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March 14, 2024

BY ELECTRONIC FILING

Hon. Bernard J. Logan, Clerk
State Corporation Commission
Tyler Building, 1st Floor
1300 East Main Street
Richmond, VA 23219

Re: Application of Virginia Electric and Power Company for Approval and Certification of Electric Transmission Facilities: Fredericksburg-Aquia Harbour Lines #29, #2104, and #2157 Partial Rebuild – Case No. PUR-2024-00035.

Dear Mr. Logan:

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

As indicated in Section II.A.12.b of the Appendix, electronic copies of the Virginia Department of Transportation "General Highway Map" for Stafford County and the City of Fredericksburg, as well as the digital geographic information system ("GIS") map required by Va. Code § 56-46.1, which is Attachment II.A.2 to the Appendix, were provided via an e-room to the Commission's Division of Public Utility Regulation.

If you have any questions or need further information, please feel free to contact us.

Sincerely,

Andrew J. Flavin

Timothy L. McHugh

Enclosures

cc: William H. Chambliss, Esq.
Mr. David Essah (without enclosures)
Mr. Neil Joshipura (without enclosures)
Mr. Michael A. Cizenski (without enclosures)
David J. DePippo, Esq.
Charlotte P. McAfee, Esq.
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John B. Sample, Esq.

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Dominion Energy®

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

Before the State Corporation Commission of Virginia

Fredericksburg-Aquia Harbour Lines #29, #2104, and #2157 Partial Rebuild

Application No. 333

Case No. PUR-2024-00035

Filed: March 14, 2024

Volume 1 of 2

COMMONWEALTH OF VIRGINIA
BEFORE THE
STATE CORPORATION COMMISSION

APPLICATION OF

VIRGINIA ELECTRIC AND POWER COMPANY

FOR APPROVAL AND CERTIFICATION
OF ELECTRIC TRANSMISSION FACILITIES

Fredericksburg-Aquia Harbour
Lines #29, #2104, and #2157 Partial Rebuild

Application No. 333

Case No. PUR-2024-00035

Filed: March 14, 2024

COMMONWEALTH OF VIRGINIA

STATE CORPORATION COMMISSION

APPLICATION OF	)	
	)	
VIRGINIA ELECTRIC AND POWER COMPANY	)	Case No. PUR-2024-00035
	)	
For approval and certification of electric transmission facilities: Fredericksburg -Aquia Harbour Lines #29, #2104, and #2157 Partial Rebuild	)	

APPLICATION OF VIRGINIA ELECTRIC AND POWER COMPANY FOR APPROVAL AND CERTIFICATION OF ELECTRIC TRANSMISSION FACILITIES: FREDERICKSBURG-AQUIA HARBOUR LINES #29, #2104, AND #2157 PARTIAL REBUILD

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

1. Dominion Energy Virginia is a public service corporation organized under the laws of the Commonwealth of Virginia furnishing electric service to the public within its Virginia service territory. The Company also furnishes electric service to the public in portions of North Carolina. Dominion Energy Virginia's electric system—consisting of facilities for the generation, transmission, and distribution of electric energy—is interconnected with the electric systems of neighboring utilities and is a part of the interconnected network of electric systems serving the

continental United States. By reason of its operation in two states and its interconnections with other utilities, the Company is engaged in interstate commerce.

2. In order to perform its legal duty to furnish adequate and reliable electric service, Dominion Energy Virginia must, from time to time, replace existing transmission facilities or construct new transmission facilities in its system.

3. In this Application, in order to: (a) maintain the structural integrity and reliability of the networked transmission system; (b) resolve identified violations of the mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards; and (c) provide for future load growth in the Woodbridge Load Area, Dominion Energy Virginia proposes, in Stafford County and the City of Fredericksburg, to rebuild its Fredericksburg to Possum Point transmission corridor by:

- Partially rebuilding, entirely within existing right-of-way or on Company-owned property, except for an approximately one-acre right-of-way near Dogwood Airpark, approximately 12.5 miles of 115 kV Line #29 on double-circuit monopole structures utilizing current 230 kV standards, between the Company's existing Fredericksburg Substation and Aquia Harbour Switching Station ("Aquia Harbour Station").

- Rebuilding, entirely within existing right-of-way or on Company-owned property, approximately 8.0 miles of 230 kV Line #2104 on double-circuit monopole structures between the Company's existing Cranes Corner Substation and Aquia Harbour Station.

- Removing two 500 kV structures and installing two 500 kV single circuit H-frame structures and two 500 kV single circuit monopoles.[1]

- Rebuilding, entirely within existing right-of-way or on Company-owned property, approximately 3.8 miles of 230 kV Line #2157 on double circuit monopole structures between the Company's existing Fredericksburg and Cranes Corner Substations.

[1] The existing structures will be removed and new structures will be added to allow the Company to relocate Line #586 to create space for the two additional 230 kV circuits. The new structures are: #568/76, #568/76A, #568/75A, and #568/77.

(collectively, the "Rebuild Project").[2]

4. The Rebuild Project will replace aging infrastructure that is at the end of its service life to comply with the Company's mandatory electric transmission planning criteria (the "Planning Criteria"), thereby enabling the Company to maintain the overall long-term reliability of its transmission system. Specifically, Line #29 between Fredericksburg Substation and Aquia Harbour Station was constructed in 1957 on wood H-frames that have reached their end of life based on industry standards, which are 35–55 years for wood structures. Additionally, several of the existing structures on Line #2157 have split, and even the existing structures that are not damaged cannot accommodate the Company's plan to uprate Line #2157.

5. The Rebuild Project is also needed to comply with mandatory NERC Reliability standards. First, the Rebuild Project is needed to resolve overloading issues on 230 kV Line #2104 identified during PJM's 2026 Summer Generator Deliverability Analysis due to the May 31, 2022, retirement of Morgantown Units 1 and 2 in the Potomac Electric Power Zone ("PEPCO") transmission zone. With the Morgantown Units removed from service, the loss of 500 kV Line #568 (Ladysmith-Possum Point) creates an overload of 105% on the segment of Line #2104 between Cranes Corner and Stafford Substations. Second, PJM's 2026 Summer Generator Deliverability Analysis identified that an N-1-1 loss of Lines #2157 and #252 will drop more than 300 MW of load in the Fredericksburg to Possum Point transmission corridor, resulting in a NERC criteria violation. To mitigate the potential violation, a new 230 kV source is required in the corridor to transfer load from the only other existing 230 kV source, Line #2104. The proposed solution, which was awarded to Dominion through PJM's 2021

[2] The Company will also perform work associated with the Rebuild Project at the Fredericksburg, Cranes Corner, and Stafford Substations, and Aquia Harbour Station to support the new line ratings. This work, while not included as part of the Rebuild Project, is discussed in Section II.C of the Appendix.

competitive Reliability Open Window, is to convert Line #29 from 115 kV to 230 kV operation. The Rebuild Project implements this proposed solution from Fredericksburg Substation to Aquia Harbour Station by partially rebuilding Line #29 utilizing current 230 kV standards.[3]

6. Finally, the Rebuild Project is needed so that the Company can continue to provide reliable service for the significant load growth anticipated in the area. In 2023, the Company received multiple Delivery Point ("DP") Requests in the transmission corridor between the Company's Fredericksburg and Possum Point Substations from data center developers. The Company's Load-Serving Entity ("Dom LSE" or "Dominion Distribution") submitted DP requests to either begin interconnection or study the feasibility of interconnection for at least 10 new substations in the Fredericksburg to Possum Point Corridor ("F2PPC"). Dom LSE also received DP requests for (i) 13 new substations in the corridor south of Fredericksburg Substation and (ii) three new substations east of the F2PPC. At this point, these 26 new projects have a combined projected load of approximately 3,000 MW in 2028 and 8,200 MW in 2032. To accommodate this rapidly growing load, the Company proposes to rebuild each of the lines in the corridor—Lines #29, #2104, and #2157—on double circuit monopole structures. The Company intends to install new conductors on the additional circuits but will not energize the new conductors until the projected load materializes.

7. By replacing the single circuit structures with double circuit structures during the corridor's scheduled rebuild, the Company will be able to accommodate growing load. Without the additional circuit, the Company would not practically be able to add a new transmission line within the existing corridor absent an additional wreck and rebuild.

[3] The Company plans to seek Commission approval to convert the section of Line #29 between Aquia Harbour Station and Possum Point Substation in late 2024.

Moreover, installing new conductors as part of the Rebuild Project allows the Company to reduce costs, outages, and impacts to environmental, historical, and cultural resources. The ability to energize a future 230 kV circuit to accommodate the significant load growth preserves the option to address future reliability issues and is consistent with prudent utility planning for the future.

8. The Rebuild Project, spanning approximately 23.4 miles, will primarily be located on existing transmission line right-of-way or on Company-owned property. The entire length of the proposed route is adequate for construction of the Rebuild Project, except for an approximately one acre right-of-way near Dogwood Airpark.[4] Given the availability of existing rights-of-way and the statutory preference to use of existing rights-of-way, and because additional costs and environmental impacts would be associated with the acquisition and construction of new rights-of-way, the Company did not consider any alternate routes requiring new rights-of-way for this Rebuild Project, except near the Dogwood Airpark.

9. The desired in-service target date for the Rebuild Project is December 31, 2026. The Company estimates it will take approximately 24 months after a final order from the Commission for detailed engineering, materials procurement, permitting, real estate, and construction of the Rebuild Project. Accordingly, to support this estimated construction timeline and construction plan, the Company respectfully requests a final order by December 31, 2024. Should the Commission issue a final order by December 31, 2024, the Company estimates that construction should begin in March 2025 with the Rebuild Project to be completed by the in-service target date of December 31, 2026. This schedule is contingent upon obtaining the necessary permits and careful coordination of outages, the latter of which may be particularly challenging

[4] The additional right-of-way is needed between Structures #29/1725 and #29/1728, and #2104/5447 and #2104/5450, located between the existing Fredericksburg Substation and Aquia Harbour Station. As explained further in Section II.A.1 of the Appendix, the Company will secure an additional 70-foot-wide right-of-way in that area for a length of approximately 685 feet.

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 labor shortages or materials/supply issues. Based on the Rebuild Project's complexity, there may be delays with procurement of materials.

10. Any adjustments to the Rebuild 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, 2026) and a CPCN sunset date (*i.e.*, December 31, 2027) for energization of the Rebuild Project.

11. In addition, the Company is actively monitoring regulatory changes and requirements associated with the Northern Long Eared Bat ("NLEB") and how it 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 expires on March 31, 2024. The Company actively is 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 continuing to track 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 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.

12. The estimated conceptual cost of the Rebuild Project is approximately $134.6 million (in 2023 dollars).[5]

13. The proposed Rebuild Project will afford the best means of meeting the continuing need for reliable service while reasonably minimizing adverse impact on the scenic, environmental, and historic assets of the area.

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

15. 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.

16. 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 notified or will notify about the Application.

[5] The cost of the work associated with the Fredericksburg, Cranes Corner, and Stafford Substations, and Aquia Harbour Station, is approximately $830,000 (in 2023 dollars).

17. 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 Mark R. Gill, Sherril A. Crenshaw, and Tracey McDonald filed with this Application.

18. Because this Application seeks approval to rebuild existing lines primarily within existing right-of-way or Company-owned property, except for an approximately one-acre right-of-way near Dogwood Airpark, the Company respectfully requests, in the interest of judicial economy, that the Commission issue an Order for Notice and Comment setting forth a procedural schedule in this proceeding without a scheduled evidentiary hearing, but with an opportunity for interested persons to request an evidentiary hearing if the issues raised cannot be addressed adequately without a hearing. An Order for Notice and Comment will still allow the Company, Commission Staff, and any interested parties that join the proceeding to develop a complete record without prejudice, as Commission Staff or any party may file with the Commission a request for hearing.

WHEREFORE, Dominion Energy Virginia respectfully requests that the Commission:

a) direct that notice of this Application be given as required by Va. Code § 56-46.1;

b) approve pursuant to Va. Code § 56-46.1 the construction of the Rebuild Project; and

c) grant a certificate of public convenience and necessity for the Rebuild Project under the Utility Facilities Act, Va. Code §§ 56-265.1, *et seq.*, by December 31, 2024, if possible.

VIRGINIA ELECTRIC AND POWER COMPANY

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Counsel for Virginia Electric and Power Company

March 14, 2024

COMMONWEALTH OF VIRGINIA
BEFORE THE
STATE CORPORATION COMMISSION

APPLICATION OF

VIRGINIA ELECTRIC AND POWER COMPANY

FOR APPROVAL AND CERTIFICATION
OF ELECTRIC FACILITIES

Fredericksburg-Aquia Harbour
Lines #29, #2104, and #2157 Partial Rebuild

Application No. 333

Appendix

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

Case No. PUR-2024-00035

Filed: March 14, 2024

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EXECUTIVE SUMMARY

In order to: (a) maintain the structural integrity and reliability of the networked transmission system; (b) resolve identified violations of the mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards; and (c) provide for future load growth in the Woodbridge Load Area, Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company") proposes, in Stafford County and the City of Fredericksburg, to rebuild its Fredericksburg to Possum Point transmission corridor by:

(i) Partially rebuilding, entirely within existing right-of-way or on Company-owned property, except for an approximately one-acre right-of-way near Dogwood Airpark, approximately 12.5 miles of 115 kV Line #29 on double circuit monopole structures utilizing current 230 kV standards, between the Company's existing Fredericksburg Substation and Aquia Harbour Switching Station ("Aquia Harbour Station").

(ii) Rebuilding, entirely within existing right-of-way or on Company-owned property, approximately 8.0 miles of 230 kV Line #2104 on double circuit monopole structures between the Company's existing Cranes Corner Substation and Aquia Harbour Station.

(iii) Removing two 500 kV structures and installing two 500 kV single circuit H-frame structures and two 500 kV single circuit monopoles.[1]

(iv) Rebuilding, entirely within existing right-of-way or on Company-owned property, approximately 3.8 miles of 230 kV Line #2157 on double circuit monopole structures between the Company's existing Fredericksburg and Cranes Corner Substations.

(collectively, the "Rebuild Project").[2]

The proposed Rebuild Project is necessary for three primary reasons.

Compliance with the Company's Mandatory Planning Criteria

The Rebuild Project will replace aging infrastructure that is at the end of its service life to comply with the Company's mandatory electric transmission planning criteria (the "Planning Criteria"), thereby enabling the Company to maintain the overall long-term reliability of its transmission system. Specifically, Line #29 between Fredericksburg Substation and Aquia Harbour Station was constructed in 1957 on wood H-frames that have reached their end of life based on industry standards, which are 35–55 years for wood structures. Additionally, several of the existing

[1] The existing structures will be removed and new structures will be added to allow the Company to relocate Line #586 to create space for the two additional 230 kV circuits. The new structures are: #568/76, #568/76A, #568/75A, and #568/77.

[2] The Company will also perform work associated with the Rebuild Project at the Fredericksburg, Cranes Corner, and Stafford Substations, and Aquia Harbour Station to support the new line ratings. This work, while not included as part of the Rebuild Project, is discussed in Section II.C.

structures on Line #2157 have split, and even the existing structures that are not damaged cannot accommodate the Company's plan to uprate Line #2157.

Compliance with Mandatory NERC Reliability Standards

The proposed Rebuild Project is also needed to comply with mandatory NERC Reliability standards.

First, the Rebuild Project is needed to resolve overloading issues on 230 kV Line #2104 identified during PJM's 2026 Summer Generator Deliverability Analysis due to the May 31, 2022, retirement of Morgantown Units 1 and 2 in the Potomac Electric Power Zone ("PEPCO") transmission zone. With the Morgantown Units removed from service, the loss of 500 kV Line #568 (Ladysmith-Possum Point) creates an overload of 105% on the segment of Line #2104 between Cranes Corner and Stafford Substations.

Second, PJM's 2026 Summer Generator Deliverability Analysis identified that an N-1-1 loss of Lines #2157 and #252 will drop more than 300 MW of load in the Fredericksburg to Possum Point transmission corridor, resulting in a NERC criteria violation. To mitigate the potential violation, a new 230 kV source is required in the corridor to transfer load from the only other existing 230 kV source, Line #2104. The proposed solution, which was awarded to Dominion through PJM's 2021 competitive Reliability Open Window, is to convert Line #29 from 115 kV to 230 kV operation. The Rebuild Project implements this proposed solution from Fredericksburg Substation to Aquia Harbour Station by partially rebuilding Line #29 utilizing current 230 kV standards.[3]

Significant Anticipated Load Growth

Finally, the Rebuild Project is needed so that the Company can continue to provide reliable service for the significant load growth anticipated in the area. In 2023, the Company received multiple Delivery Point ("DP") Requests in the transmission corridor between the Company's Fredericksburg and Possum Point Substations from data center developers. The Company's Load-Serving Entity ("Dom LSE" or "Dominion Distribution") submitted DP requests to either begin interconnection or study the feasibility of interconnection for at least 10 new substations in the Fredericksburg to Possum Point Corridor ("F2PPC"). Dom LSE also received DP requests for (i) 13 new substations in the corridor south of Fredericksburg Substation and (ii) three new substations east of the F2PPC.

At this point, these 26 new projects have a combined projected load of approximately 3,000 MW in 2028 and 8,200 MW in 2032. To accommodate this rapidly growing load, the Company proposes to rebuild each of the lines in the corridor—Lines #29, #2104, and #2157—on double circuit monopole structures.[4] The Company intends to install new conductors on the additional circuits but will not energize the new conductors until the projected load materializes.

By replacing the single circuit structures with double circuit structures during the corridor's

[3] The Company plans to seek Commission approval to convert the section of Line # 29 between Aquia Harbour Station and Possum Point Substation in late 2024.

[4] Lines #29, #2104, and #2157 currently use single circuit structures.

scheduled rebuild, the Company will be able to accommodate growing load. Without the additional circuit, the Company would not practically be able to add a new transmission line within the existing corridor absent a future wreck and rebuild. Moreover, installing new conductors as part of the Rebuild Project allows the Company to reduce costs, outages, and impacts to environmental, historical, and cultural resources. The ability to energize a future 230 kV circuit to accommodate the significant load growth preserves the option to address future reliability issues and is consistent with prudent utility planning for the future.

The Rebuild Project, spanning approximately 23.4 miles, will primarily be located on existing transmission line right-of-way or on Company-owned property. The entire length of the proposed route is adequate for construction of the Rebuild Project, except for an approximately one acre right-of-way near Dogwood Airpark.[5] Given the availability of existing rights-of-way and the statutory preference given to use of existing rights-of-way, and because additional costs and environmental impacts would be associated with the acquisition and construction of new rights-of-way, the Company did not consider any alternate routes requiring new rights-of-way for this Rebuild Project, except near the Dogwood Airpark.

The estimated conceptual cost of the Rebuild Project is approximately $134.6 million (in 2023 dollars).[6]

The desired in-service target date for the Rebuild Project is December 31, 2026. The Company estimates it will take approximately 24 months after a final order from the Commission for detailed engineering, materials procurement, permitting, real estate, and construction of the Rebuild Project. Accordingly, to support this estimated construction timeline and construction plan, the Company respectfully requests a final order by December 31, 2024. Should the Commission issue a final order by December 31, 2024, the Company estimates that construction should begin in March 2025 with the Rebuild Project to be completed by the in-service target date of December 31, 2026. This schedule is contingent upon obtaining the necessary permits and careful coordination of 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 labor shortages or materials/supply issues. Based on the Rebuild Project's complexity, there may be delays with procurement of materials.

Any adjustments to the Rebuild 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, 2026) and a CPCN

[5] The additional right-of-way is needed between Structures #29/1725 and #29/1728, and #2104/5447 and #2104/5450, located between the existing Fredericksburg Substation and Aquia Harbour Station. As explained further in Section II.A.1, the Company will secure an additional 70-foot-wide right-of-way in that area for a length of approximately 685 feet.

[6] The cost of the work associated with the Fredericksburg, Cranes Corner, and Stafford Substations, and Aquia Harbour Station, is approximately $830,000 (in 2023 dollars). The Company considers this work and the associated costs separate from the Rebuild Project.

sunset date (*i.e.*, December 31, 2027) for energization of the Rebuild Project.

In addition, the Company is actively monitoring regulatory changes and requirements associated with the Northern Long Eared Bat ("NLEB") and how it 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 expires on March 31, 2024. The Company actively is 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 continuing to track 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 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.

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 proposed Rebuild Project is necessary to: (a) maintain the structural integrity and reliability of the networked transmission system; (b) resolve identified violations of the mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards; and (c) provide for future load growth in the area. See Attachment I.A.1 for an overview map of the Rebuild Project.

Dominion Energy Virginia's transmission system is responsible for providing transmission service: (i) for redelivery to the Company's retail customers; (ii) to Appalachian Power Company, Old Dominion Electric Cooperative, Northern Virginia Electric Cooperative, Central Virginia Electric Cooperative, and Virginia Municipal Electric Association for redelivery to their retail customers in Virginia; and (iii) to North Carolina Electric Membership Corporation and North Carolina Eastern Municipal Power Agency for redelivery to their retail 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 PJM Interconnection, LLC ("PJM"), the regional transmission organization that provides service to a large portion of the eastern United States. PJM currently is responsible for ensuring the reliability of, and coordinating the movement of, electricity through all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and the District of Columbia. This service area has a population of approximately 65 million and, on August 2, 2006, set a record high of 165,563 megawatts ("MW") for summer peak demand, of which Dominion Energy Virginia's load portion was approximately 19,256 MW. On July 28, 2023, the Company set a record high of 21,993 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.

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

each other for moving bulk power through the transmission system and for reliability support. Dominion Energy Virginia's service to its customers is extremely reliant on a robust and reliable regional transmission system.

NERC has been designated by the Federal Energy Regulatory Commission ("FERC") as the electric reliability organization for the United States. Accordingly, NERC requires that the planning authority and transmission planner develop planning criteria to ensure compliance with NERC Reliability Standards. Mandatory NERC Reliability Standards require that a transmission owner ("TO") develop facility interconnection requirements that identify load and generation interconnection minimum requirements for a TO's transmission system, as well as the TO's reliability criteria.[7]

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

PJM's Regional Transmission Expansion Plan ("RTEP") is the culmination of an annual transmission planning process, approved by FERC, which includes extensive analysis of the electric transmission system to determine any needed improvements.[8] 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.[9] Projects identified through the RTEP process are developed by the TO in coordination with PJM, and are presented at the Transmission Expansion Advisory Committee ("TEAC") meetings prior to inclusion in the RTEP that is then presented for approval by the PJM Board of Managers (the "PJM Board"). PJM's generation deliverability test for reliability analysis ensures the transmission system is capable of delivering the aggregate system generating capacity at peak load with all firm transmission service modeled. Generation deliverability is a critical system condition test that is part of the PJM reliability standards and, thus, also is required to be satisfied by NERC Reliability Standards.

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, Reliability-First Corporation, SERC Reliability Corporation, PJM, and TOs; (ii) network upgrades

[7] *See* FAC-001-3 (R1, R3) (effective April 1, 2021), which can be found at https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/virginia/parallel-generation/facility-interconnection-requirements-signed.pdf.

[8] PJM Manual 14B (effective July 1, 2021) focuses on the RTEP process and can be found at https://www.pjm.com/-/media/documents/manuals/m14b.ashx.

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

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; (iii) supplemental projects are projects initiated by the TO in order to interconnect new customer load, address degraded equipment performance, improve operational flexibility and efficiency, and increase infrastructure resilience. While supplemental projects are included in the RTEP, the PJM Board does not provide formal approval for such projects. As discussed in more detail below, certain components of the Rebuild Project are classified as a baseline project resolving system reliability criteria violations, and other aspects of the Rebuild Project are classified as supplemental. See Section I.J for a discussion of the PJM process as it relates to this Rebuild Project.

Need for the Rebuild Project

The proposed Rebuild Project is needed to maintain the structural integrity and reliability of the networked transmission system; to comply with mandatory NERC Reliability Standards; and provide for future load growth in the Woodbridge Load Area,[10] which is generally defined as the area which includes all of Prince William and Stafford Counties, eastern Fauquier County, southern Loudoun County, and the City of Fredericksburg. Within the Woodbridge Load Area, the Rebuild Project is focused on the Fredericksburg to Possum Point Corridor (or "F2PPC") which, as its name implies, is the electric transmission corridor between the Company's Fredericksburg Substation to the south and its Possum Point Substation to the north. As discussed in Section I.C and depicted in Attachment I.G.1, the F2PPC contains one 230 kV source, comprised of multiple 230 kV lines in series, and one 115 kV source, feeding the various substations between the Fredericksburg and Possum Point terminals. The area served by the substations in the F2PPC is defined, generally, as the area in Stafford County paralleling Interstate 95, north of the Rappahannock River, east to the Potomac River and west along Route 17 to Hartwood Road. It also includes the areas, both north and south, around Stafford Regional Airport, as well as the area around Garrisonville Substation, north to Marine Corps Base Quantico ("MCBQ") in Stafford County, the Town of Quantico, and Prince William County.

The proposed Rebuild Project is also needed because a future project requires it to be constructed in order to comply with mandatory NERC Reliability Standards. The future project requires a new 230 kV source in the F2PPC to mitigate a potential 300 MW Load Drop violation associated with the N-1-1 loss of 230 kV Lines #2157 and #252, which run adjacent to 115 kV Line #29. The future project will, in part, propose to rebuild 115 kV Line #29 to 230 kV standards between Aquia Harbour Station and Possum Point Substation, and therefore relies on the

[10] The Dominion or Dom Zone constitutes the Southern Zone within the PJM footprint and, for purposes of discretely allocating PJM's forecasted summer and winter peak loads, is divided into 15 load areas by the Company. The load area encompassing the Rebuild Project is identified as being within the Woodbridge Load Area.

proposed Rebuild Project to convert 115 kV Line #29 to 230 kV standards between Fredericksburg Substation and Aquia Harbour Station.[11]

The following is a discussion of each Rebuild Project driver, which were developed to address: (1) aging infrastructure that is at the end of its service life based on the Company's mandatory Planning Criteria, (2) an overload identified in the PJM RTEP Summer 2026 Generator Deliverability study to comply with mandatory NERC Reliability Standards, and (3) future load growth anticipated in the area.

Compliance with the Company's Mandatory Planning Criteria

The Company has created a plan to address its end-of-life facilities, setting target completion dates for end-of-life projects based on the condition of the facilities, the Company's resources, and the need to schedule outages. 115 kV Line #29 runs for approximately 24.5 miles between Fredericksburg and Possum Point Substations and serves approximately 452 customers including the MCBQ.

The Rebuild Project will rebuild approximately 12.5 miles of 115 kV Line #29 between Fredericksburg Substation and Aquia Harbour Station utilizing 230 kV standards.[12] This segment of Line #29 was constructed in 1957 on wooden H-frame structures and is nearing its end-of-life.

Additionally, the Rebuild Project will rebuild approximately 3.8 miles of 230 kV Line #2157 on double circuit monopole structures between the Company's existing Fredericksburg and Cranes Corner Substations. This segment of Line #2157 was constructed in 1981 on wooden H-frame structures and also is nearing its end-of-life.

Section C.2.9 of the Planning Criteria addresses electric transmission infrastructure approaching its end of life:[13]

> Electric transmission infrastructure reaches its end of life as a result of many factors. Some factors such as extreme weather and environmental conditions can *shorten* infrastructure life, while others such as maintenance activities can *lengthen* its life. Once end of life is recognized, in order to ensure continued reliability of the transmission grid, a decision must be made regarding the best way to

[11] *See supra* n. 2.

[12] As discussed in Section I.B, a future application will seek approval for the rebuilding of the remainder of Line #29 between Aquia Harbour Station and Possum Point Substation and operation of the line at 230 kV, which is necessary to address an identified N-1-1 violation.

[13] 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.

address this end-of-life asset.

For this criterion, "end of life" is defined as the point at which infrastructure is at risk of failure, and continued maintenance and/or refurbishment of the infrastructure is no longer a valid option to extend the life of the facilities consistent with Good Utility Practice and Dominion Energy Virginia Transmission Planning Criteria. The infrastructure to be evaluated under this end-of-life criteria are all transmission lines at 500 kV and above.

The decision point of this criterion is based on satisfying two metrics:

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

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

Effective March 24, 2020, the Company updated its Planning Criteria so that infrastructure to be evaluated under end-of-life criteria changed from "all transmission lines at 69 kV and above" to "all regional transmission lines operated at 500 kV and above." The remaining transmission lines between 100 kV and 500 kV are evaluated under the Company's Attachment M-3 End-of-Life Planning Criteria. The latest version of this criteria was presented at the December 13, 2023, PJM Sub-Regional RTEP meeting. See Attachment I.A.2 for updated slides presented by the Company at that meeting. As discussed in Attachment I.A.2, end-of-life projects between 100 kV and 500 kV are classified as supplemental projects. The process, however, for determining that an asset has reached its end of life remains the same; therefore, the Company continues to use the criteria evaluation process outlined in Section C.2.9 of the Planning Criteria.

The Company submitted the Line #29 End-of-Life Partial-Rebuild in accordance with the PJM RTEP process to address the end-of-life criteria.

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

The Company proposes to rebuild approximately 12.5 miles of existing 115 kV transmission Line #29 between the Fredericksburg Substation and Aquia Harbour Station located primarily within the existing right-of-way or on Company-owned property, except for an approximately one-acre right-of-way near the Dogwood Airpark, to current 230 kV standards with minimum summer emergency ratings of 786 MVA for 115 kV and 1573 MVA for 230 kV. This approximately 12.5-mile section of transmission Line #29 was constructed in 1957 on wood H-frames and

has 795 ACSR conductors with a 3/8-inch steel static wire and an existing summer rating of 239 MVA. Industry guidelines indicate equipment life for wood structures is 35-55 years, conductor and connectors are 40-60 years, and porcelain insulators are 50 years. The structures supporting the 12.5-mile segment of Line #29 are approaching or have reached their end of life, driving the Company's need to rebuild the line.

The Company also proposes to rebuild, entirely within existing right-of-way or on Company-owned property, approximately 3.8 miles of 230 kV Line #2157 on double circuit monopole structures between the Company's existing Fredericksburg and Cranes Corner Substations. Some existing structures on Line #2157 have split, and the existing structures are not adequate the Company's planned uprate of Line #2157.

2. Continued operation risks negatively impacting reliability of the transmission system.

Regarding the second metric of the Company's Planning Criteria addressing end of life, Line #29 provides service to approximately 452 customers, including the MCBQ. Addressing aging infrastructure through the Rebuild Project will support the Company's ability to continue providing reliable transmission service to these customers.

This segment of Line #29 was first presented to the PJM stakeholders at the Southern Sub-Regional RTEP ("SRRTEP-South") Committee Meeting on October 30, 2017, and again on December 18, 2017, as an end-of-life rebuild project with a proposed solution to rebuild the 12.5-mile segment to current (at the time) 230 kV standards and continue operating the line at 115 kV. Attachments I.A.3 and I.A.4 include the slides that were initially presented at the SRRTEP-South meetings. The project was issued baseline upgrade identification number "b2981" by PJM. This segment was again presented to the stakeholders at the SRRTEP-South Committee Meeting on June 17, 2019, with an updated cost (see Attachment I.A.5).

Line #2157 provides service to approximately 15,983 customers. Addressing aging infrastructure through the Rebuild Project will support the Company's ability to continue providing reliable transmission service to these customers.

In summary, the Rebuild Project will replace aging infrastructure at the end of its service life to comply with the Company's mandatory Planning Criteria, thereby enabling the Company to maintain the overall long-term reliability of its transmission system.

Compliance with Mandatory NERC Reliability Standards

230 kV Line #2104 runs approximately 8.0 miles between Cranes Corner Substation and Aquia Harbour Station. The approximately 7.6-mile section between Cranes Corner Substation and Stafford Substation has been identified as

overloaded in the PJM RTEP Summer 2026 Generator Deliverability study due to the retirement of Morgantown Units 1 and 2 in the PEPCO transmission zone, which occurred on May 31, 2022. With the generators removed from service, the loss of 500 kV Line #568 (Ladysmith-Possum Point) creates an overload of 105% on the segment of Line #2104 between Cranes Corner and Stafford Substations. The existing summer emergency rating is 722 MVA.

The proposed solution to rebuild Line #2104 to a new summer emergency rating of 1047 MVA was presented to the PJM stakeholders at the TEAC Meeting on August 10, 2021, and again on August 31, 2021. Attachments I.A.6 and I.A.7 include the slides that were presented at the TEAC meetings. Attachment I.A.8 contains relevant excerpts from the December 2021, PJM Staff White Paper summarizing the TEAC Recommendations to the PJM Board which includes the Line #2104 partial rebuild project. The project was issued baseline upgrade identification number "b3321" by PJM.

Additionally, PJM's reliability analysis of the summer 2026 RTEP model has identified that an N-1-1 loss of Lines #2157 and #252 will drop more than 300 MW of load in the Fredericksburg to Possum Point transmission corridor, resulting in a NERC criteria violation. To mitigate the potential violation, a new 230 kV source is required in the corridor to transfer load from the existing 230 kV source. The proposed solution, which was awarded to Dominion through PJM's 2021 competitive Reliability Open Window, is to convert Line #29 from 115 kV to 230 kV operation and swap positions of the Line #2104 and converted Line #29 terminations at the Aquia Harbour Station backbone. This portion of the Rebuild Project, to upgrade the Fredericksburg to Aquia Harbour segment of Line #29 in the F2PPC to 230 kV standards, is a prerequisite to the conversion of Line #29 to 230 kV operation, which will be the subject of a subsequent Application to the Commission in the near future.

Significant Load Growth

As described previously, the Rebuild Project is in the F2PPC of the Company's Woodbridge Load Area. The F2PPC load area in Stafford County, which represents approximately two-thirds of the overall transmission corridor total (the City of Fredericksburg is approximately 5% and Prince William County is approximately 28%) has experienced increased interest from data center developers since approximately 2022. Dom LSE submitted DP requests to either begin interconnection or study the feasibility and develop a plan to interconnect at least 10 new substations in the Stafford portion of the F2PPC load area, six of which are associated with the proposed Stafford Technology Park. Additionally, Dom LSE and Rappahannock Electric Cooperative ("REC") have submitted an additional 16 DP requests in areas east and south of the Company's Fredericksburg Substation which are expected to impact the F2PPC.

Based on the load growth described above and in Section I.C, the Company determined that rebuilding the Lines #29, #2104, and #2157 on double circuit monopole structures and installing additional circuits/conductor as part of the Rebuild Project will provide significant cost savings as compared to rebuilding the Lines on double-circuit-capable structures and subsequently installing the additional circuits in the future. This will allow the Company to satisfy the growing demand for electricity in the F2PPC while minimizing the need to rework customer interconnections, reducing outage durations, minimizing environmental impacts, and prudently reducing overall costs as compared to retroactively installing double circuit monopole structures as part of a future project. The Company estimates cost savings of $44.2 million by rebuilding the Lines on double circuit structures and installing additional conductor as part of the Rebuild Project.

In summary, the Rebuild Project is needed to: (a) comply with the Company's mandatory Planning Criteria; (b) comply with mandatory NERC Reliability standards; and (c) allow the Company to continue providing reliable service based on the significant load growth anticipated in the area.

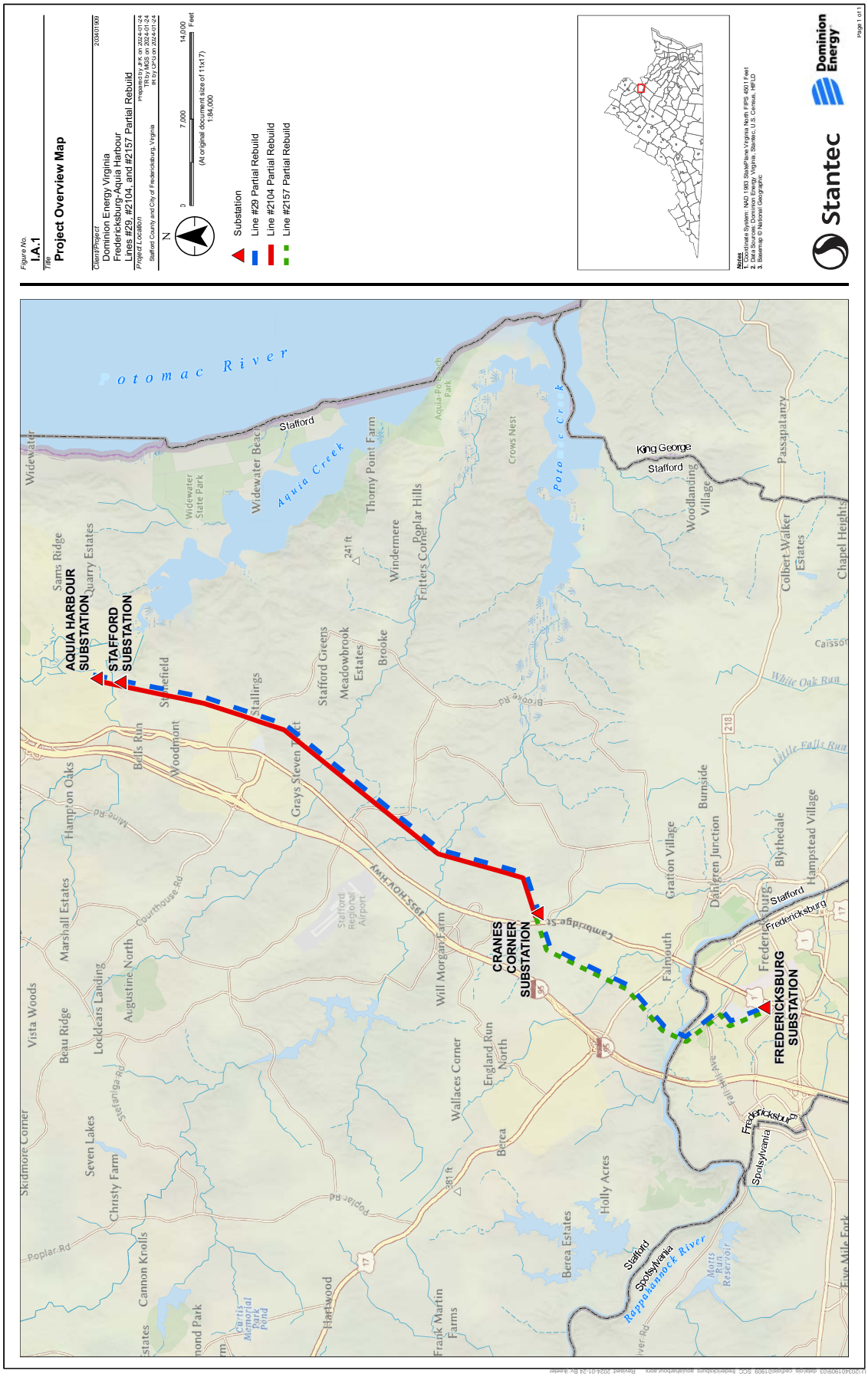


Figure No.
I.A.1
Title
Project Overview Map
Client/Project
Dominion Energy Virginia
Fredericksburg-Aquia Harbour
Lines #29, #2104, and #2157 Partial Rebuild
Project Location
Stafford County and City of Fredericksburg, Virginia
203401909
Prepared by JK on 2024-01-24
TR by MGB on 2024-01-24
IR by SDR on 2024-01-24
N
0
7,000
14,000
Feet
(At original document size of 11x17)
1:84,000
Substation
Line #29 Partial Rebuild
Line #2104 Partial Rebuild
Line #2157 Partial Rebuild
Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia; Stantec; U.S. Census, HIFLD
3. Basemap: © National Geographic
Stantec
Dominion Energy
Page 1 of 1
AQUIA HARBOUR SUBSTATION
STAFFORD SUBSTATION
CRANES CORNER SUBSTATION
FREDERICKSBURG SUBSTATION
Potomac River
Aquia Creek
Stafford
King George
Fredericksburg
Spotsylvania
Rappahannock River
Widewater
Widewater State Park
Widewater Beach
Sams Ridge
Quarry Estates
Thorny Point Farm
Aquia-Potomac Park
Crows Nest
Potomac Creek
Poplar Hills
Fritters Corner
Windermere
Woodlanding Village
Pasapatanzy
Colbert-Walker Estates
Chapel Heights
Stafford Greens
Meadowbrook Estates
Brooke
Stallings
Shelfield
Woodmont
Bells Run
Hampton Oaks
Marshall Estates
Courthouse Rd
Grays Steven Trail
Brooke Rd
White Oak Run
Little Falls Run
Calisson
Burnside
Dahlgren Junction
Grafton Village
Blythedale
Hampstead Village
Fredericksburg
Falmouth
Will Morgan Farm
Stafford Regional Airport
Cambridge St
I-95-SHOV-HWY
Vista Woods
Beau Ridge
Locklears Landing
Augustine North
Seven Lakes
Christy Farm
Skidmore Corner
Poplar Rd
Wallaces Corner
England Run North
Berea
Berea Estates
Holly Acres
Frank Martin Farms
Hartwood
Cannon Krolls
Curtis Memorial Park Pond
Morris Run Reservoir
Five Mile Fork
241 ft
381 ft
17
1
218
95

Dominion Energy

PJM Southern Sub-Regional RTEP Meeting

Planning Assumptions

Planning Criteria and Assumptions

- PJM Assumptions Apply
- All analysis and solutions must satisfy
  - NERC TPL standards
  - PJM Planning Criteria in Attachment D & G of PJM Manual 14B
  - Dominion Energy's Facility Interconnection Requirements
    - Requirements to connect to Dominion's Transmission system
    - Attachment 1 – Dominion's FERC Form 715 Planning Criteria
    - Attachment 3 – Generation Interconnection Protection Requirements
    - Attachment 4 – Generator Ride-Through Requirements
    - Attachment 5 – Generator Interconnection Data Communication and Data Exchange Requirements
  - Supplemental Project Drivers as Described Below
- PJM and Dominion validate each other's study results to ensure solutions resolve specific need and create no other harm to system
- Proposed solutions are presented
  - TEAC for facilities 230 kV and above
  - Southern Sub-regional for facilities below 230 kV

Dominion Energy's FERC Form 715 End of Life Planning Criteria

- Infrastructure to be evaluated under this end-of-life criteria are all regional transmission lines operated at 500 kV and above
- The decision point of this criterion is based on satisfying two metrics:
  1) Facility is nearing, or has already passed, its end of life, and
  2) Continued operation risks negatively impacting reliability of the transmission system, including our ability to serve local load.
- Projects approved by PJM under this criteria are classified as baseline
- Detailed discussion on the End of Life criteria can be found in Attachment 1, section C.2.9 of Dominion Energy's Facility Interconnection Requirements document
- All other asset management of transmission infrastructure is covered by the M-3 Supplemental process
- The Appendix lists transmission lines expected to be evaluated using the FERC Form No. 715 End of Life criteria in the 2024 RTEP cycle

Supplemental Project Drivers

Summary of Supplemental Project Drivers

I. Customer Service	• Service to new and existing customers. Interconnect new customer load. Address distribution load growth, customer outage exposure, equipment loading
II. Equipment Material Condition, Performance and Risk	• Degraded equipment performance, material condition, obsolescence, equipment failure, employee and public safety and environmental impact • Substation Assets, Transmission Line Assets, Transmission Transformers
III. Operational Flexibility and Efficiency	• Optimizing system configuration, equipment duty cycles and restoration capability, minimize outages
IV. Infrastructure Resilience	• Improve system ability to anticipate, absorb, adapt to, and/or rapidly recover from a potentially disruptive event, including severe weather, geo-magnetic disturbances, electromagnetic pulses, physical and cyber security challenges, critical infrastructure reduction.
V. Other	• Meet objectives not included in other definitions

II. Equipment Material Condition, Performance and Risk

- Degraded equipment performance, material condition, obsolescence, equipment failure, employee and public safety and environmental impact
- Substation Assets, Transmission Line Assets, Transmission Transformers

Equipment Material Condition, Performance and Risk

- End of Life
  - Transmission Lines operated at or above 100 kV and below 500 kV
  - Transformers with high-side operated at or above 100 kV
- Other Asset Management

  Types of equipment assessed include but not limited to:
  - Transmission Lines below 100 kV
  - Line Components (not part of EOL Criteria)
  - Transformers below 100 kV
  - Breakers
  - Circuit Switchers
  - Reactors
  - Capbanks
  - Wave Traps
  - Relaying
  - Switches
  - Bus Work, Leads
  - FACTS Devices

Equipment Material Condition, Performance and Risk

Project Drivers

- EOL and Asset Management projects include the replacement, modification, upgrade or addition of transmission equipment for the following purposes:
  - Replacement of equipment due to eminent failure
  - Safety concerns
  - Compliance (internal and external)
  - Reliability
  - Operating Flexibility
  - Obsolescence
  - Other

Dominion Energy's Attachment M-3 End of Life Planning Criteria for Transmission Lines

- Infrastructure to be evaluated under this end-of-life criteria are all transmission lines operated at or above 100kV and below 500 kV
- Projects must satisfy the following two decision point metrics:
  1) Facility is nearing, or has already passed, its end of life, and
  2) Continued operation risks negatively impacting reliability of the transmission system, including our ability to serve local load.
- Projects will be classified as supplemental

Transmission Line Facilities

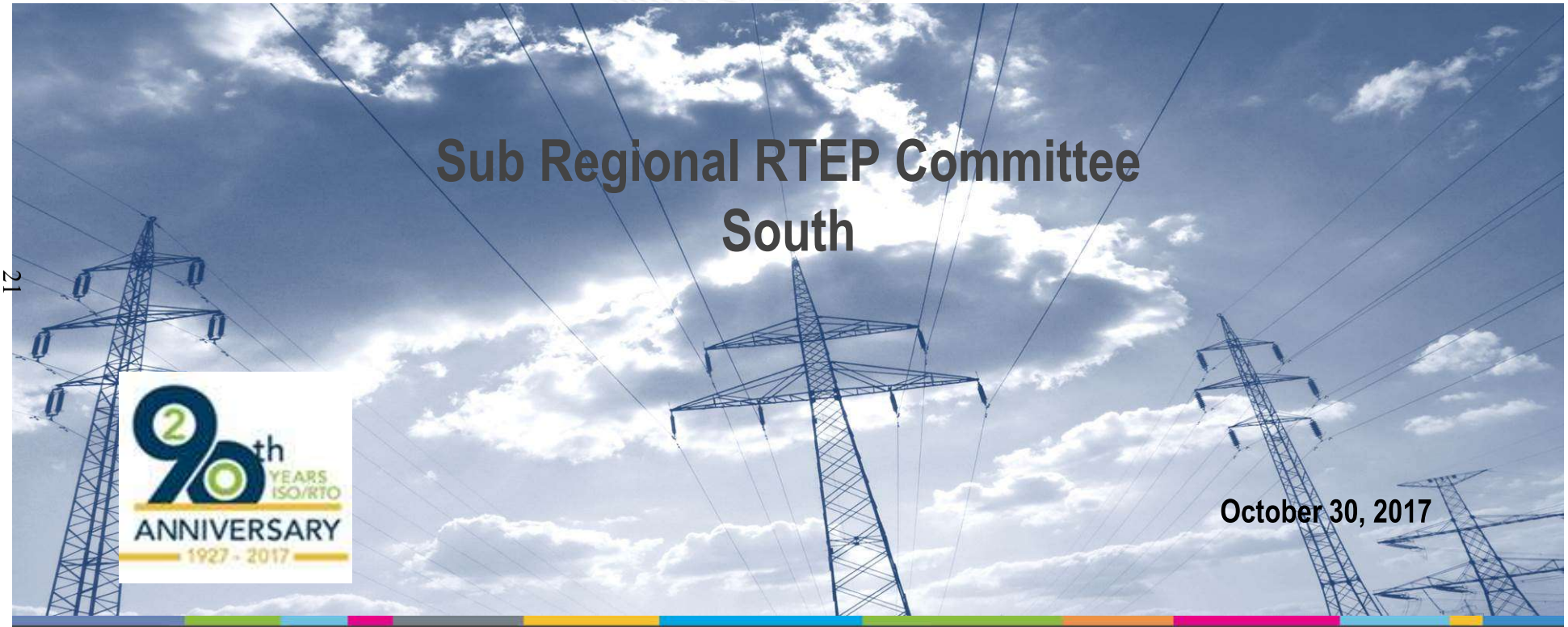
Project Development Process

- All project requests and inputs are reviewed
- Records of inspections, component failures, refurbishments/repairs, tower loading studies, COR-TEN corrosion studies and other relevant information are reviewed
- Field sampling and inspections are performed
- Perform analysis to determine condition of individual lines and a ranking to support remediation

Transmission Line Components

Project Development Process

- Industry typical “expected” service life are considered:
  - Steel structures 40 to 60 years
  - Conductors 60 years
  - Connectors 40 to 60 years
  - Insulators (Porcelain/Glass) 50 years+ (Polymer) 30 years
  - Fiber 30 years
  - Wood 55 years with maintenance
- However, the actual service life is dependent upon many variables and ongoing inspection to evaluate condition is the best determinant of end of service life.



Sub Regional RTEP Committee
South

October 30, 2017

Baseline Reliability and Supplemental Projects
First Preliminary Review

Dominion: Baseline Violation
115kV Line #29 Fredericksburg to Aquia Harbor End of Life

Problem Statement: DOM "End of Life Criteria"

- Total line length of 115kV Line #29 is 24.4 miles and runs between Fredericksburg Substation and Possum Point Power Station. The proposed rebuild segment of the 115kV Line #29 between Fredericksburg and Aquia Harbor is approximately 12 miles long and was constructed on wood H-frame structures in 1957. Existing conductor in the proposed rebuild segment is a combination of 1109 ACAR, 2-721 ACAR and 795 ACSR with a summer rating of 239 MVA. The remaining 12 miles of Line #29 is on a common 230kV lattice structure with Line #252 (with the exception of the tap to Quantico) with a summer conductor rating of 361 MVA at 115kV.
- This line provides service to Quantico Substation with a total of 440 customers including the Quantico USMC Base. Quantico Substation is connected to Line #29 with a 1.7 mile 115kV tap off the main line.
- Rebuilding this 12 mile segment of Line #29 to current 230kV standards (with continued operation at 115kV) would be consistent with the Company's practice of containing or converting 115kV load in the Northern Virginia area and would support the future conversion of the entire Line #29 to 230kV with the remaining 12 miles already installed on 230kV structures.

Potential Solution:

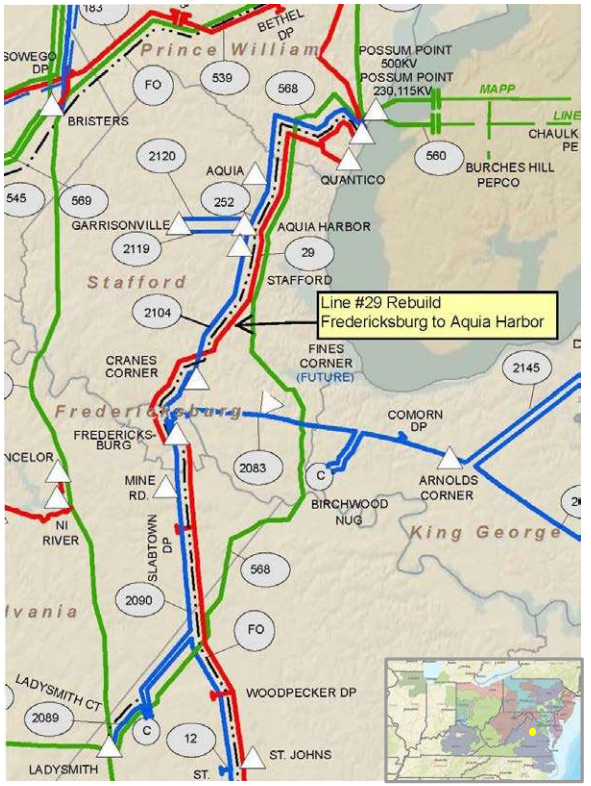
- Rebuild Line #29 segment between Fredericksburg and Aquia Harbor to current 230kV standards (operating at 115kV) utilizing steel H-frame structures with 2-636 ACSR to provide a normal continuous summer rating of 524 MVA at 115kV (1047 MVA at 230kV).

Alternatives: Convert 1.7 mile tap line to Quantico to 230kV, connect the tap to Line #252 and retire Line #29. This alternative would require the installation of a new 230kV switching station at the tap point and conversion/relocation of Quantico Substation. This alternative would be more costly ($20M) and would be subject to ROW and land acquisition due to space constraints at Quantico USMC Base. This alternative would also eliminate a network transmission line to a high load growth area in Northern Virginia.

Estimated Project Cost: $12.5 M

Possible In-service Date: 12/31/2022

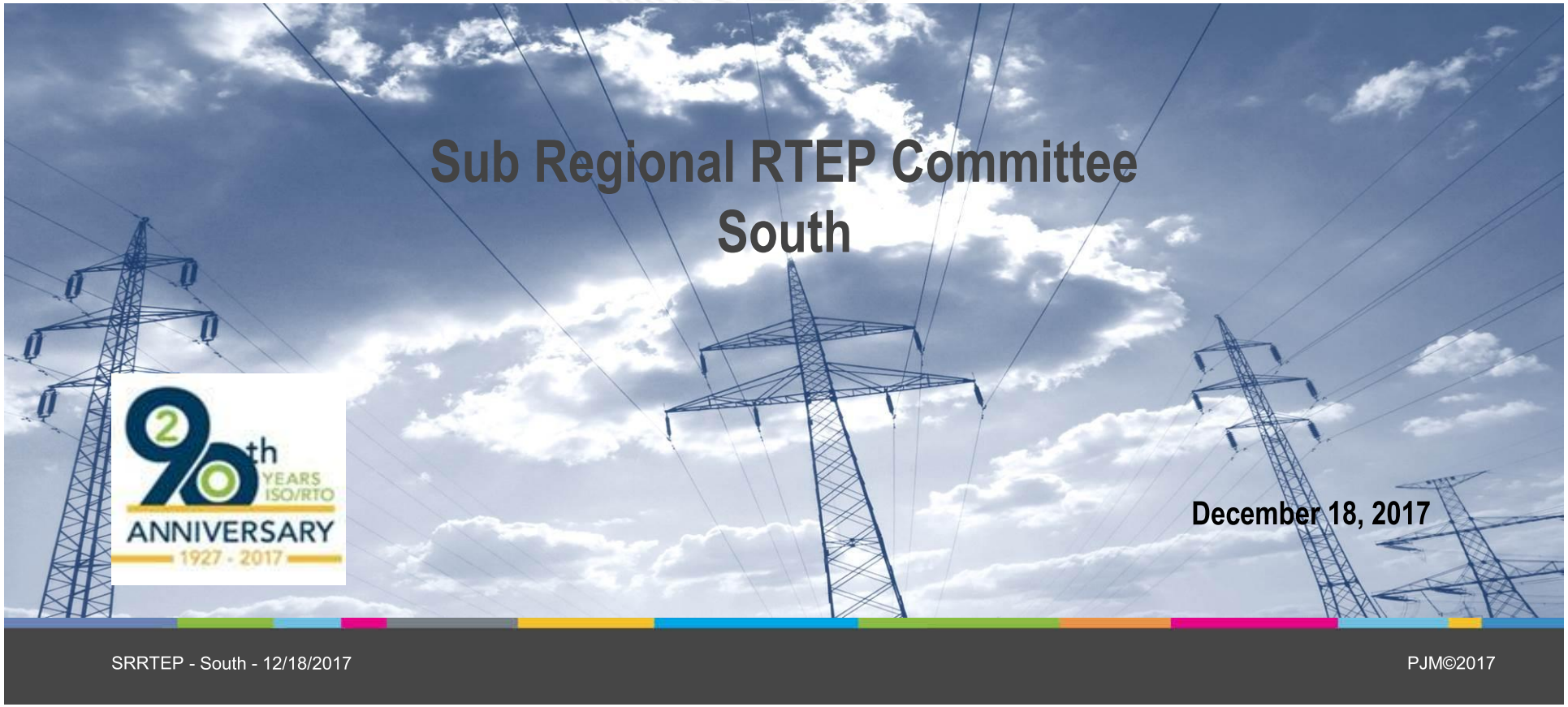
Project Status: Conceptual



COLOR	VOLTAGE	TRANSMISSION LINE NUMBER
	500 KV.	500 thru 599
	230 KV.	200 thru 299 & 2000 thru 2099
	115 KV.	1 thru 199
	138 KV.	AS NOTED
	69 KV.	AS NOTED

Revision History

10/25/2017 – Original version posted to PJM.com


Sub Regional RTEP Committee
South
90th YEARS ISO/RTO
ANNIVERSARY
1927 - 2017
December 18, 2017

Baseline Reliability and Supplemental Projects
Second Review

Dominion: Baseline Violation
115kV Line #29 Fredericksburg to Aquia Harbor End of Life

Date Project Last Presented: 10/30/2017 SRRTEP

Problem Statement: DOM "End of Life Criteria"

- Total line length of 115kV Line #29 is 24.4 miles and runs between Fredericksburg Substation and Possum Point Power Station. The proposed rebuild segment of the 115kV Line #29 between Fredericksburg and Aquia Harbor is approximately 12 miles long and was constructed on wood H-frame structures in 1957. Existing conductor in the proposed rebuild segment is a combination of 1109 ACAR, 2-721 ACAR and 795 ACSR with a summer rating of 239 MVA. The remaining 12 miles of Line #29 is on a common 230kV lattice structure with Line #252 (with the exception of the tap to Quantico) with a summer conductor rating of 361 MVA at 115kV.

- This line provides service to Quantico Substation with a total of 440 customers including the Quantico USMC Base. Quantico Substation is connected to Line #29 with a 1.7 mile 115kV tap off the main line.

- Rebuilding this 12 mile segment of Line #29 to current 230kV standards (with continued operation at 115kV) would be consistent with the Company's practice of containing or converting 115kV load in the Northern Virginia area and would support the future conversion of the entire Line #29 to 230kV with the remaining 12 miles already installed on 230kV structures.

Recommended Solution:

- Rebuild Line #29 segment between Fredericksburg and Aquia Harbor to current 230kV standards (operating at 115kV) utilizing steel H-frame structures with 2-636 ACSR to provide a normal continuous summer rating of 524 MVA at 115kV (1047 MVA at 230kV). **(b2981)**

Estimated Project Cost: $12.5 M

Projected In-service Date: 12/31/2022

Project Status: Conceptual

COLOR	VOLTAGE	TRANSMISSION LINE NUMBER
	500 KV.	500 thru 599
	230 KV.	200 thru 299 & 2000 thru 2099
	115 KV.	1 thru 199
	138 KV.	AS NOTED
	69 KV.	AS NOTED

Revision History

12/13/2017 – V1 – Original version posted to PJM.com

Sub Regional RTEP Committee
PJM South

June 17, 2019

Scope Change / Cost Increase

Dominion Transmission Zone: Baseline
115kV Line #29 Fredericksburg to Aquia Harbor End of Life

Existing b2981 Cost Increase

Date Project Last Presented: 12/18/2017 SRRTEP

Original Problem Statement: DOM "End of Life Criteria"

- Total line length of 115kV Line #29 is 24.4 miles and runs between Fredericksburg Substation and Possum Point Power Station. The proposed rebuild segment of the 115kV Line #29 between Fredericksburg and Aquia Harbor is approximately 12 miles long and was constructed on wood H-frame structures in 1957. Existing conductor in the proposed rebuild segment is a combination of 1109 ACAR, 2-721 ACAR and 795 ACSR with a summer rating of 239 MVA. The remaining 12 miles of Line #29 is on a common 230kV lattice structure with Line #252 (with the exception of the tap to Quantico) with a summer conductor rating of 361 MVA at 115kV.

- This line provides service to Quantico Substation with a total of 440 customers including the Quantico USMC Base. Quantico Substation is connected to Line #29 with a 1.7 mile 115kV tap off the main line.

- Rebuilding this 12 mile segment of Line #29 to current 230kV standards (with continued operation at 115kV) would be consistent with the Company's practice of containing or converting 115kV load in the Northern Virginia area and would support the future conversion of the entire Line #29 to 230kV with the remaining 12 miles already installed on 230kV structures.

COLOR	VOLTAGE	TRANSMISSION LINE NUMBER
	500 KV.	500 thru 599
	230 KV.	200 thru 299 & 2000 thru 2099
	115 KV.	1 thru 199
	138 KV.	AS NOTED
	69 KV.	AS NOTED

Dominion Transmission Zone: Baseline
115kV Line #29 Fredericksburg to Aquia Harbor End of Life

Recommended Solution: (no change)

Rebuild Line #29 segment between Fredericksburg and Aquia Harbor to current 230kV standards (operating at 115kV) with a normal continuous summer rating of 524 MVA at 115kV (1047 MVA at 230kV). **(b2981)**

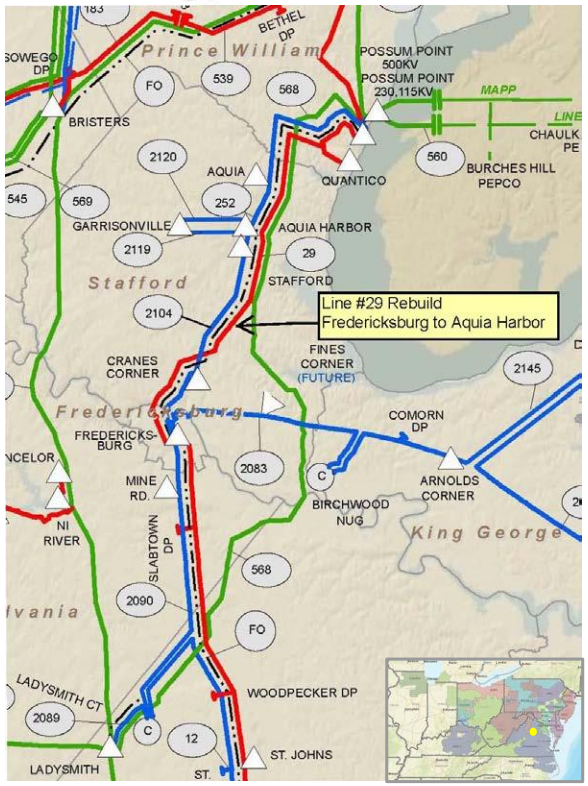
Conceptual Project Cost: $12.5M

Revised Detailed Project Cost: $20.0M

Reason for Cost Increase: Detailed versus conceptual cost estimate.

Projected In-service Date: 12/31/2022

Project Status: Engineering



COLOR	VOLTAGE	TRANSMISSION LINE NUMBER
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	115 KV.	1 thru 199
	138 KV.	AS NOTED
	69 KV.	AS NOTED

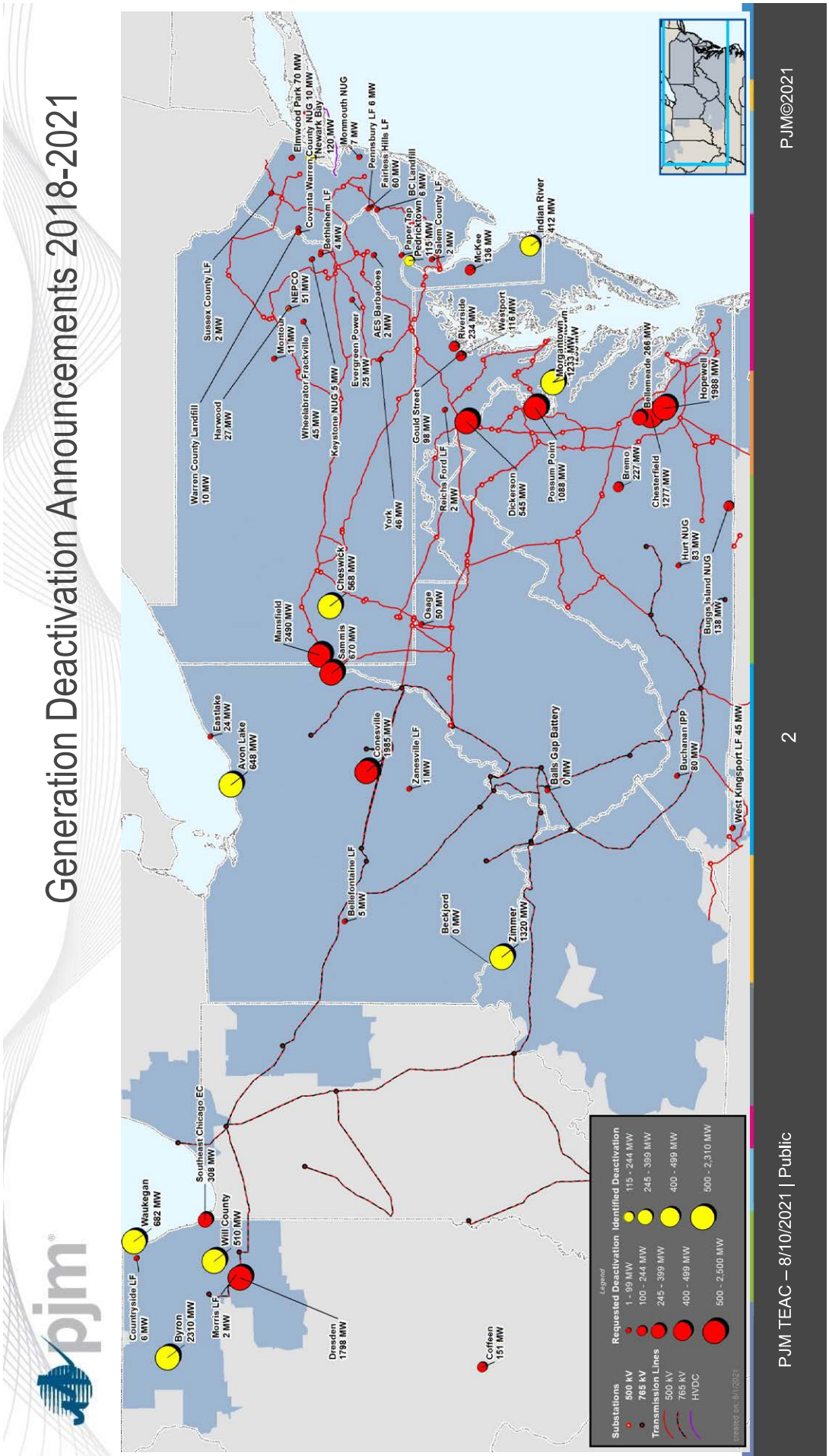
Revision History

- V1 – 06/10/2019 – Original Slides Posted

Generation Deactivation Notification Update

Transmission Expansion Advisory Committee

August 10, 2021


Generation Deactivation Announcements 2018-2021
Waukegan 682 MW
Countryside LF 6 MW
Byron 2310 MW
Morris LF 2 MW
Will County 510 MW
Dresden 1798 MW
Southeast Chicago EC 308 MW
Coffeen 151 MW
Eastlake 24 MW
Avon Lake 648 MW
Beckjord 0 MW
Zimmer 1320 MW
Conesville 1985 MW
Zanesville LF 1 MW
Bellefontaine LF 5 MW
Mansfield 2490 MW
Sammis 670 MW
Cheswick 568 MW
Osage 50 MW
Warren County Landfill 10 MW
Harwood 27 MW
Sussex County LF 2 MW
Wheelabrator Frackville 45 MW
Montour 11 MW
NEPCO 51 MW
Keystone NUG 5 MW
Evergreen Power 25 MW
AES Barbadoes 2 MW
York 46 MW
Elmwood Park 70 MW
County NUG 10 MW
Newark Bay 120 MW
Covanta Warren
Bethlehem LF 4 MW
Monmouth NUG 7 MW
Pennsbury LF 6 MW
Fairless Hills LF 60 MW
BC Landfill 6 MW
Paper Top Pedricktown 113 MW
Salem County LF 2 MW
McKee 136 MW
Indian River 412 MW
Riverside 234 MW
Westport 116 MW
Gould Street 98 MW
Reichs Ford LF 2 MW
Dickerson 545 MW
Possum Point 1088 MW
Morgantown 1233 MW
Bremo 227 MW
Chesterfield 1277 MW
Bellemeade 266 MW
Hopewell 1986 MW
Hunt NUG 83 MW
Bucks Island NUG 138 MW
Buchanan IPP 80 MW
Balls Gap Battery 0 MW
West Kingsport LF 45 MW
Substations
500 kV
765 kV
Transmission Lines
500 kV
765 kV
HVDC
Requested Deactivation Identified Deactivation
1 - 99 MW
100 - 244 MW
115 - 244 MW
245 - 399 MW
245 - 399 MW
400 - 499 MW
400 - 499 MW
500 - 2,500 MW
600 - 2,310 MW
PJM TEAC – 8/10/2021 | Public
2
PJM©2021

Deactivation Status

Unit(s)	Transmission Zone	Requested Deactivation Date	PJM Reliability Status
Avon Lake 9 -627 MW	ATSI	9/15/2021	Reliability analysis complete. New and existing baselines resolve identified impacts. Units can retire as scheduled.
Avon Lake 10 -21 MW	ATSI	9/15/2021	
Cheswick - 567.5 MW	Duquesne	9/15/2021	
Morgantown 1 -613.3 MW	PEPCO	5/31/2022	
Morgantown 2 -619.4 MW	PEPCO	5/31/2022	
Byron 1 - 1168.5 MW	ComEd	9/14/2021	Reliability analysis complete. New and existing baselines resolve identified impacts. Units can retire as scheduled.
Byron 2 -1141.5 MW	ComEd	9/16/2021	

Dominion Transmission Zone

Problem Statement: Generation Deliverability – Morgantown 1&2

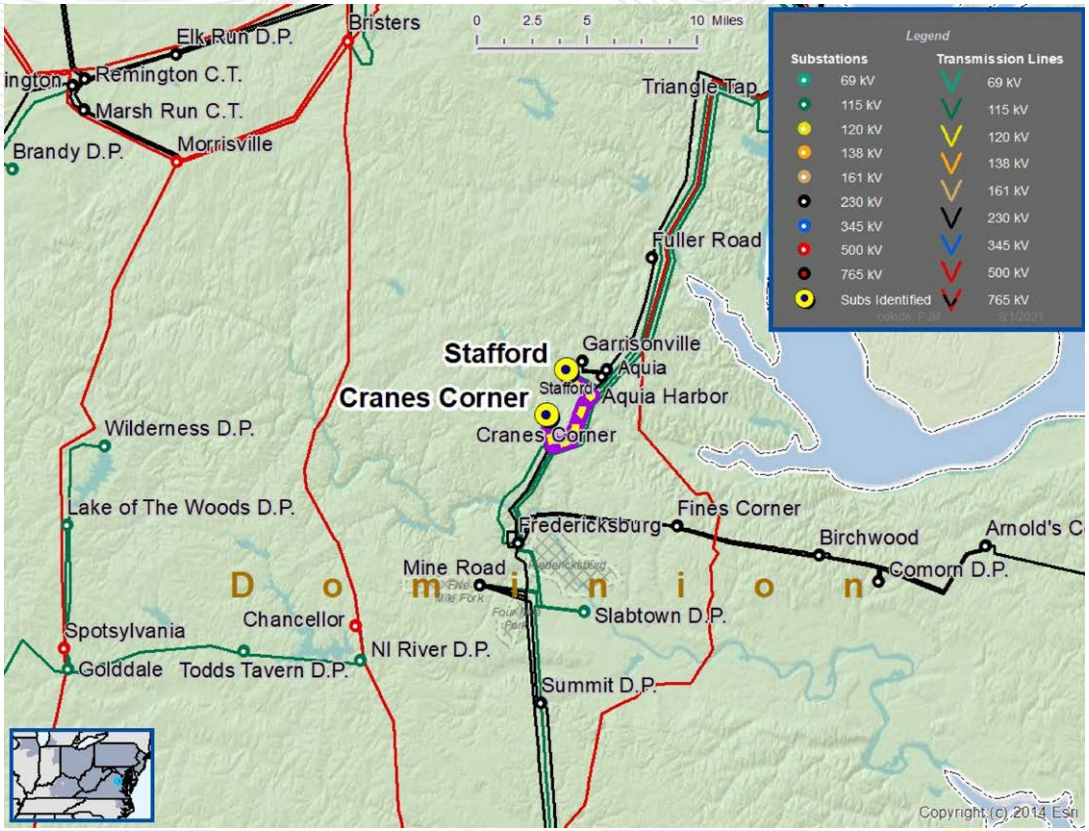
- Thermal violation: Cranes Corner – Stafford 230 kV
- Contingency: N-1

Recommended Solution:

- New baseline b3321 – Rebuild Cranes Corner – Stafford 230 kV
- Current Rating: 722 MVA SN/ 722 MVA SE
- New Rating: 1047 MVA SN/ 1047 MVA SE

Estimated Cost: $ 11.4M
Required IS Date: 06/01/2022
Projected IS Date: 12/31/2023

* Operating measures identified to mitigate reliability impacts in interim.

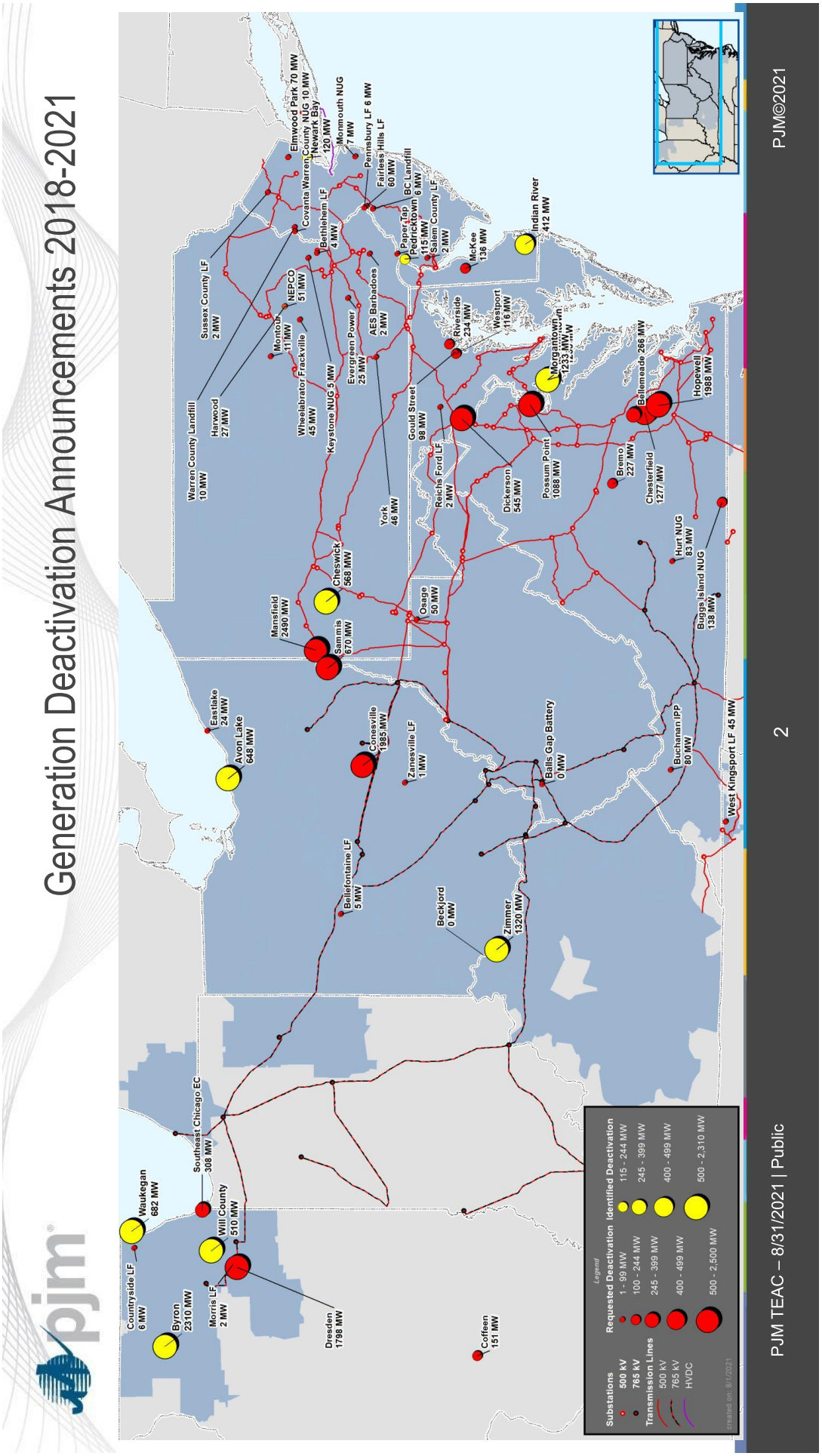


Revision History

- V1 - 8/04/21 - Original slides posted.
- V2 – 8/09/21 - Slide 4: TO names corrected for Pedricktown and Newark Bay.
  - Slide 8: Baseline description corrected.

Generation Deactivation Notification Update

Transmission Expansion Advisory Committee
August 31, 2021


Generation Deactivation Announcements 2018-2021
Waukegan 682 MW
Countryside LF 6 MW
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Eastlake 24 MW
Avon Lake 648 MW
Conesville 1985 MW
Zanesville LF 1 MW
Mansfield 2490 MW
Sammis 670 MW
Cheswick 568 MW
Osage 50 MW
Balls Gap Battery 0 MW
Buchanan IPP 80 MW
West Kingsport LF 45 MW
Bugg Island NUG 138 MW
Hurt NUG 83 MW
Chesterfield 1277 MW
Bremo 227 MW
Possum Point 1088 MW
Dickerson 545 MW
Reichs Ford LF 2 MW
Gould Street 98 MW
York 46 MW
Warren County Landfill 10 MW
Harwood 27 MW
Whelabrator Frackville 45 MW
Keystone NUG 5 MW
Montour 11 MW
NEPCO 51 MW
Evergreen Power 25 MW
AES Barbadoes 2 MW
Sussex County LF 2 MW
Elmwood Park 70 MW
Newark Bay Covanta Warren County NUG 10 MW
Berthleham LF 4 MW
Monmouth NUG 7 MW
Pennsbury LF 6 MW
Fairless Hills LF 60 MW
BC Landfill 6 MW
Salem County LF 2 MW
Paper Tap Pedricktown 115 MW
McKee 136 MW
Indian River 412 MW
Riverside 234 MW
Westport 116 MW
Morgantown 1233 MW
Hopewell 1988 MW
Bellemeade 266 MW
Legend
Substations
500 kV
765 kV
Transmission Lines
500 kV
765 kV
HVDC
Requested Deactivation
1 - 99 MW
100 - 244 MW
245 - 399 MW
400 - 499 MW
500 - 2,500 MW
Identified Deactivation
115 - 244 MW
245 - 399 MW
400 - 499 MW
500 - 2,310 MW
created on: 8/1/2021
PJM TEAC – 8/31/2021 | Public
2
PJM©2021

Deactivation Status

Unit(s)	Transmission Zone	Requested Deactivation Date	PJM Reliability Status
Avon Lake 9 -627 MW	ATSI	4/01/2022	Reliability analysis complete. New and existing baselines resolve identified impacts. Units can retire as scheduled.
Avon Lake 10 -21 MW	ATSI	4/01/2022	
Cheswick - 567.5 MW	Duquesne	4/01/2022	
Morgantown 1 -613.3 MW	PEPCO	5/31/2022	
Morgantown 2 -619.4 MW	PEPCO	5/31/2022	
Byron 1 - 1168.5 MW	ComEd	9/14/2021	Reliability analysis complete. New and existing baselines resolve identified impacts. Units can retire as scheduled.
Byron 2 -1141.5 MW	ComEd	9/16/2021	

SECOND READ

Dominion Transmission Zone

Problem Statement: Generation Deliverability – Morgantown 1&2

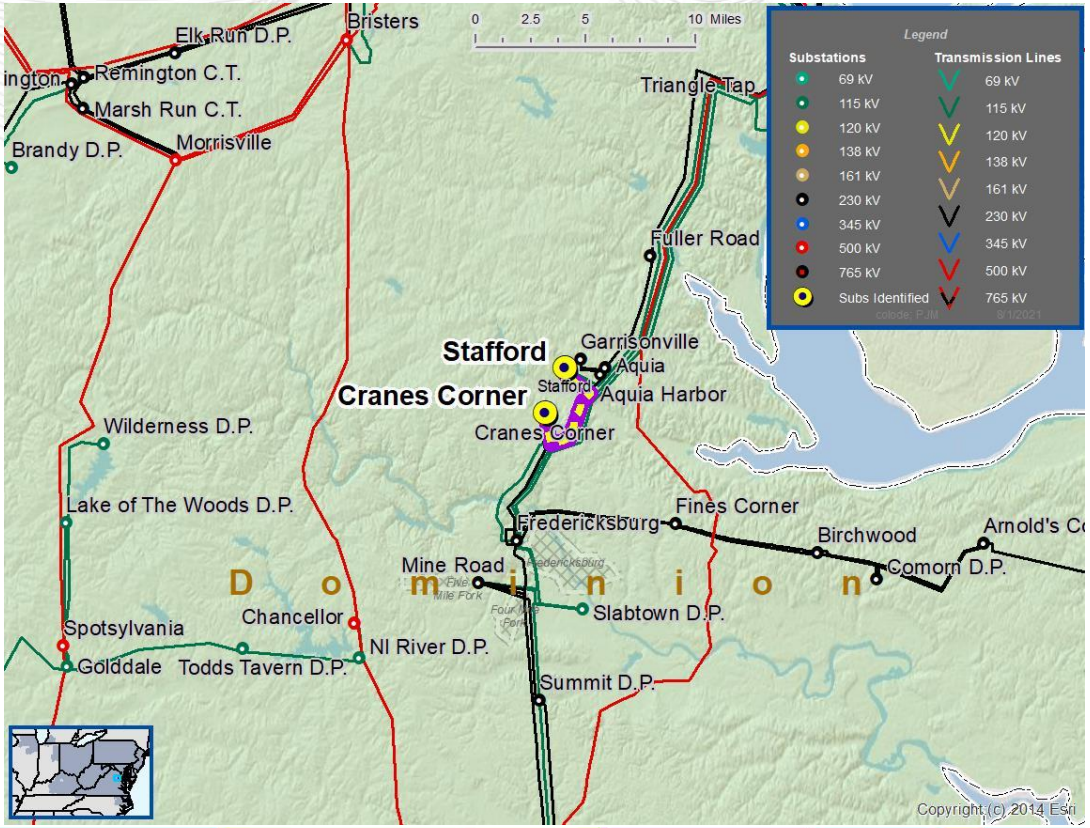
- Thermal violation: Cranes Corner – Stafford 230 kV
- Contingency: N-1

Recommended Solution:

- New baseline b3321 – Rebuild Cranes Corner – Stafford 230 kV
- Current Rating: 722 MVA SN/ 722 MVA SE
- New Rating: 1047 MVA SN/ 1047 MVA SE

Estimated Cost: $ 19.6M
Required IS Date: 06/01/2022
Projected IS Date: 12/31/2023

* Operating measures identified to mitigate reliability impacts in interim.



Revision History

- V1 - 8/25/21 - Original slides posted.
- V2- 09/22/21 –Slide 7- added the language for operational measurement.
  Slide 14 – Updated scope and cost
  Slide 22-26 – updated scope, cost, and schedule.

Transmission Expansion Advisory Committee (TEAC) Recommendations to the PJM Board

PJM Staff White Paper

PJM Interconnection
December 2021

For Public Use

Contents

I. Executive Summary

On September 22, 2021, the PJM Board of Managers approved changes to the Regional Transmission Expansion Plan (RTEP), totaling an overall net increase of $77.05 million, to resolve baseline reliability criteria violations and address changes to existing projects.

Since then, PJM has identified additional baseline reliability criteria violations and the transmission system enhancements needed to solve them, at an estimated cost of $165.73 million. Scope changes to existing projects will result in a net decrease of $70.08 million. This yields an overall RTEP net increase of $95.65 million, for which PJM recommended Board approval. PJM is also providing the annual update of RTEP generation and merchant transmission network upgrades in this white paper. PJM has identified $47.64 million in new network upgrades and an approximately $1.15 million increase due to scope changes for projects with an Interconnection Service Agreement (ISA). Additionally, PJM recommended the cancellation of $9.65 million in previously identified network upgrades as a result of updates to analysis performed for project withdrawals in the New Services Queue. The net change in network upgrades total $39.14 million, and altogether, the changes result in an overall RTEP baseline net increase of approximately $134.79 million. With these changes, RTEP projects will total approximately $38,933.5 million since the first Board approvals in 2000.

PJM sought Reliability and Security Committee consideration and full Board approval of the RTEP baseline projects summarized in this white paper. On December 8, 2021, the Board approved the addition of RTEP baseline projects as well as other changes to the RTEP as summarized in this paper.

II. Baseline Reliability Recommendations

A key dimension of PJM's RTEP process is baseline reliability evaluation, which is necessary before subsequent interconnection requests can be analyzed. Baseline analysis identifies system violations to reliability criteria and standards, determines the potential to improve the market efficiency and operational performance of the system, and incorporates any public policy requirements. PJM then develops transmission system enhancements to solve identified violations and reviews them with stakeholders through the Transmission Expansion Advisory Committee (TEAC) and Subregional RTEP Committee prior to submitting its recommendation to the Board. Baseline reliability transmission enhancement costs are allocated to PJM responsible customers.

III. Baseline Reliability Projects Summary

A summary of baseline projects with estimated costs equal to or greater than $10 million is provided below. A complete listing of all recommended projects and their associated cost allocations is included in Attachment A (allocations to a single zone) and Attachment B (allocations to multiple zones). Projects with estimated costs less than $10 million typically include, by way of example, transformer replacements, line reconductoring, breaker replacements and upgrades to terminal equipment, including relay and wave trap replacements.

A. AEP Transmission Zone

- Rebuild approximately 20 miles of line between Bancroft and Milton 69 kV stations – b3347: $56.73 million

- Rebuild Benton Harbor-Riverside 138 kV double circuit extension (6 miles) – b3336: $14.9 million

B. DEOK Transmission Zone

- Rebuild the section of Miami Fort-Hebron Tap 138 kV – b3334: $44.3 million

C. Dominion Transmission Zone

- Rebuild the Cranes Corner-Stafford 230 kV line – b3321: $19.6 million

PJM also recommended projects totaling $30.2 million, whose individual cost estimates are less than $10 million. The projects include, but are not limited to, 69 kV line rebuilds, a reconductor of a short 230 kV line portion, remote end relay upgrades, reactor installations, transformer installation and replacements, capacitor bank installations, and circuit breaker installation and replacements.

A more detailed description of the larger-scope projects that PJM recommended to the Board is provided below.

D. Baseline Reliability Project Details

Baseline Project b3347: Bancroft-Milton 69 kV

AEP Transmission Zone

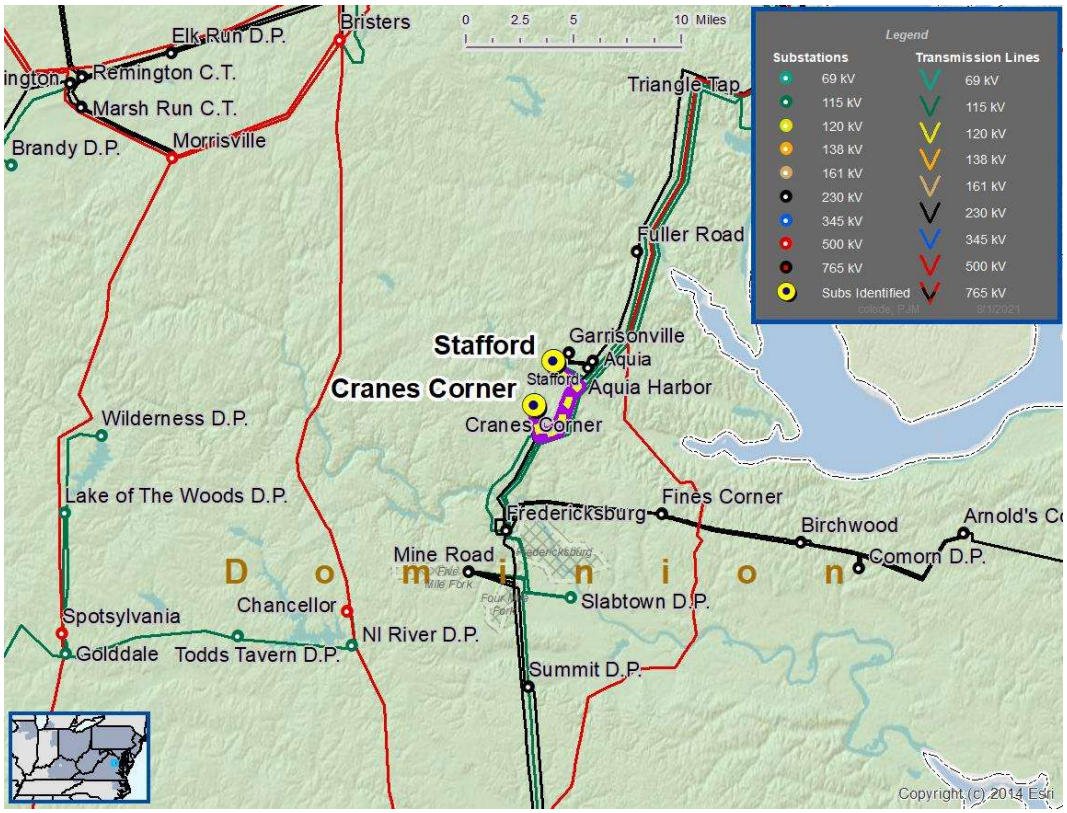
In the 2026 Light Load RTEP case, the Bancroft-Putnam Village, Putnam Village-Winfield, Putnam Village-Teays and the Hurrican-Milton 69 kV lines are overloaded for an N-1 outage combination. The Hurrican-Teays 69 kV line is also overloaded for various N-1 outage combinations.

Baseline Project b3321: Cranes Corner-Stafford 230 kV

Dominion Transmission Zone

The deactivation of Morgantown 1 and 2, which have a requested deactivation date of May 31, 2022, results in the overload of the Cranes Corner-Stafford 230 kV line for an N-1 outage.

Map 4. b3321: Cranes Corner-Stafford 230 kV



The recommended solution is to rebuild the Cranes Corner-Stafford 230 kV line. The estimated cost for this project is $19.6 million, with a required in-service date of June 2022. The projected in-service date is December 2023, and operating measures have been identified to mitigate reliability impacts in interim. The local transmission owner, Dominion, will be designated to complete this work.

IV. Transmission Owner Criteria Projects

Of the $165.73 million of the new recommended baseline transmission system enhancements, approximately $71.47 million is driven by transmission owner planning criteria, which makes up approximately 43 percent of the new project cost estimates.

V. Interconnection Queue Projects

Throughout 2021, PJM has continued to study new service customer requests that are submitted into our interconnection queue. These studies evaluate the impact of the new service request and include an evaluation of

Attachment A – Reliability Project Single-Zone Allocations

Upgrade ID	Description	Cost Estimate ($M)	Transmission Owner	Cost Responsibility	Required In-Service Date
b2668.1	Replace the bus/risers at Dequine 345 kV station	$2.30	AEP	AEP	6/1/2020
b3320	Replace the CT at Don Marquis 345 kV	$0.08	AEP	AEP	6/1/2022
b3321	Rebuild Cranes Corner-Stafford 230 kV line	$19.60	Dominion	Dominion	6/1/2022
b3334	Rebuild the section of Miami Fort-Hebron Tab 138 kV	$44.30	DEOK	DEOK	6/1/2022
b3335	Reconductor a 0.76 mile portion of the Croydon-Burlington 230 kV line	$0.79	PECO	PECO	6/1/2022
b3336	Rebuild Benton Harbor-Riverside 138 kV double circuit extension (6 miles).	$14.90	AEP	AEP	6/1/2022
b3337	Replace the one (1) Hyatt 138 kV breaker "AB1(101N)" with 3000 A, 63 kA interrupting breaker.	$0.48	AEP	AEP	6/1/2026
b3338	Replace the two (2) Kenny 138 kV breakers, "102" (SC-3) and "106" (SC-4), each with a 3000 A, 63 kA interrupting breaker.	$0.76	AEP	AEP	6/1/2026
b3339	Replace the one (1) Canal 138 kV breaker "3" with 3000 A, 63 kA breaker.	$0.48	AEP	AEP	6/1/2026
b3340	Replace one (1) Cheswick 138 kV breaker with a 3000 A, 63 kA breaker: "Z-53 LF_3".	$0.35	DL	DL	6/1/2026
b3341.1	Marysville Substation: Install two 69 kV 16.6 MVAR cap banks; Install five 69 kV circuit breakers; Upgrade station relaying; Replace 600 A wave trap on the Marysville-Kings Creek 69 kV (6660) circuit	$2.43	Dayton	Dayton	6/1/2026
b3341.2	Darby Substation: Upgrade remote end relaying at Darby 69 kV substation	$0.25	Dayton	Dayton	6/1/2026
b3341.3	Kings Creek: Upgrade remote end relaying at Kings Creek 69 kV substation	$0.25	Dayton	Dayton	6/1/2026
b3342	Replace the 2156 ACSR & 2874 ACSR bus and risers with 2-bundled 2156 ACSR at Muskingum River 345 kV station to address loading issues on Muskingum-Waterford 345 kV line.	$0.53	AEP	AEP	6/1/2026
b3343	Rebuild approximately 0.3 miles of overloaded 69 kV line between Albion-Philips Switch and Philips Switch-Brimfield Switch with 556 ACSR conductor.	$0.61	AEP	AEP	6/1/2026

I. NECESSITY FOR THE PROPOSED PROJECT

B. [1] 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.). [2] 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. [3] 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. [4] Provide a list of those facilities that are not yet in service.

Response: [1] Engineering Justification for the Project

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

[2] Known Future Projects

Significant future load growth is expected in the service area. The F2PPC has been experiencing increased interest from data center developers since approximately 2022 and Dom LSE has submitted 10 DP requests to either begin or study interconnection for projects with a projected load of close to 600 MW by 2028 and 3,000 MW by 2032. Dom LSE also received DP requests for (i) 13 new substations in the corridor south of Fredericksburg Substation and (ii) three new substations east of the F2PPC, with a combined projected load of over 2,700 MW by 2028 and over 5,200 MW by 2032.

In addition, the following known future projects are dependent upon this Rebuild Project being completed:

Rebuild 115 kV Line #29 to 230 kV standards from Aquia Harbour to Possum Point.

Rebuild 230 kV Line #252 from Aquia Harbour to Possum Point.

Convert Line #29 from 115 kV to 230 kV standards from Aquia Harbour to Possum Point.

Interconnect Line #2104 to Spartan Substation between Cranes Corner and Aquia Harbour. The interconnection will use a 230 kV ring bus, and the Spartan Substation to the Aquia Harbour Station will become Line #2297.

The growing number of Delivery Point requests, *see supra*, in the F2PPC Load Area.

[3] Planning Studies

The reliability studies conducted for this Rebuild Project and the study results are described in Section I.A.

[4] Facilities List

All approved PJM RTEP projects and associated generators are included in the 2026 RTEP model as based on PJM RTEP Protocols.

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: As described in Section I.A, the F2PPC Load Area is generally defined as containing one 230 kV source, comprised of multiple 230 kV lines in series, and one 115 kV source, feeding the various substations between the Fredericksburg and Possum Point terminals. The area served by the substations in the F2PPC is defined, generally, as the area in Stafford County paralleling Interstate 95, north of the Rappahannock River, east to the Potomac River and west along Route 17 to Hartwood Road. It also includes the areas, both north and south, around Stafford Regional Airport, as well as the area around Garrisonville Substation, north to MCBQ located in Stafford County, the Town of Quantico, and Prince William County. Attachment I.G.1 shows the portion of the Company's transmission system in the area of the Rebuild Project.

The full F2PPC area is described in detail below; however, the scope of the Rebuild Project is only between the Fredericksburg Substation and Aquia Harbour Station.

Fredericksburg to Possum Point Corridor ("F2PPC")

The existing electric transmission corridor between the Company's Fredericksburg Substation and Possum Point Power Station switchyard is approximately 24.5 miles long. For the first approximately 0.7 miles, heading roughly north out of Fredericksburg Substation, the corridor contains two 230 kV lines on double-circuit, weathering steel monopole structures – Line #2157 (Fredericksburg-Cranes Corner) and Line #2083 (Fredericksburg-Birchwood Non-Utility Generator ("NUG")). The corridor also contains one 115 kV line on single-circuit, two-pole wooden H-frame structures – Line #29 (Fredericksburg-Possum Point). Up to the point where the corridor reaches Mary Washington Boulevard and Hospital Drive ("Hospital Junction"), Line #2157 is on the west side of the corridor, Line #2083 is in the middle, and Line #29 is on the east side of the corridor. Just after crossing Mary Washington Boulevard, Line #29 crosses under Lines #2083 and #2157 as the corridor splits and Line #2083 heads roughly east toward Birchwood NUG while Line #2157 and Line #29 continue roughly north, each on single-circuit, two-pole wooden H-frame structures for approximately 3.8 miles to Cranes Corner Substation, with Line #2157 on the east side of the corridor and Line #29 on the west side. (Note: approximately 0.75 miles north of Hospital Junction, the transmission corridor crosses the Rappahannock River, leaving the City of Fredericksburg and crossing into Stafford County.)

At Cranes Corner Substation, Line #29 continues past the substation while Line #2157 terminates into a 230 kV breaker and leaves the substation as Line #2104 (Cranes Corner-Aquia Harbour). There are two 230-34.5 kV distribution transformers, 45 MVA TX#1 and 75 MVA TX#2, that feed a total of approximately 15,983 customers from six 34.5 kV distribution circuits.

Approximately 0.7 miles roughly northeast of Cranes Corner Substation, the corridor makes a more northerly turn at which point Line #29 crosses under Line #2104 ("Cranes Crossing") and the lines switch positions as they continue to travel north, with Line #29 on the east side of the corridor and Line #2104 on the west. Also, approximately 0.25 miles north of Cranes Crossing on the west side of the right-of-way is the Dogwood Air Park, an aviation-oriented residential community surrounding a 4000-foot runway, bounded by the transmission corridor to the east and Route 1 to the west.

Approximately 2.1 miles further north in the corridor from Cranes Crossing is the future Stafford Technology Park ("STP") data center development which will be developed on both sides of the Line #2104/Line #29 corridor and is discussed in Section I.B.

Continuing north approximately 2.3 miles from the STP development is another data center development, Spartan, which is located on the west side of the Line #2104/Line #29 corridor and will also be discussed in Section I.B.

On the east side of the corridor at the Spartan development, 500 kV Line #568 (Ladysmith-Possum) enters the right-of-way on single-circuit lattice towers and continues north on the east side of the corridor with Line #2104 on the west side and Line #29 in the middle.

Approximately 2.6 miles north of where Line #568 enters the corridor at the Spartan development, Stafford Substation is tapped from Line #2104, on the west side of the right-of-way. Stafford Substation consists of two 230-34.5 kV distribution transformers, 84 MVA TX#1 and 75 MVA TX#2, that feed a total of approximately 18,924 customers from six, 34.5 kV distribution circuits.

Continuing approximately 0.3 miles north of Stafford Substation to Aquia Harbour Station, Line #568 bypasses Aquia Harbour Station on the east side of the corridor while Line #29 passes through Aquia Harbour Station by utilizing the upper position of the double-circuit backbone within the station. Line #2104 dead-ends in the lower position of the double-circuit backbone at Aquia Harbour Station where it drops into a line terminal created by "normally closed" tie-breaker 2104T2119 and "normally open" tie-breaker 252T2104. On the other side of the double-circuit backbone at Aquia Harbour Station, Line #252 (Aquia Harbour-Possum Point) dead-ends into the double-circuit backbone where it drops into a line

terminal created by “normally closed” tie-breaker 252T2120 and the previously mentioned “normally open” tie-breaker 252T2104.

Lines #2119 and #2120 are both underground 230 kV lines that loop in-and-out approximately 5.8 miles from Aquia Harbour Station to Garrisonville Substation.

At Garrisonville Substation, Lines #2119 and #2120 terminate in a 230 kV four-breaker ring bus that is the source for two, 230 kV, 50-100 MVAR variable shunt reactors, as well as two 230-34.5 kV distribution transformers, 84 MVA TX#1 and 84 MVA TX#2, that feed a total of approximately 7,457 customers from four, 34.5 kV distribution circuits.

Leaving Aquia Harbour Station to the north, Line #252 and Line #29 share double-circuit lattice towers with Line #252 on the west side of the tower and Line #29 on the east side of the tower (but in the middle position within the corridor since Line #568 occupies the eastern side of the right-of-way).

Approximately 3.75 miles north of Aquia Harbour Station is Aquia Substation which is tapped from Line #252 and located within the MCBQ. There is a single 230-34.5 kV, 33.6 MVA distribution transformer that feeds about 3,374 customers from a single 34.5 kV distribution circuit.

Continuing north past Aquia Substation for approximately 1.35 miles, the corridor crosses Route 1 at the North Branch Chopawamsic Creek and enters Prince William County. The three lines (#252, #29, and #568) continue in the corridor together for approximately 1.6 miles, traversing Locust Shade Park, Interstate 95, and the eastern edge of Quantico National Cemetery before Line #252 and Line #29 turn east by crossing under Line #568 between structures 568/38 and 568/39 (“Cemetery Junction”).

At Cemetery Junction, Line #568 continues north for approximately 0.75 miles before turning east and continuing for approximately 5.5 miles to the 500 kV switchyard at Possum Point Power Station. Line #252 and Line #29 continue east from Cemetery Junction (crossing back over I-95 and Rt. 1) on shared double-circuit lattice towers for approximately 1.75 miles to Fuller Road Substation, with Line #252 on the north side of the tower and Line #29 on the south side of the tower.

At Fuller Road Substation, Line #252 is tapped as the source while Line #29 passes through the substation without touching any structures. There is a single 230-34.5 kV, 33.6 MVA distribution transformer that feeds about 424 customers from two 34.5 kV distribution circuits.

Approximately 0.2 miles east of Fuller Road Substation, Line #252 and Line #29 turn northeast at structure 252/5568 (“Quantico Tap”) and continue for approximately 2.65 miles to structure 252/5583 where they split, with Line #252

continuing approximately 0.5 miles on predominately single-circuit, two-pole H-frame structures to the 230 kV switchyard at Possum Point Power Station, and Line #29 continuing approximately 0.65 miles on predominately single-circuit, two-pole H-frame structures to the 115 kV switchyard at Possum Point Power Station.

At Quantico Tap, Line #29 continues as a radial for approximately 1.7 miles on single-circuit, two-pole wooden H-frame structures to Quantico Substation.

At Quantico Substation, there are two 115-13.2 kV distribution transformers, 22.4 MVA TX#1 and 22.4 MVA TX#2, that feed approximately 450 customers, including MCBQ, from three 13.2 kV distribution circuits.

Attachment I.C.1 shows the five-year summer and winter historical peaks (coincident with the system peak) for the existing substations in the F2PPC, while Attachments I.C.2 and I.C.3 show the summer and winter projected loads, respectively.

Projected loads from the 16 additional DP requests discussed in Section I.A are shown in Attachment I.C.4. The projections from 10 new DP requests are estimated to drive the F2PPC total direct-connected load to close to 600 MW by 2028 and 3,000 MW by 2032. Additionally, in the corridor south of Fredericksburg Substation, the Company received DP Requests for 13 new substations to serve the growing data center load. The projected new load is estimated to be over 2,600 MW by 2028 and over 4,700 MW by 2032. Further, east of the F2PPC, Dom LSE submitted DP requests for three new substations with projected loads over 100 MW by 2028 and over 500 MW by 2032. These 26 DP requests (10 in the F2PPC, 13 to the south, and three to the east) represent additional load projections of over approximately 3,300 MW in 2028 and over approximately 8,200 MW in 2032. Due to volume of DP requests, the Company continues efforts to model the impacts of this unprecedented load growth. Prudent utility practice drives maximization of existing corridors using 230 kV standards and with a minimum normal summer rating of 1573 MVA in this region, especially given the reliability of upgrades that have already been identified in the F2PPC.

Completing the Rebuild Project by rebuilding Lines #29, #2104, and #2157 on double circuit structure will enable the Company to maintain reliable service to accommodate the significant load growth anticipated in this area of the Company's transmission system as discussed in Section I.A. In addition, existing Lines #29 and #2104 cannot continue to adequately serve the needs of the Company and its customers because of the aging infrastructure (Line #29) and overloading issues (Line #2104), respectively, as discussed in Section I.A.

The Company has created a plan to address its end-of-life facilities, setting target completion dates for end-of-life projects based on the condition of the facilities, the Company's resources, and the need to schedule outages. The in-service date for the Rebuild Project is December 31, 2026, which reflects the need confirmed by

industry guidelines and balanced against the timeline for permitting, construction, and obtaining necessary outages.

Attachment I.C.1 - Historical Summer and Winter Loads in the F2PPC

SUMMER LOADS	Historical MW (Coincident with System Peak)				
Date	7/20/2019	7/20/2020	8/12/2021	8/9/2022	7/28/2023
Quantico TX#1	n/a	7.4	7.2	7.5	6.5
Quantico TX#2	n/a	7.4	7.2	7.5	6.5
Aquia TX#1	28.5	25.6	28.9	24.5	23.5
Cranes Corner TX#1	37.3	19.5	19.6	38.2	37.4
Cranes Corner TX#2	44.4	56.6	56.3	41.7	46.2
Garrisonville TX#1	43.1	48.1	46.6	47.4	44.8
Stafford TX#1	59.0	62.6	59.9	60.9	59.9
Stafford TX#2	46.9	52.6	48.1	48.6	49.2
Fuller Road TX#1	7.3	13.4	11.8	12.6	12.3
TOTAL	266.5	293.2	285.6	288.9	286.3

WINTER LOADS	Historical MW (Coincident with System Peak)				
Date	1/31/2019	1/21/2020	1/29/2021	1/27/2022	12/24/2022
Quantico TX#1	n/a	4.9	4.4	4.7	7.8
Quantico TX#2	n/a	4.9	4.4	4.7	0.2
Aquia TX#1	26.7	22.5	21.9	23.9	23.4
Cranes Corner TX#1	40.9	16.1	16.2	39.3	43.2
Cranes Corner TX#2	45.0	41.3	43.0	41.6	44.8
Garrisonville TX#1	56.4	44.1	44.1	54.0	56.9
Stafford TX#1	64.3	51.6	50.4	58.8	61.9
Stafford TX#2	57.2	42.1	41.5	50.6	56.4
Fuller Road TX#1	9.0	7.9	7.6	8.1	7.1
TOTAL	299.5	235.4	233.5	285.7	301.7

Attachment I.C.2 - Projected Summer Loads in the F2PPC

	SUMMER LOADS	Projected MW									
	Year (August)	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
EXISTING LOADS	Quantico TX#1	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
	Quantico TX#2	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
	Aquia TX#1	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5
	Cranes Corner TX#1	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4
	Cranes Corner TX#2	52.2	47.9	47.9	47.9	47.9	47.9	47.9	47.9	47.9	47.9
	Garrisonville TX#1	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8
	Stafford TX#1	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9
	Stafford TX#2	49.2	49.2	49.2	49.2	49.2	49.2	49.2	49.2	49.2	49.2
	Fuller Road TX#1	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3
PROPOSED LOADS	Spartan	18.1	28.9	71.5	71.5	71.5	71.5	71.5	71.5	71.5	71.5
	Widewater*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.0	66.0	121.0
	Centreport	0.0	0.0	0.0	4.0	48.0	136.0	136.0	136.0	136.0	136.0
	Alto	0.0	0.0	0.0	32.0	66.0	213.0	213.0	213.0	213.0	213.0
	Woodcutters	0.0	0.0	0.0	0.0	100.0	250.0	350.0	800.0	1300.0	1300.0
	Baritone	0.0	0.0	0.0	0.0	0.0	32.0	111.0	183.0	183.0	183.0
	Classical*	0.0	0.0	0.0	0.0	0.0	0.0	8.0	60.0	155.0	175.0
	Opera	0.0	0.0	0.0	0.0	0.0	0.0	54.0	170.0	242.0	255.0
	Tenor*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	66.0
	Soprano	0.0	0.0	0.0	0.0	18.0	116.0	219.0	255.0	255.0	255.0
	Total EXISTING	292.3	288.0	288.0	288.0	288.0	288.0	288.0	288.0	288.0	288.0
	Total PROPOSED	18.1	28.9	71.5	107.5	303.5	818.5	1162.5	1910.5	2627.5	2775.5
	Total OVERALL	**310.4**	**316.9**	**359.5**	**395.5**	**591.5**	**1106.5**	**1450.5**	**2198.5**	**2915.5**	**3063.5**

* = "Engineering Only" DP Request

Attachment I.C.3 - Projected Winter Loads in the F2PPC

	WINTER LOADS	Projected MW									
	Year (February)	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
EXISTING LOADS	Quantico TX#1	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
	Quantico TX#2	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
	Aquia TX#1	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4
	Cranes Corner TX#1	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2
	Cranes Corner TX#2	44.8	50.8	44.6	44.6	44.6	44.6	44.6	44.6	44.6	44.6
	Garrisonville TX#1	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9
	Stafford TX#1	61.9	61.9	61.9	61.9	61.9	61.9	61.9	61.9	61.9	61.9
	Stafford TX#2	56.4	56.4	56.4	56.4	56.4	56.4	56.4	56.4	56.4	56.4
	Fuller Road TX#1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
PROPOSED LOADS	Spartan	0.0	18.0	33.7	64.9	64.9	64.9	64.9	64.9	64.9	64.9
	Widewater*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.0	66.0
	Centreport	0.0	0.0	0.0	4.0	48.0	136.0	136.0	136.0	136.0	136.0
	Alto	0.0	0.0	0.0	32.0	66.0	213.0	213.0	213.0	213.0	213.0
	Woodcutters	0.0	0.0	0.0	0.0	100.0	250.0	350.0	800.0	1300.0	1300.0
	Baritone	0.0	0.0	0.0	0.0	0.0	32.0	111.0	183.0	183.0	183.0
	Classical*	0.0	0.0	0.0	0.0	0.0	0.0	8.0	60.0	155.0	175.0
	Opera	0.0	0.0	0.0	0.0	0.0	0.0	54.0	170.0	242.0	255.0
	Tenor*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	66.0
	Soprano	0.0	0.0	0.0	0.0	18.0	116.0	219.0	255.0	255.0	255.0
	Total EXISTING	301.7	307.7	301.5	301.5	301.5	301.5	301.5	301.5	301.5	301.5
	Total PROPOSED	0.0	18.0	33.7	100.9	296.9	811.9	1155.9	1881.9	2576.9	2713.9
	Total OVERALL	**301.7**	**325.7**	**335.2**	**402.4**	**598.4**	**1113.4**	**1457.4**	**2183.4**	**2878.4**	**3015.4**

* = "Engineering Only" DP Request

Attachment I.C.4 - Proposed New Loads East and South of the F2PPC

LOADS (East)	Projected MW									
Year	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Caboose	0.0	0.0	6.0	30.0	84.0	84.0	84.0	12.0	140.0	180.0
Freight	0.0	0.0	0.0	0.0	2.0	40.0	90.0	120.0	140.0	160.0
Locomotive	0.0	0.0	0.0	0.0	18.0	116.0	219.0	255.0	255.0	255.0
Total PROPOSED	0.0	0.0	6.0	30.0	104.0	240.0	393.0	387.0	535.0	595.0

* = "Engineering Only" DP Request

LOADS (South)	Projected MW									
Year	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
New Post	0.0	66.0	99.0	237.0	237.0	237.0	237.0	237.0	237.0	237.0
River View	0.0	7.0	47.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0
Caroline County*	0.0	5.0	20.0	50.0	100.0	200.0	300.0	400.0	500.0	600.0
Hunters Ridge	0.0	55.0	171.0	400.0	600.0	600.0	800.0	800.0	800.0	800.0
Belvedere	0.0	0.0	92.0	210.0	285.0	285.0	285.0	285.0	285.0	285.0
Slayden Creek	0.0	0.0	5.0	92.0	210.0	210.0	210.0	210.0	210.0	210.0
Matta	0.0	0.0	33.0	83.0	149.0	210.0	281.0	352.0	462.0	572.0
Hickory Ridge*	0.0	0.0	146.0	146.0	290.0	290.0	290.0	290.0	290.0	290.0
Ruther Glen	0.0	0.0	170.0	170.0	338.0	338.0	338.0	548.0	548.0	548.0
Carmel Church	0.0	0.0	18.0	80.0	125.0	187.0	299.0	299.0	299.0	299.0
Falling Creek	0.0	0.0	0.0	0.0	5.0	92.0	210.0	210.0	210.0	210.0
Tidewater	0.0	0.0	0.0	0.0	0.0	92.0	210.0	285.0	285.0	285.0
Kettler Crossroads*	0.0	0.0	0.0	81.0	189.0	297.0	400.0	450.0	500.0	550.0
Total PROPOSED	0.0	133.0	801.0	1657.0	2636.0	3146.0	3968.0	4474.0	4734.0	4994.0

* = "Engineering Only" DP Request

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: See Section I.A.

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: Feasible Project Alternatives

The Company did not identify alternatives to PJM for the Rebuild Project because there is no alternative within the existing right of way that can satisfy the Rebuild Project's three primary drivers, which are to: (a) maintain the structural integrity and reliability of the networked transmission system; (b) resolve identified violations of the mandatory NERC Reliability Standards; and (c) provide for future load growth in the area.[14]

Analysis of Demand-Side Resources

Pursuant to the Commission's November 26, 2013, Order entered in Case No. PUE-2012-00029, and its November 1, 2018, Final Order entered in Case No. PUR-2018-00075 ("2018 Final Order"), the Company is required to provide an analysis of demand-side resources ("DSM") as incorporated into the Company's planning studies. DSM is the broad term that includes both energy efficiency ("EE") and demand response ("DR"). In this case, PJM and the Company have identified a need for the proposed Rebuild Project based on the need to maintain the overall long-term reliability of its transmission system and to comply with mandatory NERC Reliability Standards.[15] Notwithstanding this, 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 Rebuild Project. Based on these considerations, the evaluation of the Rebuild Project demonstrated that despite accounting for DSM consistent with PJM's methods, the Rebuild Project is necessary.

Incremental DSM also will not eliminate the need for the Rebuild Project. As reflected in Attachments I.C.1–I.C.3, the highest annual projected peak load over the next 10 years in the F2PPC is is projected to total approximately 3063.5 MW (including future planned stations). By way of comparison, statewide, the Company achieved demand savings of 264.8 MW (net) / 404.8 MW (gross) from its DSM programs in 2022.

[14] See Section I.A.

[15] 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: Between Fredericksburg Substation and Aquia Harbour Station, a total of 108 structures consisting of 87 wood H-frame structures, 10 steel H-frame structures, nine three-pole wood structures, and two three-pole steel structures will be removed from Line #29. The Company will replace these structures with 116 230 kV tubular structures consisting of 79 double circuit V-String suspension structures, 27 double circuit double deadend (DDE) structures, six double circuit two-pole DDE structures, one single circuit DDE structure, one single circuit DDE three-pole structure, and two double circuit DDE backbones, the majority[16] being constructed of weathering steel, to maximize the number of lines that can fit in the right-of-way to serve the significant load growth anticipated in the area. Although Line #29 will be designed to current 230 kV standards, it will continue to operate at 115 kV until a conversion date in the near future. An additional structure is necessary for reasons discussed in Section I.A.

Between Cranes Corner Substation and Aquia Harbour Station, a total of 80 structures consisting of four three-pole wood structures, 70 wood H-frame structures, one steel H-frame structure, two wood static poles, two steel static poles, and two lattice steel switch structures will be removed from Line #2104. They will be replaced with 77 230 kV tubular structures consisting of 50 double circuit V-string suspension structures, 13 double circuit DDE structures, five double circuit DDE two-pole structures, five single circuit DDE, two single circuit DDE three-pole structures, and two single circuit phase/phase switch structures, all constructed of weathering steel, to maximize the number of lines that can fit in the right-of-way to serve the significant load growth anticipated in the area.

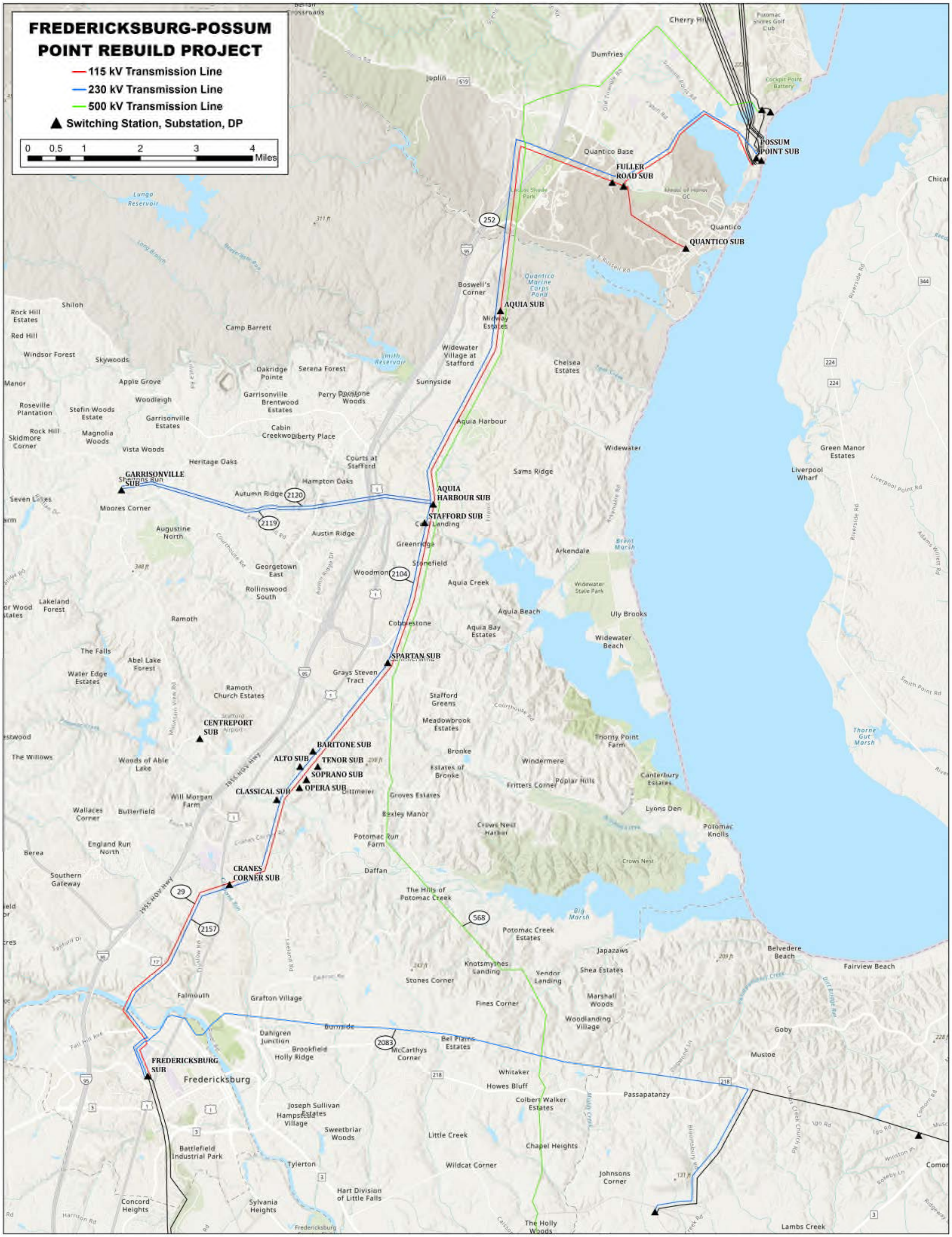
Between Fredericksburg and Cranes Corner Substations, a total of 35 structures consisting of two double circuit suspension steel structures, five single circuit steel H-frame structures, 23 single circuit wood H-frame structures, three steel three-pole DDE structures, and two wood three-pole structures will be removed from Line #2157. They will be replaced with 43 tubular steel structures consisting of 22 double circuit V-string suspension structures, 12 double circuit DDE structures, one double circuit DDE two-pole structure, four single circuit three-pole DDE structures, and four single circuit DDE structures, all constructed of weathering steel, to maximize the number of lines that can fit in the right-of-way to serve the significant load growth anticipated in the area.

[16] Two double circuit DDE backbones will be constructed of galvanized steel.

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.


FREDERICKSBURG-POSSUM POINT REBUILD PROJECT
115 kV Transmission Line
230 kV Transmission Line
500 kV Transmission Line
Switching Station, Substation, DP
0 0.5 1 2 3 4 Miles
POSSUM POINT SUB
FULLER ROAD SUB
QUANTICO SUB
AQUIA SUB
GARRISONVILLE SUB
AQUIA HARBOUR SUB
STAFFORD SUB
SPARTAN SUB
CENTREPORT SUB
BARITONE SUB
ALTO SUB
TENOR SUB
SOPRANO SUB
OPERA SUB
CLASSICAL SUB
CRANES CORNER SUB
FREDERICKSBURG SUB
Dumfries
Cherry Hill
Joplin
Quantico Base
Quantico
Lunga Reservoir
Boswell's Corner
Midway Estates
Camp Barrett
Widewater Village at Stafford
Sunnyside
Chelsea Estates
Aquia Harbour
Widewater
Sams Ridge
Green Manor Estates
Liverpool Wharf
Arkendale
Aquia Creek
Aquia Beach
Widewater State Park
Uly Brooks
Widewater Beach
Stafford Greens
Meadowbrook Estates
Thorny Point Farm
Brooke
Windermere
Fritters Corner
Poplar Hills
Canterbury Estates
Lyons Den
Potomac Knolls
Crows Nest
Daffan
The Hills of Potomac Creek
Potomac Creek Estates
Japazaws
Belvedere Beach
Fairview Beach
Shea Estates
Knotsmythes Landing
Yendor Landing
Marshall Woods
Woodlanding Village
Fines Corner
Goby
Mustoe
Falmouth
Grafton Village
Dahlgren Junction
Brookfield
Holly Ridge
McCarthys Corner
Bel Plains Estates
Whitaker
Howes Bluff
Passapatanzy
Colbert Walker Estates
Chapel Heights
Johnsons Corner
Little Creek
Wildcat Corner
Fredericksburg
Joseph Sullivan Estates
Hampstead Village
Sweetbriar Woods
Battlefield Industrial Park
Tylerton
Hart Division of Little Falls
Concord Heights
Sylvania Heights
Lambs Creek
The Holly Woods
Southern Gateway
Berea
England Run North
Wallaces Corner
Butterfield
Will Morgan Farm
Woods of Able Lake
The Willows
Ramoth
Ramoth Church Estates
Grays Steven Tract
Cobblestone
Woodmont
Stonefield
Greenridge
Austin Ridge
Georgetown East
Rollinswood South
Augustine North
Moores Corner
Autumn Ridge
Hampton Oaks
Courts at Stafford
Heritage Oaks
Vista Woods
Garrisonville Estates
Garrisonville Brentwood Estates
Cabin Creekwood
Liberty Place
Oakridge Pointe
Serena Forest
Apple Grove
Woodleigh
Skywoods
Windsor Forest
Red Hill
Rock Hill Estates
Shiloh
Roseville Plantation
Stefin Woods Estate
Magnolia Woods
Rock Hill
Skidmore Corner
Lakeland Forest
The Falls
Abel Lake Forest
Water Edge Estates
Potomac Run Farm
Groves Estates
Bexley Manor
Crows Nest Harbor
Stones Corner
252
2120
2119
2104
29
2157
568
2083
218
224
344

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 Rebuild Project is December 31, 2026. The Company estimates it will take approximately 24 months after a final order from the Commission for detailed engineering, materials procurement, permitting, real estate, and construction of the Rebuild Project. Accordingly, to support this estimated construction timeline and construction plan, the Company respectfully requests a final order by December 31, 2024. Should the Commission issue a final order by December 31, 2024, the Company estimates that construction should begin in March 2025 with the Rebuild Project to be completed by the in-service target date of December 31, 2026. This schedule is contingent upon obtaining the necessary permits and careful coordination of 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 labor shortages or materials/supply issues. Based on the Rebuild Project's complexity, there may be delays with procurement of materials.

Any adjustments to the Rebuild 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, 2026) and a CPCN sunset date (*i.e.*, December 31, 2027) for energization of the Project.

In addition, the Company is actively monitoring regulatory changes and requirements associated with the Northern Long Eared Bat ("NLEB") and how it 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 expires on March 31, 2024. The Company actively is 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 continuing to track 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 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.

I. NECESSITY FOR THE PROPOSED PROJECT

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

Response: The estimated conceptual cost of the Rebuild Project is approximately $134.6 million (in 2023 dollars).[17]

The estimated conceptual cost without installing the additional circuits as part of the Rebuild Project is approximately $112.9 million (in 2023 dollars). This option was rejected for the reasons discussed in Section I.A.

[17] The cost of the work associated with the work at the Fredericksburg, Cranes Corner, and Stafford Substations, and Aquia Harbour Stion, is approximately $830,000 (in 2023 dollars). The Company considers this work and the associated costs separate from the Rebuild Project.

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 Line #29 end-of-life rebuild to 230 kV standards was approved by the PJM Board at its February 13, 2018, meeting as a baseline upgrade, and assigned the identification number "b2981."[18]

The Line #2104 rebuild to resolve identified violations of mandatory NERC reliability standards was approved by the PJM Board at its December 8, 2021, meeting as a baseline upgrade, and assigned the identification number "b3321." See Attachment I.A.8 and Sections I.A and I.E.

The Line #2157 rebuild has not yet been submitted to PJM.

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

[18] As previously mentioned, the rebuild of Line #29 between Aquia Harbour and Possum Point to current 230 kV standards will be the subject of a future application. As part of that application, the Company will also seek to convert the entire Line #29 to 230 kV operation, including the Fredericksburg to Aquia Harbour Segment.

I. NECESSITY FOR THE PROPOSED PROJECT

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

Response: Not applicable. The need for the Rebuild Project is not driven by outage history, but rather by the need to maintain reliable service for the load growth anticipated in the area, to replace transmission infrastructure nearing end of life, and to address projected overloading issues. See Sections I.A and I.C.

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: See Attachment I.L.1 for photographs of the deterioration of structures on Lines #29 and #2157. Section I.A provides further detail on the condition of these deteriorating structures. See Attachment I.L.2 for sample inspection records of Lines #29 and #2157.

Line 2157

Line 2157

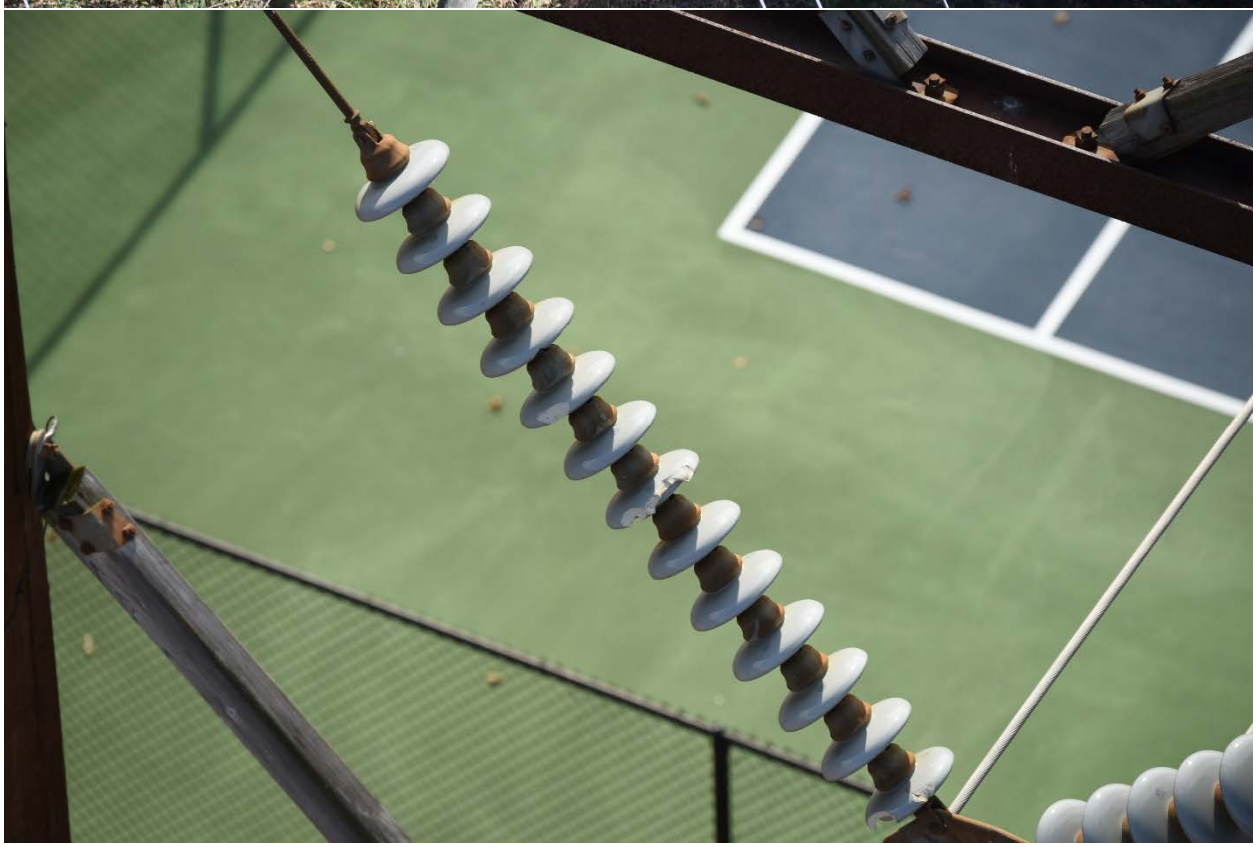
Line 2157

Line 2157

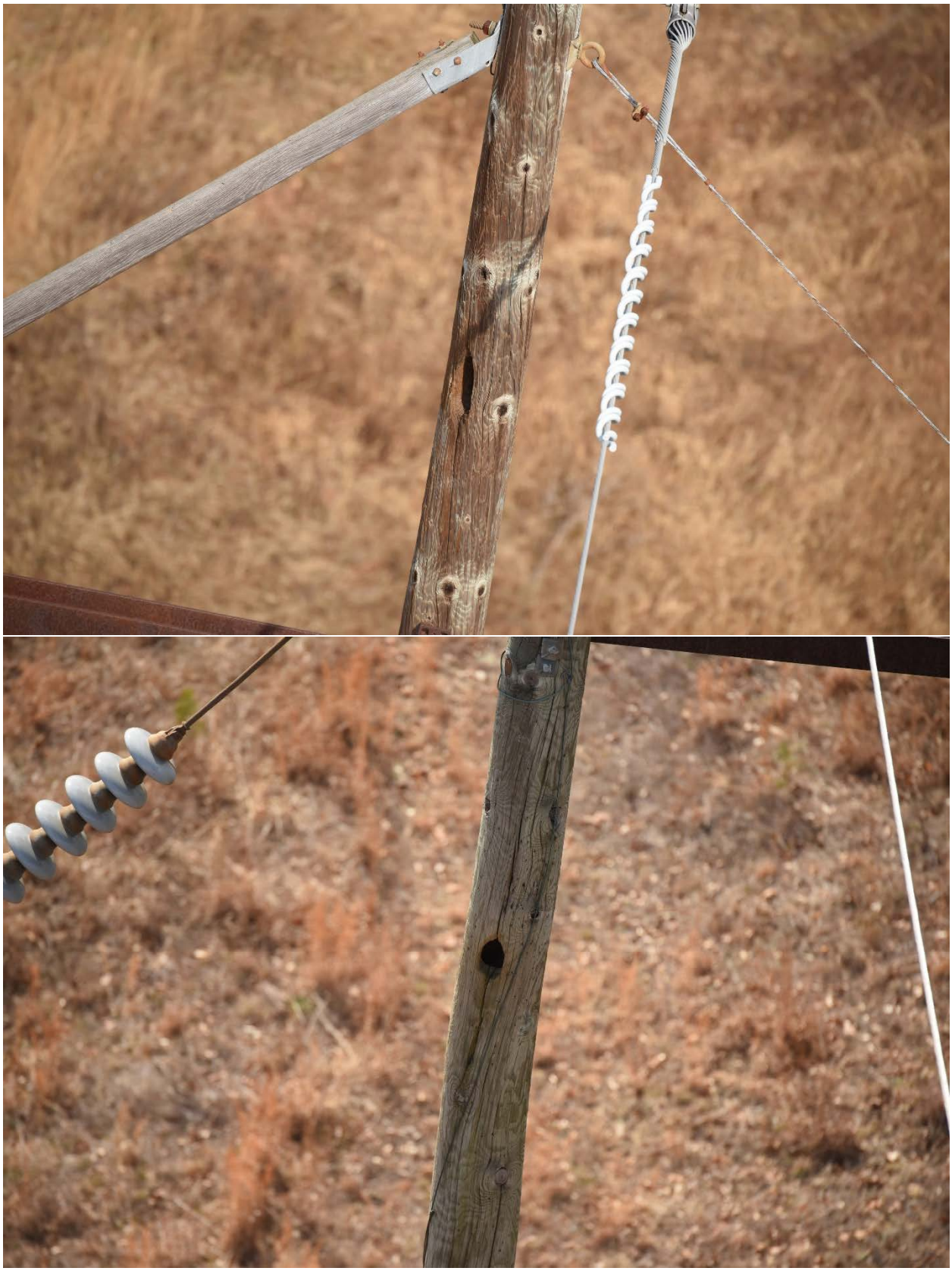
Line 2157

Line 2157

Line 2104



Line 2104

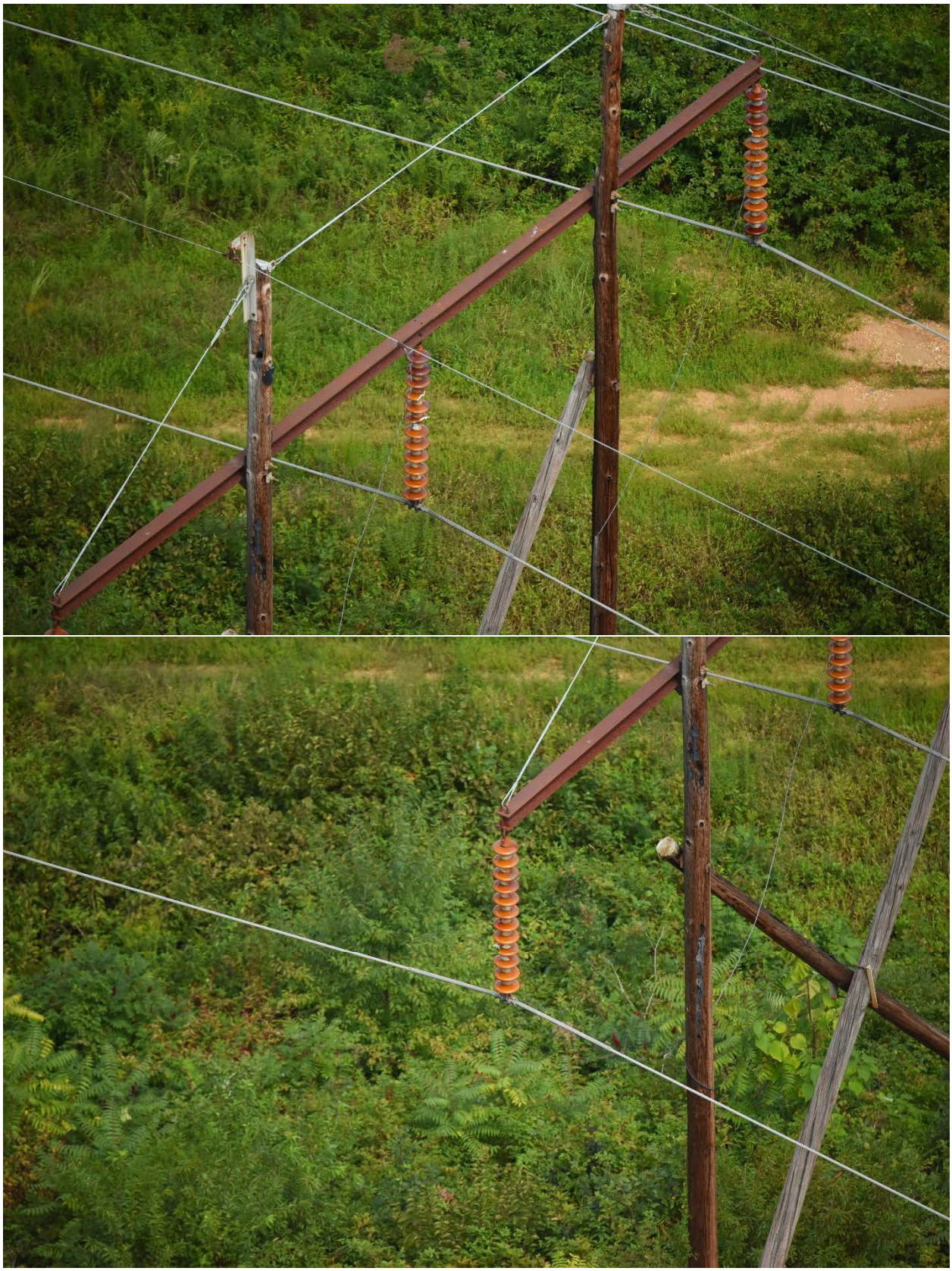


Line 2104

Line 2104

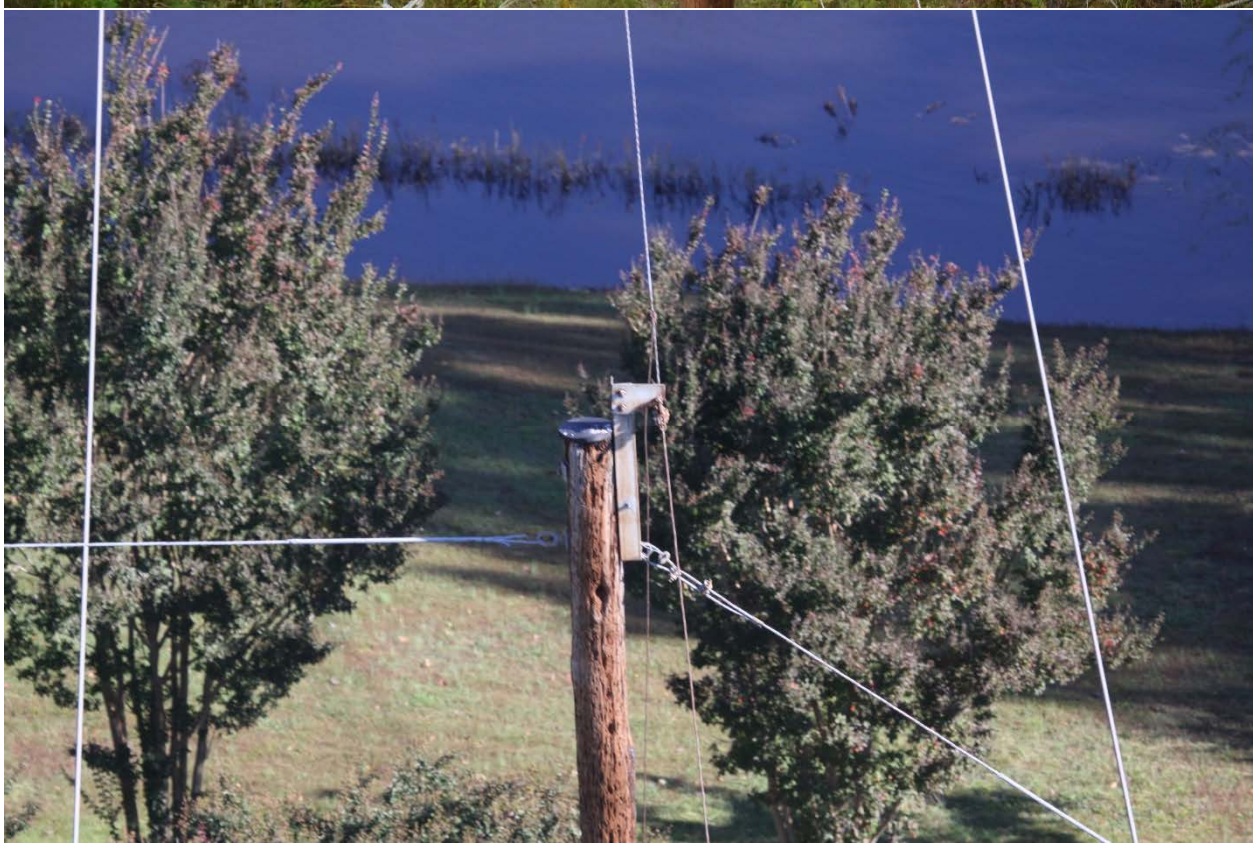
Line 2104

Line 29



Line 29

Line 29



Line 29

OUTSTANDING NOTIFICATIONS -LINE 2157						
NOTIFICATION	**LINE/STR**	**CAUSE GROUP**	**CAUSE CODE**	**CAUSE TEXT**	**NOTIF. DATE**	**REPORTED BY**
13062109	2157/5410	Guy	Corroded	Guy-Corroded	1/22/2024	JARED29
13062109	2157/5410	Guy	Buried-Equip Required to Dig Out	Guy-Buried-Equip Required to Dig Out	1/22/2024	JARED29
13062109	2157/5410	Guy	Fiber Glass/Wood Breaker-Damaged	Guy-Fiber Glass/Wood Breaker-Damaged	1/22/2024	JARED29
13062109	2157/5410	Guy	Grips (Preformed)-Damaged	Guy-Grips (Preformed)-Damaged	1/22/2024	JARED29
13062109	2157/5410	Guy	Bonding Clamps- Damaged	Guy-Bonding Clamps- Damaged	1/22/2024	JARED29
13062109	2157/5410	Guy	Need Guard	Guy-Need Guard	1/22/2024	JARED29
13062109	2157/5410	Guy	Guy Other=	Guy-Guy Other=	1/22/2024	JARED29
13062577	2157/5415	Steel Pole	Cotter Key-BO=Backed Out, M=Missing	BO	1/24/2024	CHR1394
12443076	2157/5435	Wood Pole	Str- C=Cracked,S=Split,CH=Chipped	Vertical split	1/21/2021	HELOAIR
12443076	2157/5435	Wood Pole	Pole Position=	Top Right Ascending	1/21/2021	HELOAIR
12443077	2157/5437	Wood Pole	Str- C=Cracked,S=Split,CH=Chipped	Vertical split	1/21/2021	HELOAIR
12443077	2157/5437	Wood Pole	Pole Position=	Left Pole Ascending	1/21/2021	HELOAIR
COMPLETED NOTIFICATIONS - LINE 2157						
NOTIFICATION	**LINE/STR**	**CAUSE GROUP**	**CAUSE CODE**	**CAUSE TEXT**	**NOTIF. DATE**	**REPORTED BY**
10119132	2083/7, 2157/5404	Encroachment	Encroachment - Other		11/27/2004	
10728526	2157/5411	Hardware	Hardware - Cotter Key Backed Out	right phase right sub yoke to shoe	2/23/2011	RICKEY8
10367154	2157/5412	Phase Position	Left		1/22/2008	RUSSEL8
10707909	2157/5416	Hardware	Hardware - Cotter Key Backed Out	left phase right sub	2/23/2011	RICKEY8
10254316	2157/5427	Encroachment	Encroachment - Swimming Pool		7/26/2006	CBH
10124646	2157/5428			found on 06/24/2004	7/26/2006	CBH
10124647	2157/5429	Structure - Numb	Numbers - Missing		6/26/2004	
10708163	2157/5434	Hardware	Hardware - Cotter Key Backed Out	idler sting right phase cold end	2/15/2011	RICKEY8
10367154	2157/5412	Work found durir	Work as a result of a PM Order	66798558	1/22/2008	RUSSEL8
10124646	2157/5428			found on 07/26/2006	7/26/2006	CBH
10124646	2157/5428	Phase Position	Middle	2 bells	7/26/2006	CBH
10707952	2157/5411	Hardware	Hardware - Cotter Key Missing	right phase right sub yoke to shoe	2/23/2011	RICKEY8
10928225	2083/4, 2157/5401	Steel Pole	Warning Light(s)		9/5/2012	
11009426	2157/5422	Wood Pole	Pole Other=	Needs bonding	3/22/2013	AMAND05
11350712	2083/4, 2157/5401	Insulator Conduc	Cond Insulator- Other=	need replacing	7/29/2015	
11350723	2083/5, 2157/5402	Insulator Conduc	Cond Insulator- Other=	need replacing	7/29/2015	
11350724	2083/6, 2157/5403	Insulator Conduc	Cond Insulator- Other=	need replacing	7/29/2015	
11350725	2083/7, 2157/5404	Insulator Conduc	Cond Insulator- Other=	need replacing	7/29/2015	
11350727	2083/9, 2157/5406	Insulator Conduc	Cond Insulator- Other=	need replacing	7/29/2015	
11599633	2083/5, 2157/5402	Steel Pole	Warning Light(s)	install Flash Monitoring system test	1/11/2017	
11824923	2083/2, 2157/5399	Insulator Conduc	Cotter Key-BO=Backed Out, M=Mi	BO	6/19/2018	TIM0032
11824923	2083/2, 2157/5399	Insulator Conduc	(H) Hot End / (C) Cold End	C	6/19/2018	TIM0032
11824778	2083/4, 2157/5401	Steel Pole	Str Number-M=Missing,F=Faded,A=Aerial	M	6/19/2018	BRAND58
11824779	2083/5, 2157/5402	Conductor	Cotter Key-BO=Backed Out, M=Mi	Bo	6/19/2018	BRAND58
11824924	2157/5408	Wood Pole	Ground Wire-M=Missing,C=Cut	C	6/19/2018	TIM0032
11824780	2157/5410	Conductor	Cotter Key-BO=Backed Out, M=Mi	Bo	6/19/2018	BRAND58
11824782	2157/5427	Insulator Conduc	Cotter Key-BO=Backed Out, M=Mi	Bo	6/19/2018	BRAND58
12444128	2157/5412	Wood Pole	WP Damage-MI=Minor, MA=Major	Woodpecker Hole	1/19/2021	HELOAIR
12421869	2157/5412	Wood Pole	Ground Wire-M=Missing,C=Cut	Cut	3/12/2021	JARED29
12444129	2157/5420	Wood Pole	Str Number-M=Missing,F=Faded,A=Aerial	Structure # "0" Missing	1/19/2021	HELOAIR
12444130	2157/5424	Wood Pole	WP Damage-MI=Minor, MA=Major	Woodpecker Hole	1/19/2021	HELOAIR
12421870	2157/5425	Wood Pole	Ground Wire-M=Missing,C=Cut	Cut	3/12/2021	JARED29
12421871	2157/5426	Wood Pole	Brace Location=	Wood Pole-Brace Location=	3/12/2021	JARED29
12444131	2157/5429	Wood Pole	WP Damage-MI=Minor, MA=Major	Woodpecker Damage	1/19/2021	HELOAIR
12421872	2157/5430	Wood Pole	Str Number-M=Missing,F=Faded,A=Aerial	A	3/12/2021	JARED29
12444132	2157/5434	Mixed Wood/Ste	WP Damage-MI=Minor, MA=Major	Woodpecker Hole	1/21/2021	HELOAIR
12444133	2157/5436	Wood Pole	WP Damage-MI=Minor, MA=Major	Woodpecker Hole	1/21/2021	HELOAIR
12444128	2157/5412	Wood Pole	Pole Position=	Top Right Ascending	1/19/2021	HELOAIR
12444129	2157/5420	Wood Pole	Pole Position=	Right Ascending	1/19/2021	HELOAIR
12444130	2157/5424	Wood Pole	Pole Position=	Left Ascending	1/19/2021	HELOAIR
12421871	2157/5426	Wood Pole	Ground Wire-M=Missing,C=Cut	Cut	3/12/2021	JARED29
12444131	2157/5429	Wood Pole	Pole Position=	Left Ascending	1/19/2021	HELOAIR
12444132	2157/5434	Mixed Wood/Ste	Pole Position=	Top Left Ascending	1/21/2021	HELOAIR
12444133	2157/5436	Wood Pole	Pole Position=	Top Left Ascending	1/21/2021	HELOAIR
12444127	2157/5408	Static Wire	Static Wire Other	Leaning Static	1/15/2021	HELOAIR
12444127	2157/5408	Static Wire	Wire Position L,M,R,T,B	Right Side Ascending	1/15/2021	HELOAIR
12444390	2083/4, 2157/5401	Static Wire	Static Wire Other	Leaning static	1/15/2021	HELOAIR
12444390	2083/4, 2157/5401	Static Wire	Wire Position L,M,R,T,B	Right side ascending	1/15/2021	HELOAIR
12791193	2083/3, 2157/5400	Warning Spheres	R/R(RP=Replace, RE=Repair)	RP	11/10/2022	

COMPLETED NOTIFICATIONS - LINE 2104						
NOTIFICATION	LINE/STR	CAUSE GROUP	CAUSE CODE	CAUSE TEXT	NOTIF. DATE	REPORTED BY
11633013	2104/5440	Wood Pole	Rot/Decay-Location/Type=	L leg small thru hole	3/20/2017	TIM0032
10353908	2104/5441	Work found during a routine PM	Work as a result of a PM Order	66798558	1/23/2008	RUSSEL8
10353908	2104/5441	Static Wire / Warning Spheres	Static Wire - Other	Clevis Pin backed out of threads	1/23/2008	RUSSEL8
11633014	2104/5441	Wood Pole	WP Damage-MI=Minor, MA=Major	medium	3/20/2017	TIM0032
11633014	2104/5441	Wood Pole	WP Dmg-AC=AbovCA,BC=BeloCA,BG=BetwnGy	R leg up by static	3/20/2017	TIM0032
11633015	2104/5442	Wood Pole	WP Damage-MI=Minor, MA=Major	small	3/20/2017	TIM0032
11633015	2104/5442	Wood Pole	WP Dmg-AC=AbovCA,BC=BeloCA,BG=BetwnGy	R leg between arm and x brace	3/20/2017	TIM0032
12879958	2104/5443	Wood Pole	Ground Wire-M=Missing,C=Cut	At the arm the Bond is broken.	3/29/2023	JEREMY3
10707582	2104/5445	Hardware	Hardware - Cotter Key Backed Out	right phase right sub on shoe	2/15/2011	RICKEY8
11633016	2104/5446	Wood Pole	Str Number-M=Missing,F=Faded,A=Aerial	No pole stencil	3/20/2017	TIM0032
12879957	2104/5446	Wood Pole	WP Damage-MI=Minor, MA=Major	Minor woodpecker hole top of pole	3/29/2023	JEREMY3
12290734	2104/5448	Wood Pole	Pole Position=	L/R	7/13/2020	TIM0032
12290734	2104/5448	Wood Pole	Str- C=Cracked,S=Split,CH=Chipped	C (cracks up pole)	7/13/2020	TIM0032
12290735	2104/5448	Warning Spheres	Damaged	Left side(Between structures 5448/5449	7/13/2020	TIM0032
12290735	2104/5448	Warning Spheres	R/R(RP=Replace, RE=Repair)	RE	7/13/2020	TIM0032
12327793	2104/5448	Warning Spheres	R/R(RP=Replace, RE=Repair)	Damaged aerial marker between structures	9/30/2020	HELOAIR
11877060	2104/5449	Warning Spheres	R/R(RP=Replace, RE=Repair)	half missing betwee 5449-5450	9/18/2018	HELOAIR
12290736	2104/5450	Wood Pole	Pole Position=	Left leg	7/13/2020	TIM0032
12290736	2104/5450	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RE	7/13/2020	TIM0032
12290736	2104/5450	Wood Pole	Ground Wire-M=Missing,C=Cut	C	7/13/2020	TIM0032
12290737	2104/5452	Wood Pole	Pole Position=	Left leg	7/13/2020	TIM0032
12290737	2104/5452	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RE	7/13/2020	TIM0032
12290737	2104/5452	Wood Pole	Ground Wire-M=Missing,C=Cut	C	7/13/2020	TIM0032
10367153	2104/5453	Work found during a routine PM	Work as a result of a PM Order	66798558	1/24/2008	RUSSEL8
10367153	2104/5453	Structure - Numbers	Numbers - Missing	Access Rt 676	1/24/2008	RUSSEL8
12290739	2104/5454	Insulator Conductor	Wire Position L,M,R,T,B	R	7/13/2020	TIM0032
12290739	2104/5454	Insulator Conductor	Broken- L=Leave, R=Replace	Broken	7/13/2020	TIM0032
12290739	2104/5454	Insulator Conductor	Cond Insulator- Other=	broken bell	7/13/2020	TIM0032
12290739	2104/5454	Insulator Conductor	(H) Hot End / (C) Cold End	C	7/13/2020	TIM0032
12290740	2104/5454	Wood Pole	Pole Position=	Left leg	7/13/2020	TIM0032
12290740	2104/5454	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RE	7/13/2020	TIM0032
12290740	2104/5454	Wood Pole	Ground Wire-M=Missing,C=Cut	C	7/13/2020	TIM0032
12290741	2104/5455	Insulator Conductor	Wire Position L,M,R,T,B	M	7/13/2020	TIM0032
12290741	2104/5455	Insulator Conductor	Cotter Key-BO=Backed Out, M=Mi	BO	7/13/2020	TIM0032
12290741	2104/5455	Insulator Conductor	(H) Hot End / (C) Cold End	H	7/13/2020	TIM0032
10124649	2104/5456			found on 08/21/2003 & 09/01/1994	7/26/2006	CBH
10124649	2104/5456			found on 07/26/2006	7/26/2006	CBH
10124649	2104/5456	Phase Position	Right		7/26/2006	CBH
10367151	2104/5456	Work found during a routine PM	Work as a result of a PM Order	66798558	1/24/2008	RUSSEL8
10367151	2104/5456	Guys	Guys - Needs Guard	2	1/24/2008	RUSSEL8
10367152	2104/5456	Work found during a routine PM	Work as a result of a PM Order	66798558	1/24/2008	RUSSEL8
10367152	2104/5456	Guys	Guys - Needs Guard	2	1/24/2008	RUSSEL8
10367152	2104/5456	Guys	Guy Buried	Access Rt 676	1/24/2008	RUSSEL8
12290744	2104/5456	Guy	Need Guard	Needs 2 guy guards	7/13/2020	TIM0032
12290745	2104/5456	Wood Pole	Pole Position=	Left leg	7/13/2020	TIM0032
12290745	2104/5456	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RE	7/13/2020	TIM0032
12290745	2104/5456	Wood Pole	Ground Wire-M=Missing,C=Cut	C	7/13/2020	TIM0032
10353909	2104/5457	Work found during a routine PM	Work as a result of a PM Order	66798558	1/23/2008	RUSSEL8
10353909	2104/5457	Static Wire / Warning Spheres	Static Wire - Other	Clevis Pin backed out	1/23/2008	RUSSEL8
10353909	2104/5457	Equipment Needed for Repair	ATV	Swampy. Have to climb.	1/23/2008	RUSSEL8
10353909	2104/5457	Insulators - Static Insulators	Static Insulators - Pins Loose	Clevis pin backed out	1/23/2008	RUSSEL8
12290748	2104/5457	Wood Pole	Pole Position=	Left leg	7/13/2020	TIM0032
12290748	2104/5457	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	Re	7/13/2020	TIM0032
12290748	2104/5457	Wood Pole	Ground Wire-M=Missing,C=Cut	C	7/13/2020	TIM0032
12290749	2104/5458	Wood Pole	Pole Position=	Left leg	7/13/2020	TIM0032
12290749	2104/5458	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RE	7/13/2020	TIM0032
12290749	2104/5458	Wood Pole	Ground Wire-M=Missing,C=Cut	C	7/13/2020	TIM0032
12290750	2104/5460	Wood Pole	Pole Position=	Left leg	7/13/2020	TIM0032
12290750	2104/5460	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RE	7/13/2020	TIM0032
12290750	2104/5460	Wood Pole	Ground Wire-M=Missing,C=Cut	C	7/13/2020	TIM0032
12290752	2104/5461	Wood Pole	Pole Position=	Left leg	7/13/2020	TIM0032
12290752	2104/5461	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RE	7/13/2020	TIM0032
12290752	2104/5461	Wood Pole	Ground Wire-M=Missing,C=Cut	C	7/13/2020	TIM0032
12290753	2104/5462	Wood Pole	Pole Position=	Left leg	7/13/2020	TIM0032
12290753	2104/5462	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RE	7/13/2020	TIM0032
12290753	2104/5462	Wood Pole	Ground Wire-M=Missing,C=Cut	C	7/13/2020	TIM0032
12290754	2104/5463	Wood Pole	Pole Position=	Left leg	7/13/2020	TIM0032
12290754	2104/5463	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RE	7/13/2020	TIM0032
12290754	2104/5463	Wood Pole	Ground Wire-M=Missing,C=Cut	C	7/13/2020	TIM0032
12290755	2104/5464	Wood Pole	Pole Position=	Left leg	7/13/2020	TIM0032
12290755	2104/5464	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RE	7/13/2020	TIM0032
12290755	2104/5464	Wood Pole	Ground Wire-M=Missing,C=Cut	C	7/13/2020	TIM0032
10124651	2104/5465			Found again 12/22/08, CBH Routine Patrol	8/21/2003	
10701695	2104/5465	Insulator Conductor	Broken- L=Leave, R=Replace		2/4/2011	RICKEY8
10701695	2104/5465	Insulator Conductor	Wire Position L,M,R,T,B	M	2/4/2011	RICKEY8
12290757	2104/5465	Wood Pole	Pole Position=	Right leg	7/13/2020	TIM0032
12290757	2104/5465	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	Wood Pole-R/R(RP=Replace,RE=Repair) Seve	7/13/2020	TIM0032
12290757	2104/5465	Wood Pole	Str- C=Cracked,S=Split,CH=Chipped	CH	7/13/2020	TIM0032
10124663	2104/5466	Conductor	Conductor - Loose Spacer(s)		10/20/2003	
10701694	2104/5466	Insulator Conductor	Broken- L=Leave, R=Replace		2/4/2011	RICKEY8
10701694	2104/5466	Insulator Conductor	Wire Position L,M,R,T,B	R	2/4/2011	RICKEY8
12290758	2104/5466	Insulator Conductor	Wire Position L,M,R,T,B	Right phase	7/13/2020	TIM0032
12290758	2104/5466	Insulator Conductor	Broken- L=Leave, R=Replace	L	7/13/2020	TIM0032
12290758	2104/5466	Insulator Conductor	Cond Insulator- Other=	2 brok bell	7/13/2020	TIM0032
12290758	2104/5466	Insulator Conductor	(H) Hot End / (C) Cold End	H/C	7/13/2020	TIM0032
12290759	2104/5466	Wood Pole	Pole Position=	Left leg	7/13/2020	TIM0032
12290759	2104/5466	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RE	7/13/2020	TIM0032
12290759	2104/5466	Wood Pole	Ground Wire-M=Missing,C=Cut	C	7/13/2020	TIM0032
10701696	2104/5467	Insulator Conductor	Broken- L=Leave, R=Replace		2/4/2011	RICKEY8
10701696	2104/5467	Insulator Conductor	Wire Position L,M,R,T,B	L	2/4/2011	RICKEY8
12290760	2104/5467	Insulator Conductor	Wire Position L,M,R,T,B	Left phase	7/13/2020	TIM0032
12290760	2104/5467	Insulator Conductor	Broken- L=Leave, R=Replace	L	7/13/2020	TIM0032
12290760	2104/5467	Insulator Conductor	Cond Insulator- Other=	2 brokebell	7/13/2020	TIM0032
12290760	2104/5467	Insulator Conductor	(H) Hot End / (C) Cold End	C	7/13/2020	TIM0032
12290761	2104/5467	Wood Pole	Pole Position=	Left leg	7/13/2020	TIM0032
12290761	2104/5467	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RE	7/13/2020	TIM0032

12290761	2104/5467	Wood Pole	Ground Wire-M=Missing,C=Cut	C	7/13/2020	TIM0032
10254317	2104/5473	Structure - Wood or Concrete	Structure - Major Woodpecker Hole / Hole		7/26/2006	CBH
10124667	2104/5475	Hardware	Hardware - Loose		11/14/2003	
12291022	2104/5475	Insulator Static	Wire Position L,M,R,T,B	L	7/14/2020	TIM0032
12291022	2104/5475	Insulator Static	Cond Insulator- Other=	It is hanging upside down	7/14/2020	TIM0032
12291022	2104/5475	Insulator Static	(H) Hot End / (C) Cold End	H	7/14/2020	TIM0032
12291103	2104/5478	Wood Pole	Pole Position=	Left leg	7/14/2020	TIM0032
12291103	2104/5478	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RE	7/14/2020	TIM0032
12291103	2104/5478	Wood Pole	Ground Wire-M=Missing,C=Cut	C	7/14/2020	TIM0032
10901775	2104/5480	Conductor	Damaged	no problems found	7/1/2012	
10254322	2104/5481	Structure - Foundation	Foundation - Cut Vines / Underbrush	Vines	7/26/2006	CBH
10254333	2104/5482	Structure - Foundation	Foundation - Cut Vines / Underbrush	Vines	7/26/2006	CBH
12291104	2104/5482	Wood Pole	Pole Position=	Left leg	7/14/2020	TIM0032
12291104	2104/5482	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RE	7/14/2020	TIM0032
12291104	2104/5482	Wood Pole	Ground Wire-M=Missing,C=Cut	C	7/14/2020	TIM0032
12291105	2104/5484	Insulator Static	Wire Position L,M,R,T,B	Left	7/14/2020	TIM0032
12291105	2104/5484	Insulator Static	Cond Insulator- Other=	Hanging upside down	7/14/2020	TIM0032
12291105	2104/5484	Insulator Static	(H) Hot End / (C) Cold End	H	7/14/2020	TIM0032
10707908	2104/5488	Guys	Guys - Damaged Fiber Glass Breaker	fuzzy breakers	2/15/2011	RICKEY8
10708153	2104/5488	Hardware	Hardware - Cotter Key Backed Out	keys backe dout on breakers	2/15/2011	RICKEY8
12291109	2104/5488	Guy	Guy Other=	Key backed out at pole/pole eye plate	7/14/2020	TIM0032
10254318	2104/5489	Structure - Wood or Concrete	Structure - Major Woodpecker Hole / Hole		7/26/2006	CBH
10124668	2104/5490	Structure - Numbers	Aerial Number Missing		8/21/2003	
10254319	2104/5490	Structure - Wood or Concrete	Structure - Major Woodpecker Hole / Hole		7/26/2006	CBH
10367149	2104/5490	Work found during a routine PM	Work as a result of a PM Order	66798558	1/29/2008	RUSSEL8
10367149	2104/5490	Grounds	Grounds - Broken	See text	1/29/2008	RUSSEL8
12291110	2104/5490	Wood Pole	Pole Position=	Left leg	7/14/2020	TIM0032
12291110	2104/5490	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RE	7/14/2020	TIM0032
12291110	2104/5490	Wood Pole	Ground Wire-M=Missing,C=Cut	C	7/14/2020	TIM0032
10367150	2104/5491	Work found during a routine PM	Work as a result of a PM Order	66798558	1/29/2008	RUSSEL8
10367150	2104/5491	Grounds	Grounds - Broken	See text	1/29/2008	RUSSEL8
10124669	2104/5499	Structure - Wood or Concrete	Structure - Other		8/21/2003	
10254334	2104/5499	Structure - Foundation	Foundation - Cut Vines / Underbrush	Vines	7/26/2006	CBH
10254335	2104/5500	Structure - Foundation	Foundation - Cut Vines / Underbrush	Vines	7/26/2006	CBH
10254347	2104/5502	Encroachment	Encroachment - Building / Structure	Trailers	7/26/2006	CBH
10124670	2104/5509	Structure - Numbers	Numbers - Missing		8/21/2003	
10124671	2104/5510	Structure - Numbers	Numbers - Missing		8/21/2003	
10254348	2104/5510	Encroachment	Encroachment - Other	Boats & Cars	7/26/2006	CBH
10254349	2104/5510	Encroachment	Encroachment - Building / Structure	Shed on ROW	7/26/2006	CBH
10300497	2104/5511	Phase Position	Left		4/19/2007	RUSSEL8
10300497	2104/5511	Work found during a routine PM	Work as a result of a PM Order	66667240	4/19/2007	RUSSEL8
10300497	2104/5511	Encroachment	Encroachment - Building / Structure	See Text	4/19/2007	RUSSEL8
11404909	2104/5511	Switch	Switch Other=	Install Anti-Climb Device	10/19/2015	
12872759	2104/5511	Guy	Need Guard	Guy-Need Guard	3/16/2023	BRAND58
11423513	2104/5511A	Steel Pole	Str Number-M=Missing,F=Faded,A=Aerial	M - Letter A	11/18/2015	CFARMER
12872760	2104/5511B	Wood Pole	Str Number-M=Missing,F=Faded,A=Aerial	Wood Pole-Str Number-M=Missing,F=Faded,A	3/16/2023	BRAND58
11011656	2104/5512A	Wood Pole	Pole Other=	Install Bonding	3/29/2013	PAUL348
11350441	2104/5512B	Insulator Conductor	Cond Insulator- Other=	need replacing	7/29/2015	
10148651	2104/5512C	Structure - Wood or Concrete	Structure - Replace defective pole	SC 3 Pole - Replace A & C phases	2/14/2005	RACHE06
11350440	2104/5512C	Insulator Conductor	Cond Insulator- Other=	need replacing	7/29/2015	
11404910	2104/5514	Switch	Switch Other=	Install Anti-Climb Device	10/19/2015	
10367147	2104/5514A	Work found during a routine PM	Work as a result of a PM Order	66798558	1/29/2008	RUSSEL8
10367147	2104/5514A	Guys	Guys - Improper Bond	See text	1/29/2008	RUSSEL8
10367148	2104/5514B	Work found during a routine PM	Work as a result of a PM Order	66798558	1/29/2008	RUSSEL8
10367148	2104/5514B	Guys	Guys - Improper Bond	See text	1/29/2008	RUSSEL8
11633017	2104/5515	Conductor	Cotter Key-BO=Backed Out, M=Mi	BO, @ arm and y extention (cold)	3/29/2017	TIM0032
11633017	2104/5515	Conductor	Conductor Other =	12 ladders	3/29/2017	TIM0032
11632207	2104/5516, 29/1783 Pending Removal	Steel Pole	Environmental-Nest=	Osprey on top of mono pole	3/29/2017	TIM0032

OUTSTANDING NOTIFICATIONS -LINE 29						
NOTIFICATION	LINE/STR	CAUSE GROUP	CAUSE CODE	CAUSE TEXT	NOTIF. DATE	REPORTED BY
12252725	29/1682 Pending Removal	Wood Pole	Pole Position=	L,R	5/8/2020	TIM0032
12252725	29/1682 Pending Removal	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RE	5/8/2020	TIM0032
12252725	29/1682 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major	MA	5/8/2020	TIM0032
12880666	29/1682 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major	Wood Pole-WP Damage-MI=Minor, MA=Major	3/30/2023	BRAND58
12880665	29/1684 Pending Removal	Wood Pole	Str Number-M=Missing,F=Faded,A=Aerial	Wood Pole-Str Number-M=Missing,F=Faded,A	3/30/2023	BRAND58
12252731	29/1684A Pending Removal	Wood Pole	Pole Other=	Structure is no longer here	5/8/2020	TIM0032
12252732	29/1684B Pending Removal	Wood Pole	Pole Other=	Structure is no longer here	5/8/2020	TIM0032
12252729	29/1686 Pending Removal	Wood Pole	Pole Other=	All 3 wood poles are now steel	5/8/2020	TIM0032
12252727	29/1690 Pending Removal	Wood Pole	Pole Other=	Wood poles are now steel	5/8/2020	TIM0032
12252726	29/1691 Pending Removal	Wood Pole	Pole Position=	Left leg	5/8/2020	TIM0032
12252726	29/1691 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major	MI	5/8/2020	TIM0032
11632337	29/1693 Pending Removal	Guy	Fiber Glass/Wood Breaker-Damaged	wood breakers	3/15/2017	BRAND58
12277404	29/1695	Wood Pole	Pole Position=	Wood Pole-Pole Position=	6/23/2020	TIM0032
12277404	29/1695	Wood Pole	WP Damage-MI=Minor, MA=Major	MA	6/23/2020	TIM0032
12277404	29/1695	Wood Pole	Rot/Decay-Location/Type=	Rot- hollow sounding	6/23/2020	TIM0032
12277400	29/1696 Pending Removal	Insulator Conductor	Wire Position L,M,R,T,B	Left	6/23/2020	TIM0032
12277400	29/1696 Pending Removal	Insulator Conductor	Out of Alignment	Bells racked	6/23/2020	TIM0032
12277400	29/1696 Pending Removal	Insulator Conductor	(H) Hot End / (C) Cold End	H	6/23/2020	TIM0032
12277401	29/1696 Pending Removal	Wood Pole	Pole Position=	Left	6/23/2020	TIM0032
12277401	29/1696 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major	MI	6/23/2020	TIM0032
12277401	29/1696 Pending Removal	Wood Pole	Rot/Decay-Location/Type=	Rot- Both legs hollow sounding	6/23/2020	TIM0032
12277397	29/1697 Pending Removal	Wood Pole	Pole Position=	Right leg	6/23/2020	TIM0032
12277397	29/1697 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major	MI	6/23/2020	TIM0032
12850787	29/16B Pending Removal	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	Replace	9/1/2022	BRAND22
11632075	29/1701 Pending Removal	Wood Pole	Rot/Decay-Location/Type=	Legs hollow sounding	3/15/2017	TIM0032
11632076	29/1702 Pending Removal	Wood Pole	Rot/Decay-Location/Type=	Legs hollow sounding	3/15/2017	TIM0032
11632076	29/1702 Pending Removal	Guy	Fiber Glass/Wood Breaker-Damaged	wood guy breakers	3/15/2017	TIM0032
11632077	29/1703 Pending Removal	Insulator Conductor	Broken- L=Leave, R=Replace	2nd bell	3/15/2017	TIM0032
11632077	29/1703 Pending Removal	Insulator Conductor	(H) Hot End / (C) Cold End	C	3/15/2017	TIM0032
11632077	29/1703 Pending Removal	Insulator Conductor	Wire Position L,M,R,T,B	L	3/15/2017	TIM0032
11632077	29/1703 Pending Removal	Insulator Conductor	Broken- L=Leave, R=Replace	1st bell	3/15/2017	TIM0032
11632077	29/1703 Pending Removal	Insulator Conductor	(H) Hot End / (C) Cold End	H	3/15/2017	TIM0032
11632078	29/1703 Pending Removal	Wood Pole	Rot/Decay-Location/Type=	R, Leg hollow sounding	3/15/2017	TIM0032
11632078	29/1703 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major	medium hole, lleft eg up by static	3/15/2017	TIM0032
11632079	29/1704 Pending Removal	Wood Pole	Rot/Decay-Location/Type=	Legs hollow sounding	3/15/2017	TIM0032
11632080	29/1705 Pending Removal	Wood Pole	Rot/Decay-Location/Type=	Legs hollow sounding	3/15/2017	TIM0032
12287645	29/1706 Pending Removal	Insulator Conductor	Wire Position L,M,R,T,B	M	7/9/2020	TIM0032
12287645	29/1706 Pending Removal	Insulator Conductor	Broken- L=Leave, R=Replace	L	7/9/2020	TIM0032
12287645	29/1706 Pending Removal	Insulator Conductor	Cond Insulator- Other=	Chipped	7/9/2020	TIM0032
12287645	29/1706 Pending Removal	Insulator Conductor	(H) Hot End / (C) Cold End	H	7/9/2020	TIM0032
12287646	29/1707 Pending Removal	Insulator Conductor	Wire Position L,M,R,T,B	L,M,R	7/9/2020	TIM0032
12287646	29/1707 Pending Removal	Insulator Conductor	Broken- L=Leave, R=Replace	L	7/9/2020	TIM0032
12287646	29/1707 Pending Removal	Insulator Conductor	Cond Insulator- Other=	broken	7/9/2020	TIM0032
12287646	29/1707 Pending Removal	Insulator Conductor	(H) Hot End / (C) Cold End	C	7/9/2020	TIM0032
11632084	29/1713 Pending Removal	Guy	Fiber Glass/Wood Breaker-Damaged	6 wooden breakers	3/20/2017	TIM0032
11632085	29/1719 Pending Removal	Wood Pole	Rot/Decay-Location/Type=	R leg is rotten	3/20/2017	TIM0032
11632085	29/1719 Pending Removal	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RP	3/20/2017	TIM0032
11632085	29/1719 Pending Removal	Wood Pole	Pole Other=	Hollow sounding	3/20/2017	TIM0032
11632086	29/1723 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major	1 small 1 med between arm/static	3/20/2017	TIM0032
11632086	29/1723 Pending Removal	Wood Pole	Pole Position=	Left	3/20/2017	TIM0032
11632086	29/1723 Pending Removal	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RE	3/20/2017	TIM0032
11632086	29/1723 Pending Removal			MA	3/20/2017	TIM0032
11632086	29/1723 Pending Removal			Reported again 07/13/2020	3/20/2017	TIM0032
11632087	29/1724 Pending Removal	Wood Pole	Str Number-M=Missing,F=Faded,A=Aerial	No pole stencil	3/20/2017	TIM0032
11632088	29/1724 Pending Removal	Insulator Conductor	Wire Position L,M,R,T,B	M, facing north	3/20/2017	TIM0032
11632088	29/1724 Pending Removal	Insulator Conductor	Broken- L=Leave, R=Replace	3rd bell	3/20/2017	TIM0032
11632088	29/1724 Pending Removal	Insulator Conductor	(H) Hot End / (C) Cold End	H	3/20/2017	TIM0032
11632088	29/1724 Pending Removal	Insulator Conductor	Wire Position L,M,R,T,B	R facing south	3/20/2017	TIM0032
11632088	29/1724 Pending Removal	Insulator Conductor	Broken- L=Leave, R=Replace	1st and 2nd	3/20/2017	TIM0032
11632088	29/1724 Pending Removal	Insulator Conductor	(H) Hot End / (C) Cold End	H	3/20/2017	TIM0032
11632088	29/1724 Pending Removal	Insulator Conductor	Wire Position L,M,R,T,B	R facing north	3/20/2017	TIM0032
11632088	29/1724 Pending Removal	Insulator Conductor	Broken- L=Leave, R=Replace	3, 5, 9, 10, 12 bells	3/20/2017	TIM0032
11632088	29/1724 Pending Removal	Insulator Conductor	(H) Hot End / (C) Cold End	C	3/20/2017	TIM0032
11632088	29/1724 Pending Removal			reported again on	3/20/2017	TIM0032
11632088	29/1724 Pending Removal	Insulator Conductor	Wire Position L,M,R,T,B	Right leg	3/20/2017	TIM0032
11632088	29/1724 Pending Removal	Insulator Conductor	Cond Insulator- Other=	broken on both sides of DDE	3/20/2017	TIM0032
11632088	29/1724 Pending Removal	Insulator Conductor	(H) Hot End / (C) Cold End	H/C	3/20/2017	TIM0032
12879956	29/1724 Pending Removal	Guy	Need Guard	Guy is rusted need new guy anchor	3/29/2023	JEREMY3
11632089	29/1725 Pending Removal	Insulator Conductor	Wire Position L,M,R,T,B	M	3/23/2017	TIM0032
11632089	29/1725 Pending Removal	Insulator Conductor	Broken- L=Leave, R=Replace	2nd	3/23/2017	TIM0032
11632089	29/1725 Pending Removal	Insulator Conductor	(H) Hot End / (C) Cold End	H	3/23/2017	TIM0032
11632089	29/1725 Pending Removal	Insulator Conductor	Wire Position L,M,R,T,B	R	3/23/2017	TIM0032
11632089	29/1725 Pending Removal	Insulator Conductor	Broken- L=Leave, R=Replace	4th	3/23/2017	TIM0032
11632089	29/1725 Pending Removal	Insulator Conductor	(H) Hot End / (C) Cold End	C	3/23/2017	TIM0032
11632090	29/1725 Pending Removal	Wood Pole	Rot/Decay-Location/Type=	R leg scabbed/rotten	3/23/2017	TIM0032
11632090	29/1725 Pending Removal	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=		3/23/2017	TIM0032
12288122	29/1725 Pending Removal	Insulator Conductor	Wire Position L,M,R,T,B	Middle	7/13/2020	TIM0032
12288122	29/1725 Pending Removal	Insulator Conductor	Cond Insulator- Other=	Broken bell	7/13/2020	TIM0032
12288122	29/1725 Pending Removal	Insulator Conductor	(H) Hot End / (C) Cold End	H	7/13/2020	TIM0032
12290733	29/1725 Pending Removal	Wood Pole	Pole Position=	Right leg	7/13/2020	TIM0032
12290733	29/1725 Pending Removal	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RP	7/13/2020	TIM0032
12290733	29/1725 Pending Removal	Wood Pole	Pole Other=	Pole hollow sounding and has a repair sl	7/13/2020	TIM0032
11632091	29/1729 Pending Removal	Wood Pole	Str Number-M=Missing,F=Faded,A=Aerial	No stencil	3/23/2017	TIM0032
11632092	29/1731 Pending Removal	Insulator Conductor	Wire Position L,M,R,T,B	R	3/23/2017	TIM0032
11632092	29/1731 Pending Removal	Insulator Conductor	Broken- L=Leave, R=Replace	4th	3/23/2017	TIM0032
11632092	29/1731 Pending Removal	Insulator Conductor	(H) Hot End / (C) Cold End	C	3/23/2017	TIM0032
11632092	29/1731 Pending Removal			Reported again 07/13/2020	3/23/2017	TIM0032
11632092	29/1731 Pending Removal	Insulator Conductor	Wire Position L,M,R,T,B	Right	3/23/2017	TIM0032
11632092	29/1731 Pending Removal	Insulator Conductor	Broken- L=Leave, R=Replace	Broken	3/23/2017	TIM0032
11632092	29/1731 Pending Removal	Insulator Conductor	Cond Insulator- Other=	broken bell	3/23/2017	TIM0032
11632092	29/1731 Pending Removal	Insulator Conductor	(H) Hot End / (C) Cold End	C	3/23/2017	TIM0032
11632103	29/1731 Pending Removal	Wood Pole	Rot/Decay-Location/Type=	R leg hollow sounding	3/23/2017	TIM0032

11632104	29/1732 Pending Removal	Wood Pole	Str Number-M=Missing,F=Faded,A=Aerial	No stencil	3/23/2017	TIM0032
11632104	29/1732 Pending Removal	Wood Pole	Rot/Decay-Location/Type=	both legs hollow sounding	3/23/2017	TIM0032
11632104	29/1732 Pending Removal	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=		3/23/2017	TIM0032
12879959	29/1732 Pending Removal	Conductor	Damaged	Outside phase is damaged .	3/29/2023	JEREMY3
11632105	29/1733 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major	L leg between x brace @ large knot	3/15/2017	BRAND58
11632105	29/1733 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major	leg possibly starting to break	3/15/2017	BRAND58
11632105	29/1733 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major	Alot of small holes	3/15/2017	BRAND58
11632105	29/1733 Pending Removal	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=		3/15/2017	BRAND58
11632334	29/1733 Pending Removal	Conductor	Damaged	needs armor rod	3/15/2017	BRAND58
12058361	29/1733 Pending Removal	Wood Pole	WP Dmg-AC=AbovCA,BC=BeloCA,BG=BetwnGy	7 or more holes	7/26/2019	JEREMY3
12290746	29/1733 Pending Removal	Conductor	Wire Position L,M,R,T,B	R	7/13/2020	TIM0032
12290746	29/1733 Pending Removal	Conductor	Damaged	broken	7/13/2020	TIM0032
12290747	29/1733 Pending Removal	Wood Pole	Pole Position=	Left leg	7/13/2020	TIM0032
12290747	29/1733 Pending Removal	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RP	7/13/2020	TIM0032
12290747	29/1733 Pending Removal	Wood Pole	Str- C=Cracked,S=Split,CH=Chipped	C/S	7/13/2020	TIM0032
12290747	29/1733 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major	MA	7/13/2020	TIM0032
11632106	29/1736 Pending Removal	Insulator Conductor	Wire Position L,M,R,T,B	R	3/23/2017	TIM0032
11632106	29/1736 Pending Removal	Insulator Conductor	Broken- L=Leave, R=Replace	1, 5, 7, 8, 12, 13	3/23/2017	TIM0032
11632106	29/1736 Pending Removal	Insulator Conductor	(H) Hot End / (C) Cold End	C	3/23/2017	TIM0032
12290751	29/1736 Pending Removal	Insulator Conductor	Wire Position L,M,R,T,B	Right phase	7/13/2020	TIM0032
12290751	29/1736 Pending Removal	Insulator Conductor	Broken- L=Leave, R=Replace	L	7/13/2020	TIM0032
12290751	29/1736 Pending Removal	Insulator Conductor	Cond Insulator- Other=	5 broke bell	7/13/2020	TIM0032
12290751	29/1736 Pending Removal	Insulator Conductor	(H) Hot End / (C) Cold End	H/C	7/13/2020	TIM0032
11632107	29/1740 Pending Removal	Insulator Conductor	Wire Position L,M,R,T,B	R	3/23/2017	TIM0032
11632107	29/1740 Pending Removal	Insulator Conductor	Broken- L=Leave, R=Replace	4, 6, 7, 8, 9, 10	3/23/2017	TIM0032
11632107	29/1740 Pending Removal	Insulator Conductor	(H) Hot End / (C) Cold End	C	3/23/2017	TIM0032
11632107	29/1740 Pending Removal			Reported again 07/13/2020	3/23/2017	TIM0032
11632107	29/1740 Pending Removal			but only 1 broken bell reported	3/23/2017	TIM0032
11632108	29/1742 Pending Removal	Wood Pole	Rot/Decay-Location/Type=	Legs hollow sounding	3/23/2017	TIM0032
11632109	29/1743 Pending Removal	Wood Pole	Rot/Decay-Location/Type=		3/23/2017	TIM0032
11632110	29/1750 Pending Removal	Insulator Conductor	Wire Position L,M,R,T,B	M	3/23/2017	TIM0032
11632110	29/1750 Pending Removal	Insulator Conductor	Broken- L=Leave, R=Replace	6, 7, 8	3/23/2017	TIM0032
11632110	29/1750 Pending Removal	Insulator Conductor	(H) Hot End / (C) Cold End	C	3/23/2017	TIM0032
11632111	29/1750 Pending Removal	Wood Pole	Rot/Decay-Location/Type=	R leg is rotten	3/23/2017	TIM0032
11632111	29/1750 Pending Removal	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=		3/23/2017	TIM0032
11632112	29/1756 Pending Removal	Wood Pole	Rot/Decay-Location/Type=	R leg is rotten	3/23/2017	TIM0032
11632112	29/1756 Pending Removal	Wood Pole	Str Number-M=Missing,F=Faded,A=Aerial	missing #1 on plate stencil	3/23/2017	TIM0032
11632112	29/1756 Pending Removal	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=		3/23/2017	TIM0032
11632112	29/1756 Pending Removal			reported again on 7/26/2019	3/23/2017	TIM0032
11632112	29/1756 Pending Removal	Wood Pole	WP Dmg-AC=AbovCA,BC=BeloCA,BG=BetwnGy	All over pole	3/23/2017	TIM0032
11632112	29/1756 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major	Major	3/23/2017	TIM0032
11632112	29/1756 Pending Removal	Wood Pole	Rot/Decay-Location/Type=	Rotten	3/23/2017	TIM0032
11632203	29/1757 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major	small holes on inside legs up by static	3/23/2017	TIM0032
11632203	29/1757 Pending Removal			reported again on 7/14/2020	3/23/2017	TIM0032
11632203	29/1757 Pending Removal	Wood Pole	Pole Position=	Left leg	3/23/2017	TIM0032
11632203	29/1757 Pending Removal	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RE	3/23/2017	TIM0032
11632203	29/1757 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major	MI	3/23/2017	TIM0032
11632204	29/1758 Pending Removal	Guy	Need Guard	L leg slack guy/guard	3/23/2017	TIM0032
12291108	29/1760 Pending Removal	Insulator Conductor	Wire Position L,M,R,T,B	R	7/14/2020	TIM0032
12291108	29/1760 Pending Removal	Insulator Conductor	Broken- L=Leave, R=Replace	L	7/14/2020	TIM0032
12291108	29/1760 Pending Removal	Insulator Conductor	Contaminated	Insulator Conductor-Contaminated	7/14/2020	TIM0032
12291108	29/1760 Pending Removal	Insulator Conductor	Cond Insulator- Other=	1 broke bel	7/14/2020	TIM0032
12291108	29/1760 Pending Removal	Insulator Conductor	(H) Hot End / (C) Cold End	H	7/14/2020	TIM0032
12323852	29/1771 Pending Removal	Wood Pole	Pole Position=	Left/Right legs hollow sounding	9/15/2020	TIM0032
12324044	29/1775 Pending Removal	Wood Pole	Pole Position=	Right leg	9/15/2020	TIM0032
12324044	29/1775 Pending Removal	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RP	9/15/2020	TIM0032
12324044	29/1775 Pending Removal	Wood Pole	Str Number-M=Missing,F=Faded,A=Aerial	Missing 1 #5	9/15/2020	TIM0032
12324044	29/1775 Pending Removal	Wood Pole	Rot/Decay-Location/Type=	Rot	9/15/2020	TIM0032
13058921	29/3	Conductor	Flying Tap Broken		1/16/2024	

COMPLETED NOTIFICATIONS - LINE 29

NOTIFICATION	LINE/STR	CAUSE GROUP	CAUSE CODE	CAUSE TEXT	NOTIF. DATE	REPORTED BY
10126961	29/1675 Pending Removal	Structure - Numbers	Numbers - Missing		02/03/2000	
12253522	29/1676 Pending Removal	Insulator Conductor	Cotter Key-BO=Backed Out, M=Mi	Insulator Conductor-Cotter Key-BO=Backed	05/08/2020	BRAND58
10367166	29/1677 Pending Removal	Pole Position	Right		01/23/2008	RUSSEL8
10367166	29/1677 Pending Removal	Work found during a routine PM	Work as a result of a PM Order	66798555	01/23/2008	RUSSEL8
10367166	29/1677 Pending Removal	Grounds	Grounds - Broken	See text	01/23/2008	RUSSEL8
10120190	29/1680 Pending Removal	Structure - Numbers	Aerial Number Missing		02/03/2000	
10120191	29/1682 Pending Removal	Structure - Wood or Concrete	Structure - Major Woodpecker Hole / Hole		02/03/2000	
11632336	29/1682 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major	L leg small thru hole	02/02/2017	TIM0032
11632336	29/1682 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major	R leg med holes	02/02/2017	TIM0032
10127141	29/1690 Pending Removal	Structure - Numbers	Numbers - Missing		02/03/2000	
10127141	29/1690 Pending Removal	Pole Position	Left		02/03/2000	
10157429	29/1690 Pending Removal	Conductor	Damaged Conductor		02/03/2000	RACHE06
10157429	29/1690 Pending Removal	Pole Position	Left		02/03/2000	RACHE06
10120192	29/1693 Pending Removal	Guys	Guys - Needs Guard		02/03/2000	
12060664	29/1693 Pending Removal	Guy	Fiber Glass/Wood Breaker-Damaged	Wood	07/30/2019	BRAND58
12252728	29/1693 Pending Removal	Guy	Need Guard	Need 6	05/08/2020	TIM0032
10367163	29/1695	Work found during a routine PM	Work as a result of a PM Order	66798555	01/22/2008	RUSSEL8
10367163	29/1695	Structure - Wood or Concrete	Structure - Major Woodpecker Hole / Hole	See text	01/22/2008	RUSSEL8
11632339	29/1695	Wood Pole	WP Damage-MI=Minor, MA=Major	hole under dead end	03/15/2017	BRAND58
11632339	29/1695	Wood Pole	Pole Position=	Center pole	03/15/2017	BRAND58
11632339	29/1695	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	rp	03/15/2017	BRAND58
12277402	29/1695	Guy	Fiber Glass/Wood Breaker-Damaged	Wood breakers (3)	06/23/2020	TIM0032
12277403	29/1695	Guy	Fiber Glass/Wood Breaker-Damaged	Wood breakers(3)	06/23/2020	TIM0032
12879960	29/1695	Wood Pole	WP Damage-MI=Minor, MA=Major	Minor woodpecker hole middle pole	03/29/2023	JEREMY3
10120193	29/1696 Pending Removal	Structure - Wood or Concrete	Structure - Major Woodpecker Hole / Hole		02/03/2000	
10120193	29/1696 Pending Removal	Pole Position	Left		02/03/2000	
12277398	29/1696 Pending Removal	Insulator Conductor	Wire Position L,M,R,T,B	L	06/23/2020	TIM0032
12277398	29/1696 Pending Removal	Insulator Conductor	Out of Alignment	Bells are racked	06/23/2020	TIM0032
12277399	29/1696 Pending Removal	Wood Pole	Pole Position=	Left leg	06/23/2020	TIM0032
12277399	29/1696 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major	MI	06/23/2020	TIM0032
11632338	29/1697 Pending Removal	Insulator Static	Wire Position L,M,R,T,B	R shoe to bolt	03/15/2017	BRAND58
11632338	29/1697 Pending Removal	Insulator Static	Wire Position L,M,R,T,B	BO	03/15/2017	BRAND58
10120194	29/1698 Pending Removal	Structure - Wood or Concrete	Structure - Major Woodpecker Hole / Hole		02/03/2000	

10120194	29/1698 Pending Removal	Pole Position	Right		02/03/2000	
10126965	29/16A	Structure - Numbers	Numbers - Missing		02/22/2000	
10126966	29/16A	Structure - Numbers	Numbers - Missing	see Comments	01/29/2001	
11443180	29/16A	Structure	Structure Other=	Install FP Clips	01/25/2016	
12344718	29/16A	Insulator Conductor	Cotter Key-BO=Backed Out, M=Mi	Insulator Conductor-Cotter Key-BO=Backed	10/20/2020	JARED29
10126959	29/16B Pending Removal	Structure - Numbers	Numbers - Missing		02/22/2000	
10126960	29/16B Pending Removal	Structure - Numbers	Numbers - Missing	see Comments	01/29/2001	
12344719	29/16B Pending Removal	Wood Pole	Ground Wire-M=Missing,C=Cut	Broken aluminum	10/20/2020	JARED29
10367164	29/1700 Pending Removal	Pole Position	Right		01/23/2008	RUSSEL8
10367164	29/1700 Pending Removal	Work found during a routine PM	Work as a result of a PM Order	66798555	01/23/2008	RUSSEL8
10367164	29/1700 Pending Removal	Grounds	Grounds - Broken		01/23/2008	RUSSEL8
10367165	29/1701 Pending Removal	Pole Position	Right		01/23/2008	RUSSEL8
10367165	29/1701 Pending Removal	Work found during a routine PM	Work as a result of a PM Order	66798555	01/23/2008	RUSSEL8
10367165	29/1701 Pending Removal	Grounds	Grounds - Broken		01/23/2008	RUSSEL8
12063021	29/1702 Pending Removal	Guy	Fiber Glass/Wood Breaker-Damaged	Woodbreakers	07/26/2019	JARED29
12058437	29/1704 Pending Removal	Wood Pole	Pole Other=	Hollow sound more like shell rot	07/26/2019	JEREMY3
12058436	29/1705 Pending Removal	Wood Pole	Pole Other=	Little hollow sound	07/26/2019	JEREMY3
10770818	29/1709 Pending Removal	Braces - Arm Brace	Defective Arm Brace		07/14/2011	
10911607	29/1709 Pending Removal	Steel Pole	Bolt-B=Broke,NM=Nut Miss,BM=Bolt Miss	Broken x-braces	07/19/2012	
11033089	29/1710 Pending Removal	Steel Pole	Brace-A=Arm,K=Knee,X=X	replace x-arm	06/05/2013	
11399774	29/1710 Pending Removal	Insulator Conductor	Cond Insulator- Other=	install floating DE	10/15/2015	
11626369	29/1712	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	see attached pic	03/22/2017	WWILKINS
11626369	29/1712	Wood Pole	Rot/Decay-Location/Type=	L leg shell rot	03/22/2017	WWILKINS
11626369	29/1712	Wood Pole	Pole Other=	R leg very bad bow	03/22/2017	WWILKINS
12058435	29/1713 Pending Removal	Guy	Fiber Glass/Wood Breaker-Damaged	6 wood breakers need to replace in the f	07/26/2019	JEREMY3
12287647	29/1713 Pending Removal	Guy	Fiber Glass/Wood Breaker-Damaged	6 Wooden Breakers	07/09/2020	TIM0032
12287648	29/1713 Pending Removal	Insulator Conductor	Wire Position L,M,R,T,B	M	07/09/2020	TIM0032
12287648	29/1713 Pending Removal	Insulator Conductor	Cotter Key-BO=Backed Out, M=Mi	Missing	07/09/2020	TIM0032
12287649	29/1713 Pending Removal	Guy	Fiber Glass/Wood Breaker-Damaged	Need 6 fiberglass breakers	07/09/2020	TIM0032
12287650	29/1713 Pending Removal	Insulator Conductor	Wire Position L,M,R,T,B	M	07/09/2020	TIM0032
12287650	29/1713 Pending Removal	Insulator Conductor	Cotter Key-BO=Backed Out, M=Mi	Missing	07/09/2020	TIM0032
12287650	29/1713 Pending Removal	Insulator Conductor	(H) Hot End / (C) Cold End	C	07/09/2020	TIM0032
10151390	29/1715 Pending Removal			1 broken. Estimated 15 Manhours.	11/06/2004	CBH
10900852	29/1716 Pending Removal	Conductor	Damaged	possible	07/01/2012	
10910227	29/1716 Pending Removal	Conductor	Damaged	Install Armor Rod	07/16/2012	
10901773	29/1717 Pending Removal	Conductor	Damaged	possible	07/01/2012	
10910226	29/1717 Pending Removal	Conductor	Damaged	Install Armor Rod	07/16/2012	
10254343	29/1719 Pending Removal	Structure - Foundation	Foundation - Cut Vines / Underbrush	Vines	07/26/2006	CBH
12058355	29/1719 Pending Removal	Wood Pole	Rot/Decay-Location/Type=	Shell rot	07/26/2019	JEREMY3
12288119	29/1719 Pending Removal	Wood Pole	Pole Position=	Right leg	07/13/2020	TIM0032
12288119	29/1719 Pending Removal	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RP	07/13/2020	TIM0032
12288119	29/1719 Pending Removal	Wood Pole	Pole Other=	Hollow sounding	07/13/2020	TIM0032
10254342	29/1720 Pending Removal	Structure - Foundation	Foundation - Cut Vines / Underbrush	Vines	07/26/2006	CBH
10120200	29/1723 Pending Removal	Structure - Wood or Concrete	Structure - Major Woodpecker Hole / Hole	see Comments	01/29/2001	
10127142	29/1723 Pending Removal	Structure - Wood or Concrete	Structure - Major Woodpecker Hole / Hole		02/07/2000	
10127142	29/1723 Pending Removal	Pole Position	Left		02/07/2000	
12058356	29/1723 Pending Removal	Wood Pole	WP Dmg-AC=AbovCA,BC=BeloCA,BG=BetwnGy	Mi holes	07/26/2019	JEREMY3
12288120	29/1723 Pending Removal	Wood Pole	Pole Position=	Left leg	07/13/2020	TIM0032
12288120	29/1723 Pending Removal	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RE	07/13/2020	TIM0032
12288120	29/1723 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major	MA	07/13/2020	TIM0032
10151413	29/1724 Pending Removal			2 broken. Estimated 15 Manhours.	11/06/2004	CBH
10447628	29/1724 Pending Removal			4 insulator bells broken mid-phase	01/26/2009	CBH
10447628	29/1724 Pending Removal			IMG 0436	01/26/2009	CBH
10447628	29/1724 Pending Removal			Found again, CBH Routine Patrol 1/26/09	01/26/2009	CBH
10447628	29/1724 Pending Removal	Miscellaneous	Miscellaneous - Other	REF: IMG0436	01/26/2009	CBH
12288121	29/1724 Pending Removal	Insulator Conductor	Wire Position L,M,R,T,B	Right leg	07/13/2020	TIM0032
12288121	29/1724 Pending Removal	Insulator Conductor	Cond Insulator- Other=	broken on both sides of DDE	07/13/2020	TIM0032
12288121	29/1724 Pending Removal	Insulator Conductor	(H) Hot End / (C) Cold End	H/C	07/13/2020	TIM0032
10120204	29/1725 Pending Removal			found on 09/14/1995	07/26/2006	CBH
10120204	29/1725 Pending Removal			found on 07/26/2006	07/26/2006	CBH
10120204	29/1725 Pending Removal	Phase Position	Left		07/26/2006	CBH
10120204	29/1725 Pending Removal			Found again, CBH Routine Patrol 1/26/09	07/26/2006	CBH
10120204	29/1725 Pending Removal	Miscellaneous	Miscellaneous - Other	REF: IMG0437	07/26/2006	CBH
12058357	29/1725 Pending Removal	Wood Pole	Str Number-M=Missing,F=Faded,A=Aerial	29/1725	07/26/2019	JEREMY3
10450986	29/1731 Pending Removal			Broken Bells REF IMG: 0439	01/26/2009	CBH
12058358	29/1731 Pending Removal	Wood Pole	Rot/Decay-Location/Type=	Shell rot	07/26/2019	JEREMY3
12290738	29/1731 Pending Removal	Insulator Conductor	Wire Position L,M,R,T,B	Right	07/13/2020	TIM0032
12290738	29/1731 Pending Removal	Insulator Conductor	Broken- L=Leave, R=Replace	Broken	07/13/2020	TIM0032
12290738	29/1731 Pending Removal	Insulator Conductor	Cond Insulator- Other=	broken bell	07/13/2020	TIM0032
12290738	29/1731 Pending Removal	Insulator Conductor	(H) Hot End / (C) Cold End	C	07/13/2020	TIM0032
12058359	29/1732 Pending Removal	Wood Pole	Str Number-M=Missing,F=Faded,A=Aerial	The number are there they about 20ft up	07/26/2019	JEREMY3
12058359	29/1732 Pending Removal	Wood Pole	Rot/Decay-Location/Type=	Little Shell rot	07/26/2019	JEREMY3
10367161	29/1733 Pending Removal	Work found during a routine PM	Work as a result of a PM Order	66798555	01/24/2008	RUSSEL8
10367161	29/1733 Pending Removal	Structure - Wood or Concrete	Structure - Minor Woodpecker Hole / Hole		01/24/2008	RUSSEL8
10367161	29/1733 Pending Removal	Structure - Wood or Concrete	Structure - Major Woodpecker Hole / Hole	See text	01/24/2008	RUSSEL8
11399775	29/1733 Pending Removal	Insulator Conductor	Cond Insulator- Other=	install floating DE	10/15/2015	
12058360	29/1733 Pending Removal	Conductor	Damaged	60 to 100 ft from the die-end shoe	07/26/2019	JEREMY3
10120207	29/1735 Pending Removal	Guys	Guys - Needs Guard		02/08/2000	
10254321	29/1735 Pending Removal	Structure - Wood or Concrete	Structure - Major Woodpecker Hole / Hole		07/26/2006	CBH
10367169	29/1735 Pending Removal	Work found during a routine PM	Work as a result of a PM Order	66798555	01/24/2008	RUSSEL8
10367169	29/1735 Pending Removal	Guys	Guys - Needs Guard	4; do before spring (swamp)	01/24/2008	RUSSEL8
10447629	29/1735 Pending Removal			Found again, CBH Routine Patrol 1/26/09	01/26/2008	CBH
10447629	29/1735 Pending Removal	Miscellaneous	Miscellaneous - Other	REF: IMG0440	01/26/2008	CBH
11138213	29/1735 Pending Removal	Guy	Guy Other=	Repairing and Changing out guy wires	01/30/2014	
11138213	29/1735 Pending Removal			Per C. Wilkins	01/30/2014	
10367159	29/1736 Pending Removal	Work found during a routine PM	Work as a result of a PM Order	66798555	01/24/2008	RUSSEL8
10701693	29/1736 Pending Removal			right phase	02/04/2011	RICKEY8
10701674	29/1740 Pending Removal			right phase	02/04/2011	RICKEY8
12290756	29/1740 Pending Removal	Insulator Conductor	Wire Position L,M,R,T,B	Right phase	07/13/2020	TIM0032
12290756	29/1740 Pending Removal	Insulator Conductor	Broken- L=Leave, R=Replace	L	07/13/2020	TIM0032
12290756	29/1740 Pending Removal	Insulator Conductor	Cond Insulator- Other=	1 broke bel	07/13/2020	TIM0032
12290756	29/1740 Pending Removal	Insulator Conductor	(H) Hot End / (C) Cold End	C	07/13/2020	TIM0032
11399776	29/1741 Pending Removal	Insulator Conductor	Cond Insulator- Other=	install floating DE	10/15/2015	
11876158	29/1742 Pending Removal	Right of Way	ROW Other:	Need to install gates	10/01/2018	

11246943	29/1743 Pending Removal	Right of Way	ROW Other:	installing a gate	10/23/2014	
10254355	29/1749 Pending Removal	Phase Position	Middle		07/26/2006	CBH
11399777	29/1749 Pending Removal	Insulator Conductor	Cond Insulator- Other=	install floating DE	10/15/2015	
12058434	29/1750 Pending Removal	Wood Pole	Rot/Decay-Location/Type=	Shell rot	07/26/2019	JEREMY3
10151416	29/1753 Pending Removal			4-5 Bells broken. Estimated 15 Manhours.	07/26/2006	CBH
10151416	29/1753 Pending Removal			TXT above for previous trouble dates.	07/26/2006	CBH
10151416	29/1753 Pending Removal	Phase Position	Middle	2 bells	07/26/2006	CBH
10151416	29/1753 Pending Removal			Noted again, 1/24/2008, see text	07/26/2006	CBH
10151416	29/1753 Pending Removal			Found again, CBH Routine Patrol 1/26/09	07/26/2006	CBH
10151416	29/1753 Pending Removal	Phase Position	Left and Middle	REF: IMG0442	07/26/2006	CBH
10254320	29/1756 Pending Removal	Structure - Wood or Concrete	Structure - Major Woodpecker Hole / Hole		07/26/2006	CBH
10254320	29/1756 Pending Removal	Work found during a routine PM	Work as a result of a PM Order	66798555, 1/24/2008	07/26/2006	CBH
10254320	29/1756 Pending Removal	Structure - Wood or Concrete	Structure - Major Woodpecker Hole / Hole	Noted again, 1/24/2008; see text	07/26/2006	CBH
10367168	29/1756 Pending Removal	Work found during a routine PM	Work as a result of a PM Order	66798555	01/24/2008	RUSSEL8
10367168	29/1756 Pending Removal	Structure - Wood or Concrete	Structure - Rotten		01/24/2008	RUSSEL8
12058362	29/1756 Pending Removal	Wood Pole	WP Dmg-AC=AbovCA,BC=BeloCA,BG=BetwnGy	All over pole	07/26/2019	JEREMY3
12058362	29/1756 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major	Major	07/26/2019	JEREMY3
12058362	29/1756 Pending Removal	Wood Pole	Rot/Decay-Location/Type=	Rotten	07/26/2019	JEREMY3
11399778	29/1757 Pending Removal	Insulator Conductor	Cond Insulator- Other=	install floating DE	10/15/2015	
12058433	29/1757 Pending Removal	Wood Pole	WP Dmg-AC=AbovCA,BC=BeloCA,BG=BetwnGy	AC	07/26/2019	JEREMY3
12058433	29/1757 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major	MI . It's a old hole	07/26/2019	JEREMY3
12291106	29/1757 Pending Removal	Wood Pole	Pole Position=	Left leg	07/14/2020	TIM0032
12291106	29/1757 Pending Removal	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RE	07/14/2020	TIM0032
12291106	29/1757 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major	MI	07/14/2020	TIM0032
12291107	29/1760 Pending Removal	Guy	Fiber Glass/Wood Breaker-Damaged	Wood Breakers- need 6 fiberglass breaker	07/14/2020	TIM0032
10151419	29/1761 Pending Removal			3 broken. Estimated 15 Manhours.	07/26/2006	CBH
10151419	29/1761 Pending Removal	Phase Position	Middle		07/26/2006	CBH
10367155	29/1761 Pending Removal	Work found during a routine PM	Work as a result of a PM Order	66798555	01/29/2008	RUSSEL8
10120216	29/1763 Pending Removal	Structure - Wood or Concrete	Structure - Major Woodpecker Hole / Hole		02/08/2000	
10120216	29/1763 Pending Removal	Pole Position	Right		02/08/2000	
10120217	29/1763 Pending Removal	Structure - Wood or Concrete	Structure - Major Woodpecker Hole / Hole	see Comments	02/01/2001	
10120217	29/1763 Pending Removal	Pole Position	Right		02/01/2001	
10120217	29/1763 Pending Removal	Work found during a routine PM	Work as a result of a PM Order		02/01/2001	
10120217	29/1763 Pending Removal	Structure - Wood or Concrete	Structure - Major Woodpecker Hole / Hole	noted again 1/29/2008, see text	02/01/2001	
11399779	29/1763 Pending Removal	Insulator Conductor	Cond Insulator- Other=	install floating DE	10/15/2015	
10118857	29/1764 Pending Removal	Encroachment	Encroachment - Dirt Pile on Right of Way		02/08/2000	
11399780	29/1764 Pending Removal	Insulator Conductor	Cond Insulator- Other=	install floating DE	10/15/2015	
12324043	29/1770 Pending Removal	Wood Pole	Pole Position=	Right leg	09/15/2020	TIM0032
12324043	29/1770 Pending Removal	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RE	09/15/2020	TIM0032
12324043	29/1770 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major	MI	09/15/2020	TIM0032
11399781	29/1773 Pending Removal	Insulator Conductor	Cond Insulator- Other=	install floating DE	10/15/2015	
12323851	29/1774 Pending Removal	Wood Pole	Pole Position=	Right leg	09/15/2020	TIM0032
12323851	29/1774 Pending Removal	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RE	09/15/2020	TIM0032
12323851	29/1774 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major	MI	09/15/2020	TIM0032
10458013	29/1779 Pending Removal			Broken insulator	01/30/2009	CBH
10458013	29/1779 Pending Removal	Miscellaneous	Miscellaneous - Other	Ref Img_0453	01/30/2009	CBH
12032137	29/1779 Pending Removal	Wood Pole	Str Number-M=Missing,F=Faded,A=Aerial	M	06/14/2019	JEREMY3
12324045	29/1779 Pending Removal	Wood Pole	Pole Other=	Steel not wood	09/15/2020	TIM0032
12324046	29/1780 Pending Removal	Insulator Conductor	Wire Position L,M,R,T,B	M	09/15/2020	TIM0032
12324046	29/1780 Pending Removal	Insulator Conductor	Cotter Key-BO=Backed Out, M=Mi	BO	09/15/2020	TIM0032
12324046	29/1780 Pending Removal	Insulator Conductor	(H) Hot End / (C) Cold End	H	09/15/2020	TIM0032
10120245	29/1823	Structure - Numbers	Numbers - Missing		02/22/2000	
10120246	29/1823	Structure - Numbers	Numbers - Missing	see Comments	01/29/2001	
10293013	29/1823	Hardware	Hardware - Other	Top of pole not grounded - no pole grd.	02/05/2007	RUSSEL8
10293013	29/1823	Work found during a routine PM	Work as a result of a PM Order	66667749	02/05/2007	RUSSEL8
10293013	29/1823	Equipment Needed for Repair	ATV	Quantico Cemetary	02/05/2007	RUSSEL8

I. NECESSITY FOR THE PROPOSED PROJECT

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

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

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

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

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

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

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

Response: Not applicable.

I. NECESSITY FOR THE PROPOSED PROJECT

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

Response: Not applicable.

II. DESCRIPTION OF THE PROPOSED PROJECT

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

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

Response: The total length of the existing Rebuild Project transmission corridor is approximately 12.5 miles between Fredericksburg Substation and Aquia Harbour Station. The Company will secure an additional 70-foot-wide right-of-way between Structures #29/1725 and #29/1728, and #2104/5447 and #2104/5450, located between the existing Fredericksburg Substation and Aquia Harbour Station in the area of Dogwood Airpark. Specifically, the additional 70-foot-wide ROW will be needed for a length of 685 feet.

In coordination with the affected landowners in the vicinity of Dogwood Airpark, the Company considered the following alternatives for the new right-of-way:

Option 1 – Approximately 685 feet of additional 70-foot-wide right-of-way.

Option 2 – Approximately 735 feet of additional 155-foot-wide right-of-way.

Option 3 – Approximately 1020 feet of additional 115-foot-wide right-of-way.

The Company selected Option 1 because it requires the least amount of additional ROW and tree removal. Additionally, after multiple discussions concerning the above-referenced options, the Dogwood Airpark HOA informed the Company that it prefers Option 1 because Option 1 best addresses its needs and concerns.

Additionally, Option 1 requires new ROW from only one landowner associated with the Dogwood Airpark HOA, while Option 3 would require additional ROW from two landowners, one of which is not associated with the Dogwood Airpark HOA.

See Section II.A.9 of the Appendix for an explanation of the Company's route selection process.

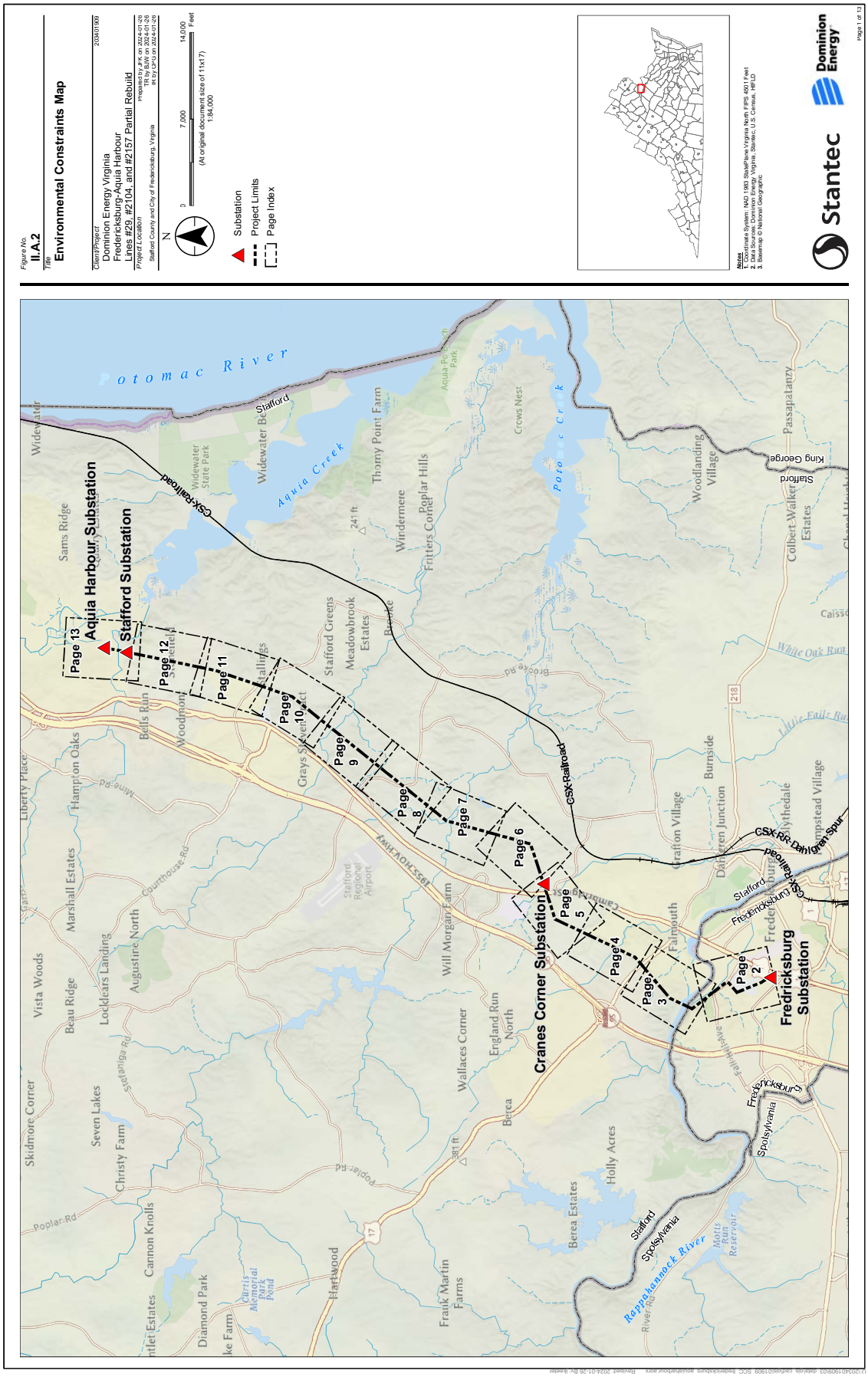
II. DESCRIPTION OF THE PROPOSED PROJECT

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

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

Response: See Attachment II.A.2, which includes existing linear utilities paralleled by the existing transmission line corridor. The Rebuild Project is primarily located within existing transmission line right-of-way. The Company will secure a new 70-foot-wide right of way between Structures #29/1725 and #29/1728, and #2104/5447 and #2104/5450, located between the existing Fredericksburg Substation and Aquia Harbour Station in the area of Dogwood Airpark. The existing transmission right-of-way collocates and parallels Line #568 from Structures #29/1760 and #2104/5488 to Aquia Harbour. No portion of the right-of-way is proposed to be quitclaimed or relinquished.

The Company will make the digital Geographic Information Systems ("GIS") shape file available to interested persons upon request to counsel for the Company.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II.A.2
Title
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Dominion Energy Virginia
Fredericksburg-Aquia Harbour
Lines #29, #2104, and #2157 Partial Rebuild
Project Location
Stafford County and City of Fredericksburg, Virginia
Prepared by JFK on 2024-01-26
TR by BJW on 2024-01-26
IR by JDH on 2024-01-26
N
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Feet
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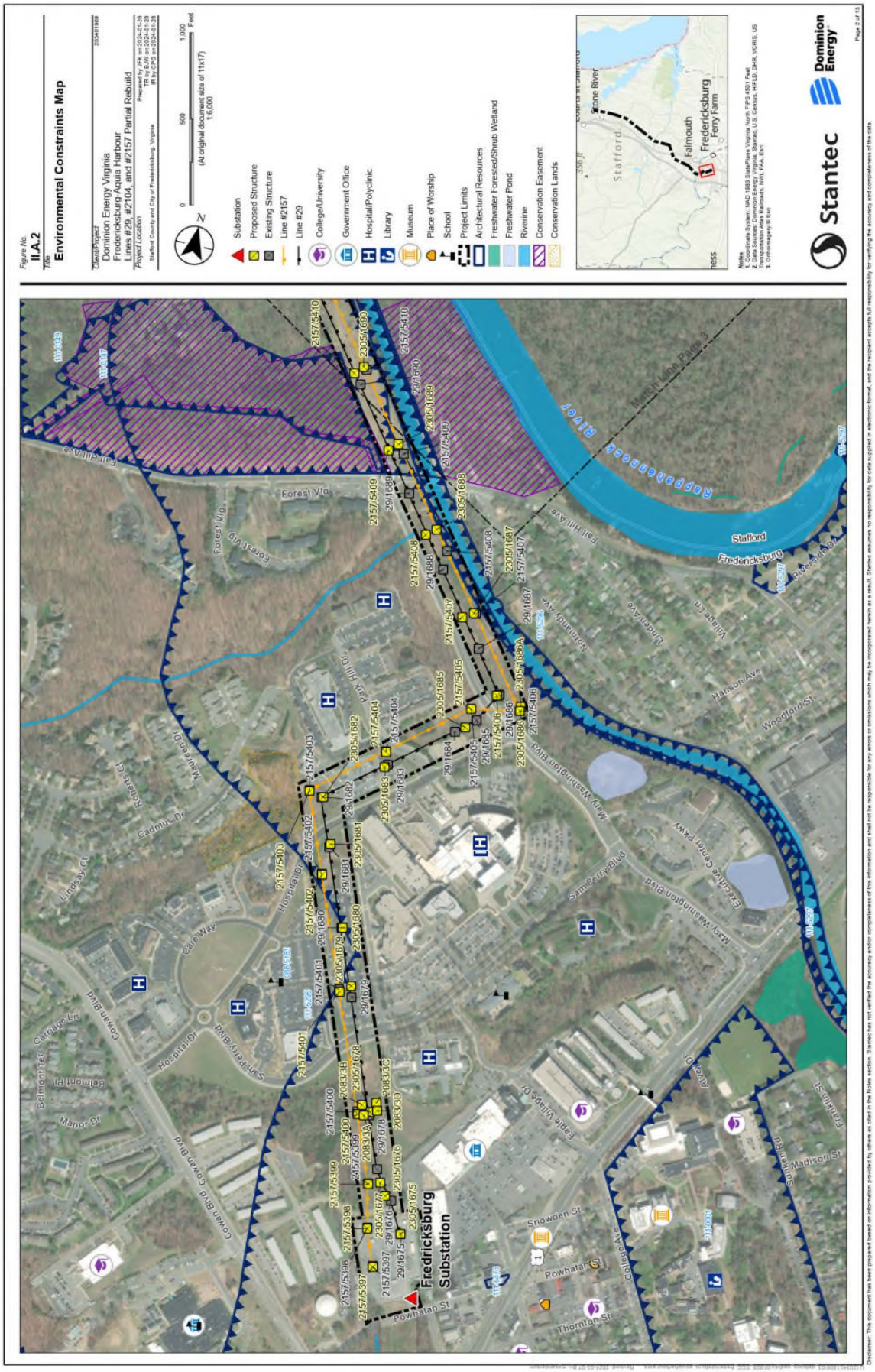
Substation
Project Limits
Page Index
Aquia Harbour Substation
Stafford Substation
Cranes Corner Substation
Fredricksburg Substation
Page 2
Page 3
Page 4
Page 5
Page 6
Page 7
Page 8
Page 9
Page 10
Page 11
Page 12
Page 13
Potomac River
Aquia Creek
Rappahannock River
CSX-Railroad
CSX-RR-Dahlgren-Spur
I-95/SHOUTHWY
Stafford
Fredericksburg
Spotsylvania
Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, U.S. Census, HIFLD
3. Basemap: © National Geographic
Stantec
Dominion Energy
Page 1 of 13
Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.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Title
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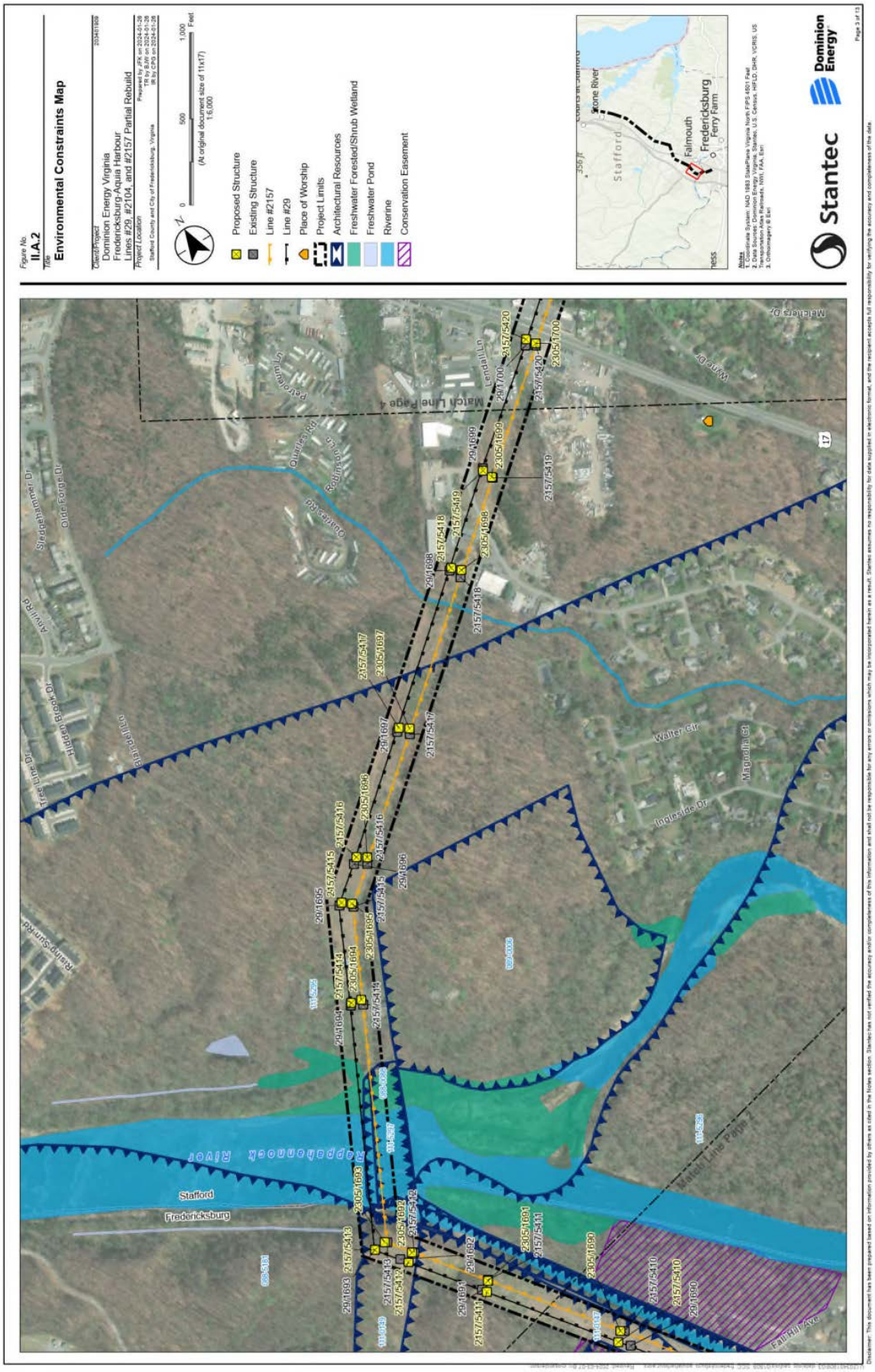
Client/Project
Dominion Energy Virginia
Fredericksburg-Aquia Harbour
Lines #29, #2104, and #2157 Partial Rebuild
Project Location
Stafford County and City of Fredericksburg, Virginia
Substation
Proposed Structure
Existing Structure
Line #2157
Line #29
College/University
Government Office
Hospital/Polyclinic
Library
Museum
Place of Worship
School
Project Limits
Architectural Resources
Freshwater Forested/Shrub Wetland
Freshwater Pond
Riverine
Conservation Easement
Conservation Lands
Fredericksburg Substation
Rappahannock River
Stafford
Fredericksburg
Falmouth
Ferry Farm
Stone River
Stantec
Dominion Energy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Title
Environmental Constraints Map
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Dominion Energy Virginia
Fredericksburg-Aquia Harbour
Lines #29, #2104, and #2157 Partial Rebuild
Project Location
Stafford County and City of Fredericksburg, Virginia
Prepared by JPA on 2024-01-26
TR by BJR on 2024-01-26
IR by CPR on 2024-02-06
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Proposed Structure
Existing Structure
Line #2157
Line #29
Place of Worship
Project Limits
Architectural Resources
Freshwater Forested/Shrub Wetland
Freshwater Pond
Riverine
Conservation Easement
Falmouth
Fredericksburg
Ferry Farm
Stone River
Stafford
Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
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3. Orthoimagery © Esri
Stantec
Dominion Energy
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Rappahannock River
Stafford
Fredericksburg
Walter Cir
Ingleside Dr
Magnolia Ct
Fall Hill Ave
Sledgehammer Dr
Olde Forge Dr
Hidden Brook Dr
Tree Line Dr
Alvin Rd
Quarles Rd
Robinson Ln
Patterson Ln
Matick Line Page 4
Matick Line Page 3
17
29/1695
29/1694
29/1693
29/1692
29/1691
29/1690
29/1696
29/1697
29/1698
29/1699
29/1700
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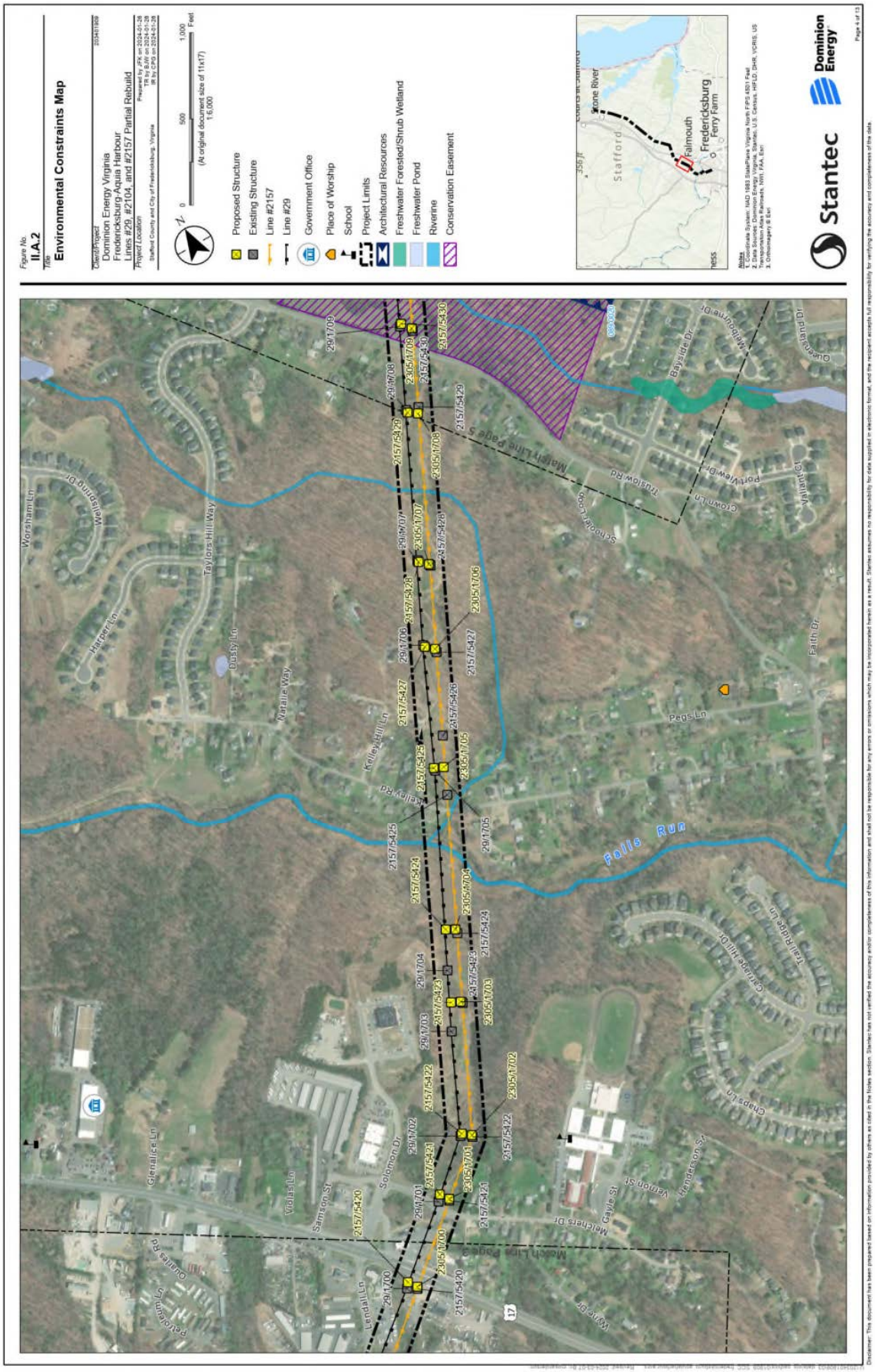
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Fredericksburg-Aquia Harbour
Lines #29, #2104, and #2157 Partial Rebuild
Project Location
Stafford County and City of Fredericksburg, Virginia
Prepared by JPK on 2024-01-26
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Line #2157
Line #29
Government Office
Place of Worship
School
Project Limits
Architectural Resources
Freshwater Forested/Shrub Wetland
Freshwater Pond
Riverine
Conservation Easement
Falls Run
Stafford
Fredericksburg
Falmouth
Ferry Farm
Stone River
Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy, Stantec, U.S. Census, HIFLD, DHR, VCRIS, US Fish and Wildlife Service, NWI, FEMA, Esri
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Stantec
Dominion Energy
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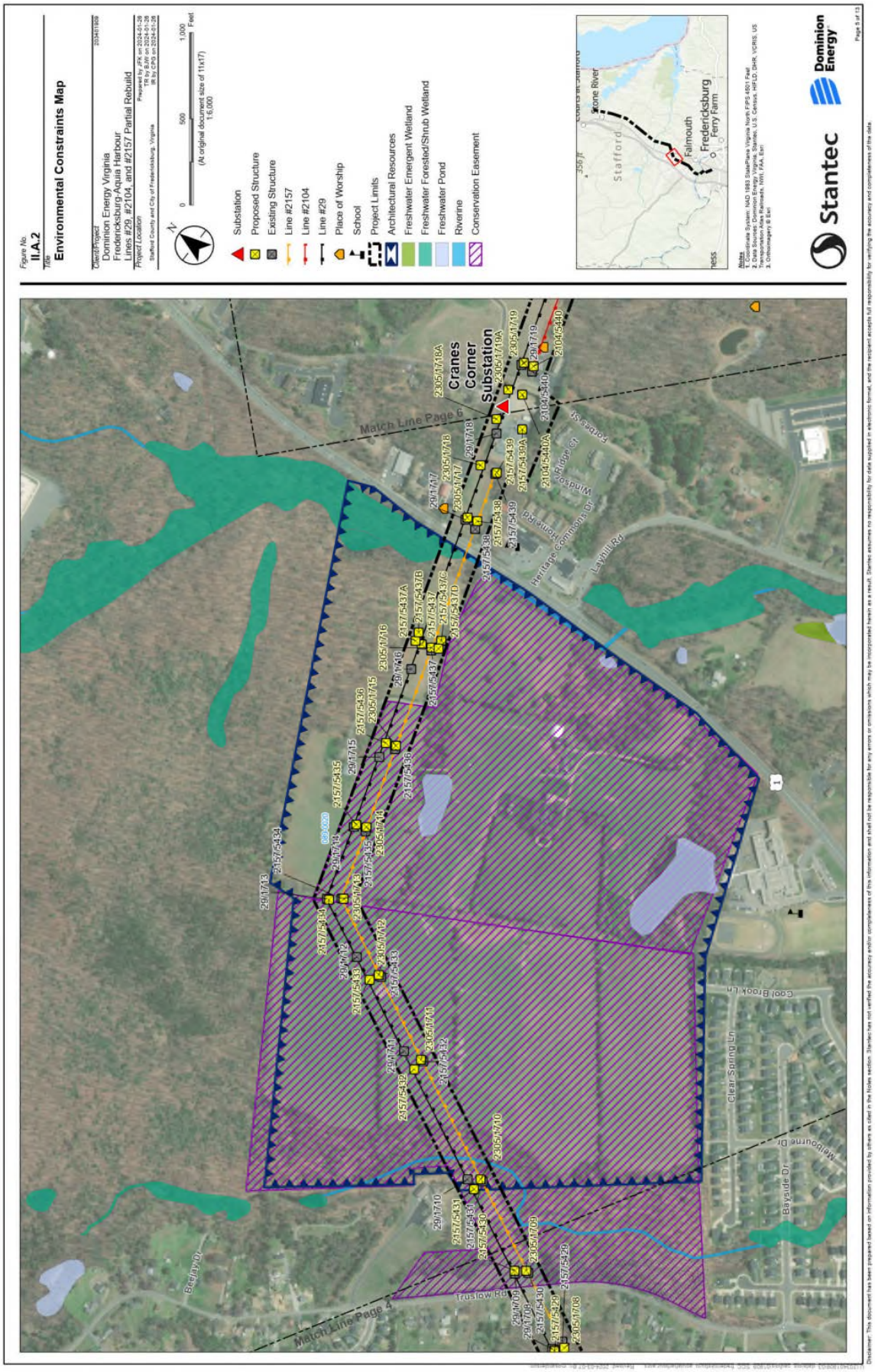
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Fredericksburg-Aquia Harbour
Lines #29, #2104, and #2157 Partial Rebuild
Project Location
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Substation
Proposed Structure
Existing Structure
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Line #2104
Line #29
Place of Worship
School
Project Limits
Architectural Resources
Freshwater Emergent Wetland
Freshwater Forested/Shrub Wetland
Freshwater Pond
Riverine
Conservation Easement
Cranes Corner Substation
Match Line Page 6
Match Line Page 4
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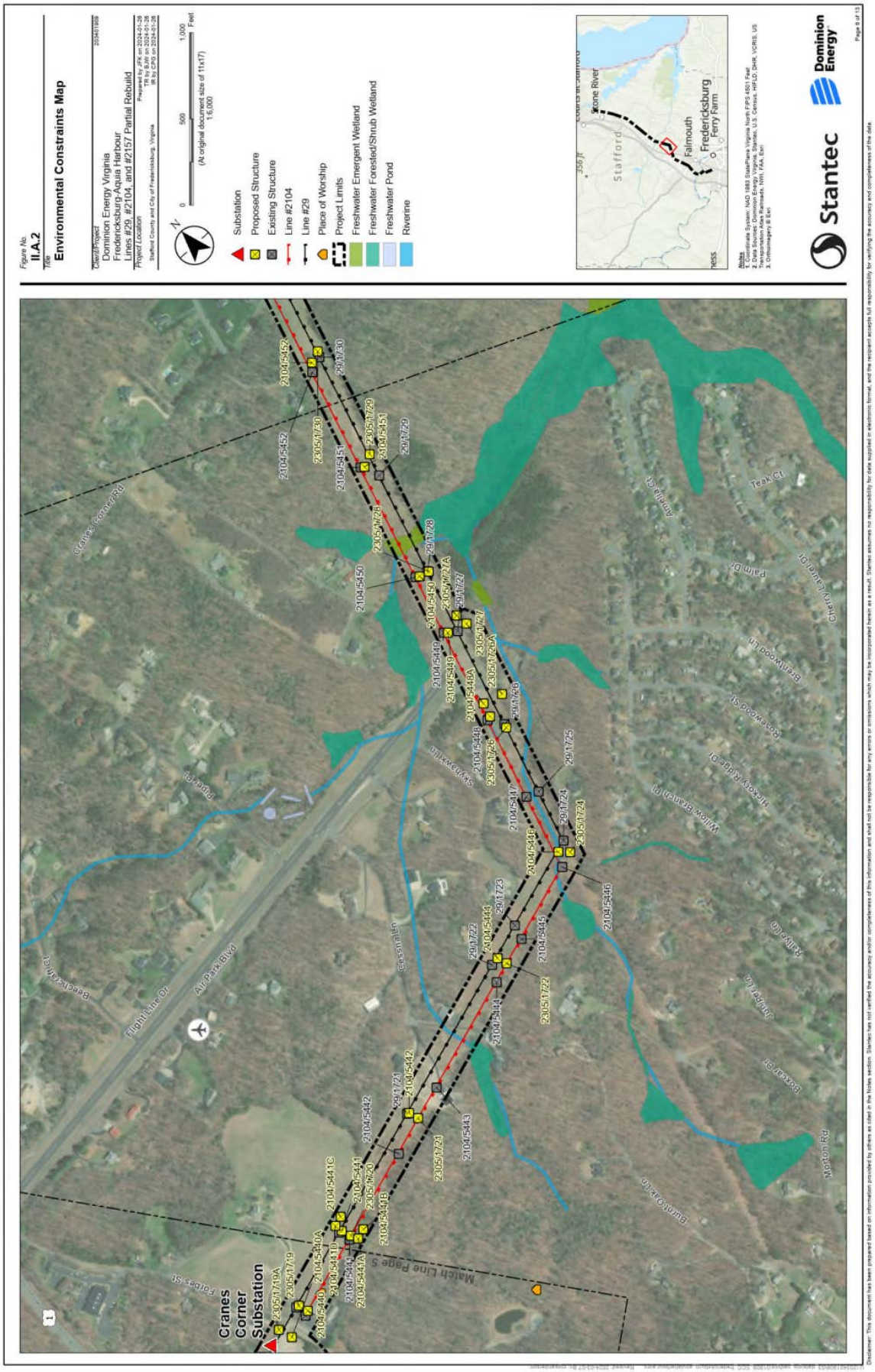
Falmouth
Fredericksburg
Ferry Farm
Rappahannock River
Stantec
Dominion Energy
Page 5 of 13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Project Location
Stafford County and City of Fredericksburg, Virginia
Substation
Proposed Structure
Existing Structure
Line #2104
Line #29
Place of Worship
Project Limits
Freshwater Emergent Wetland
Freshwater Forested/Shrub Wetland
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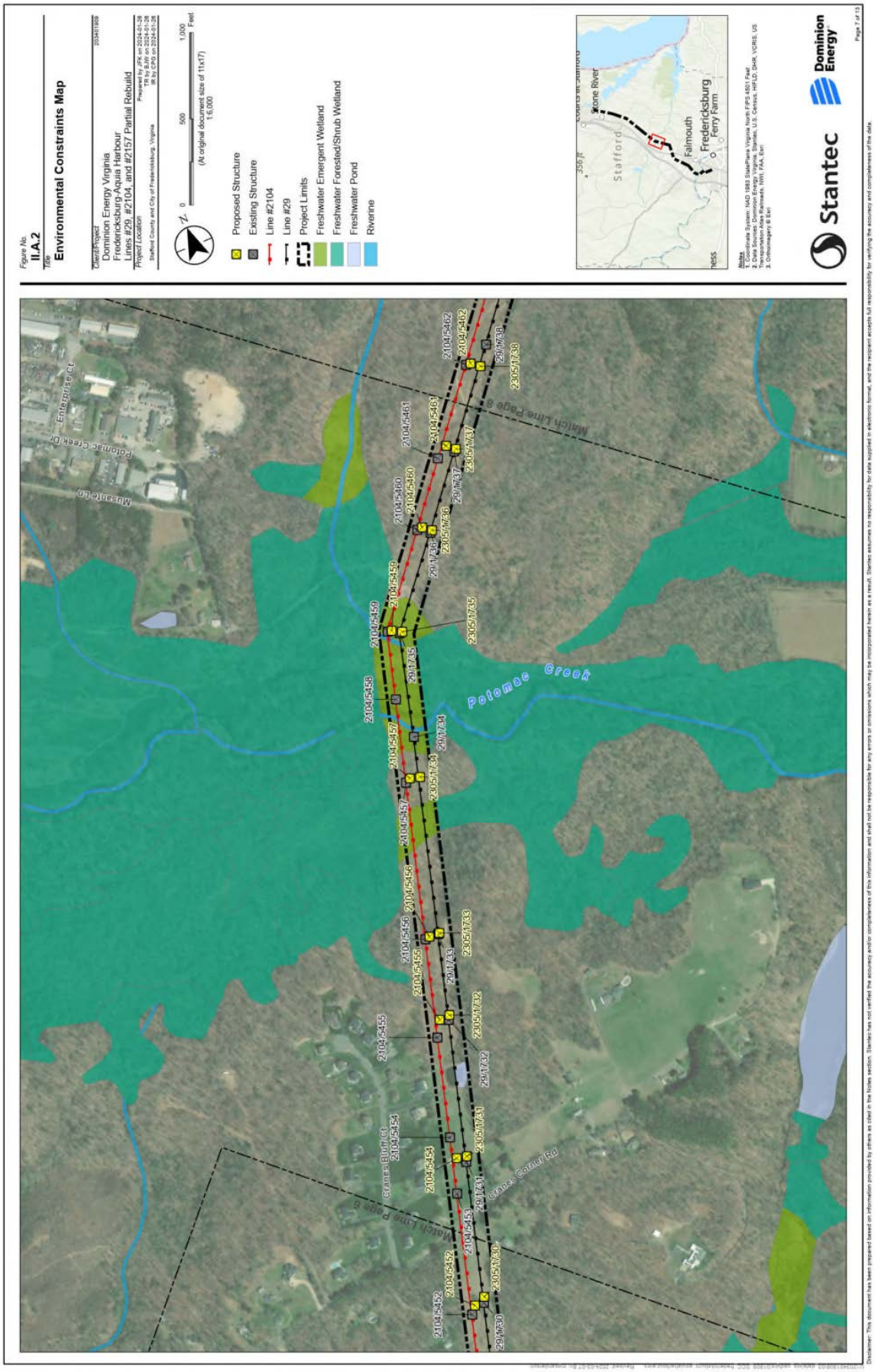
Dominion Energy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Project Location
Stafford County and City of Fredericksburg, Virginia
Prepared by JFK on 2024-01-26
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Line #2104
Line #29
Project Limits
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Freshwater Forested/Shrub Wetland
Freshwater Pond
Riverine
Potomac Creek
Enterprise Ct
Potomac Creek Dr
McEnnis Ln
Match Line Page 8
Grimes Bluff Ct
Grimes Corner Rd
Match Line Page 6
Stafford
Falmouth
Fredericksburg
Ferry Farm
Stone River
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2. Data Sources: Dominion Energy, Stantec, U.S. Census, HIFLD, DHR, VCRIS, US Fish and Wildlife Service, NWI, FEMA, Esri
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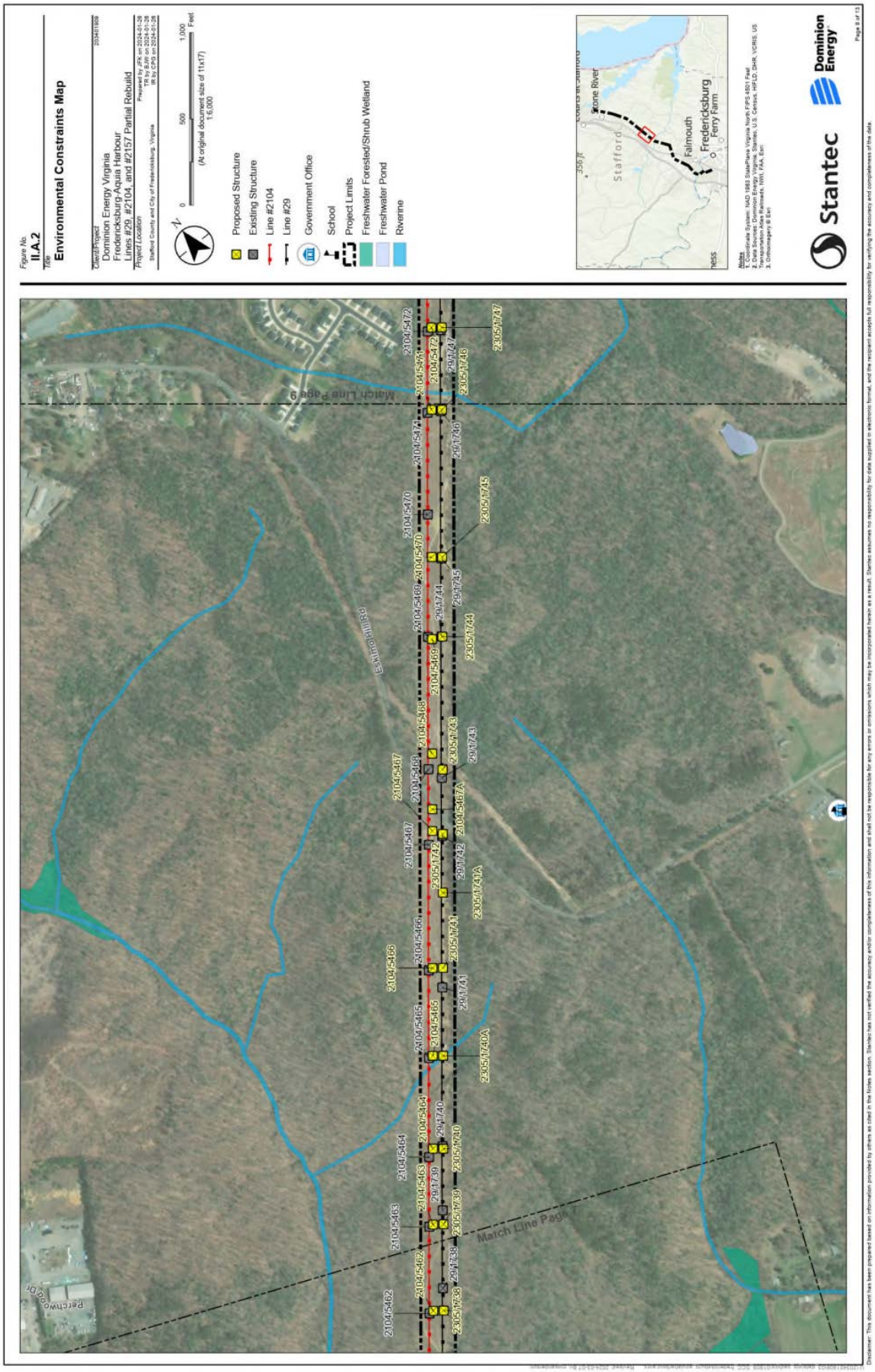
Dominion Energy
Page 7 of 13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Fredericksburg-Aquia Harbour
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Existing Structure
Line #2104
Line #29
Government Office
School
Project Limits
Freshwater Forested/Shrub Wetland
Freshwater Pond
Riverine
Match Line Page 8
Match Line Page 9
Match Line Page 7
Notes
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2. Data Sources: Dominion Energy; Stantec; U.S. Census; HIFLD; DHR; VCRIS; US Fish and Wildlife Service; NWI; FEMA; Esri
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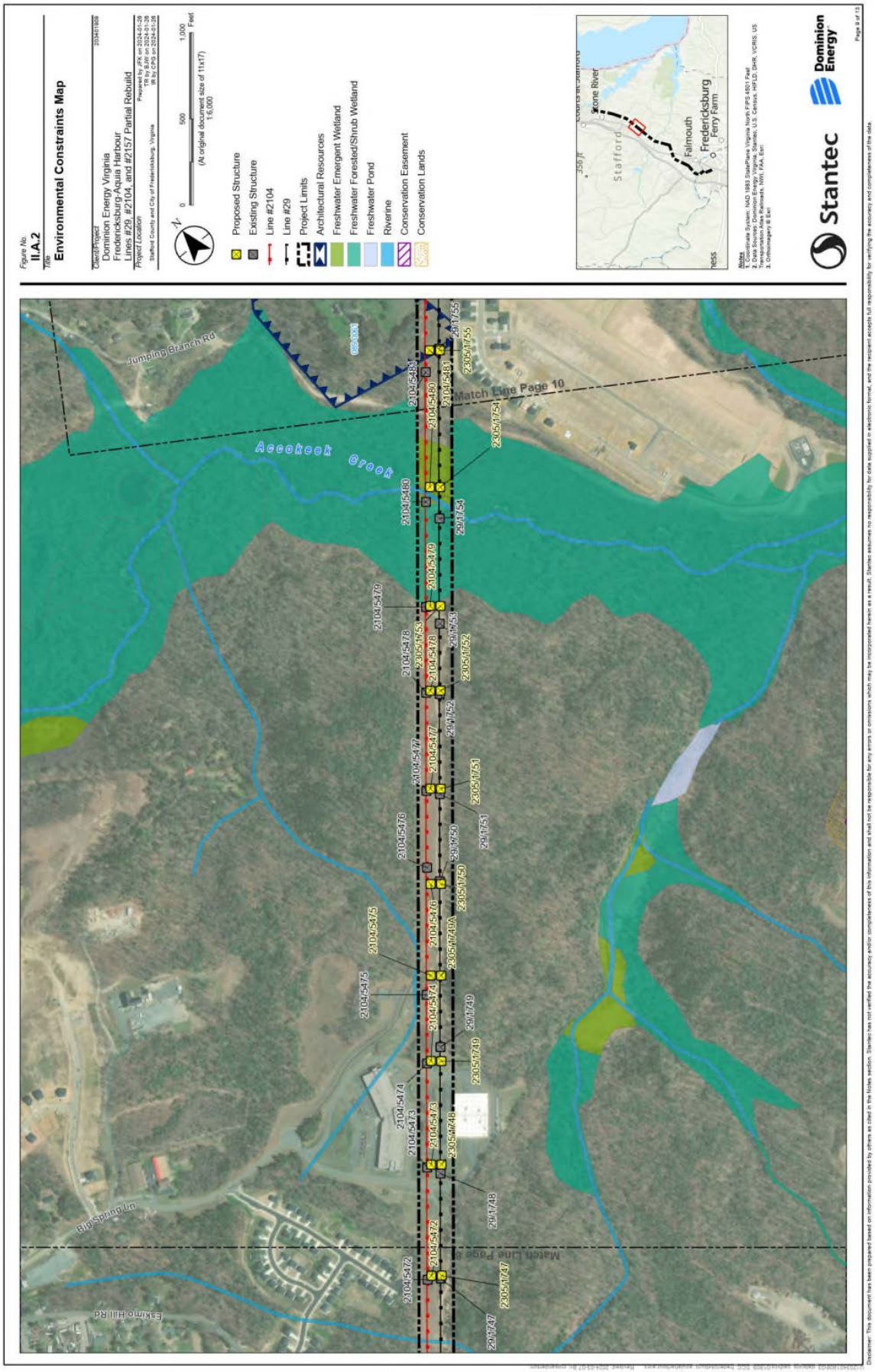
Dominion Energy
Page 8 of 13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Fredericksburg-Aquia Harbour
Lines #29, #2104, and #2157 Partial Rebuild
Project Location
Stafford County and City of Fredericksburg, Virginia
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Existing Structure
Line #2104
Line #29
Project Limits
Architectural Resources
Freshwater Emergent Wetland
Freshwater Forested/Shrub Wetland
Freshwater Pond
Riverine
Conservation Easement
Conservation Lands
Accokeek Creek
Jumping Branch Rd
Big Spring Ln
Elkmo Hill Rd
Match Line Page 10
Match Line Page 8
Stafford
Falmouth
Fredericksburg
Ferry Farm
Stone River
Notes
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2. Data Sources: Dominion Energy, Pasda, Stantec, U.S. Census, HIFLD, DHR, VCRIS, US Fish and Wildlife Service, NWI, FAA, Esri
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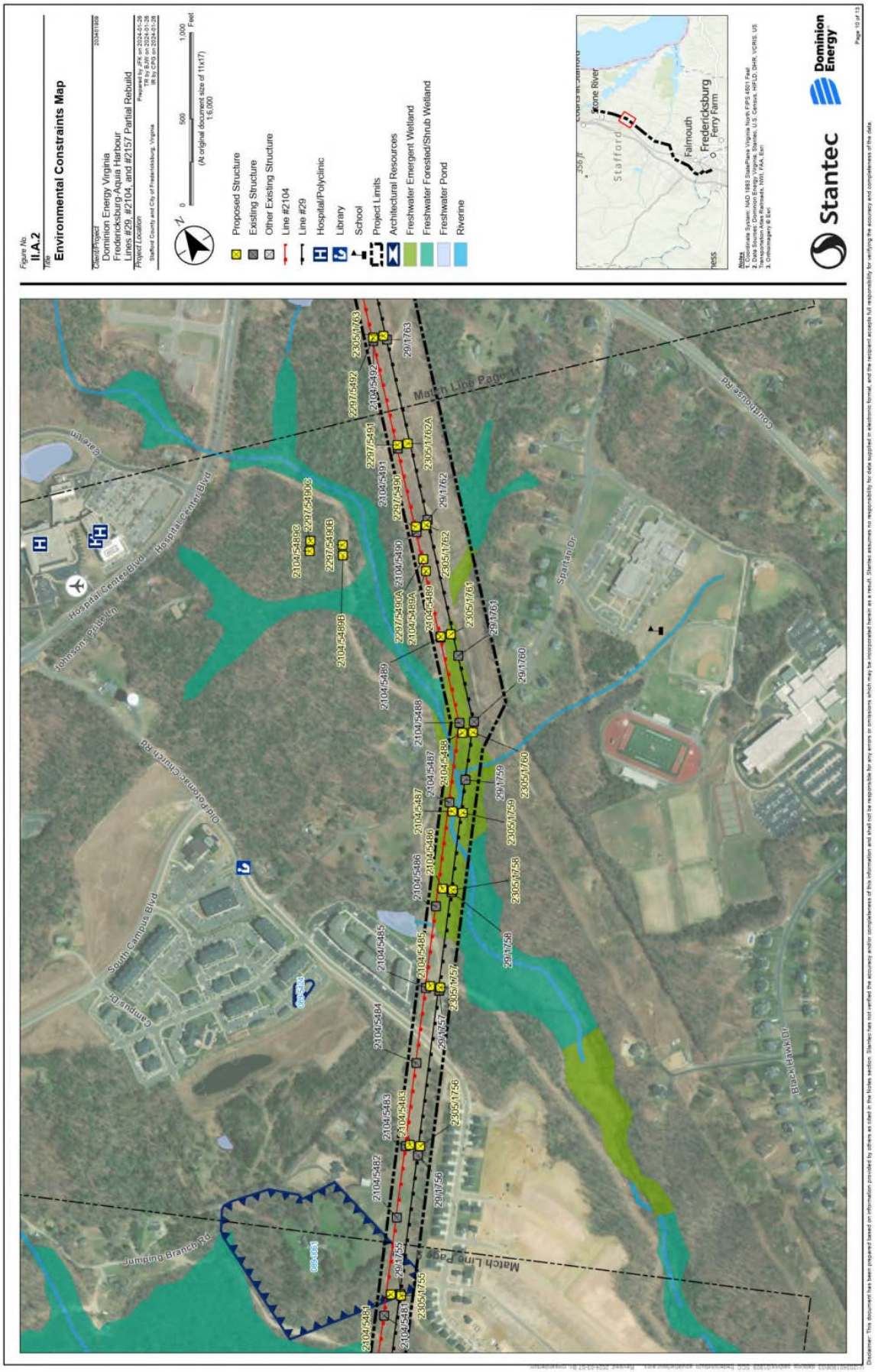
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Fredericksburg-Aquia Harbour
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Project Location
Stafford County and City of Fredericksburg, Virginia
Prepared by: JPK on 2024-01-26
TR by BJR on 2024-01-26
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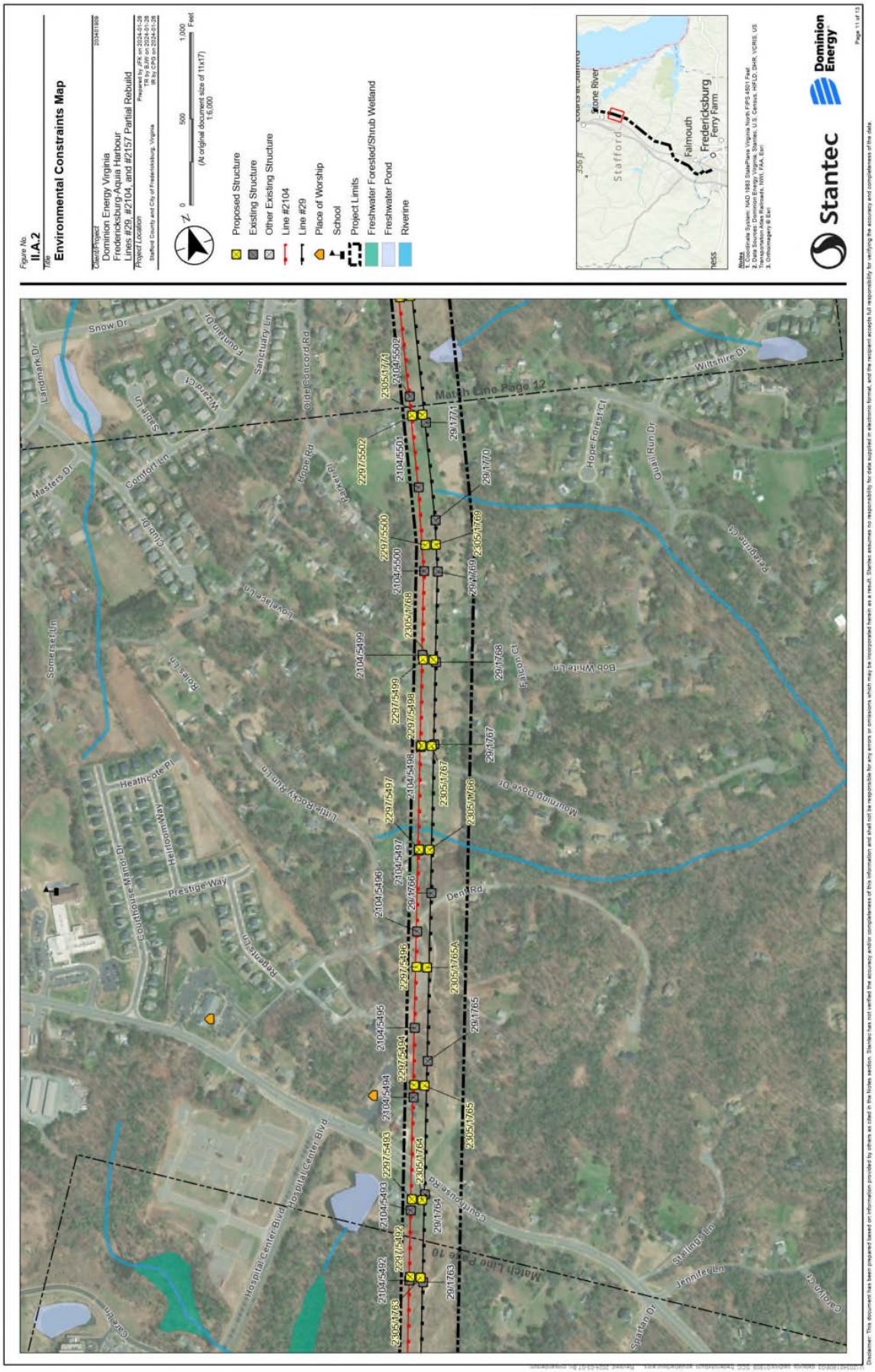
Existing Structure
Other Existing Structure
Line #2104
Line #29
Hospital/Polyclinic
Library
School
Project Limits
Architectural Resources
Freshwater Emergent Wetland
Freshwater Forested/Shrub Wetland
Freshwater Pond
Riverine
Match Line Page
Hospital Center Blvd
Johnson Pkwy
Old Forge Church Rd
South Campus Blvd
Campus Dr
Jumping Branch Rd
Spartan Dr
Courthouse Rd
Black Hawk Dr
Stafford
Falmouth
Fredericksburg
Ferry Farm
Rappahannock River
Stantec
Dominion Energy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Environmental Constraints Map
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Fredericksburg-Aquia Harbour
Lines #29, #2104, and #2157 Partial Rebuild
Project Location
Stafford County and City of Fredericksburg, Virginia
Prepared by: JPA on 2024-01-26
TR by BJR on 2024-01-26
IR by CPR on 2024-02-06
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Proposed Structure
Existing Structure
Other Existing Structure
Line #2104
Line #29
Place of Worship
School
Project Limits
Freshwater Forested/Shrub Wetland
Freshwater Pond
Riverine
Aquia Harbour
Falmouth
Fredericksburg
Ferry Farm
Stafford
Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy, Stantec, U.S. Census, HIFLD, DeLorme, VCRIS, US Fish and Wildlife Service, NWI, FEMA, Esri
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Dominion Energy
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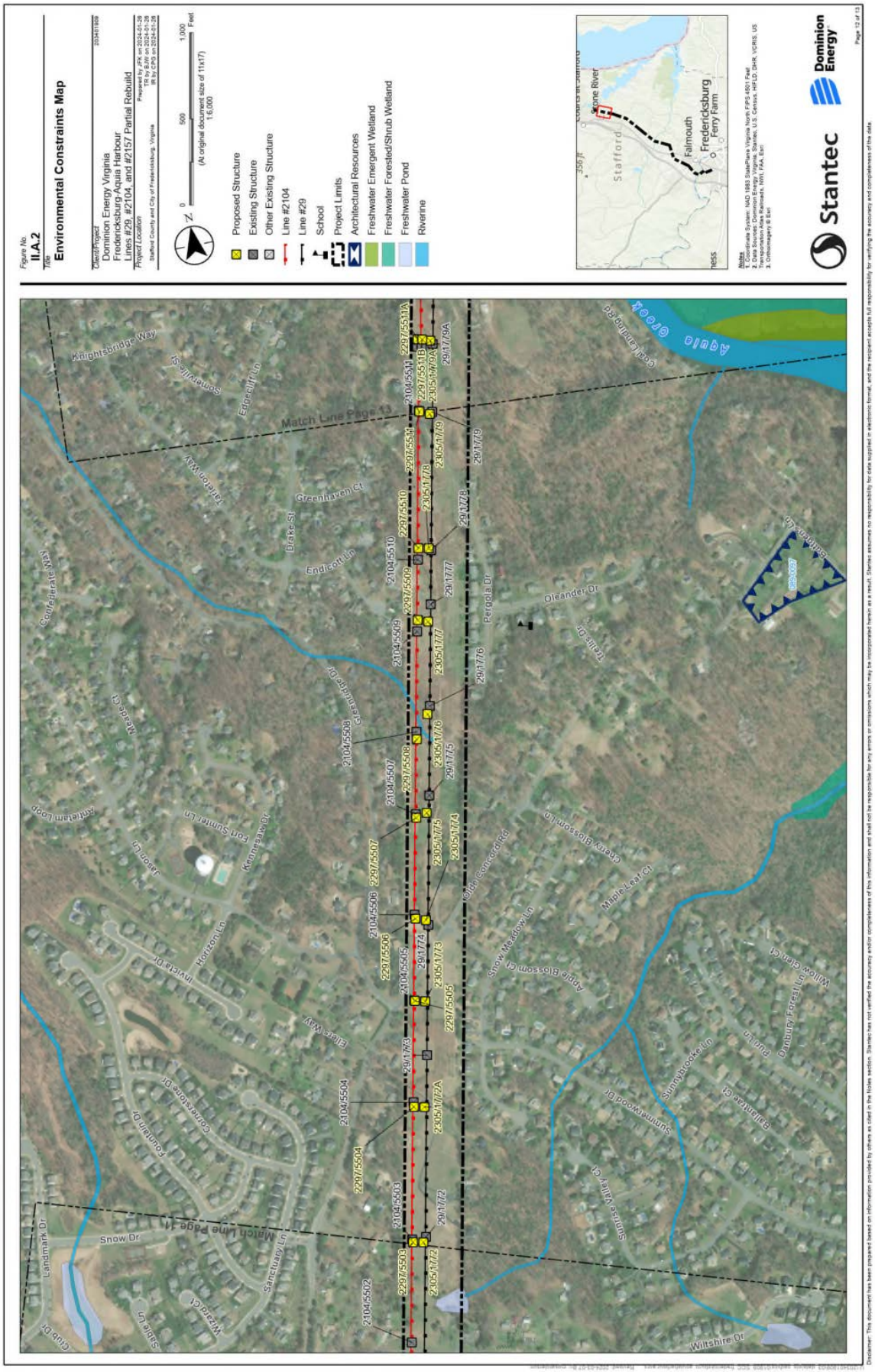
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II.A.2
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Environmental Constraints Map
Client/Project
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Fredericksburg-Aquia Harbour
Lines #29, #2104, and #2157 Partial Rebuild
Project Location
Stafford County and City of Fredericksburg, Virginia
Prepared by JPK on 2024-01-26
TR by BJR on 2024-01-26
IR by CPR on 2024-02-06
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Proposed Structure
Existing Structure
Other Existing Structure
Line #2104
Line #29
School
Project Limits
Architectural Resources
Freshwater Emergent Wetland
Freshwater Forested/Shrub Wetland
Freshwater Pond
Riverine
Rappahannock River
Stafford
Falmouth
Fredericksburg
Ferry Farm
Notes
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2. Data Sources: Dominion Energy, Stantec, U.S. Census, HIFLD, DHR, VCRIS, US Fish and Wildlife Service, NWI, FEMA, Esri
3. Orthoimagery © Esri
Stantec
Dominion Energy
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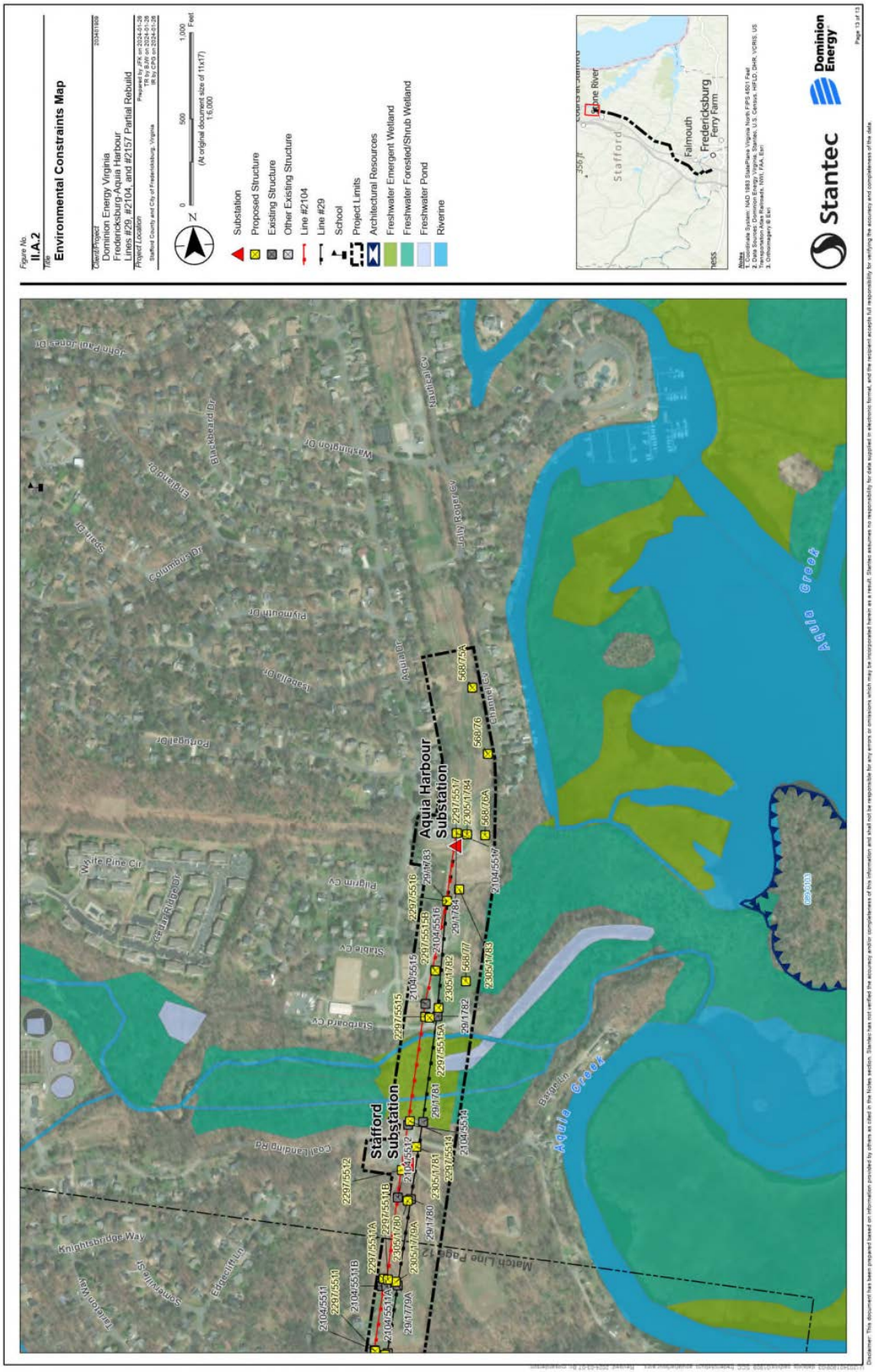
Match Line Page 11
Aquia Creek
Page 13 of 13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Project Location
Stafford County and City of Fredericksburg, Virginia
Prepared by JFK on 2024-01-26
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Substation
Proposed Structure
Existing Structure
Other Existing Structure
Line #2104
Line #29
School
Project Limits
Architectural Resources
Freshwater Emergent Wetland
Freshwater Forested/Shrub Wetland
Freshwater Pond
Riverine
Aquia Harbour Substation
Stafford Substation
Match Line Page 12
Aquia Creek
Brooke
Falmouth
Fredericksburg
Ferry Farm
Stantec
Dominion Energy
Page 13 of 13

II. DESCRIPTION OF THE PROPOSED PROJECT

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

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

Response: See Attachment I.G.1.

II. DESCRIPTION OF THE PROPOSED PROJECT

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

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

Response: The Rebuild Project is located within existing rights-of-way or on Company-owned property, with the exception of one-acre area near Dogwood Airpark where the existing right-of-way must be expanded slightly to avoid impacts to planes attempting to land at the privately owned Dogwood Airpark. For this reason, and after consultation with affected landowners in the vicinity of Dogwood Airpark, the Company will expand its existing easement by 70 feet between Structures #29/1725 and #29/1728, and #2104/5447 and #2104/5450.

II. DESCRIPTION OF THE PROPOSED PROJECT

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

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

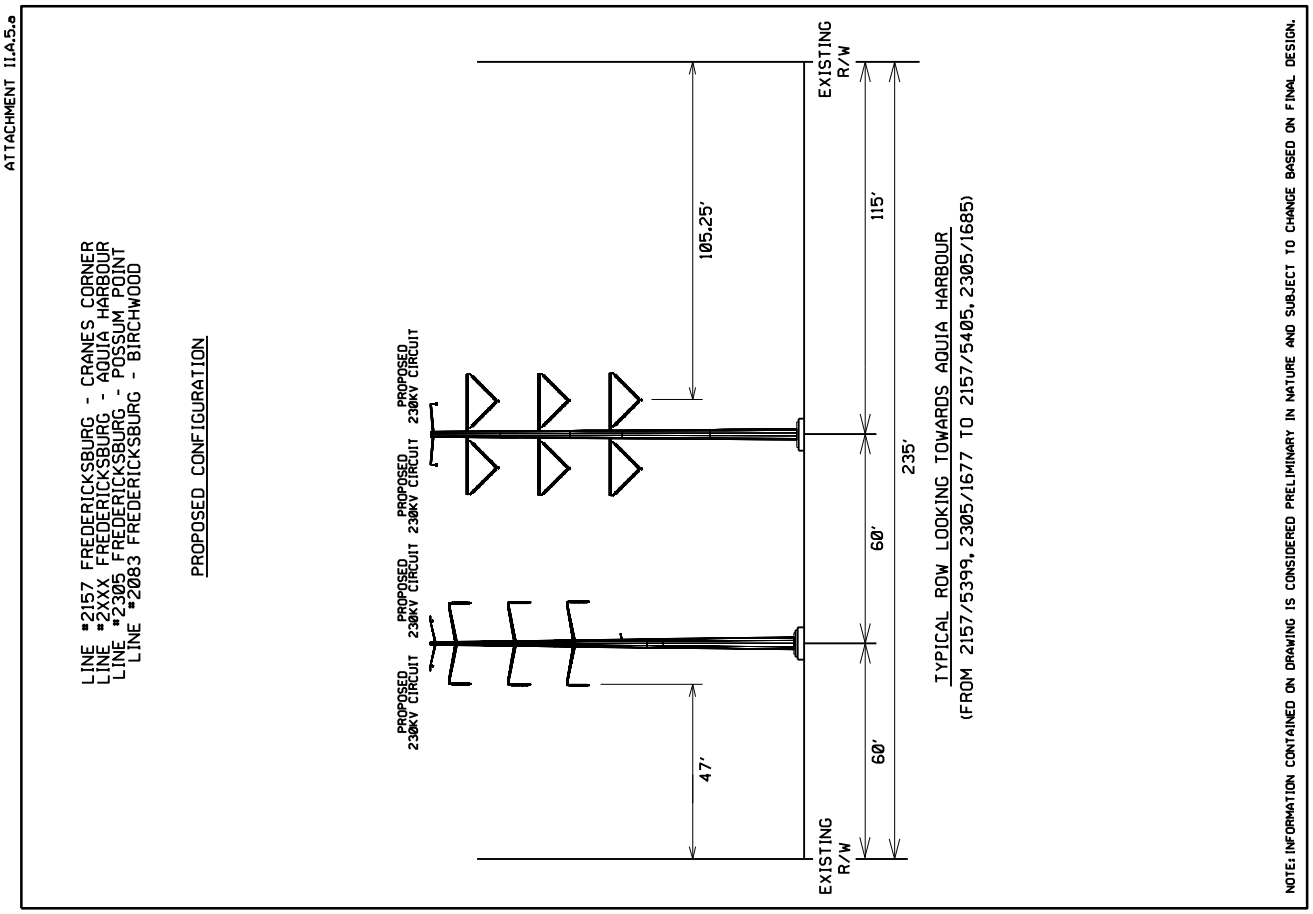
a. ROW width for each cross section drawing;

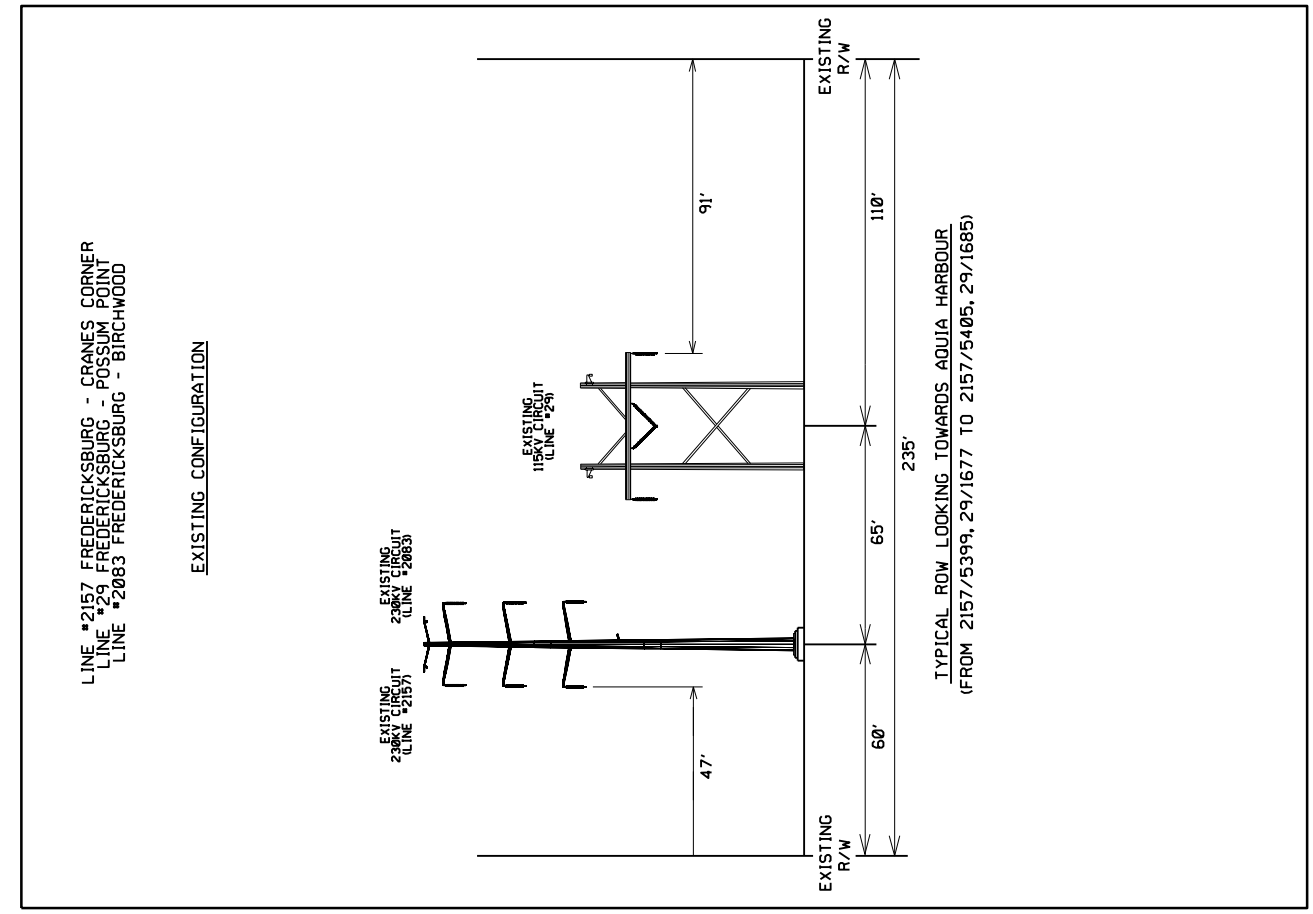
b. Lateral distance between the conductors and edge of ROW;

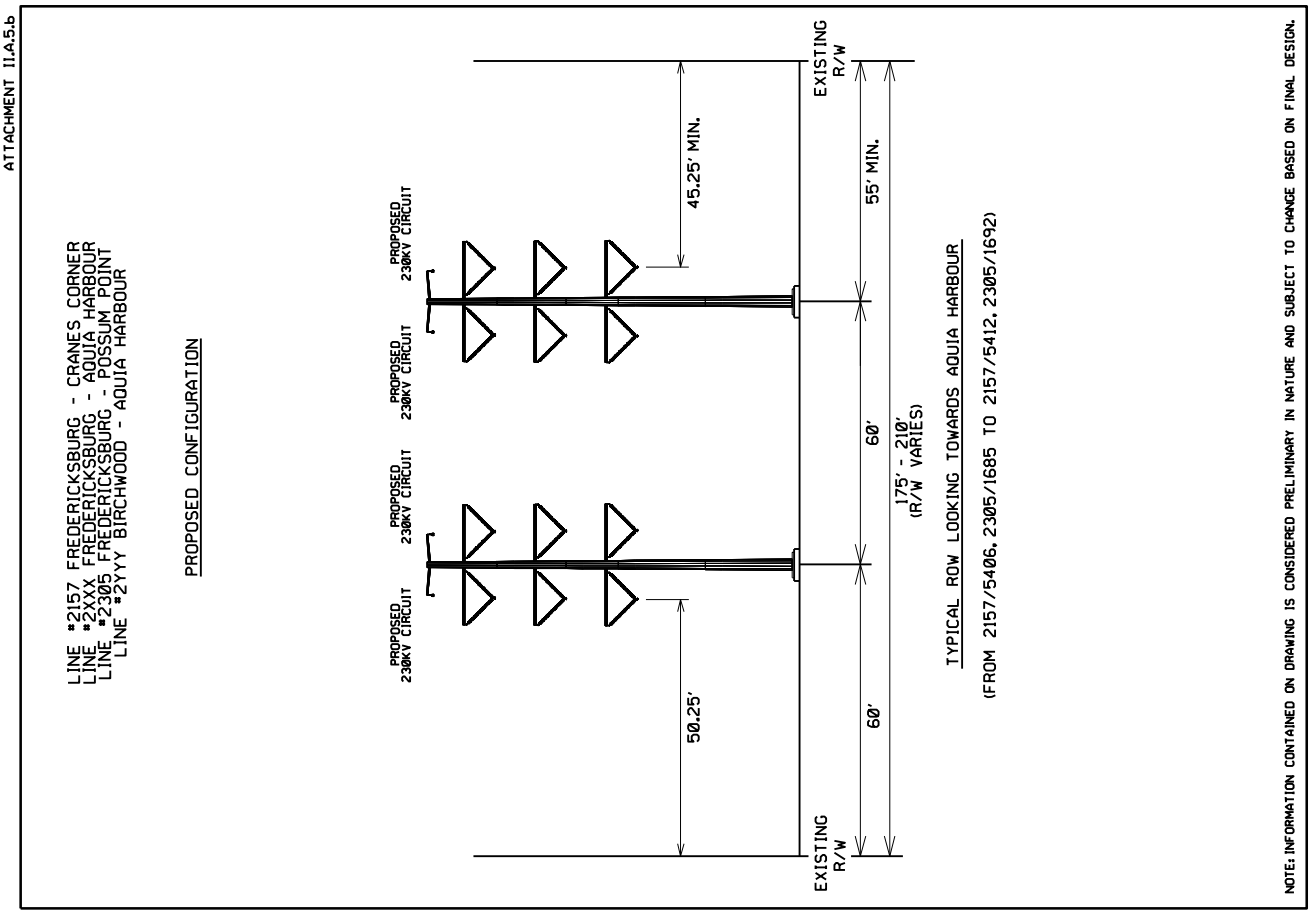
c. Existing utility facilities on the ROW; and

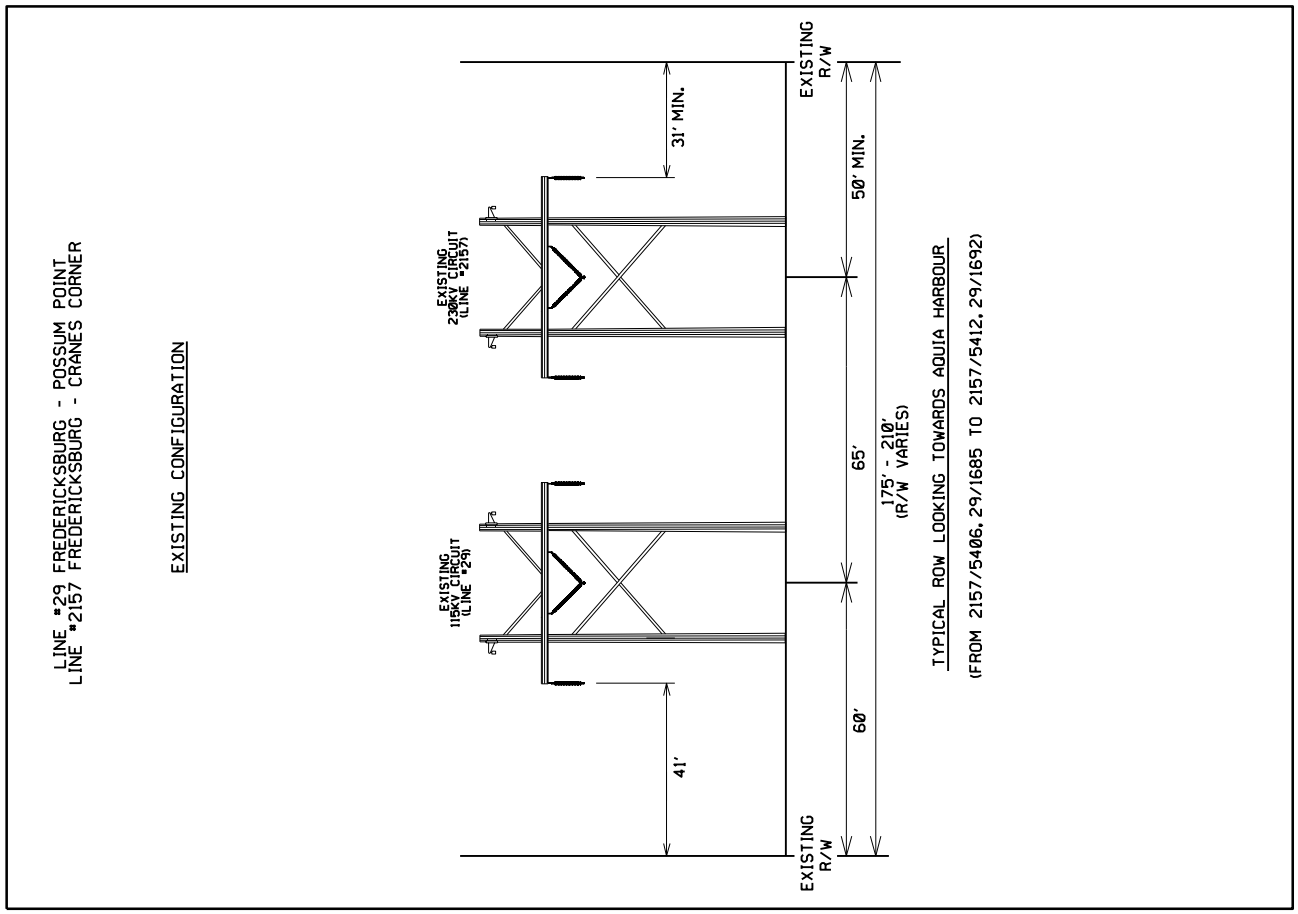
d. For lines being rebuilt in existing ROW, provide all of the above (i) as it currently exists, and (ii) as it will exist at the conclusion of the proposed project.

Response: See Attachments II.A.5.a-j.


ATTACHMENT II.A.5.a
LINE #2157 FREDERICKSBURG - CRANES CORNER
LINE #2XXX FREDERICKSBURG - AQUIA HARBOUR
LINE #2305 FREDERICKSBURG - POSSUM POINT
LINE #2083 FREDERICKSBURG - BIRCHWOOD
PROPOSED CONFIGURATION
PROPOSED 230KV CIRCUIT
PROPOSED 230KV CIRCUIT
PROPOSED 230KV CIRCUIT
PROPOSED 230KV CIRCUIT
105.25'
47'
EXISTING R/W
EXISTING R/W
115'
60'
60'
235'
TYPICAL ROW LOOKING TOWARDS AQUIA HARBOUR
(FROM 2157/5399, 2305/1677 TO 2157/5405, 2305/1685)
NOTE: INFORMATION CONTAINED ON DRAWING IS CONSIDERED PRELIMINARY IN NATURE AND SUBJECT TO CHANGE BASED ON FINAL DESIGN.

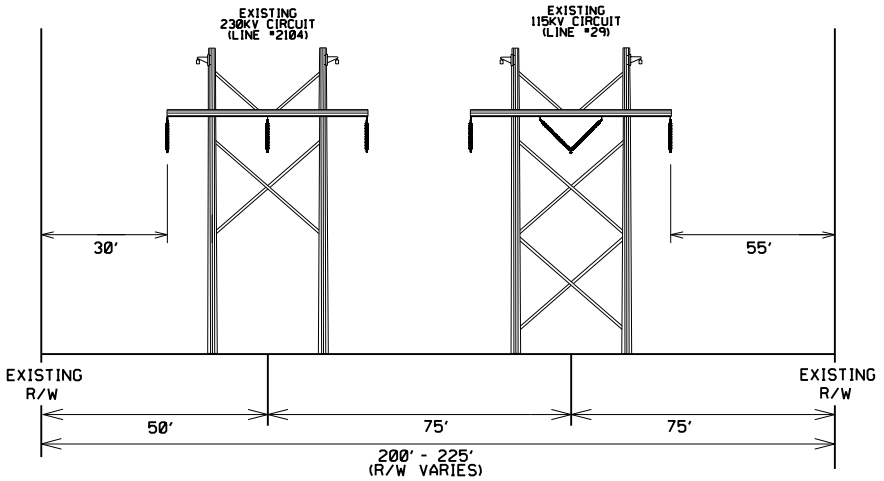

LINE #2157 FREDERICKSBURG - CRANES CORNER
LINE #29 FREDERICKSBURG - POSSUM POINT
LINE #2083 FREDERICKSBURG - BIRCHWOOD
EXISTING CONFIGURATION
EXISTING 230KV CIRCUIT (LINE #2157)
EXISTING 230KV CIRCUIT (LINE #2083)
EXISTING 115KV CIRCUIT (LINE #29)
91'
47'
EXISTING R/W
EXISTING R/W
110'
65'
60'
235'
TYPICAL ROW LOOKING TOWARDS AQUIA HARBOUR
(FROM 2157/5399, 29/1677 TO 2157/5405, 29/1685)


ATTACHMENT II.A.5.b
LINE #2157 FREDERICKSBURG - CRANES CORNER
LINE #2XXX FREDERICKSBURG - AQUIA HARBOUR
LINE #2305 FREDERICKSBURG - POSSUM POINT
LINE #2YYY BIRCHWOOD - AQUIA HARBOUR
PROPOSED CONFIGURATION
PROPOSED 230KV CIRCUIT
PROPOSED 230KV CIRCUIT
PROPOSED 230KV CIRCUIT
PROPOSED 230KV CIRCUIT
45.25' MIN.
50.25'
EXISTING R/W
EXISTING R/W
55' MIN.
60'
60'
175' - 210' (R/W VARIES)
TYPICAL ROW LOOKING TOWARDS AQUIA HARBOUR
(FROM 2157/5406, 2305/1685 TO 2157/5412, 2305/1692)
NOTE: INFORMATION CONTAINED ON DRAWING IS CONSIDERED PRELIMINARY IN NATURE AND SUBJECT TO CHANGE BASED ON FINAL DESIGN.


LINE #29 FREDERICKSBURG - POSSUM POINT
LINE #2157 FREDERICKSBURG - CRANES CORNER
EXISTING CONFIGURATION
EXISTING 230KV CIRCUIT (LINE #2157)
EXISTING 115KV CIRCUIT (LINE #29)
31' MIN.
41'
EXISTING R/W
EXISTING R/W
50' MIN.
65'
60'
175' - 210' (R/W VARIES)
TYPICAL ROW LOOKING TOWARDS AQUIA HARBOUR
(FROM 2157/5406, 29/1685 TO 2157/5412, 29/1692)

LINE #2104 CRANES CORNER - AQUIA HARBOUR
LINE #29 FREDERICKSBURG - POSSUM POINT

EXISTING CONFIGURATION

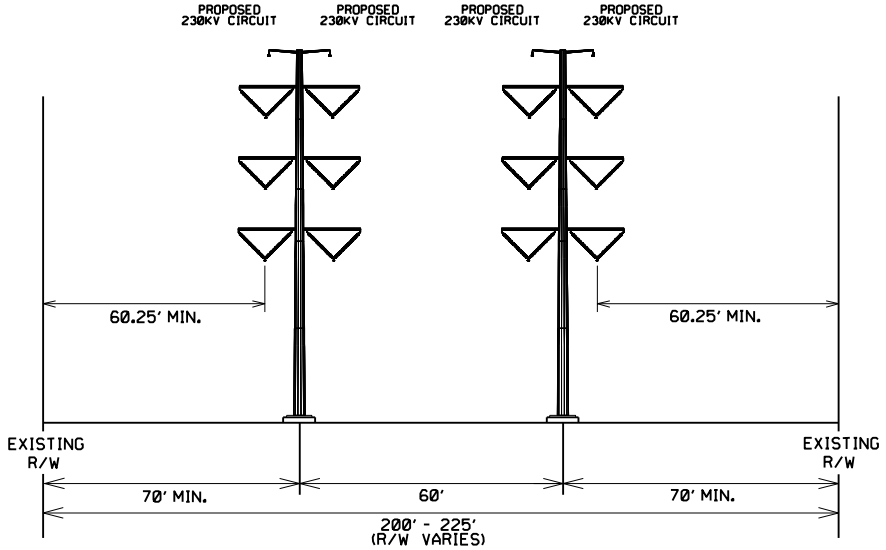


TYPICAL ROW LOOKING TOWARDS AQUIA HARBOUR

(FROM STRUCTURES 2157/5416, 29/1696 TO 2104/5487, 29/1759)

LINE #2104 CRANES CORNER - SPARTAN
LINE #2XXX FREDERICKSBURG - AQUIA HARBOUR
LINE #2305 FREDERICKSBURG - POSSUM POINT
LINE #2YYY BIRCHWOOD - AQUIA HARBOUR

PROPOSED CONFIGURATION



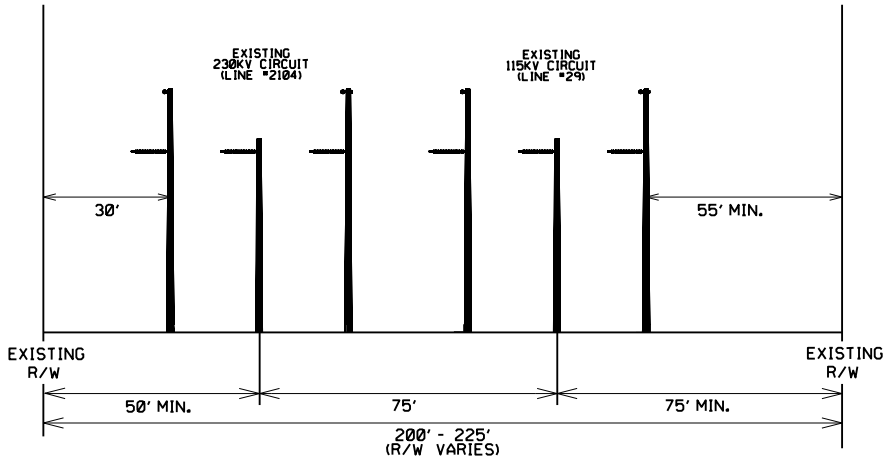
TYPICAL ROW LOOKING TOWARDS AQUIA HARBOUR

(FROM STRUCTURES 2157/5416, 2305/1696 TO 2104/5487, 2305/1759)

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

LINE #2104 CRANES CORNER - AQUIA HARBOUR
LINE #29 FREDERICKSBURG - POSSUM POINT

EXISTING CONFIGURATION

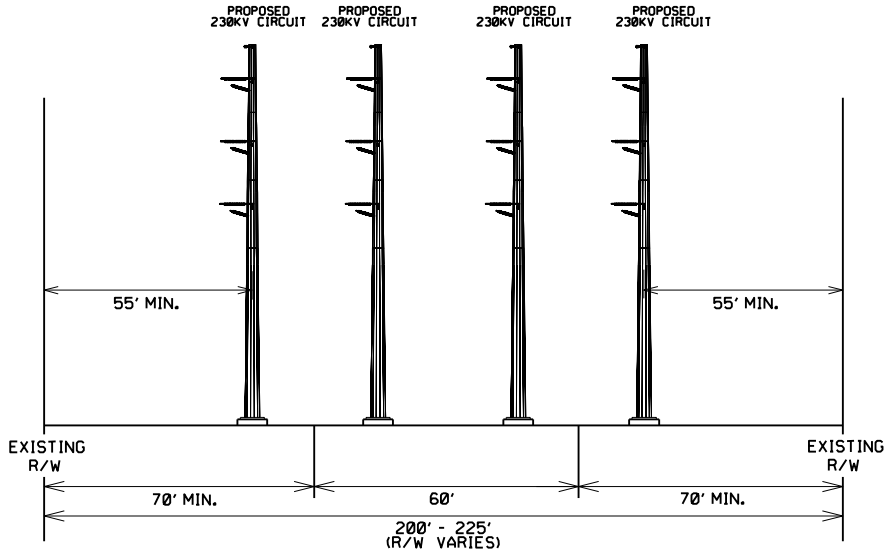


TYPICAL ROW LOOKING TOWARDS AQUIA HARBOUR

(HEAVY ANGLE STRUCTURES 2157/5413, 2104/5446, 29/1693, 29/1724)

LINE #2104 CRANES CORNER - SPARTAN
LINE #2XXX FREDERICKSBURG - AQUIA HARBOUR
LINE #2305 FREDERICKSBURG - POSSUM POINT
LINE #2YYY BIRCHWOOD - AQUIA HARBOUR

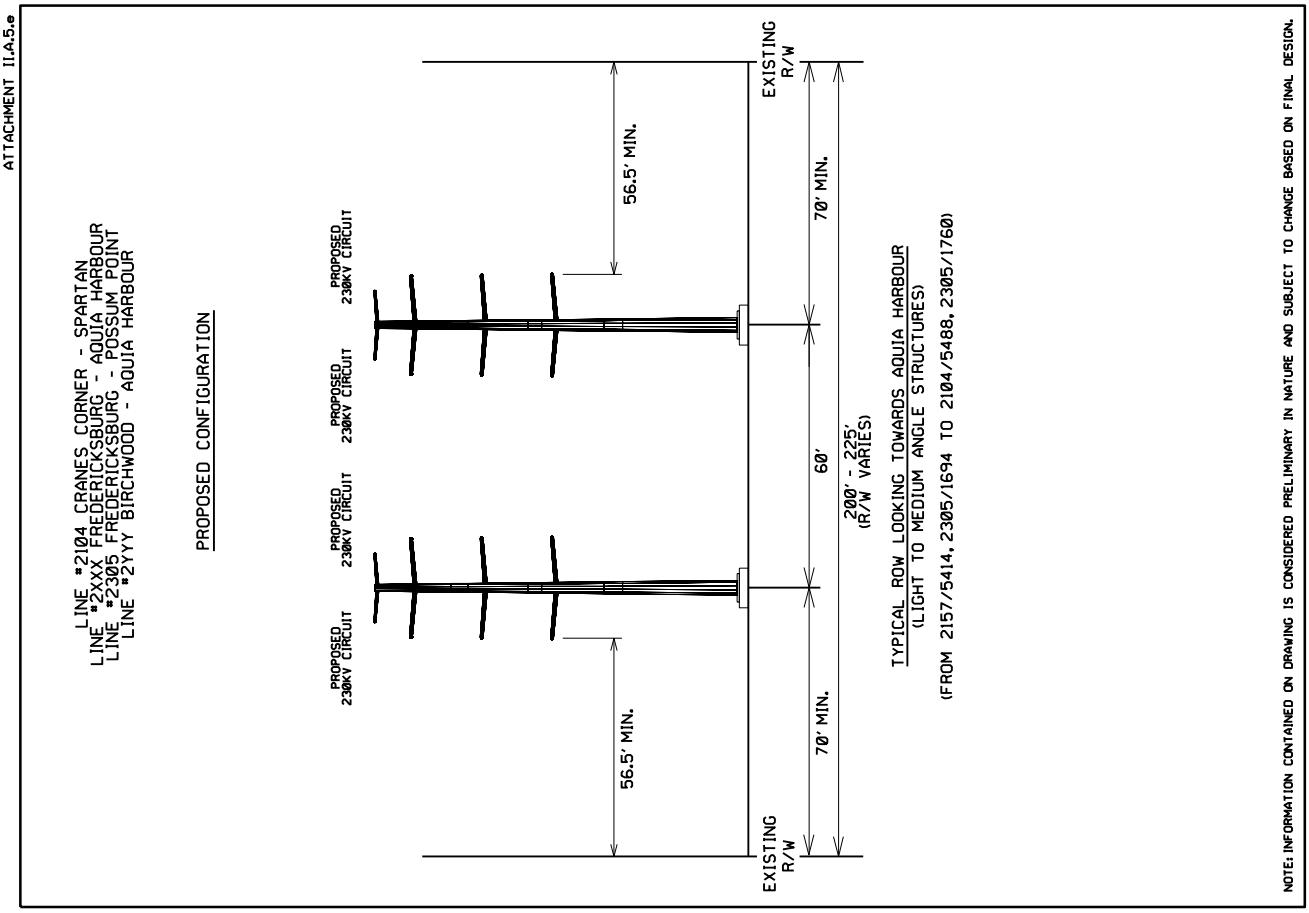
PROPOSED CONFIGURATION

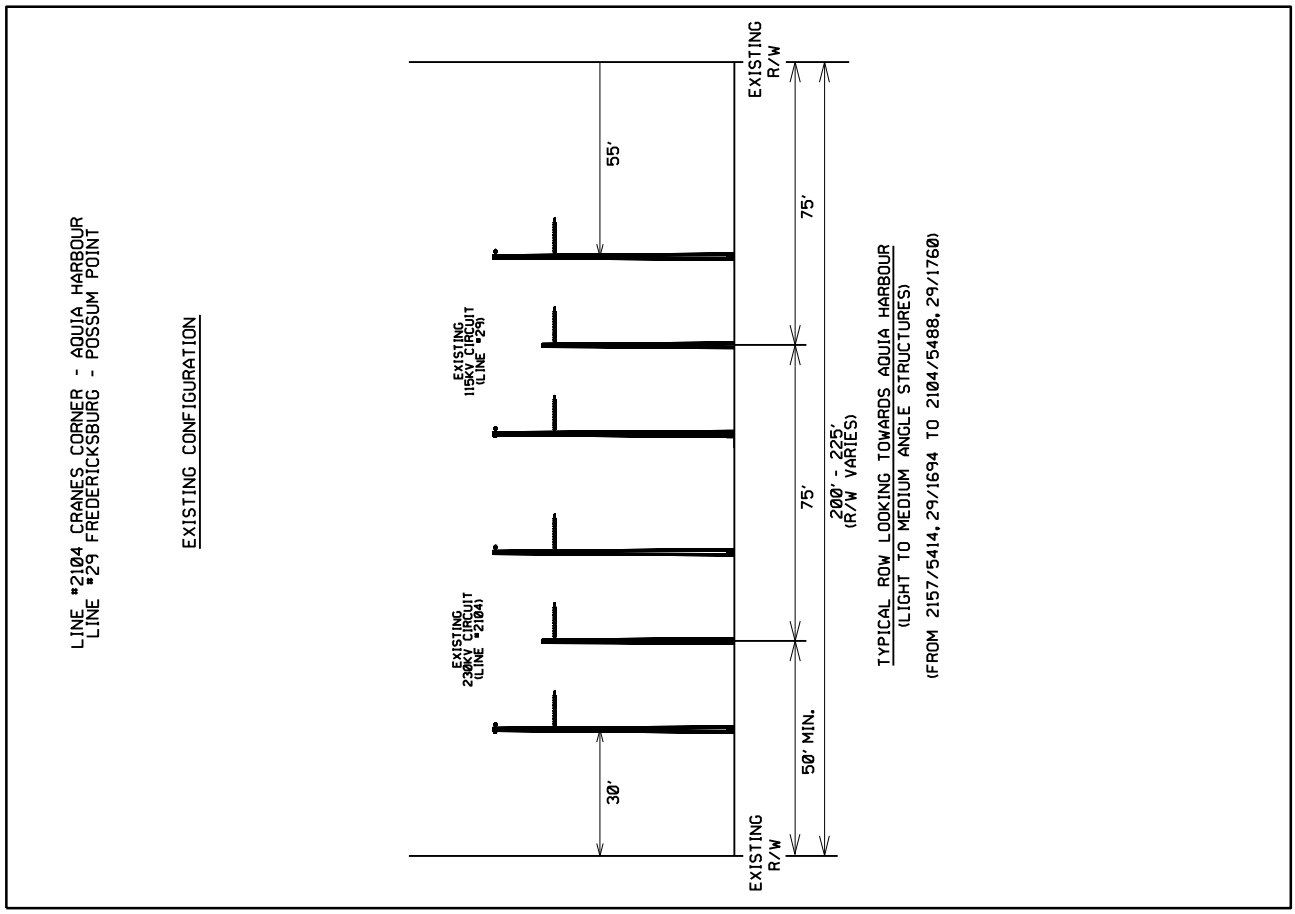


TYPICAL ROW LOOKING TOWARDS AQUIA HARBOUR

(HEAVY ANGLE STRUCTURES 2157/5413, 2104/5446, 2305/1693, 2305/1724)

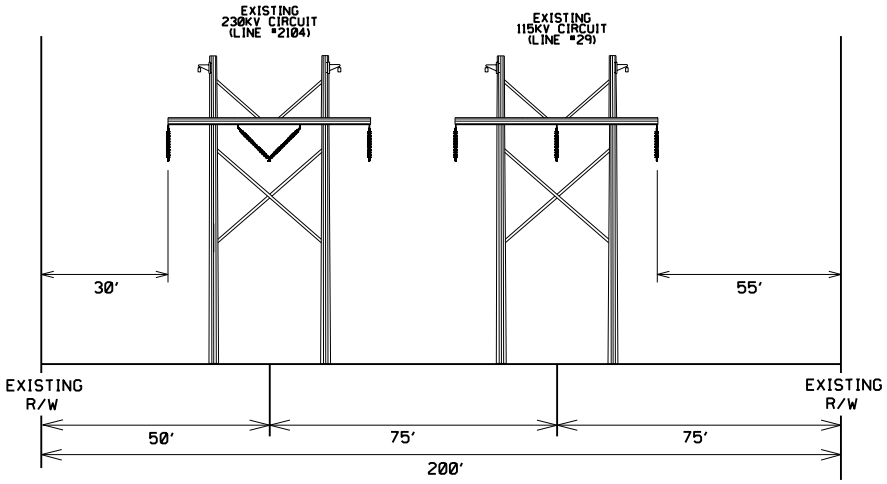
NOTE: INFORMATION CONTAINED ON DRAWING IS CONSIDERED PRELIMINARY IN NATURE AND SUBJECT TO CHANGE BASED ON FINAL DESIGN.


ATTACHMENT II.A.5.e
LINE #2104 CRANES CORNER - SPARTAN
LINE #2XXX FREDERICKSBURG - AQUIA HARBOUR
LINE #2305 FREDERICKSBURG - POSSUM POINT
LINE #2YYY BIRCHWOOD - AQUIA HARBOUR
PROPOSED CONFIGURATION
PROPOSED 230KV CIRCUIT
PROPOSED 230KV CIRCUIT
PROPOSED 230KV CIRCUIT
PROPOSED 230KV CIRCUIT
56.5' MIN.
56.5' MIN.
EXISTING R/W
EXISTING R/W
70' MIN.
70' MIN.
60'
200' - 225' (R/W VARIES)
TYPICAL ROW LOOKING TOWARDS AQUIA HARBOUR
(LIGHT TO MEDIUM ANGLE STRUCTURES)
(FROM 2157/5414, 2305/1694 TO 2104/5488, 2305/1760)
NOTE: INFORMATION CONTAINED ON DRAWING IS CONSIDERED PRELIMINARY IN NATURE AND SUBJECT TO CHANGE BASED ON FINAL DESIGN.


LINE #2104 CRANES CORNER - AQUIA HARBOUR
LINE #29 FREDERICKSBURG - POSSUM POINT
EXISTING CONFIGURATION
EXISTING 230KV CIRCUIT (LINE #2104)
EXISTING 115KV CIRCUIT (LINE #29)
30'
55'
EXISTING R/W
EXISTING R/W
50' MIN.
75'
75'
200' - 225' (R/W VARIES)
TYPICAL ROW LOOKING TOWARDS AQUIA HARBOUR
(LIGHT TO MEDIUM ANGLE STRUCTURES)
(FROM 2157/5414, 29/1694 TO 2104/5488, 29/1760)

LINE #2104 CRANES CORNER - AQUIA HARBOUR
LINE #29 FREDERICKSBURG - POSSUM POINT

EXISTING CONFIGURATION

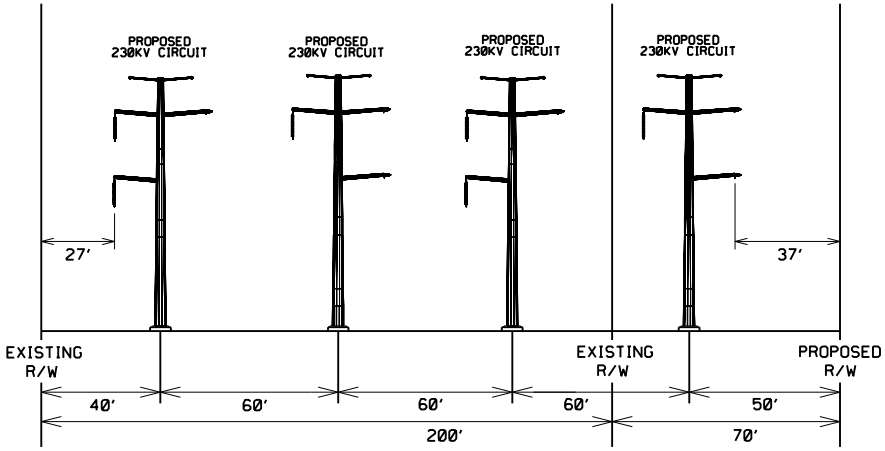


TYPICAL ROW LOOKING TOWARDS AQUIA HARBOUR
(DOGWOOD AIRPARK)

(FROM STRUCTURES 2104/5448, 29/1726 TO 2104/5449, 29/1727)

LINE #2104 CRANES CORNER - SPARTAN
LINE #2XXX FREDERICKSBURG - AQUIA HARBOUR
LINE #2305 FREDERICKSBURG - POSSUM POINT
LINE #2YYY BIRCHWOOD - AQUIA HARBOUR

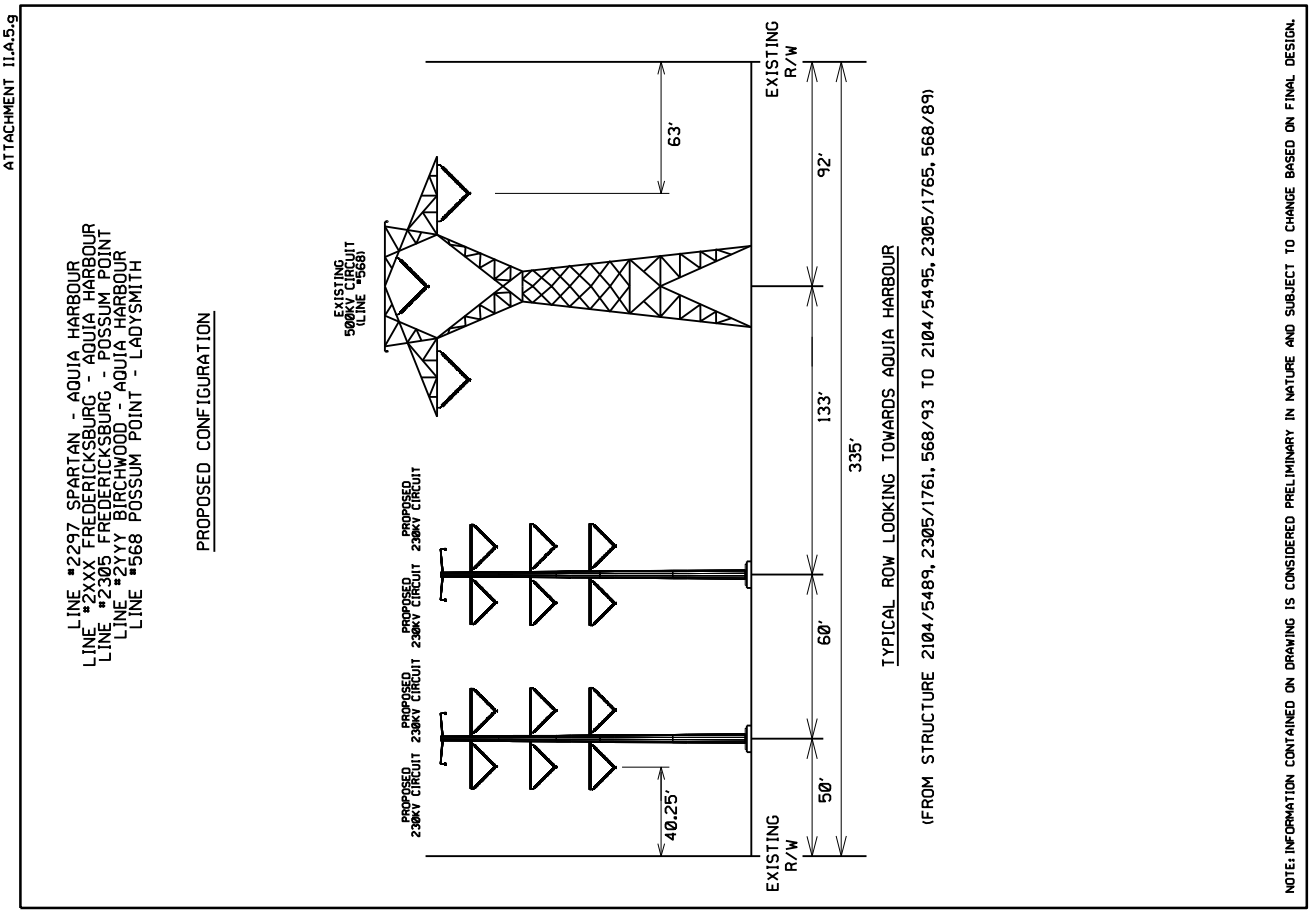
PROPOSED CONFIGURATION

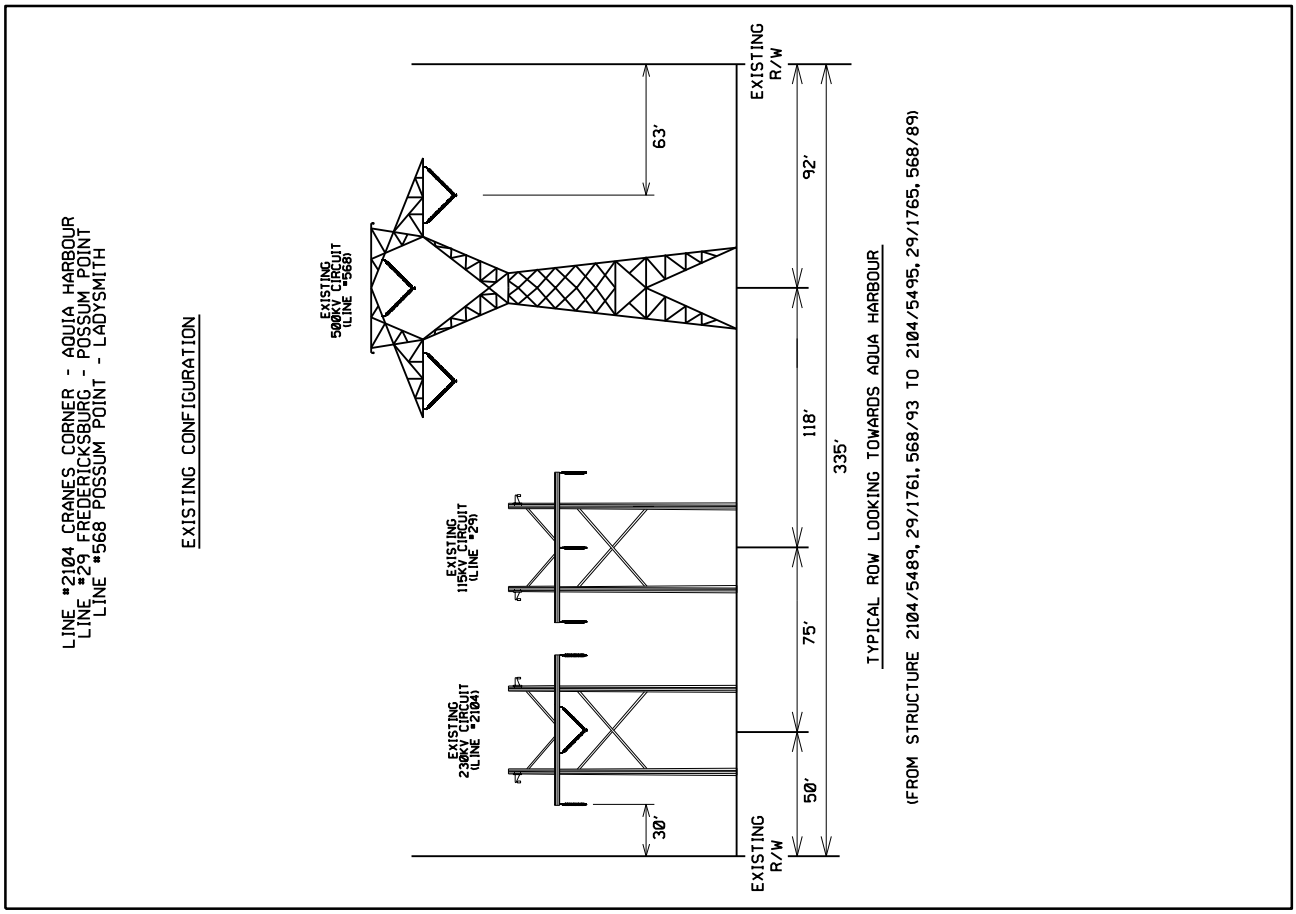


ROW LOOKING TOWARDS AQUIA HARBOUR
(DOGWOOD AIRPARK)

(FROM STRUCTURES 2104/5448A, 2305/1726A TO 2104/5449, 2305/1727)

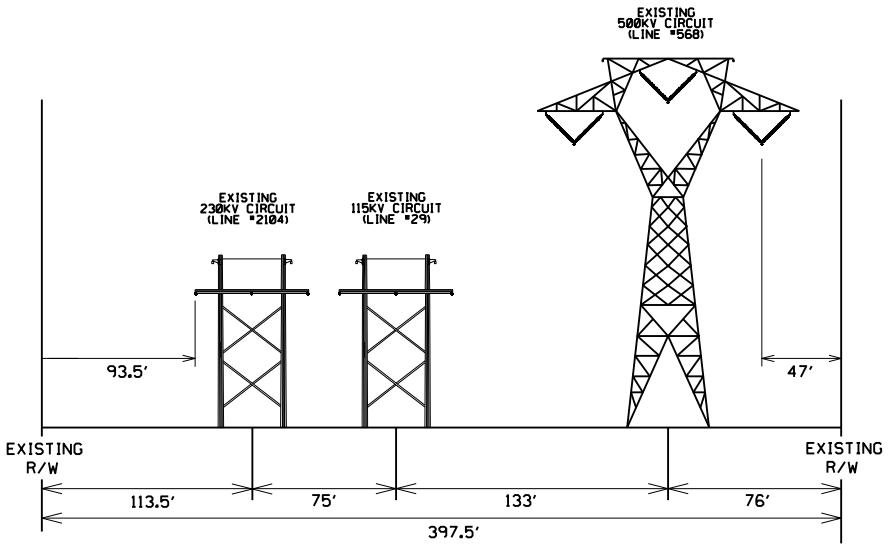
NOTE: INFORMATION CONTAINED ON DRAWING IS CONSIDERED PRELIMINARY IN NATURE AND SUBJECT TO CHANGE BASED ON FINAL DESIGN.


ATTACHMENT II.A.5.g
LINE #2297 SPARTAN - AQUIA HARBOUR
LINE #2XXX FREDERICKSBURG - AQUIA HARBOUR
LINE #2305 FREDERICKSBURG - POSSUM POINT
LINE #2YYY BIRCHWOOD - AQUIA HARBOUR
LINE #568 POSSUM POINT - LADYSMITH
PROPOSED CONFIGURATION
EXISTING 500KV CIRCUIT (LINE #568)
PROPOSED 230KV CIRCUIT
PROPOSED 230KV CIRCUIT
PROPOSED 230KV CIRCUIT
63'
40.25'
EXISTING R/W
EXISTING R/W
50'
60'
133'
92'
335'
TYPICAL ROW LOOKING TOWARDS AQUIA HARBOUR
(FROM STRUCTURE 2104/5489, 2305/1761, 568/93 TO 2104/5495, 2305/1765, 568/89)
NOTE: INFORMATION CONTAINED ON DRAWING IS CONSIDERED PRELIMINARY IN NATURE AND SUBJECT TO CHANGE BASED ON FINAL DESIGN.


LINE #2104 CRANES CORNER - AQUIA HARBOUR
LINE #29 FREDERICKSBURG - POSSUM POINT
LINE #568 POSSUM POINT - LADYSMITH
EXISTING CONFIGURATION
EXISTING 500KV CIRCUIT (LINE #568)
EXISTING 115KV CIRCUIT (LINE #29)
EXISTING 230KV CIRCUIT (LINE #2104)
63'
30'
EXISTING R/W
EXISTING R/W
50'
75'
118'
92'
335'
TYPICAL ROW LOOKING TOWARDS AQUA HARBOUR
(FROM STRUCTURE 2104/5489, 29/1761, 568/93 TO 2104/5495, 29/1765, 568/89)

LINE #2104 CRANES CORNER - AQUIA HARBOUR
LINE #29 FREDERICKSBURG - POSSUM POINT
LINE #568 POSSUM POINT - LADYSMITH

EXISTING CONFIGURATION

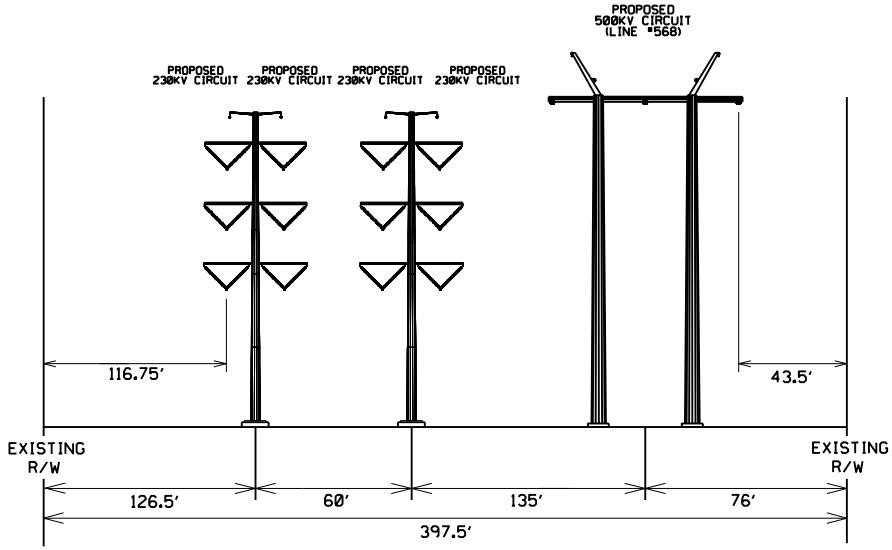


TYPICAL ROW LOOKING TOWARDS AQUIA HARBOUR

(FROM STRUCTURES 2104/5514, 29/1781, 568/78 TO 2104/5515, 29/1782, 568/77)

LINE #2297 SPARTAN - AQUIA HARBOUR
LINE #2XXX FREDERICKSBURG - AQUIA HARBOUR
LINE #2305 FREDERICKSBURG - POSSUM POINT
LINE #2YYY BIRCHWOOD - AQUIA HARBOUR
LINE #568 POSSUM POINT - LADYSMITH

PROPOSED CONFIGURATION



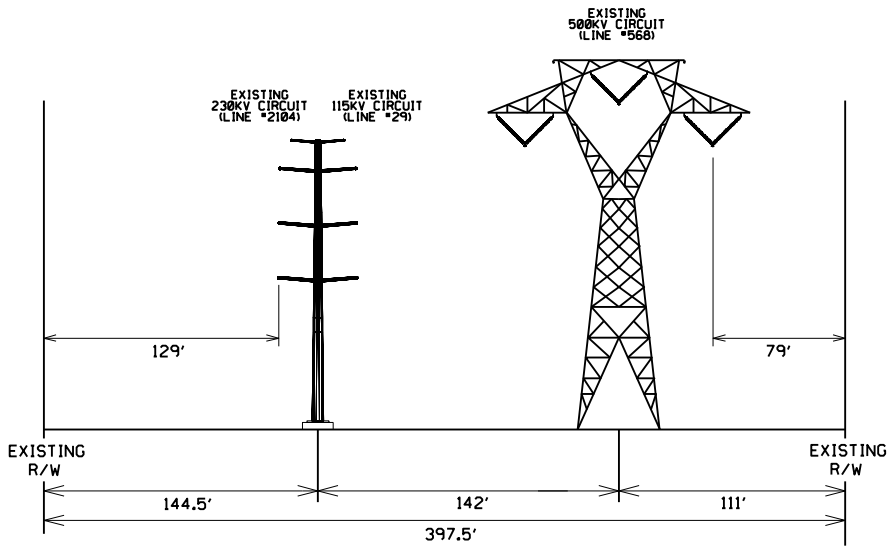
TYPICAL ROW LOOKING TOWARDS AQUIA HARBOUR

(FROM STRUCTURES 2297/5514, 2305/1781, 568/78 TO 2297/5515, 2305/1782, 568/77)

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

LINE #2104 CRANES CORNER - AQUIA HARBOUR
LINE #29 FREDERICKSBURG - POSSUM POINT
LINE #568 POSSUM POINT - LADYSMITH

EXISTING CONFIGURATION

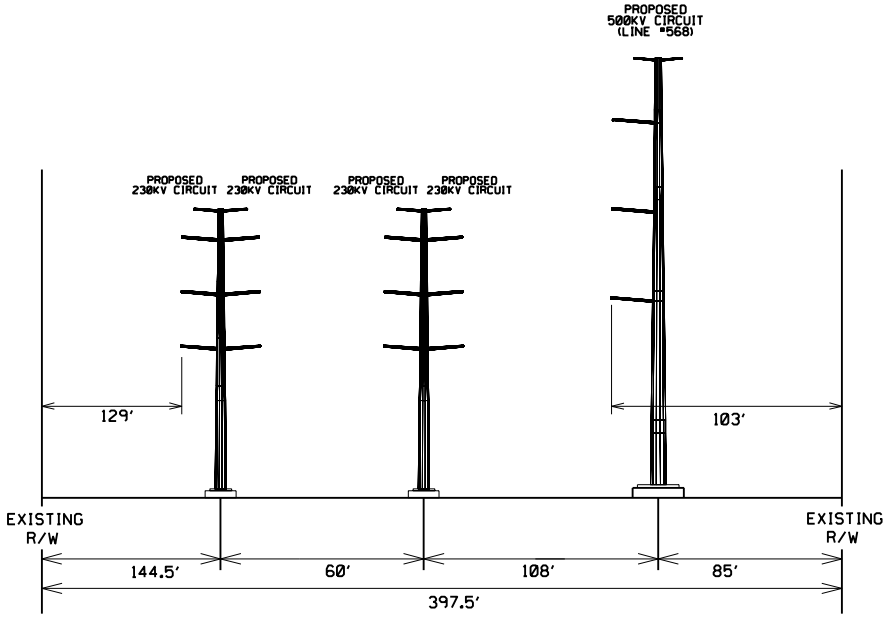


ROW LOOKING TOWARDS AQUIA HARBOUR
(SOUTH OF AQUIA HARBOUR SUBSTATION)

(FROM STRUCTURE 2104/5516, 29/1783, 568/77 TO 2104/5517, 29/1784, 568/76)

LINE #2297 SPARTAN - AQUIA HARBOUR
LINE #2XXX FREDERICKSBURG - AQUIA HARBOUR
LINE #2305 FREDERICKSBURG - POSSUM POINT
LINE #2YYY BIRCHWOOD - AQUIA HARBOUR
LINE #568 POSSUM POINT - LADYSMITH

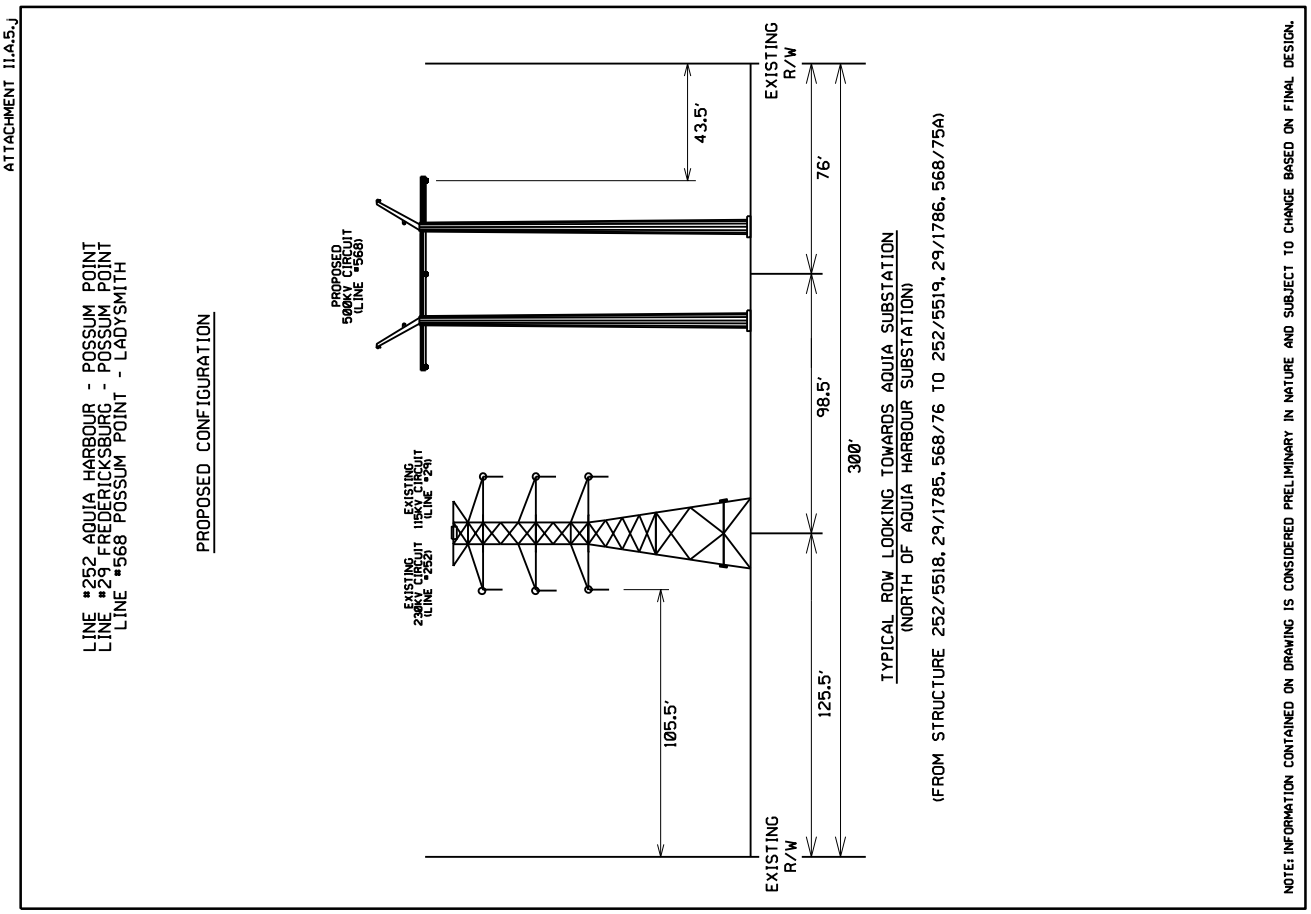
PROPOSED CONFIGURATION

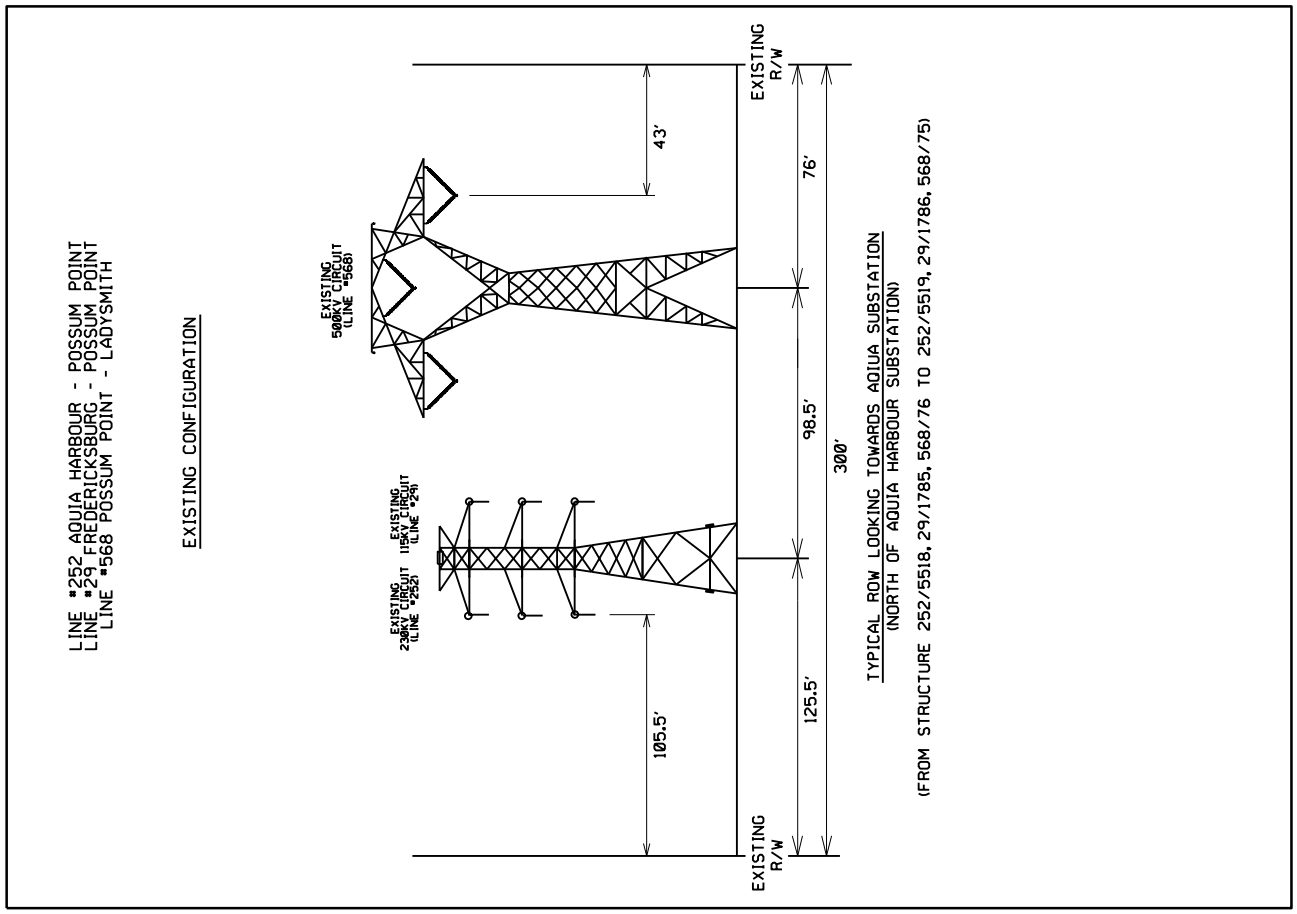


ROW LOOKING TOWARDS AQUIA HARBOUR
(SOUTH OF AQUIA HARBOUR SUBSTATION)

(FROM STRUCTURE 2104/5516, 2305/1783, 568/77 TO 2104/5517, 29/1784, 568/76A)

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


ATTACHMENT II.A.5.j
LINE #252 AQUIA HARBOUR - POSSUM POINT
LINE #29 FREDERICKSBURG - POSSUM POINT
LINE #568 POSSUM POINT - LADYSMITH
PROPOSED CONFIGURATION
PROPOSED 500kV CIRCUIT (LINE #568)
EXISTING 230kV CIRCUIT (LINE #252)
EXISTING 115kV CIRCUIT (LINE #29)
43.5'
105.5'
125.5'
98.5'
76'
300'
EXISTING R/W
EXISTING R/W
TYPICAL ROW LOOKING TOWARDS AQUIA SUBSTATION
(NORTH OF AQUIA HARBOUR SUBSTATION)
(FROM STRUCTURE 252/5518, 29/1785, 568/76 TO 252/5519, 29/1786, 568/75A)
NOTE: INFORMATION CONTAINED ON DRAWING IS CONSIDERED PRELIMINARY IN NATURE AND SUBJECT TO CHANGE BASED ON FINAL DESIGN.


LINE #252 AQUIA HARBOUR - POSSUM POINT
LINE #29 FREDERICKSBURG - POSSUM POINT
LINE #568 POSSUM POINT - LADYSMITH
EXISTING CONFIGURATION
EXISTING 500kV CIRCUIT (LINE #568)
EXISTING 230kV CIRCUIT (LINE #252)
EXISTING 115kV CIRCUIT (LINE #29)
43'
105.5'
125.5'
98.5'
76'
300'
EXISTING R/W
EXISTING R/W
TYPICAL ROW LOOKING TOWARDS AQUIA SUBSTATION
(NORTH OF AQUIA HARBOUR SUBSTATION)
(FROM STRUCTURE 252/5518, 29/1785, 568/76 TO 252/5519, 29/1786, 568/75)

II. DESCRIPTION OF THE PROPOSED PROJECT

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

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

Response: The Company obtained several easements along the existing right-of-way of the Rebuild Project corridor for initial construction of Line #29 in the 1950s. The Company will secure an additional easement to expand its existing right-of-way near Dogwood Airpark as discussed in Section II.A.1.

See Attachment II.A.6 for conservation easements near the Rebuild Project, and Section 2.L of the DEQ Supplement for a discussion of potential conservation easements.

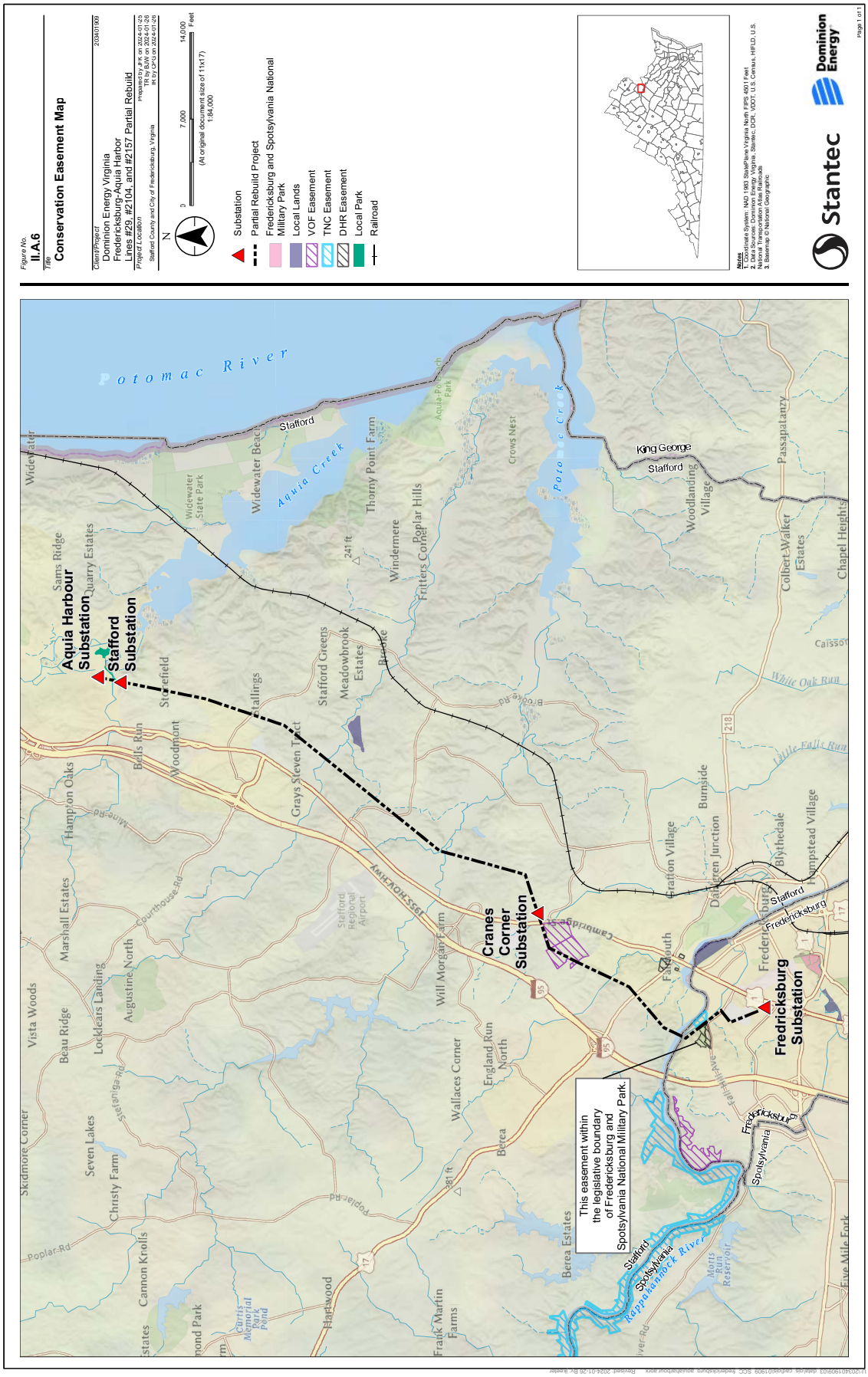


Figure No.
II.A.6
Title
Conservation Easement Map
Client/Project
Dominion Energy Virginia
Fredericksburg-Aquia Harbor
Lines #29, #2104, and #2157 Partial Rebuild
Project Location
Stafford County and City of Fredericksburg, Virginia
Prepared by JF/K on 2024-01-25
TR by BJW on 2024-01-26
IR by JDH on 2024-01-26
20340169
N
0
7,000
14,000
Feet
(At original document size of 11x17)
1:84,000
Substation
Partial Rebuild Project
Fredericksburg and Spotsylvania National Military Park
Local Lands
VOF Easement
TNC Easement
DHR Easement
Local Park
Railroad
Aquia Harbour Substation
Stafford Substation
Cranes Corner Substation
Fredricksburg Substation
This easement within the legislative boundary of Fredericksburg and Spotsylvania National Military Park.
Potomac River
Aquia Creek
Potomac Creek
Rappahannock River
Stafford
King George
Fredericksburg
Spotsylvania
Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, DCR, VDOT, U.S. Census, HIFLD, U.S. National Transportation Atlas Railroads
3. Basemap: © National Geographic
Stantec
Dominion Energy
Page 1 of 1
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II. DESCRIPTION OF THE PROPOSED PROJECT

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

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

Response: The entire width of the existing transmission line corridor subject to the Rebuild Project, which ranges from 175' to 397.5' feet wide, currently is maintained for operation of the existing transmission facilities. Clearing of new right-of-way will be required between Structures #29/1725 and #29/1728, and #2104/5447 and #2104/5450 to accommodate the Company's minor right-of-way expansion near Dogwood Airpark.

The trees within newly cleared right-of-way will be cut to be no more than three inches above ground level and no grubbing of roots or stumps will occur, except as needed to install structure foundations. Tree removal within wetland areas and within 100 feet of streams will be accomplished by hand or from equipment placed upon mats. Cut trees from the cleared right-of-way will be limbed and either removed from the right-of-way or mulched and chipped into upland areas. Care will be taken not to leave debris in streams or wetland areas that may cause an impediment to the flow of water. No mulching will occur in wetlands. Erosion control devices will be used where applicable on an ongoing basis, as appropriate, during all clearing and construction activities.

Trimming of tree limbs along the edge of the right-of-way may be conducted to support construction activities for the Rebuild Project. 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 also be cut to be no more than three inches above ground level, limbed, and will remain where felled. No grubbing of roots or stumps will occur. 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 or from equipment placed on mats in wetland areas and within 100 feet of streams, if applicable. Care will be taken not to leave debris in streams or wetland areas that may cause an impediment to the flow of water. No mulching will occur in wetlands.

Erosion control will be maintained and temporary stabilization for all soil-disturbing activities will be used until the right-of-way has been restored. Upon completion of the Rebuild Project, the Company will restore the right-of-way utilizing site rehabilitation procedures outlined in the Company's General Erosion and Sedimentation Control Specifications for the Construction and Maintenance of Electric Transmission Lines that is approved yearly by the Virginia Department of Environmental Quality ("DEQ"). Time of year and weather conditions may affect when permanent stabilization takes place.

Limited clearing or limbing may be required to accommodate construction access. Any clearing will be done in accordance with the Company's Integrated Vegetation Management Plan ("IVMP") practice with no grabbing of roots or stump materials. The remainder of the existing right-of-way is currently cleared and maintained.

The right-of-way will continue to be maintained in its current state 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; and
- Wildlife / Pollinator Habitat.

II. DESCRIPTION OF THE PROPOSED PROJECT

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

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

Response: The Company's route selection for transmission line rebuild projects begins with a review of the existing right-of-way. This approach generally minimizes impacts on the natural and human environments. This approach also is consistent with FERC Guideline #1 (included as Attachment 1 to these Guidelines), which states that existing rights-of-way should be given priority when adding new transmission facilities, and §§ 56-46.1 and 56-529 of the Code of Virginia, which promote the use of existing rights-of-way for new transmission facilities.

The Rebuild Project is primarily located in existing right-of-way. Because the statutory preference given to the use of existing rights-of-way, and because additional costs and environmental impacts would be associated with the acquisition of and construction on new right-of-way, the Company did not consider any alternate routes where existing right-of-way is sufficient.

The Company considered three alternatives to accommodate the minor right-of-way expansion near Dogwood Airpark.

Option 1 was ultimately chosen and will use four single circuit delta structures. The western most structure will be placed as close to the edge of the existing right-of-way as possible, while still maintaining clearance requirements, to reduce additional right-of-way needs on the eastern edge.

Option 2 would have used four single circuit delta structures. The western most structure would have been placed closer to the center of the right-of-way to increase the horizontal distance between the edge of the runway and the nearest conductor. Option 2 was not chosen, in part, due to the impacts associated with the additional required right-of-way.

Option 3 was likewise not chosen, in part due to the significant increase in required right-of-way.

The Company selected Option 1 as the preferred alternative because it requires the least amount of additional right-of-way and tree removal. Additionally, the Dogwood Airpark HOA prefers Option. Option 1 requires new right-of-way from only one landowner who is associated with the Dogwood Airpark HOA while Option 3 would require additional right-of-way from two landowners, one of which is not associated with the Dogwood Airpark HOA.

The existing right-of-way crosses the easements and facilities listed in Section II.A.6 and as depicted on Attachment II.A.6.

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 rebuild the corridor in a manner that minimizes outage durations on Line #2157, Line #2104, and Line #29. Assuming that the Commission issues a final order by December 31, 2024, the Company will commence access and foundation construction in the Spring of 2025.

The Company plans to use the newly built additional circuits as temporary circuits for Line #29 and Line #2157 during construction. This will require installing temporary jumpers to connect existing lines to the newly installed additional circuits. Doing so will reduce the outage durations on the lines and allow for segments of the lines to be wrecked and rebuilt during the PJM peak seasons without necessitating an outage. Thus, the Company has submitted outages to support the construction sequence as outlined below:

Season	Work to Be Completed
Spring 2024	• Install Line #29 and Line #2104 foundations between Cranes Corner Substation and Aquia Harbour Station.
Summer 2024	• Install Line #29 foundations between Fredericksburg Substation and Aquia Harbour Station.
Fall 2025	• Wreck and rebuild line #2104 between Cranes Corner and Stafford Substations on double circuit monopoles with additional circuit. • Install temporary jumpers to connect existing Line #29 to the additional circuit on the Line #2104 structures near Cranes Corner and Stafford Substations, creating a temporary Line #29 between Cranes Corner and Stafford Substations.
Winter 2025	• Wreck and rebuild line #29 between Cranes Corner and Stafford Substations on double circuit monopoles with additional circuit.
Spring 2026	• Wreck and rebuild line #29 between Fredericksburg and Cranes Corner Substations on double circuit monopoles with additional circuit. • Install temporary jumpers to connect existing Line #2157 to the additional circuit on the Line #29 structures near Fredericksburg Substation and Aquia Harbour Station, creating a temporary Line #2157 between Fredericksburg and Cranes Corner Substations.

Summer 2026	• Wreck and rebuild Line #2157 between Fredericksburg and Cranes Corner Substations on double circuit monopoles with additional circuit.
Fall 2026	• Install final temporary line crossing structures and jumpers to reconfigure lines into final configurations. • Wreck and rebuild Line #2104 between Stafford Substation and Aquia Harbour Station on double circuit monopoles with additional circuit.[19] • Wreck and rebuild Line #29 between Stafford Substation and Aquia Harbour Station on double circuit monopoles with additional circuit.

This work schedule is subject to final engineering and is contingent upon obtaining necessary 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.

[19] To eliminate service disruption to nearby customers, a temporary line will be installed between Stafford and Aquia Harbour while Line #2104 is rebuilt between Stafford and Aquia Harbour.

II. DESCRIPTION OF THE PROPOSED PROJECT

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

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

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

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

By utilizing the existing transmission corridor, the proposed Rebuild Project will minimize impact to any site listed on the National Register of Historic Places ("NRHP"). Thus, the Rebuild Project is consistent with Guideline #2 (where practical, rights-of-way should avoid sites listed on the National Register of Historic Places. See Section III.A for a discussion of the Stage I Pre-Application Analysis prepared by Stantec, which is included with the DEQ Supplement as Attachment 2.I.2. The Company will coordinate with the Virginia Department of Historic Resources ("VDHR") through review of the Stage I Pre-Application Analysis regarding these initial findings.

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

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

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

II. DESCRIPTION OF THE PROPOSED PROJECT

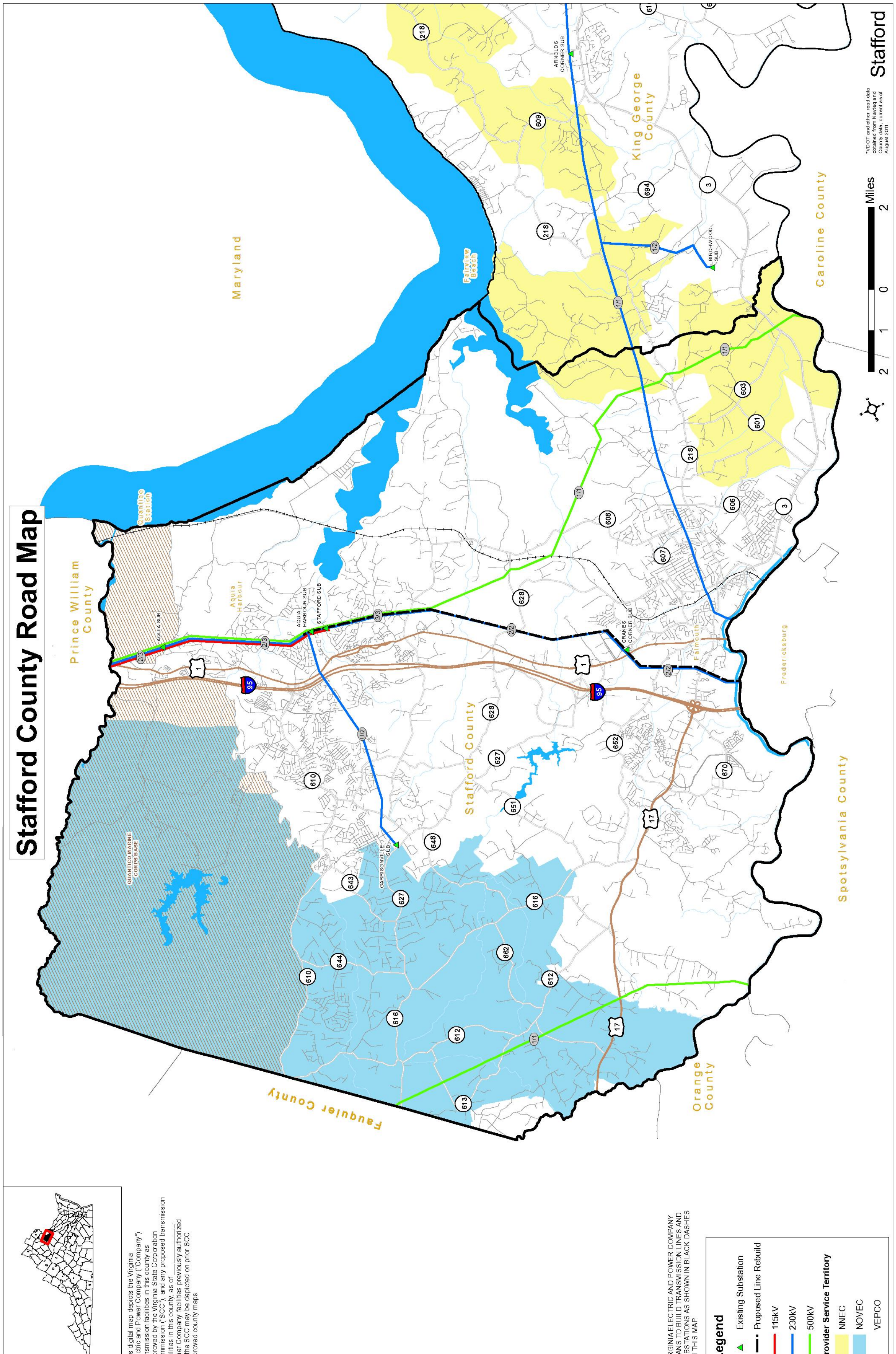
A. Right-of-way ("ROW")

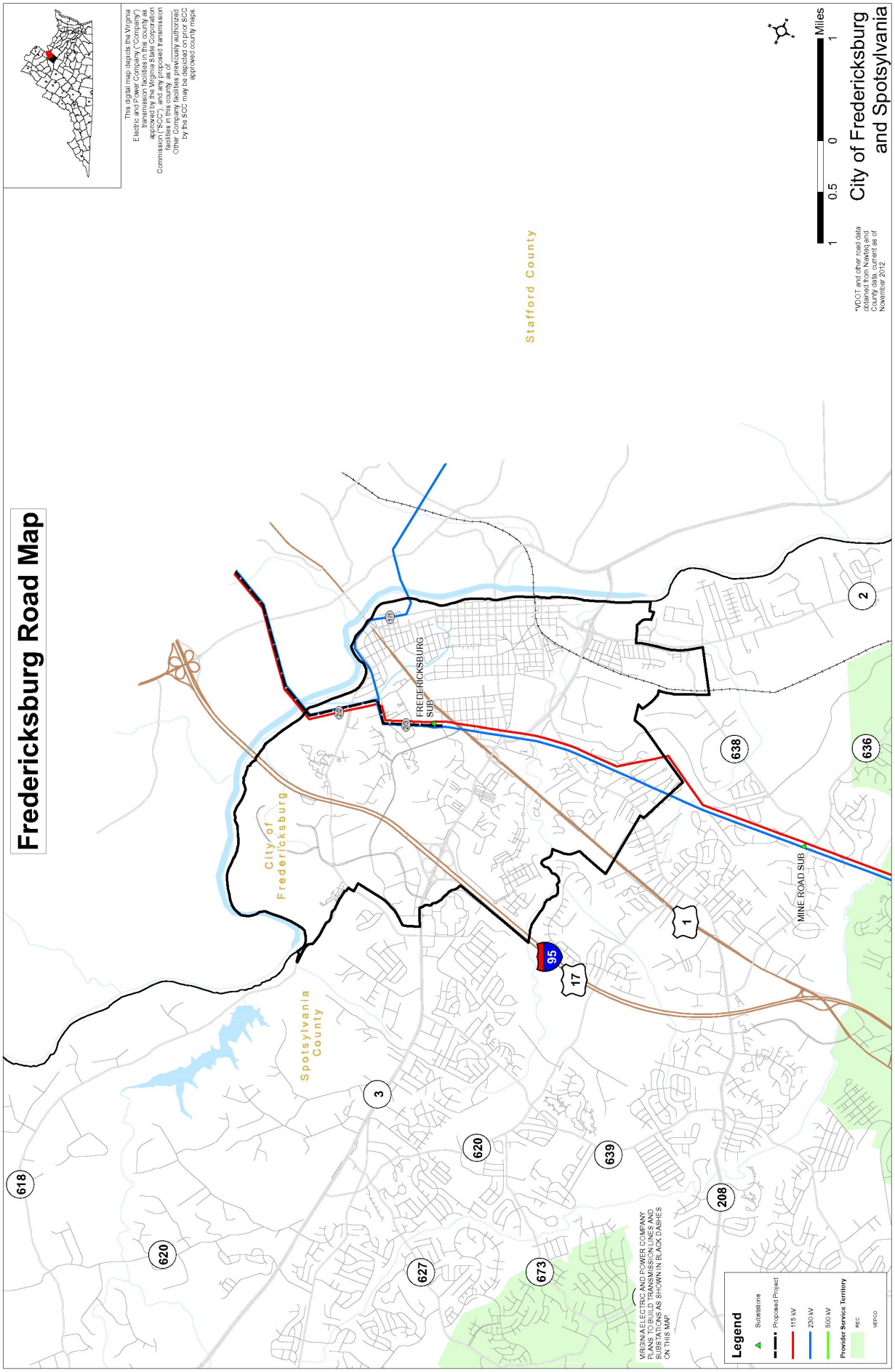
12. a. Detail counties and localities through which the line will pass. If any portion of the line will be located outside of the Applicant's certificated service area: (1) identify each electric utility affected; (2) state whether any affected electric utility objects to such construction; and (3) identify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

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

Response: a. The Rebuild Project crosses through Stafford County for 11 miles and the City of Fredericksburg for 1.6 miles. The Rebuild Project is located entirely within the Company's service territory.

b. Electronic versions of Virginia Department of Transportation ("VDOT") "General Highway Map" for Stafford County and the City of Fredericksburg have been marked as required and will be made available with the Application. Reduced copies of the map are provided as Attachment II.A.12.b.


Stafford County Road Map
Prince William County
Maryland
King George County
Caroline County
Stafford County
Spotsylvania County
Orange County
Fauquier County
Quantico Station
Fairview Beach
Aquia Harbour
Fredericksburg
Falmouth
QUANTICO MARINE CORPS BASE
AQUIA SUB
AQUIA HARBOUR SUB
STAFFORD SUB
CRANES CORNER SUB
GARRISONVILLE SUB
ARNOLDS CORNER SUB
BIRCHWOOD SUB
Stafford
*VDOT and other road data obtained from Navteq and County data, current as of August 2011.
Miles
2 1 0 2
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.
Legend
Existing Substation
Proposed Line Rebuild
115kV
230kV
500kV
Provider Service Territory
NNEC
NOVEC
VEPCO


Fredericksburg 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.
City of Fredericksburg
Spotsylvania County
Stafford County
FREDERICKSBURG SUB
MINE ROAD SUB
VIRGINIA ELECTRIC AND POWER COMPANY PLANS TO BUILD TRANSMISSION LINES AND SUBSTATIONS AS SHOWN IN BLACK DASHES ON THIS MAP
Legend
Substations
Proposed Project
115 kV
230 kV
500 kV
Provider Service Territory
REC
VEPCO
Miles
1 0.5 0 1
City of Fredericksburg and Spotsylvania
*VDOT and other road data obtained from Navteq and County data, current as of November 2012

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: Line #29 will be designed to current 230 kV standards but will continue to operate at 115 kV until a future conversion date. No voltage upgrades are anticipated. The bundled 768.2 ACSS/TW/HS conductors will have a transfer capability of 1573 MVA. Line #29 will be rebuilt on double circuit monopole structures.

Line #2104 will be designed and operated at 230 kV with no anticipated voltage upgrade. The bundled 768.2 ACSS/TW/HS conductors will have a transfer capability of 1573 MVA. Line #2104 will be rebuilt on double circuit monopole structures.

Line #2157 will be designed and operated at 230 kV with no anticipated voltage upgrade. The bundled 768.2 ACSS/TW/HS conductors will have a transfer capability of 1573 MVA. Line #2157 will be rebuilt on double circuit monopole structures.

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: Lines #29, #2104, and #2157 will have bundled 768.2 ACSS/TW/HS conductors, which are a Company 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;

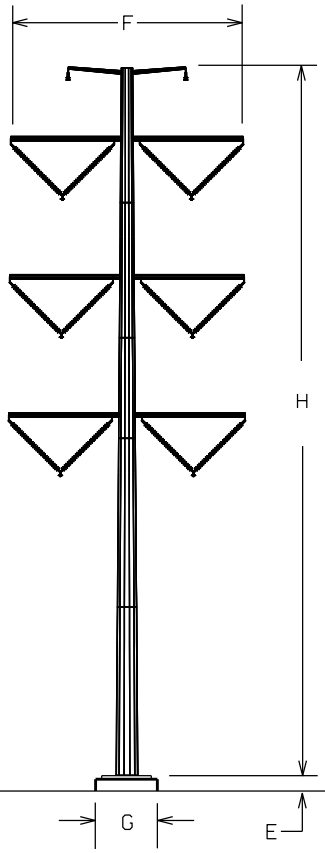
h. the maximum, minimum and average structure heights;

i. the average span length; and

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

Response: See Attachments II.B.3.a-n.

230KV LINE #2157 FREDERICKSBURG - CRANES CORNER
230KV LINE #2305 FREDERICKSBURG - AQUIA HARBOUR
230KV LINE #2104 CRANES CORNER - SPARTAN
230KV LINE #2297 SPARTAN - AQUIA HARBOUR



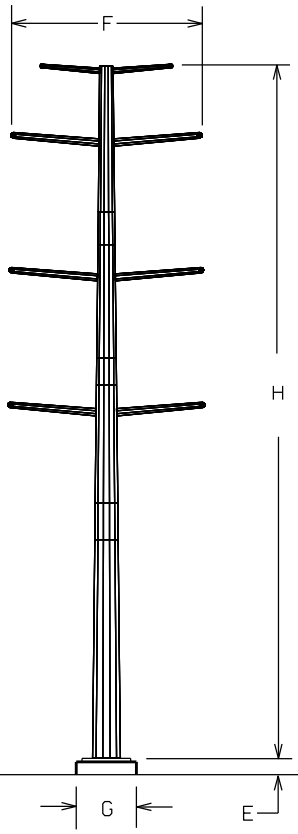
DOUBLE CIRCUIT SUSPENSION MONOPOLE STRUCTURE

A. MAPPING OF THE ROUTE:	SEE ATTACHMENT II.B.5
B. RATIONALE FOR STRUCTURE TYPE:	ACCOMMODATES EFFICIENT USE OF R/W AND REDUCES BLOWOUT FOOTPRINT.
C. LENGTH OF R/W (STRUCTURE QTY):	12.5 MILES (151)
D. STRUCTURE MATERIAL: RATIONAL FOR MATERIAL:	WEATHERING STEEL WEATHERING STEEL WAS SELECTED FOR ITS CORROSION RESISTANCE, ENVIRONMENTAL SUSTAINABILITY DUE TO LOW MAINTENANCE, AESTHETIC APPEAL, LOW COST AND LONGEVITY.
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 2
F. AVERAGE WIDTH AT CROSS ARM:	36'
G. AVERAGE WIDTH AT BASE:	6' DIAMETER FOUNDATION (SEE NOTE 3)
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	100' 135' 113'
I. AVERAGE SPAN LENGTH (RANGE):	612' (322' - 901') (WIND SPAN)
J. MINIMUM CONDUCTOR-TO-GROUND:	25.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTE:

1. INFORMATION CONTAINED ON DRAWING IS PRELIMINARY IN NATURE AND SUBJECT TO CHANGE DURING FINAL DESIGN.
2. MINIMUM FOUNDATION REVEAL SHALL BE 1.5'
3. FINAL FOUNDATION DIAMETER SHALL BE BASED UPON FINAL ENGINEERING.
4. STRUCTURE HEIGHTS ARE MEASURED FROM THE STRUCTURE CENTERLINE.

230KV LINE #2157 FREDERICKSBURG - CRANES CORNER
230KV LINE #2305 FREDERICKSBURG - AQUIA HARBOUR
230KV LINE #2104 CRANES CORNER - SPARTAN
230KV LINE #2297 SPARTAN - AQUIA HARBOUR



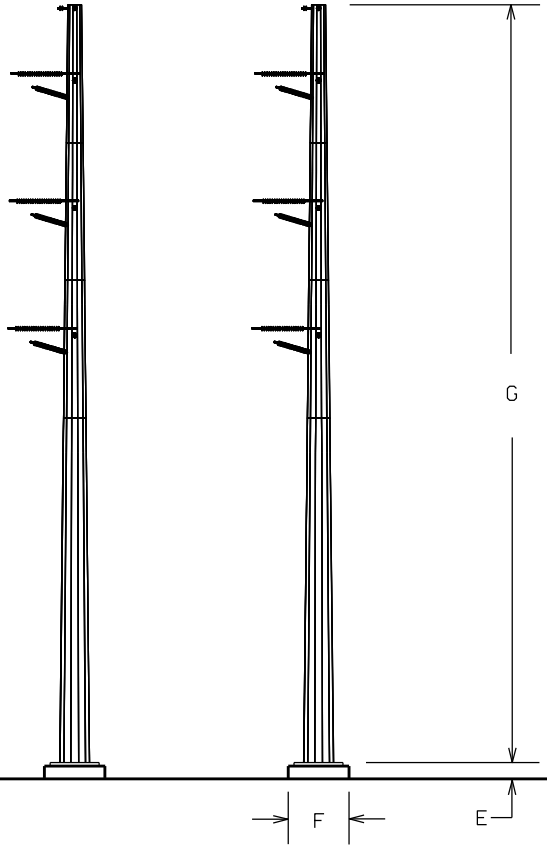
DOUBLE CIRCUIT DEADEND MONOPOLE STRUCTURE

A. MAPPING OF THE ROUTE:	SEE ATTACHMENT II.B.5
B. RATIONALE FOR STRUCTURE TYPE:	ACCOMODATES EFFICIENT USE R/W AND REDUCES BLOWOUT FOOTPRINT
C. LENGTH OF R/W (STRUCTURE QTY):	12.5 MILES (50)
D. STRUCTURE MATERIAL: RATIONAL FOR MATERIAL:	WEATHERING STEEL WEATHERING STEEL WAS SELECTED FOR ITS CORROSION RESISTANCE, ENVIRONMENTAL SUSTAINABILITY DUE TO LOW MAINTENANCE, AESTHETIC APPEAL, LOW COST AND LONGEVITY.
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 2
F. AVERAGE WIDTH AT CROSS ARM:	27'
G. AVERAGE WIDTH AT BASE:	6' DIAMETER FOUNDATION (SEE NOTE 3)
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	90' 130' 112'
I. AVERAGE SPAN LENGTH (RANGE):	508' (183' - 909') (WIND SPAN)
J. MINIMUM CONDUCTOR-TO-GROUND:	25.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTE:

1. INFORMATION CONTAINED ON DRAWING IS PRELIMINARY IN NATURE AND SUBJECT TO CHANGE DURING FINAL DESIGN.
2. MINIMUM FOUNDATION REVEAL SHALL BE 1.5'
3. FINAL FOUNDATION DIAMETER SHALL BE BASED UPON FINAL ENGINEERING.
4. STRUCTURE HEIGHTS ARE MEASURED FROM THE STRUCTURE CENTERLINE.

230KV LINE #2305 FREDERICKSBURG - AQUIA HARBOUR
230KV LINE #2104 CRANES CORNER - SPARTAN
230KV LINE #2297 SPARTAN - STAFFORD



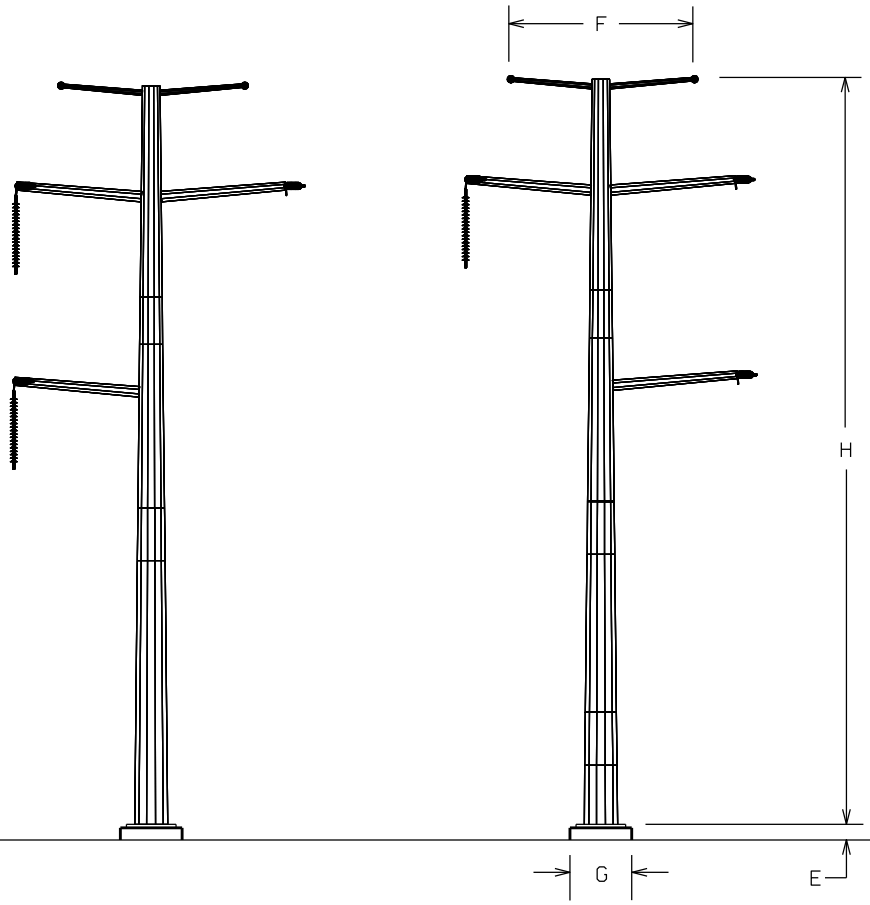
DOUBLE CIRCUIT DEADEND 2-POLE STRUCTURE

A. MAPPING OF THE ROUTE:	SEE ATTACHMENT II.B.5
B. RATIONALE FOR STRUCTURE TYPE:	ACCOMODATES EFFICIENT USE R/W, REDUCES BLOWOUT FOOTPRINT. MOST SUITABLE FOR HEAVY ANGLES AND INTERFACE WITH DELIVERY POINTS.
C. LENGTH OF R/W (STRUCTURE QTY):	12.5 MILES (8)
D. STRUCTURE MATERIAL: RATIONAL FOR MATERIAL:	WEATHERING STEEL WEATHERING STEEL WAS SELECTED FOR ITS CORROSION RESISTANCE, ENVIRONMENTAL SUSTAINABILITY DUE TO LOW MAINTENANCE, AESTHETIC APPEAL, LOW COST AND LONGEVITY.
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 2
F. AVERAGE WIDTH AT BASE:	6' DIAMETER FOUNDATION (SEE NOTE 3)
G. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	100' 130' 115'
H. AVERAGE SPAN LENGTH (RANGE):	626' (228' - 822') (WIND SPAN)
I. MINIMUM CONDUCTOR-TO-GROUND:	25.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTE:

1. INFORMATION CONTAINED ON DRAWING IS PRELIMINARY IN NATURE AND SUBJECT TO CHANGE DURING FINAL DESIGN.
2. MINIMUM FOUNDATION REVEAL SHALL BE 1.5'
3. FINAL FOUNDATION DIAMETER SHALL BE BASED UPON FINAL ENGINEERING.
4. STRUCTURE HEIGHTS ARE MEASURED FROM THE STRUCTURE CENTERLINE.

230KV LINE #2305 FREDERICKSBURG - AQUIA HARBOUR
230KV LINE #2104 CRANES CORNER - SPARTAN



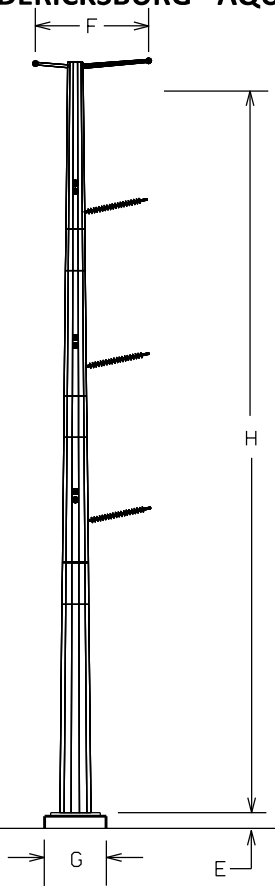
DOUBLE CIRCUIT 2-POLE DEADEND STRUCTURE

A. MAPPING OF THE ROUTE:	SEE ATTACHMENT II.B.5
B. RATIONALE FOR STRUCTURE TYPE:	MAINTAINS LOW PROFILE TO FACILITATE SAFE LANDING AND TAKE OFF OF PLANES AT DOGWOOD AIRPARK.
C. LENGTH OF R/W (STRUCTURE QTY):	12.5 MILES (4)
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONAL FOR MATERIAL:	WEATHERING STEEL WAS SELECTED FOR ITS CORROSION RESISTANCE, ENVIRONMENTAL SUSTAINABILITY DUE TO LOW MAINTENANCE, AESTHETIC APPEAL, LOW COST AND LONGEVITY.
E. FOUNDATION MATERIAL:	CONCRETE
AVERAGE FOUNDATION REVEAL:	SEE NOTE 2
F. AVERAGE WIDTH AT CROSS ARM:	27'
G. AVERAGE WIDTH AT BASE:	6' DIAMETER FOUNDATION (SEE NOTE 3)
H. MINIMUM STRUCTURE HEIGHT:	67'
MAXIMUM STRUCTURE HEIGHT:	80'
AVERAGE STRUCTURE HEIGHT:	70'
I. AVERAGE SPAN LENGTH (RANGE):	320' (265' - 412') (WIND SPAN)
J. MINIMUM CONDUCTOR-TO-GROUND:	25.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTE:

1. INFORMATION CONTAINED ON DRAWING IS PRELIMINARY IN NATURE AND SUBJECT TO CHANGE DURING FINAL DESIGN.
2. MINIMUM FOUNDATION REVEAL SHALL BE 1.5'
3. FINAL FOUNDATION DIAMETER SHALL BE BASED UPON FINAL ENGINEERING.
4. STRUCTURE HEIGHTS ARE MEASURED FROM THE STRUCTURE CENTERLINE.

230KV LINE #2104 CRANES CORNER - SPARTAN
230KV LINE #2297 SPARTAN - AQUIA HARBOUR
230KV LINE #2305 FREDERICKSBURG - AQUIA HARBOUR



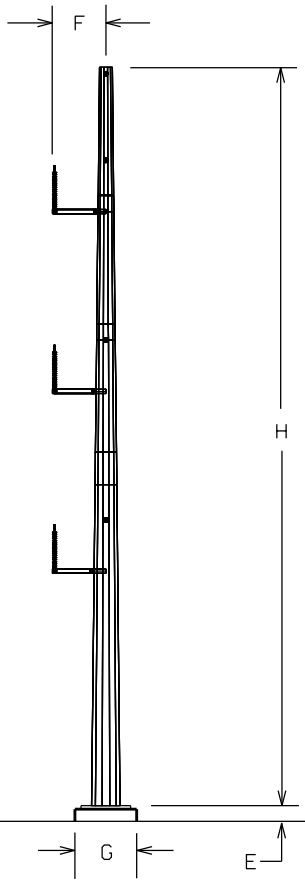
SINGLE CIRCUIT DEADEND MONOPOLE STRUCTURE

A. MAPPING OF THE ROUTE:	SEE ATTACHMENT II.B.5
B. RATIONALE FOR STRUCTURE TYPE:	ACCOMMODATES EFFICIENT USE OF R/W AND REDUCES BLOWOUT FOOTPRINT.
C. LENGTH OF R/W (STRUCTURE QTY):	12.5 MILES (4)
D. STRUCTURE MATERIAL: RATIONAL FOR MATERIAL:	WEATHERING STEEL WEATHERING STEEL WAS SELECTED FOR ITS CORROSION RESISTANCE, ENVIRONMENTAL SUSTAINABILITY DUE TO LOW MAINTENANCE, AESTHETIC APPEAL, LOW COST AND LONGEVITY.
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 2
F. AVERAGE WIDTH AT CROSS ARM:	13'
G. AVERAGE WIDTH AT BASE:	6' DIAMETER FOUNDATION (SEE NOTE 3)
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	110' 130' 118'
I. AVERAGE SPAN LENGTH (RANGE):	424' (327' - 531') (WIND SPAN)
J. MINIMUM CONDUCTOR-TO-GROUND:	25.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTE:

1. INFORMATION CONTAINED ON DRAWING IS PRELIMINARY IN NATURE AND SUBJECT TO CHANGE DURING FINAL DESIGN.
2. MINIMUM FOUNDATION REVEAL SHALL BE 1.5'
3. FINAL FOUNDATION DIAMETER SHALL BE BASED UPON FINAL ENGINEERING.
4. STRUCTURE HEIGHTS ARE MEASURED FROM THE STRUCTURE CENTERLINE.

230KV LINE #2297 SPARTAN - AQUIA HARBOUR



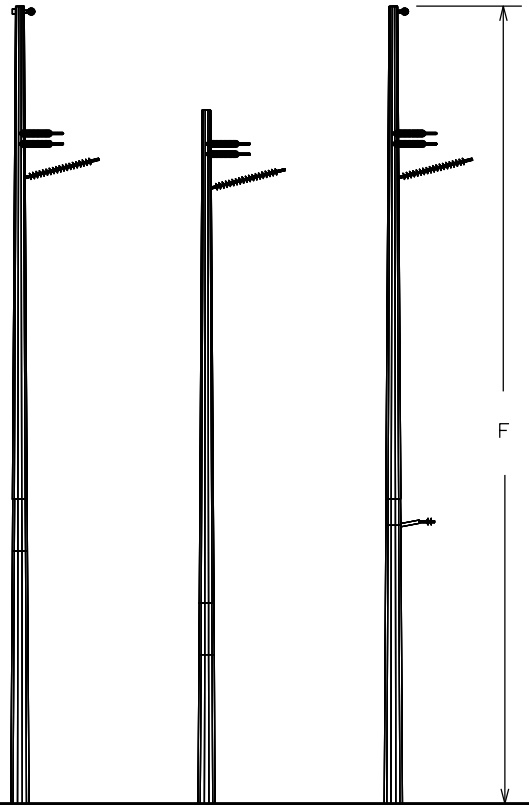
SINGLE CIRCUIT MONOPOLE SWITCHING STRUCTURE

A. MAPPING OF THE ROUTE:	SEE ATTACHMENT II.B.5
B. RATIONALE FOR STRUCTURE TYPE:	ACCOMMODATES BOTH CIRCUITS REDUCES BLOWOUT FOOTPRINT.
C. LENGTH OF R/W (STRUCTURE QTY):	2.93 MILES (2)
D. STRUCTURE MATERIAL: RATIONAL FOR MATERIAL:	WEATHERING STEEL WEATHERING STEEL WAS SELECTED FOR ITS CORROSION RESISTANCE, ENVIRONMENTAL SUSTAINABILITY DUE TO LOW MAINTENANCE, AESTHETIC APPEAL, LOW COST AND LONGEVITY.
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 2
F. AVERAGE WIDTH AT CROSS ARM:	10'
G. AVERAGE WIDTH AT BASE:	6' DIAMETER FOUNDATION (SEE NOTE 3)
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	135' 135' 135'
I. AVERAGE SPAN LENGTH (RANGE):	487' (442' - 531') (WIND SPAN)
J. MINIMUM CONDUCTOR-TO-GROUND:	25.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTE:

1. INFORMATION CONTAINED ON DRAWING IS PRELIMINARY IN NATURE AND SUBJECT TO CHANGE DURING FINAL DESIGN.
2. MINIMUM FOUNDATION REVEAL SHALL BE 1.5'
3. FINAL FOUNDATION DIAMETER SHALL BE BASED UPON FINAL ENGINEERING.
4. STRUCTURE HEIGHTS ARE MEASURED FROM THE STRUCTURE CENTERLINE.

230KV LINE #2305 FREDERICKSBURG - AQUIA HARBOUR



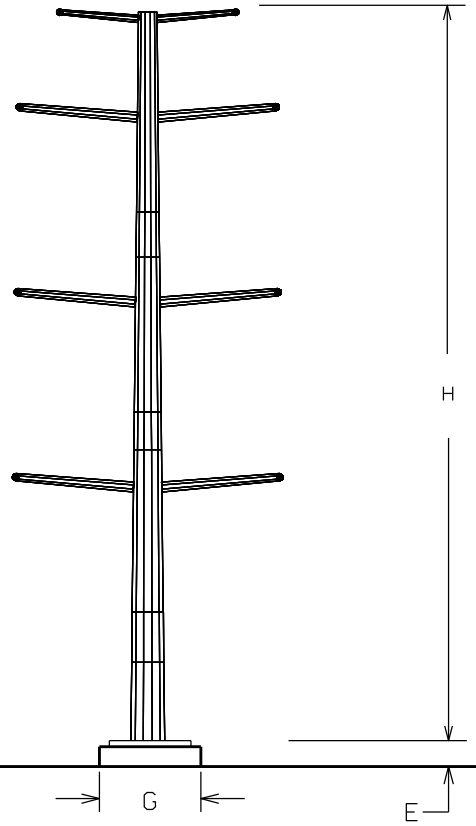
SINGLE CIRCUIT DEADEND GUYED 3-POLE STRUCTURE

A. MAPPING OF THE ROUTE:	SEE ATTACHMENT II.B.5
B. RATIONALE FOR STRUCTURE TYPE:	FACILITATES PHASE ROLL FROM VERTICAL TO FLAT LEADING TO EXISTING BACKBONE STRUCTURE.
C. LENGTH OF R/W (STRUCTURE QTY):	12.5 MILES (1)
D. STRUCTURE MATERIAL: RATIONAL FOR MATERIAL:	WEATHERING STEEL WEATHERING STEEL WAS SELECTED FOR ITS CORROSION RESISTANCE, ENVIRONMENTAL SUSTAINABILITY DUE TO LOW MAINTENANCE, AESTHETIC APPEAL, LOW COST AND LONGEVITY.
E. FOUNDATION MATERIAL:	EMBEDDED WITH BACKFILL (SEE NOTE 2)
F. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	79' 79' 79'
G. AVERAGE SPAN LENGTH (RANGE):	161' (WIND SPAN)
H. MINIMUM CONDUCTOR-TO-GROUND:	25.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTE:

1. INFORMATION CONTAINED ON DRAWING IS PRELIMINARY IN NATURE AND SUBJECT TO CHANGE DURING FINAL DESIGN.
2. FINAL EMBEDMENT AND BACKFILL MATERIAL SHALL BE BASED UPON FINAL ENGINEERING.
3. STRUCTURE HEIGHTS ARE MEASURED FROM THE STRUCTURE CENTERLINE.

230KV LINE #2305 FREDERICKSBURG - AQUIA HARBOUR
230KV LINE #2157 FREDERICKSBURG - CRANES CORNER



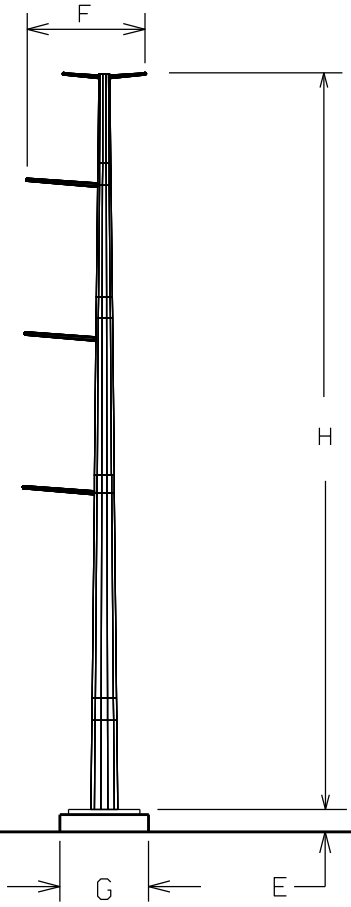
DOUBLE CIRCUIT DEADEND MONO POLE STRUCTURE

A. MAPPING OF THE ROUTE:	SEE ATTACHMENT II.B.5
B. RATIONALE FOR STRUCTURE TYPE:	ACCOMMODATES EFFICIENT USE OF R/W AND REDUCES BLOWOUT FOOTPRINT.
C. LENGTH OF R/W (STRUCTURE QTY):	12.5 MILES (2)
D. STRUCTURE MATERIAL: RATIONAL FOR MATERIAL:	WEATHERING STEEL WEATHERING STEEL WAS SELECTED FOR ITS CORROSION RESISTANCE, ENVIRONMENTAL SUSTAINABILITY DUE TO LOW MAINTENANCE, AESTHETIC APPEAL, LOW COST AND LONGEVITY.
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 2
F. AVERAGE WIDTH AT CROSS ARM:	36'
G. AVERAGE WIDTH AT BASE:	6' DIAMETER FOUNDATION (SEE NOTE 3)
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	130' 130' 130'
I. AVERAGE SPAN LENGTH (RANGE):	997' (984' - 1010') (WIND SPAN)
J. MINIMUM CONDUCTOR-TO-GROUND:	30.9' (AT MAXIMUM OPERATING TEMPERATURE)

NOTE:

1. INFORMATION CONTAINED ON DRAWING IS PRELIMINARY IN NATURE AND SUBJECT TO CHANGE DURING FINAL DESIGN.
2. MINIMUM FOUNDATION REVEAL SHALL BE 1.5'
3. FINAL FOUNDATION DIAMETER SHALL BE BASED UPON FINAL ENGINEERING.
4. STRUCTURE HEIGHTS ARE MEASURED FROM THE STRUCTURE CENTERLINE.

500KV LINE #568 POSSUM POINT - LADYSMITH



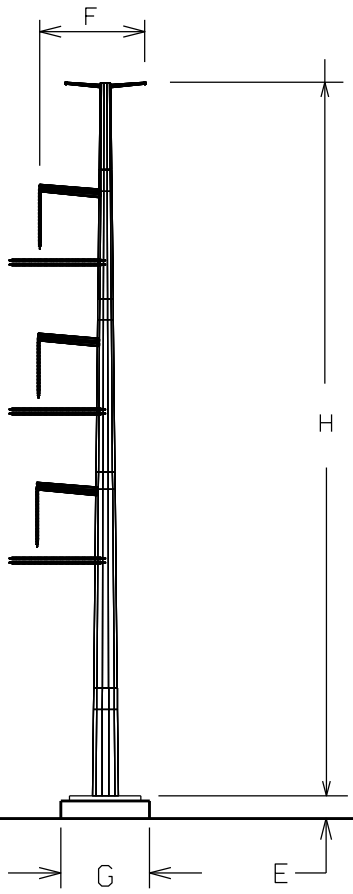
SINGLE CIRCUIT DEADEND MONOPOLE STRUCTURE

A. MAPPING OF THE ROUTE:	SEE ATTACHMENT II.B.5
B. RATIONALE FOR STRUCTURE TYPE:	ACCOMMODATES EFFICIENT USE OF R/W AND REDUCES BLOWOUT FOOTPRINT.
C. LENGTH OF R/W (STRUCTURE QTY):	0.33 MILES (1)
D. STRUCTURE MATERIAL: RATIONAL FOR MATERIAL:	WEATHERING STEEL WEATHERING STEEL WAS SELECTED FOR ITS CORROSION RESISTANCE, ENVIRONMENTAL SUSTAINABILITY DUE TO LOW MAINTENANCE, AESTHETIC APPEAL, LOW COST AND LONGEVITY.
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 2
F. AVERAGE WIDTH AT CROSS ARM:	27'
G. AVERAGE WIDTH AT BASE:	6' DIAMETER FOUNDATION (SEE NOTE 3)
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	165' 165' 165'
I. AVERAGE SPAN LENGTH (RANGE):	662' (WIND SPAN)
J. MINIMUM CONDUCTOR-TO-GROUND:	30.9' (AT MAXIMUM OPERATING TEMPERATURE)

NOTE:

1. INFORMATION CONTAINED ON DRAWING IS PRELIMINARY IN NATURE AND SUBJECT TO CHANGE DURING FINAL DESIGN.
2. MINIMUM FOUNDATION REVEAL SHALL BE 1.5'
3. FINAL FOUNDATION DIAMETER SHALL BE BASED UPON FINAL ENGINEERING.
4. STRUCTURE HEIGHTS ARE MEASURED FROM THE STRUCTURE CENTERLINE.

500KV LINE #568 POSSUM POINT - LADYSMITH



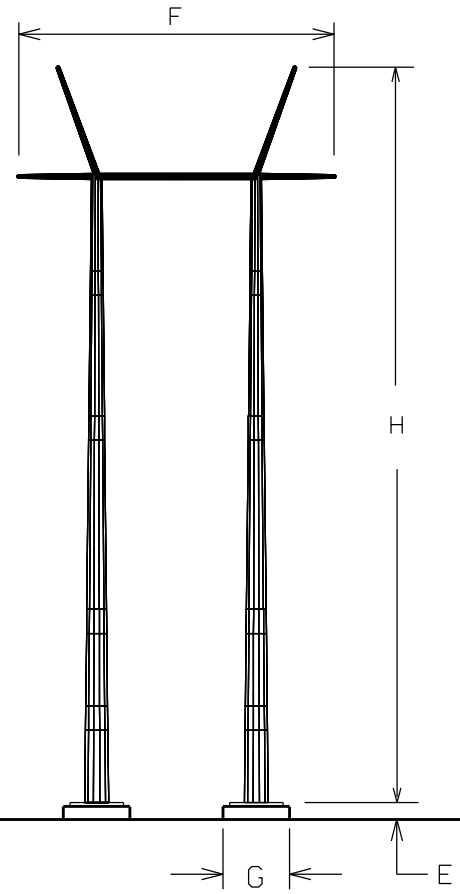
SINGLE CIRCUIT DEADEND MONOPOLE STRUCTURE

A. MAPPING OF THE ROUTE:	SEE ATTACHMENT II.B.5
B. RATIONALE FOR STRUCTURE TYPE:	ACCOMMODATES EFFICIENT USE OF R/W AND REDUCES BLOWOUT FOOTPRINT.
C. LENGTH OF R/W (STRUCTURE QTY):	0.33 MILES (1)
D. STRUCTURE MATERIAL: RATIONAL FOR MATERIAL:	WEATHERING STEEL WEATHERING STEEL WAS SELECTED FOR ITS CORROSION RESISTANCE, ENVIRONMENTAL SUSTAINABILITY DUE TO LOW MAINTENANCE, AESTHETIC APPEAL, LOW COST AND LONGEVITY.
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 2
F. AVERAGE WIDTH AT CROSS ARM:	27'
G. AVERAGE WIDTH AT BASE:	6' DIAMETER FOUNDATION (SEE NOTE 3)
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	165' 165' 165'
I. AVERAGE SPAN LENGTH (RANGE):	729' (472' - 986') (WIND SPAN)
J. MINIMUM CONDUCTOR-TO-GROUND:	30.9' (AT MAXIMUM OPERATING TEMPERATURE)

NOTE:

1. INFORMATION CONTAINED ON DRAWING IS PRELIMINARY IN NATURE AND SUBJECT TO CHANGE DURING FINAL DESIGN.
2. MINIMUM FOUNDATION REVEAL SHALL BE 1.5'
3. FINAL FOUNDATION DIAMETER SHALL BE BASED UPON FINAL ENGINEERING.
4. STRUCTURE HEIGHTS ARE MEASURED FROM THE STRUCTURE CENTERLINE.

500KV LINE #568 POSSUM POINT - LADYSMITH



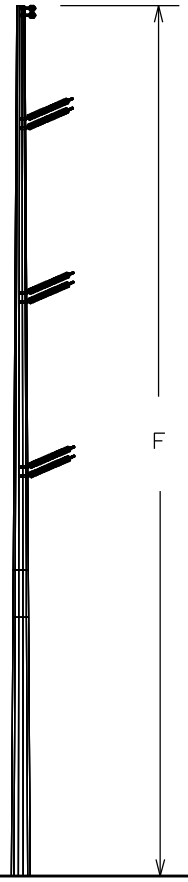
SINGLE CIRCUIT DEADEND H-FRAME STRUCTURE

A. MAPPING OF THE ROUTE:	SEE ATTACHMENT II.B.5
B. RATIONALE FOR STRUCTURE TYPE:	FACILITATES PHASE ROLL FROM VERTICAL TO FLAT AT THE INTERFACE WITH EXISTING CONDUCTOR
C. LENGTH OF R/W (STRUCTURE QTY):	0.33 MILES (2)
D. STRUCTURE MATERIAL: RATIONAL FOR MATERIAL:	WEATHERING STEEL WEATHERING STEEL WAS SELECTED FOR ITS CORROSION RESISTANCE, ENVIRONMENTAL SUSTAINABILITY DUE TO LOW MAINTENANCE, AESTHETIC APPEAL, LOW COST AND LONGEVITY.
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 2
F. AVERAGE WIDTH AT CROSS ARM:	66'
G. AVERAGE WIDTH AT BASE:	6' DIAMETER FOUNDATION (SEE NOTE 3)
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	152' 152' 152'
I. AVERAGE SPAN LENGTH (RANGE):	751' (596' - 1005') (WIND SPAN)
J. MINIMUM CONDUCTOR-TO-GROUND:	30.9' (AT MAXIMUM OPERATING TEMPERATURE)

NOTE:

1. INFORMATION CONTAINED ON DRAWING IS PRELIMINARY IN NATURE AND SUBJECT TO CHANGE DURING FINAL DESIGN.
2. MINIMUM FOUNDATION REVEAL SHALL BE 1.5'
3. FINAL FOUNDATION DIAMETER SHALL BE BASED UPON FINAL ENGINEERING.
4. STRUCTURE HEIGHTS ARE MEASURED FROM THE STRUCTURE CENTERLINE.

230KV LINE #2157 FREDERICKSBURG - CRANES CORNER
230KV LINE #2083 FREDERICKSBURG - BIRCHWOOD
230KV LINE #2104 CRANES CORNER - SPARTAN



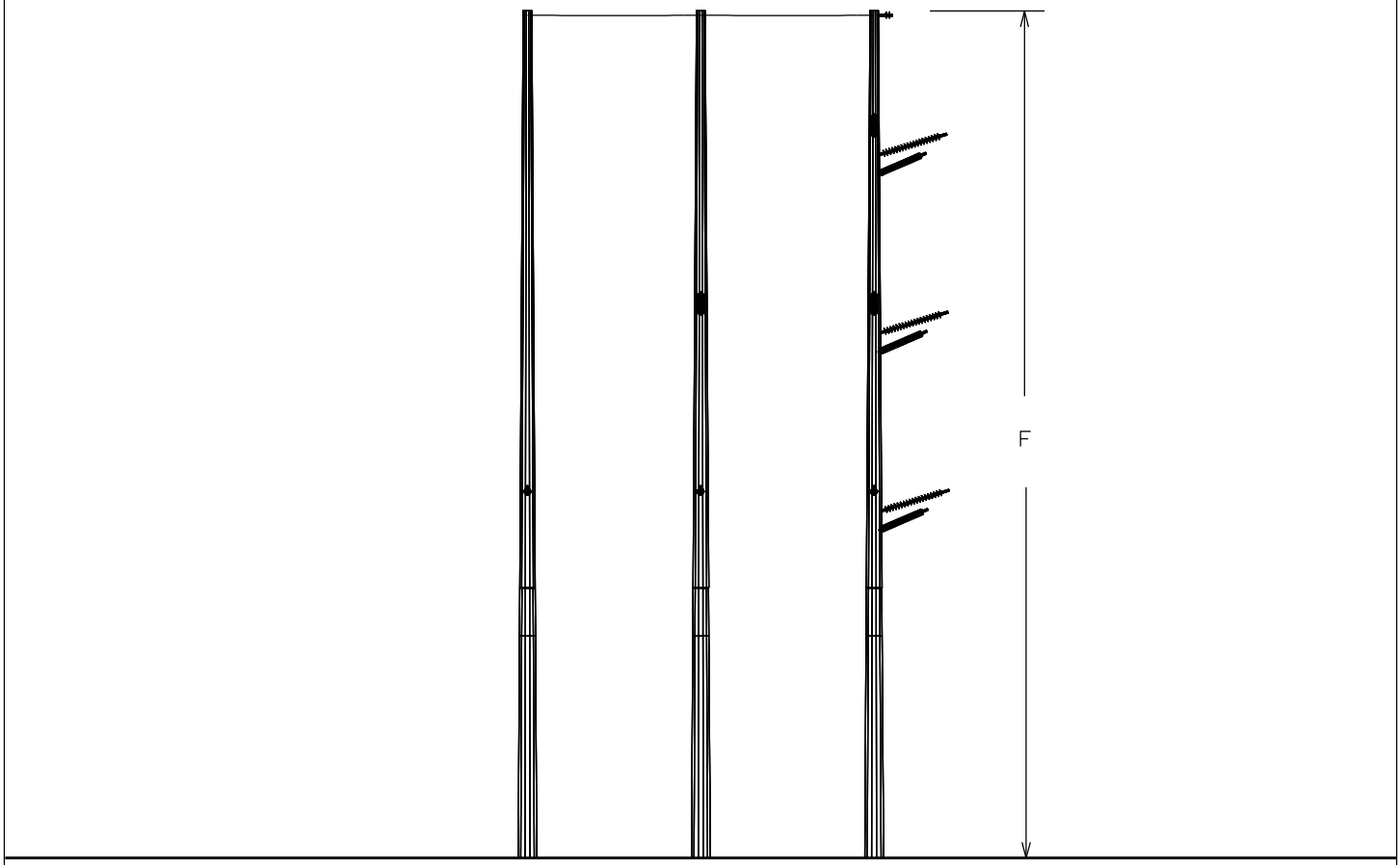
EMBEDDED SINGLE POLE DEADEND STRUCTURE

A. MAPPING OF THE ROUTE:	SEE ATTACHMENT II.B.5
B. RATIONALE FOR STRUCTURE TYPE:	MAINTAIN VERTICAL CONFIGURATION AT THE CROSSINGS AND FACILITATES EFFICIENT USE OF R/W.
C. LENGTH OF R/W (STRUCTURE QTY):	12.5 MILES (6)
D. STRUCTURE MATERIAL: RATIONAL FOR MATERIAL:	WEATHERING STEEL WEATHERING STEEL WAS SELECTED FOR ITS CORROSION RESISTANCE, ENVIRONMENTAL SUSTAINABILITY DUE TO LOW MAINTENANCE, AESTHETIC APPEAL, LOW COST AND LONGEVITY.
E. FOUNDATION MATERIAL:	DIRECT EMBED WITH BACKFILL (SEE NOTE 2)
F. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	97' 97' 97'
G. AVERAGE SPAN LENGTH (RANGE):	47' (41' - 58') (WIND SPAN)
H. MINIMUM CONDUCTOR-TO-GROUND:	25.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTE:

1. INFORMATION CONTAINED ON DRAWING IS PRELIMINARY IN NATURE AND SUBJECT TO CHANGE DURING FINAL DESIGN.
2. FINAL EMBEDMENT AND BACKFILL MATERIAL SHALL BE BASED UPON FINAL ENGINEERING.
3. STRUCTURE HEIGHTS ARE MEASURED FROM THE STRUCTURE CENTERLINE.

230KV LINE #2157 FREDERICKSBURG - CRANES CORNER
230KV LINE #2083 FREDERICKSBURG - BIRCHWOOD
230KV LINE #2104 CRANES CORNER - SPARTAN



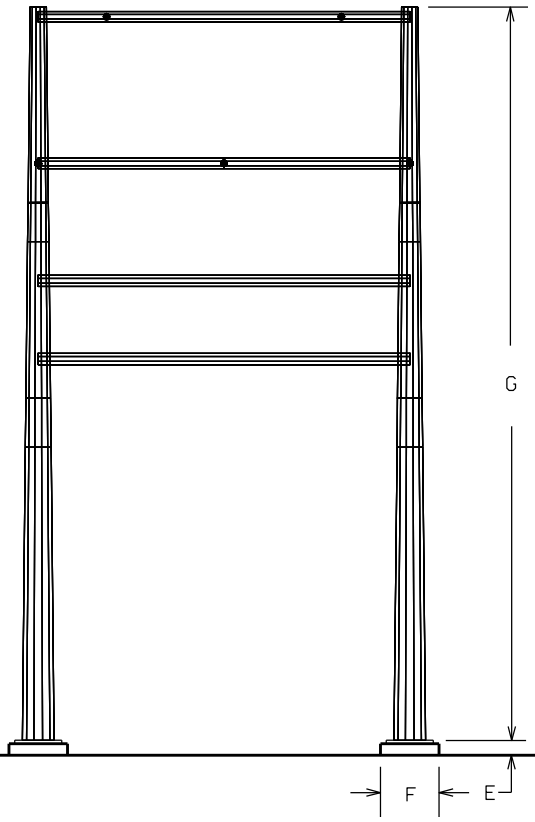
EMBEDDED 3-POLE DEADEND STRUCTURE

A. MAPPING OF THE ROUTE:	SEE ATTACHMENT II.B.5
B. RATIONALE FOR STRUCTURE TYPE:	FACILITATES PHASE ROLL FROM VERTICAL TO FLAT AT 230KV CROSSINGS.
C. LENGTH OF R/W (STRUCTURE QTY):	12.5 MILES (6)
D. STRUCTURE MATERIAL: RATIONAL FOR MATERIAL:	WEATHERING STEEL WEATHERING STEEL WAS SELECTED TO FOR ITS CORROSION RESISTANCE, ENVIRONMENTAL SUSTAINABILITY DUE TO LOW MAINTENANCE, AESTHETIC APPEAL, LOW COST AND LONGEVITY.
E. FOUNDATION MATERIAL:	DIRECT EMBED WITH BACKFILL (SEE NOTE 2)
F. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	88' 88' 88'
G. AVERAGE SPAN LENGTH (RANGE):	86' (65' - 107') (WIND SPAN)
H. MINIMUM CONDUCTOR-TO-GROUND:	25.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTE:

1. INFORMATION CONTAINED ON DRAWING IS PRELIMINARY IN NATURE AND SUBJECT TO CHANGE DURING FINAL DESIGN.
2. FINAL EMBEDMENT AND BACKFILL MATERIAL SHALL BE BASED UPON FINAL ENGINEERING.
3. STRUCTURE HEIGHTS ARE MEASURED FROM THE STRUCTURE CENTERLINE.

230KV LINE #2104 CRANES CORNER - SPARTAN
230KV LINE #2305 FREDERICKSBURG - AQUIA HARBOUR



DOUBLE CIRCUIT BACKBONE STRUCTURE

A. MAPPING OF THE ROUTE:	SEE ATTACHMENT II.B.5
B. RATIONALE FOR STRUCTURE TYPE:	MAINTAINS FLAT CONFIGURATION AT THE SUBSTATION INTERFACE
C. LENGTH OF R/W (STRUCTURE QTY):	12.5 MILES (2)
D. STRUCTURE MATERIAL: RATIONAL FOR MATERIAL:	GALVANIZED STEEL GALVANIZED STEEL WAS SELECTED TO MATCH EXISTING GALVANIZED STRUCTURES INSIDE SUBSTATIONS.
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 2
F. AVERAGE WIDTH AT BASE:	6' DIAMETER FOUNDATION (SEE NOTE 3)
G. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	95' 95' 95'
H. AVERAGE SPAN LENGTH (RANGE):	285' (233' - 377') (WIND SPAN)
I. MINIMUM CONDUCTOR-TO-GROUND:	25.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTE:

1. INFORMATION CONTAINED ON DRAWING IS PRELIMINARY IN NATURE AND SUBJECT TO CHANGE DURING FINAL DESIGN.
2. MINIMUM FOUNDATION REVEAL SHALL BE 1.5'
3. FINAL FOUNDATION DIAMETER SHALL BE BASED UPON FINAL ENGINEERING.
4. STRUCTURE HEIGHTS ARE MEASURED FROM THE STRUCTURE CENTERLINE.

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: With respect to the alternatives considered to accommodate the minor right-of-way expansion near Dogwood Airpark, the structure heights for the alternatives discussed in Section II.A.9 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.)
Alternative 1	67	80	70
Alternative 2	70	80	75
Alternative 3	55	70	65

II. DESCRIPTION OF THE PROPOSED PROJECT

B. Line Design and Operational Features

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

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

The proposed approximate structure heights are from the conceptual design created to estimate the cost of the proposed Rebuild Project and are subject to change based on final engineering design. The approximate structure heights do not include foundation reveal and assume equal leg lengths based on the centerline ground elevation. The following table provides a breakdown of existing and proposed structure heights, generally grouped by segment.

Existing Structure Number	Existing Structure Height (ft.)	Proposed Structure Number	Proposed Structure Height (ft.)	Attachment II.B.3 Structure Type
29/1675	75	2305/1675	*	
29/1676	79	2305/1676	79	II.B.3.g
29/1677	68	2305/1677	115	II.B.3.b
29/1678	65	2305/1678	115	II.B.3.b
29/1679	66	2305/1679	120	II.B.3.b
29/1680	53	2305/1680	100	II.B.3.a
29/1681	50	2305/1681	100	II.B.3.a
29/1682	63	2305/1682	100	II.B.3.b
29/1683	70	2305/1683	110	II.B.3.a
29/1684	67		**	
29/1685	48	2305/1685	115	II.B.3.b
		2305/1686A	110	II.B.3.e
29/1686	54	2157/5406	120	II.B.3.b
29/1687	58	2157/5407	120	II.B.3.a
29/1688	63	2157/5408	115	II.B.3.a
29/1689	65	2157/5409	115	II.B.3.a
29/1690	71	2157/5410	105	II.B.3.b
29/1691	63	2157/5411	100	II.B.3.a
29/1692	63	2157/5412	120	II.B.3.a
29/1693	52	2157/5413	130	II.B.3.c

29/1694	63	2157/5414	130	II.B.3.h
29/1695	55	2157/5415	105	II.B.3.b
29/1696	54	2157/5416	100	II.B.3.a
29/1697	53	2157/5417	100	II.B.3.a
29/1698	68	2157/5418	120	II.B.3.a
29/1699	58	2157/5419	120	II.B.3.a
29/1700	74	2157/5420	120	II.B.3.a
29/1701	73	2157/5421	115	II.B.3.a
29/1702	61	2157/5422	115	II.B.3.b
29/1703	63	2157/5423	110	II.B.3.a
29/1704	63	2157/5424	125	II.B.3.a
29/1705	63	2157/5425	125	II.B.3.a
29/1706	57	2157/5427	100	II.B.3.a
29/1707	53	2157/5428	100	II.B.3.a
29/1708	63	2157/5429	115	II.B.3.a
29/1709	71	2157/5430	115	II.B.3.a
29/1710	67	2157/5431	120	II.B.3.a
29/1711	63	2157/5432	115	II.B.3.a
29/1712	63	2157/5433	115	II.B.3.a
29/1713	59	2157/5434	105	II.B.3.b
29/1714	66	2157/5435	105	II.B.3.a
29/1715	68	2157/5436	105	II.B.3.b
29/1716	68	2157/5437	125	II.B.3.b
29/1717	68	2305/1717	120	II.B.3.b
29/1718	63	2305/1718	125	II.B.3.b
		2305/1718A	95	II.B.3.n
		2305/1719A	115	II.B.3.b
29/1719	67	2305/1719	115	II.B.3.b
29/1720	62	2104/5441	120	II.B.3.b
29/1721	57	2104/5442	110	II.B.3.b
29/1722	54	2104/5444	105	II.B.3.a
29/1723	58		**	
29/1724	47	2305/1724	125	II.B.3.c
29/1725	71		**	
29/1726	55	2305/1726	90	II.B.3.b
		2305/1726A	76	II.B.3.d
		2305/1727	75	II.B.3.d
29/1727	57	2305/1727A	90	II.B.3.b

29/1728	58	2305/1728	105	II.B.3.b
29/1729	71	2305/1729	115	II.B.3.a
29/1730	58	2305/1730	110	II.B.3.a
29/1731	61	2305/1731	110	II.B.3.a
29/1732	62	2305/1732	120	II.B.3.a
29/1733	57	2305/1733	105	II.B.3.a
29/1734	66	2305/1734	120	II.B.3.a
29/1735	54	2305/1735	125	II.B.3.b
29/1736	60	2305/1736	110	II.B.3.a
29/1737	60	2305/1737	110	II.B.3.a
29/1738	62	2305/1738	105	II.B.3.a
29/1739	59	2305/1739	100	II.B.3.a
29/1740	57	2305/1740	105	II.B.3.a
		2305/1740A	125	II.B.3.a
29/1741	67	2305/1741	130	II.B.3.a
		2305/1741A	108	II.B.3.c
29/1742	69	2305/1742	110	II.B.3.a
29/1743	56	2305/1743	110	II.B.3.a
29/1744	55	2305/1744	99	II.B.3.c
29/1745	65	2305/1745	110	II.B.3.a
29/1746	70	2305/1746	125	II.B.3.a
29/1747	57	2305/1747	105	II.B.3.a
29/1748	62	2305/1748	115	II.B.3.a
29/1749	63	2305/1749	110	II.B.3.a
		2305/1749A	120	II.B.3.a
29/1750	61	2305/1750	105	II.B.3.b
29/1751	62	2305/1751	115	II.B.3.a
29/1752	57	2305/1752	110	II.B.3.a
29/1753	52	2305/1753	115	II.B.3.a
29/1754	66	2305/1754	120	II.B.3.a
29/1755	66	2305/1755	115	II.B.3.a
29/1756	67	2305/1756	125	II.B.3.a
29/1757	69	2305/1757	125	II.B.3.a
29/1758	62	2305/1758	110	II.B.3.a
29/1759	61	2305/1759	105	II.B.3.a
29/1760	63	2305/1760	105	II.B.3.b
29/1761	64	2305/1761	110	II.B.3.a
29/1762	58	2305/1762	100	II.B.3.a

		2305/1762A	120	II.B.3.b
29/1763	58	2305/1763	105	II.B.3.a
29/1764	62	2305/1764	120	II.B.3.a
29/1765	63	2305/1765	120	II.B.3.a
		2305/1765A	125	II.B.3.a
29/1766	73	2305/1766	135	II.B.3.a
29/1767	62	2305/1767	105	II.B.3.a
29/1768	52	2305/1768	100	II.B.3.a
29/1769	58	2305/1769	115	II.B.3.b
29/1770	62		**	
29/1771	63	2305/1771	110	II.B.3.a
29/1772	53	2305/1772	100	II.B.3.a
		2305/1772A	120	II.B.3.a
29/1773	63	2305/1773	115	II.B.3.a
29/1774	66	2305/1774	110	II.B.3.a
29/1775	57	2305/1775	115	II.B.3.a
29/1776	63	2305/1776	120	II.B.3.a
29/1777	57	2305/1777	110	II.B.3.a
29/1778	56	2305/1778	115	II.B.3.a
29/1779	53	2305/1779	100	II.B.3.a
29/1779A	62	2305/1779A	105	II.B.3.a
29/1780	67	2305/1780	100	II.B.3.a
29/1781	65	2305/1781	130	II.B.3.a
29/1782	80	2305/1782	130	II.B.3.a
		2305/1783	130	II.B.3.b
		2305/1784	95	II.B.3.n
2157/5397	71	2157/5397	*	
2157/5398	104	2157/5398	*	
2157/5399	90	2157/5399	*	
2157/5400	97	2157/5400	115	II.B.3.b
		2083/3A	97	II.B.3.l
		2083/3B	89	II.B.3.m
		2083/3C	89	II.B.3.m
		2083/3D	97	II.B.3.l
2157/5401	119	2157/5401	115	II.B.3.b
2157/5402	114	2157/5402	*	
2157/5403	108	2157/5403	*	
2157/5404	115	2157/5404	*	

2157/5405	125	2157/5405	*	
2157/5406	115	2305/1686	*	
2157/5407	54	2305/1687	115	II.B.3.a
2157/5408	70	2305/1688	115	II.B.3.a
2157/5409	65	2305/1689	120	II.B.3.a
2157/5410	73	2305/1690	105	II.B.3.b
2157/5411	75	2305/1691	110	II.B.3.a
2157/5412	54	2305/1692	120	II.B.3.a
2157/5413	56	2305/1693	130	II.B.3.c
2157/5414	67	2305/1694	130	II.B.3.h
2157/5415	56	2305/1695	105	II.B.3.b
2157/5416	52	2305/1696	100	II.B.3.a
2157/5417	66	2305/1697	100	II.B.3.a
2157/5418	76	2305/1698	120	II.B.3.a
2157/5419	71	2305/1699	120	II.B.3.a
2157/5420	75	2305/1700	120	II.B.3.a
2157/5421	62	2305/1701	115	II.B.3.a
2157/5422	54	2305/1702	115	II.B.3.b
2157/5423	70	2305/1703	110	II.B.3.a
2157/5424	66	2305/1704	125	II.B.3.a
2157/5425	73	2305/1705	125	II.B.3.a
2157/5426	58		**	
2157/5427	72	2305/1706	110	II.B.3.a
2157/5428	52	2305/1707	100	II.B.3.a
2157/5429	71	2305/1708	115	II.B.3.a
2157/5430	70	2305/1709	115	II.B.3.a
2157/5431	70	2305/1710	120	II.B.3.a
2157/5432	71	2305/1711	115	II.B.3.a
2157/5433	80	2305/1712	115	II.B.3.a
2157/5434	56	2305/1713	105	II.B.3.b
2157/5435	57	2305/1714	105	II.B.3.a
2157/5436	65	2305/1715	105	II.B.3.b
2157/5437	69	2305/1716	125	II.B.3.b
		2157/5437A	97	II.B.3.l
		2157/5437B	90	II.B.3.m
		2157/5437C	89	II.B.3.m
		2157/5437D	97	II.B.3.l
2157/5438	70	2157/5438	120	II.B.3.b

2157/5439	71	2157/5439	125	II.B.3.b
2157/5439A	70	2157/5439A	*	
		2104/5440A	115	II.B.3.e
2104/5440	74	2104/5440	125	II.B.3.b
2104/5441	71	2305/1720	120	II.B.3.b
		2104/5441A	97	II.B.3.l
		2104/5441B	88	II.B.3.m
		2104/5441C	89	II.B.3.m
		2104/5441D	97	II.B.3.l
2104/5442	66	2305/1721	110	II.B.3.b
2104/5443	71		**	
2104/5444	61	2305/1722	105	II.B.3.a
2104/5445	61		**	
2104/5446	78	2104/5446	125	II.B.3.c
2104/5447	71		**	
2104/5448	62	2104/5448	100	II.B.3.b
		2104/5448A	64	II.B.3.d
2104/5449	61	2104/5449	66	II.B.3.d
2104/5450	64	2104/5450	105	II.B.3.b
2104/5451	72	2104/5451	115	II.B.3.a
2104/5452	62	2104/5452	110	II.B.3.a
2104/5453	62		**	
2104/5454	61	2104/5454	110	II.B.3.a
2104/5455	63	2104/5455	110	II.B.3.a
2104/5456	64	2104/5456	115	II.B.3.a
2104/5457	61	2104/5457	120	II.B.3.a
2104/5458	51		**	
2104/5459	61	2104/5459	125	II.B.3.b
2104/5460	59	2104/5460	110	II.B.3.a
2104/5461	60	2104/5461	125	II.B.3.a
2104/5462	63	2104/5462	105	II.B.3.a
2104/5463	61	2104/5463	105	II.B.3.a
2104/5464	60	2104/5464	115	II.B.3.a
2104/5465	61	2104/5465	120	II.B.3.a
2104/5466	58	2104/5466	120	II.B.3.a
2104/5467	64	2104/5467	97	II.B.3.c
		2104/5467A	99	II.B.3.c
2104/5468	65	2104/5468	115	II.B.3.a

2104/5469	61	2104/5469	110	II.B.3.a
2104/5470	70	2104/5470	125	II.B.3.a
2104/5471	66	2104/5471	125	II.B.3.a
2104/5472	56	2104/5472	105	II.B.3.a
2104/5473	66	2104/5473	100	II.B.3.a
2104/5474	61	2104/5474	105	II.B.3.a
2104/5475	66	2104/5475	120	II.B.3.a
2104/5476	60	2104/5476	110	II.B.3.b
2104/5477	61	2104/5477	115	II.B.3.a
2104/5478	57	2104/5478	105	II.B.3.a
2104/5479	57	2104/5479	120	II.B.3.a
2104/5480	61	2104/5480	115	II.B.3.a
2104/5481	58	2104/5481	120	II.B.3.a
2104/5482	58		**	
2104/5483	60	2104/5483	125	II.B.3.a
2104/5484	61		**	
2104/5485	58	2104/5485	120	II.B.3.a
2104/5486	64	2104/5486	110	II.B.3.a
2104/5487	62	2104/5487	105	II.B.3.a
2104/5488	53	2104/5488	105	II.B.3.b
2104/5489	64	2104/5489	110	II.B.3.a
2104/5490	65	2297/5490	105	II.B.3.b
2104/5491	60	2297/5491	110	II.B.3.a
2104/5492	65	2297/5492	105	II.B.3.a
2104/5493	74	2297/5493	130	II.B.3.a
2104/5494	71	2297/5494	130	II.B.3.a
2104/5495	66		**	
2104/5496	64	2297/5496	125	II.B.3.a
2104/5497	65	2297/5497	125	II.B.3.a
2104/5498	66	2297/5498	105	II.B.3.a
2104/5499	66	2297/5499	100	II.B.3.a
2104/5500	62	2297/5500	115	II.B.3.b

2104/5501	62		**	
2104/5502	61	2297/5502	110	II.B.3.a
2104/5503	52	2297/5503	100	II.B.3.a
2104/5504	60	2297/5504	110	II.B.3.a
2104/5505	66	2297/5505	115	II.B.3.a
2104/5506	70	2297/5506	110	II.B.3.a
2104/5507	69	2297/5507	115	II.B.3.a
2104/5508	64	2297/5508	110	II.B.3.a
2104/5509	56	2297/5509	110	II.B.3.a
2104/5510	65	2297/5510	110	II.B.3.a
2104/5511	58	2297/5511	115	II.B.3.a
2104/5511A	60	2297/5511A	135	II.B.3.f
2104/5511B	80	2297/5511B	115	II.B.3.e
2104/5511C	77		**	
2104/5512	70	2297/5512	120	II.B.3.b
2104/5514	62	2297/5514	120	II.B.3.b
2104/5514A	75		**	
2104/5514B	75		**	
		2297/5515	135	II.B.3.f
2104/5515	84	2297/5515A	130	II.B.3.e
		2297/5515B	115	II.B.3.b
2104/5516	110	2297/5516	*	
2104/5517	95	2297/5517	*	
568/77	147	568/77	152	II.B.3.k
		568/76A	165	II.B.3.i
568/76	130	568/76	165	II.B.3.j
		568/75A	152	II.B.3.k
Minimum	47		64	
Maximum	147		165	
Average	66		112	

* Existing structures that are not being replaced and are excluded from minimum, maximum, and average calculations.

** Existing structures that are being removed and not replaced; excluded from minimum, maximum, and average calculations.

The Company will install new structures #2104/5489A and #2297/5490A, #2104/5489B and #2297/5490B, and #2104/5489C and #2297/5490C as part of a different project to provide service to the new Spartan Substation.

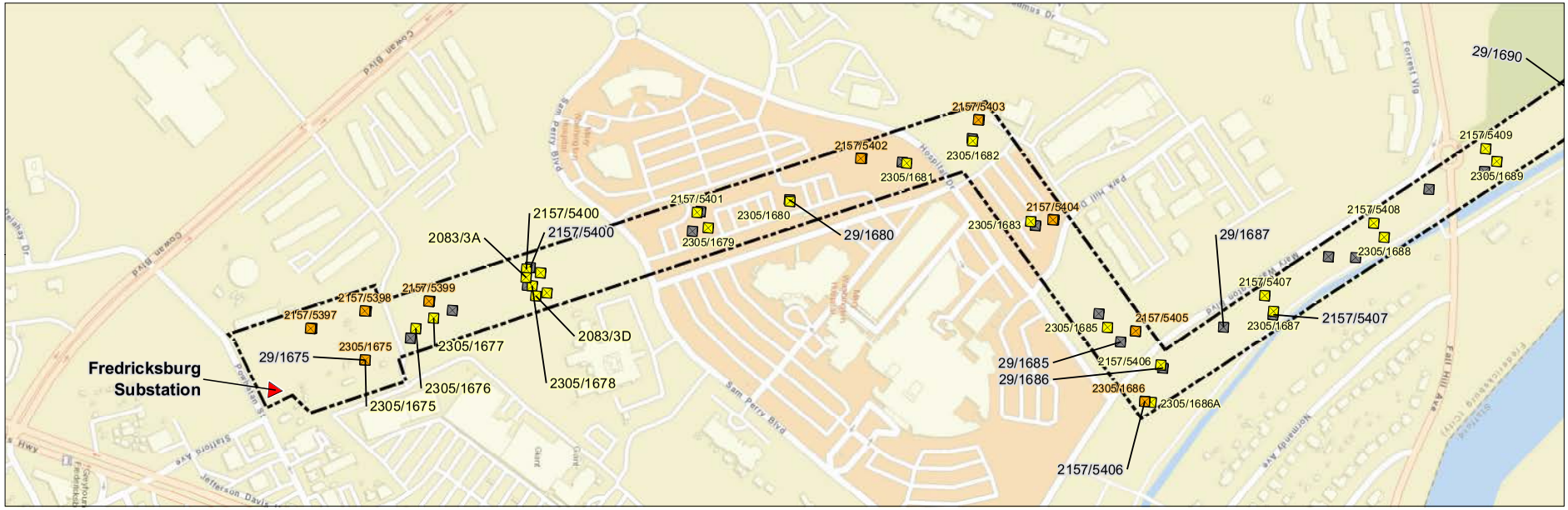


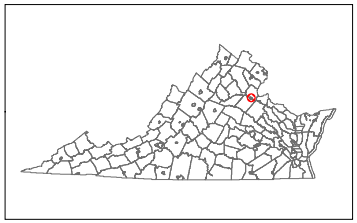
Table II.B.5

Existing Structure Number	29/1675	29/1676	29/1677	29/1678	---	---	---	---	29/1679	29/1680	29/1681	29/1682	29/1683	29/1684	29/1685	2157/5406	N/A	2157/5407	2157/5408	2157/5409
Existing Structure Height (Feet)	75	79	68	65					66	53	50	63	70	67	48	115		54	70	65
Proposed Structure Number	**2305/1675**	**2305/1676**	**2305/1677**	**2305/1678**	**---**	**---**	**---**	**---**	**2305/1679**	**2305/1680**	**2305/1681**	**2305/1682**	**2305/1683**	**Removed**	**2305/1685**	**2305/1686**	**2305/1686A**	**2305/1687**	**2305/1688**	**2305/1689**
Proposed Structure Height (Feet)	75	79	115	115					120	100	100	100	110		115	115	110	115	115	120

Existing Structure Number	2157/5397	2157/5398	2157/5399	2157/5400	N/A	N/A	N/A	N/A	2157/5401	---	2157/5402	2157/5403	2157/5404	2157/5405	---	29/1686	29/1687	---	29/1688	29/1689
Existing Structure Height (Feet)	71	104	90	97	N/A	N/A	N/A	N/A	119		114	108	115	125		54	58		63	65
Proposed Structure Number	**2157/5397**	**2157/5398**	**2157/5399**	**2157/5400**	**2083/3A**	**2083/3B**	**2083/3C**	**2083/3D**	**2157/5401**	**---**	**2157/5402**	**2157/5403**	**2157/5404**	**2157/5405**	**---**	**2157/5406**	**2157/5407**	**---**	**2157/5408**	**2157/5409**
Proposed Structure Height (Feet)	71	104	90	115	97	89	89	97	115		114	108	115	125		120	120		115	115

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

** These structures will be 2-pole structures. Individual pole locations not represented on map.



Substation
Existing Structure to Remain
Proposed Structure
Existing Structure to be Removed
Project Limits

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

N

Stantec

Project Location
Stafford County and City of Fredericksburg, Virginia

Prepared by MGS on 2024-01-11
TR by BJW on 2024-02-23
IR by CPG on 2024-02-22

Client/Project
203401909
Dominion Energy Virginia
Fredericksburg-Aquia Harbour
Lines #29, #2159, and #2014 Partial Rebuild

Figure No.
II.B.5

Title
Existing and Proposed Structures

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

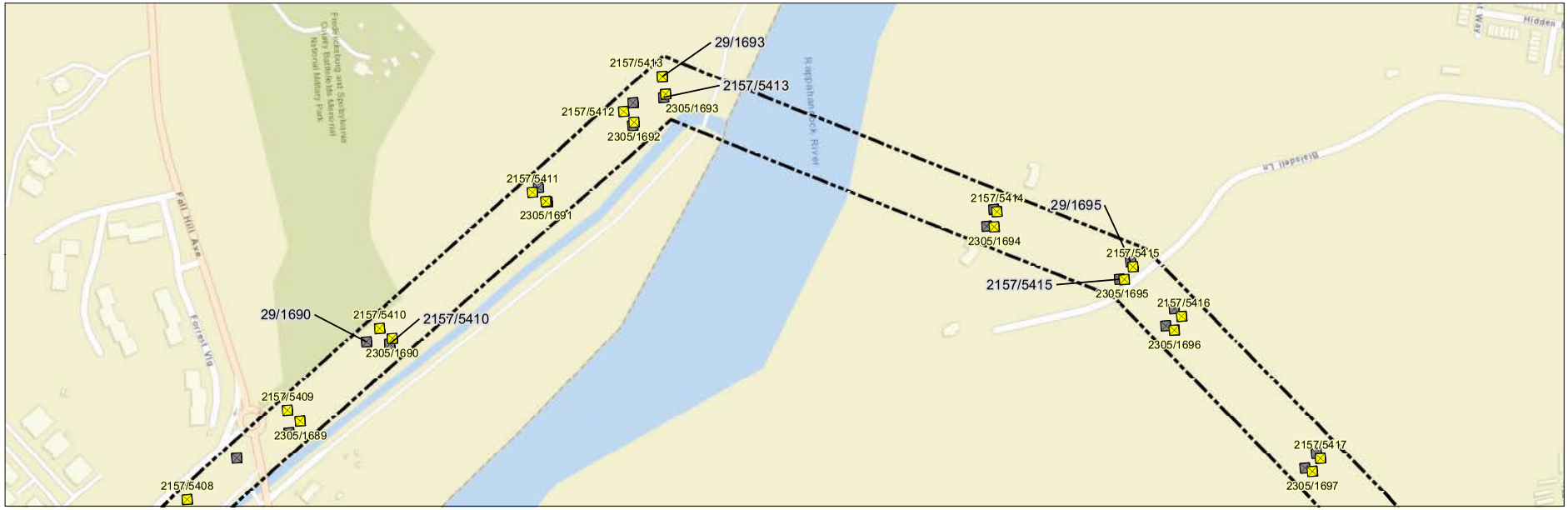


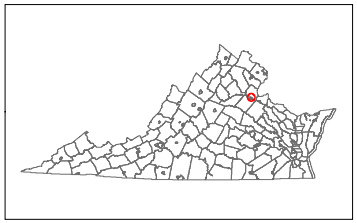
Table II.B.5

Existing Structure Number	2157/5409	2157/5410	2157/5411	2157/5412	2157/5413	2157/5414	2157/5415	2157/5416	2157/5417
Existing Structure Height (Feet)	65	73	75	54	56	67	56	52	66
Proposed Structure Number	**2305/1689**	**2305/1690**	**2305/1691**	**2305/1692**	**2305/1693****	**2305/1694**	**2305/1695**	**2305/1696**	**2305/1697**
Proposed Structure Height (Feet)	120	105	110	120	130	130	105	100	100

Existing Structure Number	29/1689	29/1690	29/1691	29/1692	29/1693	29/1694	29/1695	29/1696	29/1697
Existing Structure Height (Feet)	65	71	63	63	52	63	55	54	53
Proposed Structure Number	**2157/5409**	**2157/5410**	**2157/5411**	**2157/5412**	**2157/5413****	**2157/5414**	**2157/5415**	**2157/5416**	**2157/5417**
Proposed Structure Height (Feet)	115	105	100	120	130	130	105	100	100

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

** These structures will be 2-pole structures. Individual pole locations not represented on map.



Substation
Proposed Structure
Existing Structure to be Removed
Project Limits

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

N

Stantec

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Client/Project
203401909
Dominion Energy Virginia
Fredericksburg-Aquia Harbour
Lines #29, #2159, and #2014 Partial Rebuild

Figure No.
II.B.5

Title
Existing and Proposed Structures

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

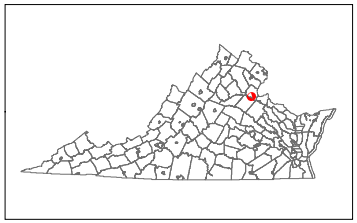
Table II.B.5

Existing Structure Number	2157/5417	2157/5418	2157/5419	2157/5420	2157/5421	2157/5422	2157/5423	2157/5424	2157/5425	2157/5426
Existing Structure Height (Feet)	66	76	71	75	62	54	70	66	73	58
Proposed Structure Number	**2305/1697**	**2305/1698**	**2305/1699**	**2305/1700**	**2305/1701**	**2305/1702**	**2305/1703**	**2305/1704**	**2305/1705**	**Removed**
Proposed Structure Height (Feet)	100	120	120	120	115	115	110	125	125	

Existing Structure Number	29/1697	29/1698	29/1699	29/1700	29/1701	29/1702	29/1703	29/1704	29/1705	---
Existing Structure Height (Feet)	53	68	58	74	73	61	63	63	63	
Proposed Structure Number	**2157/5417**	**2157/5418**	**2157/5419**	**2157/5420**	**2157/5421**	**2157/5422**	**2157/5423**	**2157/5424**	**2157/5425**	**---**
Proposed Structure Height (Feet)	100	120	120	120	115	115	110	125	125	

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

** These structures will be 2-pole structures. Individual pole locations not represented on map.



Substation
Proposed Structure
Existing Structure to be Removed
Project Limits

0 400 800 Feet
(At original document size of 11x17)
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N

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Dominion Energy Virginia
Fredericksburg-Aquia Harbour
Lines #29, #2159, and #2014 Partial Rebuild

Figure No.
II.B.5

Title
Existing and Proposed Structures

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

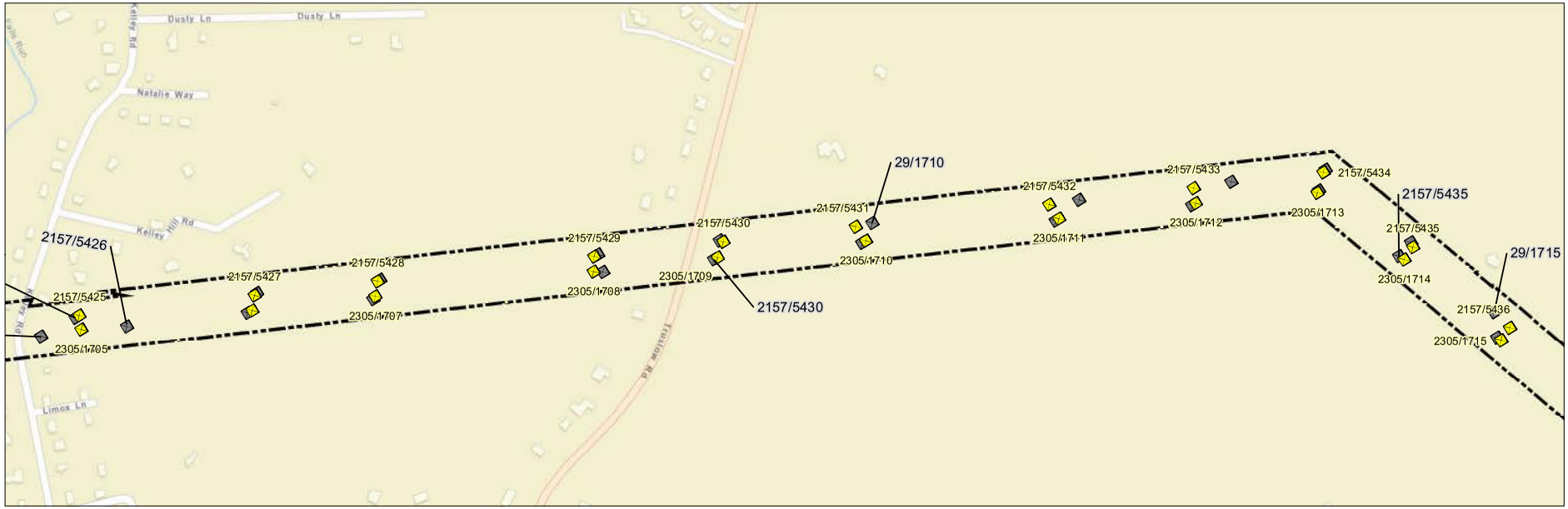


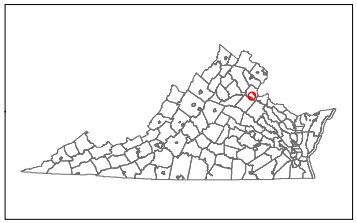
Table II.B.5

Existing Structure Number	2157/5425	2157/5426	2157/5427	2157/5428	2157/5429	2157/5430	2157/5431	2157/5432	2157/5433	2157/5434	2157/5435	2157/5436
Existing Structure Height (Feet)	73	58	72	52	71	70	70	71	80	56	57	65
Proposed Structure Number	**2305/1705**	**Removed**	**2305/1706**	**2305/1707**	**2305/1708**	**2305/1709**	**2305/1710**	**2305/1711**	**2305/1712**	**2305/1713**	**2305/1714**	**2305/1715**
Proposed Structure Height (Feet)	125		110	100	115	115	120	115	115	105	105	105

Existing Structure Number	29/1705	---	29/1706	29/1707	29/1708	29/1709	29/1710	29/1711	29/1712	29/1713	29/1714	29/1715
Existing Structure Height (Feet)	63		57	53	63	71	67	63	63	59	66	68
Proposed Structure Number	**2157/5425**	**---**	**2157/5427**	**2157/5428**	**2157/5429**	**2157/5430**	**2157/5431**	**2157/5432**	**2157/5433**	**2157/5434**	**2157/5435**	**2157/5436**
Proposed Structure Height (Feet)	125		100	100	115	115	120	115	115	105	105	105

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

** These structures will be 2-pole structures. Individual pole locations not represented on map.



Substation
Proposed Structure
Existing Structure to be Removed
Project Limits

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

N

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Project Location
Stafford County and City of Fredericksburg, Virginia

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Client/Project
203401909
Dominion Energy Virginia
Fredericksburg-Aquia Harbour
Lines #29, #2159, and #2014 Partial Rebuild

Figure No.
II.B.5

Title
Existing and Proposed Structures

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

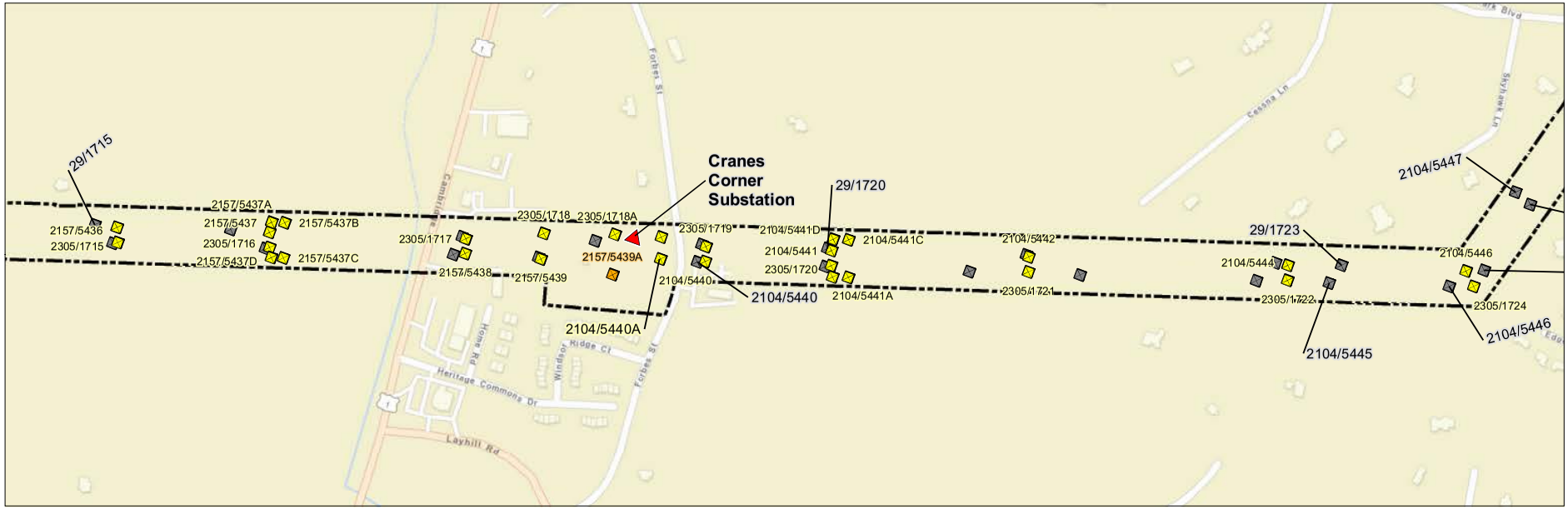


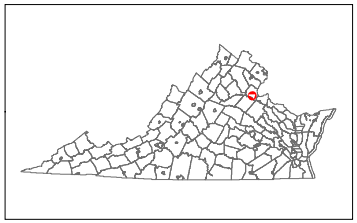
Table II.B.5

Existing Structure Number	2157/5436	2157/5437	---	---	---	---	29/1717	29/1718	N/A	N/A	29/1719	2104/5441	---	---	---	---	2104/5442	---	2104/5444	29/1723	29/1724	29/1725
Existing Structure Height (Feet)	65	69					68	63			67	71					66		61	58	47	71
Proposed Structure Number	**2305/1715**	**2305/1716**	**---**	**---**	**---**	**---**	**2305/1717**	**2305/1718**	**2305/1718A**	**2305/1719A**	**2305/1719**	**2305/1720**	**---**	**---**	**---**	**---**	**2305/1721**	**---**	**2305/1722**	**Removed**	**2305/1724**	**Removed**
Proposed Structure Height (Feet)	105	125					120	125	95	115	115	120					110		105		125	

Existing Structure Number	29/1715	29/1716	N/A	N/A	N/A	N/A	2157/5438	2157/5439	2157/5439A	N/A	2104/5440	29/1720	N/A	N/A	N/A	N/A	29/1721	2104/5443	29/1722	2104/5445	2104/5446	2104/5447
Existing Structure Height (Feet)	68	68	N/A	N/A	N/A	N/A	70	71	70	N/A	74	62	N/A	N/A	N/A	N/A	57	71	54	61	78	71
Proposed Structure Number	**2157/5436**	**2157/5437**	**2157/5437A**	**2157/5437B**	**2157/5437C**	**2157/5437D**	**2157/5438**	**2157/5439**	**2157/5439A**	**2104/5440A**	**2104/5440**	**2104/5441**	**2104/5441A**	**2104/5441B**	**2104/5441C**	**2104/5441D**	**2104/5442**	**Removed**	**2104/5444**	**Removed**	**2104/5446**	**Removed**
Proposed Structure Height (Feet)	105	125	97	90	89	97	120	125	70	115	125	120	97	88	89	97	110		105		125	

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

** These structures will be 2-pole structures. Individual pole locations not represented on map.



- Substation
- Existing Structure to Remain
- Proposed Structure
- Existing Structure to be Removed
- Project Limits

0 400 800 Feet

(At original document size of 11x17)
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N

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Fredericksburg-Aquia Harbour
Lines #29, #2159, and #2014 Partial Rebuild

Figure No.
II.B.5

Title
Existing and Proposed Structures

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

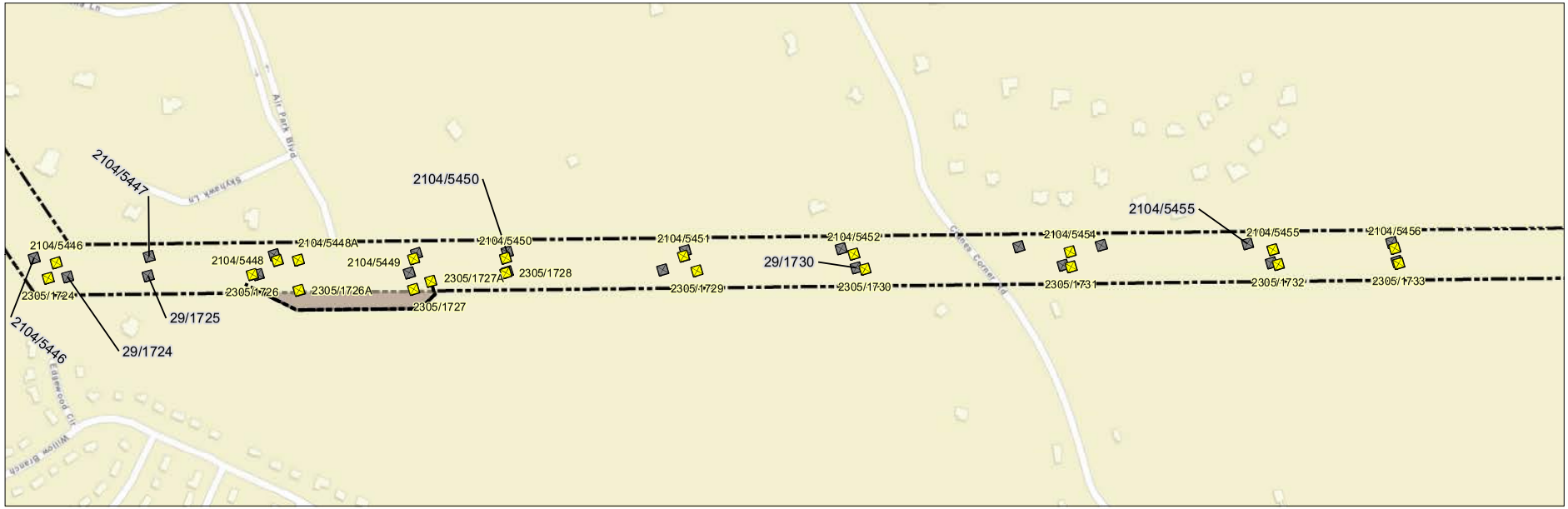


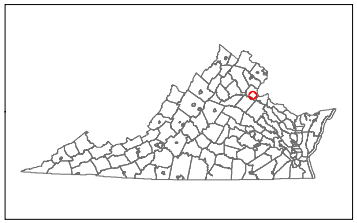
Table II.B.5

Existing Structure Number	29/1724	29/1725	29/1726	N/A	N/A	29/1727	29/1728	29/1729	29/1730	---	29/1731	29/1732	29/1733
Existing Structure Height (Feet)	47	71	55			57	58	71	58		61	62	57
Proposed Structure Number	**2305/1724**	**Removed**	**2305/1726**	**2305/1726A****	**2305/1727****	**2305/1727A**	**2305/1728**	**2305/1729**	**2305/1730**	**---**	**2305/1731**	**2305/1732**	**2305/1733**
Proposed Structure Height (Feet)	125		90	76	75	90	105	115	110		110	120	105

Existing Structure Number	2104/5446	2104/5447	2104/5448	N/A	2104/5449	---	2104/5450	2104/5451	2104/5452	2104/5453	2104/5454	2104/5455	2104/5456
Existing Structure Height (Feet)	78	71	62	N/A	61		64	72	62	62	61	63	64
Proposed Structure Number	**2104/5446**	**Removed**	**2104/5448**	**2104/5448A****	**2104/5449****	**--**	**2104/5450**	**2104/5451**	**2104/5452**	**Removed**	**2104/5454**	**2104/5455**	**2104/5456**
Proposed Structure Height (Feet)	125		100	64	66		105	115	110		110	110	115

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

** These structures will be 2-pole structures. Individual pole locations not represented on map.



Substation
Proposed Structure
Existing Structure to be Removed
Project Limits
Additional Right-of-Way

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

N

Stantec

Project Location
Stafford County and City of Fredericksburg, Virginia

Prepared by MGS on 2024-01-11
TR by BJW on 2024-02-23
IR by CPG on 2024-02-22

Client/Project
203401909
Dominion Energy Virginia
Fredericksburg-Aquia Harbour
Lines #29, #2159, and #2014 Partial Rebuild

Figure No.
II.B.5

Title
Existing and Proposed Structures

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

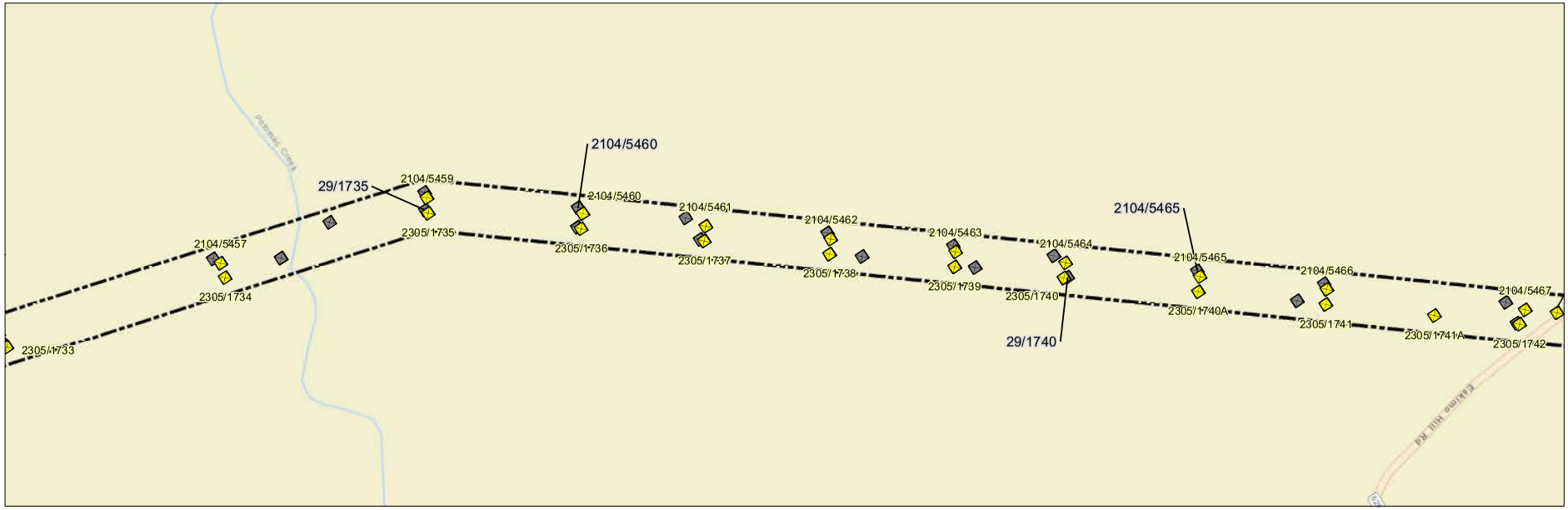


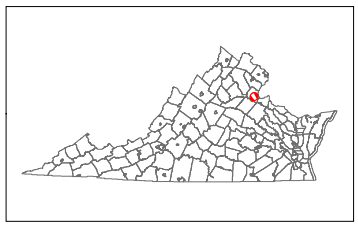
Table II.B.5

Existing Structure Number	29/1734	---	29/1735	29/1736	29/1737	29/1738	29/1739	29/1740	N/A	29/1741	N/A	29/1742	---
Existing Structure Height (Feet)	66		54	60	60	62	59	57		67		69	
Proposed Structure Number	**2305/1734**	**---**	**2305/1735**	**2305/1736**	**2305/1737**	**2305/1738**	**2305/1739**	**2305/1740**	**2305/1740A**	**2305/1741****	**2305/1741A**	**2305/1742**	**---**
Proposed Structure Height (Feet)	120		125	110	110	105	100	105	125	130	108	110	

Existing Structure Number	2104/5457	2104/5458	2104/5459	2104/5460	2104/5461	2104/5462	2104/5463	2104/5464	2104/5465	2104/5466	---	2104/5467	N/A
Existing Structure Height (Feet)	61	51	61	59	60	63	61	60	61	58		64	N/A
Proposed Structure Number	**2104/5457**	**Removed**	**2104/5459**	**2104/5460**	**2104/5461**	**2104/5462**	**2104/5463**	**2104/5464**	**2104/5465**	**2104/5466**	**---**	**2104/5467****	**2104/5467A****
Proposed Structure Height (Feet)	120		125	110	125	105	105	115	120	120		97	99

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

** These structures will be 2-pole structures. Individual pole locations not represented on map.



Substation
Proposed Structure
Existing Structure to be Removed
Project Limits

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

Stantec

Project Location
Stafford County and City of Fredericksburg, Virginia

Prepared by MGS on 2024-01-11
TR by BJW on 2024-02-23
IR by CPG on 2024-02-22

Client/Project
203401909
Dominion Energy Virginia
Fredericksburg-Aquia Harbour
Lines #29, #2159, and #2014 Partial Rebuild

Figure No.
II.B.5

Title
Existing and Proposed Structures

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

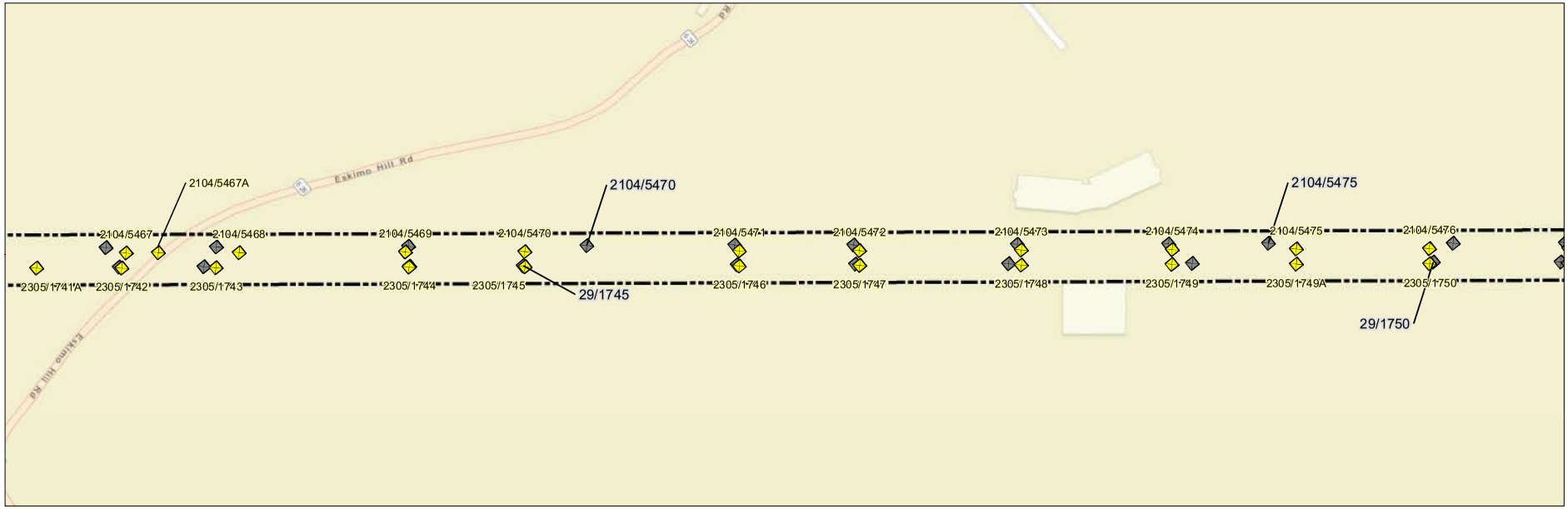


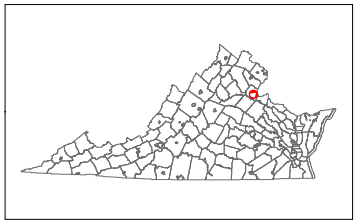
Table II.B.5

Existing Structure Number	N/A	29/1742	---	29/1743	29/1744	29/1745	29/1746	29/1747	29/1748	29/1749	N/A	29/1750	29/1751
Existing Structure Height (Feet)		69		56	55	65	70	57	62	63		61	62
Proposed Structure Number	**2305/1741A**	**2305/1742**	**---**	**2305/1743**	**2305/1744****	**2305/1745**	**2305/1746**	**2305/1747**	**2305/1748**	**2305/1749**	**2305/1749A**	**2305/1750**	**2305/1751**
Proposed Structure Height (Feet)	108	110		110	99	110	125	105	115	110	120	105	115

Existing Structure Number	---	2104/5467	N/A	2104/5468	2104/5469	2104/5470	2104/5471	2104/5472	2104/5473	2104/5474	2104/5475	2104/5476	2104/5477
Existing Structure Height (Feet)		64	N/A	65	61	70	66	56	66	61	66	60	61
Proposed Structure Number	**---**	**2104/5467****	**2104/5467A****	**2104/5468**	**2104/5469**	**2104/5470**	**2104/5471**	**2104/5472**	**2104/5473**	**2104/5474**	**2104/5475**	**2104/5476**	**2104/5477**
Proposed Structure Height (Feet)		97	99	115	110	125	125	105	100	105	120	110	115

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

** These structures will be 2-pole structures. Individual pole locations not represented on map.



Substation
Proposed Structure
Existing Structure to be Removed
Project Limits

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

N

Stantec

Project Location
Stafford County and City of Fredericksburg, Virginia

Prepared by MGS on 2024-01-11
TR by BJW on 2024-02-23
IR by CPG on 2024-02-22

Client/Project
203401909
Dominion Energy Virginia
Fredericksburg-Aquia Harbour
Lines #29, #2159, and #2014 Partial Rebuild

Figure No.
II.B.5

Title
Existing and Proposed Structures

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

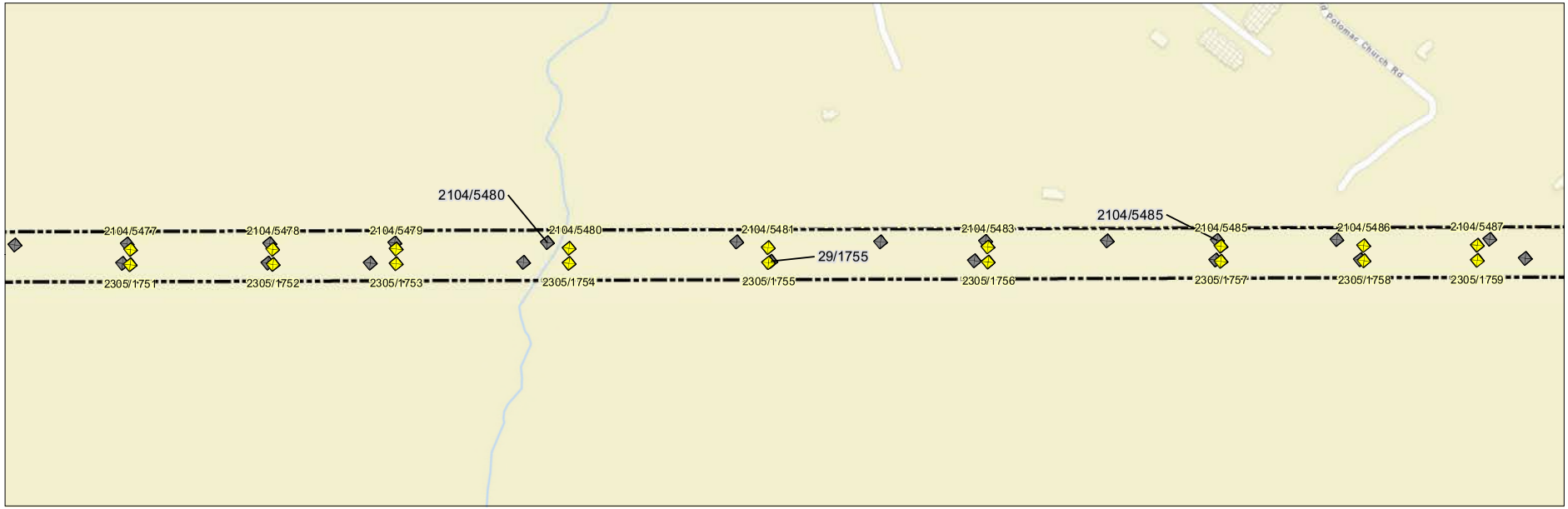


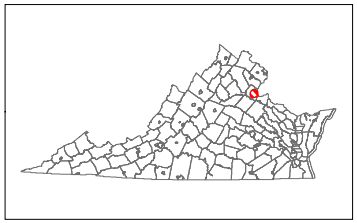
Table II.B.5

Existing Structure Number	29/1751	29/1752	29/1753	29/1754	29/1755	---	29/1756	---	29/1757	29/1758	29/1759
Existing Structure Height (Feet)	62	57	52	66	66		67		69	62	61
Proposed Structure Number	**2305/1751**	**2305/1752**	**2305/1753**	**2305/1754**	**2305/1755**	**---**	**2305/1756**	**---**	**2305/1757**	**2305/1758**	**2305/1759**
Proposed Structure Height (Feet)	115	110	115	120	115		125		125	110	105

Existing Structure Number	2104/5477	2104/5478	2104/5479	2104/5480	2104/5481	2104/5482	2104/5483	2104/5484	2104/5485	2104/5486	2104/5487
Existing Structure Height (Feet)	61	57	57	61	58	58	60	61	58	64	62
Proposed Structure Number	**2104/5477**	**2104/5478**	**2104/5479**	**2104/5480**	**2104/5481**	**Removed**	**2104/5483**	**Removed**	**2104/5485**	**2104/5486**	**2104/5487**
Proposed Structure Height (Feet)	115	105	120	115	120		125		120	110	105

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

** These structures will be 2-pole structures. Individual pole locations not represented on map.



Substation
Proposed Structure
Existing Structure to be Removed
Project Limits

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

N

Stantec

Project Location
Stafford County and City of Fredericksburg, Virginia

Prepared by MGS on 2024-01-11
TR by BJW on 2024-02-23
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Client/Project
203401909
Dominion Energy Virginia
Fredericksburg-Aquia Harbour
Lines #29, #2159, and #2014 Partial Rebuild

Figure No.
II.B.5

Title
Existing and Proposed Structures

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

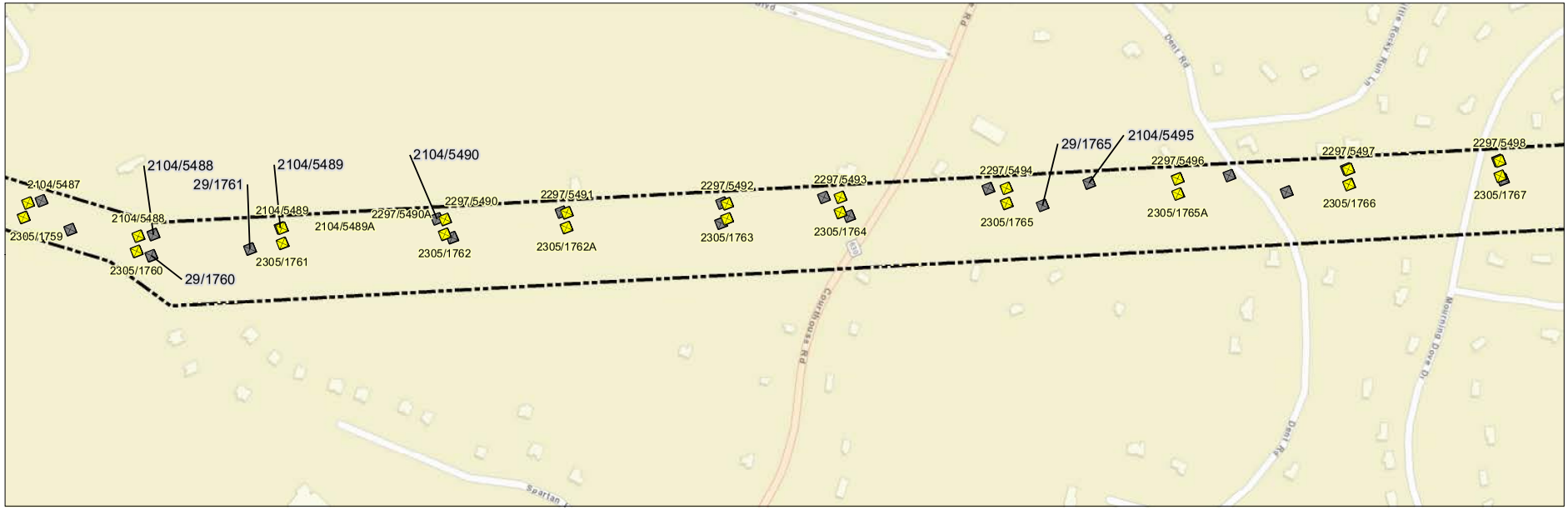


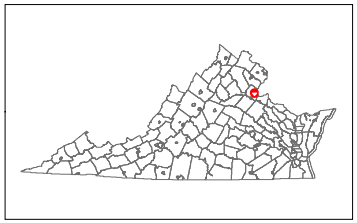
Table II.B.5

Existing Structure Number	29/1759	29/1760	29/1761	29/1762	N/A	29/1763	29/1764	29/1765	---	N/A	29/1766	29/1767
Existing Structure Height (Feet)	61	63	64	58		58	62	63			73	62
Proposed Structure Number	**2305/1759**	**2305/1760**	**2305/1761**	**2305/1762**	**2305/1762A**	**2305/1763**	**2305/1764**	**2305/1765**	**---**	**2305/1765A**	**2305/1766**	**2305/1767**
Proposed Structure Height (Feet)	105	105	110	100	120	105	120	120		125	135	105

Existing Structure Number	2104/5487	2104/5488	2104/5489	2104/5490	2104/5491	2104/5492	2104/5493	2104/5494	2104/5495	2104/5496	2104/5497	2104/5498
Existing Structure Height (Feet)	62	53	64	65	60	65	74	71	66	64	65	66
Proposed Structure Number	**2104/5487**	**2104/5488**	**2104/5489**	**2297/5490**	**2297/5491**	**2297/5492**	**2297/5493**	**2297/5494**	**Removed**	**2297/5496**	**2297/5497**	**2297/5498**
Proposed Structure Height (Feet)	105	105	110	105	110	105	130	130		125	125	105

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

** These structures will be 2-pole structures. Individual pole locations not represented on map.



Substation
Proposed Structure
Existing Structure to be Removed
Project Limits

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

N

Stantec

Project Location
Stafford County and City of Fredericksburg, Virginia

Prepared by MGS on 2024-01-11
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Client/Project
203401909
Dominion Energy Virginia
Fredericksburg-Aquia Harbour
Lines #29, #2159, and #2014 Partial Rebuild

Figure No.
II.B.5

Title
Existing and Proposed Structures

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

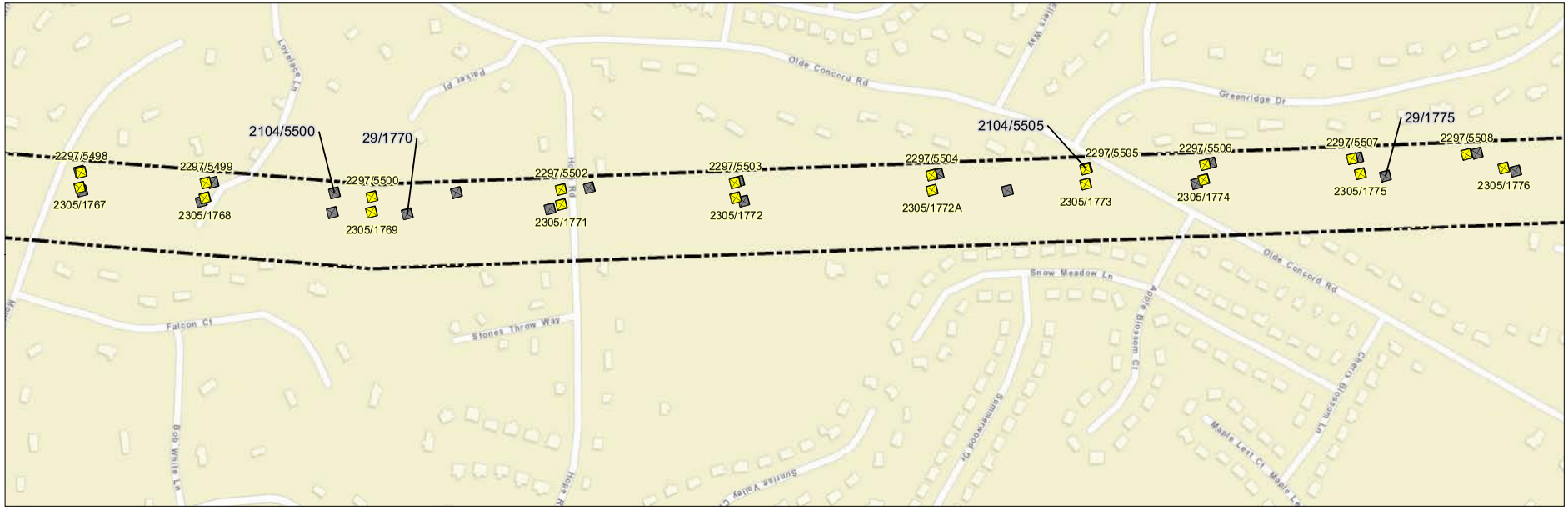


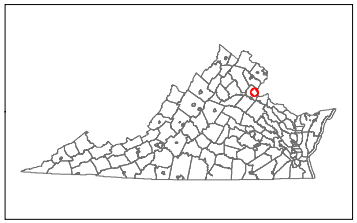
Table II.B.5

Existing Structure Number	29/1767	29/1768	29/1769	29/1770	29/1771	29/1772	N/A	29/1773	29/1774	29/1775	29/1776
Existing Structure Height (Feet)	62	52	58	62	63	53		63	66	57	63
Proposed Structure Number	**2305/1767**	**2305/1768**	**2305/1769**	**Removed**	**2305/1771**	**2305/1772**	**2305/1772A**	**2305/1773**	**2305/1774**	**2305/1775**	**2305/1776**
Proposed Structure Height (Feet)	105	100	115		110	100	120	115	110	115	120

Existing Structure Number	2104/5498	2104/5499	2104/5500	2104/5501	2104/5502	2104/5503	2104/5504	2104/5505	2104/5506	2104/5507	2104/5508
Existing Structure Height (Feet)	66	66	62	62	61	52	60	66	70	69	64
Proposed Structure Number	**2297/5498**	**2297/5499**	**2297/5500**	**Removed**	**2297/5502**	**2297/5503**	**2297/5504**	**2297/5505**	**2297/5506**	**2297/5507**	**2297/5508**
Proposed Structure Height (Feet)	105	100	115		110	100	110	115	110	115	110

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

** These structures will be 2-pole structures. Individual pole locations not represented on map.



Substation
Proposed Structure
Existing Structure to be Removed
Project Limits

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

N

Stantec

Project Location
Stafford County and City of Fredericksburg, Virginia

Prepared by MGS on 2024-01-11
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Client/Project
203401909
Dominion Energy Virginia
Fredericksburg-Aquia Harbour
Lines #29, #2159, and #2014 Partial Rebuild

Figure No.
II.B.5

Title
Existing and Proposed Structures

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

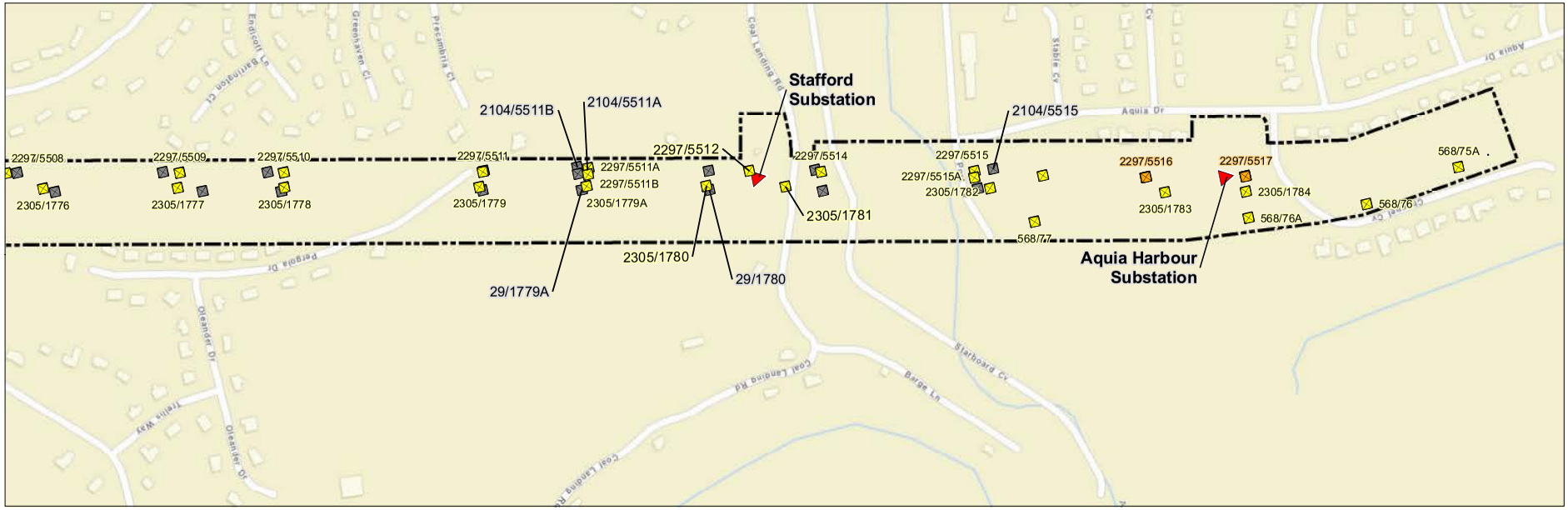


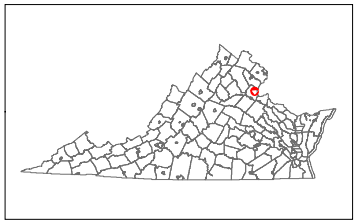
Table II.B.5

Existing Structure Number	29/1776	29/1777	29/1778	29/1779	29/1779A	---	---	29/1780	29/1781	---	---	---	29/1782	---	N/A	N/A	568/77	N/A	568/76	N/A
Existing Structure Height (Feet)	63	57	56	53	62			67	65				80				147		130	
Proposed Structure Number	**2305/1776**	**2305/1777**	**2305/1778**	**2305/1779**	**2305/1779A**	**---**	**---**	**2305/1780**	**2305/1781**	**---**	**---**	**---**	**2305/1782**	**---**	**2305/1783**	**2305/1784**	**568/77**	**568/76A**	**568/76**	**568/75A**
Proposed Structure Height (Feet)	120	110	115	100	105			100	130				130		130	95	152	165	165	152

Existing Structure Number	2104/5508	2104/5509	2104/5510	2104/5511	2104/5511A	2104/5511B	2104/5511C	2104/5512	2104/5514	2104/5514A	2104/5514B	N/A	2104/5515	N/A	2104/5516	2104/5517	---	---	---	---
Existing Structure Height (Feet)	64	56	65	58	60	80	77	70	62	75	75	N/A	84	N/A	110	95				
Proposed Structure Number	**2297/5508**	**2297/5509**	**2297/5510**	**2297/5511**	**2297/5511A**	**2297/5511B**	**Removed**	**2297/5512**	**2297/5514**	**Removed**	**Removed**	**2297/5515**	**2297/5515A**	**2297/5515B**	**2297/5516**	**2297/5517**	**---**	**---**	**---**	**---**
Proposed Structure Height (Feet)	110	110	110	115	135	115		120	120			135	130	115	110	95				

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

** These structures will be 2-pole structures. Individual pole locations not represented on map.



Substation
Existing Structure to Remain
Proposed Structure
Existing Structure to be Removed
Project Limits

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

N

Stantec

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Stafford County and City of Fredericksburg, Virginia

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Figure No.
II.B.5

Title
Existing and Proposed Structures

Notes
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2. Data Sources: Dominion Energy Virginia, Stantec, DCR
3. Base Map © ESRI

II. DESCRIPTION OF THE PROPOSED PROJECT

B. Line Design and Operational Features

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

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

See Attachments II.B.6.a.i-ix for representative photographs of typical existing structures.

(b) Comparable photographs or representations for proposed structures.

See Attachments II.B.6.b.i-viii, for representative photographs of the proposed structures for the Rebuild Project.

(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.

Visual simulations showing the appearance of the proposed transmission structures are provided for historic properties where the Rebuild Project will be visible. These simulations were created using GIS modeling to depict whether the existing and proposed structures are or will be visible from historic properties. Observation points used for the simulations are indicated on the maps. The photo simulation locations are provided on Attachment II.B.6.c.i. Attachment II.B.6.c.ii provides existing photographs and simulations of the proposed structures from the selected observation points, where visible. The table below identifies the historic properties evaluated.

VDHR #	Resource Name	OP	Comments
111-0008	Brompton	1	Not visible
111-0107	John Lewis House	2	Not visible
111-0009	Fredericksburg Historic District Extension	2, 3, 5	2 and 3: Not visible 5: Structures 2305/1680 and 2305/1696 slightly visible through trees

111-5265	Fredericksburg City and Confederate Cemeteries	3	Not visible
111-0132	Fredericksburg Historic District	4	Not visible
111-0047	Kenmore	5	Structures 2305/1680 and 2305/1696 slightly visible through trees
111-5262	Washington Avenue Historic District	6	Not visible
111-5473	Allman's Bar-B-Que	7	Existing and proposed structures only visible from corner of property
111-5295	Battle of Fredericksburg I	7, 9, 10	7 and 9: Not visible 10: Structures visible down existing right-of-way
111-5296	Battle of Fredericksburg II	7, 10, 11 14, 15	7, 14, and 15: Not visible 10 and 11: Structures visible down existing right-of-way
088-5181	Salem Church Battlefield	7, 10	7: Existing and proposed structures visible 10: Structures visible down existing right-of-way
111-5267	Elmhurst	8	Not visible
111-5007	Carl's Frozen Custard	9	Not visible
111-0147	Fredericksburg and Spotsylvania Battlefields National Military Park	10	Structures visible down existing right-of-way

111-0149	Fall Hill	10	Structures visible down existing right-of-way
089-5180	Carlton	12	Existing structures not visible. Proposed 2305/1700 and 2157/5420 visible down Business U.S. 17
089-5180	Chancellorsville Battlefield	12, 13, 14,15	12: Existing structures not visible. Proposed 2305/1700 and 2157/5420 visible down Business U.S. 17 13-15: Not visible
089-0067	Falmouth Historic District	12, 13, 14, 15, 16, 17	12: Existing structures not visible. Proposed 2305/1700 and 2157/5420 visible down Business U.S. 17 13-16: Not visible 17: Existing structures not visible. Proposed structures visible through trees and above tree line
089-5074	Roots House	13	Not visible
089-0022	Belmont	14	Not visible
089-0012	Clearview	17	17: Existing structures not visible. Proposed structures visible through trees and above tree line
089-0020	Glencairne	18	Existing and proposed structures visible

089-0247	Stafford Training School	19[20]	Not visible
089-0103	Aquia Creek Quarries	21	Existing structure visible through trees. Proposed 2305/1784 and 568/76A visible through trees

[20] Observation Point 20 not utilized.

Existing Structure Type:
230kV (Left) And 115kV (Right) Single Circuit
Wood H-Frame (Tangent)

Existing Structure Type:
230kV (Left) And 115kV (Right) Single Circuit
Wood 3-Pole (Running Angle)

Existing Structure Type:
115kV (Left) And 230kV (Right) Single Circuit
Wood 3-Pole (DDE)

Existing Structure Type:
230kV Single Circuit Steel H-Frame (DDE)

Existing Structure Type:
230kV Single Circuit Wood 3-Pole (DDE)

Existing Structure Type:
230kV Single Circuit Steel 3-Pole (DDE)

Existing Structure Type:
230kV Single Circuit Steel Switch Structure
(DDE)

Existing Structure Type:
230kV Double Circuit Steel Structure (Tangent)

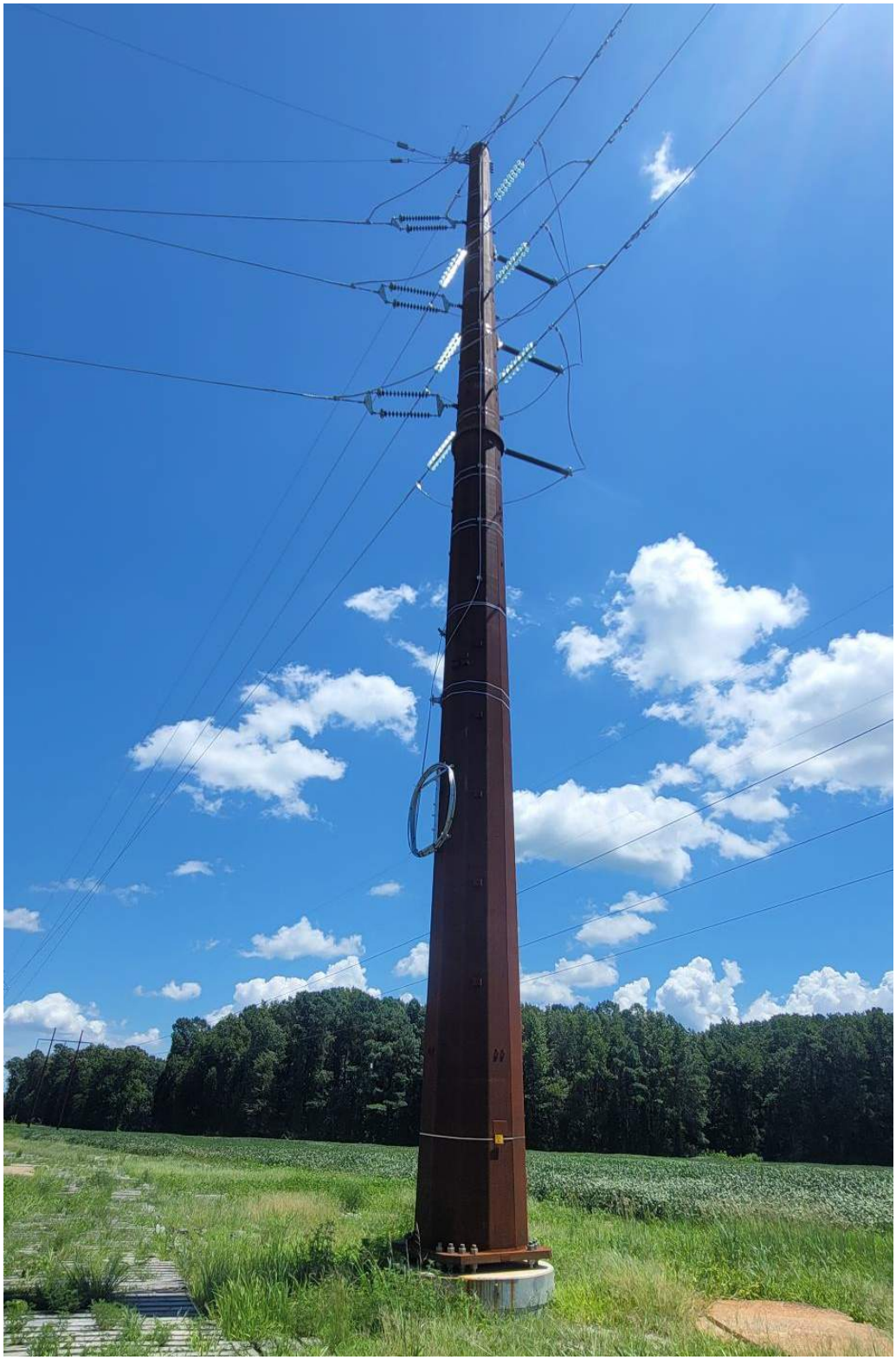
Existing Structure Type:
500kV Single Circuit Steel Tower (Tangent)

Existing Structure Type:
230kV Double Circuit Steel Monopole (Tangent)

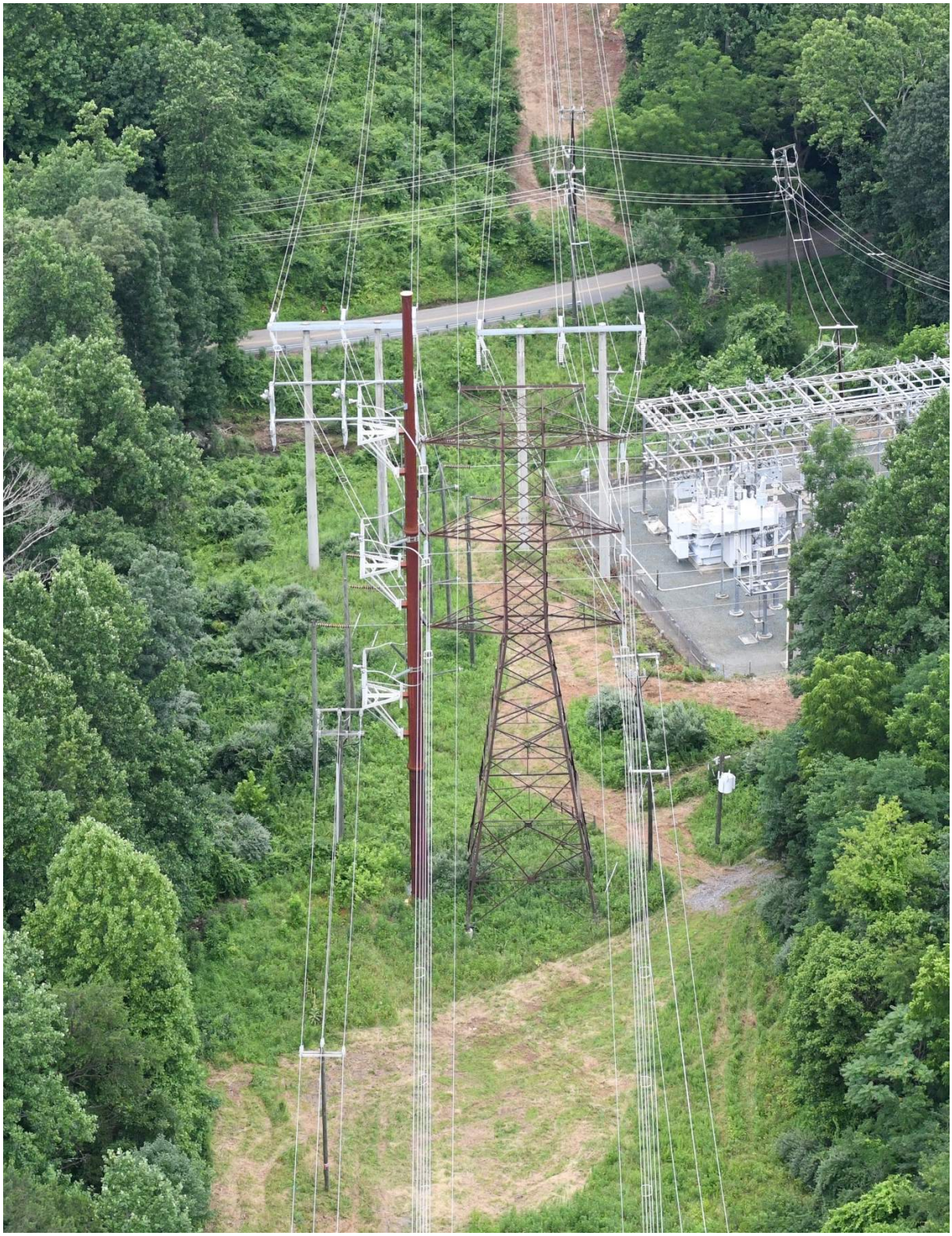
Existing Structure Type:
230kV Double Circuit Steel Monopole (DDE)

Existing Structure Type:
230kV Double Circuit Steel 2-Pole (DDE)

Existing Structure Type:
230kV Double Circuit Steel Monopole w/
Staggered Arms (DDE)



Existing Structure Type:
230kV Single Circuit Steel Monopole (DDE)



Existing Structure Type:
230kV Single Circuit Steel Monopole Phase Over Phase Switch (DDE)

Existing Structure Type:
230kV Single Circuit Steel 3-Pole Guyed (DDE)

Existing Structure Type:
230kV Double Circuit Steel Monopole (DDE)

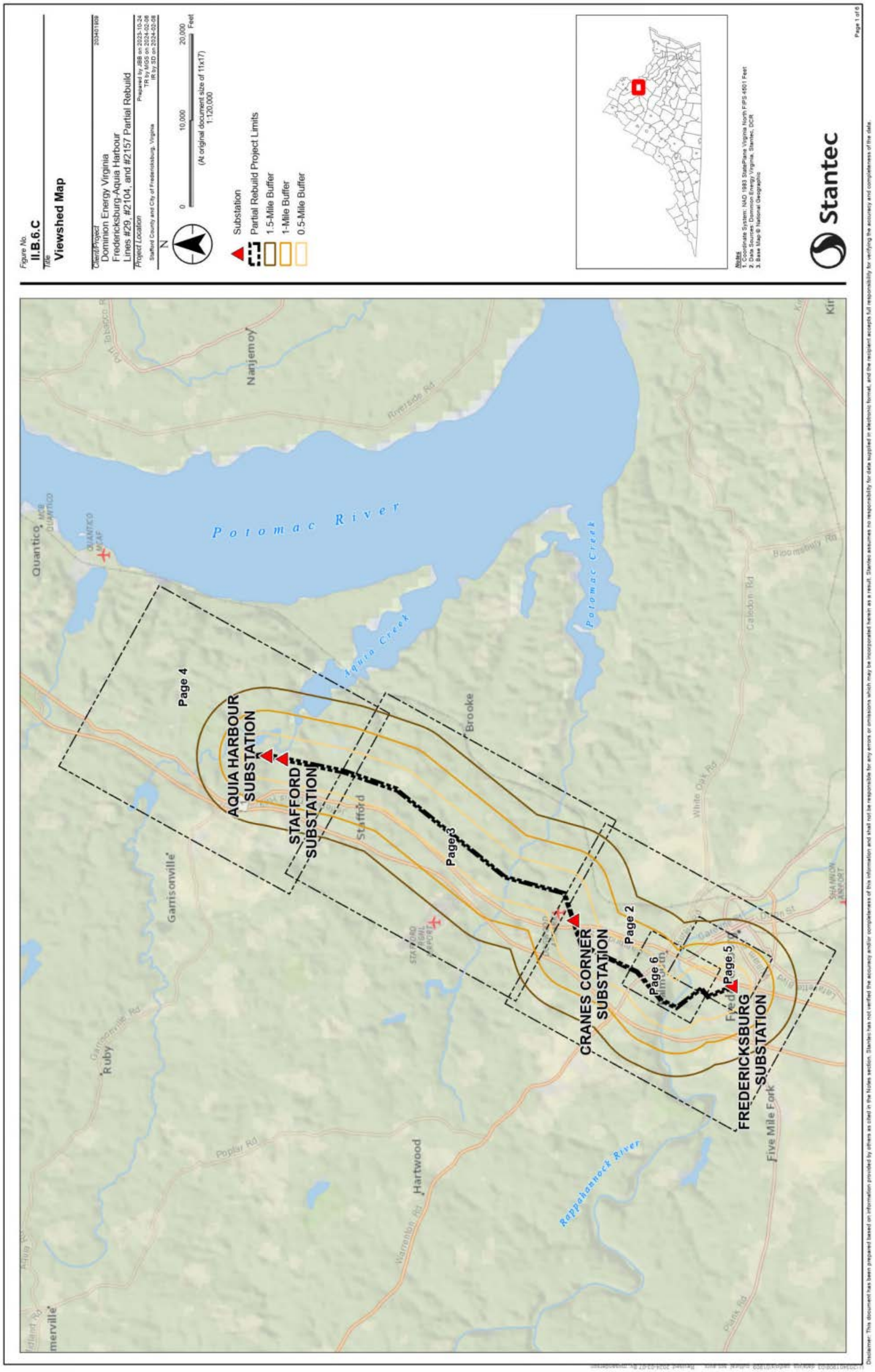


Figure No.
II.B.6.C
Title
Viewshed Map
Client/Project
Dominion Energy Virginia
Fredericksburg-Aquia Harbour
Lines #29, #2104, and #2157 Partial Rebuild
203401909
Project Location
Stafford County and City of Fredericksburg, Virginia
Prepared by JBB on 2023-10-24
TR by MGS on 2024-02-08
IR by SD on 2024-02-08
N
0
10,000
20,000
Feet
(At original document size of 11x17)
1:120,000
Substation
Partial Rebuild Project Limits
1.5-Mile Buffer
1-Mile Buffer
0.5-Mile Buffer
Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, DCR
3. Base Map © National Geographic
Stantec
Page 1 of 6
Potomac River
Quantico
Nanjemoy
Riverside Rd
Aquia Creek
Potomac Creek
Page 4
Page 3
Page 2
Page 5
Page 6
AQUIA HARBOUR SUBSTATION
STAFFORD SUBSTATION
CRANES CORNER SUBSTATION
FREDERICKSBURG SUBSTATION
Stafford
Brooke
Garrisonville
Ruby
Hartwood
White Oak Rd
Caledon Rd
Bloomsbury Rd
Poplar Rd
Garrisonville Rd
Warrenton Rd
Rappahannock River
Five Mile Fork
Plank Rd
Dunn St
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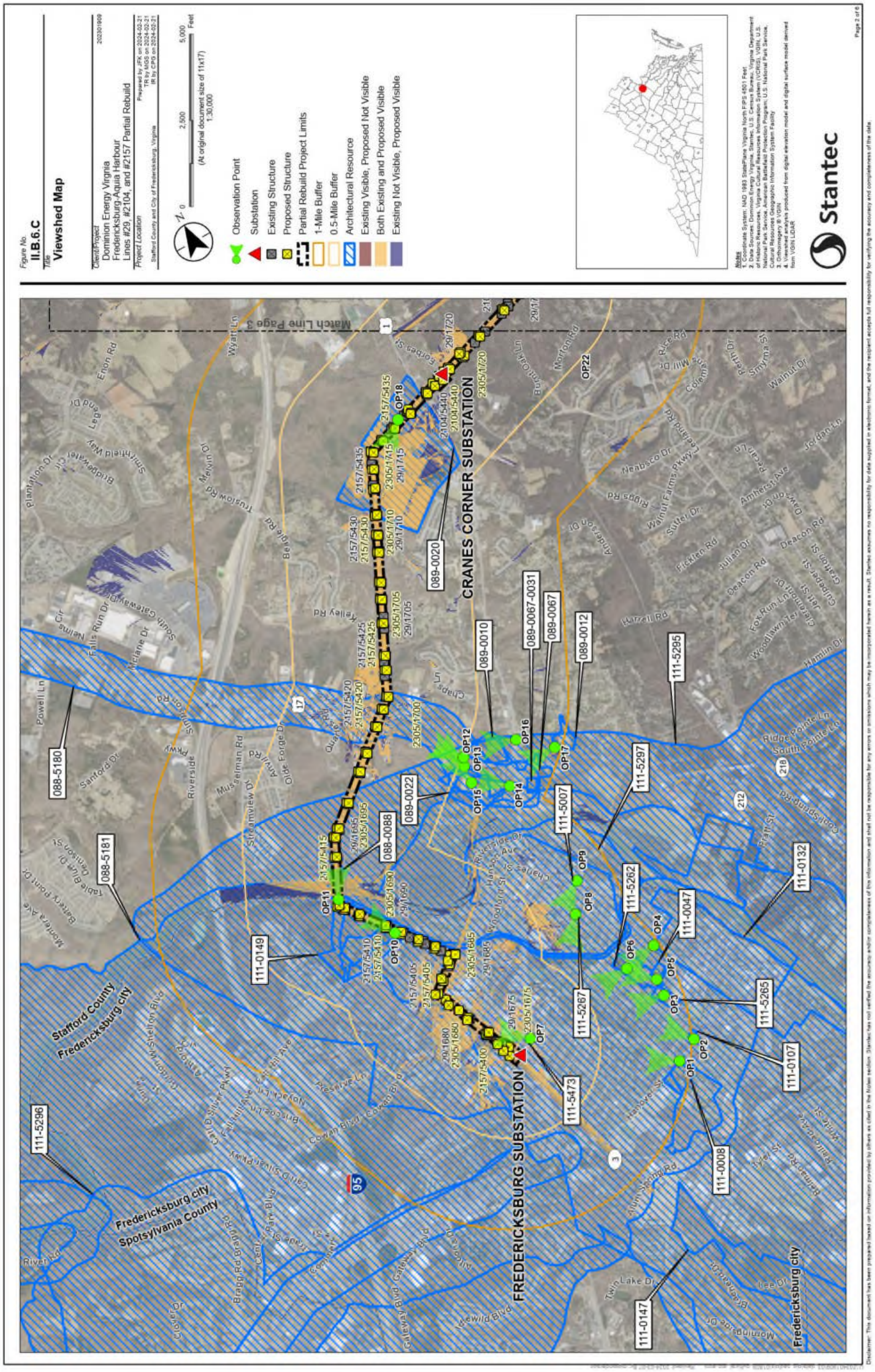
Figure No.
II.B.6.C
Title
Viewshed Map
Client/Project
202301909
Dominion Energy Virginia
Fredericksburg-Aquia Harbour
Lines #29, #2104, and #2157 Partial Rebuild
Project Location
Stafford County and City of Fredericksburg, Virginia
Prepared by JFK on 2024-02-21
TR by MGS on 2024-02-21
IR by CPG on 2024-02-21
0
2,500
5,000
Feet
(At original document size of 11x17)
1:30,000
Observation Point
Substation
Existing Structure
Proposed Structure
Partial Rebuild Project Limits
1-Mile Buffer
0.5-Mile Buffer
Architectural Resource
Existing Visible, Proposed Not Visible
Both Existing and Proposed Visible
Existing Not Visible, Proposed Visible
Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, U.S. Census Bureau, Virginia Department of Historic Resources, Virginia Cultural Resources Information System (VCRIS), VGIN, U.S. National Park Service, American Battlefield Protection Program; U.S. National Park Service, Cultural Resources Geographic Information System Facility
3. Orthoimagery © VGIN
4. Viewshed analysis produced from digital elevation model and digital surface model derived from VGIN LiDAR
Stantec
Page 2 of 6
Match Line Page 3
CRANES CORNER SUBSTATION
FREDERICKSBURG SUBSTATION
Stafford County
Fredericksburg city
Fredericksburg city
Spotsylvania County
Fredericksburg city
OP1
OP2
OP3
OP4
OP5
OP6
OP7
OP8
OP9
OP10
OP11
OP12
OP13
OP14
OP15
OP16
OP17
OP18
OP22
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088-0088
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089-0020
089-0010
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089-0012
111-5296
111-0149
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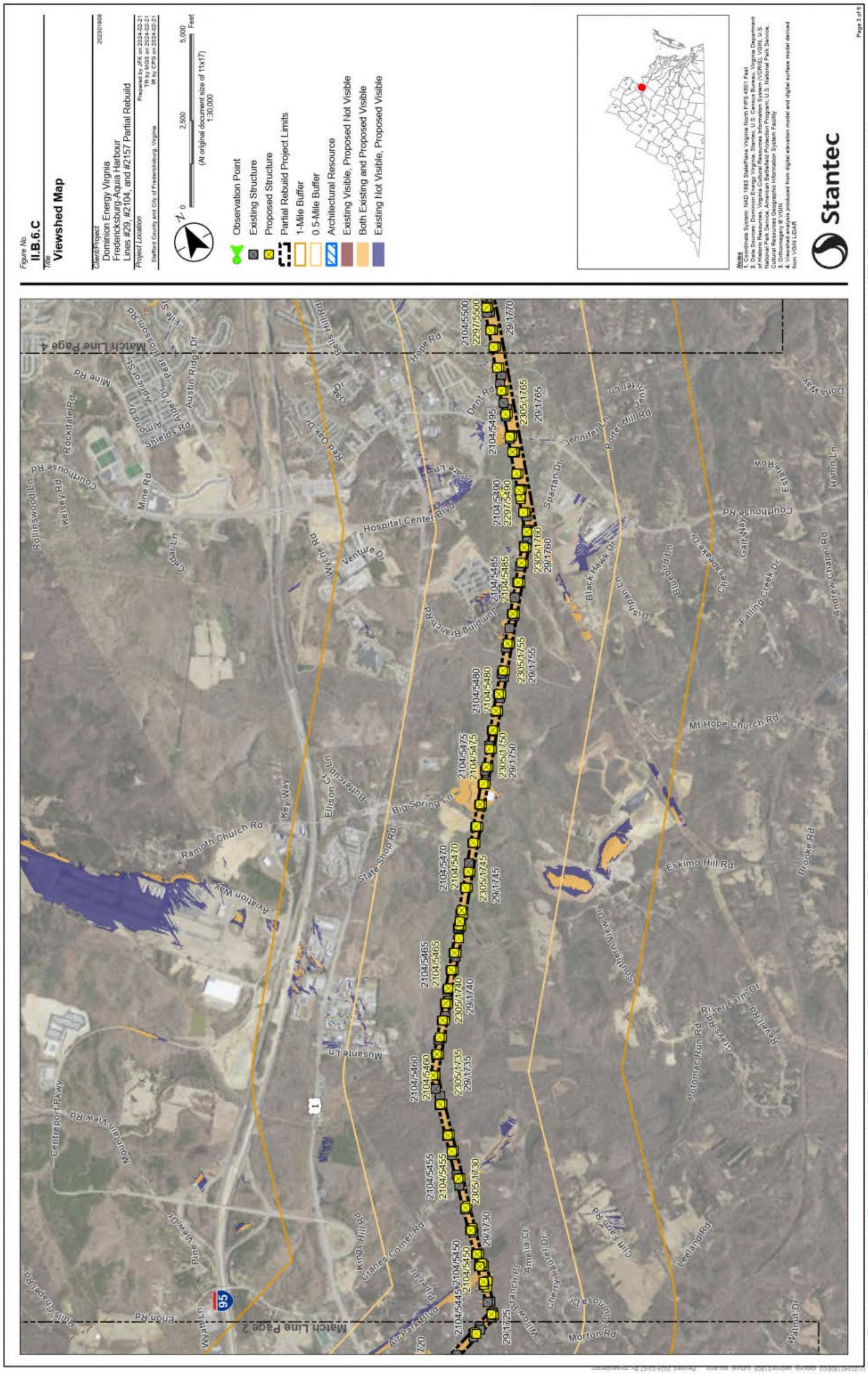
Figure No.
II.B.6.C
Title
Viewshed Map
Client/Project
Dominion Energy Virginia
Fredericksburg-Aquia Harbour
Lines #29, #2104, and #2157 Partial Rebuild
203301909
Project Location
Stafford County and City of Fredericksburg, Virginia
Prepared by JFK on 2024-02-21
TR by MGS on 2024-02-21
IR by CPG on 2024-02-21
0
2,500
5,000
Feet
(At original document size of 11x17)
1:30,000
Observation Point
Existing Structure
Proposed Structure
Partial Rebuild Project Limits
1-Mile Buffer
0.5-Mile Buffer
Architectural Resource
Existing Visible, Proposed Not Visible
Both Existing and Proposed Visible
Existing Not Visible, Proposed Visible
Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, U.S. Census Bureau, Virginia Department of Historic Resources, Virginia Cultural Resources Information System (VCRIS), VGIN, U.S. National Park Service, American Battlefield Protection Program; U.S. National Park Service, Cultural Resources Geographic Information System Facility
3. Orthoimagery © VGIN
4. Viewshed analysis produced from digital elevation model and digital surface model derived from VGIN LIDAR
Stantec
Page 3 of 6
Match Line Page 4
Match Line Page 2
2104/5445
2104/5450
2104/5450
29/1725
29/1730
2104/5455
2104/5455
2305/1730
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2104/5460
2305/1735
29/1735
2104/5465
2104/5465
2305/1740
29/1740
2104/5470
2104/5470
2305/1745
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2104/5475
2104/5475
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2104/5480
2104/5480
2305/1755
29/1755
2104/5485
2104/5485
2305/1760
29/1760
2104/5490
2297/5490
2104/5495
2305/1765
29/1765
2104/5500
2297/5500
29/1770
Mine Rd
Rockdale Rd
Courthouse Rd
Kelsey Rd
Rollinswood Ln
Cedar Ln
Shields Rd
Alder Dr
Apricot St
Austin Ridge Dr
Pearl Blossom Rd
Fite St
Bells Hill Rd
Red Oak Dr
Oak Dr
Hope Rd
Wyche Rd
Venture Dr
Hospital Center Blvd
Jumping Branch Rd
Dent Rd
Jennifer Ln
Porter Hill Rd
Spartan Dr
Black Hawk Dr
Bluebird Ln
Chesapeake Dr
Galt Way
Estate Row
Hamn Ln
Dons Way
Falling Creek Dr
Andrew Chapel Rd
Mt Hope Church Rd
Eskimo Hill Rd
Brooke Rd
Southern View Dr
River Farm Dr
Potomac Run Rd
Revell Rd
Leeland Rd
Cliff Farm Rd
Morton Rd
Walnut Dr
Willow Branch Pl
Amelia Ct
Cherry Laurel Dr
Mimosa Dr
Piper Pl
Airpark Blvd
Cranes Corner Rd
Kings Hill Rd
Pine View Dr
Wyatt Ln
Enon Rd
Mills Chapel Rd
Mountain View Rd
Centreport Pkwy
Musante Ln
Aviation Way
Ramoth Church Rd
Key Way
Ellison Ct
Buttercup Ln
Big Spring Ln
State Shop Rd
95
1
720
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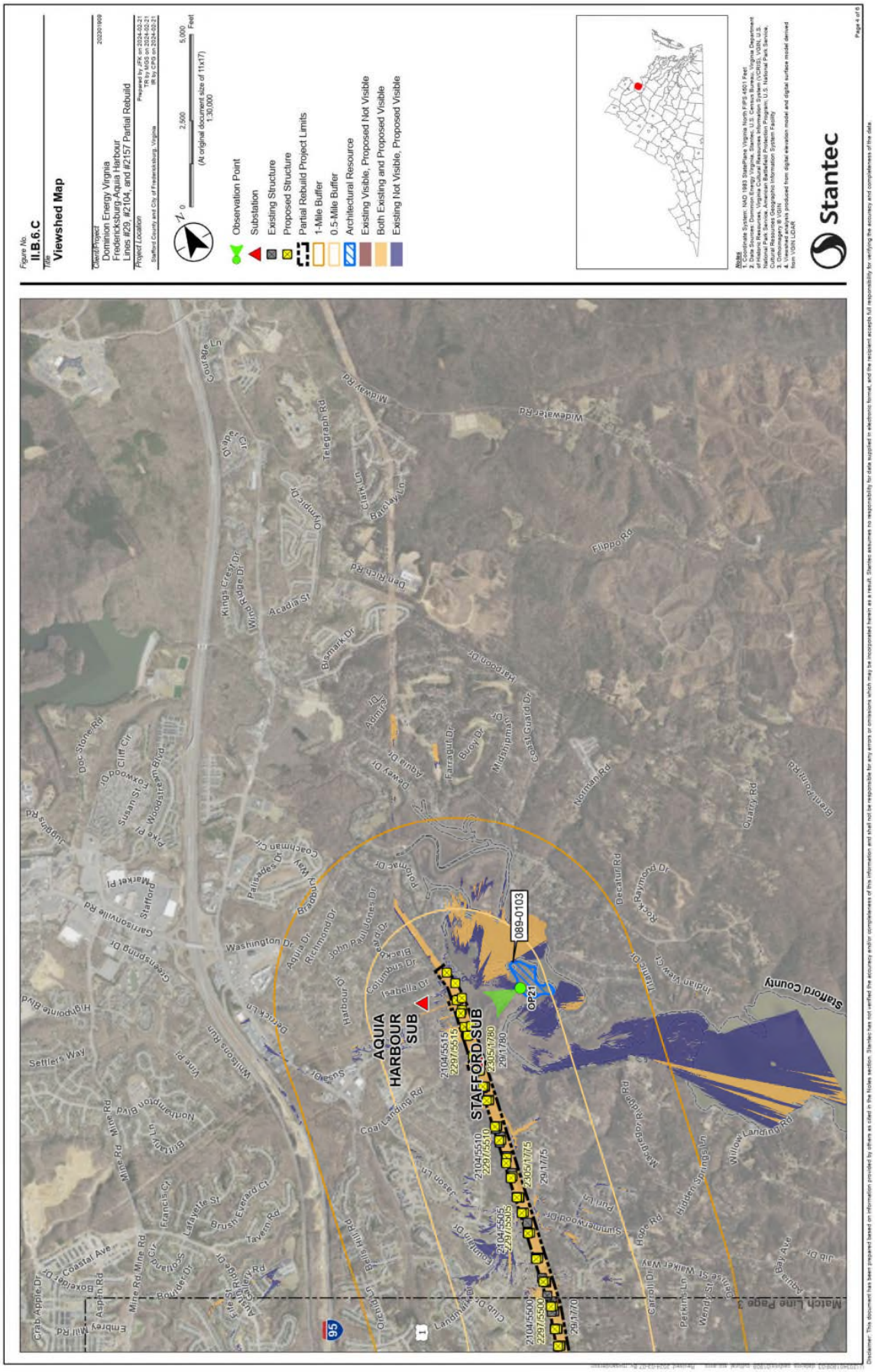
Figure No.
II.B.6.C
Title
Viewshed Map
Client/Project
Dominion Energy Virginia
Fredericksburg-Aquia Harbour
Lines #29, #2104, and #2157 Partial Rebuild
Project Location
Stafford County and City of Fredericksburg, Virginia
Prepared by JFK on 2024-02-21
TR by MDS on 2024-02-21
IR by CPP on 2024-02-21
0
2,500
5,000 Feet
(At original document size of 11x17)
1:30,000
Observation Point
Substation
Existing Structure
Proposed Structure
Partial Rebuild Project Limits
1-Mile Buffer
0.5-Mile Buffer
Architectural Resource
Existing Visible, Proposed Not Visible
Both Existing and Proposed Visible
Existing Not Visible, Proposed Visible
Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Topographic Basemap: Esri, Maxar, Earthstar Geographics, and the GIS User Community; Historic Resources: Virginia Department of Historic Resources, Virginia Cultural Resources Information System (VCRIS), VGIN; U.S. National Park Service, Antietam Battlefield; Fredericksburg and Spotsylvania National Military Park, Fredericksburg, Virginia; Petersburg National Battlefield, Petersburg, Virginia
3. Orthoimagery: © VGIN
4. Viewshed analysis produced from digital elevation model and digital surface model derived from USGS LiDAR
Stantec
Page 4 of 6
AQUIA HARBOUR SUB
STAFFORD SUB
089-0103
OP21
Stafford County
Match Line Page 3

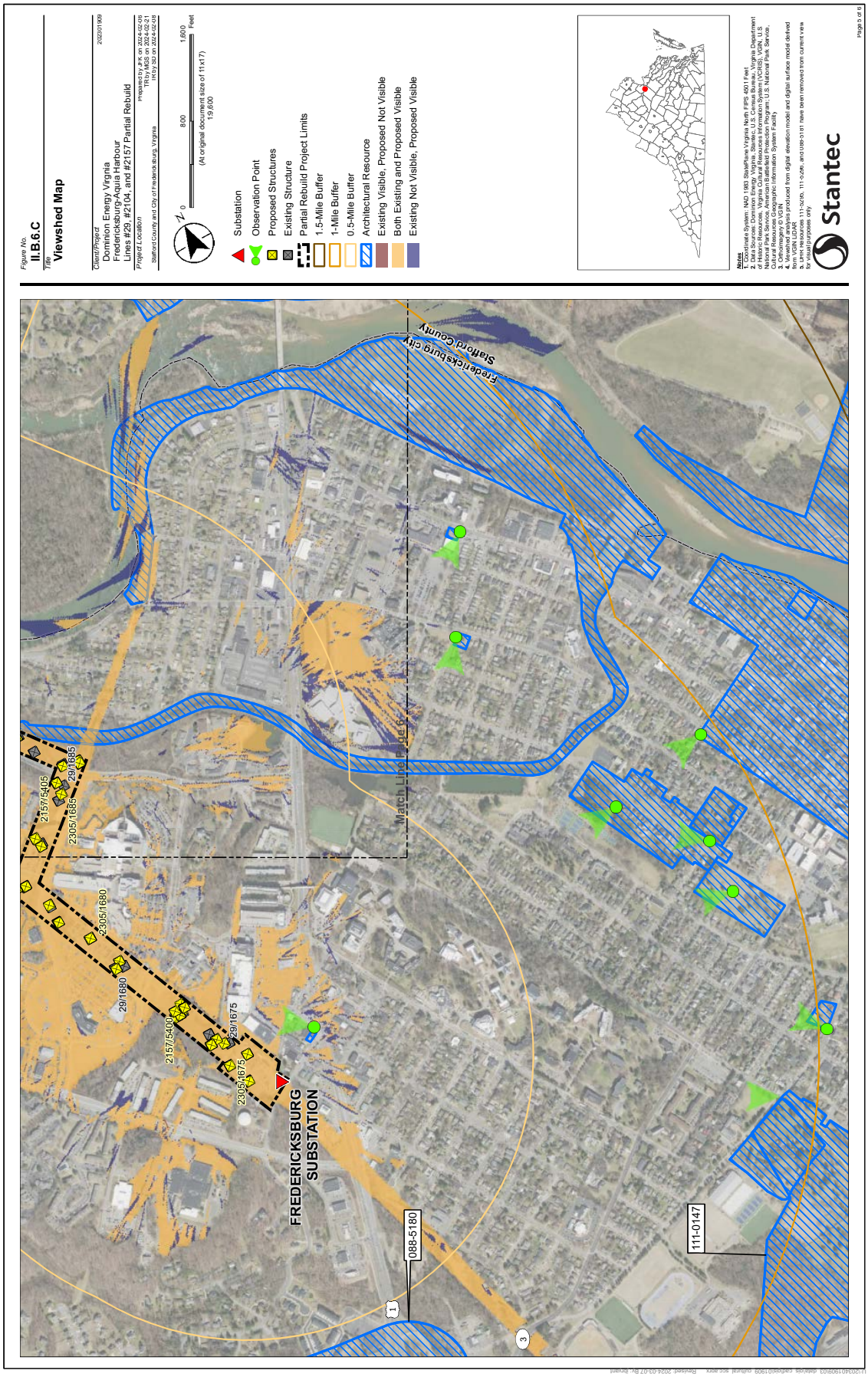
Figure No.
II.B.6.C
Title
Viewshed Map
Client/Project
Dominion Energy Virginia
Fredericksburg-Aquia Harbour
Lines #29, #2104, and #2157 Partial Rebuild
2002011909
Project Location
Stafford County and City of Fredericksburg, Virginia
Prepared by JF K. on 2024-02-06
TR by MDS on 2024-02-21
VHG QC on 2024-03-06
N
0
800
1,600
Feet
(At original document size of 11x17)
1:9,600
Substation
Observation Point
Proposed Structures
Existing Structure
Partial Rebuild Project Limits
1.5-Mile Buffer
1-Mile Buffer
0.5-Mile Buffer
Architectural Resource
Existing Visible, Proposed Not Visible
Both Existing and Proposed Visible
Existing Not Visible, Proposed Visible
Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia; Stantec; U.S. Census Bureau; Virginia Department of Historic Resources, Virginia Cultural Resources Information System (VCRIS), VGIN; U.S. National Park Service, National Register of Historic Places Program; U.S. National Park Service, Cultural Resources Geographic Information System Facility
3. Orthoimagery © VGIN
4. All elevations/profiles produced from digital elevation model and digital surface model derived from VGIN LiDAR
5. Line resources 111-5245, 111-5246, and 088-5181 have been removed from current view for visual simulation only
Stantec
Page 5 of 6
FREDERICKSBURG SUBSTATION
088-5180
111-0147
Match Line Page 6
Fredericksburg City
Stafford County
2157/5405
2305/1685
29/1685
2305/1680
29/1680
2157/5400
2305/1675
29/1675
1
3
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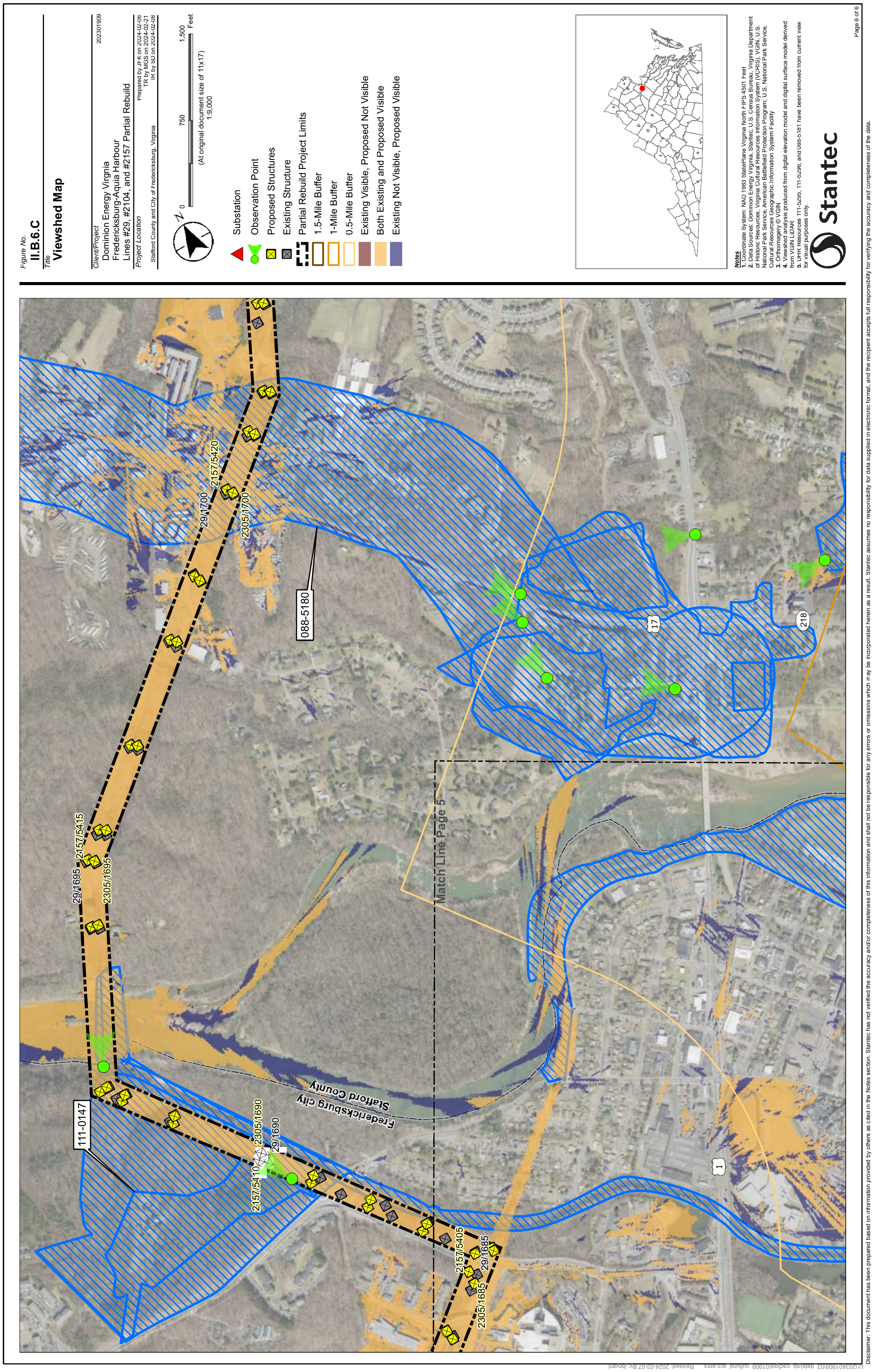
Figure No.
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Title
Viewshed Map
Client/Project
202301909
Dominion Energy Virgnia
Fredericksburg-Aquia Harbour
Lines #29, #2104, and #2157 Partial Rebuild
Project Location
Prepared by JFK on 2024-02-06
TR by MGS on 2024-02-21
IR by SD on 2024-02-08
Stafford County and City of Fredericksburg, Virginia
0
750
1,500
Feet
(At original document size of 11x17)
1:9,000
Substation
Observation Point
Proposed Structures
Existing Structure
Partial Rebuild Project Limits
1.5-Mile Buffer
1-Mile Buffer
0.5-Mile Buffer
Existing Visible, Proposed Not Visible
Both Existing and Proposed Visible
Existing Not Visible, Proposed Visible
Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, U.S. Census Bureau, Virginia Department of Historic Resources, Virginia Cultural Resources Information System (VCRIS), VGIN, U.S. National Park Service, American Battlefield Protection Program; U.S. National Park Service, Cultural Resources Geographic Information System Facility
3. Orthoimagery © VGIN
4. Viewshed analysis produced from digital elevation model and digital surface model derived from VGIN LiDAR
5. DHR Resources 111-5295, 111-5296, and 088-5181 have been removed from current view for visual purposes only.
Stantec
Page 6 of 6
2157/5420
29/1700
2305/1700
088-5180
17
218
Match Line Page 5
2157/5415
29/1695
2305/1695
111-0147
Stafford County
Fredericksburg city
2305/1690
29/1690
2157/5410
2157/5405
29/1685
2305/1685
1
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U:\203401909\03_data\gis_cad\gis\01909_cultural_scc.aprx   Revised: 2024-03-07 By: jbryant

Photograph provided by Stantec

OP 1 Existing
Brompton (DHR #111-0008)

Stantec Dominion Energy

Simulation provided by Stantec

OP 1 Proposed
Brompton (DHR #111-0008)

Stantec Dominion Energy

Photograph provided by Stantec

OP 2 Existing
John Lewis House (DHR #111-0107) &
Fredericksburg Historic District Extension (DHR #111-0009)

Stantec Dominion Energy

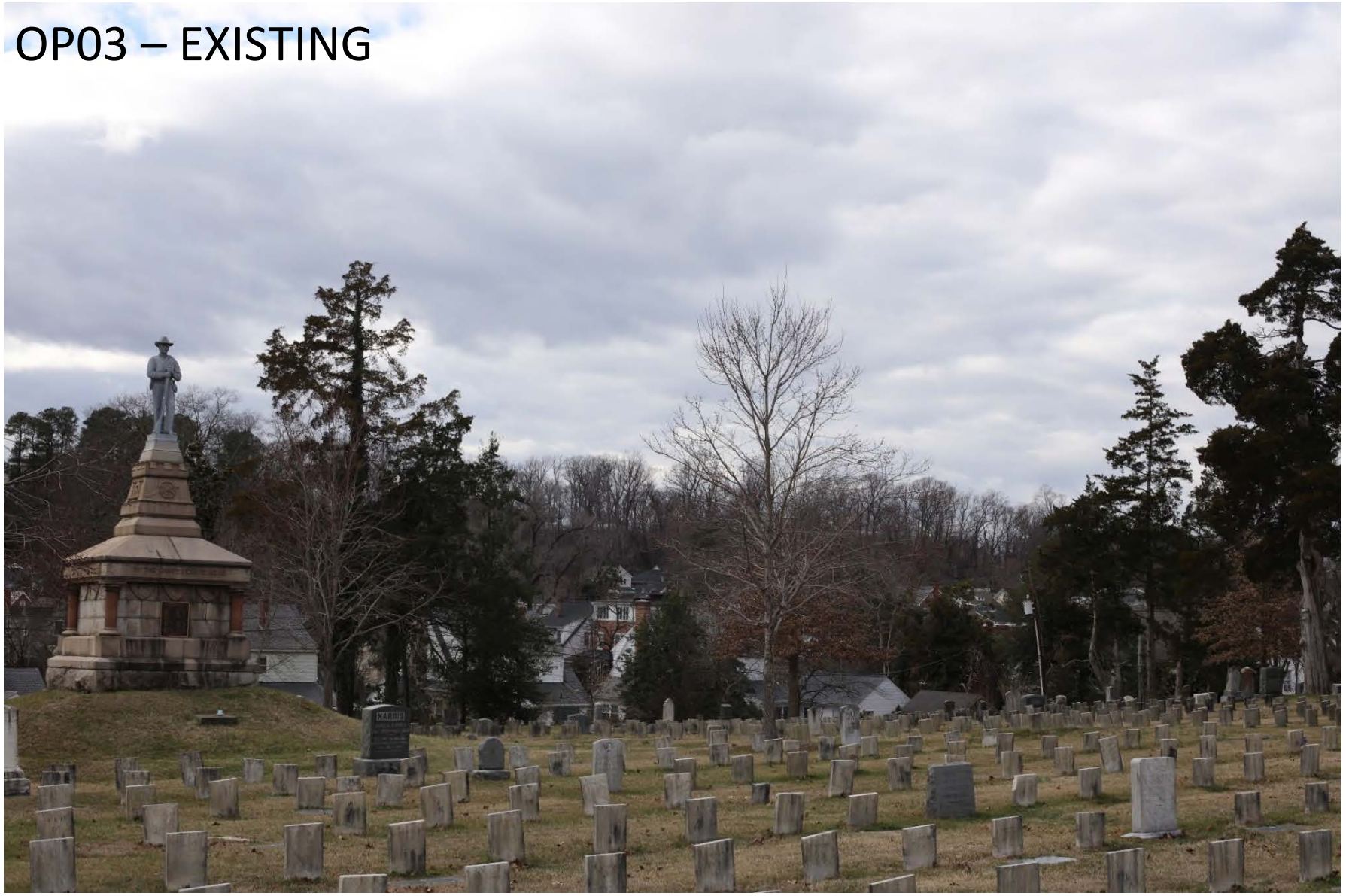
Simulation provided by Stantec

OP 2 Proposed

John Lewis House (DHR #111-0107) &
Fredericksburg Historic District Extension (DHR #111-0009)

Stantec Dominion Energy

OP03 – EXISTING



Photograph provided by Stantec

OP 3 Existing

Fredericksburg City and Confederate Cemeteries (DHR #111-5265) &
Fredericksburg Historic District Extension (DHR # 111-0009)

Stantec Dominion Energy

OP03 – Proposed

Simulation provided by Stantec

OP 3 Proposed

Fredericksburg City and Confederate Cemeteries (DHR #111-5265) &
Fredericksburg Historic District Extension (DHR #111-0009)

Stantec Dominion Energy

OP04 – EXISTING

Photograph provided by Stantec

OP 4 Existing
Fredericksburg Historic District (DHR #111-0132)

Stantec Dominion Energy

Simulation provided by Stantec

OP 4 Proposed
Fredericksburg Historic District (DHR #111-0132)

Stantec Dominion Energy

Photograph provided by Stantec

OP 5 Existing
Kenmore (DHR # 111-0047) &
Fredericksburg Historic District Extension (DHR #111-0009)

Stantec Dominion Energy

Simulation provided by Stantec

OP 5 Proposed
Kenmore (DHR #111-0047) &
Fredericksburg Historic District Extension (DHR #111-0009)

Stantec Dominion Energy

Simulation provided by Stantec

OP 5 Proposed Guide
Kenmore (DHR #111-0047) &
Fredericksburg Historic District Extension (DHR #111-0009)

Stantec Dominion Energy

Photograph provided by Stantec

OP 6 Existing
Washington Avenue Historic District (DHR #111-5262)

Stantec Dominion Energy

Simulation provided by Stantec

OP 6 Proposed
Washington Avenue Historic District (DHR #111-5262)

Stantec Dominion Energy

OP07 – EXISTING

Photograph provided by Stantec

OP 7 Existing

Allman's Bar-B-Que (DHR #111-5473), Battle of Fredericksburg I (DHR #111-5295), Battle of Fredericksburg II (DHR #111-5296) & Salem Church Battlefield (DHR #088-5181)

Stantec Dominion Energy

Simulation provided by Stantec

OP 7 Proposed

Allman's Bar-B-Que (DHR #111-5473), Battle of Fredericksburg I (DHR #111-5295), Battle of Fredericksburg II (DHR #111-5296) & Salem Church Battlefield (DHR #088-5181)

Stantec Dominion Energy

OP08 – EXISTING

Photograph provided by Stantec

OP 8 Existing
Elmhurst (DHR #111-5267)

Stantec Dominion Energy

OP08 – Proposed

Simulation provided by Stantec

OP 8 Proposed
Elmhurst (DHR #111-5267)

Stantec Dominion Energy

OP09 – EXISTING

Photograph provided by Stantec

OP 9 Existing

Carl's Frozen Custard (DHR #111-5007) & Battle of Fredericksburg I (DHR #111-5295)

Stantec Dominion Energy

OP09 – Proposed

Simulation provided by Stantec

OP 9 Proposed
Carl's Frozen Custard (DHR #111-5007) &
Battle of Fredericksburg I (DHR #111-5295)

Stantec Dominion Energy

OP10 – EXISTING

Photograph provided by Stantec

OP 10 Existing

Fredericksburg and Spotsylvania Battlefields NMP (DHR #111-0174), Fall Hill (DHR #111-0149), Battle of Fredericksburg I (DHR #111-5295), Battle of Fredericksburg II (DHR #111-5296) & Salem Church Battlefield (DHR #088-5181)

Stantec Dominion Energy

Simulation provided by Stantec

OP 10 Proposed

Fredericksburg and Spotsylvania Battlefields NMP (DHR #111-0174), Fall Hill (DHR #111-0149), Battle of Fredericksburg I (DHR #111-5295), Battle of Fredericksburg II (DHR #111-5296 & Salem Church Battlefield (DHR #088-5181)

Stantec Dominion Energy

OP11 – EXISTING

Photograph provided by Stantec

OP 11 Existing

Rappahannock Canal (DHR #111-5297) & Battle of Fredericksburg II (DHR #111-5296)

Stantec Dominion Energy