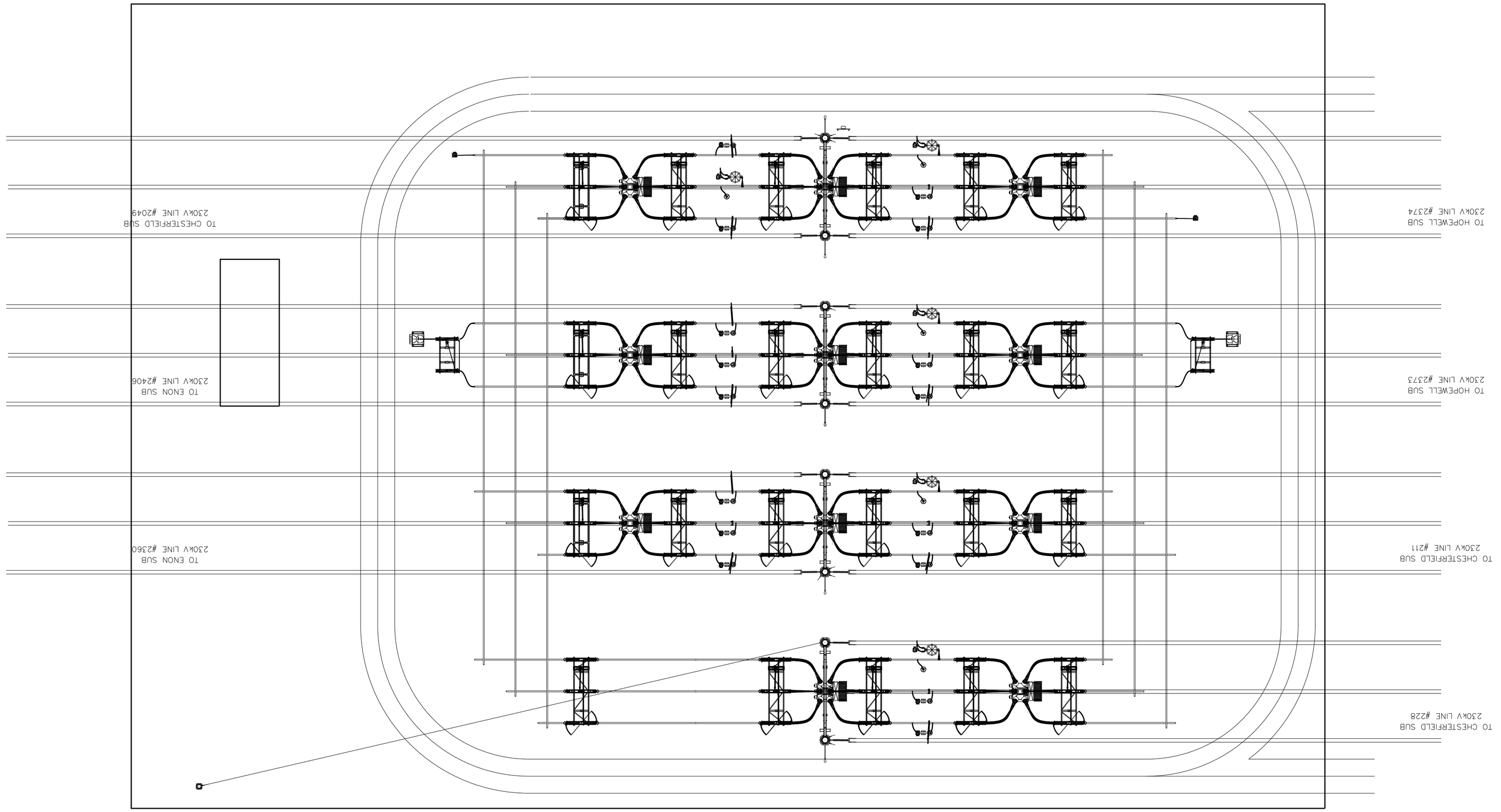
Attachment II.C.10

PRELIMINARY
NOT FOR CONSTRUCTION



ATTACHMENT II.C.10

Typical Drawing Information	Library Location	Cell Name	B/M Assembly	Pipe Stand Foundation Cells (Pier)	Pipe Stand Foundation Cells (Spread)	Foundation Cells for Other Typical Structures (Pier) (Spread)	Steel Detail & Assembly
$USERNAME$							

Revisions

No.	Date	By	Checked/Appr.	Description	Project Number B/M

Dominion Energy

GENERAL ARRANGEMENT
SYCAMORE SPRINGS SUBSTATION
CHESTERFIELD COUNTY, VIRGINIA

	Name	Date	Project No.	Sheet No.
Designed by:	CCB	03/06/24		1 OF 1
Approvals			Scale	
Approvals				

Revisions		B/M No.

Cad File Name: $$$$$$$$$$$$SYTIME

Drawing No.

PLOTTED: $$$$$$$$$$$$SYTIME

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PLOTTED: $$$$$$$$$$$$SYTIME
$USERNAME$

0 1 2 3 4 5 6 7 8 9 10 11 12

130

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: **Component 1: Bermuda Hundred and Sloan Drive**

The Component 1 Proposed Route is approximately 1.2 miles in length and is located entirely within Chesterfield County, Virginia. The proposed route extends west from the cut-in location on Line #2050 to the proposed Bermuda Hundred Station, and farther west from the Bermuda Hundred Station to the proposed Sloan Drive Station. This portion of the proposed route crosses undeveloped forested land just to the south of the Brown and Williamson Conservation Area and the Lower James River Linear Park trail. Component 1 does not cross these resources and it is not anticipated that he proposed component will impact the use or function of the conservation area and trail. Construction on this component would require tree clearing of the proposed ROW and may have a visual impact on the Conservation area and park trail.

According to County parcel data, zoning data, and aerial photo analysis, no residences or associated outbuildings, residential areas, or commercial structures are crossed by, or located within 500 feet of Component 1.

See Attachment III.A.1 and Figures L.7 and L.8 of the DEQ Supplement for the estimated amount of farmland and forestland within the ROW that the Component 1 Proposed Route would impact.

For additional description of the character of the area that will be traversed by the Component 1 Proposed Route and the related impacts, see the DEQ Supplement, specifically as to wetlands (Section 2.B), forests (Section 2.L), agricultural lands (Section 2.L), historic resources (Section 2.I), and wildlife (Section 2.K).

Component 2: Meadowville and White Mountain

The Component 2 Proposed Route is approximately 1.60 miles in length for Line #2363 and approximately 1.4 miles in length for Line #2364, and is located entirely within Chesterfield County, Virginia. Line #2363 and #2364 extend south and then west from the Sloan Drive Station for 0.88 mile until they reach Meadowville Technology Parkway. From Meadowville Technology Parkway, Line #2363 runs adjacent to the Parkway for 0.30 mile before turning west across Customer B and Chesterfield EDA property for 0.40 mile until reaching Meadowville Station. Line #2364 continues north along Meadowville Technology Parkway, where Line #2363 turns west to the Station, and continues another 0.17 mile north to White Mountain

Station. Line #2365 connects White Mountain Station to Meadowville Station by following the same 0.17mile corridor south and then 0.40 mile west to Meadowville Station.

According to County parcel data, zoning data, and aerial photo analysis, no residences or associated outbuildings, residential areas, or commercial structures are crossed by Component 2. However, there are two residential and associated outbuildings, one residential area (Tazewell James Single Family Subdivision), and six commercial structures within 500 feet of Component 2.

See Attachment III.A.1 and Section 2.L of the DEQ Supplement for the estimated amount of farmland and forestland within the right-of-way that the Proposed Route would impact.

For additional description of the character of the area that will be traversed by the Component 2 Proposed Route and the related impacts, see the DEQ Supplement, specifically as to land use (Sections 2.G and 2.L), wetlands (Section 2.B and 2.D), forests (Section 2.L), agricultural lands (Section 2.L), historic resources (Section 2.I), and wildlife (Sections 2.G and 2.K).

Component 3: Sycamore Springs

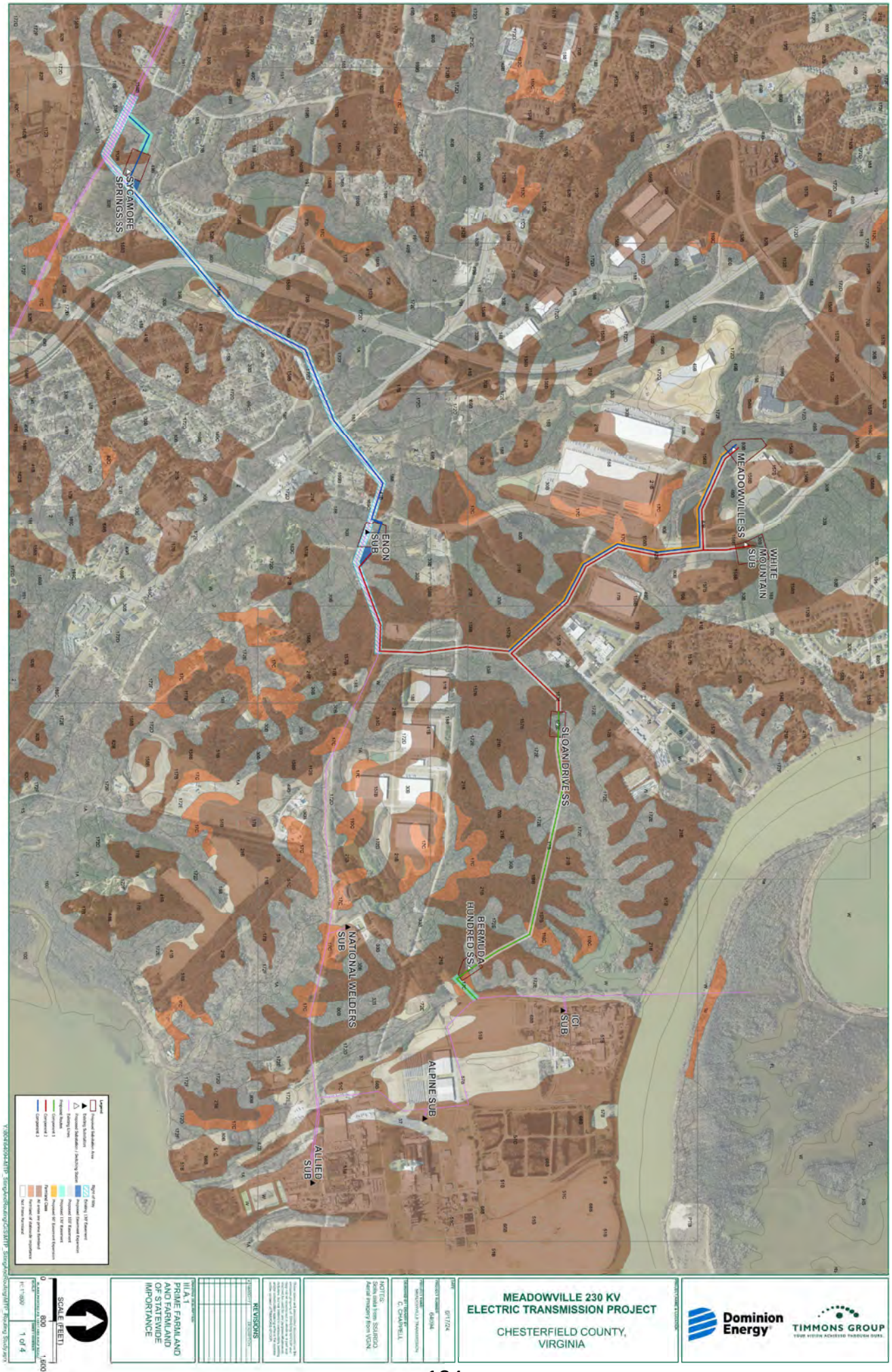
The Component 3 Proposed Route is approximately 4.23 miles in total length and is located entirely within Chesterfield County, Virginia. Looping Lines #211, #228, and #2049 into Sycamore Springs Station, on property owned by Chesterfield County, and extending Line #2360 and Line #2406 (formerly Line #2049) north out of Sycamore Springs Station, which will require a rebuild of the existing transmission line within existing electric transmission ROW to Enon Substation. Line #2361 and #2362 continue from Enon Substation along the existing corridor for 0.43 mile before turning north into a new greenfield ROW corridor on Chesterfield County EDA and Customer A property for 0.47 mile to converge with Component 2. The Component 3 Proposed Route expands the corridor for Component 2 an additional 60 feet, widening the total ROW to 160 feet from the proposed ROW colocation point just south of Sloan Drive Substation, heading west and perpendicularly crossing North Enon Church Road and traversing undeveloped forested land owned by Chesterfield EDA for approximately 0.55 mile until they reach Meadowville Technology Parkway. From Meadowville Technology Parkway, Lines #2361 and #2362 run adjacent to the Parkway for 0.3 mile before turning west across Customer B and Chesterfield EDA property for 0.4 mile until reaching Meadowville Station.

According to County parcel data, zoning data, and aerial photo analysis, Component 3 crosses five existing residential areas: Montclair at Southbend (Single Family) Subdivision, Rivermont Crossing (Apartment) Subdivision, Rivermont Hills (Single Family) Subdivision, Perkinson Heights (Single Family) Subdivision, and Five Point Acres (Single Family) Subdivision. Within these residential areas

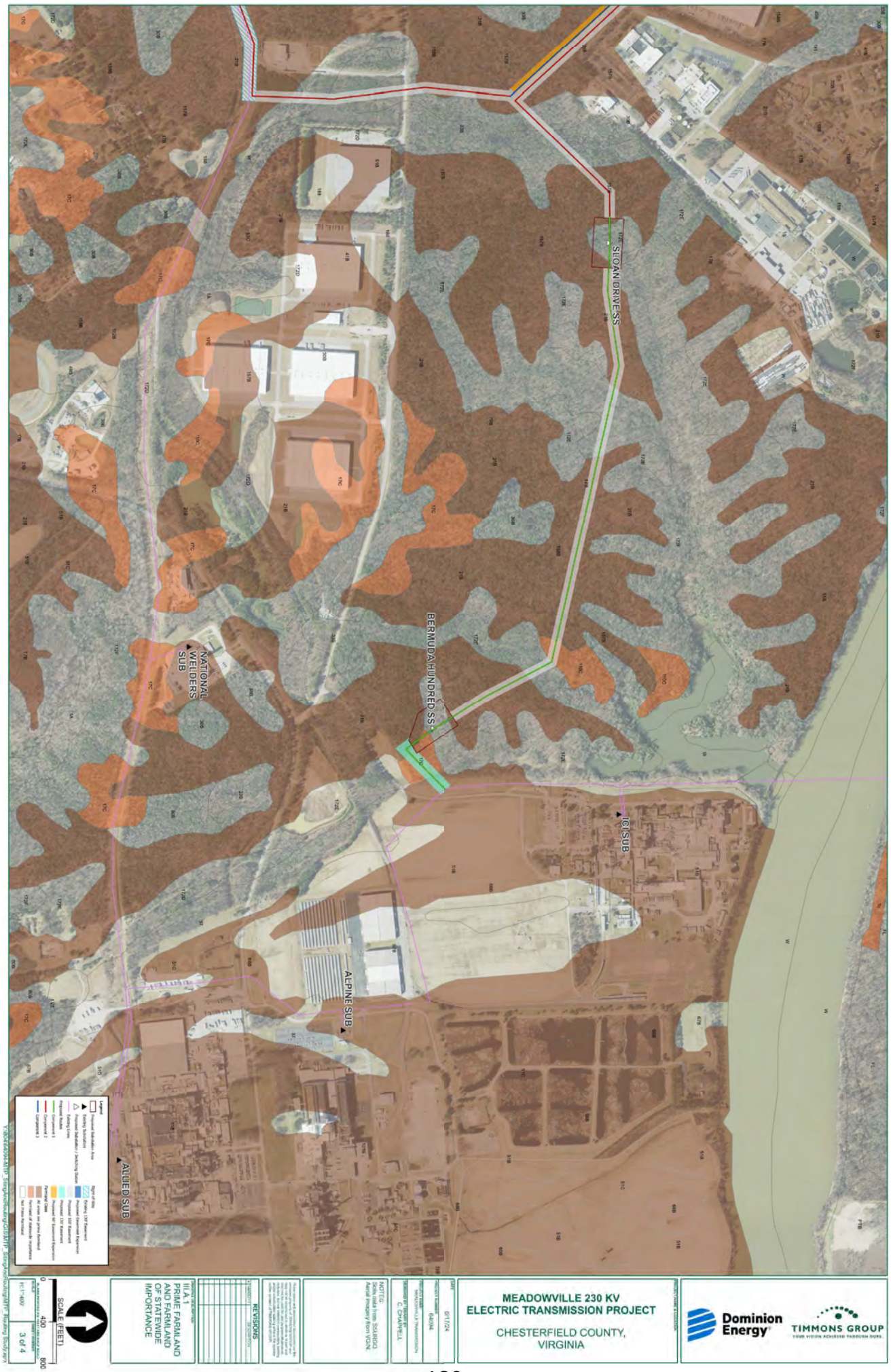
there are 11 residences and associated outbuildings crossed by the component. Additionally, there are 6 commercial structures, one church structure, and a multitude of residences and associated outbuildings within 500 feet of Component 3.

See Attachment III.A.1 and Section 2.L of the DEQ Supplement for the estimated amount of farmland and forestland within ROW that the Component 3 Proposed Route would impact.

For additional description of the character of the area that will be traversed by the Component 3 Proposed Route and the related impacts, see the DEQ Supplement, specifically as to land use (Sections 2.G and 2.L), wetlands (Section 2.D), forests (Section 2.L), agricultural lands (Section 2.L), historic resources (Section 2.I), and wildlife (Sections 2.G and 2.K).


SYCAMORE SPRINGS SS
LENON SUB
MEADOWVILLE SS
WHITE MOUNTAIN SUB
SLOAN DRIVE SS
BERMUDA HUNDRED SS
NATIONAL WELDERS SUB
IGT SUB
ALPINE SUB
ALLIED SUB
MEADOWVILLE 230 KV
ELECTRIC TRANSMISSION PROJECT
CHESTERFIELD COUNTY,
VIRGINIA
Dominion Energy
TIMMONS GROUP
III.A.1
PRIME FARMLAND AND FARMLAND OF STATEWIDE IMPORTANCE
SCALE (FEET)
1 of 4


MEADOWVILLE SS
WHITE MOUNTAIN SUB
SLOAN DRIVE SS
MEADOWVILLE 230 KV
ELECTRIC TRANSMISSION PROJECT
CHESTERFIELD COUNTY,
VIRGINIA
Dominion Energy
TIMMONS GROUP
III.A.1
PRIME FARM AND FARM AND OF STATEWIDE IMPORTANCE
SCALE (FEET)
2 of 4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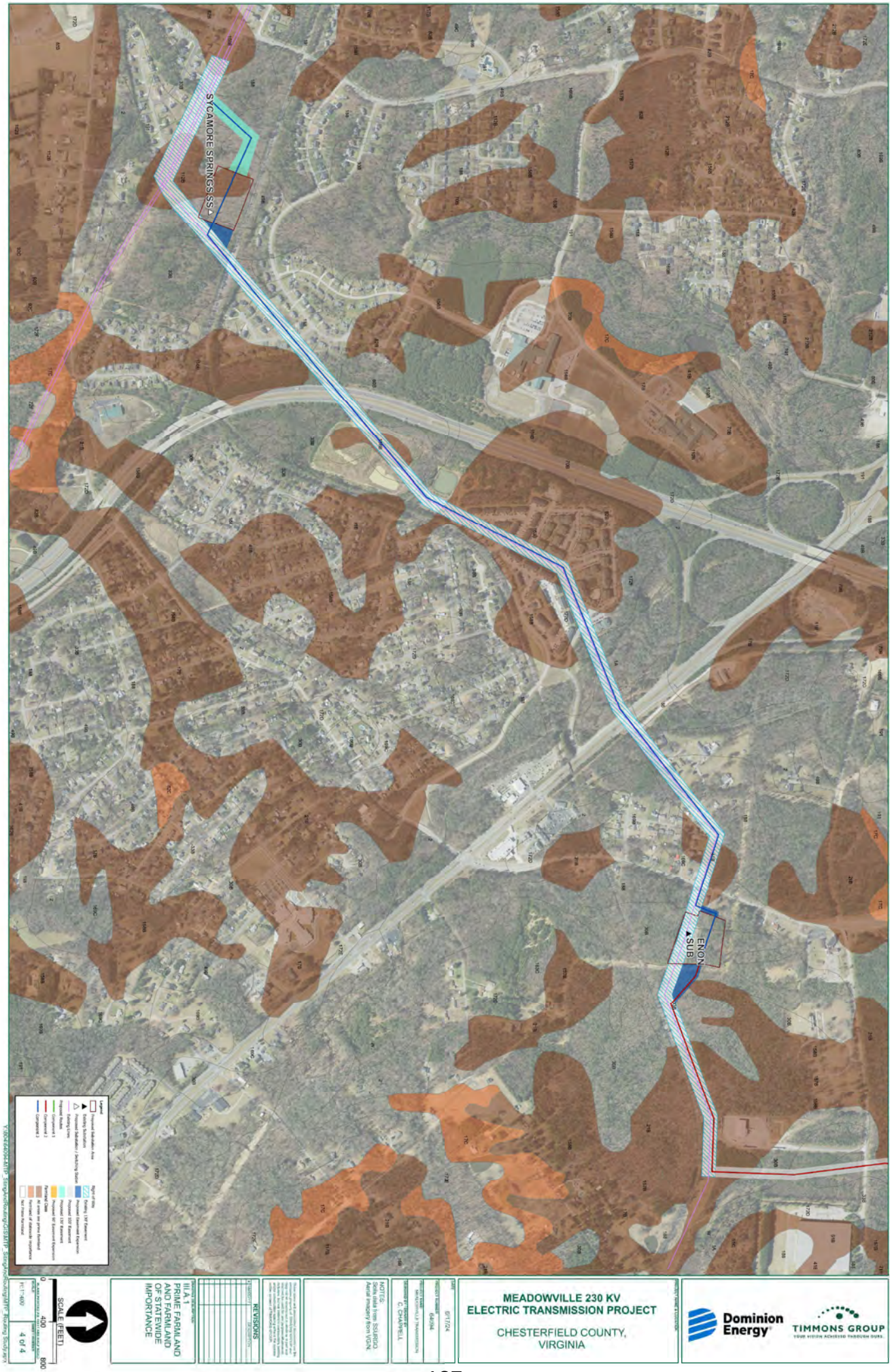
BERMUDA HUNDRED SS
NATIONAL WELDERS SUB
IGI SUB
ALPINE SUB
ALLIED SUB
MEADOWVILLE 230 KV
ELECTRIC TRANSMISSION PROJECT
CHESTERFIELD COUNTY,
VIRGINIA
Dominion Energy
TIMMONS GROUP
III.A.1
PRIME FARM AND FARM AND OF STATEWIDE IMPORTANCE
SCALE (FEET)
3 of 4


SYCAMORE SPRINGS SS
ENON SUB
MEADOWVILLE 230 KV
ELECTRIC TRANSMISSION PROJECT
CHESTERFIELD COUNTY,
VIRGINIA
Dominion Energy
TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.
III.A.1
PRIME FARMLAND AND FARMLAND OF STATEWIDE IMPORTANCE
REVISIONS
SCALE (FEET)
0
400
800
4 of 4

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: Stakeholder Engagement

In June 2024, the Company launched an internet website dedicated to several projects in the area: www.dominionenergy.com/meadowville. The website includes a description of the proposed Project, an explanation of the need, routing options, an interactive mapping tool, photo renderings and simulations, and information on the Commission review process. The Company also made the website available to the public in English and Spanish.

On June 12, 2024, a Project announcement letter was mailed to nearly 1,600 residences and businesses in the vicinity of the Project area. The letter included Project information, a project fact sheet, and details regarding in-person community meetings. Copies of the Project announcement letters, as well as a postcard inviting community members to attend the July 11 and July 18 community meetings community has been available on www.dominionenergy.com/meadowville.

On July 11, the Company hosted an in-person community meeting at Elizabeth Scott Elementary from 5-7 p.m. on the need for new electric transmission lines to support large utility customers. There were 14 attendees.

On July 18th, the Company hosted a second in-person community meeting on the Project. There were 19 attendees. The community meeting was conducted in an exhibition format, and the layout included several Project-specific stations, such as renderings of the proposed electric transmission line routes, and photo simulations, as well as related informational boards. Electronic copies of the boards on display were made available for the public after the community meetings.

The Company conducted a digital advertising campaign designed to communicate all aspects of the Meadowville-Bermuda Hundred 230 kV Electric Transmission Project. Through social media platforms, display advertisements, videos and newspaper ads, the Company's goal was to provide information about the alternatives for meaningful involvement among impacted communities. The digital advertising campaign ran in English and Spanish, from June 18, 2024, through July 25, 2024, and promoted the community meetings. Print advertisements were run in the Progress Index.

See Attachment III.B.1, which includes the Project's newspaper advertisements, the digital advertisements, and the digital campaign results.

The Company deployed an interactive mapping tool within the Project website, which allows users to review the proposed substations, switching stations, routing options, and rebuild section.

Environmental Justice

As set forth in Section 3.2 of the Environmental Routing Study, the Company researched the demographics of the surrounding communities using data from the U.S. Census Bureau's American Community Survey 5-Year Estimates (2017-2021). This review revealed that eleven Census Block Groups ("CBGs") are located within one mile of the Proposed Routes, inclusive of the four proposed switching stations and proposed substation. A review of census data for several demographic characteristics identified populations within the Project study area that meet the Virginia Environmental Justice Act ("VEJA") thresholds for Environmental Justice Communities ("EJ Communities") (Va. Code §§ 2.2-234, 2.2-235).

Of the eleven CBGs within the Project study area, three CBGs are crossed by the Project's Proposed Routes. Of the three CBGs that cross the Proposed Routes, two contain populations of color and age-based vulnerable communities. None of the three CBGs crossed meet low-income or other sensitive population thresholds.

In addition to its evaluation of impacts, the Company will engage the EJ Communities in a manner that allows them to meaningfully participate in the Project development and approval process so that the Company can take their views and input into consideration. See Attachment III.B.1 for information regarding outreach. See Attachment III.B.2 for a copy of the Company's Environmental Justice Policy.

DE Transmission

Meadowville

Report Date: June 26, 2024 – July 25, 2024

140

Attachment III.B.1

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Dominion Energy

DET |Meadowville| 6/26/24 – 7/25/24 | Overall Report

The Meadowville campaign ran on Facebook, Google and Nextdoor through 7/25/24. These campaigns targeted customers over the age of 25 who resided in and around the project areas.

1,200,737 impressions
of ads were delivered to target audiences.

10,531 clicks
have taken audiences to the landing pages.

78,027 video views with an average 34.53% VCR.

0.88% CTR
Most CTRs near or above benchmarks.

62,920 ad engagements
such as reactions, likes, comments, shares and saves have been made on the ads.

Notable Creative

The DET Meadowville Post-Event 300x600 Display ad had the highest CTR at 5.40%, which is 980% higher than the 0.50% Display benchmark.

Notable Insights

- Facebook ads had a CTR of 0.95% and 20,945 completed video views for a 35.20% VCR.
- Nextdoor ads performed well with a CTR of 0.55%, which is 267% above benchmark.
- Google Display ads performed well with a CTR of 0.95%, which is 90% above benchmark.
- Google Video ads had 6,000 completed video views for a 32.40% VCR, which is 116% above the 15% Google VCR benchmark.

Facebook CTR Benchmark: 0.90% | Twitter CTR Benchmark: 1.11% | Google Search CTR Benchmark: 3.17% | Google Display CTR Benchmark: 0.50% | Google Video Benchmark: 15%| Nextdoor CTR Benchmark: 0.15%

DET | Meadowville | 6/26/24 – 7/3/24 | English Announcement Report

The English Meadowville Announcement campaign ran on Facebook, Google and Nextdoor through 7/3/24. These campaigns targeted English-speaking customers over the age of 25 who resided in and around the project areas.

213,983 impressions
of ads were delivered to target audiences.

2,028 clicks
have taken audiences to the landing pages.

15,757 video views with an average 33.35% VCR.

0.95% CTR
Most CTRs near or above benchmarks.

12,410 ad engagements
such as reactions, likes, comments, shares and saves have been made on the ads.

Notable Creative

The DET Meadowville 300x600 Display Announcement ad had the highest CTR at 4.39%, which is 778% higher than the 0.50% Display benchmark.

Notable Insights

- Facebook ads had a CTR of 1.06% and 4,118 completed video views for a 35.18% VCR.
- Nextdoor ads performed well with a CTR of 0.63%, which is 320% above benchmark.
- Google Display ads performed well with a CTR of 1.54%, which is 208% above benchmark.
- Google Video ads had 1,137 completed video views for a 28.05% VCR, which is 87% above the 15% Google VCR benchmark.

Facebook CTR Benchmark: 0.90% | Twitter CTR Benchmark: 1.11% | Google Search CTR Benchmark: 3.17% | Google Display CTR Benchmark: 0.50% | Google Video Benchmark: 15%| Nextdoor CTR Benchmark: 0.15%

DET | Meadowville | 6/28/24 – 7/5/24 | Spanish Announcement Report

The Spanish Meadowville Announcement campaign ran on Facebook and Google through 7/5/24. These campaigns targeted Spanish-speaking customers over the age of 25 who resided in and around the project areas.

27,949 impressions

of ads were delivered to target audiences.

258 clicks

have taken audiences to the landing pages.

1,801 video views with an average 37.36% VCR.

0.92% CTR

Most CTRs near or above benchmarks.

1,516 ad engagements

such as reactions, likes, comments, shares and saves have been made on the ads.

Notable Creative

The DET Spanish Meadowville 300x600 Display Announcement ad had the highest CTR at 5.08%, which is 916% higher than the 0.50% Display benchmark.

Notable Insights

- Facebook ads had a CTR of 0.83% and 575 completed video views for a 40.27% VCR.
- Google Display ads performed well with a CTR of 1.15%, which is 130% above benchmark.
- Google Video ads had 98 completed video views for a 26.24% VCR, which is 75% above the 15% Google VCR benchmark.

Facebook CTR Benchmark: 0.90% | Twitter CTR Benchmark: 1.11% | Google Search CTR Benchmark: 3.17% | Google Display CTR Benchmark: 0.50% | Google Video Benchmark: 15%| Nextdoor CTR Benchmark: 0.15%

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DET | Meadowville | 7/3/24 – 7/18/24 | English Pre-Event Report

The English Meadowville Pre-Event campaign ran on Facebook, Google and Nextdoor through 7/18/24. These campaigns targeted English-speaking customers over the age of 25 who resided in and around the project areas.

635,842 impressions
of ads were delivered to target audiences.

5,373 clicks
have taken audiences to the landing pages.

42,725 video views with an average 34.93% VCR.

0.85% CTR
Most CTRs near or above benchmarks.

34,096 ad engagements
such as reactions, likes, comments, shares and saves have been made on the ads.

Notable Creative

The DET Meadowville 300x600 Display Pre-Event ad had the highest CTR at 3.29%, which is 558% higher than the 0.50% Display benchmark.

Notable Insights

- Facebook ads had a CTR of 0.90% and 11,236 completed video views for a 34.72% VCR.
- Nextdoor ads performed well with a CTR of 0.55%, which is 267% above benchmark.
- Google Display ads performed well with a CTR of 0.88%, which is 76% above benchmark.
- Google Video ads had 3,688 completed video views for a 35.59% VCR, which is 137% above the 15% Google VCR benchmark.

Facebook CTR Benchmark: 0.90% | Twitter CTR Benchmark: 1.11% | Google Search CTR Benchmark: 3.17% | Google Display CTR Benchmark: 0.50% | Google Video Benchmark: 15%| Nextdoor CTR Benchmark: 0.15%

DET | Meadowville | 7/3/24 – 7/18/24 | Spanish Pre-Event Report

The Spanish Meadowville Pre-Event campaign ran on Facebook and Google through 7/18/24. These campaigns targeted Spanish-speaking customers over the age of 25 who resided in and around the project areas.

68,384 impressions

of ads were delivered to target audiences.

552 clicks

have taken audiences to the landing pages.

3,758 video views with an average 35.17% VCR.

0.81% CTR

Most CTRs near or above benchmarks.

3,046 ad engagements

such as reactions, likes, comments, shares and saves have been made on the ads.

Notable Creative

The DET Spanish Meadowville 300x600 Display Pre-Event ad had the highest CTR at 4.29%, which is 758% higher than the 0.50% Display benchmark.

Notable Insights

- Facebook ads had a CTR of 0.66% and 985 completed video views for a 34.08% VCR.
- Google Display ads performed well with a CTR of 0.89%, which is 78% above benchmark.
- Google Video ads had 337 completed video views for a 38.78% VCR, which is 159% above the 15% Google VCR benchmark.

Facebook CTR Benchmark: 0.90% | Twitter CTR Benchmark: 1.11% | Google Search CTR Benchmark: 3.17% | Google Display CTR Benchmark: 0.50% | Google Video Benchmark: 15%| Nextdoor CTR Benchmark: 0.15%

DET | Meadowville | 7/19/24 – 7/25/24 | English Post-Event Report

The English Meadowville Post-Event campaign ran on Facebook, Google and Nextdoor through 7/25/24. These campaigns targeted English-speaking customers over the age of 25 who resided in and around the project areas.

226,644 impressions

of ads were delivered to target audiences.

2,093 clicks

have taken audiences to the landing pages.

12,827 video views with an average 33.40% VCR.

0.92% CTR

Most CTRs near or above benchmarks.

10,778 ad engagements

such as reactions, likes, comments, shares and saves have been made on the ads.

Notable Creative

The DET Meadowville Post-Event 300x600 Display ad had the highest CTR at 5.40%, which is 980% higher than the 0.50% Display benchmark.

Notable Insights

- Facebook ads had a CTR of 1.10% and 3,600 completed video views for a 35.59% VCR.
- Nextdoor ads performed well with a CTR of 0.46%, which is 207% above benchmark.
- Google Display ads performed well with a CTR of 0.89%, which is 78% above benchmark.
- Google Video ads had 685 completed video views for a 25.23% VCR, which is 68% above the 15% Google VCR benchmark.

Facebook CTR Benchmark: 0.90% | Twitter CTR Benchmark: 1.11% | Google Search CTR Benchmark: 3.17% | Google Display CTR Benchmark: 0.50% | Google Video Benchmark: 15%| Nextdoor CTR Benchmark: 0.15%

DET | Meadowville | 7/19/24 – 7/25/24 | Spanish Post-Event Report

The Spanish Meadowville Post-Event campaign ran on Facebook and Google through 7/25/24. These campaigns targeted Spanish-speaking customers over the age of 25 who resided in and around the project areas.

27,935 impressions

of ads were delivered to target audiences.

227 clicks

have taken audiences to the landing pages.

1,159 video views with an average 41.98% VCR.

0.81% CTR

Most CTRs near or above benchmarks.

1,074 ad engagements

such as reactions, likes, comments, shares and saves have been made on the ads.

Notable Creative

The DET Spanish Meadowville Post-Event 300x600 Display ad had the highest CTR at 3.31%, which is 562% higher than the 0.50% Display benchmark.

Notable Insights

- Facebook ads had a CTR of 0.94% and 431 completed video views for a 42.76% VCR.
- Google Display ads performed well with a CTR of 0.70%, which is 40% above benchmark.
- Google Video ads had 56 completed video views for a 36.79% VCR, which is 145% above the 15% Google VCR benchmark.

Facebook CTR Benchmark: 0.90% | Twitter CTR Benchmark: 1.11% | Google Search CTR Benchmark: 3.17% | Google Display CTR Benchmark: 0.50% | Google Video Benchmark: 15%| Nextdoor CTR Benchmark: 0.15%

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Summary:

- The Meadowville Post-Event 300x600 Display ad was the highest-performing ad with a CTR of 5.40%.
- Males 25-44 were the top engagers on Facebook. Females ages 25-44 were the top engagers on Google Video and Display.
- Google Display was the top-performing platform for the campaign and ended the campaign with a CTR 90% over the 0.50% Display benchmark.
- Video ads performed well in this campaign with 78,027 video views. There were 26,945 completed video views across the platforms for a total VCR of 34.53%.
- The electricity provider, energy industry information and electric company audience segments had the highest CTRs on Google.

Platform Benchmarks:
Facebook CTR Benchmark: 0.90% | Twitter CTR Benchmark: 1.11% |
LinkedIn CTR Benchmark: 0.26%

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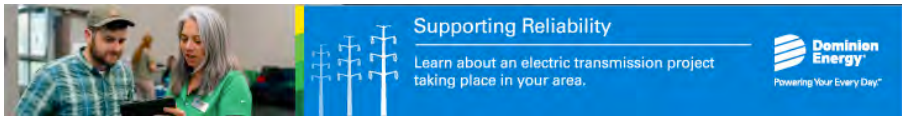
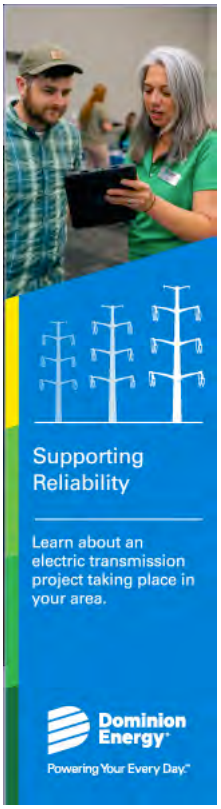
Dominion Energy Electric Transmission Contact:
Ann Gordon Mickel, Ann.Gordon.Mickel@dominionenergy.com

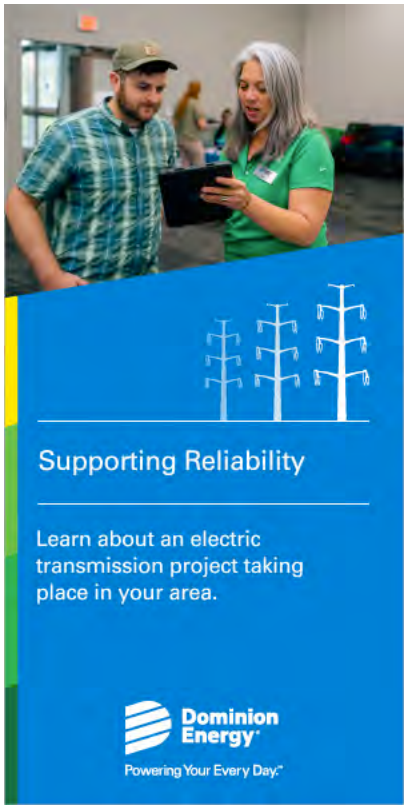
Dominion Energy Electric Transmission

Meadowville Electric Transmission Line Project

Announcement Display







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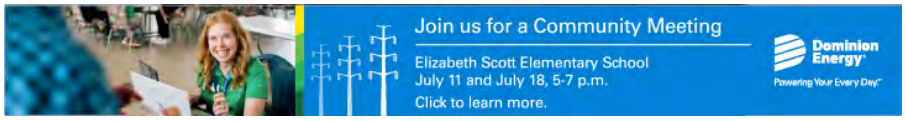
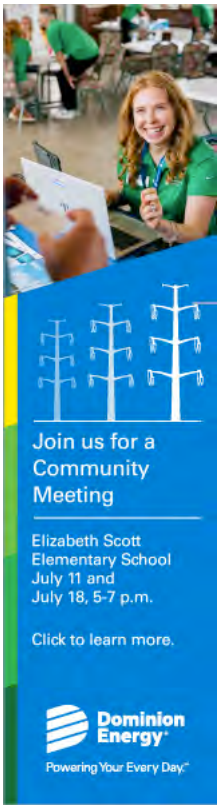
Dominion Energy
Electric Transmission

Meadowville Electric
Transmission Line Project

Pre-Event Display



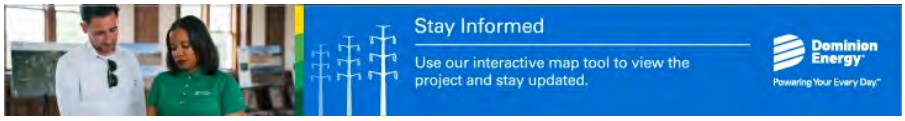


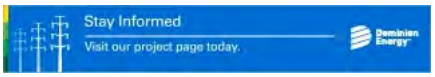
charles ryan associates

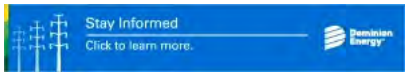
Dominion Energy
Electric Transmission

Meadowville Electric
Transmission Line Project

Post-Event Display







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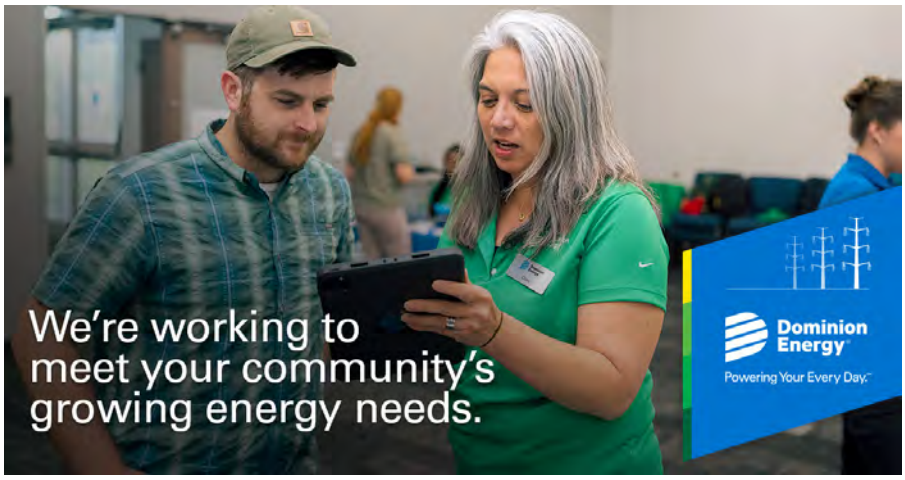
Dominion Energy Electric Transmission

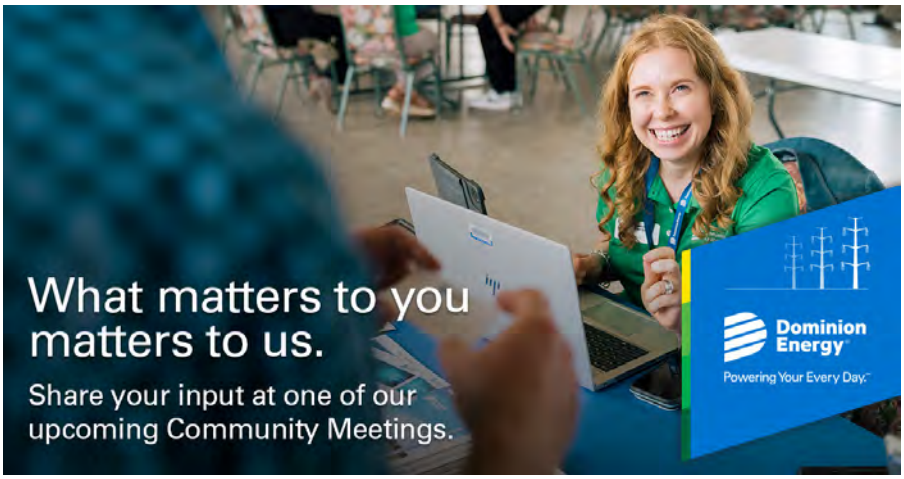
Meadowville Electric Transmission Line Project

Nextdoor Imagery

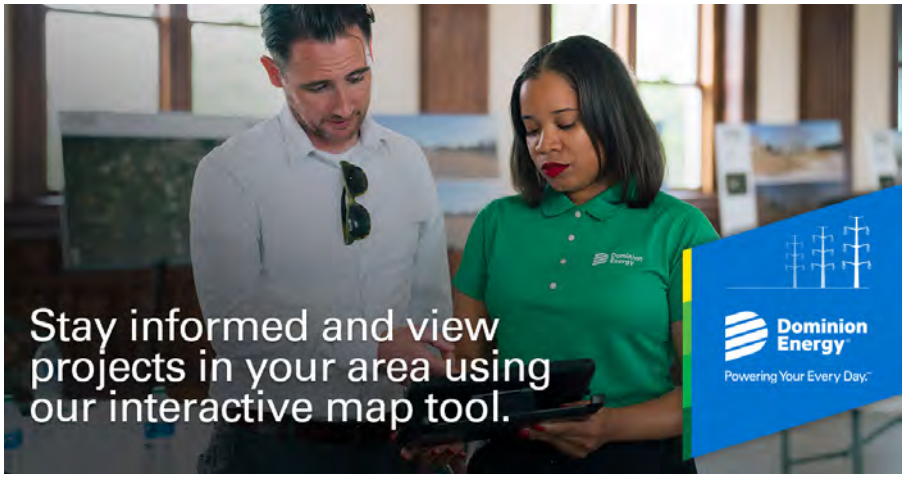
Announcement Image:



Pre-Event Image:



Post-Event Image:



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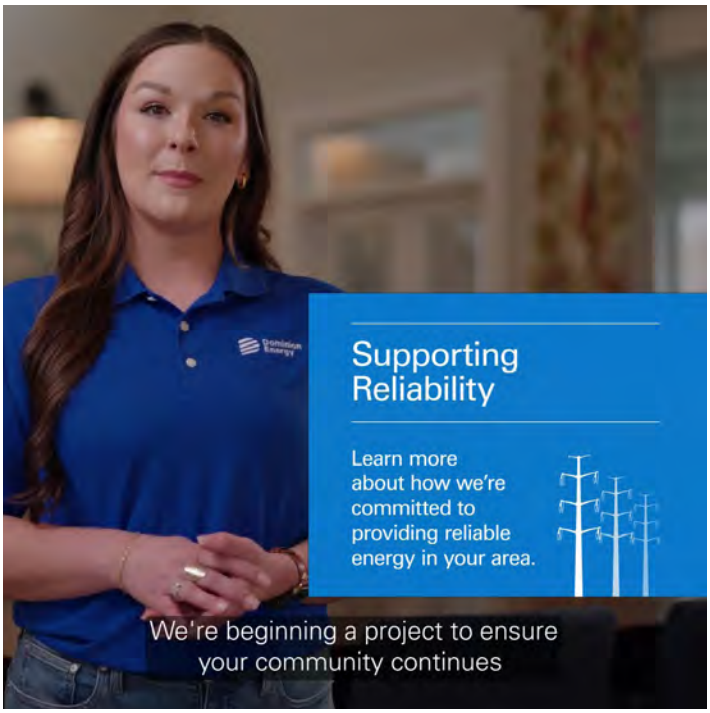
Dominion Energy Electric Transmission

Meadowville Electric Transmission Line Project

Social Videos

Announcement Video (Click to Play)



Pre-event Video (Click to Play)

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Dominion Energy Electric Transmission

Meadowville Electric Transmission Line Project

Social Videos

Post-Event Video (Click to Play)

charles ryan associates

Dominion Energy
Electric Transmission

Meadowville Electric
Transmission Line Project

Print Ads

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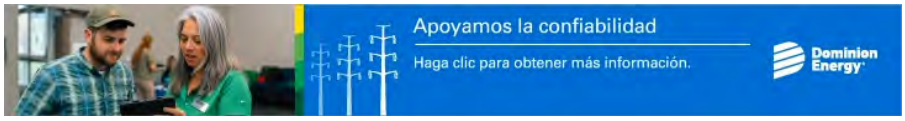
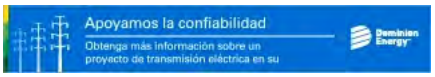
Dominion Energy Electric Transmission Contact:
Ann Gordon Mickel, Ann.Gordon.Mickel@dominionenergy.com

Dominion Energy Electric Transmission

Meadowville Electric Transmission Line Project

Announcement Display Spanish



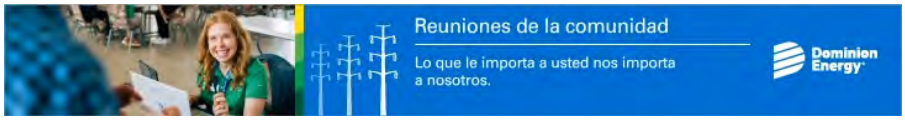


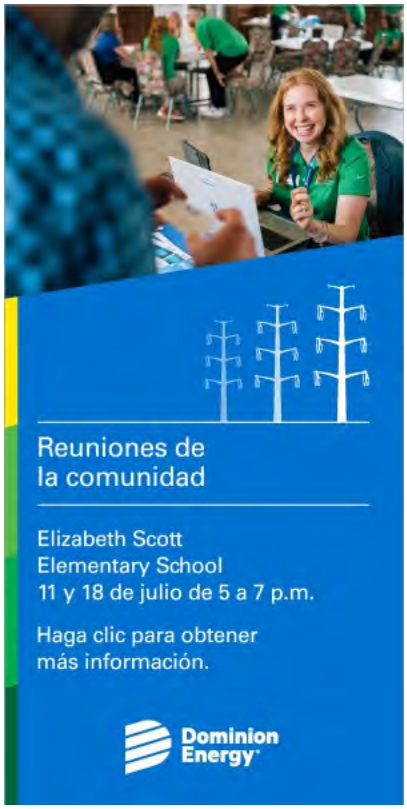
charles ryan associates

Dominion Energy
Electric Transmission

Meadowville Electric
Transmission Line Project

Pre-Event Display
Spanish



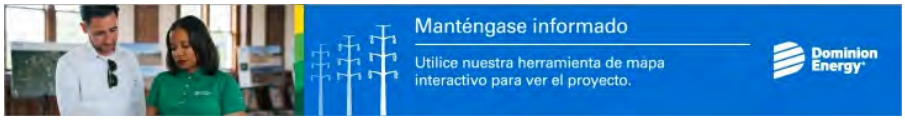


charles ryan associates

Dominion Energy
Electric Transmission

Meadowville Electric
Transmission Line Project

Post-Event Display
Spanish



charles ryan associates

Dominion Energy Electric Transmission

Meadowville Electric Transmission Line Project

Social Videos
Spanish

Announcement Video (Click to Play)

Pre-event Video (Click to Play)

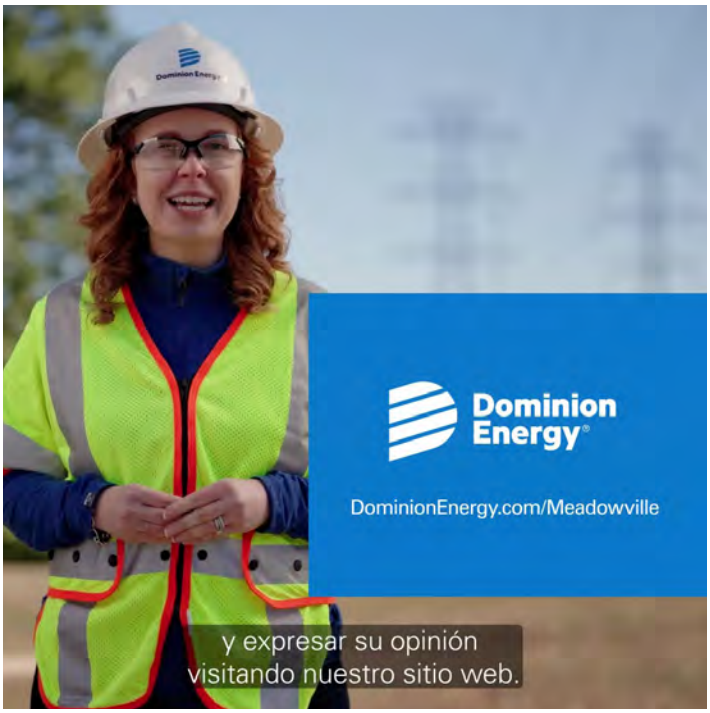
charles ryan associates

Dominion Energy
Electric Transmission

Meadowville Electric
Transmission Line Project

Social Videos
Spanish

Post-Event Video (Click to Play)



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: The Company did not identify any buildings that would have to be demolished, removed, or relocated to construct Components 1 or 2 of the proposed project. The Company did identify five buildings and one area of debris that would have to be demolished, removed, or relocated to construct the Project along the route for Component 3 within the rebuild scope. These buildings have been identified as sheds that are encroachments within the existing transmission line ROW and the Company will coordinate with the property owners 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: **Component 1: Bermuda Hundred and Sloan Drive**

No existing transmission rights-of-way are available to use for the Project. The Component 1 Proposed Route cuts the existing transmission line at Customer A's property and traverses the property line for approximately 1.2 miles to Sloan Drive Substation.

Component 2: Meadowville and White Mountain

No existing transmission rights-of-way are available to use for the Project. The Component 2 Proposed Route would extend from Sloan Drive Substation and follow along an existing sewer utility corridor before turning at Meadowville Technology Parkway and collocating along the road for 1.60 miles before terminating at Customer B's property.

Component 3: Sycamore Springs

Component 3 Proposed Route utilizes existing transmission rights-of-way for 2.54 miles until connecting to Component 2. The Proposed Route also follows the proposed electric transmission ROW corridor from Component 2.

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 Chesterfield County Zoning Ordinance and Comprehensive Plan were reviewed to evaluate the potential effect the proposed Meadowville 230 kV lines could have on future development.

The Project is located in the Meadowville Technology Park - Economic Development Opportunity Site which represents a sizeable opportunity for significant commercial development due to location, size, transportation and utility infrastructure. Meadowville Technology Park (MTP) is a 1,300-acre industrial development. Chesterfield County has completed the zoning, environmental and utility infrastructure studies that are necessary for potential industrial users to evaluate, and eventually use this, site. Chesterfield County has also constructed phase one of the utility infrastructure necessary to serve the property. MTP is a potential site for a wide range of businesses such as headquarters, distribution, information technology, office and research and development.

Additionally, in developing the Proposed Routes' alignment, the Company considered input from affected landowners and other stakeholders, particularly the data center developers and Chesterfield County EDA, to determine a feasible path for the transmission lines to cross through the planned developments adjacent to the proposed Meadowville 230 kV Transmission Project. Coordination with affected landowners and other stakeholders included the following:

Customer A: Customer A plans to construct a data center complex (Campus A) on its properties north of Bermuda Hundred Road. Based on the latest Campus A preliminary site design, the Component 1 Proposed Route, which was developed in coordination with Customer A, minimizes impacts to the planned building footprints by following the rear property line.

Customer B: Customer B plans to construct a data center complex (Campus B) on its properties on both sides of Meadowville Technology Parkway, north of Digital Drive. Based on the latest Campus B preliminary site design, the Component 2 Proposed Route, which was developed in coordination with Customer B, will not impact planned building footprints and will instead cross a constructed pond and follow existing utility corridors to the station.

Chesterfield County EDA: The Company coordinated with Chesterfield County Economic Development Authority to solicit feedback on its planned development, construction, and expansion plans in the Project area. The EDA owns several properties in the Project area and we worked collaboratively with their representatives to avoid impacts to their planned developments.

Chesterfield County: Chesterfield County's 2019 Comprehensive Plan currently has identified the Meadowville Technology Park area as an area suited for major industrial clients. Utility infrastructure needs have been reviewed for the area and the project's Proposed Routes are consistent with the needs of the Technology Park area.

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) Chesterfield County designates important farmland based on soil type. The Company coordinated with Chesterfield County Staff who concluded that the Project will not impact important farmlands.

(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) Dale's Pale Archaeological Historic District, Point of Rocks

(2) Dale's Pale Archaeological Historic District, Petersburg Battlefield II, First Deep Bottom Battlefield, Second Deep Bottom Battlefield, Point of Rocks/ Point of Rocks Park, Earthworks, Enon Park, Swift Creek Battlefield, Ware Bottom Church Battlefield, New Market Heights/ Chaffins Farm Battlefield

(3) None.

(4) Dale's Pale Archaeological Historic District

(5) None.

(6) None.

(7) None.

(8) None.

(9) None.

(10) None.

(11) Chesterfield County

(12) Nothing not previously listed above.

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 Company has reviewed the FAA's website[23] to identify airports within 10.0 nautical miles of the proposed Project. Based on this review, the following FAA-restricted airports are located within 10.0 nautical miles of the Project:

Airport Name	Approximate Distance and Direction from Proposed Project (nautical miles (approx.))	Use
Fort Gregg-Adams AHP	o 5.09 miles south of Enon Substation	Private
Fort Lee NR 1/HQS	o 5.93miles south of Enon Substation	Private
Defense Supply Center Richmond	o 7.9 miles northwest of Enon Substation	Private
Richmond International Airport	o 9.92 miles north of Enon Substation	Public

The Company reviewed the FAA website to identify public use airports, airports operated by a federal agency, or the U.S. Department of Defense, airports or heliports with at least one FAA-Approved instrument approach procedure, and public use or military airports under construction (FAA 2021). Based on this review, there are no airports, private airstrips, or heliports located within three nautical miles of the proposed alignment. As such, no height limitations are anticipated, and the Company is not expecting to need to file FAA Form 7460-1, Notice of Proposed Construction or Alteration.

[23] *See* https://oeaaa.faa.gov/oeaaa/external/portal.jsp and https://adip.faa.gov/agis/public/#/public.

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

I. Advise of any scenic byways that are in close proximity to or that will be crossed by the proposed transmission line and describe what steps will be taken to mitigate any visual impacts on such byways. Describe typical mitigation techniques for other highways' crossings.

Response: No scenic byways are in close proximity to the study area for the proposed Project, and no scenic byways would be crossed by the Meadowville 230 kV Transmission Project lines.[24] Perpendicular road crossings, which are preferred by VDOT and Chesterfield County, will be utilized at other road crossings to mitigate impacts.

[24] VDOT 2021 Virginia's Scenic Roads Map. Accessed: January 2024. Retrieved from: https://www.vdot.virginia.gov/media/vdotvirginiagov/travel-and-traffic/maps/16054_ScenicMap_front.pdf.

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

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

Response: The Company solicited feedback from Chesterfield County regarding the proposed Project. Below is a list of coordination that has occurred with municipal, state, and federal agencies:

- Coordination with the U.S. Army Corps of Engineers, DEQ, and VDOT will take place as appropriate to obtain necessary approvals for the Project.
- A letter dated July 15, 2024, was submitted to Chesterfield County to describe the Project and request comments. See Section V.D.
- A Stage I Pre-Application Analysis has been prepared and was submitted to VDHR on October 9, 2024. See Attachment 2.I.1 to the DEQ Supplement.
- On July 3, 2024, the Company solicited comments via letter from several federally recognized Native American tribes, including:

Name	Tribe
Chief Walt "Red Hawk" Brown	Cheroenhaka (Nottoway) Indian Tribe
Mary Frances Wilkerson	Cheroenhaka (Nottoway) Indian Tribe
Chief Stephen Adkins	Chickahominy Indian Tribe
Assistant Chief Reginald Stewart	Chickahominy Indian Tribe
Chief Gerald A. Stewart	Chickahominy Indian Tribe Eastern Division
Jessica Phillips	Chickahominy Indian Tribe Eastern Division
Dana Adkins	Chickahominy Tribe
Chief Mark Custalow	Mattaponi Tribe
Chief Diane Shields	Monacan Indian Nation
Chief Keith Anderson	Nansemond Indian Nation
Chief Lynette Allston	Nottoway Indian Tribe of Virginia
Ms. Beth Roach	Nottoway Indian Tribe of Virginia
Chief Robert Gray	Pamunkey Indian Tribe
Kendall Stevens	Pamunkey Indian Tribal Resource Office
Chief Charles (Bootsie) Bullock	Patawomeck Indian Tribe of Virginia
Chief G. Anne Richardson	Rappahannock Tribe
Assistant Chief	Rappahannock Tribe
Chief W. Frank Adams	Upper Mattaponi Indian Tribe
Leigh Mitchell	Upper Mattaponi Indian Tribe

Name	Tribe
Dr. Wenonah G. Haire	Catawba Indian Nation
Caitlin Rogers	Catawba Indian Nation
Katelyn Lucas	Delaware Nation, Oklahoma
Deborah Dotson	Delaware Nation, Oklahoma

A copy of the letter template and map is included as Attachment III.J.1.

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
DominionEnergy.com

July 3, 2024

Proposed Meadowville 230 kV Electric Transmission Project

Dear ,

Dominion Energy is dedicated to maintaining safe, reliable, and affordable electric service in the communities we serve. You are receiving this project announcement letter as part of our efforts to proactively communicate early with Tribal Nations who may have an interest in this area. With your unique perspective, you can help us better plan projects in their earliest stages. Please note, this letter is not a notification of formal government-to-government consultation from any state or federal agency. Dominion Energy has been and continues to be committed to creating and maintaining strong, open, supportive, and mutually beneficial relationships with Tribal Nations.

We are reaching out to you now as we have an upcoming project in Chesterfield County, Virginia, and you may have an interest in this area. New electric infrastructure is needed to meet the new power needs, maintain federal reliability rules, and keep the grid operating efficiently.

Enclosed is a project fact sheet for your reference. This project requires review by the Virginia State Corporation Commission (SCC). We are currently in the conceptual phase of the project. Providing your input now allows us to consider any concerns you may have as we work to meet the project's needs. 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 county and state historic, cultural, and scenic organizations, as well as Tribal Nations.

We value your input as we move through the planning process. If you would like any additional information, have questions, or would like to set up a meeting to discuss the project, please contact me by email at ann.gordon.mickel@dominionenergy.com or by calling 804-363-9783. You may also contact Ken Custalow, our Tribal Liaison Manager. He can be reached by email at ken.custalow@dominionenergy.com.

Sincerely,

Ann Gordon Mickel
Electric Transmission Communications

Enclosure: Project Fact Sheet
cc Ken Custalow

Meadowville 230 kV Electric Transmission Project

CHESTERFIELD COUNTY, VIRGINIA

Dominion Energy®
Powering Your Every Day.℠

OVERVIEW

At Dominion Energy, we are committed to providing the reliable, affordable, and increasingly clean energy that powers our customers every day. Eastern Chesterfield County is experiencing growing energy demands with the development of the Meadowville Technology Park. To address this growth, new electric transmission infrastructure investments are needed in the area.

The proposed Meadowville 230 kV Electric Transmission Project will allow Dominion Energy to meet the growing energy needs, continue providing reliable electric service, and maintain compliance with federal reliability standards. The project proposes rebuilding existing and extending new 230 kV electric transmission lines to connect to new substations to support developing infrastructure in Chesterfield County, Virginia.

QUICK FACTS

- **Location: Meadowville/Enon area of Chesterfield County.**
- **View and zoom in on project details by using our interactive mapping tool on our website.**
- **Attend our community meetings or contact our team to ask questions or share feedback.**

SCAN HERE TO LEARN MORE

Three key project components:

1. **Construct one substation and four switching stations in the general vicinity of Meadowville Technology Park.**
2. **Route and construct two new transmission corridors into the Meadowville Technology Park.**
3. **Rebuild approximately two miles of an existing transmission line in the area between our future Orchard Switching Station site and our existing Enon Substation. The new structures will allow us to bring a necessary source to the growth area while accommodating an additional circuit and maximizing our existing right of way.**

PROJECT SCHEDULE

Visit or project website for more detailed timelines on each phase of work

DATE	ACTIVITY
June 2024	Project announcement
July 11, 2024 July 18, 2024	Community Meetings
Late Summer 2024	File application with the Virginia State Corporation Commission (SCC) File Conditional Use Permit with Chesterfield County for the proposed Orchard Switching Station
Spring 2025	Anticipated SCC ruling
2025	• Permitting • Finalize engineering • Pre-construction outreach
2025	Construction to begin (will be completed in phases)
Late 2028	Construction complete, restoration begins

CONTINUED ON BACK

Meadowville 230 kV Electric Transmission Project CONTINUED

PROJECT OVERSIGHT AND APPROVAL

Dominion Energy has an obligation to serve and maintain reliability for all customers. Entities such as PJM – which operates the electric grid in 13 states – and NERC, North American Electric Reliability Corporation, oversee standards to ensure reliability and the prudency of investments by utility companies like Dominion Energy.

The SCC is the regulatory body with jurisdiction over electric transmission lines in Virginia. This project's proposed new 230 kV infrastructure will be reviewed by the SCC. Dominion Energy plans to file an application with the SCC in late summer 2024. Our SCC application and associated documents are made public upon filing and will be available for viewing. Visit the legal section of our project website for more details.

Although the SCC is the primary state agency reviewing and ultimately approving the project, there are additional permits needed, including a Conditional Use Permit from Chesterfield County for the proposed Orchard Switching Station, and other state and federal agencies.

DETERMINING THE ROUTES

Dominion Energy is currently in the initial stages of the siting and routing process. New line routes will need to connect the new substations to existing 230 kV transmission lines in the area.

The planning and evaluation of an electric transmission route and any potential alternatives are one of the most challenging things we do at Dominion Energy. We recognize the impact a new transmission line has on the community. Multiple factors are considered when deciding where to build a new line including, but not limited to, land use, historic and cultural resources, environmental impacts, wetlands, environmental justice, and tribal property. We consider these factors to avoid or limit community impact and take community feedback into our plans wherever possible.

Ultimately, the SCC must approve the project need and route(s) prior to construction.

YOUR FEEDBACK MATTERS

We want to hear your feedback on our project plans. The purpose of our public engagement is to share, listen and learn to ensure our projects are planned with our communities in mind. The SCC also considers public input in its review process. There are multiple ways to share your feedback with our team:

- Contact us by email at powerline@dominionenergy.com or by phone at 888-291-0190.
- Attend our community meetings.
- Invite us to your community or property.

FOR MORE INFORMATION

Visit our website at DominionEnergy.com/meadowville.

You may also contact us by sending an email to powerline@dominionenergy.com or calling 888-291-0190.

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

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

Response: On June 14, 2024, the Company solicited comments via letter from the community leaders, environmental groups, and business groups identified below. A copy of the letter template and map is included as Attachment III.K.1.

Name	Organization
Ms. Elizabeth S. Kostelny	Preservation Virginia
Ms. Eleanor Breen, PhD, RPA	Council of Virginia Archaeologists
Ms. Leighton Powell	Scenic Virginia
Ms. Elaine Chang	National Trust for Historic Preservation
Mr. John McCarthy	Piedmont Environmental Council
Ms. Julie Bolthouse	Piedmont Environmental Council
Mr. Thomas Gilmore	American Battlefield Trust
Mr. Jim Campi	American Battlefield Trust
Mr. Max Hokit	American Battlefield Trust
Mr. Steven Williams	Colonial National Historical Park
Dr. Cassandra Newby-Alexander	Norfolk State University
Mr. Roger Kirchen, Archaeologist	Virginia Department of Historic Resources
Ms. Adrienne Birge-Wilson	Virginia Department of Historic Resources
Mr. Dave Dutton	Dutton and Associates, LLC

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

June 14, 2024

Proposed Meadowville 230 kV Electric Transmission Project

Dear _____,

At Dominion Energy, we are dedicated to finding the best solution for our long-term needs in the communities we serve. As a valued stakeholder with a vested interest in the community, we invite you to participate in the development of a new electric transmission project in Chesterfield County, Virginia.

Eastern Chesterfield County is experiencing growing energy demands as the Meadowville Technology Park is drawing new business to the area. New electric infrastructure is needed to meet the new power needs, maintain federal reliability rules, and keep the grid operating efficiently.

This project is currently in the conceptual phase, and we are seeking your input prior to filing an application with the Virginia State Corporation Commission (SCC) in late summer 2024. Doing so allows us to hear any concerns you may have as we work to meet the project's needs. 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.

Enclosed, you will find a project fact sheet. Please visit the project website at DominionEnergy.com/meadowville for more project information.

We appreciate your assistance as we move through the planning process. On July 11 and July 18, we will host community meetings at Elizabeth Scott Elementary School from 5-7 p.m. During these meetings, you can meet the project team and have your questions answered. Please provide your comments by July 25, 2024, so we have adequate time to review and consider your comments in our project design.

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 sending an email to ann.gordon.mickel@dominionenergy.com or calling 804-363-9783.

Sincerely,

Ann Gordon Mickel
Communications Consultant
The Electric Transmission Project Team

Enclosure: Project Fact Sheet

Meadowville 230 kV Electric Transmission Project

CHESTERFIELD COUNTY, VIRGINIA

Dominion Energy®
Powering Your Every Day.℠

OVERVIEW

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CONTINUED ON BACK

Meadowville 230 kV Electric Transmission Project CONTINUED

PROJECT OVERSIGHT AND APPROVAL

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DETERMINING THE ROUTES

Dominion Energy is currently in the initial stages of the siting and routing process. New line routes will need to connect the new substations to existing 230 kV transmission lines in the area.

The planning and evaluation of an electric transmission route and any potential alternatives are one of the most challenging things we do at Dominion Energy. We recognize the impact a new transmission line has on the community. Multiple factors are considered when deciding where to build a new line including, but not limited to, land use, historic and cultural resources, environmental impacts, wetlands, environmental justice, and tribal property. We consider these factors to avoid or limit community impact and take community feedback into our plans wherever possible.

Ultimately, the SCC must approve the project need and route(s) prior to construction.

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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: The permits or special permissions that are likely to be required for the proposed Project are listed below.

Potential Permits

Activity	Potential Permit	Agency/Organization
Impacts to wetlands and other waters of the U.S.	Nationwide Permit 18 or 57	U.S. Army Corps of Engineers
Impacts to state surface waters	Virginia Water Protection Permit	Virginia Department of Environmental Quality
Discharge of stormwater from construction	Construction General Permit	Virginia Department of Environmental Quality
Work within VDOT rights-of-way	Land Use Permit	Virginia Department of Transportation

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 associated with high voltage power lines is best estimated by field levels calculated at annual average loading. For any day of the year, the EMF levels associated with average conditions provide the best estimate of potential exposure. Maximum (peak) values are less relevant as they may occur for only a few minutes or hours each year.

This section describes the levels of EMF associated with the proposed transmission lines. EMF levels are provided for future (2029) annual average and maximum (peak) loading conditions.

Proposed Project – Historical Average Loading

Line No.	Historical Average Loading (Amps)
2049	170

Proposed Project – Historical Average Loading (2023-2024)				
	Left Edge Per II.A.5 Drawing		Right Edge Per II.A.5 Drawing	
Attachment	Electric Field (kV/m)	Magnetic Field (mG)	Electric Field (kV/m)	Magnetic Field (mG)
II.A.5.a	0.853	5.634	0.664	6.343

Proposed Project – Projected Average Loading in 2029

EMF levels were calculated for the proposed Project at the ***projected average*** load condition as shown in the table below and at a maximum operating voltage of 242 kV when supported on the proposed Project structures. See Attachments II.A.5.b and II.A.5.c.

Line No.	Projected Average Loading (Amps)
2049	527
2350	110
2360	1747

Line No.	Projected Average Loading (Amps)
2361	597
2362	595
2363	289
2364	244
2365	511
2366	301
2367	301
211	400
228	660
2373[25]	955
2374[26]	481

These field levels were calculated at mid-span where the conductors are closest to the ground at a projected average load operating temperature. Values were calculated under the assumption that the current travels in the same direction for all lines.

EMF levels at the edge of the rights-of-way for the proposed Project at the projected average loading for a typical span:

Proposed Project – Projected Average Loading (2029)				
	Left Edge Per II.A.5 Drawing		**Right Edge Per II.A.5 Drawing**	
Attachment	Electric Field (kV/m)	Magnetic Field (mG)	Electric Field (kV/m)	Magnetic Field (mG)
II.A.5.b	0.296	62.029	0.337	25.101
II.A.5.c	0.975	50.29	0.709	35.818

Proposed Project – Projected Peak Loading in 2029

EMF levels were calculated for the proposed Project at the ***projected peak*** load condition as shown in the table below and at a maximum operating voltage of 241.5 kV when supported on the proposed Project structures. See Attachments II.A.5.a and II.A.5.b.

[25] *See, supra* n. 24.
[26] *See id.*

Line No.	Projected Peak Loading (Amps)
2049	879
2350	184
2360	2912
2361	994
2362	992
2363	481
2364	407
2365	852
2366	502
2367	502
211	667
228	1101
2373	1592
2374	801

These field levels were calculated at mid-span where the conductors are closest to the ground at a projected peak load operating temperature. Values were calculated under the assumption that the current travels in the same direction for all lines.

EMF levels at the edge of the rights-of-way for the proposed Project at the projected peak loading for a typical span:

Proposed Project – Projected Peak Loading (2029)				
	Left Edge Per II.A.5 Drawing		**Right Edge Per II.A.5 Drawing**	
Attachment	Electric Field (kV/m)	Magnetic Field (mG)	Electric Field (kV/m)	Magnetic Field (mG)
II.A.5.b	0.708	144.080	0.733	57.696
II.A.5.c	0.992	90.231	0.729	64.623

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 few decades are the foundation of the Company's opinion that no adverse health effects are anticipated to result from the operation of the proposed Project. Each of these panels has evaluated the scientific research related to health and extremely low frequency ("ELF") EMF, also referred to as power-frequency (50/60 Hertz ("Hz")) 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 on biological responses of high, short-term EMF exposure not typically found in people's day-to-day lives, while others evaluate the effects of common, low 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 100 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 scientific agencies to identify, review, and summarize the results of this large and diverse research.

The reviews of ELF EMF-related biological and health research have been conducted by numerous scientific and health agencies, including, for example, 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 Health, Environmental and Emerging Risks ("SCHEER") (formerly 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, 2022; ICES, 2019; SCHEER, 2023). 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 and 2023 reports by SCENIHR and SCHEER, respectively, and annual reviews published by SSM (i.e., for the years 2015 through 2022). 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.

WHO has recommended that countries adopt recognized international standards published by ICNIRP and ICES. Typical levels of EMF from Dominion Energy Virginia's high voltage power lines outside its property and rights-of-way are far below the screening reference levels of EMF recommended for the general public and still lower than exposures equivalent to restrictions to limits on fields within the body (ICNIRP, 2010; ICES, 2019).

Thus, based on the conclusions of scientific reviews and the levels of EMF associated with the proposed Project, the Company has determined that no adverse health effects are anticipated to result from the operation of the proposed Project.

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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."[27]

The continuing scientific research on ELF 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:

- WHO, which published one of the most comprehensive and detailed reviews of the relevant scientific peer-reviewed literature in 2007;
- SCHEER (formerly SCENIHR), a committee of the European Commission, which published its assessments in 2009, 2015 and 2023;
- The SSM, which has published annual reviews of the relevant peer-reviewed scientific literature since 2003, with its most recent review published in 2022; 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

[27] *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). In their 2023 Preliminary Opinion providing an update on the potential health effects of exposure to electromagnetic fields in the 1 Hz to 100 kilohertz ("kHz") range, SCHEER concluded that "overall, there is weak evidence concerning the association of ELF-MF [magnetic field] exposure with childhood leukemia" (SCHEER 2023, p. 2).

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 March 2024, provide additional evidence and contribute to clarification of previous findings. Overall, new research studies have not provided evidence to alter the previous conclusions of scientific and health organizations, including WHO and SCENIHR.

Epidemiologic studies of EMF and childhood leukemia published during the above referenced period 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 tumors, 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 and after) and reported no overall associations between exposure categories and childhood leukemia for the later periods (1980 and after), 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 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 Quebec. 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 exposure to high calculated magnetic fields (≥ 0.4 microtesla ["μT"]) (i.e., ≥ 4 milligauss ["mG"]). 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.

- Amoon et al. (2022) conducted a pooled analysis of four studies of residential exposure to magnetic fields and childhood leukemia published following a 2010 pooled analysis by Kheifets et al. (2010). The study by Amoon et al. (2022) compared the exposures of 24,994 children with leukemia to the exposures of 30,769 controls without leukemia in California, Denmark, Italy, and the United Kingdom. Exposure was assessed by measured or calculated magnetic fields at their residences. The exposure of these two groups to magnetic fields were found not to significantly differ. A decrease in the combined effect estimates in epidemiologic studies was observed over time, and the authors concluded that their findings, based on the most recent studies, were "not in line" with previous pooled analyses that reported an increased risk of childhood leukemia.

- Brabant et al. (2022) performed a literature review and meta-analysis of studies of childhood leukemia and magnetic-field exposure. The overall analysis included 21 epidemiologic studies published from 1979 to 2020. The authors reported a statistically significant association, which they noted was "mainly explained by the studies conducted before 2000." The authors reported a statistically significant association between childhood leukemia and measured or calculated magnetic-field exposures > 0.4 μT (4 mG); no statistically significant overall associations were reported between childhood leukemia and lower magnetic-field exposure (< 0.4 μT [4 mG]), residential distance from power lines, or wire coding configuration. An association between childhood

leukemia and electric blanket use was also reported. The overall results were likely influenced by the inclusion of a large number of earlier studies; 10 of the 21 studies in the main analysis were published prior to 2000. Studies published prior to 2000 included fewer studies deemed to be of higher study quality, as determined by the authors, compared to studies published after 2000.

- Nguyen et al. (2022) investigated whether potential pesticide exposure from living in close proximity to commercial plant nurseries confounds the association between magnetic-field exposure and childhood leukemia development reported within the California study population previously analyzed in Crespi et al. (2016) and Kheifets et al. (2017). The authors in Nguyen et al. (2022) noted that while the association between childhood leukemia and magnetic-field exposure was "slightly attenuated" after adjusting for nursery proximity or when restricting to subjects living > 300 meters from nurseries, their results "do not support plant nurseries as an explanation for observed childhood leukemia risks." The authors further noted that close residential proximity to nurseries may be an independent risk factor for childhood leukemia.

- Guo et al. (2023) reported conducting a systematic review and meta-analysis of studies published from 2015 to 2022 that evaluated associations between magnetic-field exposure and childhood leukemia development. Three meta-analyses were conducted to evaluate the relationship using different exposure metrics. In the first meta-analysis, magnetic-field levels ranging from 0.4 μT (4 mG) to 0.2 μT (2 mG) were associated with a statistically significant reduced risk of childhood leukemia development (i.e., a protective association). In the second meta-analysis, exposure was based on wiring configuration codes, and the reported pooled relative risk estimates demonstrated a statistically significant increased association with childhood leukemia. In the third meta-analysis, exposure was categorized into groupings of magnetic-field strength; no statistically significant associations with childhood leukemia were reported for any of the groupings, including for magnetic-field levels ≥ 0.4 μT (4 mG). There are significant limitations of this study that prevent meaningful interpretations of the results. Most of the analyses of magnetic fields did not state whether measurements and calculations were included, and the authors provided no description of the methods used for their analyses, no data tables to support their findings, and no references to the number and type of studies included. In fact, much of the article's introduction discusses ionized radiation. The authors also do not report relevant metrics for evaluating meta-analyses such as study heterogeneity.

- Malagoli et al. (2023) examined associations between exposure to magnetic fields from high voltage power lines (≥ 132 kV) and childhood leukemia development in a case-control study of children in Italy. The study included 182 cases diagnosed with childhood leukemia between 1998 and 2019 and 726 controls matched based on age, sex, and Italian province. The authors assessed magnetic-field exposure by calculating the distance from each participant's

residence to the nearest high voltage power line and classifying that distance into one of three exposed categories (participants living < 100 meters, 100 to < 200 meters, or 200 to < 400 meters from the power lines) or as unexposed (participants living ≥ 400 meters from the power lines). The authors reported a non-statistically significant association between childhood leukemia and a residence distance of <100 meters; no statistically significant associations were reported for any distance, including when stratifying by age (< 5 or ≥ 5 years) or when restricting to acute lymphoblastic leukemia (ALL).

- Nguyen et al. (2023) extended their previous investigation (Nguyen et al., 2022) into whether pesticide exposure was an independent risk factor or confounder for childhood leukemia in the presence of magnetic-field exposure from high voltage power lines by examining the potential impact of specific pesticide exposure factors (*e.g.*, intended use, chemical class, active ingredient). The authors found no statistically significant associations between distance to high voltage power lines or magnetic-field exposure and childhood leukemia, including when adjusting for pesticide exposures. Several of the examined pesticides were determined by the authors to be potential independent risk factors for childhood leukemia.

- Zagar et al. (2023) examined the relationship between magnetic fields and childhood cancers, including childhood leukemia, in Slovenia. Cancer cases, including 194 cases of leukemia, were identified from the Slovenian Cancer Registry; cases were then classified into one of five calculated magnetic-field exposure levels (ranging from < 0.1 μT [< 1 mG] to ≥ 0.4 μT [≥ 4 mG]) based on residential distance to high voltage (*e.g.*, 110-kV, 220-kV, and 400-kV) power lines. The authors reported that less than 1% of Slovenian children and adolescents lived in an area near high voltage power lines. No differences in the development of childhood cancers, including leukemia, brain tumors, or all cancers combined, were reported across the five exposure categories.

- Crespi et al. (2024) assessed the association between residential proximity to electricity transformers in multi-story residential buildings and childhood leukemia development in the International Transformer Exposure study. Participants were required to live in an apartment building that contained a built-in transformer; exposure was estimated using the participants' apartment location relative to the transformer and categorized as high exposure (located above or adjacent to the transformer), intermediate exposure (located on the same floor as apartments in the high exposure category), or unexposed (all other apartments). In the pooled analyses of five countries' data, a total of 74 cases and 20,443 controls were included; 18 of the 74 cases were identified in the intermediate or high exposure categories. No significant associations were reported between proximity to residential transformers and childhood leukemia. Sensitivity analyses performed using the data from one of the five countries (Finland) where a cohort study design was used, also reported no significant associations. The authors concluded that the evidence for an elevated risk of childhood leukemia from proximity to residential transformers was "weak."

- Duarte-Rodríguez et al. (2024) conducted a population-based case-control study to examine the geographical distribution of childhood ALL cases in Mexico City, Mexico. Cases and controls were geolocated using the most recent residential address, and a spatial scan statistic was used to detect spatial clusters of cancer cases. The authors identified eight spatial clusters of cases, representing nearly 40% of all cases included in the study (n=1,054 cases). The authors noted that six of the eight spatial clusters were located in proximity to high voltage power lines and high voltage electric installations (distances not specified), and that the remaining two clusters were located near former petrochemical industrial facility sites. Since the study did not directly assess magnetic-field exposure and made no conclusions about magnetic-field exposure and cancer development, this study adds little value to the existing literature regarding a potential association between exposure to ELF EMF and childhood leukemia development.

- Malavolti et al. (2024) examined the association between magnetic-field exposure from transformer stations and childhood leukemia in the same Italian study population as Malagoli et al. (2023). Magnetic-field exposure was estimated based on residential distance to the nearest transformer station, and participants were then categorized as exposed or unexposed using two different distance cut-points: residing within a radius of 15 or 25 meters from the transformer station (exposed); residing ≥ 15 meters or ≥ 25 meters from the transformer station (unexposed). No significant associations were reported for all leukemias, or ALL specifically, when either distance cut-point was used, and in fact no association at all (an odds ratio = 1.0) was observed when the more stringent cut-point of 15 meters was used. In sub-analyses that stratified by participant age (< 5 years vs. ≥ 5 years), no significant associations were reported for either age category.

  Epidemiologic studies of EMF and neurodegenerative diseases published during the above referenced period 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 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[28] 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

[28] 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).

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 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.

- Grebeneva et al. (2021) evaluated disease rates among electric power company workers in the Republic of Kazakhstan. The authors included three groups of "exposed" workers who "were in contact with equipment generating [industrial frequency EMF]" (a total of 161 workers), as well as 114 controls "who were not associated with exposure to electromagnetic fields." Disease rates were assessed "based on analyzing the sick leaves of employees" from 2010 to 2014 and expressed as "incidence rate per 100 employees." The authors reported a higher "incidence rate" of "diseases of the nervous system" in two of the exposed categories compared to the non-exposed group. No meaningful conclusions from the study could be drawn, however, because no specific diagnoses within "diseases of the nervous system" were identified in the paper and no clear description was provided on how the authors defined and calculated "incidence rate" for the evaluated conditions. In addition, no measured or calculated magnetic-field levels were presented by the authors.

- Filippini et al. (2021) conducted a meta-analysis to assess the dose-response relationship between residential exposure to magnetic fields and ALS. The

authors identified six ALS epidemiologic studies, published between 2009 and 2020, that assessed exposure to residential magnetic fields by either distance from overhead power lines or magnetic-field modeling. They reported a decrease in risk of ALS in the highest exposure categories for both distance-based and modeling-based exposure estimates. The authors also reported that their dose-response analyses "showed little association between distance from power lines and ALS"; the data were too sparse to conduct a dose-response analysis for modeled magnetic-field estimates. The authors noted that their study was limited by small sample size, "imprecise" exposure categories, the potential for residual confounding, and by "some publication bias."

- Jalilian et al. (2021) conducted a meta-analysis of occupational exposure to ELF magnetic fields and electric shocks and development of ALS. The authors included 27 studies from Europe, the United States, and New Zealand that were published between 1983 and 2019. A weak, statistically significant association was reported between magnetic-field exposure and ALS, and no association was observed between electric shocks and ALS. Indications of publication bias and "moderate to high" heterogeneity were identified for the studies of magnetic-field exposure and ALS, and the authors noted that "the results should be interpreted with caution."

- Goutman et al. (2022) examined occupational exposures, including "electromagnetic radiation" exposure, and associations with ALS in a case-control study of Michigan workers across various industries. The study included 381 cases diagnosed with ALS, all patients at the University of Michigan's Pranger ALS clinic, and 272 controls recruited from an online database for the University of Michigan. Participants were enrolled from 2010 to 2020 and completed a written survey of their work history and occupational exposures to nine exposure categories, including electromagnetic fields, particulate matter (PM), and pesticides. Exposure to electromagnetic fields was ascertained with a binary question asking whether they were "[e]xposed to power lines, transformation [*sic*] stations or other EM [electromagnetic radiation]?" The analysis was adjusted for age, sex, and military service. No association was observed between electromagnetic field exposure and ALS, while exposure to PM, pesticides, and metals, among others, were determined by the authors to be "associated with an increased ALS risk in this cohort."

- Sorahan and Nichols (2022) investigated magnetic-field exposure and mortality from MND in a large cohort of employees of the former Central Electricity Generating Board of England and Wales. The study included nearly 38,000 employees first hired between 1942 and 1982 and still employed in 1987. Estimates of exposure magnitude, frequency, and duration were calculated using data from the power stations and the employees' job histories, and were described in detail in a previous publication (Renew et al., 2003). Mortality from MND in the total cohort was observed to be similar to national rates. No statistically significant dose-response trends were observed with lifetime, recent, or distant magnetic-field exposure; statistically significant associations

were observed for some categories of recent exposure, but not for the highest exposure category.

- Duan et al. (2023) conducted a meta-summary of ALS and exposure to magnetic fields, which was 1 of 22 non-genetic risk factors evaluated across 67 studies for its association with ALS. Six of the 67 studies examined magnetic-field exposure and associations with ALS; of the six studies identified, the authors included four case-control studies and one cohort study in their meta-analysis. Pooling results from these studies resulted in significant increased odds of ALS among individuals with higher (but undefined) exposure to magnetic fields. However, this pooled odds ratio for magnetic-field exposure (1.22) was below the minimum odds ratio threshold of 1.3 set by the authors as the criterion for defining an exposure as an ALS risk factor. In addition, the authors identified "substantial" heterogeneity between studies evaluating magnetic-field exposure and ALS.

- In a subsequent publication of the same study as Goutman et al. (2022), Goutman et al. (2023) assessed the potential for the same nine exposure categories, including "electromagnetic radiation" exposure, to be risk factors for ALS progression, including survival and onset segment (bulbar, cervical, lumbar). Electromagnetic field exposure was not significantly associated with ALS survival or with bulbar onset compared to lumbar, but was significantly associated with cervical onset compared to lumbar. It is worth noting that an association with cervical onset compared to lumbar was observed in the majority (7/9) of the exposure categories. The authors make no concluding statements on electromagnetic field exposure and ALS and instead emphasize that occupational pesticide exposure and working in military operations were significantly associated with worse ALS survival.

- Saucier et al. (2023) carried out three systematic reviews of studies that evaluated relationships between urbanization, air pollution, and water pollution, and ALS development. The authors identified five studies that assessed whether electromagnetic fields (of varying frequencies) and high voltage infrastructure were significant urbanization risk factors for ALS, but make no conclusion about magnetic-field exposure and ALS development based on these studies, therefore adding little value to the existing literature.

- Vasta et al. (2023) examined the relationship between residential distance to power lines and ALS development in a cohort study of 1,098 participants in Italy. The authors reported no differences in the age of ALS onset or ALS progression rate between low-exposed and high-exposed participants based on residential distance to power lines at the time of the participants' diagnosis. Similarly, no differences were observed when exposure was based on residential distance to repeater antennas.

- Vitturi et al. (2023) conducted a systematic review and meta-analysis of case-control studies examining potential occupational risk factors related to multiple

sclerosis, including solvents, mercury, pesticides, and low-frequency magnetic fields. The authors included 24 studies in their review, but only one of the included studies investigated exposure to magnetic fields (Pedersen et al., 2017, discussed above), thereby adding little new information to the existing body of research.

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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 overhead Proposed Route for the proposed Meadowville 230 kV Electric Transmission Project lines and the location of the proposed Bermuda Hundred Station, Sloan Drive Station, Meadowville Station, White Mountain Substation, and Sycamore Springs Station is provided in Attachment V.A. A written description of the Proposed Routes is as follows:

Proposed Routes

Component 1 Proposed Route

The Component1 Proposed Route is approximately 1.2 miles in length and is located entirely within Chesterfield County, Virginia. The Component 1 Proposed Route begins at the cut-in location just west of Discovery Road on Line #2050 and just north of structure #2050/13 and extends west along the edge of Customer A's proposed development to the proposed Bermuda Hundred Station, and further west from the Bermuda Hundred Station to the proposed Sloan Drive Station. This route is located entirely on the Customer's parcel.

For the Component 1 Proposed Route, the minimum structure height is 110 feet, the maximum structure height is 120 feet, and the average structure height is 118 feet, based on preliminary conceptual design, not including foundation reveal, and subject to change based on final engineering design.

Component 2 Proposed Route

The Component 2 Proposed Route is approximately 1.6 miles in length for Line #2363 and approximately 1.4 miles in length for Line #2364, and is located entirely within Chesterfield County, Virginia. Line #2363 and #2364 extend south from the Sloan Drive Station and then heads west perpendicularly crossing N Enon Church Road and over undeveloped forested land owned by EDA for 0.88 mile until they reach Meadowville Technology Parkway. From Meadowville Technology Parkway, Line #2363 runs adjacent to the Parkway for 0.3 mile before turning west across Customer B and Chesterfield EDA property for 0.4 mile until reaching Meadowville Station. Line #2364 continues north along Meadowville Technology Parkway, where Line #2363 turns west to the Station, and continues another 0.17 mile north to White Mountain Station. Line #2365 connects White Mountain Station to Meadowville Station by following the same 0.17 mile corridor south and then 0.4 mile west to Meadowville Station.

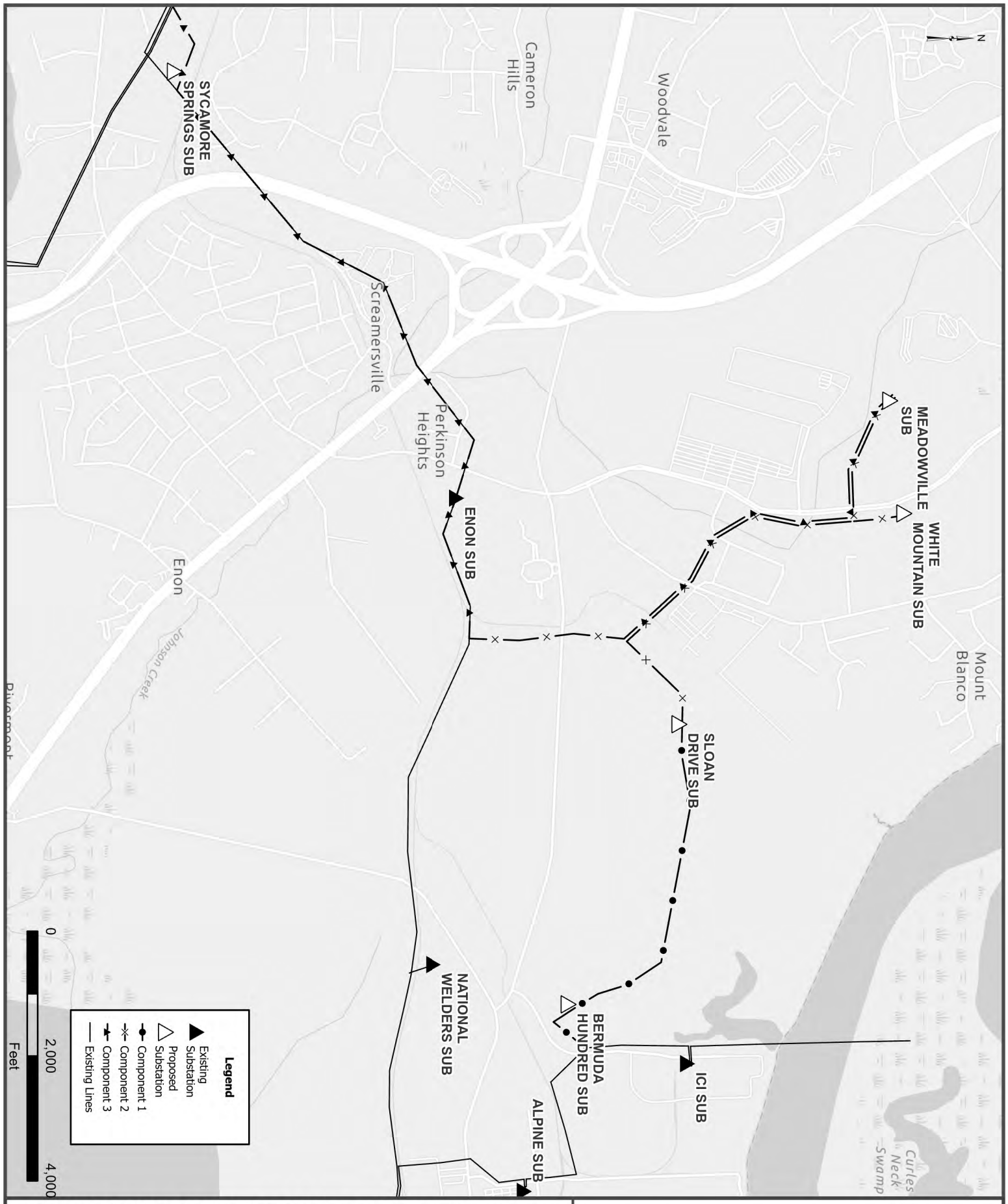
For the Component 2 Proposed Route, the minimum structure height is 110 feet, the maximum structure height is 120 feet, and the average structure height is 115

feet, based on preliminary conceptual design, not including foundation reveal, and subject to change based on final engineering design.

Component 3 Proposed Route

The Component 3 Proposed Route is approximately 4.23 miles in total length and is located entirely within Chesterfield County, Virginia. Looping Lines #211, #228, and #2049 into Sycamore Springs Station, on property owned by Chesterfield County, and extending Line #2360 and Line #2406 (formerly Line #2049) north out of Sycamore Springs Station, which will require a rebuild of the existing transmission line within existing electric transmission right of way to Enon Substation. The existing right-of-way crosses one CSX railroad, Route I-295, E. Hundred Road, and North Enon church Road before reaching the existing Enon Substation. Line #2361 and #2362 continue from Enon Substation along the existing corridor for 0.43 mile before turning north into a new greenfield ROW corridor on Chesterfield County EDA and Customer A property for 0.47 mile to converge with Component 2. The Component 3 Proposed Route expands the corridor for Component 2 an additional 60 feet, widening the total ROW to 160 feet from the proposed ROW colocation point just south of Sloan Drive Substation, heading west and perpendicularly crossing North Enon Church Road and traversing undeveloped forested land owned by Chesterfield EDA for approximately 0.55 mile until they reach Meadowville Technology Parkway. From Meadowville Technology Parkway, Lines #2361 and #2362 run adjacent to the Parkway for 0.3 mile before turning west across Customer B and Chesterfield EDA property for 0.4 mile until reaching Meadowville Station.

For the Component 3 Proposed Route, the minimum structure height is 85 feet, the maximum structure height is 120 feet, and the average structure height is 113 feet, based on preliminary conceptual design, not including foundation reveal, and subject to change based on final engineering design.



MEADOWVILLE 230 KV ELECTRIC TRANSMISSION PROJECT
CHESTERFIELD COUNTY, VIRGINIA

ATTACHMENT V.A. NOTICE MAP

Dominion Energy®

TIMMONS GROUP

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: Shortly after filing, the Application will be made available electronically for public inspection at: www.dominionenergy.com/meadowville.

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
Virginia Department of Environmental Quality
Office of Environmental Impact Review
1111 East Main Street, Suite 1400
Richmond, Virginia 23219

Ms. Michelle Henicheck
Virginia Department of Environmental Quality
Office of Wetlands and Streams
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Gloucester, Virginia 23061

Ms. Regena Bronson
U.S. Army Corps of Engineers
Fredericksburg Field Office
10300 Spotsylvania Parkway, Suite 230
Fredericksburg, VA 22408.

Ms. Arlene Fields Warren
Virginia Department of Health
Office of Drinking Water
109 Governor Street
Richmond, Virginia 23219

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

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

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

Mr. Dale Totten
District Engineer
Virginia Department of Transportation, Richmond District
2430 Pine Forest Drive
South Chesterfield, Virginia 23834

Mr. Kevin Gregg
Chief of Maintenance and Operations for Central Office
Virginia Department of Transportation
1401 E. Broad Street
Richmond, Virginia 23219

Dr. Joseph P. Casey
County Administrator
P.O.Box 40
Chesterfield, VA 23832

Mr. Andrew Gillies, AICP
Director, Planning
9800 Government Center Parkway
Chesterfield, VA 23832

Mr. Jim Ingle
Board of Supervisors
P.O Box 40
Chesterfield, VA 23832

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, a letter dated July 15, 2024, was delivered to Dr. Joseph Casey, Administrator of Chesterfield County, where the Project is located. The letter stated the Company's intention to file this Application and invited the County to consult with the Company about the Project. This letter is included as Attachment V.D.

Dominion Energy Virginia
5000 Dominion Boulevard, 3rd Floor SW
Glen Allen, VA 23060

July 15, 2024

Dr. Joseph P. Casey
Chesterfield County Administrator
PO Box 40
Chesterfield, VA 23832

RE: Dominion Energy Virginia's Proposed Meadowville 230 kV Electric Transmission Project in Chesterfield County, Virginia.
Notice Pursuant to Va. Code § 15.2-2202 E

Dear Dr. Casey,

In order to interconnect and provide service requested by two data center customers in the Chesterfield Load Area and to maintain compliance with mandatory NERC Reliability Standards, Dominion Energy Virginia (the "Company") is proposing a set of projects, collectively known as the Meadowville 230 kV Electric Transmission Project ("the Project") entirely in Chesterfield County, Virginia. Specifically, the Company is proposing to:

- Construct four new switching stations (Bermuda Hundred, Sloan Drive, Sycamore Springs, and Meadowville) and one new substation (White Mountain);
- Cut existing Line #2050 and loop into the Bermuda Hundred Switching Station ("Bermuda Hundred Station") with two (2) 230 kV single circuits extending from the Bermuda Hundred Station to the Sloan Drive Switching Station ("Sloan Drive Station"), Line # 2366 and Line #2367.
- Cut and tie existing Line #211 and Line #228 into Sycamore Springs Station (formerly known as "Orchard Station") and extend a new 230 kV line (Line #2360) that will provide a third source to Bermuda Hundred and Sloan Drive Stations. Existing Line #2049 will also be rebuilt on new, double circuit monopoles and reconductored on the same structures as the new proposed Line #2360 from Sycamore Springs Station to Enon Substation to mitigate the need for expanded rights-of-way in existing transmission corridors.
- Cut the proposed Line #2360 (Sycamore Springs Station – Sloan Drive Station) and extend it to the proposed Meadowville Station resulting in Line # 2361.
- Construct a new 230 kV line (Line #2365) from the Meadowville Station to the White Mountain Substation. Another new 230 kV line (Line #2364) will then travel southeast from the White Mountain Substation to the Sloan Drive Station.
- Construct a new 230 kV line (Line #2362) from the Enon Substation to the Meadowville Station as well as extend an additional 230 kV line (Line #2363) from Sloan Drive Station to Meadowville Station.

The Company is preparing an application for a certificate of public convenience and necessity ("CPCN") from the State Corporation Commission of Virginia (the "Commission"). In advance of filing an application for a CPCN from the Commission, 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. Once filed, the application will be available for review on the Company's website at http://www.dominionenergy.com/meadowville.

Dominion Energy Virginia
5000 Dominion Boulevard, 3rd Floor SW
Glen Allen, VA 23060

Enclosed is a Project Overview Map depicting the substations and the proposed routes for the Meadowville 230 kV Electric Transmission Project, as well as the general Project location. Please note that the Project Overview Map and route depictions depicted therein are preliminary in nature and subject to final engineering. All final materials, including maps, will be available in the Company's CPCN filing to the Commission.

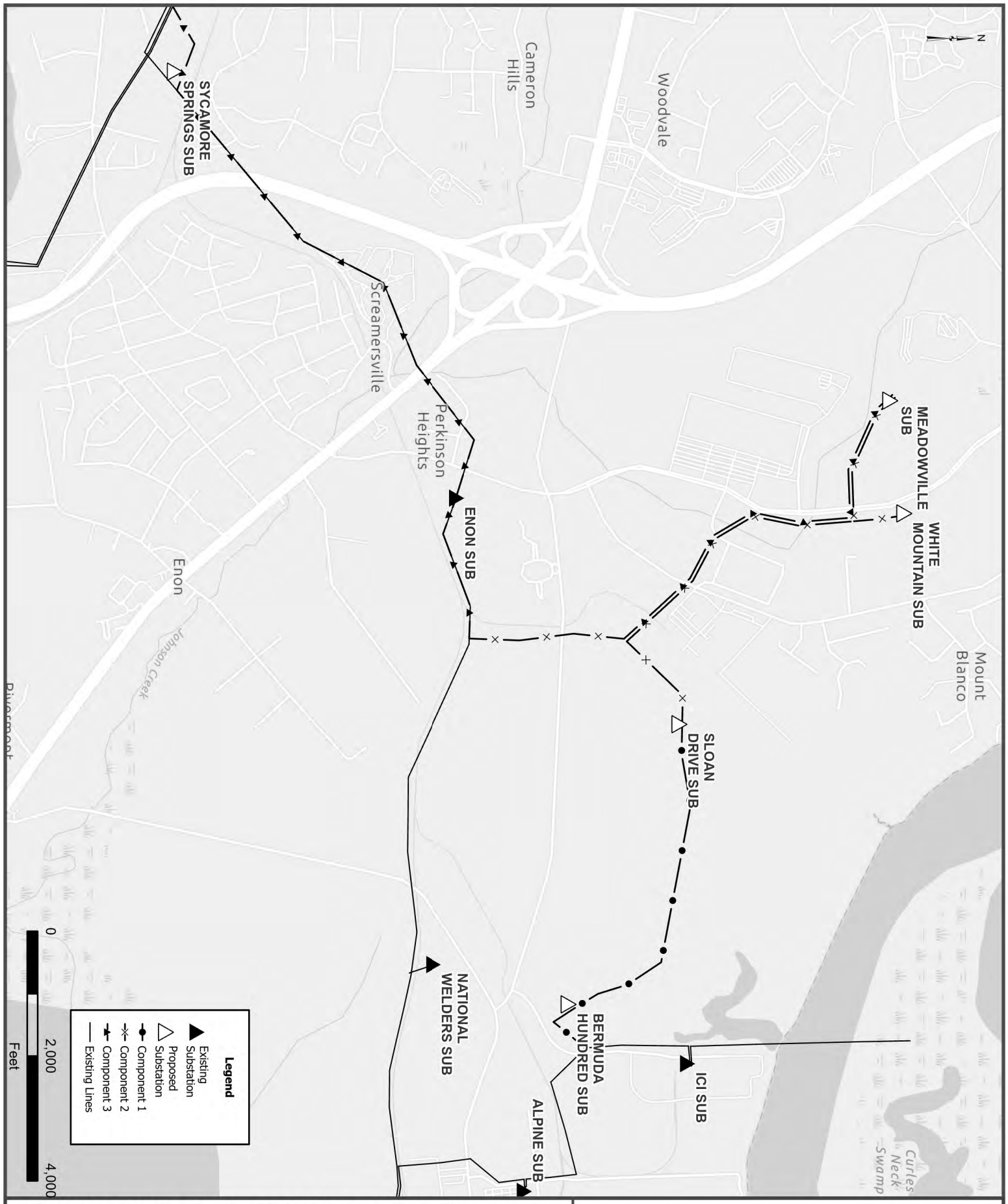
If you would like to receive a GIS shapefile of the transmission line routes to assist in the project review or if there are any questions, please do not hesitate to contact Laura Meadows at (804) 239-8246 or laura.p.meadows@dominionenergy.com. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Regards,

Laura Meadows
Supervisor, Electric Transmission Siting and Permitting

Attachment: Project Overview Map

cc: Jesse Smith, Deputy County Administrator, Chesterfield County
The Honorable Jim Ingle, Board of Supervisors – Bermuda District, Chesterfield County



MEADOWVILLE 230 KV ELECTRIC TRANSMISSION PROJECT
CHESTERFIELD COUNTY, VIRGINIA

ATTACHMENT V.A. NOTICE MAP

Dominion Energy®

TIMMONS GROUP

COMMONWEALTH OF VIRGINIA

STATE CORPORATION COMMISSION

APPLICATION OF	)	
	)	
VIRGINIA ELECTRIC AND POWER COMPANY	)	Case No. PUR-2024-00179
	)	
For approval and certification of electric transmission facilities: Meadowville 230 kV Electric Transmission Project	)	

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

Jason S. Whitlow

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

Shannon L. Snare

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

George C. Brimmer

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

Laura P. Meadows

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

B. Clark Chappell

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

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Jason S. Whitlow

Title: Engineer III – Electric Transmission Planning

Summary:

Company Witness Jason S. Whitlow sponsors those portions of the Appendix describing the Company's electric transmission system and the need for, and benefits of, the proposed 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: This section, when applicable, describes critical contingencies and associated violations due to the inadequacy of the existing system.
- Section I.E: This section explains feasible project alternatives, when applicable
- Section I.G: This section provides a system map for the affected area.
- 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: This section, when applicable, provides outage history and maintenance history for existing transmission lines if the proposed project is a rebuild and is due in part to reliability issues.
- Section I.M: This section, when applicable, contains information for transmission lines interconnecting a non-utility generator.
- Section I.N: This section provides the proposed and existing generating sources, distribution circuits or load centers planned to be served by all new substations, switching stations, and other ground facilities associated with the proposed project.
- Section II.A.3: This section provides color maps of existing or proposed rights-of-way in the vicinity of the proposed project.
- Section II.A.10: This section provides details of the construction plans for the proposed project, including requested line outage schedules.

Additionally, Company Witness Whitlow co-sponsors the following sections of the Appendix:

- Section I.A (co-sponsored with Company Witnesses, Shannon L. Snare, George C. Brimmer, Laura P. Meadows, and B. Clark Chappell): This section details the primary justifications for the proposed project.
- Section I.L (co-sponsored with Company Witness Shannon L. Snare): This section, when applicable, provides details on the deterioration of structures and associated equipment.

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

DIRECT TESTIMONY
OF
JASON S. WHITLOW
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2024-00179

Q. Please state your name, position with Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company"), and business address.

A. My name is Jason S. Whitlow, and I am an Engineer III in the Electric Transmission Planning Department for the Company. My business address is 5000 Dominion Boulevard, Glen Allen, Virginia 23060. A statement of my qualifications and background is provided as Appendix A.

Q. Please describe your areas of responsibility with the Company.

A. I am responsible for planning the Company's electric transmission system for voltages of 69 kilovolt ("kV") through 500 kV.

Q. What is the purpose of your testimony in this proceeding?

A. In order to provide service requested by two data center customers (the "Customers"), to maintain reliable service for the overall load growth in the area, and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Dominion Energy Virginia proposes in Chesterfield County, Virginia, to:

- <u>Bermuda Hundred and Sloan Drive</u>
  Construct the Bermuda Hundred Switching Station ("Bermuda Hundred Station") on Customer A's property in Chesterfield County, Virginia, west of Discovery Road and the Company's existing Line #2050, cut into the adjacent Line #2050 (Bermuda Hundred – Chickahominy) to the east of the proposed Bermuda Hundred Station, and loop Line #2050 in and out of the Bermuda Hundred Station on two new weathering steel structures, traveling approximately 0.2 mile along new 100-foot-wide right-of-way ("ROW"). Once Line #2050 is looped in and out

of the Bermuda Hundred Station, Line #2050 will then be renumbered as Line #2368 from existing structure 2050/13 to Allied Substation. The Company will then construct two structures outside the fence of the Bermuda Hundred Station on property owned by Customer A, which Customer A will use to interconnect to their data center campus. The Company will also construct the proposed Sloan Drive Switching Station ("Sloan Drive Station"), located to the west of the Bermuda Hundred Station on Customer A's property, and construct two new double-circuit 230 kV lines (Line #2366 and Line #2367) that will extend approximately 1.0 mile west from the proposed Bermuda Hundred Station along new 100-feet foot ROW on double-circuit weathering steel poles to the proposed Sloan Drive Station.

- Meadowville and White Mountain

  Construct the proposed Meadowville Switching Station ("Meadowville Station") east of Interstate 95 ("I-95") and west of Meadowville Technology Parkway on Customer B's property, construct the proposed White Mountain Substation northeast of the Meadowville Station and Meadowville Technology Parkway on Chesterfield County Economic Development Authority ("EDA")-owned property, which will be purchased by the Company, and construct new230 kV lines (Line #2363 and Line #2364) on double-circuit weathering steel structures traveling northwest from the Sloan Drive Station along new 100-foot-wide ROW, with single-circuit Line #2363 traveling approximately 1.6 miles terminating in the proposed Meadowville Station and single-circuit Line #2364 traveling approximately 1.4 miles terminating at the proposed White Mountain Substation. In addition, the Company will also connect Meadowville Station and White Mountain Substation with a new single-circuit 230 kV line (Line #2365) on double-circuit weathering steel structures traveling approximately 0.6 mile between the stations within the same proposed 100-foot-wide ROW as Line #2363 and Line #2364. The Company also proposes to cut the existing 230 kV Line #2049 (Sycamore Springs – Allied) to connect to the Sloan Drive Station. The extension from the existing Line #2049 corridor to Meadowville Station will be renumbered Line #2361. The existing Line #2049 from Enon Substation to Allied Substation will be renumbered Line #2370. Line #2361 will be constructed on double-circuit weathering steel structures, in new 100-foot-wide ROW from Enon Substation[1] for approximately 2.2 miles on a direct route north towards the Sloan Drive Station where it will converge with Lines #2363 and #2364 terminating in the proposed Meadowville Station.

[1] The expansion of Enon Substation is part of a separate project with an anticipated in-service date in the fourth quarter of 2028. To cut lines into Enon Substation as discussed in Components 2 and 3, the substation will need to be expanded and backbones will need to be installed. Please note that Structures 2049/48-52 are currently slated to be replaced as part of the Enon Substation expansion project. The costs for the expansion and backbone installations are not included in the costs for the proposed Project in this Application. As such, the proposed Project ends two structures outside of the Enon Substation and resumes on the other side of Enon Substation.

- Sycamore Springs
  Construct the Sycamore Springs Switching Station ("Sycamore Springs Station") to the east of Bermuda Orchard Lane and west of Interstate 295 ("I-295") on Chesterfield County-owned property, which will be purchased by the Company, and cut existing Lines #211, #228, and #2049 in and out of the proposed Sycamore Springs Station. Once line #2049 is looped into Sycamore Springs Station, the line from Sycamore Springs Station to Enon Substation will then be renumbered as Line #2406 from Sycamore Springs Station to Enon Substation, and Line #2370 from Enon Substation to Allied Substation. The Company will partially rebuild existing Line #2049 from the proposed Sycamore Springs Station to existing structure #2049/55 for approximately 1.8 miles on an existing 130-foot-wide ROW on new double-circuit weathering steel structures. In addition, the Company proposes to construct new 230 kV Line #2360. Line #2360 will travel along the same existing 130-foot-wide ROW and on the same double-circuit weathering steel structures as Line #2406 (formerly Line #2049) from the proposed Sycamore Springs Station to existing structure #2049/55 for approximately 1.8 miles. The Company also proposes to expand the proposed 100-foot right-of-way to 160 feet in width from Enon Substation to Meadowville Station to construct a new approximately 2.2-miles 230 kV line, Line #2362, on double-circuit weathering steel monopoles adjacent to the corridor described in Component 2, extending the convergence of Line #2361 and Line #2362 with Line #2363 and Line #2364, with Line #2361 and Line #2362 ultimately terminating at Meadowville Station.

Components (1) through (3) described above are collectively referred to as the "Project."

The Project is needed to interconnect and provide service requested by two data center customers in the Chesterfield Load Area, and to maintain compliance with mandatory NERC Reliability Standards.

The purpose of my testimony is to describe the Company's electric transmission system and the need for, and benefits of, the proposed Project. I sponsor Sections I.B, I.C, I.D, I.E, I.G, I.H., I.J, I.K, I.M, I.N, II.A.3, and II.A.10 of the Appendix. Additionally, I co-sponsor the Executive Summary and Section I.A with Company Witnesses Shannon L. Snare, George C. Brimmer, Laura P. Meadows, and B. Clark Chappell; and Section I.L with Company Witness Shannon L. Snare.

. Does this conclude your pre-filed direct testimony?

A. Yes, it does.

APPENDIX A

BACKGROUND AND QUALIFICATIONS
OF
JASON S. WHITLOW

Jason Whitlow received a B.S. in Mechanical Engineering from Virginia Tech in 2007. Mr. Whitlow has been employed by the Company since 2013, where he has worked in both natural gas and electric transmission planning. Prior to joining the Company, he worked as a Project Manager for The Whiting-Turner Contracting Company.

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Shannon L. Snare

Title: Engineer III – Electric Transmission Line Engineering

Summary:

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

- Section I.F: This section, when applicable, describes any lines or facilities that will be removed, replaced, or taken out of service upon completion of the proposed project.
- 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.2: These sections provide the line design and operational features of the proposed project, as applicable.
- Section IV: This section provides analysis on the health aspects of electric and magnetic field levels.

Additionally, Company Witness Snare co-sponsors the following sections of the Appendix:

- Section I.A (co-sponsored with Company Witnesses Jason S. Whitlow, George C. Brimmer, Laura P. Meadows, and B. Clark Chappell): This section details the primary justifications for the proposed project.
- Section I.I. (co-sponsored with Company Witness George C. Brimmer): This section provides the estimated total cost of the proposed project.
- Section I.L (co-sponsored with Company Witness Jason S. Whitlow): This section, when applicable, provides details on the deterioration of structures and associated equipment.
- Section II.A.4 (co-sponsored with Company Witnesses Shannon L. Snare and B. Clark Chappell): This section explains why the existing right-of-way is not adequate to serve the need.
- Sections II.B.3 to II.B.5 (co-sponsored with Company Witness Laura P. Meadows): These sections, when applicable, provide supporting structure details along the proposed and alternative routes.
- Section II.B.6 (co-sponsored with Company Witnesses Laura P. Meadows and B. Clark Chappell): This section provides photographs of existing facilities, representations of proposed facilities, and visual simulations.
- Section V.A (co-sponsored with Company Witnesses Laura P. Meadows and B. Clark Chappell): This section provides the proposed route description and structure heights for notice purposes.

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

DIRECT TESTIMONY
OF
SHANNON L. SNARE
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2024-00179

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 Shannon L. Snare, and I am an Engineer III in the Electric Transmission Line Engineering Department of the Company. My business address is 5000 Dominion Boulevard, 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 and conceptual design of high voltage transmission line projects from 69 kilovolt ("kV") to 500 kV.

Q. What is the purpose of your testimony in this proceeding?

A. In order to provide service requested by two data center customers (the "Customers"), to maintain reliable service for the overall load growth in the area, and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Dominion Energy Virginia proposes in Chesterfield County, Virginia, to:

- <u>Bermuda Hundred and Sloan Drive</u>
  Construct the Bermuda Hundred Switching Station ("Bermuda Hundred Station") on Customer A's property in Chesterfield County, Virginia, west of Discovery Road and the Company's existing Line #2050, cut into the adjacent Line #2050 (Bermuda Hundred – Chickahominy) to the east of the proposed Bermuda Hundred Station, and loop Line #2050 in and out of the Bermuda Hundred Station on two new weathering steel structures, traveling approximately 0.2 mile along new 100-foot-wide right-of-way ("ROW"). Once Line #2050 is looped in and out

of the Bermuda Hundred Station, Line #2050 will then be renumbered as Line #2368 from existing structure 2050/13 to Allied Substation. The Company will then construct two structures outside the fence of the Bermuda Hundred Station on property owned by Customer A, which Customer A will use to interconnect to their data center campus. The Company will also construct the proposed Sloan Drive Switching Station ("Sloan Drive Station"), located to the west of the Bermuda Hundred Station on Customer A's property, and construct two new double-circuit 230 kV lines (Line #2366 and Line #2367) that will extend approximately 1.0 mile west from the proposed Bermuda Hundred Station along new 100-feet foot ROW on double-circuit weathering steel poles to the proposed Sloan Drive Station.

- Meadowville and White Mountain

  Construct the proposed Meadowville Switching Station ("Meadowville Station") east of Interstate 95 ("I-95") and west of Meadowville Technology Parkway on Customer B's property, construct the proposed White Mountain Substation northeast of the Meadowville Station and Meadowville Technology Parkway on Chesterfield County Economic Development Authority ("EDA")-owned property, which will be purchased by the Company, and construct new230 kV lines (Line #2363 and Line #2364) on double-circuit weathering steel structures traveling northwest from the Sloan Drive Station along new 100-foot-wide ROW, with single-circuit Line #2363 traveling approximately 1.6 miles terminating in the proposed Meadowville Station and single-circuit Line #2364 traveling approximately 1.4 miles terminating at the proposed White Mountain Substation. In addition, the Company will also connect Meadowville Station and White Mountain Substation with a new single-circuit 230 kV line (Line #2365) on double-circuit weathering steel structures traveling approximately 0.6 mile between the stations within the same proposed 100-foot-wide ROW as Line #2363 and Line #2364. The Company also proposes to cut the existing 230 kV Line #2049 (Sycamore Springs – Allied) to connect to the Sloan Drive Station. The extension from the existing Line #2049 corridor to Meadowville Station will be renumbered Line #2361. The existing Line #2049 from Enon Substation to Allied Substation will be renumbered Line #2370. Line #2361 will be constructed on double-circuit weathering steel structures, in new 100-foot-wide ROW from Enon Substation[2] for approximately 2.2 miles on a direct route north towards the Sloan Drive Station where it will converge with Lines #2363 and #2364 terminating in the proposed Meadowville Station.

[2] The expansion of Enon Substation is part of a separate project with an anticipated in-service date in the fourth quarter of 2028. To cut lines into Enon Substation as discussed in Components 2 and 3, the substation will need to be expanded and backbones will need to be installed. Please note that Structures 2049/48-52 are currently slated to be replaced as part of the Enon Substation expansion project. The costs for the expansion and backbone installations are not included in the costs for the proposed Project in this Application. As such, the proposed Project ends two structures outside of the Enon Substation and resumes on the other side of Enon Substation.

- Sycamore Springs
  Construct the Sycamore Springs Switching Station ("Sycamore Springs Station") to the east of Bermuda Orchard Lane and west of Interstate 295 ("I-295") on Chesterfield County-owned property, which will be purchased by the Company, and cut existing Lines #211, #228, and #2049 in and out of the proposed Sycamore Springs Station. Once line #2049 is looped into Sycamore Springs Station, the line from Sycamore Springs Station to Enon Substation will then be renumbered as Line #2406 from Sycamore Springs Station to Enon Substation, and Line #2370 from Enon Substation to Allied Substation. The Company will partially rebuild existing Line #2049 from the proposed Sycamore Springs Station to existing structure #2049/55 for approximately 1.8 miles on an existing 130-foot-wide ROW on new double-circuit weathering steel structures. In addition, the Company proposes to construct new 230 kV Line #2360. Line #2360 will travel along the same existing 130-foot-wide ROW and on the same double-circuit weathering steel structures as Line #2406 (formerly Line #2049) from the proposed Sycamore Springs Station to existing structure #2049/55 for approximately 1.8 miles. The Company also proposes to expand the proposed 100-foot right-of-way to 160 feet in width from Enon Substation to Meadowville Station to construct a new approximately 2.2-miles 230 kV line, Line #2362, on double-circuit weathering steel monopoles adjacent to the corridor described in Component 2, extending the convergence of Line #2361 and Line #2362 with Line #2363 and Line #2364, with Line #2361 and Line #2362 ultimately terminating at Meadowville Station.

Components (1) through (3) described above are collectively referred to as the "Project."

The Project is needed to interconnect and provide service requested by two data center customers in the Chesterfield Load Area, and to maintain compliance with mandatory NERC Reliability Standards.

The purpose of my testimony is to describe the design characteristics of the transmission facilities for the proposed Project and to discuss electric and magnetic field levels. I sponsor Sections I.F, II.A.5, II.B.1, II.B.2, and IV of the Appendix. Additionally, I co-sponsor the Executive Summary and Section I.A with Company Witnesses Jason S. Whitlow, George C. Brimmer, Laura P. Meadows, and B. Clark Chappell; Section I.I with Company Witness George C. Brimmer; Section I.L with Company Witness Jason S. Whitlow; Sections II.B.3 to II.B.5 with Company Witness Laura P. Meadows; and

Sections II.A.4, II.B.6 and V.A with Company Witnesses Laura P. Meadows and B. Clark Chappell.

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

A. Yes, it does.

APPENDIX A

BACKGROUND AND QUALIFICATIONS
OF
SHANNON L. SNARE

Shannon L. Snare graduated from Virginia Polytechnic Institute and State University in 2016. She joined the Company in 2016 as an electric transmission engineer in the Electric Transmission Engineering department. Ms. Snare is a licensed engineer in the Commonwealth of Virginia.

.

WITNESS DIRECT TESTIMONY SUMMARY

Witness: George C. Brimmer

Title: Engineer III—Substation Engineering

Summary:

Company Witness George C. Brimmer sponsors or co-sponsors the following sections of the Appendix describing the substation work to be performed for the proposed Project as follows:

- Section I.A (co-sponsored with Company Witnesses Jason S. Whitlow, Shannon L. Snare, Laura P. Meadows, and B. Clark Chappell): This section details the primary justifications for the proposed project.

- Section I.I (co-sponsored with Company Witness Shannon L. Snare): 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 associated with the proposed project.

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

DIRECT TESTIMONY
OF
GEORGE C. BRIMMER
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2024-00179

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 George C. Brimmer, and I am an Engineer III in the Substation Engineering section of the Electric Transmission group of the Company. My business address is 2400 Grayland Avenue, Richmond, Virginia 23220. A statement of my qualifications and background is provided as Appendix A.

Q. Please describe your areas of responsibility with the Company.

A. I am responsible for evaluation of the substation project requirements, feasibility studies, conceptual physical design, scope development, preliminary engineering, and cost estimating for high voltage transmission and distribution substations.

Q. What is the purpose of your testimony in this proceeding?

A. In order to provide service requested by two data center customers (the "Customers"), to maintain reliable service for the overall load growth in the area, and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Dominion Energy Virginia proposes in Chesterfield County, Virginia, to:

- <u>Bermuda Hundred and Sloan Drive</u>
  Construct the Bermuda Hundred Switching Station ("Bermuda Hundred Station") on Customer A's property in Chesterfield County, Virginia, west of Discovery Road and the Company's existing Line #2050, cut into the adjacent Line #2050 (Bermuda Hundred – Chickahominy) to the east of the proposed Bermuda Hundred Station, and loop Line #2050 in and out of the Bermuda Hundred Station

on two new weathering steel structures, traveling approximately 0.2 mile along new 100-foot-wide right-of-way ("ROW"). Once Line #2050 is looped in and out of the Bermuda Hundred Station, Line #2050 will then be renumbered as Line #2368 from existing structure 2050/13 to Allied Substation. The Company will then construct two structures outside the fence of the Bermuda Hundred Station on property owned by Customer A, which Customer A will use to interconnect to their data center campus. The Company will also construct the proposed Sloan Drive Switching Station ("Sloan Drive Station"), located to the west of the Bermuda Hundred Station on Customer A's property, and construct two new double-circuit 230 kV lines (Line #2366 and Line #2367) that will extend approximately 1.0 mile west from the proposed Bermuda Hundred Station along new 100-feet foot ROW on double-circuit weathering steel poles to the proposed Sloan Drive Station.

- Meadowville and White Mountain

  Construct the proposed Meadowville Switching Station ("Meadowville Station") east of Interstate 95 ("I-95") and west of Meadowville Technology Parkway on Customer B's property, construct the proposed White Mountain Substation northeast of the Meadowville Station and Meadowville Technology Parkway on Chesterfield County Economic Development Authority ("EDA")-owned property, which will be purchased by the Company, and construct new230 kV lines (Line #2363 and Line #2364) on double-circuit weathering steel structures traveling northwest from the Sloan Drive Station along new 100-foot-wide ROW, with single-circuit Line #2363 traveling approximately 1.6 miles terminating in the proposed Meadowville Station and single-circuit Line #2364 traveling approximately 1.4 miles terminating at the proposed White Mountain Substation. In addition, the Company will also connect Meadowville Station and White Mountain Substation with a new single-circuit 230 kV line (Line #2365) on double-circuit weathering steel structures traveling approximately 0.6 mile between the stations within the same proposed 100-foot-wide ROW as Line #2363 and Line #2364. The Company also proposes to cut the existing 230 kV Line #2049 (Sycamore Springs – Allied) to connect to the Sloan Drive Station. The extension from the existing Line #2049 corridor to Meadowville Station will be renumbered Line #2361. The existing Line #2049 from Enon Substation to Allied Substation will be renumbered Line #2370. Line #2361 will be constructed on double-circuit weathering steel structures, in new 100-foot-wide ROW from Enon Substation[3] for approximately 2.2 miles on a direct route north towards the Sloan Drive Station where it will converge with Lines #2363 and #2364 terminating in the proposed Meadowville Station.

[3] The expansion of Enon Substation is part of a separate project with an anticipated in-service date in the fourth quarter of 2028. To cut lines into Enon Substation as discussed in Components 2 and 3, the substation will need to be expanded and backbones will need to be installed. Please note that Structures 2049/48-52 are currently slated to be replaced as part of the Enon Substation expansion project. The costs for the expansion and backbone installations are not included in the costs for the proposed Project in this Application. As such, the proposed Project ends two structures outside of the Enon Substation and resumes on the other side of Enon Substation.

- Sycamore Springs
  Construct the Sycamore Springs Switching Station ("Sycamore Springs Station") to the east of Bermuda Orchard Lane and west of Interstate 295 ("I-295") on Chesterfield County-owned property, which will be purchased by the Company, and cut existing Lines #211, #228, and #2049 in and out of the proposed Sycamore Springs Station. Once line #2049 is looped into Sycamore Springs Station, the line from Sycamore Springs Station to Enon Substation will then be renumbered as Line #2406 from Sycamore Springs Station to Enon Substation, and Line #2370 from Enon Substation to Allied Substation. The Company will partially rebuild existing Line #2049 from the proposed Sycamore Springs Station to existing structure #2049/55 for approximately 1.8 miles on an existing 130-foot-wide ROW on new double-circuit weathering steel structures. In addition, the Company proposes to construct new 230 kV Line #2360. Line #2360 will travel along the same existing 130-foot-wide ROW and on the same double-circuit weathering steel structures as Line #2406 (formerly Line #2049) from the proposed Sycamore Springs Station to existing structure #2049/55 for approximately 1.8 miles. The Company also proposes to expand the proposed 100-foot right-of-way to 160 feet in width from Enon Substation to Meadowville Station to construct a new approximately 2.2-miles 230 kV line, Line #2362, on double-circuit weathering steel monopoles adjacent to the corridor described in Component 2, extending the convergence of Line #2361 and Line #2362 with Line #2363 and Line #2364, with Line #2361 and Line #2362 ultimately terminating at Meadowville Station.

Components (1) through (3) described above are collectively referred to as the "Project."

The Project is needed to interconnect and provide service requested by two data center customers in the Chesterfield Load Area, and to maintain compliance with mandatory NERC Reliability Standards.

The purpose of my testimony is to describe the substation and switching station work to be performed as part of the Project. As it pertains to station work, I sponsor Section II.C of the Appendix. Additionally, I co-sponsor the Executive Summary and Section I.A with Company Witnesses Jason S. Whitlow, Shannon L. Snare, Laura P. Meadows, and B. Clark Chappell; and Section I.I of the Appendix with Company Witness Shannon L. Snare.

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

A. Yes, it does.

APPENDIX A

BACKGROUND AND QUALIFICATIONS
OF
GEORGE C. BRIMMER

George Brimmer received a Bachelor of Science degree in Electrical Engineering from Virginia Commonwealth University in 2014. Mr. Brimmer also received a Bachelor of Science degree in Psychology in 2008. Prior to joining the Company, he worked as Cable Technician for American Systems Corporation from 2010 to 2011. Mr. Brimmer has been employed by the Company since 2013. He joined the Dominion Energy Substation Engineering department in November 2016 as an Engineer II. He was promoted to Engineer III in July 2021. Mr. Brimmer's responsibilities included the evaluation of the substation project requirements, development of project scope documents, estimates, development of detailed physical drawings, bill of materials, electrical schematics and wiring diagrams. His areas of expertise are substation and grounding design.

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Laura P. Meadows

Title: Transmission Siting and Permitting Supervisor – Siting and Permitting Group

Summary:

Company Witness Laura P. Meadows sponsors those portions of the Appendix providing an overview of the design of the route for the proposed Project, and related permitting, as follows:

- 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.
- Sections V.B–D: These sections provide information related to public notice of the proposed project.

Additionally, Company Witness Meadows co-sponsors the following portion of the Appendix:

- Section I.A (co-sponsored with Company Witnesses Jason S. Whitlow, Shannon L. Snare, George C. Brimmer, and B. Clark Chappell): This section details the primary justifications for the proposed project.
- Section II.A.1 (co-sponsored with Company Witness B. Clark Chappell): This section provides the length of the proposed corridor and viable alternatives to the proposed project.
- Section II.A.2 (co-sponsored with Company Witness B. Clark Chappell): 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 (co-sponsored with Company Witnesses Shannon L. Snare and B. Clark Chappell): This section explains why the existing right-of-way is not adequate to serve the need.
- Sections II.A.6 to II.A.8 (co-sponsored with Company B. Clark Chappell): These sections provide detail regarding the right-of-way for the proposed project.
- Section II.A.9 (co-sponsored with Company Witness B. Clark Chappell): This section describes the proposed route selection procedures and details alternative routes considered.
- Section II.A.11 (co-sponsored with Company Witness B. Clark Chappell): This section details how the construction of the proposed project follows the provisions discussed in Attachment 1 of the Transmission Appendix Guidelines.
- Sections II.B.3 to II.B.5 (co-sponsored with Company Witness Shannon L. Snare): These sections, when applicable, provide supporting structure details along the proposed and alternative routes.
- Section II.B.6 (co-sponsored with Company Witnesses Shannon L. Snare and B. Clark Chappell): This section provides photographs of existing facilities, representations of proposed facilities, and visual simulations.
- Section III (co-sponsored with Company Witness B. Clark Chappell): This section details the impact of the proposed project on scenic, environmental, and historic features.
- Section V.A (co-sponsored with Company Witnesses Shannon L. Snare and B. Clark Chappell): This section provides the proposed route description and structure heights for notice purposes.

Finally, Ms. Meadows sponsors the DEQ Supplement filed with the Application along with Company Witness B. Clark Chappell. A statement of Ms. Meadows's background and qualifications is attached to her testimony as Appendix A.

DIRECT TESTIMONY
OF
LAURA P. MEADOWS
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2024-00179

Q. Please state your name, position with Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company"), and business address.

A. My name is Laura P. Meadows, and I am the Electric Transmission Siting and Permitting Supervisor for Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company"). My business address is 5000 Dominion Boulevard, Glen Allen, Virginia 23060. A statement of my qualifications and background is provided as Appendix A.

Q. Please describe your areas of responsibility with the Company.

A. I am responsible for identifying appropriate routes for transmission lines and obtaining necessary federal, state, and local approvals and environmental permits for those facilities. In this position, I work closely with government officials, permitting agencies, property owners, and other interested parties, as well as with other Company personnel, to develop facilities needed by the public so as to reasonably minimize environmental and other impacts on the public in a reliable, cost-effective manner.

Q. What is the purpose of your testimony in this proceeding?

A. In order to provide service requested by two data center customers (the "Customers"), to maintain reliable service for the overall load growth in the area, and to comply with

mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Dominion Energy Virginia proposes in Chesterfield County, Virginia, to:

- Bermuda Hundred and Sloan Drive
  Construct the Bermuda Hundred Switching Station ("Bermuda Hundred Station") on Customer A's property in Chesterfield County, Virginia, west of Discovery Road and the Company's existing Line #2050, cut into the adjacent Line #2050 (Bermuda Hundred – Chickahominy) to the east of the proposed Bermuda Hundred Station, and loop Line #2050 in and out of the Bermuda Hundred Station on two new weathering steel structures, traveling approximately 0.2 mile along new 100-foot-wide right-of-way ("ROW"). Once Line #2050 is looped in and out of the Bermuda Hundred Station, Line #2050 will then be renumbered as Line #2368 from existing structure 2050/13 to Allied Substation. The Company will then construct two structures outside the fence of the Bermuda Hundred Station on property owned by Customer A, which Customer A will use to interconnect to their data center campus. The Company will also construct the proposed Sloan Drive Switching Station ("Sloan Drive Station"), located to the west of the Bermuda Hundred Station on Customer A's property, and construct two new double-circuit 230 kV lines (Line #2366 and Line #2367) that will extend approximately 1.0 mile west from the proposed Bermuda Hundred Station along new 100-feet foot ROW on double-circuit weathering steel poles to the proposed Sloan Drive Station.

- Meadowville and White Mountain
  Construct the proposed Meadowville Switching Station ("Meadowville Station") east of Interstate 95 ("I-95") and west of Meadowville Technology Parkway on Customer B's property, construct the proposed White Mountain Substation northeast of the Meadowville Station and Meadowville Technology Parkway on Chesterfield County Economic Development Authority ("EDA")-owned property, which will be purchased by the Company, and construct new230 kV lines (Line #2363 and Line #2364) on double-circuit weathering steel structures traveling northwest from the Sloan Drive Station along new 100-foot-wide ROW, with single-circuit Line #2363 traveling approximately 1.6 miles terminating in the proposed Meadowville Station and single-circuit Line #2364 traveling approximately 1.4 miles terminating at the proposed White Mountain Substation. In addition, the Company will also connect Meadowville Station and White Mountain Substation with a new single-circuit 230 kV line (Line #2365) on double-circuit weathering steel structures traveling approximately 0.6 mile between the stations within the same proposed 100-foot-wide ROW as Line #2363 and Line #2364. The Company also proposes to cut the existing 230 kV Line #2049 (Sycamore Springs – Allied) to connect to the Sloan Drive Station. The extension from the existing Line #2049 corridor to Meadowville Station will be renumbered Line #2361. The existing Line #2049 from Enon Substation to Allied Substation will be renumbered Line #2370. Line #2361 will be constructed on double-circuit weathering steel structures, in new 100-foot-wide

ROW from Enon Substation[4] for approximately 2.2 miles on a direct route north towards the Sloan Drive Station where it will converge with Lines #2363 and #2364 terminating in the proposed Meadowville Station.

- Sycamore Springs
  Construct the Sycamore Springs Switching Station ("Sycamore Springs Station") to the east of Bermuda Orchard Lane and west of Interstate 295 ("I-295") on Chesterfield County-owned property, which will be purchased by the Company, and cut existing Lines #211, #228, and #2049 in and out of the proposed Sycamore Springs Station. Once line #2049 is looped into Sycamore Springs Station, the line from Sycamore Springs Station to Enon Substation will then be renumbered as Line #2406 from Sycamore Springs Station to Enon Substation, and Line #2370 from Enon Substation to Allied Substation. The Company will partially rebuild existing Line #2049 from the proposed Sycamore Springs Station to existing structure #2049/55 for approximately 1.8 miles on an existing 130-foot-wide ROW on new double-circuit weathering steel structures. In addition, the Company proposes to construct new 230 kV Line #2360. Line #2360 will travel along the same existing 130-foot-wide ROW and on the same double-circuit weathering steel structures as Line #2406 (formerly Line #2049) from the proposed Sycamore Springs Station to existing structure #2049/55 for approximately 1.8 miles. The Company also proposes to expand the proposed 100-foot right-of-way to 160 feet in width from Enon Substation to Meadowville Station to construct a new approximately 2.2-miles 230 kV line, Line #2362, on double-circuit weathering steel monopoles adjacent to the corridor described in Component 2, extending the convergence of Line #2361 and Line #2362 with Line #2363 and Line #2364, with Line #2361 and Line #2362 ultimately terminating at Meadowville Station.

Components (1) through (3) described above are collectively referred to as the "Project."

The Project is needed to interconnect and provide service requested by two data center customers in the Chesterfield Load Area, and to maintain compliance with mandatory NERC Reliability Standards.

[4] The expansion of Enon Substation is part of a separate project with an anticipated in-service date in the fourth quarter of 2028. To cut lines into Enon Substation as discussed in Components 2 and 3, the substation will need to be expanded and backbones will need to be installed. Please note that Structures 2049/48-52 are currently slated to be replaced as part of the Enon Substation expansion project. The costs for the expansion and backbone installations are not included in the costs for the proposed Project in this Application. As such, the proposed Project ends two structures outside of the Enon Substation and resumes on the other side of Enon Substation.

The purpose of my testimony is to provide an overview of the route and permitting for the proposed Project. I sponsor Sections II.A.12 and V.B to V.D of the Appendix. Additionally, I co-sponsor the Executive Summary and Section I.A with Company Witnesses Jason S. Whitlow, Shannon L. Snare, George C. Brimmer, and B. Clark Chappell; Sections II.A.1, II.A.2, II.A.6 to II.A.9, II.A.11, and III with Company Witness B. Clark Chappell; Sections II.B.3 to II.B.5 with Company Shannon L. Snare; and Sections II.A.4, II.B.6 and V.A with Company Witnesses Shannon L. Snare and B. Clark Chappell. Finally, I co-sponsor the DEQ Supplement with Company Witness B. Clark Chappell.

Q. Has the Company complied with Va. Code § 15.2-2202 E?

A. Yes. In accordance with Va. Code § 15.2-2202 E, a letter dated July 15, 2024, was sent to Dr. Joseph Casey, Administrator of Chesterfield County, where the Project is located. The letter stated the Company's intention to file this Application and invited the County to consult with the Company about the Project. A copy of the letter is included as Appendix Attachment V.D.1.

Q. Does this conclude your pre-filed direct testimony

A. Yes, it does.

APPENDIX A

BACKGROUND AND QUALIFICATIONS
OF
LAURA P. MEADOWS

Ms. Laura P. Meadows earned her Bachelor of Arts in History from Longwood University in 2012 and her Master of Arts in Museum Studies from Johns Hopkins University in 2014. In 2013, she began working as an Environmental Specialist and Transportation Planner, coordinating technical NEPA review for linear transportation projects. Ms. Meadows joined the Company in 2017 as a Siting and Permitting Specialist to secure permits for electric transmission and substation projects.

Ms. Meadows has previously submitted pre-filed testimony to the State Corporation Commission of Virginia.

WITNESS DIRECT TESTIMONY SUMMARY

Witness: B. Clark Chappell

Title: Project Manager, Environmental GIS Lead with Timmons Group.

Summary:

Company Witness B. Clark Chappell sponsors the Environmental Routing Study provided as part of the Company's Application.

Additionally, Mr. Chappell co-sponsors the following portion of the Appendix:

- Section I.A (co-sponsored with Company Witnesses Jason S. Whitlow, Shannon L. Snare, George C. Brimmer, and Laura P. Meadows): This section details the primary justifications for the proposed project.
- Section II.A.1 (co-sponsored with Company Witness Laura P. Meadows): This section provides the length of the proposed corridor and viable alternatives to the proposed project.
- Section II.A.2 (co-sponsored with Company Witness Laura P. Meadows): 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 (co-sponsored with Company Witnesses Laura P. Meadows and Shannon L. Snare): This section explains why the existing right-of-way is not adequate to serve the need.
- Sections II.A.6 to II.A.8 (co-sponsored with Company Witness Laura P. Meadows): These sections provide detail regarding the right-of-way for the proposed project.
- Section II.A.9 (co-sponsored with Company Witness Laura P. Meadows): This section describes the proposed route selection procedures and details alternative routes considered.
- Section II.A.11 (co-sponsored with Company Witness Laura P. Meadows): This section details how the construction of the proposed project follows the provisions discussed in Attachment 1 of the Transmission Appendix Guidelines.
- Section II.B.6 (co-sponsored with Company Witnesses Shannon L. Snare and Laura P. Meadows): This section provides photographs of existing facilities, representations of proposed facilities, and visual simulations.
- Section III (co-sponsored with Company Witness Laura P. Meadows): This section details the impact of the proposed project on scenic, environmental, and historic features.
- Section V.A (co-sponsored with Company Witnesses Shannon L. Snare and Laura P. Meadows): This section provides the proposed route description and structure heights for notice purposes.

Finally, Mr. Chappell co-sponsors the DEQ Supplement filed with this Application with Company Witness Laura P. Meadows.

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

DIRECT TESTIMONY
OF
B. CLARK CHAPPELL
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2024-00179

Q. Please state your name, position and place of employment and business address.

A. My name is B. Clark Chappell. I am employed as a Project Manager, Environmental GIS Lead with Timmons Group. My business address is 1001 Boulders Parkway, Suite 300, Richmond, VA 23225. A statement of my qualifications and background is provided as Appendix A.

Q. What professional experience does Timmons Group have with the routing of linear energy transportation facilities?

A. Timmons Group ("Timmons") has extensive experience in the routing, feasibility assessments, and permitting of energy infrastructure projects. It has assisted its clients in the identification, evaluation and development of linear energy facilities for the past 10 years. During this time, it has developed a consistent approach for linear facility routing and route selection based on the identification, mapping and comparative evaluation of routing constraints and opportunities within defined study areas. Timmons uses data-intensive Geographic Information System spatial and dimensional analysis and the most current and refined data layers and aerial photography resources available for the identification, evaluation and selection of transmission line routes.

In addition to Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company"), its clients include some of the largest energy companies in the United

States, including Apex Clean Energy, NextEra, Leeward Renewables, Depcom Power, EDP Renewables, Engie, and many others. Timmons works on both small and large energy projects and has assisted in or conducted the planning, siting, and routing of many energy projects in North America.

In Virginia, Timmons served as consultant to Dominion Energy Virginia for many projects over the last 10 years, including:

- Dominion Transmission Injection Studies
- Carysbrook Solar - Sun Tribe Development -Cumulative Impact Assessment
- Walnut Solar - Open Road Renewables - Cumulative Impact Assessment
- Bellflower Solar – Birdseye Renewable Energy LLC
- Chester Solar Technology Park - Torch Clean Energy – CPCN
- DE - Multi Site Injection Studies (VA)
- Pittsylvania Power Station
- DE - Multi Site Injection Studies (Virginia)
- DE - Multiple Site Injection Studies
- Battery Storage Injection Projects

Q. What were you asked to do in connection with this case?

A. In order to provide service requested by two data center customers (the "Customers"), to maintain reliable service for the overall load growth in the area, and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Dominion Energy Virginia proposes in Chesterfield County, Virginia, to:

- <u>Bermuda Hundred and Sloan Drive</u>
  Construct the Bermuda Hundred Switching Station ("Bermuda Hundred Station") on Customer A's property in Chesterfield County, Virginia, west of Discovery Road and the Company's existing Line #2050, cut into the adjacent Line #2050 (Bermuda Hundred – Chickahominy) to the east of the proposed Bermuda Hundred Station, and loop Line #2050 in and out of the Bermuda Hundred Station on two new weathering steel structures, traveling approximately 0.2 mile along new 100-foot-wide right-of-way ("ROW"). Once Line #2050 is looped in and out of the Bermuda Hundred Station, Line #2050 will then be renumbered as Line

#2368 from existing structure 2050/13 to Allied Substation. The Company will then construct two structures outside the fence of the Bermuda Hundred Station on property owned by Customer A, which Customer A will use to interconnect to their data center campus. The Company will also construct the proposed Sloan Drive Switching Station ("Sloan Drive Station"), located to the west of the Bermuda Hundred Station on Customer A's property, and construct two new double-circuit 230 kV lines (Line #2366 and Line #2367) that will extend approximately 1.0 mile west from the proposed Bermuda Hundred Station along new 100-feet foot ROW on double-circuit weathering steel poles to the proposed Sloan Drive Station.

- Meadowville and White Mountain
  Construct the proposed Meadowville Switching Station ("Meadowville Station") east of Interstate 95 ("I-95") and west of Meadowville Technology Parkway on Customer B's property, construct the proposed White Mountain Substation northeast of the Meadowville Station and Meadowville Technology Parkway on Chesterfield County Economic Development Authority ("EDA")-owned property, which will be purchased by the Company, and construct new230 kV lines (Line #2363 and Line #2364) on double-circuit weathering steel structures traveling northwest from the Sloan Drive Station along new 100-foot-wide ROW, with single-circuit Line #2363 traveling approximately 1.6 miles terminating in the proposed Meadowville Station and single-circuit Line #2364 traveling approximately 1.4 miles terminating at the proposed White Mountain Substation. In addition, the Company will also connect Meadowville Station and White Mountain Substation with a new single-circuit 230 kV line (Line #2365) on double-circuit weathering steel structures traveling approximately 0.6 mile between the stations within the same proposed 100-foot-wide ROW as Line #2363 and Line #2364. The Company also proposes to cut the existing 230 kV Line #2049 (Sycamore Springs – Allied) to connect to the Sloan Drive Station. The extension from the existing Line #2049 corridor to Meadowville Station will be renumbered Line #2361. The existing Line #2049 from Enon Substation to Allied Substation will be renumbered Line #2370. Line #2361 will be constructed on double-circuit weathering steel structures, in new 100-foot-wide ROW from Enon Substation[5] for approximately 2.2 miles on a direct route north towards the Sloan Drive Station where it will converge with Lines #2363 and #2364 terminating in the proposed Meadowville Station.

- Sycamore Springs
  Construct the Sycamore Springs Switching Station ("Sycamore Springs Station") to the east of Bermuda Orchard Lane and west of Interstate 295 ("I-295") on

[5] The expansion of Enon Substation is part of a separate project with an anticipated in-service date in the fourth quarter of 2028. To cut lines into Enon Substation as discussed in Components 2 and 3, the substation will need to be expanded and backbones will need to be installed. Please note that Structures 2049/48-52 are currently slated to be replaced as part of the Enon Substation expansion project. The costs for the expansion and backbone installations are not included in the costs for the proposed Project in this Application. As such, the proposed Project ends two structures outside of the Enon Substation and resumes on the other side of Enon Substation.

Chesterfield County-owned property, which will be purchased by the Company, and cut existing Lines #211, #228, and #2049 in and out of the proposed Sycamore Springs Station. Once line #2049 is looped into Sycamore Springs Station, the line from Sycamore Springs Station to Enon Substation will then be renumbered as Line #2406 from Sycamore Springs Station to Enon Substation, and Line #2370 from Enon Substation to Allied Substation. The Company will partially rebuild existing Line #2049 from the proposed Sycamore Springs Station to existing structure #2049/55 for approximately 1.8 miles on an existing 130-foot-wide ROW on new double-circuit weathering steel structures. In addition, the Company proposes to construct new 230 kV Line #2360. Line #2360 will travel along the same existing 130-foot-wide ROW and on the same double-circuit weathering steel structures as Line #2406 (formerly Line #2049) from the proposed Sycamore Springs Station to existing structure #2049/55 for approximately 1.8 miles. The Company also proposes to expand the proposed 100-foot right-of-way to 160 feet in width from Enon Substation to Meadowville Station to construct a new approximately 2.2-miles 230 kV line, Line #2362, on double-circuit weathering steel monopoles adjacent to the corridor described in Component 2, extending the convergence of Line #2361 and Line #2362 with Line #2363 and Line #2364, with Line #2361 and Line #2362 ultimately terminating at Meadowville Station.

Components (1) through (3) described above are collectively referred to as the "Project."

The Project is needed to interconnect and provide service requested by two data center customers in the Chesterfield Load Area, and to maintain compliance with mandatory NERC Reliability Standards.

Timmons was engaged on behalf of the Company to assist it in the identification and evaluation of route alternatives to resolve the identified electrical need that would meet the applicable criteria of Virginia law and the Company's operating needs.

The purpose of my testimony is to introduce and sponsor the Environmental Routing Study, which is included as part of the Application filed by the Company in this proceeding. Additionally, I co-sponsor the Executive Summary and Section I.A with Company Witnesses Jason S. Whitlow, Shannon L. Snare, George C. Brimmer, and Laura P. Meadows; Sections II.A.1, II.A.2, II.A.6 to II.A.9, II.A.11, and III with

Company Witness Laura P. Meadows ; and Sections II.A.4, II.B.6 and V.A with Company Witnesses Shannon L. Snare and Laura P. Meadows. Lastly, I co-sponsor the DEQ Supplement with Company Witness Laura P. Meadows.

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

A. Yes, it does.

APPENDIX A

BACKGROUND AND QUALIFICATIONS OF B. CLARK CHAPPELL

B. Clark Chappell received a Bachelor of Science degree in Physical Oceanography and a minor is GIS from Old Dominion University in 2011. He has been employed by Timmons Group since 2012. His experience with the Company includes GIS Tech (2012-2015), GIS Analyst (2015-2019), and Environmental Project Manager from (2019-Present).