Dominion Energy®

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

Before the State Corporation Commission of Virginia

230 kV Germanna Lines and Germanna Substation

Application No. 330

Case No. PUR-2023-00206

Filed: November 20, 2023

Volume 2 of 3

COMMONWEALTH OF VIRGINIA

BEFORE THE

STATE CORPORATION COMMISSION

APPLICATION OF

VIRGINIA ELECTRIC AND POWER COMPANY

FOR APPROVAL AND CERTIFICATION
OF ELECTRIC TRANSMISSION FACILITIES

230 kV Germanna Lines and Germanna Substation

Application No. 330

DEQ Supplement

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Based on consultations with the Virginia Department of Environmental Quality ("DEQ"), Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company") has developed this DEQ Supplement to facilitate review and analysis of the proposed Project by DEQ and other relevant agencies.

1. Project Description

In order to provide service requested by a data center customer (the "Customer"), to maintain reliable service for the overall load growth in the area, and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Dominion Energy Virginia proposes in Culpeper County, Virginia, to:

(1) Construct a new overhead 230 kilovolt ("kV") double circuit transmission line by cutting the Company's 230 kV Cirrus-Gordonsville Line #2199[1] at Structure #2199/102, resulting in 230 kV Cirrus-Germanna Line #2331 and 230 kV Germanna-Gordonsville Line #2199 (the "Germanna Lines"). From the cut-in location, the Germanna Lines will extend approximately 1.8 miles to the proposed Germanna Substation. While the proposed cut-in location is in existing right-of-way, the proposed Germanna Lines will be constructed on entirely new 100-foot-wide right-of-way primarily supported by double circuit weathering steel monopoles utilizing three-phase twin-bundled 768.2 ACSS/TW type conductor with a summer transfer capability of 1,573 MVA;

(2) Construct a new 230-34.5 kV substation in Culpeper County, Virginia ("Germanna Substation") on property to be obtained by the Company; and

(3) Perform relay resets at the Company's existing Gordonsville and Remington Substations.

The Germanna Lines, Germanna Substation, and other related substation work are collectively referred to as the "Project."

The Project is necessary to assure that Dominion Energy Virginia can provide service requested by the Customer in Culpeper County, Virginia, maintain reliable service for the overall growth in the load area surrounding the Company's existing Culpeper Substation ("Culpeper Load Area"), and comply with mandatory NERC Reliability Standards. Specifically, the Customer has requested a total of 135 MW of contract load from Dominion Energy Virginia to serve its new data center campus in Culpeper County, Virginia.

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[1] The Company's existing Line #2199 is currently named the Gordonsville-Remington line. However, in November 2022, the Company filed for a certificate of public convenience and necessity ("CPCN") from the State Corporation Commission (the "Commission") for various new electric transmission facilities in Culpeper County, Virginia. Among other things, the Company proposed to cut the existing Gordonsville-Remington Line #2199, resulting in Cirrus-Gordonsville Line #2199, Cirrus-Keyser Line #2278, and Keyser-Germanna #2276. *See Application of Virginia Electric and Power Company for approval and certification of electric transmission facilities: Cirrus-Keyser 230 kV Loop and Related Projects*, Case No. PUR-2022-00198 (filed Nov. 21, 2022). The Commission approved that project with an in-service date of December 30, 2025, which means it will be in service prior to the Project proposed herein. *See* Case No. PUR-2022-00198, Final Order at 5-6 (Oct. 23, 2023). For ease of reference in this DEQ Supplement, the Company will refer to the line being cut for the Project as the Cirrus-Gordonsville Line #2199 or simply Line #2199, with the resulting new lines proposed herein being named accordingly.

The Company's existing Culpeper Substation is the source substation for the local load area and also the closest substation to the Customer's campus; however, the Culpeper Substation does not have the adequate capacity to serve this total block of load. As a result, connecting the Customer's requested load to the Culpeper Substation would result in (i) substation transformer thermal overloads, and (ii) violations of the Company's transmission system reliability criteria set forth in the Facilities Interconnection Requirement document. Accordingly, to serve this new data center campus block load and maintain reliable service for the overall load growth in the area, consistent with NERC Reliability Standards, the Company is proposing to construct the Germanna Lines and Germanna Substation. With the proposed Project, the system transformers in the Culpeper Load Area are not overloaded, and reliability criteria are met.

The Company identified an approximately 1.8-mile overhead proposed route for the Project ("Proposed Route" or "Route 2"), as well as an approximately 2.4-mile overhead alternative route ("Alternative Route 1" or "Route 1") and an approximately 2.0-mile overhead alternative route ("Alternative Route 3" or "Route 3"). The Company is proposing all three routes for notice and Commission consideration. Discussion of the Proposed Route and the Alternative Routes, as well as other underground routes, overhead routes, and distribution solutions that the Company studied but ultimately rejected, is provided in Section II of the Appendix and in the Environmental Routing Study included with the Application.

The proposed Germanna Substation initially will be constructed with four 230 kV breakers in a ring bus arrangement, with two 112 MVA 230-34.5 kV transformers, built to 4000 ampere standards. In total, the Germanna Substation will be designed to accommodate future growth in the area with an ultimate station configuration of six 230 kV breakers and five transformers. The total area required to build the Germanna Substation is approximately 6.1 acres.

For this Project, the Company retained the services of Environmental Resources Management ("ERM") to help collect information within the study area, identify potential routes, perform a routing analysis comparing the route alternatives, and document the routing efforts in an Environmental Routing Study.

A description of the Proposed Route and Alternative Routes is as follows.

Proposed Route (Route 2)

The Proposed Route (Route 2) of the Germanna Lines is approximately 1.8 miles in length. Beginning at the cut-in location at Structure #2199/102, the route travels approximately 0.3 mile southwest, crosses Batna Road, then turns east for approximately 1.5 miles before turning north for another 0.1 mile, terminating at the proposed Germanna Substation.

The Proposed Route will be constructed on new 100-foot-wide right-of-way encompassing about 26.7 acres (including the 6.1-acre proposed substation site). The Proposed Route primarily will be supported by double circuit weathering steel monopoles with a minimum structure height of 105 feet, a maximum structure height of 125 feet, and an average

structure height of 113 feet, based on preliminary conceptual design, not including foundation reveal, and subject to change based on final engineering design.

Alternative Route 1

Alternative Route 1 of the Germanna Lines is approximately 2.4 miles in length. Beginning at the cut-in location at Structure #2199/76, the route travels approximately 0.5 mile southeast, then turns south for 1.4 miles. The route then turns west for 0.1 mile before turning south for another 0.4 mile, terminating at the proposed Germanna Substation.

Alternative Route 1 will be constructed on new 100-foot-wide right-of-way encompassing about 34.2 acres (including the 6.1-acre proposed substation site). Alternative Route 1 primarily will be supported by double circuit weathering steel monopoles with a minimum structure height of 105 feet, a maximum structure height of 125 feet, and an average structure height of 117 feet, based on preliminary conceptual design, not including foundation reveal, and subject to change based on final engineering design.

Alternative Route 3

Alternative Route 3 of the Germanna Lines is approximately 2.0 miles in length. Beginning at the cut-in location at Structure #2199/103, the route travels approximately 0.3 mile southwest, turns east for approximately 0.2 mile, crossing Batna Road, then turns north for 0.1 mile before turning east for 1.0 mile, then turns north for another 0.1 mile, terminating at the proposed Germanna Substation.

Alternative Route 3 will be constructed on new 100-foot-wide right-of-way encompassing about 28.9 acres (including the 6.1-acre proposed substation site). Alternative Route 3 primarily will be supported by double circuit weathering steel monopoles with a minimum structure height of 105 feet, a maximum structure height of 125 feet, and an average structure height of 112 feet, based on preliminary conceptual design, not including foundation reveal, and subject to change based on final engineering design.

Germanna Substation

The Germanna Substation will be sited on approximately 6.1 acres and located approximately 0.2 mile south of Germanna Highway within the Customer's new data center campus. Impacts associated with the substation footprint are included in the impacts for each route alternative.

2. Environmental Analysis

The Company solicited comments from all relevant state and local agencies about the proposed Project in letters sent on October 18, 2023 and November 10, 2023. Copies of

the October 18, 2023 letters are included as Attachment 2,[2] and copies of the November 10, 2023[3] letters are included as Attachment 2.1. The DEQ responded to the Company's request for comments on the proposed Project in an email that attached the agency's Scoping Response Letter dated November 16, 2023 (see Attachment 2.2).

A. Air Quality

For the Project, the Company will control fugitive dust during construction in accordance with DEQ regulations. During construction, if the weather is dry for an extended period, there will be airborne particles from the use of vehicles and equipment within the right-of-way. However, minimal earth disturbance will take place and vehicle speed, which is often a factor in airborne particulate, will be kept to a minimum. Erosion and sedimentation control is addressed in Section 2.H of this Supplement. Equipment and vehicles that are powered by gasoline or diesel motors will be used during the construction of the line so there will be exhaust from those motors. Exhaust from those motors will result in minimal air pollution.

Tree clearing within the new rights-of-way will be required as part of this Project. The Company does not expect to burn cleared material, but, if necessary, the Company will coordinate with the responsible locality to obtain these permits and will comply with any conditions set forth by the locality, or take actions as otherwise in accordance with the Company's property rights. The Company's tree clearing methods are described in Section 2.L.

B. Water Source

No water source is required for transmission lines so this discussion will focus on water bodies that will be crossed by the proposed transmission lines.

On behalf of the Company, ERM identified and mapped waterbodies in the vicinity of the routes using publicly available geographic information system ("GIS") databases, U.S. Geological Survey ("USGS") National Hydrography Dataset ("NHD"), the United States Fish and Wildlife Service ("USFWS") National Wetland Inventory ("NWI"), U.S. Geological Survey topographic maps (1:24,000), ESRI World Topographic Map (2023) and recent (2022) and historic digital aerial photography (Planet Imagery, VGIN Most Recent Imagery, and Google Earth). All route alternatives utilize an overhead configuration that would span waterbodies; no transmission structures are planned to be installed within waterbodies. The Proposed and Alternative Routes for the Germanna

[2] The letters (dated October 18, 2023, and October 20, 2023) sent on October 18, 2023 were sent to the list of agencies identified in Section V.C of the Appendix.

[3] The letters (dated November 13, 2023) sent on November 10, 2023 were sent to five agencies, as well as the County Administrator, to provide an updated Project Overview Map that removed the designation of "Proposed Route" from the map.

Lines cross perennial and intermittent waterbodies, including perennial Mountain Run (Alternative Route 1).

The distance between transmission line structures proposed by Dominion Energy Virginia will be adequate to span the waterbodies identified along the Proposed and Alternative Routes. Tree clearing would be required within forested riparian areas at waterbody crossing locations. The removal of forested riparian areas adjacent to waterbodies will reduce erosion control and stormwater filtration at these locations. Impacts to surface waters and riparian habitat will be limited by minimizing rights-of-way at crossing to the extent possible, leaving roots and stumps in place, and implementing erosion control best management practices during construction.

According to the U.S. Army Corps of Engineers ("Corps") documentation, no waters considered navigable under Section 10 of the Rivers and Harbors Act are crossed by the Proposed or Alternative Routes for the Project. Waterbodies in the vicinity of the Project routes are shown on Attachment 2 of the Wetland and Waterbody Desktop Summary for the Project included in Attachment 2.D.1 described below.

Proposed Route (Route 2)

The Proposed Route would cross the same four NHD-mapped intermittent waterbodies as the Proposed Route. Waterbodies crossed by the right-of-way include one unnamed, intermittent tributary to Potato Run, and three unnamed, intermittent tributaries to Brook Run.

Alternative Route 1

Alternative Route 1 would have a total of two NHD-mapped waterbody crossings, including one perennial stream (Mountain Run) and one intermittent stream (unnamed tributary to Mountain Run) within the right-of-way.

Alternative Route 3

Alternative Route 3 would have a total of four NHD-mapped intermittent waterbody crossings within the right-of-way. Waterbodies crossed by the right-of-way include one unnamed, intermittent tributary to Potato Run, and three unnamed, intermittent tributaries to Brook Run.

During construction, waterbodies will be maintained for proper drainage using culverts and/or other crossing devices, as needed, according to the Company's standard policies. Where clearing of trees and/or woody shrubs is required, clearing within 100 feet of a stream will be conducted by hand. Vegetation will be at or slightly above ground level, and stumps will not be grubbed. To protect waterways from soil erosion and sedimentation during construction, the Company will use sediment barriers along waterways and steep slopes. If a section of line cannot be accessed from existing roads, the Company may need to install a culvert or temporary bridge to cross small streams. In such cases, temporary fill material may be required that would be placed on erosion control fabric and removed when work is completed, returning the surface to original contours.

Section 28.2-1203 of the Code of Virginia recently was amended by the Virginia General Assembly through the passage of House Bill 2181 ("HB 2181") and identical Senate Bill 1074 ("SB 1074"), which were signed into law by Governor Glenn Youngkin, effective July 1, 2023.[4] With the passage of HB 2181 and SB 1074, the Virginia Marine Resources Commission ("VMRC") will no longer have jurisdiction over non-tidal waters with a drainage area greater than 5.0 square miles. On June 23, 2023, the VMRC and DEQ issued a Memorandum of Agreement for implementing Chapters 258 and 259 of the 2023 Session of the Virginia Acts of Assembly to document this transition of permitting authority in non-tidal waters of the Commonwealth.[5]

The Company solicited comments from the Corps and VMRC regarding the proposed Project. If necessary, a Joint Permit Application ("JPA") will be submitted for review by the VMRC, DEQ, and the Corps to authorize jurisdictional crossings and for any impacts to jurisdictional features.

C. Discharge of Cooling Waters

No discharge of cooling waters is associated with the Project.

D. Tidal and Non-tidal Wetlands

No tidal wetlands were identified within the Project area. Non-tidal wetlands are summarized below.

On behalf of the Company, ERM identified wetlands along the Project routes using GIS and remote sensing data sources. to conduct an offsite desktop wetlands delineation. A copy of ERM's Wetland and Waterbody Desktop Summary for Project is included in Attachment 2.D.1. Sources for this desktop summary include the USGS 7.5-minute series topographic quadrangle maps, the USFWS NWI, the USGS NHD, the Natural Resources Conservation Service Web Soil Survey, ESRI World Topographic Maps (2023), recent (2022) and historic aerial photography (Planet Imagery, VGIN Most Recent Imagery, and Google Earth), and National Agricultural Imagery Program ("NAIP") and Virginia Base Mapping Program ("VBMP") Digital Ortho-Rectified Infrared Images dating from 2021.

ERM did not field delineate wetlands along the Project routes. A field wetland delineation will be completed for the approved route alignment selected by the Commission upon the Company receiving a final order on the Project.

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[4] *See* Chapter 258 of the 2023 Session of the Virginia Acts of Assembly (effective July 1, 2023) available at *https://lis.virginia.gov/cgi-bin/legp604.exe?231+ful+CHAP0258*, and Chapter 259 of the 2023 Session of the Virginia Acts of Assembly (effective July 1, 2023) available at *https://lis.virginia.gov/cgi-bin/legp604.exe?231+ful+CHAP0259*.

[5] *See https://www.wetlands.com/vmrc-deq-moa/* for changes to VMRC permitting in non-tidal waters, and *https://www.wetlands.com/wp-content/uploads/FINAL-MOANontidal-Permitti.pdf* for a copy of the Memorandum of Agreement.

ERM used a stepwise process to identify probable wetland and waterbody areas along the alternative transmission line routes as follows:

1. Infrared and natural color aerial photography was used in conjunction with USGS topographic maps, soils maps, and other data sources to identify potential wetland areas. Boundaries were assigned to the areas that appeared to exhibit wetland signatures based on this review (referred to here as "Interpreted Wetlands"), and a cover type was determined based on aerial photo interpretation.

2. To further determine the probability of a wetland occurring within a given location, polygon shapefiles for Interpreted Wetlands were digitally layered with NWI and NHD mapping and hydric soils information from the Natural Resources Conservation Service ("NRCS") soil survey database.

3. ERM assigned a probability of wetland occurrence based on the number of overlapping data layers (i.e., indicators of potential wetland presence) in any given area (Table D-1).

Table D-1

Wetland Probability Criteria

Probability Class	Criteria
High	Areas where layers of hydric soils, Interpreted Wetlands, and NWI data overlap
Medium/High	Areas where NWI data overlaps hydric soils; or NWI data overlaps Interpreted Wetlands with or without partially hydric soils; or hydric soils overlap Interpreted Wetlands
Medium	Interpreted Wetlands with or without overlap by partially hydric soils
Medium/Low	Hydric soils only; or NWI data with or without overlap by partially hydric soils
Low	Partially hydric soils only
Very Low	Non-hydric soils only

Using the above criteria, wetland and waterbody occurrence probabilities ranging from very low to high were identified for each Project route, with acres of affected wetland calculated by probability class and cover type. The probability of wetland and waterbody occurrence increases as multiple indicators overlap toward the "high" end of the probability spectrum as shown in Table D-1. The medium to high probability categories were selected as the most reliable representation of in-situ conditions due to overlapping data sets. Results for these wetland probability classes are presented below.[6]

[6] Note that the sum of the addends presented for the Proposed and Alternative Routes wetland types may not equal the totals due to rounding.

Proposed Route (Route 2)

Based on the wetland desktop delineation method described above, there are approximately 3.1 acres of wetlands within the Proposed Route right-of-way. Of these, approximately 2.6 acres consists of palustrine forested ("PFO") wetland areas, 0.1 acre consists of palustrine scrub-shrub ("PSS") wetlands, 0.1 acre consists of palustrine emergent ("PEM") wetlands, and 0.2 acre consists of riverine/stream wetland areas.

Alternative Route 1

Based on the wetland desktop delineation method described above, there are approximately 1.3 acres of wetlands within the Alternative Route 1 right-of-way. Of these, approximately 1.0 acre consists of PFO wetland areas, less than 0.1 acre consists of PEM wetlands, and 0.3 acre consists of riverine/stream wetland areas.

Alternative Route 3

Based on the wetland desktop delineation method described above, there are approximately 3.0 acres of wetlands within the Alternative Route 3 right-of-way. Of these, approximately 2.6 acres consist of PFO wetland areas, 0.1 acre consists of PSS wetlands, less than 0.1 acre consists of PEM wetlands, and 0.1 acre consists of riverine/stream wetland areas.

All wetlands will require protective matting to be installed to support construction vehicles, equipment, and materials during construction. Wetlands are anticipated to be spanned and direct impacts associated with structure placement will be avoided; however, PFO and PSS wetlands within the maintained right-of-way would be cleared and converted to PSS or PEM type wetlands within the maintained right-of-way, reducing riparian buffer benefits such as water filtration. Within the Germanna Substation footprint, a small amount of PEM wetland (less than 0.1 acre) would be permanently filled, however, the Customer (not the Company) will permit and grade the building pad reserved for Germanna Substation. Excluding the Germanna Substation impacts (permitted by the Customer) and outside of any required structure placement, construction impacts from the transmission lines on PEM and riverine wetlands would be temporary and would be restored to pre-construction conditions when construction is complete. Within PFO and PSS wetlands, vegetation will be allowed to return to maintained right-of-way heights, consistent with open meadow and/or shrub habitat, after construction is completed.

Prior to construction, the Company will delineate wetlands and other waters of the United States using the *Routine Determination Method*, as outlined in the *1987 Corps of Engineers Wetland Delineation Manual* and methods described in the *2012 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (Version 2.0). The Company will obtain any necessary permits to impact jurisdictional resources.

The Company solicited comments from the Corps and the DEQ Office of Wetlands and Stream Protection ("OWSP") regarding the proposed Project.

The Company has sited structures to avoid wetlands and streams to the extent practicable. Temporary impacts will be restored to pre-existing conditions, and permanent impacts will be compensated for in accordance with all applicable state regulations and laws. The Project is expected to require a Virginia Water Protection general permit and a Nationwide Permit 57. A JPA will be submitted for further evaluation and final permit need determination by DEQ, VMRC, and the Corps.

E. Floodplains

As depicted on the Federal Emergency Management Agency's ("FEMA") online Flood Insurance Rate Maps #51061C0500C (effective date 2/5/2008), #51047C0275D (effective date 2/25/2021), #51137C0050E (effective date 5/16/2022), #51047C0250D (effective date 2/25/2021), #51137C0025E (effective date 5/16/2022), the Project study area contains Zone A, areas of a 1% annual chance flood hazard, and Zone X, areas of minimal flood hazard. The Company will coordinate with the local floodplain coordinators as required.

F. Solid and Hazardous Waste

Environmentally regulated sites in the study area have been identified using publicly available geographic information system databases obtained from the U.S. Environmental Protection Agency ("EPA") and the DEQ. These databases provide information about facilities, sites, or places subject to environmental regulation or of environmental interest. These include sites that use and/or store hazardous materials; waste producing facilities operating under permits from the EPA or other regulatory authorities; Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA" or "Superfund") sites; Resource Conservation and Recovery Act ("RCRA") sites; Brownfield sites; petroleum storage and petroleum release sites; and solid waste sites. The identification of a site in the databases does not mean that the site necessarily has contaminated soil or groundwater.

A summary of the information from the EPA and DEQ databases within a 1.0-mile buffer of the centerlines of the Proposed and Alternative Routes is provided in Table F-1 below. The locations of the sites are depicted in Attachment 2.F.1.

TABLE F-1
230 kV Germanna Lines and Germanna Substation [a]

Environmental Regulated Facilities and Hazardous Waste/Petroleum Release Sites within 1.0 Mile

Site Type	Proposed Route (Route 2)	Alternative Route 1	Alternative Route 3
Waste	0	2	0
Toxics	0	0	0
Land	0	3	0
Air	2	4	2
Water	10	16	9
Solid Waste Facilities	0	0	0
Petroleum Facilities	1	2	1
Petroleum Releases	2	2	2
Total [b]	**15**	**29**	**14**

[a] The Germanna Substation is included in the route analysis.

[b] Note that a single facility may be associated with multiple environmental permits; as such, the total number reflects the number of permits and releases within the specified distance from the Project.

Notes

Waste (Facilities that handle or generate hazardous wastes)
Toxics (Facilities that release toxic substances to the environment)
Land (Site cleanup under CERCLA, RCRA, Superfund, or Brownfield programs, and/or DEQ VRP program)
Air (Facilities with a release of pollutants to the air)
Water (Facilities that discharge storm or process water to surface water)
Solid Waste Facilities (Former and existing landfills)
Petroleum Facilities (Regulated petroleum storage)
Petroleum Releases (Typically associated with storage tank releases)

To evaluate the potential impact to the routes, ERM further assessed the sites within 1,000 feet of the Project's Proposed and Alternative Routes (Table F-2).

.TABLE F-2
230 kV Germanna Lines and Germanna Substation [a]

Environmental Regulated Facilities and Hazardous Waste/Petroleum Release Sites within 1,000 Feet

Database	Proposed Route (Route 2)	Alternative Route 1	Alternative Route 3
Waste	0	0	0
Toxics	0	0	0
Land	0	0	0
Air	0	0	0
Water	2	1	2
Solid Waste Facilities	0	0	0
Petroleum Facilities	0	0	0
Petroleum Releases	0	0	0
Total [b]	**2**	**1**	**2**

[a] The Germanna Substation is included in the route analysis.

[b] Note that a single facility may be associated with multiple environmental permits; as such, the total number reflects the number of permits and releases within the specified distance from the Project.

Notes

Waste (Facilities that handle or generate hazardous wastes)
Toxics (Facilities that release toxic substances to the environment)
Land (Site cleanup under CERCLA, RCRA, Superfund, or Brownfield programs, and/or DEQ VRP program)
Air (Facilities with a release of pollutants to the air)
Water (Facilities that discharge storm or process water to surface water)
Solid Waste Facilities (Former and existing landfills)
Petroleum Facilities (Regulated petroleum storage)
Petroleum Releases (Typically associated with storage tank releases)

Based on the most recent available data in the EPA's "Cleanups in My Community" database, no Brownfield, Superfund, or RCRA Corrective Action sites are located within 1.0 mile of the Proposed or Alternative Routes.

Based on a review of sites listed in the EPA and DEQ databases within 1,000 feet of the various route centerlines, ERM did not identify any petroleum release sites located within 1,000 feet of the Proposed or Alternative Routes. One permitted water discharge site was identified within 1,000 feet of Alternative Route 1 and two sites were identified within 1,000 feet of the Proposed Route and Alternative Route 3. The first permitted water

discharge site is the FFC Properties Limited Liability Company site located approximately 325 feet of the Proposed Route and 950 feet from Alternative Route 3. The site is currently listed as inactive in the EPA database. The second permitted water discharge site is the Germanna Highway Development site located approximately 300 feet from the Proposed Route and Alternative Route 3 and approximately 950 feet from Alternative Route 1. The Virginia Pollution Discharge Elimination System permit for this site was opened in June 2023. According to files provided by the DEQ, contamination of soil and/or groundwater was not reported. Due to the distance from the routes and documented site history, it is not anticipated that either permitted water discharge site impacted soil and/or groundwater in the vicinity of the routes.

Care will be taken to operate and maintain construction equipment to prevent any fuel or oil spills. Any waste created by the construction crews will be disposed of in a proper manner and recycled where appropriate and will be further detailed in the Company's stormwater pollution prevention plan, a component of the Virginia Stormwater Management Program, which falls under the purview of the DEQ.

G. Natural Heritage, Threatened and Endangered Species

On behalf of the Company, ERM conducted online database searches for threatened and endangered species in the vicinity of the Project, including the Virginia Department of Conservation and Recreation ("DCR") Natural Heritage Data Explorer ("NHDE"). The NHDE includes three components: Conservation Sites, Stream Conservation Units, and General Location Areas for Natural Heritage Resources. ERM also obtained query results from the Virginia Department of Wildlife Resources ("DWR") Fish and Wildlife Information Service ("VaFWIS"), and the USFWS Information for Planning and Consultation ("IPaC") System to identify federally- and state-listed species that may occur within the study area. Digital data were obtained from the DCR-NHDE to identify locations within the study area that potentially support protected species. Results of these queries are provided in Attachment 2.G.1.

To obtain the most current eagle nest data, ERM reviewed the Center for Conservation Biology ("CCB") Virginia Eagle Nest Locator mapping portal, which provides information about the Virginia bald eagle (*Haliaeetus leucocephalus*) population, including the results of the CCB's annual eagle nest survey.

Based on queries of the above referenced sources, five federal and/or state-listed threatened and endangered species have the potential to occur within the study area (Table G-1). For additional information, see Section 3.2.5 of the Environmental Routing Study.

TABLE G-1
230 kV Germanna Lines and Germanna Substation

Potential Federal-and State-Listed Species in the Project Area

Species	Status	Database	Habitat	Results
Northern long-eared bat (*Myotis septentrionalis*)	FE, ST	USFWS IPaC, DWR-NLEB Winter Habitat and Roost Tree Map	Generally associated with old-growth or late successional interior forests. Partially dead or decaying trees are used for breeding, summer day roosting, and foraging. Hibernation occurs primarily in caves, mines, and tunnels.	Species not confirmed as present, and no known hibernacula or maternity roost trees are documented within the Project area. The Project would require clearing of forested areas; however, given the lack of confirmed species presence, impacts are not anticipated.
Tri-colored bat (*Perimyotis subflavus)*	FPE, SE	USFWS IPaC, DWR Tri-colored Bat Winter Habitat and Roost Tree Map	Typically roost in trees near forest edges during summer. Hibernate deep in caves or mines in areas with warm, stable temperatures during winter.	Species not confirmed as present, and no hibernaculum identified within a 0.5-mile-radius of the Project. No impacts are anticipated.
Dwarf wedgemussel (*Alasmidonta heterodon*)	FE, SE	USFWS IPaC, DCR	Deep quick running water on cobble, fine gravel, or on firm silt or sandy bottoms.	Species not confirmed as present, and no instream work would be performed. No impacts are anticipated.
Yellow lance (*Elliptio lanceolata)*	FT, ST	USFWS IPaC, DCR	Main channels of drainage and streams as small as one meter across with clean, coarse, medium-sized sand or gravel substrate.	Species not confirmed as present, and no instream work would be performed. No impacts are anticipated.
Loggerhead shrike (*Lanius ludovicianus)*	ST	DWR VaFWIS, DCR	Open country with scattered shrubs and trees or other tall structures for perching.	VaFWIS Search Report listed as not confirmed. No impacts are anticipated.

Federal/State Status:

FE Federally listed as endangered
FT Federally listed as threatened
FPE Federally proposed as endangered
SE State listed as endangered
ST State listed as threatened
FPT Federally proposed as threatened

Database queries identified three federally listed species protected under the Endangered Species Act ("ESA") that could potentially occur in the study area: Northern long-eared bat (*Myotis septentrionalis*), Dwarf wedgemussel (*Alasmidonta heterodon*), and Yellow

lance (*Elliptio lanceolata*). In addition, there are two state-listed species identified by queries that have not been federally listed, and these include the Tri-colored bat (*Perimyotis subflavus*) and the Loggerhead shrike (*Lanius ludovicianus*). The federal-listing of the Tri-colored bat has been proposed, but this species has not been officially listed.

The review accounted for regulatory changes and requirements associated with the Northern long-eared bat ("NLEB") and the USFWS up-listing of this species from federally threatened to federally endangered, per the existing interim guidance from the USFWS for the NLEB that expires on March 31, 2024. The review also accounted for regulatory changes and requirements associated with Tri-colored bat and the proposed USFWS listing of this species to federally endangered.

While all five of these species were identified by the DWR, the DCR Division of Natural Heritage ("DNH"), and/or USFWS as having potential occurrence within the Project study area, the DWR, VaFWIS, and Wildlife Environmental Review Map Service data shows that no occurrences of these species have been confirmed as present within the study area. The DCR-DNH predicted suitable habitat model shows the following approximate amounts in Table G-2 of predicted suitable habitat where the Loggerhead shrike, Dwarf wedgemussel, or Yellow lance might exist along each route.

TABLE G-2
230 kV Germanna Lines and Germanna Substation
Predicted Suitable Habitat

	Proposed Route (Route 2) (acres)	Alternative Route 1 (acres)	Alternative Route 3 (acres)
Loggerhead shrike	3.6	0.0	3.1
Dwarf wedgemussel & Yellow lance	0.0	2.2	0.0

On behalf of the Company, ERM submitted the Project to the DCR-DNH for review. The DCR-DNH conducted an official review dated September 22, 2023, and provided additional areas for potential Loggerhead shrike habitat in their response to the Company's query (see Attachment 2.G.1). A biologist from DCR-DNH studied the area, and knowing the preferred habitat of the Loggerhead shrike, recommended that these additional areas be surveyed in conjunction with the areas of predicted suitable habitat (see additional discussion below as to surveying for the Loggerhead shrike). DCR-DNH suggests the additional approximate amounts listed in Table G-3 of likely habitat for Loggerhead shrike along each route.

TABLE G-3
230 kV Germanna Lines and Germanna Substation
DCR-Recommended Predicted Suitable Habitat for Loggerhead Shrike

	Proposed Route (Route 2) (acres)	Alternative Route 1 (acres)	Alternative Route 3 (acres)
Loggerhead shrike	7.5	8.3	8.5

According to this official review, DCR-DNH concluded that the Project will not affect any documented state-listed plants or insects and does not cross any State Natural Area

Preserves under DCR's jurisdiction. However, according to a DCR-DNH biologist, "several rare plants, which are typically associated with prairie vegetation and inhabit semi-open diabase glades in Virginia, may occur at this location if suitable habitat is present. Diabase glades are characterized by historically fire-dominated grassland vegetation on relatively nutrient-rich soils underlain by Triassic bedrock. Diabase flatrock, a hard, dark-colored volcanic rock, is found primarily in northern Virginia counties and is located within the geologic formation known as the Triassic Basin. Where the bedrock is exposed, a distinctive community type of drought-tolerant plants occurs. Diabase flatrocks are extremely rare natural communities that are threatened by activities such as quarrying and road construction (Rawinski, 1995)." See Attachment 2.G.1.

Due to the potential for this site to support populations of natural heritage resources, DCR-DNH recommends an inventory for rare plants associated with diabase glades, the Loggerhead shrike, and significant natural communities in the study area. With the survey results, DCR-DNH indicates that it can more accurately evaluate potential impacts to natural heritage resources and offer specific protection recommendations for minimizing impacts to the documented resources.

Diabase Glades

With regard to DCR-DNH's recommendation for an inventory for rare plants associated with diabase glades, the Company notes, for context, that diabase refers to unique plant communities that form in certain circumstances in the presence of underlying igneous diabase rock. Diabase associated plant species, whose occurrence in Virginia is often associated with diabase derived soils, are not formally listed as endangered or threatened. These plants and associated habitat, while considered rare by DCR-DNH, are not protected by any regulations.

Impacts to the Diabase Flatrocks are primarily associated with quarrying and road construction, which have a very direct permanent impact to the habitats within a potential defined Project area. Electric transmission lines, as proposed in this Application, typically do not have a significant permanent impact outside of structure foundation locations. Habitat conversion is possible, but the transmission line corridor will be maintained as a natural emergent/scrub shrub habitat that resembles successional conditions that would allow for natural communities to exist within this converted habitat regime. The permanent impacts associated with the Project are discrete and limited to the structure foundation locations only.

Diabase communities are most likely to occur in semi-open areas that have a disturbance regime similar to that of pre-settlement wildfires, and that also have not been heavily infested by invasive plants. Areas that do not receive this type of intermediate disturbance (including areas that are subject to intense disturbance) typically do not provide high quality habitat for the diabase associated species.

Dominion Energy Virginia strives to be in compliance with local, state, and federal regulations. Rare species are not classified as endangered or threatened, so are not protected by any regulations, and a requirement to inventory these resources prior

to construction would result in significant delay to the construction schedule, potentially increasing project costs.

Due to the low likelihood of diabase plants in the Project area, and the lack of any legal status via federal or state law, the Company concludes that DCR-DNH's recommendation for an inventory for rare plants associated with diabase glades in the Project area is not required. In lieu of conducting an inventory of these resources prior to construction, Dominion Energy Virginia suggests that it provide the Company's construction team with information about the rare diabase plant species and coordinate with DCR-DNH if a species of concern is observed.[7]

Loggerhead Shrike

As discussed above, DCR-DNH would like the Company to conduct a habitat assessment for the Loggerhead shrike within the Project area based on documentation of this species in the area and predicted suitable habitat. However, it should be noted that the Loggerhead shrike observation closest to the study area was recorded in 2000 and was approximately 1.9 miles southeast of the study area. According to DWR's Wildlife Environmental Review Map Service database, in particular "Species Observations," since the 2000 observation, there have been no other documented sightings of Loggerhead shrike within 2.0 miles of the study area.

Furthermore, as noted by DWR, the species is known to inhabit areas of grassland that are maintained to keep vegetation heights low and where an abundance of perching sites are available. Impacts to open or agricultural areas that may provide habitat for the Loggerhead shrike would be limited to potential structure placement and the areas would continue to function as they had prior to construction. In addition, the description of the preferred habitat of the Loggerhead shrike is more consistent with the anticipated nature of the site post construction than with the pre-construction condition. Due to significant declines in Loggerhead shrike populations throughout much of North America, and in Virginia specifically, this species is very unlikely to occur in the Project area even in areas of ostensibly suitable habitat where it may have historically occurred. No impacts are anticipated to the species as a result of the proposed Project.

From a practical perspective, a habitat assessment prior to construction would result in a significant delay to the construction schedule, potentially increasing Project

[7] This is approach is consistent with the Commission's directive in prior proceedings. See, e.g., *Application of Virginia Electric and Power Company For approval and certification of electric transmission facilities: DTC 230 kV Line Loop and DTC Substation*, Case No. PUR-2021-00280, Final Order at 15 ("Based on the record developed herein, the Commission agrees with Dominion [Energy Virginia] that customers should not bear the costs of the recommended survey. The Commission therefore declines to adopt DCR's recommendation but directs the Company to educate its construction personnel regarding the plant species prior to the commencement of construction activities and to coordinate with DCR-DNH if the species is found within the Project area") (internal citations omitted).

costs. The Company does not believe this is necessary given the low likelihood of disturbance to Loggerhead shrike.

For these reasons, the Company concludes that this recommendation from DCR-DNH is unreasonable and unnecessary. In lieu of conducting a habitat assessment, the Company agrees to provide its construction team with information about the Loggerhead shrike and to coordinate with DCR-DNH if the species of concern is observed within the Project area.

Significant Natural Communities

According to the DCR-DNH, the study area has the potential to support Piedmont Hardpan Forest, Piedmont Upland Depression Swamp, and Basic Oak-Hickory Forest communities, which are significant natural communities in the Northern Piedmont province. The Piedmont Hardpan Forest is an ecological group of oak-hickory forests on mostly flat Piedmont uplands and impermeable clay subsoils. In Virginia, the Piedmont Hardpan Forest is considered uncommon to rare due to its reliance on specialized soil environments.

The Piedmont Upland Depression Swamp natural community most commonly occurs in Mesozoic basins and areas situated on mafic rocks and acidic slates. These swamp habitats include shallow, seasonally flooded upland basins and broad, shallow streams with sluggish, intermittent flows. The Piedmont Upland Depression Swamp communities in northern Virginia typically include tree species such as Pin oak (*Quercus palustris*), Swamp white oak (*Quercus bicolor*), Red maple (*Acer rubrum*), and potentially, Willow oak (*Quercus phellos*). This natural community is rare both state-wide and globally.

Basic Oak-Hickory Forest habitats in Virginia include submesic to subxeric uplands underlain by basic igneous and metamorphic rocks (*e.g.*, diabase, gabbro, amphibolite, metabasalt). Hickories (*Carya spp*.) are abundant in these communities and have the potential to dominate some tree stands, but other tree species include oaks (*Quercus spp*.), White ash (*Fraxinus americana*), and Tulip poplar. Oak tree existence has been declining in these communities, and White ash trees have been nearly eliminated by the insect pathogen Emerald ash borer (*Agrilus planipennis*). Some features of the Basic Oak-Hickory Forest are considered uncommon or rare in Virginia, and like other significant natural communities, the occurrence of this community has been reduced due to agriculture, silviculture, and urban development.

DCR-DNH recommends that the Company conduct a survey to inventory the significant natural communities in the study area due to their potential to support natural heritage resources. The Proposed Route and Alternative Route 3 both cross mostly agricultural land, and it is unlikely that the forested areas (2.3 acres and 2.7 acres, respectively) contain these significant natural communities due to the agricultural use surrounding the routes. As discussed in Section 2.K, Wildlife Resources, the majority of land cover within the Alternative Route 1 right-of-way

is forested land (21.1 acres, 1.7 miles); however, according to historic aerial imagery, a significant amount of this route spans through forested areas that were disturbed at some point within the previous 65 years. Approximately 0.9 mile of the 1.7-mile span through forested land is through land that has been clearcut at some point; therefore, it is likely that over half of the forested land lacks the biodiversity of the significant natural communities mentioned above.

Due to the low likelihood of these significant natural communities in the Project area, and the lack of any legal status via federal or state law, the Company concludes that DCR's recommendation for an inventory of significant natural communities in the Project area is not required. In lieu of conducting an inventory of these resources prior to construction, Dominion Energy Virginia suggests that it provide the Company's construction team with information about significant natural communities and coordinate with DCR-DNH if a species of concern from within a community is observed.

Ecological cores are areas of 100-acres or more of contiguous natural land cover associated with areas of high ecological value. They are ranked from C1 (Outstanding) to C5 (General). As part of its official review, DCR-DNH also found that the Proposed and Alternative Routes intersect Ecological Cores of ranks C4 (moderate integrity) and C5 (general integrity).

During the Project routing process, ERM attempts to avoid higher-ranking ecological cores to the extent practicable, while also taking into consideration other routing constraints. When avoidance is not possible, ERM attempts to minimize the crossing length of higher-ranking ecological cores, collocate with existing linear corridors, cross previously cleared or disturbed areas, and to minimize fragmentation by following ecological core boundaries to the extent practicable. Where cores are crossed, the habitat is not fully lost as the transmission lines are maintained as open meadow/shrub habitat that is consistent with successional habitat.

The DCR-DNH review identified two ecological cores (Core IDs 42941 and 42702) crossed by Alternative Route 1. The right-of-way of Alternative Route 1 crosses 11.1 acres (0.9 mile) of Core ID 42941, which is ranked as C4 'moderate,' and is predominantly unfragmented but does contain two residences and one commercial structure. The right-of-way crosses 4.7 acres (0.4 mile) of Core ID 42702 (ranked as C5 'general'). This core is predominantly unfragmented forest around Mountain Run.

The Proposed Route and Alternative Route 3 cross 6.1 acres (0.5 mile) of ecological core 43336 (C4 'moderate') in the same location. This core is fragmented by agricultural and cleared, open land.

Based on the CCB Virginia Eagle Nest Locator mapping portal, the Proposed Route and Alternative Routes do not intersect any secondary buffers of currently documented bald eagle nests as identified in The Bald Eagle Protection Guidelines for Virginia (2012). According to the CCB database, there is one eagle nest (Nest ID OR1601) approximately 5.2 miles south of the Project area and is documented as occupied in 2021. None of the

route alternatives are within the 660-foot management buffer for the nest. The Company will work with the appropriate jurisdictional agencies to minimize impacts on this species.

Construction and maintenance of the new transmission line facilities could have minor effects on wildlife; however, impacts on most species will be short-term in nature, and limited to the period of construction.

Proposed Route (Route 2)

Of the five species identified in Table G-1 above, none have historically been documented by state agencies in areas crossed by the Proposed Route. The Proposed Route would require approximately 2.3 acres of tree clearing, which is less than what would be required for Alternative Route 1 (21.1 acres) and Alternative Route 3 (2.7 acres). The Proposed Route would have four intermittent waterbody crossings; however, as the crossings would be spanned by the transmission line, impacts to aquatic species would be limited to any temporary construction impacts associated with vegetation clearing adjacent to the waterbody and the elimination of riparian buffer benefits such as erosion control, water filtration, habitat and temperature control. According to the CCB, this route does not cross a primary or secondary buffer zone of a documented bald eagle nest.

Alternative Route 1

Impacts of Alternative Route 1 to threatened and endangered species would be similar to those described above for the Proposed Route. With regard to potential impacts on wildlife, Alternative Route 1 would require much more forested land clearing than the Proposed Route (21.1 acres versus 2.3 acres), and Alternative Route 1 crosses two streams (one perennial and one intermittent) while the Proposed Route crosses four intermittent waterbodies.

Alternative Route 3

Impacts associated with construction of Alternative Route 3 to threatened and endangered species would be similar to those described above for the Proposed Route. With regard to potential impacts on wildlife, Alternative Route 3 would require slightly more forested land clearing than the Proposed Route (2.7 acres versus 2.3 acres). Alternative Route 3 and the Proposed Route cross the same waterbodies (four unnamed, intermittent tributaries).

New and updated information is continually added to DCR's Biotics database. The Company shall re-submit project information and a map for an update on this natural heritage information if the scope of the Project changes and/or six months have passed before this information is utilized.[8]

[8] The Company updated this commitment consistent with discussions held between Company and DCR-DNH representatives on August 23, 2022.

The Company requested comments from USFWS, DWR, and DCR-DNH about the Project.

H. Erosion and Sediment Control

The DEQ approved the Company's *Standards & Specification for Erosion & Sediment* Control *and Stormwater Management for Construction of Linear Electric Transmission Facilities (TE VEP 8000).* These specifications are given to the Company's contractors and require erosion and sediment control measures to be in place before construction of the line begins and specifies the requirements for rehabilitation of the right-of-way. A copy of the current DEQ approval letter dated August 13, 2019, is provided as Attachment 2.H.1. According to the approval letter, coverage was effective through August 12, 2020. The Company submitted the renewal application on August 3, 2020 and is awaiting approval.

I. Archaeological, Historic, Scenic, Cultural or Architectural Resources

ERM conducted a Stage I Pre-Application Analysis ("Stage I Analysis") of potential impacts on cultural resources for the Project Proposed Routes and Alternative Routes in accordance with the Virginia Department of Historic Resources's ("VDHR") *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (VDHR 2008). A copy of the Stage I Analysis, which was provided to VDHR on November 17, 2023, is included as Attachment 2.I.1. For each route alternative, the analysis identified and considered previously recorded resources within the following study tiers as specified in the Guidelines:

- National Historic Landmark ("NHL") properties located within a 1.5-mile radius of each route centerline.
- National Register of Historic Places ("NRHP")-listed properties, NHLs, battlefields, and historic landscapes within a 1.0-mile radius of each route centerline.
- NRHP-eligible and -listed properties, NHLs, battlefields, and historic landscapes within a 0.5-mile radius of each route centerline.
- Qualifying architectural resources and archaeological sites located within the right-of-way for each alternative route.
- Information on cultural resources within each of the above study tiers was obtained from the Virginia Cultural Resource Information System.
- Information from the Museum of Culpeper History (2023) and Historic Germanna (2023) to identify locally significant resources within a 1.0-mile radius of each centerline.
- Information on battlefields surveyed and assessed by the National Park Service's American Battlefield Protection Program ("ABPP") (NPS 2023). No additional resources (locally significant sites and ABPP study areas, core areas, or potential NRHP boundaries for battlefields) were identified within the relevant study tiers for the various route options.

Proposed Route (Route 2)

Six aboveground historic resources were identified within the VDHR study tiers for the Proposed Route (Table I-1). Construction and operation of the new facilities along this route would have no impact on one resource (023-0084), a minimal impact on four resources (023-0018, 023-0020, 023-5055, and 068-5007); and a moderate impact on one resource (023-0068).

The Mount Pony Rural Historic District (023-0084) is located approximately 0.9 mile to the northwest of the Proposed Route at MP 0.0. The district would have no view of the new infrastructure that would be installed along the route due to distance. Thus, the route would result in no impact on 023-0084.

Rose Hill/Game Preserve (023-0018) is located approximately 960 feet to the west of the Proposed Route a MP 0.0 would be visible from the northern portion of the resource. However, Dominion Energy Virginia's existing Lines #70/2, #2199/70, #2199/2 are already visible from the resource. Line #70/2 currently bisects the resource, while the other existing transmission lines are visible when looking east and closer to 023-0018. It is also important to note that another transmission line (Line #2276) will be built prior to the construction of the Germanna Lines. Line #2276 would be built to the north, running parallel to Dominion Energy Virginia's existing Line #70/2. The intersection of these lines is named Mountain Run Junction, which will also include a rebuild of Line #70/2 from 115 kV to 230 kV. Thus, by the time the proposed Project is built, these lines would be visible in the landscape and would create a more obtrusive change to the landscape than that associated with the Proposed Route. The route would not be visible from the southern portion of the resource due to distance. For these reasons, the route would result in a minimal impact on 023-0018.

La Grange/Salubria (023-0020) is located approximately 0.3 mile to the north of the Proposed Route at MP 0.8 and approximately 0.5 mile to the northwest of the proposed Germanna Substation. The route would be visible from the southwestern edge of the resource boundary. The Proposed Route would not be visible from the northern or central portions of the resource. The views towards the route would be minor and distant. However, as the construction of the route would add modern elements to a landscape where there are currently only large expanses of pasture and woodlands, there would be a minimal impact on La Grange/Salubria from the Proposed Route.

Brandy Station Battlefield (023-5055) is located approximately 0.2 mile to the north and northwest of the Proposed Route at MP 1.8 and approximately 714 feet to the north-northwest of the proposed Germanna Substation. Two existing Dominion Energy Virginia transmission lines, Line #2199/70 and Line #70/2, run through the battlefield, although Line #70/2 only runs through approximately 600 feet of the southern boundary. Line #2199/70 runs through approximately 2.1 miles of the battlefield. These areas of development have already had a direct impact on the battlefield through their changes to the setting. However, the

construction of the Proposed Route would introduce additional modern elements to the battlefield's southern viewshed, where there currently are trees and agricultural land. The most significant viewshed impacts are focused in areas of high elevation and near the eastern border of the battlefield. However, this portion of the resource's viewshed is small, in relation to that for the battlefield as a whole. Thus, there would be a minimal impact on the Brandy Station Battlefield from the Proposed Route.

The Battle of Morton's Ford (068-5007) is located approximately 357 feet to the northwest of the Proposed Route at MP 0.0. Dominion Energy Virginia's existing Lines #70/2, #2199/70, #2199/2 are already visible from the resource. The Mountain Run Junction transmission line would be visible and built prior to the Proposed Route, which would be very minor in comparison. The construction of the Proposed Route would add additional modern elements to the battlefield's eastern viewshed, but these views would be limited to a small section in the northern part of the resource boundary. The majority of the battlefield would have no view towards the route. Thus, the Proposed Route would have a minimal impact on 068-5007.

Hansbrough Ridge Winter Encampment District (023-0068) is located approximately 0.6 mile to the northwest of the Proposed Route at MP 1.8 and 0.6 mile to the northwest of the proposed Germanna Substation. The Proposed Route would be visible from the district due to the high elevation. Although there is an existing transmission line that has already affected the district's historic viewshed towards the west and north, the addition of the Proposed Route would introduce modern elements to the southern viewshed, which currently features only a small distribution line. In addition, the areas of high elevation in the ridge are important components of the district's landscape that contribute to its eligibility for listing on the NRHP and VLR. Thus, the Proposed Route would have a moderate impact on 023-0068.

TABLE I-1
230 kV Germanna Lines and Germanna Substation

Resources in VDHR Tiers for the Proposed Route (Route 2)

Buffer (miles)	Considered Resources	VDHR #	Description	Impact
1.0-1.5	National Historic Landmarks	NA	NA	NA
0.5-1.0	National Register—Listed	NA	NA	NA
	Battlefields—Potentially Eligible	023-0068*	Hansbrough Ridge Winter Encampment District	Moderate
	Rural Historic District — Eligible	023-0084	Mount Pony Rural Historic District	None
0.0- 0.5	National Register—Eligible	NA	NA	NA
	National Register—Listed	023-0018	Rose Hill/Game Preserve	Minimal
		023-0020*	La Grange/Salubria	Minimal

	Battlefields—Potentially Eligible	023-5055*	Brandy Station Battlefields	Minimal
		068-5007	Battle of Morton's Ford	Minimal
0.0 (within right-of-way)	National Register — Eligible	NA	NA	NA
	Battlefields—Potentially Eligible	NA	NA	NA

*NA = not applicable; VDHR = Virginia Department of Historic Resources; * Located within the VDHR study tiers for the Germanna Substation*

The Stage I Analysis also considered the potential effects to archaeological resources. No archaeological sites lie within the new right-of-way associated with the Proposed Route.

Alternative Route 1

Three aboveground historic resources were identified within the VDHR study tiers for Alternative Route 1 (Table I-2). Construction and operation of the new facilities along this route would have no impact on one resource (023-0020), a minimal impact on one resource (023-5055), and a moderate impact on one resource (023-0068).

La Grange/Salubria (023-0020) is located approximately 0.6 mile to the west of Alternative Route 1 at MP 2.3 and approximately 0.5 mile to the west of the proposed Germanna Substation. The resource would have no view of the new infrastructure that would be installed along the route due to distance and intervening vegetation. Thus, the route would result in no impact on 023-0020.

Alternative Route 1 would go through Brandy Station Battlefield (023-5055) between approximate MP 1.4 to 1.7, and the battlefield is located approximately 0.6 mile to the north of the proposed Germanna Substation. Alternative Route 1 would also be approximately 0.3 mile from the battlefield Core Area. The recorded boundary for the resource's ABPP PotNR boundary encompasses approximately 31,032.5 acres, but only 4.6 acres of the Alternative Route 1 right-of-way (0.3 miles of its linear extent) are within the battlefield's potentially National Register eligible boundary. Two existing Dominion Energy Virginia transmission lines, Line #2199/70 and #70/2 run through the battlefield, although Line #70/2 only runs through approximately 600 feet of the southern boundary. Line #2199/70 runs through approximately 2.1 miles of the battlefield boundary, with 0.8 miles of that running through the Core Area. These areas of development have already had a direct impact on the battlefield. The construction of Alternative Route 1 would introduce modern elements and some tree clearing to the eastern portion of the battlefield, where there currently are trees and agricultural land. This viewshed change is minor, in relation to the battlefield as a whole. However, as the proposed route would introduce additional modern elements to the battlefield, Alternative Route 1 would have a minimal impact on 023-5055.

Hansbrough Ridge Winter Encampment District (023-0068) is located approximately 0.5 mile to the northwest of Alternative Route 1 at MP 2.0, and 0.6

mile to the northwest of the proposed Germanna Substation. Dominion Energy Virginia's existing Line #2199/70 runs north to south, to the west of the district. An existing distribution line bisects the resource, running from east to west. Alternative Route 1 would be visible in the higher elevation areas of the ridge, but not visible where there is dense vegetation surrounding the route. The eastern portion of the ridge would have line of sight to the route. Although there is an existing transmission line that has already affected the district's historic viewshed towards the west and north, the addition of Alternative Route 1 would introduce modern elements to the resource's eastern viewshed, which currently features no visible modern features. In addition, the areas of high elevation on the ridge are important components of the district's landscape that contribute to its eligibility for listing on the NRHP and VLR. Thus, Alternative Route 1 would have a moderate impact on 023-0068.

TABLE I-2
230 kV Germanna Lines and Germanna Substation

Resources in VDHR Tiers for Alternative Route 1

Buffer (miles)	Considered Resources	VDHR #	Description	Impact
1.0-1.5	National Historic Landmarks	NA	NA	NA
0.5-1.0	National Register—Listed	023-0020*	La Grange/Salubria	None
	Battlefields—Potentially Eligible	023-0068*	Hansbrough Ridge Winter Encampment District	Moderate
0.0- 0.5	National Register—Eligible	NA	NA	NA
0.0 (within right-of-way)	National Register — Eligible	NA	NA	NA
	Battlefields—Potentially Eligible	023-5055*	Brandy Station Battlefields	Minimal
	Archaeological Sites	44CU185	-	None

NA = not applicable; VDHR = Virginia Department of Historic Resources; * Located within the VDHR study tiers for the Germanna Substation.

The Stage I Analysis also considered the potential effects to archaeological resources. One archaeological site lies within the new right-of-way associated with Alternative Route 1: Site 44CU0185. Site 44CU0185, locally known as the Laurel Hill site is defined as a 0.1-acre historic artifact scatter dating from the Antebellum period (1830–1860) to the Civil War (1861–1865). The majority of the site exists in an existing cut transmission corridor and is surrounded by a forested area. The site is located at the end of Alternative Route 1; however, only 15 feet of the route actually intersects the defined extent of 44CU0185. The site has been determined not eligible for listing in the NRHP. The overall integrity of the archaeological deposits at the site has likely been disturbed by the construction of the existing transmission line, and the previous survey reports that a portion of the site has been destroyed. Given that Alternative Route 1 intersects the site where the route ties into the existing transmission line, it is unlikely that any intact cultural remains would be encountered there. The condition of the site would be confirmed during

the Phase I survey to be completed for the Project if Alternative Route 1 is selected as the preferred alternative.

Alternative Route 3

Seven aboveground historic resources were identified within the VDHR study tiers for Alternative Route 3 (Table I-3). Construction and operation of the new facilities along this route would have no impact on one resource (023-0084), a minimal impact on five resources (023-0018, 023-0020, 023-5055, 023-5494, and 068-5007), and a moderate impact on one resource (023-0068).

The Mount Pony Rural Historic District (023-0084) is located approximately 0.9 mile to the northwest of Alternative Route 3 at MP 0.0. The district would have no view of the new infrastructure that would be installed along the route due to distance. Thus, the route would result in no impact on 023-0084.

Rose Hill/Game Preserve (023-0018) is located approximately 0.2 mile to the west of Alternative Route 3 at MP 0.0. The route would be visible from the resource. However, Dominion Energy Virginia's existing Lines #70/2, #2199/70, #2199/2 are already visible from the resource. Line #70/2 currently bisects the resource, while the other existing transmission lines are visible when looking east and are closer to 023-0018. It is also important to note that another transmission line (Line #2276) will be built prior to the construction of the route. Line #2276 would be built to the north, running parallel to Dominion Energy Virginia's existing Line #70/2. The connection of these lines is named Mountain Run Junction, which will also include a rebuild of Line #70/2 from 115 kV to 230 kV. Thus, by the time Alternative Route 3 is built, these lines would be visible in the landscape. Still, the construction of Alternative Route 3 would introduce additional modern elements to this landscape. For these reasons, there would be a minimal impact on Rose Hill/Game Preserve from Alternative Route 3.

La Grange/Salubria (023-0020) is located approximately 0.3 mile to the north of Alternative Route 3 at MP 1.0 and approximately 0.5 mile to the northwest of the proposed Germanna Substation. The route would be visible from the southwestern edge of the resource boundary. The route would not be visible from the northern or central portions of the resource. The views towards the route would be minor and distant. However, as the construction of the route would add modern elements to a landscape where there are currently only large expanses of pasture and woodlands, there would be a minimal impact on La Grange/Salubria from Alternative Route 3.

Brandy Station Battlefield (023-5055) is located approximately 0.3 mile to the north and northwest of Alternative Route 3 at MP 1.9 and approximately 714 feet to the north-northwest of the proposed Germanna Substation. Two existing Dominion Energy Virginia transmission lines, Line #2199/70 and Line #70/2, run through the battlefield, although Line #70/2 only runs through approximately 600 feet of the southern boundary. Line #2199/70 runs through approximately 2.1 miles

of the battlefield. These areas of development have already had a direct impact on the battlefield's setting. However, the construction of Alternative Route 3 would introduce additional modern elements to the battlefield's southern viewshed, where there currently are trees and agricultural land. The most significant viewshed impacts are focused in areas of high elevation and near the eastern border of the battlefield. However, this portion of the resource's viewshed is small in relation to the battlefield as a whole. Thus, there would be a minimal impact on the Brandy Station Battlefield from Alternative Route 3.

The Battle of Morton's Ford (068-5007) is located approximately 357 feet to the northwest of Alternative Route 3 at MP 0.0. Dominion Energy Virginia's existing Lines #70/2, #2199/70, #2199/2 are already visible from the resource. The Mountain Run Junction transmission line would be visible and built prior to Alternative Route 3, which would be very minor in comparison. The construction of the route would add additional modern elements to the battlefield's eastern viewshed, but these views would be limited to a small section in the northern part of the resource boundary. The majority of the battlefield would have no view towards the route. Thus, Alternative Route 3 would have a minimal impact on 068-5007.

A twentieth century house (023-5494) is located approximately 0.5 mile to the southwest of Alternative Route 3 at MP 0.0. Three poles associated with the route would be visible in the distance. However, Dominion Energy Virginia's existing Lines #2199/2 are already visible, and are more prominent in the landscape. Thus, Alternative Route 3 would have a minimal impact on 068-5007.

Hansbrough Ridge Winter Encampment District (023-0068) is located approximately 0.7 mile to the northwest of Alternative Route 3 at MP 1.9 and 0.6 mile to the northwest of the proposed Germanna Substation. The route would be visible from the district due to the high elevation. Although there is an existing transmission line that has already affected the district's historic viewshed towards the west and north, the addition of Alternative Route 3 would introduce modern elements to the southern viewshed, which currently features only a small distribution line. In addition, the areas of high elevation in the ridge are important components of the district's landscape that contribute to its eligibility for listing on the NRHP and VLR. Thus, ERM recommends that Alternative Route 3 would have a moderate impact on 023-0068.

TABLE I-3
230 kV Germanna Lines and Germanna Substation

Resources in VDHR Tiers for Alternative Route 3

Buffer (miles)	Considered Resources	VDHR #	Description	Impact
1.0-1.5	National Historic Landmarks	NA	NA	NA
0.5-1.0	National Register—Listed	NA	NA	NA

	Battlefields—Potentially Eligible	023-0068*	Hansbrough Ridge Winter Encampment District	Moderate
	Rural Historic District — Eligible	023-0084	Mount Pony Rural Historic District	None
	National Register—Eligible	023-5494	Farmstead	None
0.0- 0.5	National Register—Listed	023-0018	Rose Hill/Game Preserve	Minimal
		023-0020	La Grange/Salubria	Minimal
	Battlefields—Potentially Eligible	023-5055*	Brandy Station Battlefields	Minimal
		023-5007*	Battle of Morton's Ford	Minimal
0.0 (within right-of-way)	National Register — Eligible	NA	NA	NA
	Archaeological Sites	44CU190	-	None

NA = not applicable; VDHR = Virginia Department of Historic Resources; * *Located within the VDHR study tiers for the Germanna Substation*

The Stage I Analysis also considered the potential effects to archaeological resources. One archaeological site lies within the new right-of-way associated with Alternative Route 3: 44CU0190. 44CU0190 is a 6.1-acre historic farmstead consisting of a historic artifact scatter dating from the World War I to World War II period (1917–1945) through the Post Cold War period (1993-present). Site 44CU0190 has been determined not eligible for listing on the NRHP. 44CU0190 is mapped at the western end of Alternative Route 3, with only 42.5 feet of the route extending into the site. In comparison, Dominion Energy Virginia's existing Line #2199/2 intersects the site for approximately 540 feet. The portion of Alternative Route 3 that is located in the site is entirely within the existing right-of-way of Line #2199/2. While no transmission structures for Alternative Route 3 would be placed within the site boundary, the site could be impacted by construction traffic or clearing within the transmission line right-of-way in an area that has already experienced such impacts.

The Company solicited comments from VDHR regarding the proposed Project.

J. Chesapeake Bay Preservation Areas

The Project is not located in a locality subject to the Chesapeake Bay Preservation Act. Construction, installation, operation, and maintenance of electric transmission lines are conditionally exempt from the Chesapeake Bay Act as stated in the exemption for public utilities, railroads, public roads, and facilities in 9 VAC 25-830-150. The Company will meet those conditions and will use Best Management Practices to limit impacts to RPAs to the minimum extent possible while safely and effectively constructing and maintaining this infrastructure.

K. Wildlife Resources

Relevant agency databases were reviewed and requests for comments from the USFWS, DWR, and DCR-DNH were submitted to determine if the proposed Project has the potential to affect any threatened or endangered species. As discussed in Section 2.G and

identified in Attachment 2.G.1, certain federal and state listed species were identified as potentially occurring in the Project area. The Company will coordinate with the USFWS, DWR, and DCR-DNH as appropriate to determine whether additional surveys are necessary and to minimize impacts on wildlife resources.

Based on recommendations by the DWR, the Company will endeavor to adhere to time of year restrictions for cutting trees and vegetations favorable to winged animals, from March 15 – November 15, to the extent practicable. The Company will further minimize potential effects by avoiding trees favorable for bat maternity roosting or nesting bird habitat, to the extent practicable.

In addition, the Company is actively monitoring the regulatory changes and requirements associated with the NLEB and how it could potentially impact construction timing associated with time of year restrictions ("TOYRs"). The existing interim guidance from the USFWS for the NLEB expires on March 31, 2024. The Company is also monitoring potential regulatory changes associated with the potential up-listing of the Tri-colored bat. On September 14, 2022, the USFWS published a proposed rule in the Federal Register proposing to list the Tri-colored bat as endangered, with an estimated announcement of a final decision within 12 months;[9] however, as of filing the Application the final listing has not been published in the Federal Register. Regulatory guidance on the Tri-colored bat will be available upon up-listing. Regulatory guidance on the Tri-colored bat will be available upon up-listing. The Company's construction window described above may require adjustment based upon the regulatory guidance and potential time of year restrictions associated with these two bat species.

Proposed Route (Route 2)

The majority of the Proposed Route crosses agricultural land (24.3 acres), with smaller areas of forested (2.3 acres), and very little developed (0.1 acre) land cover interspersed within the proposed alignment. Based on review of recent (2022) aerial photography, a total of approximately 2.3 acres of forested habitat would need to be cleared within the right-of-way for the construction of this route.

Alternative Route 1

The majority of Alternative Route 1 crosses undeveloped forested lands (21.1 acres), some agricultural land (12.9 acres), with very little developed (0.1 acre) and open water (0.1 acre) land use within the route alignment. Based on review of recent (2023) aerial photography, a total of approximately 21.1 acres of forested habitat would need to be cleared within the right-of-way for the construction of this route.

[9] *See* https://www.federalregister.gov/documents/2022/09/14/2022-18852/endangered-and-threatened-wildlife-and-plants-endangered-species-status-for-tricolored-bat.

Alternative Route 3

The majority of Alternative Route 3 crosses agricultural land (26.1 acres), with smaller areas of forested (2.7 acres), and very little developed (0.1 acre) land cover interspersed within the proposed alignment. Based on review of recent (2022) aerial photography, a total of approximately 2.7 acres of forested habitat would need to be cleared within the right-of-way for the construction of this route.

L. Recreation, Agricultural, and Forest Resources

The Project is expected to have minimal incremental impacts on recreational, agricultural, and forest resources. The Project routes collocation and impacts on forest land are described in the sections below. Opportunities for collocation with the Company's existing electric transmission rights-of-way were considered, where possible, for the routes as a means of avoiding or minimizing impacts on these resources. Where the route crosses agricultural lands, impacts would be limited to structure placement and agricultural activities could resume post construction. Where forested areas are crossed, trees would be removed and vegetation kept to maintained heights within the right-of-way.

The Virginia Scenic Rivers Act seeks to identify, designate, and protect rivers and streams that possess outstanding scenic, recreational, historic, and natural characteristics of statewide significance for future generations. No state scenic rivers will be crossed by the Project.

The Virginia Agricultural and Forestal Districts Act provides for the creation of conservation districts designed to conserve, protect, and encourage the development and improvement of a locality's agricultural and forested lands. According to the Virginia Department of Forestry ("VDOF"), Alternative Route 1 crosses 8.9 acres of an Agricultural and Forestal District ("AFD"). The Proposed Route and Alternative Route 3 do not cross any AFDs.

Under the Virginia Open-Space Land Act, any public body can acquire title or rights to real property to provide means of preservation of open-space land. Most easements created under the Act are held by the Virginia Outdoors Foundation ("VOF"), but any state agency is authorized to create and hold an open-space easement. Such conservation easements are designed to preserve and protect open space and other resources and must be held for no less than five years in duration and can be held in perpetuity. According to the DCR's NHDE, none of the alternative routes cross any VOF easements, other conservation, or any conservation lands identified by the DCR-DNH. The Proposed Route and Alternative Route 3 are adjacent to the south side of a 183.0-acre privately held conservation VOF easement. No direct impacts will occur to VOF easements as proposed by this project.

Within 0.5 mile of the route alternative centerlines, a private hunting preserve, three farm properties, and one historically significant landmark were identified. One additional historically significant landmark is found within approximately 0.6 mile of the centerline of Alternative Route 1 and approximate 0.7 mile of the centerlines of the Proposed Route and Alternative Route 3.

None of the route alternatives run parallel to or cross any Virginia Byways, Scenic Rivers, Resource Protection Areas, or Virginia Birding and Wildlife Trails. Alternative Route 1 crosses Germanna Highway (State Route 3), which is an entrance corridor overlap district ("EC"). ECs exist to align with the comprehensive plan in preserving natural, scenic, historic, architectural, and cultural resources near major traffic corridors. The affected area surrounding an EC includes whichever is greater: the full depth of all parcels of land contiguous to the EC right-of-way, or a depth of 500 feet from the right-of-way if the adjacent parcel is less than 500 feet in depth. Additional permitting and a certificate of appropriateness is required for plans that encroach on EC areas. The Proposed Route and Alternative Route 3 do not cross an EC.

Any tree along the right-of-way that is tall enough to endanger the conductors if it were to break at the stump or uproot and fall directly toward the conductors and exhibits signs or symptoms of disease or structural defect that make it an elevated risk for falling will be designated as a "danger tree" and may be removed. The Company's arborist will contact the property owner if possible before any danger trees are cut, except in emergency situations. The Company's Forestry Coordinator will field-inspect the right-of-way and designate any danger trees present. Qualified contractors working in accordance with the Company's Electric Transmission specifications will perform all danger tree cutting.

Proposed Route (Route 2)

The Proposed Route does not cross AFD land but crosses adjacent to a privately held VOF easement between MP 0.6 and 1.2. The Proposed Route collocates along the southern boundary of the Greenwood Solar site's landscape buffer for 0.6 mile from MP 0.5 to 1.2. The Proposed Route also spans 0.5 mile from approximate MP 1.1 to 1.7 through an approved data center transmission line right-of-way. There is no other opportunity for collocation along this route. An assessment of impacts on these resources is provided in the Environmental Routing Study.

NRCS soils data indicates approximately 1.4 acres (0.1 mile) of the Proposed Route right-of-way are classified as prime farmland and 11.7 acres (1.0 mile) are classified as farmland of statewide importance. The Proposed Route crosses approximately 17.8 acres of agricultural lands (66.7% of the route) and approximately 2.3 acres of forested lands (8.6% of the route).

Alternative Route 1

Alternative Route 1 crosses 8.9 acres (0.7 mile) of AFD land and does not cross any easements or recreational areas. Alternative Route 1 spans for 0.1 mile from approximate MP 2.2 to 2.3 through an approved data center transmission line right-of-way. There is no other opportunity for collocation along this route. An assessment of impacts on these resources is provided in the Environmental Routing Study.

NRCS soils data indicates approximately 1.5 acres (0.1 mile) of the Alternative Route 1 right-of-way are classified as prime farmland and 18.3 acres (1.5 miles) are classified as farmland of statewide importance. Alternative Route 1 crosses less than 0.1 acre of

agricultural lands (less than 0.3% of the route) and approximately 21.1 acres of forested lands (61.7% of the route).

Alternative Route 3

The impacts of Alternative Route 3 are similar to the Proposed Route impacts with a few minor differences in milepost values. Alternative Route 3 route spans adjacent to a privately held VOF easement between MP 0.8 and 1.4. This route collocates along the southern boundary of the Greenwood Solar site's landscape buffer for 0.6 mile from MP 0.6 to 1.4. Alternative Route 3 also spans 0.5 mile from approximate MP 1.3 to 1.9 through an approved data center transmission line right-of-way. There is no other opportunity for collocation along this route. An assessment of impacts on these resources is provided in the Environmental Routing Study.

NRCS soils data indicates approximately 1.4 acres (0.1 mile) of the Alternative Route 3 right-of-way are classified as prime farmland and 13.4 (1.1 miles) acres are classified as farmland of statewide importance. Alternative Route 3 crosses approximately 19.6 acres of agricultural lands (67.8% of the route), and approximately 2.7 acres of forested lands (9.3% of the route).

The Company solicited comments from DCR-DNH, VOF, and VDOF regarding the proposed Project.

M. Use of Pesticides and Herbicides

Of the techniques available, selective foliar is the preferred method of herbicide application. The Company typically maintains transmission line right-of-way by means of selective, low volume applications of EPA-approved, non-restricted use herbicides. The goal of this method is to exclude tall growing brush species from right-of-way by establishing early successional plant communities of native grasses, forbs, and low growing woody vegetation. "Selective" application means the Company sprays only the undesirable plant species (as opposed to broadcast applications). "Low volume" application means the Company uses only the volume of herbicide necessary to remove the selected plant species. The mixture of herbicides used varies from one cycle to the next to avoid the development of resistance by the targeted plants. There are four means of dispersal available to the Company, including by-hand application, backpack, fixed nozzle-radiarc, and aerial. Very little right-of-way maintenance incorporates aerial equipment. The Company uses licensed contractors to perform this work that are either certified applicators or registered technicians in the Commonwealth of Virginia.

DEQ has previously requested that only herbicides approved for aquatic use by the EPA or the USFWS be used in or around any surface water. The Company intends to comply with this request.

Additionally, the Company and DCR-DNH representatives met in August 2022 and again in February 2023 to discuss the Company's Integrated Vegetation Management Plan ("IVMP") for application to both woody and herbaceous species, based on the species list available on the DCR-DNH website. The Company has provided DCR-DNH an

addendum draft to the IVMP, which further explains how the Company's operations and maintenance Forestry program addresses invasive species. Once all discussions are complete and the addendum is final, the Company will report on the results of its communications with DCR-DNH in future transmission certificate of public convenience and necessity filings.[10]

N. Geology and Mineral Resources

The study area is located within the Piedmont geologic province, which lies between the mountainous Blue Ridge province to the west and the terraced slopes of the Coastal Plain province to the east. The Piedmont province is characterized by heavily weathered bedrock caused by a humid climate, thick soils, and rolling topography. The Piedmont province consists of several complex geologic terranes where faults separate the rock units with variable igneous and metamorphic histories.

Based on review of the geologic map of Virginia, the route alternatives are located approximately on the transitional boundary between the Western Piedmont-Potomac Terrane and a Mesozoic basin. Within this terrane and basin, the bedrock underlying the Project area comprises Jurassic-age volcanic, Cambrian-aged quartzite, and sedimentary bedrock (William and Mary Department of Geology 2023; USGS 2005).

ERM reviewed publicly available Virginia Energy datasets (2022), USGS topographic quadrangles, and recent (2022) digital aerial photographs to identify mineral resources in the study area. There are no active mineral resource sites within 0.3 mile of the routes. The closest active permitted mining site is the Culpeper Plant located on Germanna Highway approximately 1.0-mile northwest of where the routes terminate. The closest mineral occurrence is a sandstone prospect located approximately 0.7 mile west of Route 1 (Virginia Energy 2023).

O. Transportation Infrastructure

Road and Railroad Crossings

Germanna Highway (State Route 3), a principal arterial road, which extends east/west through the study area. Other public roads in the Project vicinity include Batna Road,

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[10] *See, Application of Virginia Electric and Power Company, For approval and certification of electric transmission facilities: 230 kV Line #293 and 115 kV Line #83 Rebuild Project*, Case No. PUR-2021-00272, Final Order at 9-11 (Aug. 31, 2022) *(The Commission agreed with the Chief Hearing Examiner and declined to adopt DCR-DNH's recommendation regarding an invasive species management plan ("ISMP"), but directed the Company to meet with DCR-DNH and to report on the status of the meetings in the Company's next transmission certificate of public convenience and necessity ("CPCN") filing)*; *see also* Report of Alexander F. Skirpan, Jr., Chief Hearing Examiner (Jun. 22, 2022) at 22 *(agreeing with the Company that, with its IVMP, the Company should not be required to undergo the additional cost of DCR-DNH's ISMP; however, recommending that the Company meet with DCR-DNH regarding its IVMP and report the results of the meeting in the next transmission CPCN filing)*.

Carrico Mills Road, Clay Hill Road, and Mountain View Farm Road. Germanna Highway and Batna Road are maintained by the Virginia Department of Transportation ("VDOT").

ERM reviewed the VDOT projects and studies website to identify future road projects in the study area (VDOT 2023b). The review identified no proposed project in the study area. No future road projects were identified within or near the Project routes. East of the study area, VDOT is planning improvement to the Germanna Highway and Carrico Mills Road Intersection. This project would alter the intersection of from the existing three-way intersection to a partial restricted crossing U-turn intersection. The proposed completion date of that VDOT project is November 2029.

No railroads cross the study area or are in the immediate vicinity of the Project.

Proposed Route (Route 2)

The Proposed Route would cross Batna Road approximately 0.6 mile south of Germanna Highway. The road crossing would be spanned. Based on a review of the Culpeper County Comprehensive Plan and VDOT projects, the Proposed Route would not impact on any future roads.

Alternative Route 1

Alternative Route 1 would cross Germanna Highway approximately 1.6 miles east of Stevensburg. Based on a review of the Culpeper County Comprehensive Plan and VDOT projects, Alternative Route 1 would not impact on any future roads.

Alternative Route 3

Alternative Route 3 would cross Batna Road approximately 0.7 mile south of Germanna Highway. The road crossing would be spanned. Based on a review of the Culpeper County Comprehensive Plan and VDOT projects, Alternative Route 3 would not impact on any future roads.

Temporary closures of roads and or traffic lanes would be required during construction of the Proposed Route or Alternative Routes. No long-term impacts to roads are anticipated and the collocated sections of Project rights-of-way would be located entirely outside of road and railroad rights-of-way. The Company will comply with VDOT and Culpeper County requirements for access to the rights-of-way from public roads. At the appropriate time, the Company will obtain the necessary VDOT permits as required and comply with permit conditions.

The Company solicited comments from VDOT regarding the proposed Project. VDOT responded on October 24, 2023 and outlined comments pertaining to the proposed Project. outlining agency requirements for the Project. A copy of the VDOT response is included as Attachment 2.O.1.

Airports

The design of the proposed Project must prevent interference with pilots' safe ingress and egress at airports in the vicinity of the Project. Such hazards or impediments include interference with navigation and communication equipment and glare from materials and external lights.

The Company reviewed the Federal Aviation Administration's ("FAA") website to identify public use airports, airports operated by a federal agency or the U.S. Department of Defense, airports, or heliports with at least one FAA-approved instrument approach procedure, and public use or military airports under construction within 10.0 miles of the Project routes.

Of the public use airports identified within 10.0 miles of the Project, it was determined only the Culpeper Regional Airport was in close enough proximity to potentially impact navigable airspace. The Company conducted an airport analysis to determine if any of the FAA defined Civil Airport Imaginary Surface would be penetrated by structures associated with the Project. The Company hired ERM to conduct the review. ERM reviewed the height limitations associated with FAA-defined imaginary surfaces for runway 1/19 associated with the airport. Standard GIS tools, including ESRI's ArcMap 3D and Spatial Extension software were used to create and geo-reference the imaginary surfaces in space, and in relation to the locations and proposed heights of the transmission structures. Ground surface data for the study area was derived by using a USGS 10 Meter Digital Elevation Model. Based on the results of this review it was determined there would be no potential for penetration into any of the proposed imaginary surfaces associated with the Culpeper Regional Airport and thus there would be no impacts to navigable airspace from the proposed Project.

The regulations that govern objects that may affect navigable airspace are codified in the Code of Federal Regulations, Title 14, Part 77. In these regulations it states that restrictions to structure heights only apply to public use airports and do not apply to privately owned airports. The privately owned Greenhouse Airport is located 0.7 mile (3,550 feet) east of the proposed Germanna Substation. The airport's runway is orientated in a northwest/southeast direction. If this airport were to change to a public use airport it would be classified as a utility runway with a visual approach. In this scenario, given the distance from the proposed tower locations to the airport's runway, and the similar ground elevation of the airport and the Project area, there would be no penetration of any of the airport's imaginary surfaces by the Project. Even though Greenhouse Airport is not granted the same height restrictions of the surrounding area (as opposed to a public use airport), the Project should not have any impacts on the navigable airspace of the airport.

Since the FAA manages air traffic in the United States, it will evaluate any physical objects that may affect the safety of aeronautical operations through an obstruction evaluation. If required during the permitting process, Dominion Energy Virginia will submit an FAA Form 7460-1 Notice pursuant to 14 CFR Part 77 for any tower locations that meet the review criteria.

The Company solicited comments from Virginia Department of Aviation ("DOAv") regarding the proposed Project. DOAv responded on October 25, 2023, attaching DOAv's comment letter regarding Aeronautical study #2023-AEA-13070-OE. DOAv also submitted responses on October 31, 2023 and again on November 13, 2023. Copies of DOAv's October 25th, October 31st, and November 13th responses are included as Attachments 2.O.2, 2.O.3, and 2.O.4, respectively.

The Company also solicited comments from the FAA regarding the proposed Project. The FAA responded on October 25, 2023, and again on November 16, 2023. Copies of the October and November responses are included as Attachment 2.O.5 and Attachment 2.O.6, respectively.

P. Drinking Water Wells

As a general matter, water wells within 1,000 feet of the route of the Project may be outside of the transmission line corridor and located on private property. The Company does not have the ability or right to field mark the wells on private property. In August 2021, the Company contacted the Virginia Department of Health ("VDH"), Office of Drinking Water ("ODW") to propose a method of well protection, including plotting and calling out the wells on the Project's Erosion and Sediment Control Plan, to which VDH-ODW indicated that the Company's proposed method is reasonable. A copy of that correspondence is included as Attachment 2.P.1. The Company intends to follow this same approach in this proceeding, as it has in other cases, and will coordinate with VDH-ODW, as needed.

The Company solicited comments from VDH-ODW regarding the proposed Project. VDH-ODW responded on November 14, 2023, and a copy of the response is included as Attachment 2.P.2.

Q. Pollution Prevention

Generally, as to pollution prevention, as part of Dominion Energy Virginia's commitment to environmental compliance, the Company has a comprehensive Environmental Management System Manual in place that ensures it is complying with environmental laws and regulations, reducing risk, minimizing adverse environmental impacts, setting environmental goals, and achieving improvements in its environmental performance, consistent with the Company's core values. Accordingly, any recommendation by the DEQ to consider development of an effective environmental management system has already been satisfied.

ATTACHMENTS

Dominion Energy Services, Inc.
120 Tredegar Street Richmond, VA 23219
DominionEnergy.com

October 20, 2023

BY EMAIL

Ms. Michelle Henicheck
Office of Wetlands and Streams
Department of Environmental Quality
1111 East Main Street, Suite 1400
Richmond, Virginia 23219

RE: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation in Culpeper County, Virginia.

Dear Ms. Henicheck,

Dominion Energy Virginia (the "Company") is proposing to construct a new overhead 230 kV double circuit transmission line (the "Germanna Lines") on new right-of-way by cutting the Company's existing 230 kV overhead Line #2199 and extending the lines to the Company's proposed new 230 kV substation (the "Germanna Substation"), in Culpeper County, Virginia (collectively, the "Project").

The Project is necessary to assure that Dominion Energy Virginia can provide service requested by a data center customer in Culpeper County, Virginia, maintain reliable service for the overall growth in the load area surrounding the Company's existing Culpeper Substation, and comply with mandatory North American Electric Reliability Corporation Reliability Standards.

The Company is preparing an application for a Certificate of Public Convenience and Necessity from the State Corporation Commission of Virginia (the "Commission). Pursuant to the July 2003 Memorandum Wetlands Impact Consultation, Dominion Energy Virginia is sending this letter to initiate consultation with the DEQ prior to filing an application with the Commission.

A wetland delineation has not been conducted at this time. However, Environmental Resources Management conducted a wetland desktop study to identify probable wetlands based on a review of multiple data sources. The tables below provide a summary of the medium to high probability wetlands expected to be present within the proposed Project right-of-way.

Table 1: Summary of the Probabilities of Wetland and Waterbody Occurrence along Project Route Alternatives [a, b]

Probability	Total within right-of-way Acres [c]	Wetland and Waterbody type (acres)				
		PEM Emergent	PFO Forested	PSS Scrub-shrub	Riverine Stream	PUB Freshwater pond
Alternative Route 1						
High	0.2	NA	0.1	NA	0.1	NA
Medium/High	0.7	0.0	0.6	NA	0.1	NA
Medium	0.4	NA	0.3	NA	0.1	NA
Alternative Route 2						
High	0.3	0.0	0.3	0.0	0.1	NA

Probability	Total within right-of-way Acres [c]	Wetland and Waterbody type (acres)				
		PEM Emergent	PFO Forested	PSS Scrub-shrub	Riverine Stream	PUB Freshwater pond
Medium/High	2.2	0.0	1.9	0.1	0.1	NA
Medium	0.6	0.1	0.5	NA	NA	NA
Alternative Route 3						
High	0.3	0.0	0.3	0.0	0.1	NA
Medium/High	2.1	0.0	1.9	0.1	0.1	NA
Medium	0.5	NA	0.5	NA	NA	NA

NA Not applicable due to absence of wetland or waterbody type within the alternative route
a The numbers in this table have been rounded for presentation purposes; as a result, the totals may not reflect the sum of the addends.
b Germanna Substation wetlands and waterbodies are included within each route rather than individually.
c Total acres may not total the sum of wetland and waterbody types. This is due to some of the lower probability rankings not overlapping with NWI or interpreted wetlands, and therefore not having a wetland/waterbody type associated with them.

The full Wetland Desktop Study will be submitted once finalized. Subsequently, a wetland delineation will be conducted and the limits of wetlands of other waters of the United States will be submitted to the U.S. Army Corps of Engineers for confirmation. At this time, in advance of the Commission filing, the Company respectfully requests that you submit any comments or additional information you feel would have bearing on the Project within 30 days of the date of this letter.

Enclosed is a preliminary Project Overview Map depicting the proposed and alternative routes of the Germanna Lines, as well as the general Project location. All final materials, including maps, will be available in the Company's application filing to the Commission.

Finally, attached is a GIS shapefile of the transmission line routes to assist in your project review. Please do not hesitate to contact James P. Young at (804) 750-6406 or James.P.Young@dominionenergy.com and Stacey T. Ellis at (434) 532-9034 or Stacey.t.ellis@dominionenergy.com if you have any additional questions.

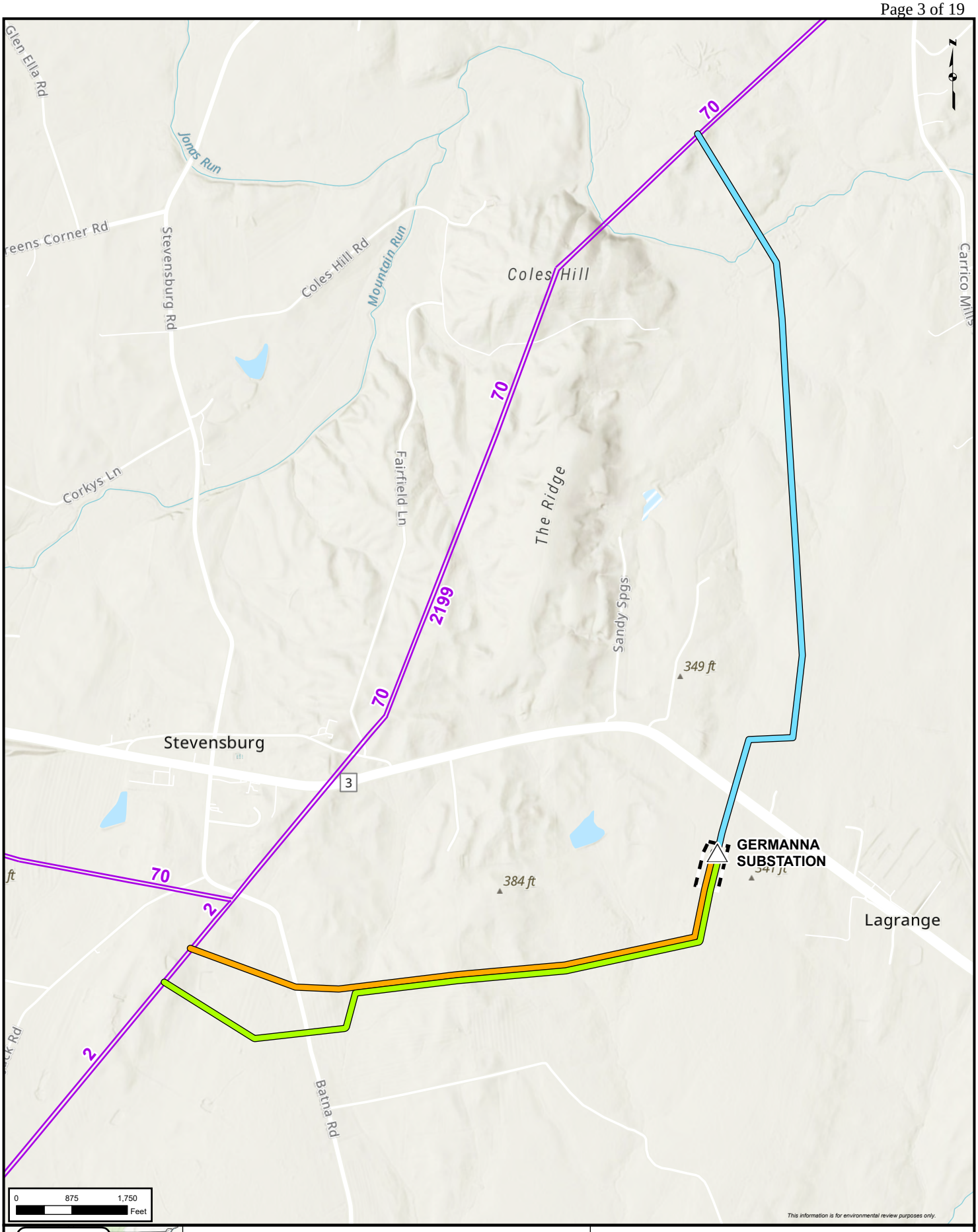
We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Sincerely,

Dominion Energy Virginia

Elizabeth "Tibby" Hester
Manager, Environmental and Sustainability

Attachment: Project Map
GIS Shapefiles


Glen Ella Rd
Jonas Run
reens Corner Rd
Stevensburg Rd
Coles Hill Rd
Mountain Run
Coles Hill
Carrico Mills
70
70
2199
70
2
2
Corkys Ln
Fairfield Ln
The Ridge
Sandy Spgs
349 ft
Stevensburg
3
GERMANNA
SUBSTATION
384 ft
Lagrange
Batna Rd
0
875
1,750
Feet
This information is for environmental review purposes only.
Project Location
Wash
Virginia
Proposed Substation
Proposed Germanna Substation Boundary
Existing Dominion Transmission Line
Route 1
Route 2
Route 3
ERM
Project Overview
Germanna 230 kV Transmission Line and Substation Project
Culpeper County, Virginia
Dominion Energy
MPLS M:\US\Projects\D-F\Dominion\Germanna\ArcGIS\2023\10\Agency_Letter_DOM_GERM_Agency_Letter.aprx | REVISED: 10/10/2023 | SCALE: 1: when printed at 11x17
DRAWN BY: MPLS GIS

Dominion Energy Services, Inc.
120 Tredegar Street Richmond, VA 23219
DominionEnergy.com

October 20, 2023

BY EMAIL

RE: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation in Culpeper County, Virginia.

To Whom it may Concern,

Dominion Energy Virginia (the "Company") is proposing to construct a new overhead 230 kV double circuit transmission line (the "Germanna Lines") on new right-of-way by cutting the Company's existing 230 kV overhead Line #2199 and extending the lines to the Company's proposed new 230 kV substation (the "Germanna Substation"), in Culpeper County, Virginia (collectively, the "Project").

The Project is necessary to assure that Dominion Energy Virginia can provide service requested by a data center customer in Culpeper County, Virginia, maintain reliable service for the overall growth in the load area surrounding the Company's existing Culpeper Substation, and comply with mandatory North American Electric Reliability Corporation Reliability Standards.

The Company is preparing an application for a Certificate of Public Convenience and Necessity ("CPCN") from the State Corporation Commission of Virginia (the "Commission"). At this time, in advance of filing an application for a CPCN from the Commission, the Company respectfully requests that you submit any comments or additional information that would have bearing on the proposed Project within 30 days of the date of this letter.

Enclosed is a Project Overview Map depicting the proposed and alternative routes of the Germanna Lines, as well as the general Project location. All final materials, including maps, will be available in the Company's application filing to the Commission.

Finally, attached is a GIS shapefile of the transmission line routes to assist in the project review. Please do not hesitate to contact James Young at (804) 750-6406 or james.p.young@dominionenergy.com and Stacey T. Ellis at (434) 532-9034 or Stacey.t.ellis@dominionenergy.com if you have any additional questions.

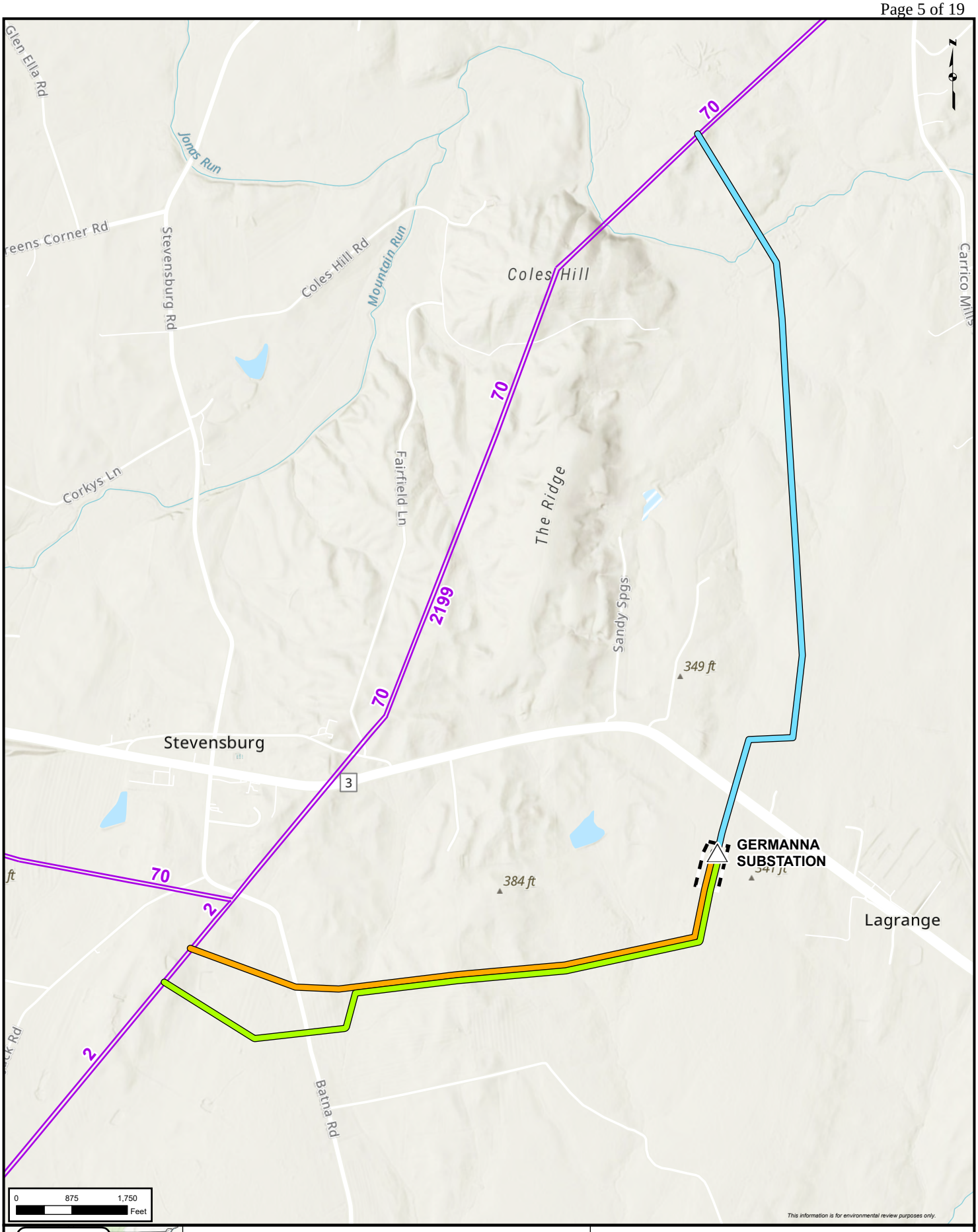
We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Sincerely,

Dominion Energy Virginia

Elizabeth "Tibby" Hester
Manager, Environmental and Sustainability

Attachment: Project Map
GIS Shapefiles


Glen Ella Rd
Jonas Run
reens Corner Rd
Stevensburg Rd
Coles Hill Rd
Mountain Run
Coles Hill
Carrico Mills
70
70
2199
70
2
2
Fairfield Ln
The Ridge
Sandy Spgs
Corkys Ln
349 ft
Stevensburg
3
GERMANNA
SUBSTATION
384 ft
Lagrange
Batna Rd
0
875
1,750
Feet
This information is for environmental review purposes only.
Project Location
Wash
Virginia
Proposed Substation
Proposed Germanna Substation Boundary
Existing Dominion Transmission Line
Route 1
Route 2
Route 3
ERM
Project Overview
Germanna 230 kV Transmission Line and Substation Project
Culpeper County, Virginia
Dominion Energy
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Dominion Energy Virginia
5000 Dominion Blvd; 3rd Floor
Glen Allen, VA 23060
DominionEnergy.com

October 18, 2023

Mr. Mike Helvey
Obstruction Evaluation Group Manager
Federal Aviation Administration, FAA Eastern Regional Office
800 Independence Ave, SW, Room 400 East
Washington, DC 20591

RE: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation, in Culpeper County, Virginia.

Dear Mr. Helvey,

Dominion Energy Virginia (the "Company") is proposing to construct a new overhead 230 kV double circuit transmission line (the "Germanna Lines") on new right-of-way by cutting the Company's existing 230 kV Line #2199 and extending the lines to the Company's proposed new 230 kV substation (the "Germanna Substation"), in Culpeper County, Virginia (collectively, the "Project").

The Project is necessary to assure that Dominion Energy Virginia can provide service requested by a data center customer in Culpeper County, Virginia, maintain reliable service for the overall growth in the load area surrounding the Company's existing Culpeper Substation and comply with mandatory North American Electric Reliability Corporation Reliability Standards.

The Company is in process of preparing an application for a Certificate of Public Convenience and Necessity ("CPCN") from the State Corporation Commission of Virginia (the "Commission"). At this time, in advance of the filing an application for a CPCN from the Commission, the Company respectfully requests that you submit any comments or additional information that would have bearing on the proposed Project within 30 days of the date of this letter.

Enclosed is a Project Overview Map depicting the proposed and alternative routes of the Germanna Lines, as well as the general Project location. All final materials, including maps, will be available in the Company's application filing to the Commission.

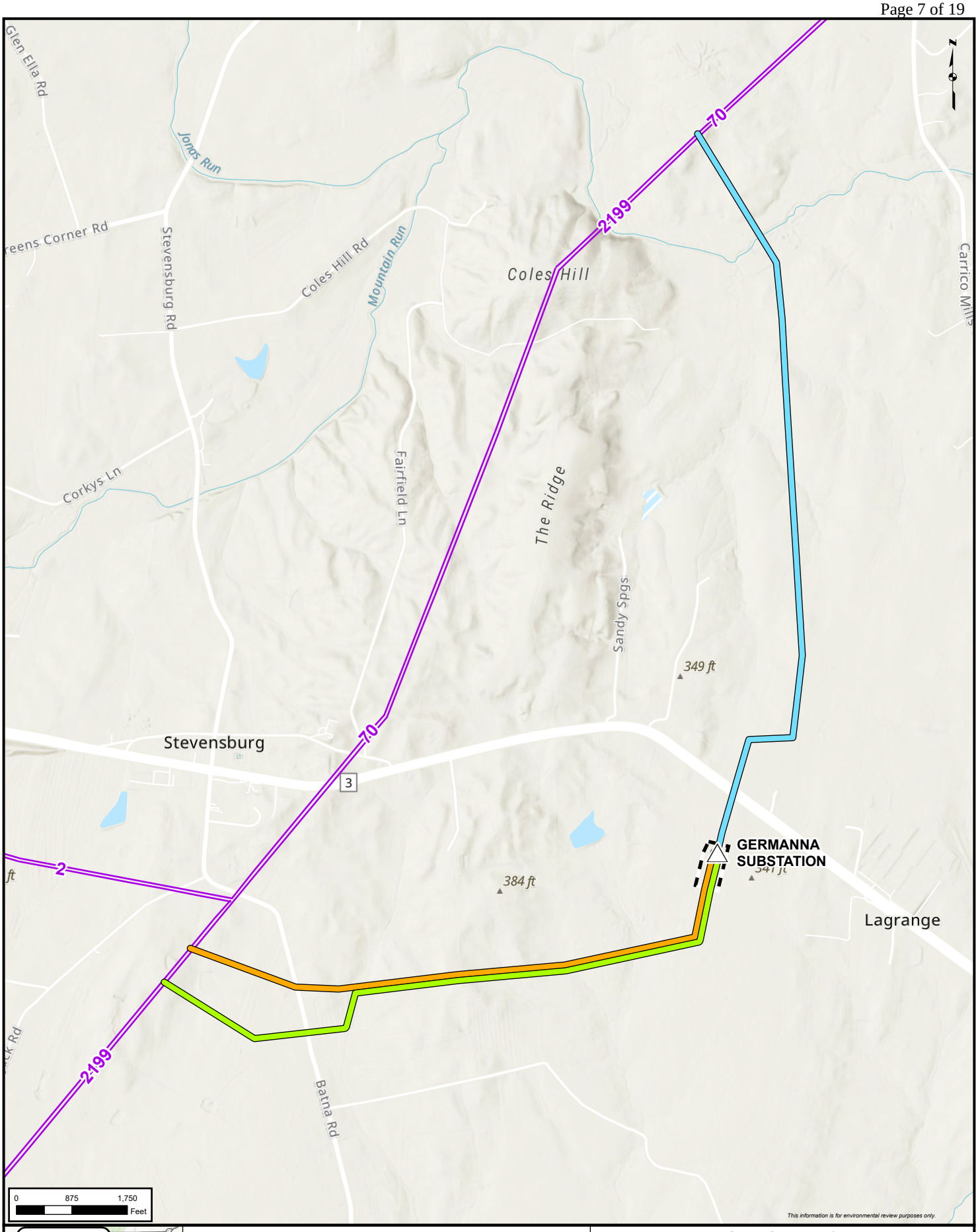
If you would like to receive a GIS shapefile of the transmission line routes to assist in the project review or if there are any questions, please do not hesitate to contact Greg Baka at (804) 201-3053 or greg.r.baka@dominionenergy.com if you have any additional questions. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Sincerely,

Greg Baka

Greg Baka
Local Permitting Consultant

Attachment: Project Map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GERMANNA
SUBSTATION
2
384 ft
Lagrange
2199
Batna Rd
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875
1,750
Feet
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Virginia
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Proposed Germanna Substation Boundary
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Proposed Route
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Dominion Energy Virginia
5000 Dominion Blvd; 3rd Floor
Glen Allen, VA 23060
DominionEnergy.com

October 18, 2023

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

RE: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation, in Culpeper County, Virginia.

Dear Mr. Kirchen,

Dominion Energy Virginia (the "Company") is proposing to construct a new overhead 230 kV double circuit transmission line (the "Germanna Lines") on new right-of-way by cutting the Company's existing 230 kV Line #2199 and extending the lines to the Company's proposed new 230 kV substation (the "Germanna Substation"), in Culpeper County, Virginia (collectively, the "Project").

The Project is necessary to assure that Dominion Energy Virginia can provide service requested by a data center customer in Culpeper County, Virginia, maintain reliable service for the overall growth in the load area surrounding the Company's existing Culpeper Substation and comply with mandatory North American Electric Reliability Corporation Reliability Standards.

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Sincerely,

Greg Baka

Greg Baka
Local Permitting Consultant

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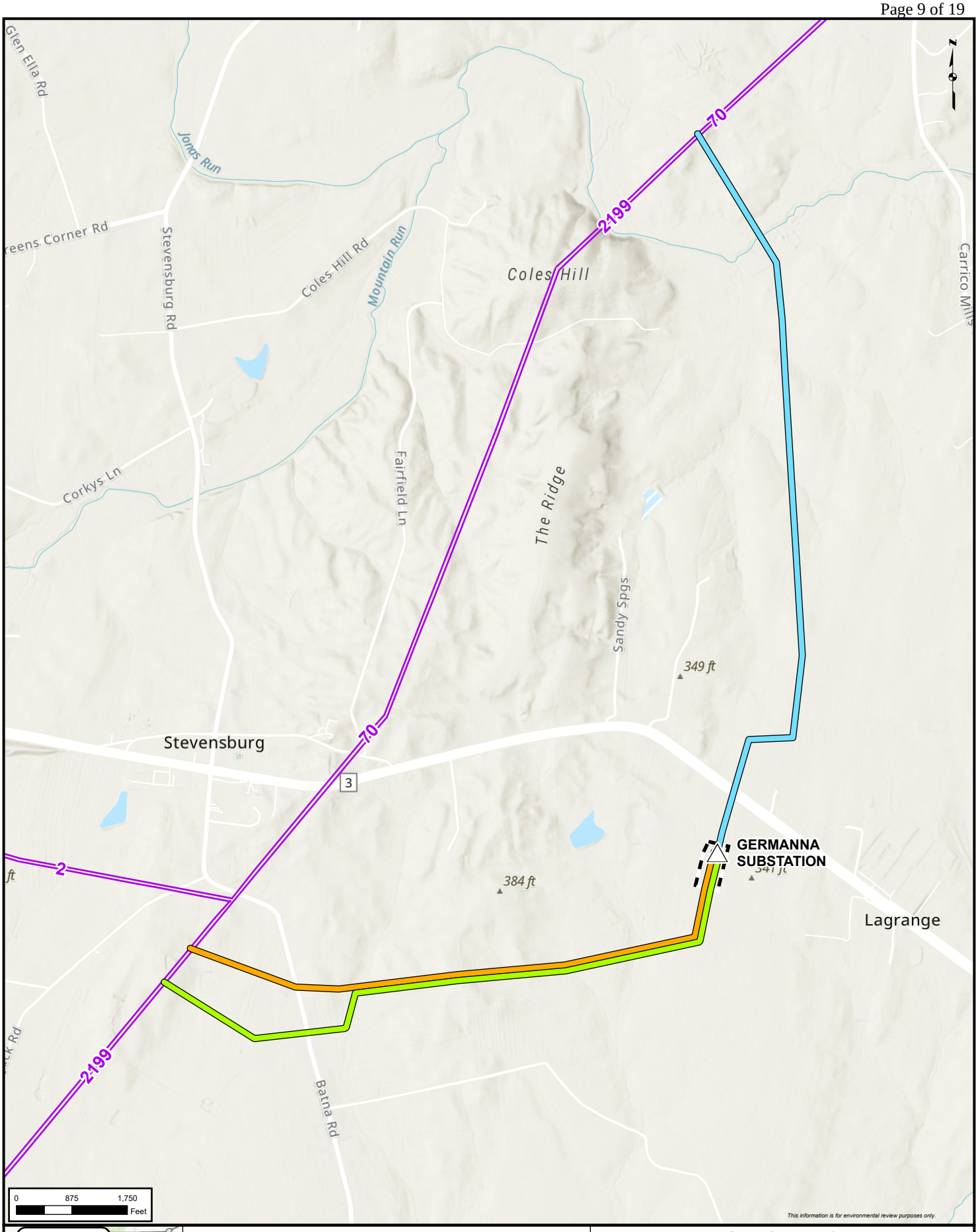
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Dominion Energy Virginia
5000 Dominion Blvd; 3rd Floor
Glen Allen, VA 23060
DominionEnergy.com

October 18, 2023

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

RE: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation, in Culpeper County, Virginia.

Dear Mr. Denny,

Dominion Energy Virginia (the "Company") is proposing to construct a new overhead 230 kV double circuit transmission line (the "Germanna Lines") on new right-of-way by cutting the Company's existing 230 kV Line #2199 and extending the lines to the Company's proposed new 230 kV substation (the "Germanna Substation"), in Culpeper County, Virginia (collectively, the "Project").

The Project is necessary to assure that Dominion Energy Virginia can provide service requested by a data center customer in Culpeper County, Virginia, maintain reliable service for the overall growth in the load area surrounding the Company's existing Culpeper Substation and comply with mandatory North American Electric Reliability Corporation Reliability Standards.

The Company is in process of preparing an application for a Certificate of Public Convenience and Necessity ("CPCN") from the State Corporation Commission of Virginia (the "Commission"). At this time, in advance of the filing an application for a CPCN from the Commission, the Company respectfully requests that you submit any comments or additional information that would have bearing on the proposed Project within 30 days of the date of this letter.

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Sincerely,

Greg Baka

Greg Baka
Local Permitting Consultant

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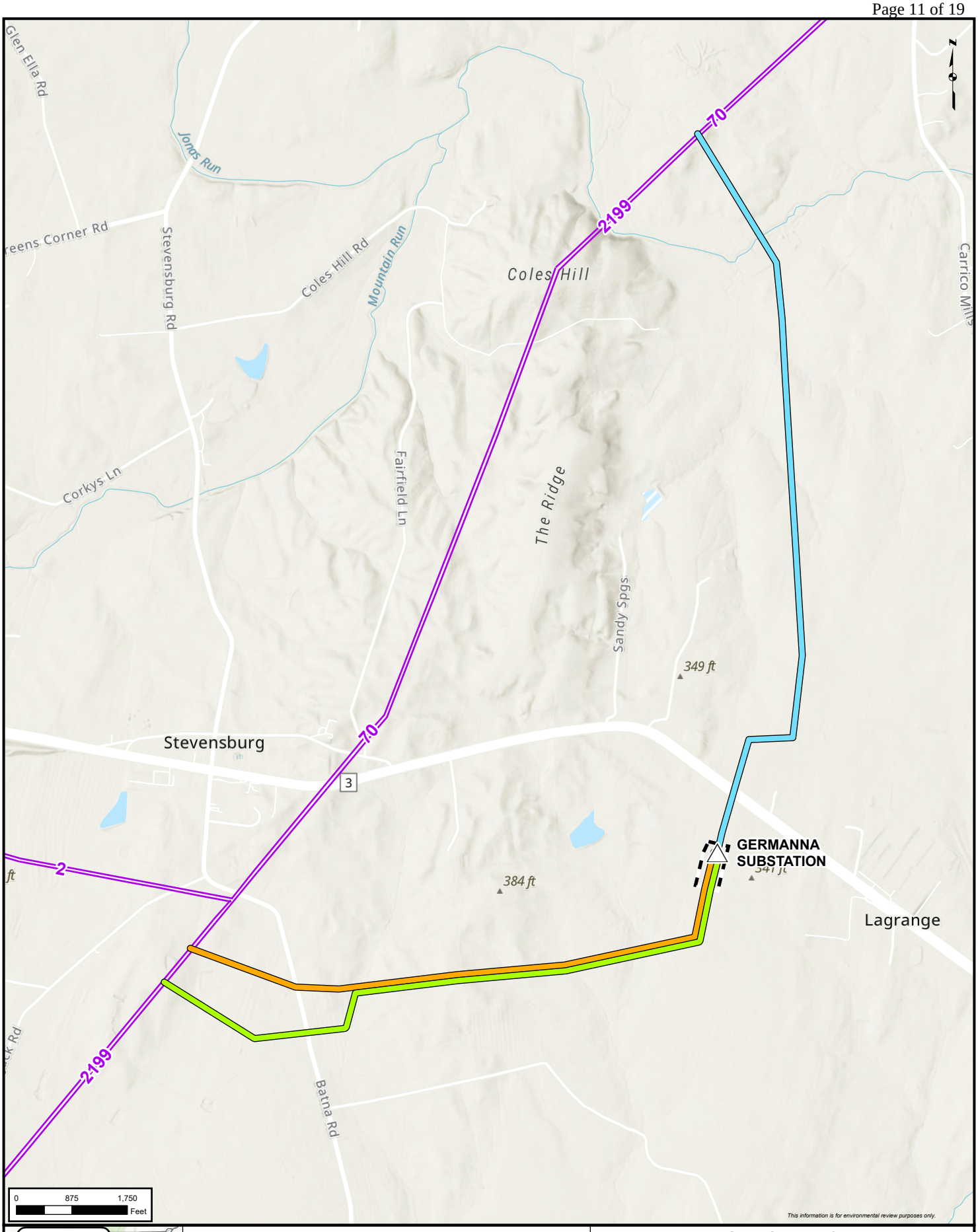
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Dominion Energy Virginia
5000 Dominion Blvd; 3rd Floor
Glen Allen, VA 23060
DominionEnergy.com

October 18, 2023

Mr. Sean Nelson, P.E.
Culpeper District Engineer
Virginia Department of Transportation
1601 Orange Road
Culpeper, VA 22701

RE: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation, in Culpeper County, Virginia.

Dear Mr. Nelson,

Dominion Energy Virginia (the "Company") is proposing to construct a new overhead 230 kV double circuit transmission line (the "Germanna Lines") on new right-of-way by cutting the Company's existing 230 kV Line #2199 and extending the lines to the Company's proposed new 230 kV substation (the "Germanna Substation"), in Culpeper County, Virginia (collectively, the "Project").

The Project is necessary to assure that Dominion Energy Virginia can provide service requested by a data center customer in Culpeper County, Virginia, maintain reliable service for the overall growth in the load area surrounding the Company's existing Culpeper Substation and comply with mandatory North American Electric Reliability Corporation Reliability Standards.

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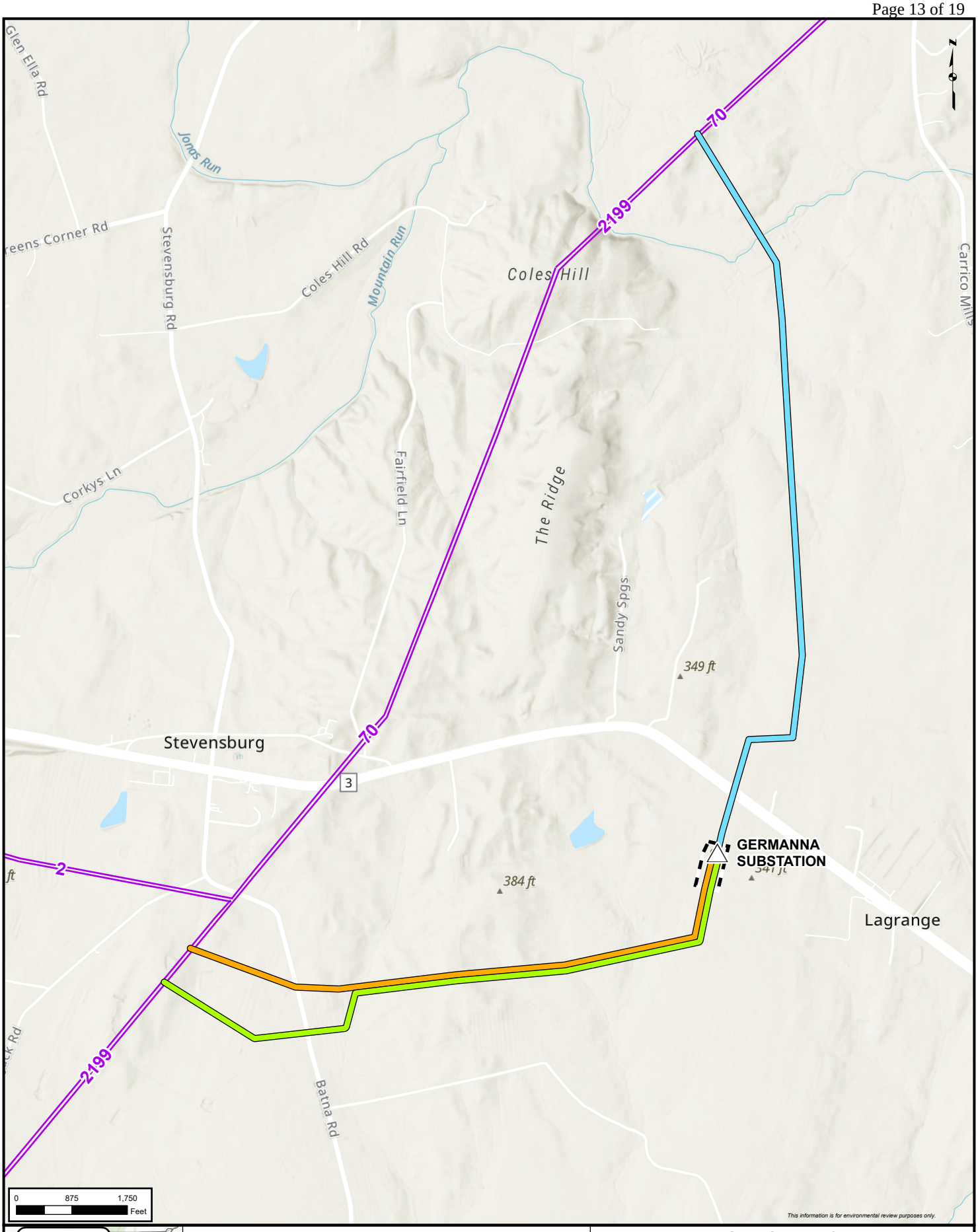
Sincerely,

Greg Baka

Greg Baka
Local Permitting Consultant

Attachment: Project Map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Dominion Energy Virginia
5000 Dominion Blvd; 3rd Floor
Glen Allen, VA 23060
DominionEnergy.com

October 18, 2023

Mr. D. Mark Nesbit, P.E.
Warrenton Residence Engineer, Culpeper District
Virginia Department of Transportation
475 E. Shirley Ave
Warrenton, VA 20186

RE: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation, in Culpeper County, Virginia.

Dear Mr. Nesbit,

Dominion Energy Virginia (the "Company") is proposing to construct a new overhead 230 kV double circuit transmission line (the "Germanna Lines") on new right-of-way by cutting the Company's existing 230 kV Line #2199 and extending the lines to the Company's proposed new 230 kV substation (the "Germanna Substation"), in Culpeper County, Virginia (collectively, the "Project").

The Project is necessary to assure that Dominion Energy Virginia can provide service requested by a data center customer in Culpeper County, Virginia, maintain reliable service for the overall growth in the load area surrounding the Company's existing Culpeper Substation and comply with mandatory North American Electric Reliability Corporation Reliability Standards.

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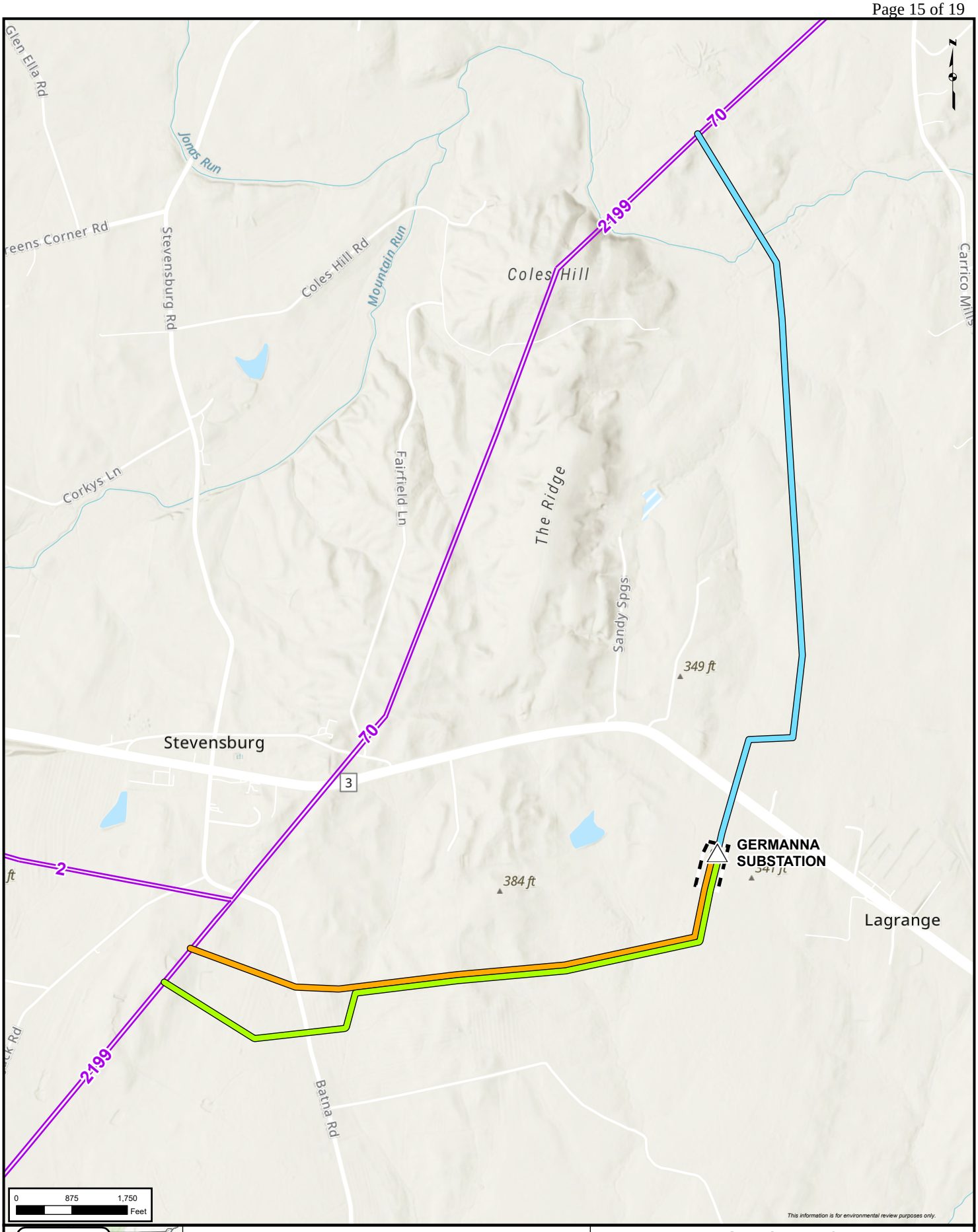
Sincerely,

Greg Baka

Greg Baka
Local Permitting Consultant

Attachment: Project Map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Dominion Energy Virginia
5000 Dominion Blvd; 3rd Floor
Glen Allen, VA 23060
DominionEnergy.com

October 18, 2023

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

RE: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation, in Culpeper County, Virginia.

Dear Ms. Little,

Dominion Energy Virginia (the "Company") is proposing to construct a new overhead 230 kV double circuit transmission line (the "Germanna Lines") on new right-of-way by cutting the Company's existing 230 kV Line #2199 and extending the lines to the Company's proposed new 230 kV substation (the "Germanna Substation"), in Culpeper County, Virginia (collectively, the "Project").

The Project is necessary to assure that Dominion Energy Virginia can provide service requested by a data center customer in Culpeper County, Virginia, maintain reliable service for the overall growth in the load area surrounding the Company's existing Culpeper Substation and comply with mandatory North American Electric Reliability Corporation Reliability Standards.

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Sincerely,

Greg Baka

Greg Baka
Local Permitting Consultant

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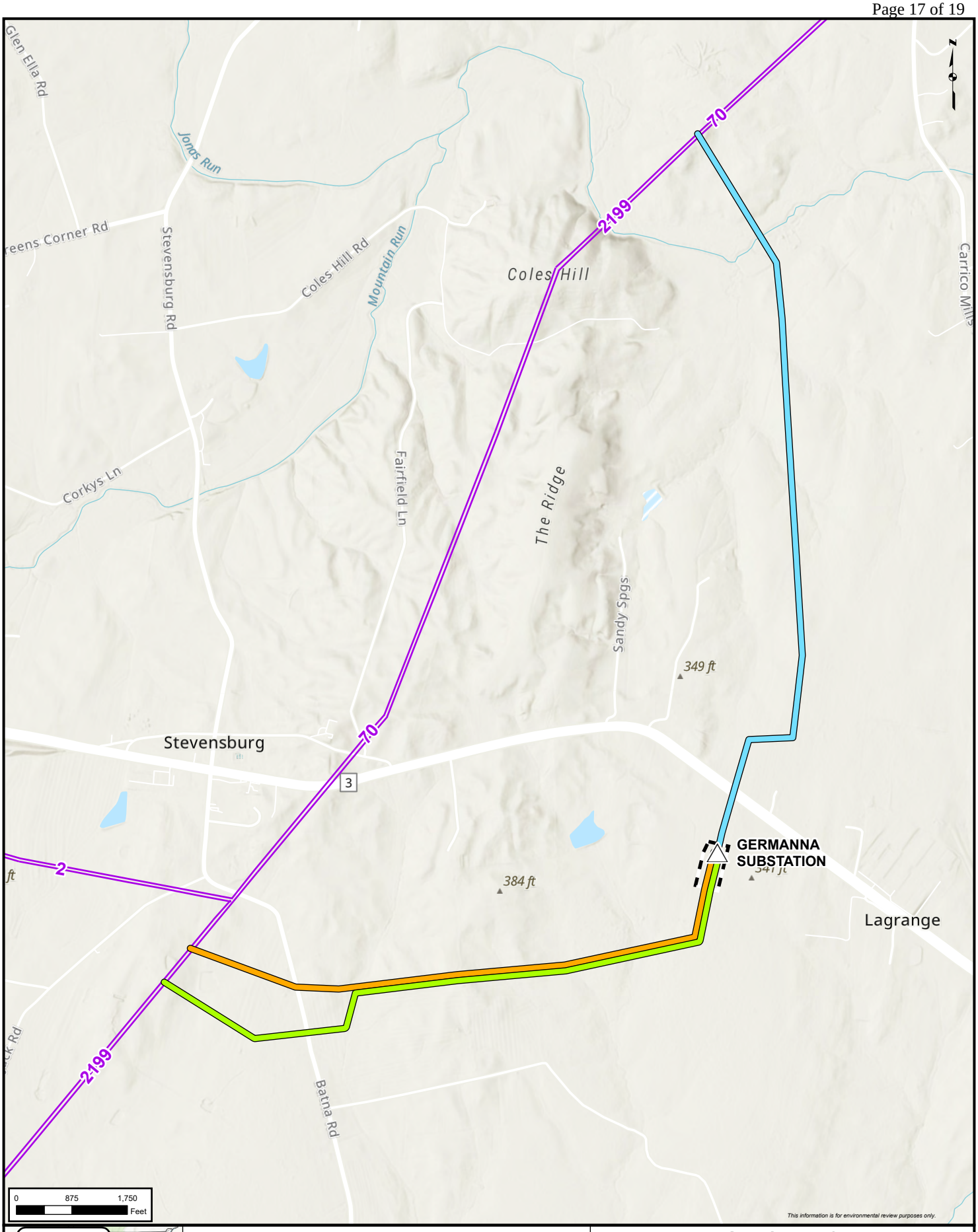
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Dominion Energy Virginia
5000 Dominion Blvd; 3rd Floor
Glen Allen, VA 23060
DominionEnergy.com

October 18, 2023

Mr. John Egertson
Culpeper County Administrator
302 North Main Street
Culpeper, VA 22701

Reference: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation in Culpeper County, Virginia
Notice Pursuant to Va. Code § 15.2-2202 E

Dear Mr. Egertson,

Dominion Energy Virginia (the "Company") is proposing to construct a new overhead 230 kV double circuit transmission line (the "Germanna Lines") on new right-of-way by cutting the Company's existing 230 kV overhead Line #2199 and extending the lines to the Company's proposed new 230 kV substation (the "Germanna Substation"), in Culpeper County, Virginia (collectively, the "Project").

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Greg Baka

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Local Permitting Consultant

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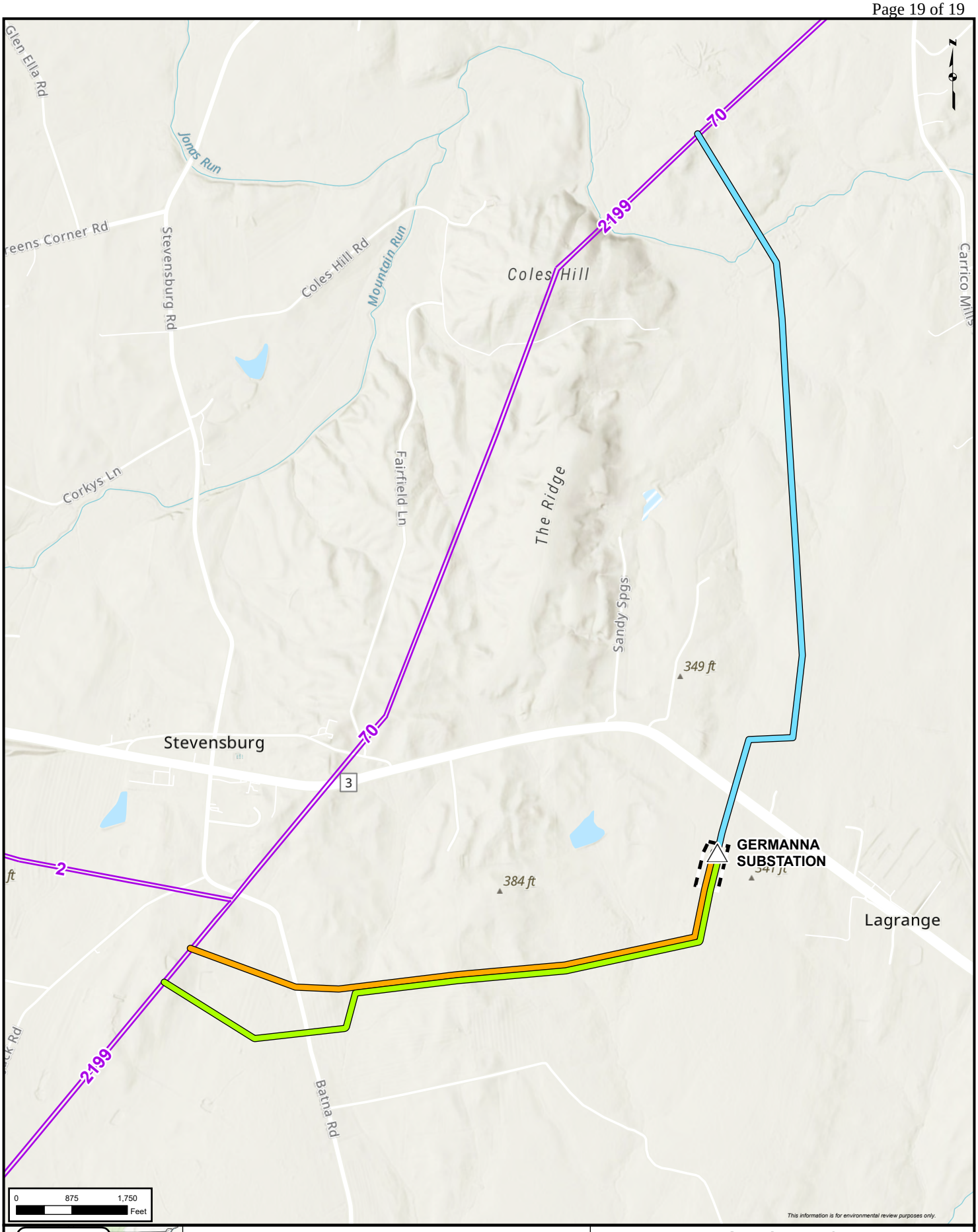
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5000 Dominion Blvd; 3rd Floor
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DominionEnergy.com

November 13, 2023

Mr. Mike Helvey
Obstruction Evaluation Group Manager
Federal Aviation Administration, FAA Eastern Regional Office
800 Independence Ave, SW, Room 400 East
Washington, DC 20591

RE: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation, in Culpeper County, Virginia.

Dear Mr. Helvey,

By letter dated October 18, 2023, Dominion Energy Virginia (the "Company") informed you of its proposal to construct a new overhead 230 kV double circuit transmission line (the "Germanna Lines") on new right-of-way by cutting the Company's existing 230 kV Line #2199 and extending the lines to the Company's proposed new 230 kV substation (the "Germanna Substation"), in Culpeper County, Virginia (collectively, the "Project").

The Project is necessary to assure that Dominion Energy Virginia can provide service requested by a data center customer in Culpeper County, Virginia, maintain reliable service for the overall growth in the load area surrounding the Company's existing Culpeper Substation and comply with mandatory North American Electric Reliability Corporation Reliability Standards.

As noted in the October 18th letter, the Company is in process of preparing an application for a Certificate of Public Convenience and Necessity from the State Corporation Commission of Virginia (the "Commission").

Enclosed with that letter was a Project Overview Map depicting the proposed and alternative routes of the Germanna Lines, as well as the general Project location. Note that the attached Project Overview Map has been updated to remove the designation of "Proposed Route." There are no other changes to the map that was provided with the October 18th letter. All final materials, including maps, will be available in the Company's application filing to the Commission.

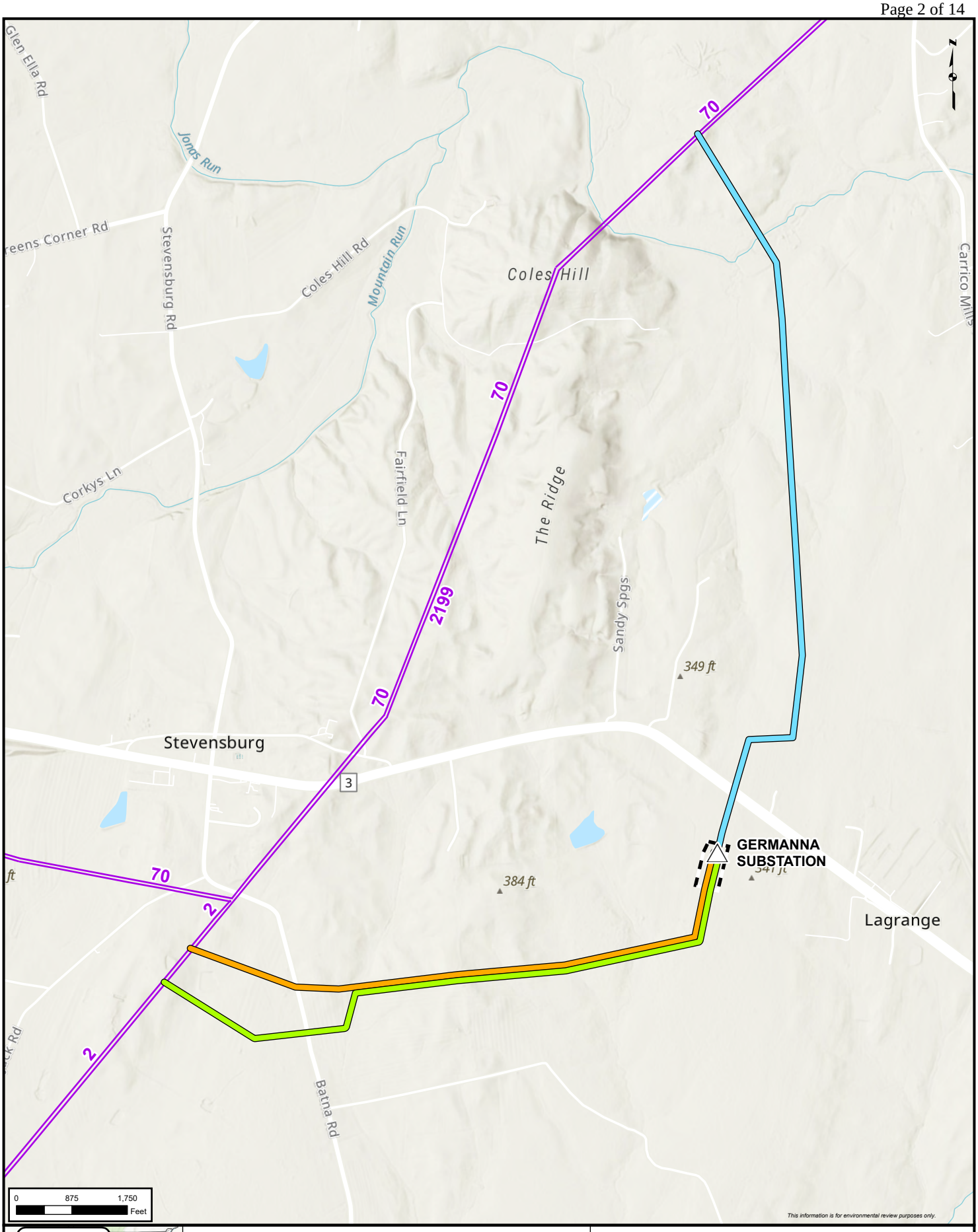
If there are any questions, please do not hesitate to contact Greg Baka at (804) 201-3053 or greg.r.baka@dominionenergy.com if you have any additional questions. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Sincerely,

Greg Baka

Greg Baka
Local Permitting Consultant

Attachment: Updated Project Map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November 13, 2023

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

RE: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation, in Culpeper County, Virginia.

Dear Mr. Kirchen,

By letter dated October 18, 2023, Dominion Energy Virginia (the "Company") informed you of its proposal to construct a new overhead 230 kV double circuit transmission line (the "Germanna Lines") on new right-of-way by cutting the Company's existing 230 kV Line #2199 and extending the lines to the Company's proposed new 230 kV substation (the "Germanna Substation"), in Culpeper County, Virginia (collectively, the "Project").

The Project is necessary to assure that Dominion Energy Virginia can provide service requested by a data center customer in Culpeper County, Virginia, maintain reliable service for the overall growth in the load area surrounding the Company's existing Culpeper Substation and comply with mandatory North American Electric Reliability Corporation Reliability Standards.

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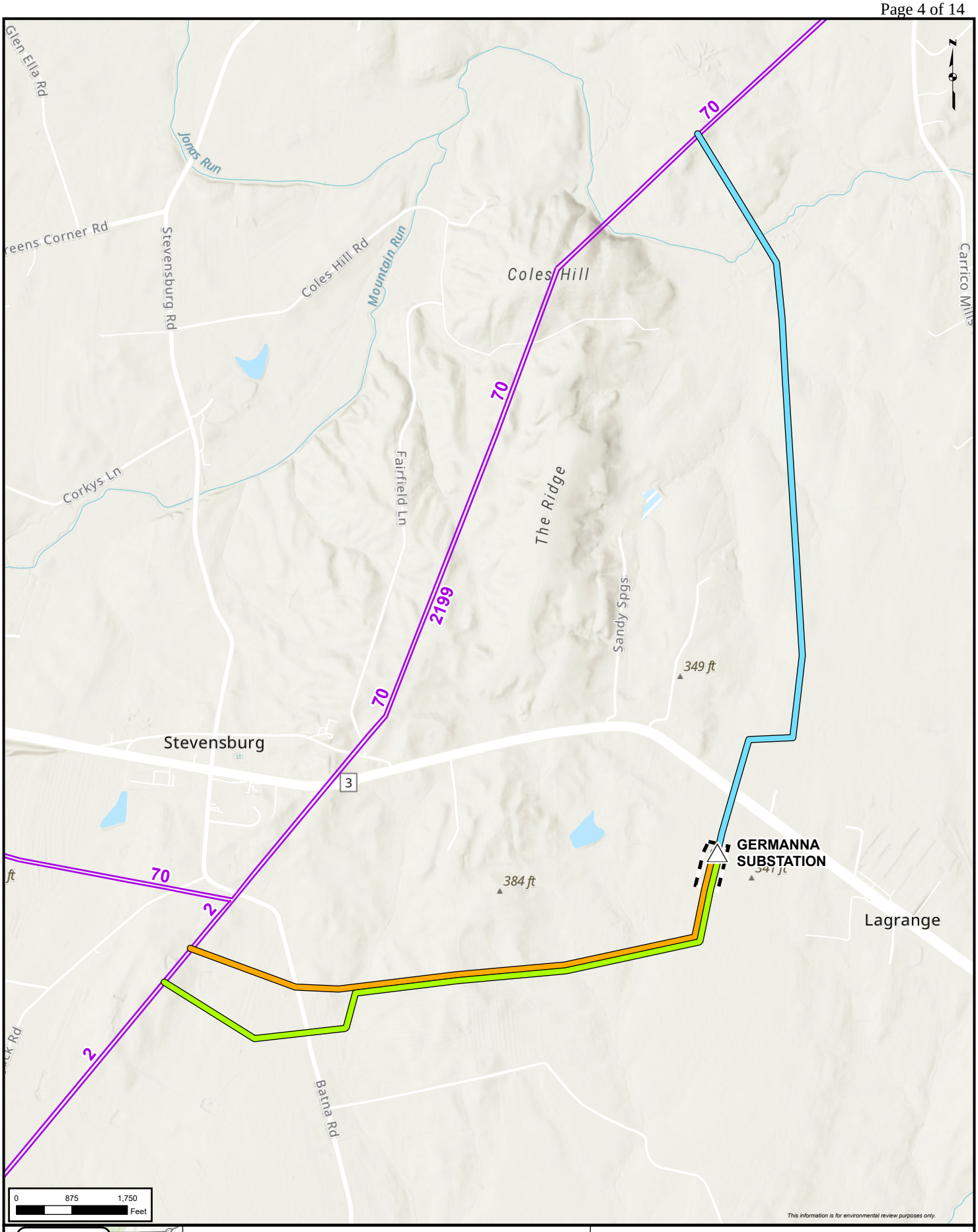
If there are any questions, please do not hesitate to contact Greg Baka at (804) 201-3053 or greg.r.baka@dominionenergy.com if you have any additional questions. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Sincerely,

Greg Baka

Greg Baka
Local Permitting Consultant

Attachment: Updated Project Map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Dominion Energy Virginia
5000 Dominion Blvd; 3rd Floor
Glen Allen, VA 23060
DominionEnergy.com

November 13, 2023

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

RE: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation, in Culpeper County, Virginia.

Dear Mr. Denny,

By letter dated October 18, 2023, Dominion Energy Virginia (the "Company") informed you of its proposal to construct a new overhead 230 kV double circuit transmission line (the "Germanna Lines") on new right-of-way by cutting the Company's existing 230 kV Line #2199 and extending the lines to the Company's proposed new 230 kV substation (the "Germanna Substation"), in Culpeper County, Virginia (collectively, the "Project").

The Project is necessary to assure that Dominion Energy Virginia can provide service requested by a data center customer in Culpeper County, Virginia, maintain reliable service for the overall growth in the load area surrounding the Company's existing Culpeper Substation and comply with mandatory North American Electric Reliability Corporation Reliability Standards.

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Enclosed with that letter was a Project Overview Map depicting the proposed and alternative routes of the Germanna Lines, as well as the general Project location. Note that the attached Project Overview Map has been updated to remove the designation of "Proposed Route." There are no other changes to the map that was provided with the October 18th letter. All final materials, including maps, will be available in the Company's application filing to the Commission.

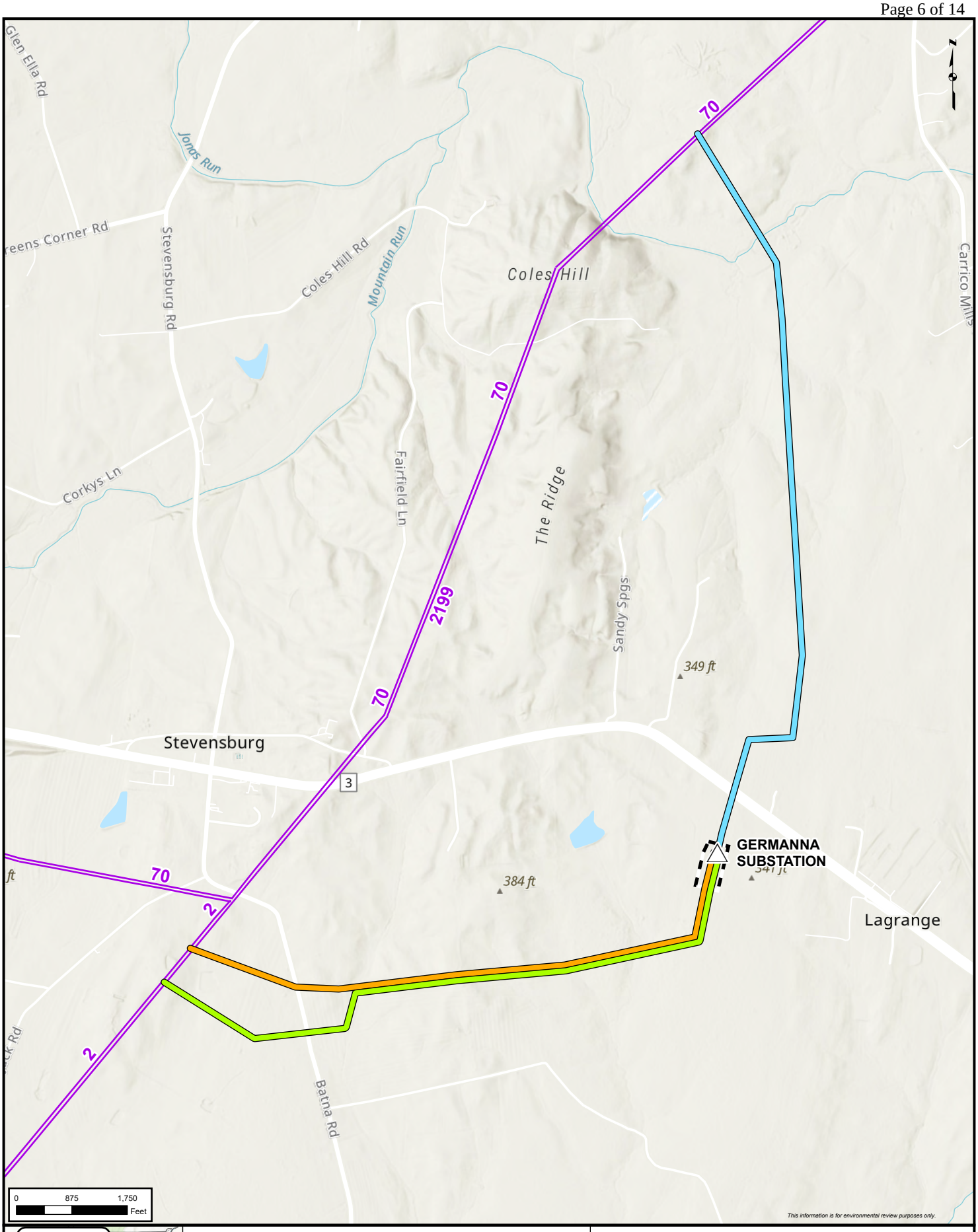
If you would like to receive a GIS shapefile of the transmission line routes to assist in the project review or if there are any questions, please do not hesitate to contact Greg Baka at (804) 201-3053 or greg.r.baka@dominionenergy.com if you have any additional questions. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Sincerely,

Greg Baka

Greg Baka
Local Permitting Consultant

Attachment: Updated Project Map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Dominion Energy Virginia
5000 Dominion Blvd; 3rd Floor
Glen Allen, VA 23060
DominionEnergy.com

November 13, 2023

Mr. Sean Nelson, P.E.
Culpeper District Engineer
Virginia Department of Transportation
1601 Orange Road
Culpeper, VA 22701

RE: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation, in Culpeper County, Virginia.

Dear Mr. Nelson,

By letter dated October 18, 2023, Dominion Energy Virginia (the "Company") informed you of its proposal to construct a new overhead 230 kV double circuit transmission line (the "Germanna Lines") on new right-of-way by cutting the Company's existing 230 kV Line #2199 and extending the lines to the Company's proposed new 230 kV substation (the "Germanna Substation"), in Culpeper County, Virginia (collectively, the "Project").

The Project is necessary to assure that Dominion Energy Virginia can provide service requested by a data center customer in Culpeper County, Virginia, maintain reliable service for the overall growth in the load area surrounding the Company's existing Culpeper Substation and comply with mandatory North American Electric Reliability Corporation Reliability Standards.

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If there are any questions, please do not hesitate to contact Greg Baka at (804) 201-3053 or greg.r.baka@dominionenergy.com if you have any additional questions. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Sincerely,

Greg Baka

Greg Baka
Local Permitting Consultant

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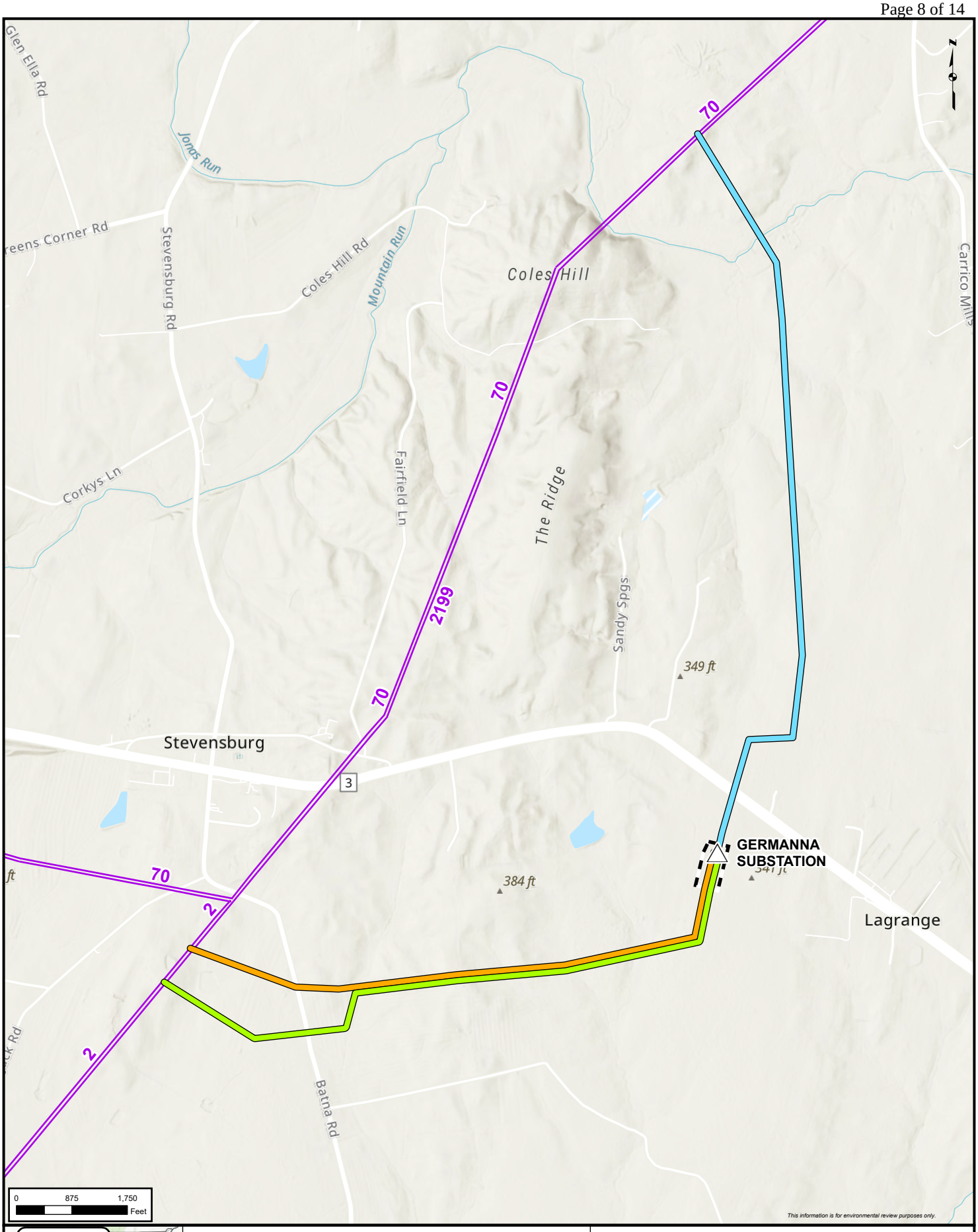
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Dominion Energy Virginia
5000 Dominion Blvd; 3rd Floor
Glen Allen, VA 23060
DominionEnergy.com

November 13, 2023

Mr. D. Mark Nesbit, P.E.
Warrenton Residence Engineer, Culpeper District
Virginia Department of Transportation
475 E. Shirley Ave
Warrenton, VA 20186

RE: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation, in Culpeper County, Virginia.

Dear Mr. Nesbit,

By letter dated October 18, 2023, Dominion Energy Virginia (the "Company") informed you of its proposal to construct a new overhead 230 kV double circuit transmission line (the "Germanna Lines") on new right-of-way by cutting the Company's existing 230 kV Line #2199 and extending the lines to the Company's proposed new 230 kV substation (the "Germanna Substation"), in Culpeper County, Virginia (collectively, the "Project").

The Project is necessary to assure that Dominion Energy Virginia can provide service requested by a data center customer in Culpeper County, Virginia, maintain reliable service for the overall growth in the load area surrounding the Company's existing Culpeper Substation and comply with mandatory North American Electric Reliability Corporation Reliability Standards.

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Sincerely,

Greg Baka

Greg Baka
Local Permitting Consultant

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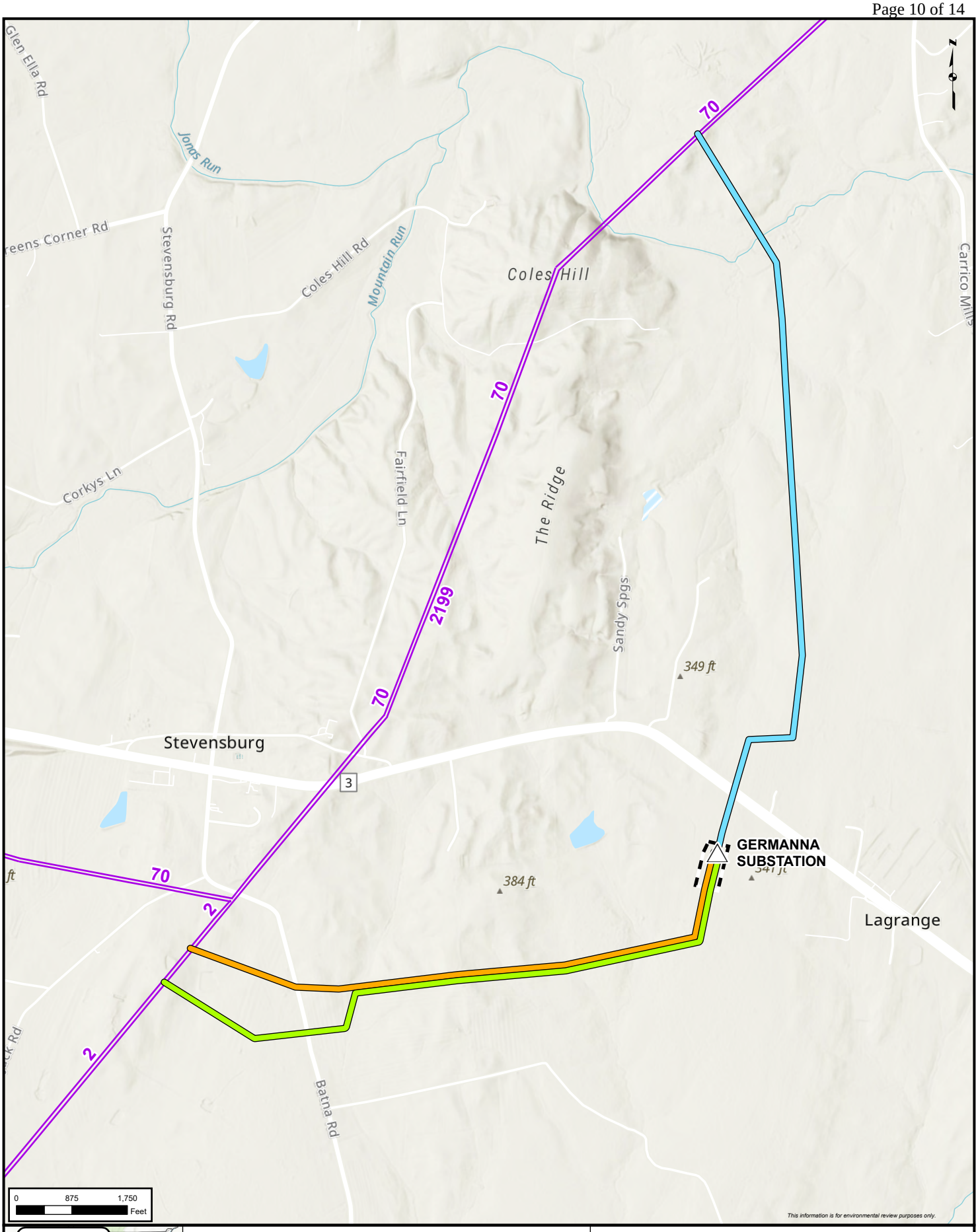
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Dominion Energy Virginia
5000 Dominion Blvd; 3rd Floor
Glen Allen, VA 23060
DominionEnergy.com

November 13, 2023

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

RE: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation, in Culpeper County, Virginia.

Dear Ms. Little,

By letter dated October 18, 2023, Dominion Energy Virginia (the "Company") informed you of its proposal to construct a new overhead 230 kV double circuit transmission line (the "Germanna Lines") on new right-of-way by cutting the Company's existing 230 kV Line #2199 and extending the lines to the Company's proposed new 230 kV substation (the "Germanna Substation"), in Culpeper County, Virginia (collectively, the "Project").

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Greg Baka

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Local Permitting Consultant

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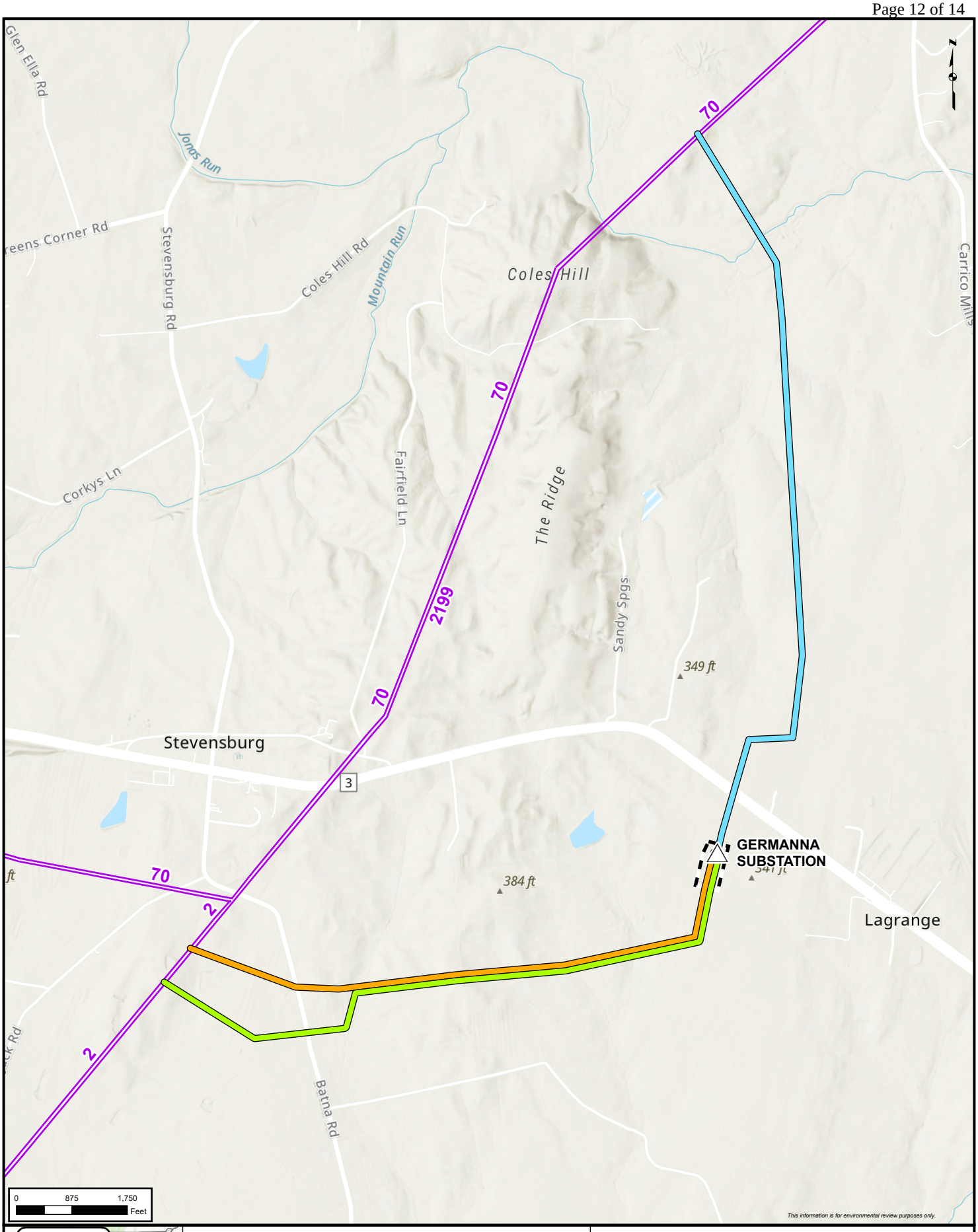
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Dominion Energy Virginia
5000 Dominion Blvd; 3rd Floor
Glen Allen, VA 23060
DominionEnergy.com

November 13, 2023

Mr. John Egertson
Culpeper County Administrator
302 North Main Street
Culpeper, VA 22701

Reference: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation in Culpeper County, Virginia
Notice Pursuant to Va. Code § 15.2-2202 E

Dear Mr. Egertson,

By letter dated October 18, 2023, Dominion Energy Virginia (the "Company") informed you of its proposal to construct a new overhead 230 kV double circuit transmission line (the "Germanna Lines") on new right-of-way by cutting the Company's existing 230 kV overhead Line #2199 and extending the lines to the Company's proposed new 230 kV substation (the "Germanna Substation"), in Culpeper County, Virginia (collectively, the "Project"). The Project is necessary to assure that Dominion Energy Virginia can provide service requested by a data center customer in Culpeper County, Virginia, maintain reliable service for the overall growth in the load area surrounding the Company's existing Culpeper Substation, and comply with mandatory North American Electric Reliability Corporation Reliability Standards.

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Local Permitting Consultant

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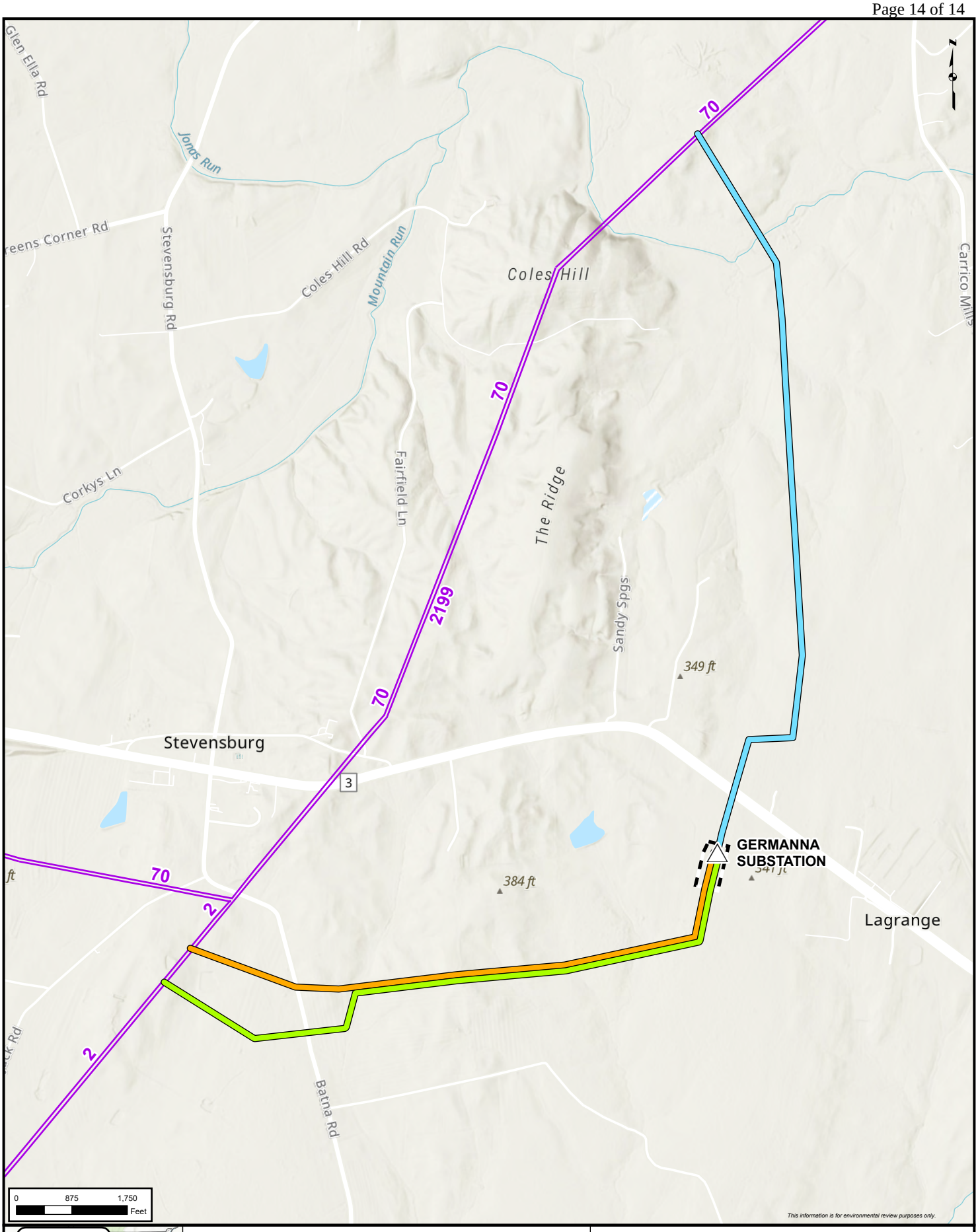
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James P Young (Services - 6)

From: Fulcher, Valerie (DEQ) <Valerie.Fulcher@deq.virginia.gov>
Sent: Thursday, November 16, 2023 10:28 AM
To: DCR-PRR Environmental Review (DCR); dgif-ESS Projects (DWR); Tignor, Keith (VDACS); odwreview (VDH); Churchill, Nikolas (DEQ); Ballou, Thomas (DEQ); Lovain, Anna (DEQ); Gavan, Larry (DEQ); Miller, Mark (DEQ); Kirchen, Roger (DHR); Lasher, Terrance J. (DOF); Folks, Clint (DOF); Spears, David (Energy); EIR Coordination (VDOT); ImpactReview (impactreview@vof.org); Patrick Mauney; John Egertson
Cc: James P Young (Services - 6)
Subject: [EXTERNAL] NEW SCOPING Dominion Energy Proposed 230 kV Germanna Lines and Substation Project
Attachments: Germanna_Routes_20231010.zip; Germanna_ROWs_20231010.zip; Germanna Lines and Substation Scoping Response.pdf; _DOM_GERM_Agency_Letter_Project_Overview_20231010.pdf; Agency Letter - General (Germanna) - Signed Flat.pdf

Good morning—attached is a request for scoping comments on the following:

> **Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation Project - Culpeper County, VA - CPCN agency Notification.**

If you choose to make comments, please send them directly to the project sponsor (james.p.young@dominionenergy.com) and copy the DEQ Office of Environmental Impact Review: eir@deq.virginia.gov. We will coordinate a review when the environmental document is completed.

DEQ-OEIR's scoping response is also attached.

If you have any questions regarding this request, please email our office at eir@deq.virginia.gov.

Valerie

Valerie A. Fulcher, CAP, OM, Admin/Data Coordinator Senior
Department of Environmental Quality
Environmental Enhancement - Office of Environmental Impact Review
1111 East Main Street
Richmond, VA 23219
NEW PHONE NUMBER: 804-659-1550
Email: Valerie.Fulcher@deq.virginia.gov
https://www.deq.virginia.gov/permits-regulations/environmental-impact-review [deq.virginia.gov]

For program updates and public notices please subscribe to Constant Contact: https://lp.constantcontact.com/su/MVcCump/EIR [lp.constantcontact.com]

Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

1111 E. Main Street, Suite 1400, Richmond, Virginia 23219
P.O. Box 1105, Richmond, Virginia 23218
(800) 592-5482 FAX (804) 698-4178
www.deq.virginia.gov

Travis A. Voyles
Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus
Director
(804) 698-4020

November 16, 2023

James P. Young
Environmental Specialist III
Dominion Environmental & Sustainability (E&S)
120 Tredegar Street
Richmond, VA 23219

RE: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation in Culpeper County, Virginia

Dear Mr. Young:

This letter is in response to the scoping request for the above-referenced project.

As you may know, the Department of Environmental Quality, through its Office of Environmental Impact Review (DEQ-OEIR), is responsible for coordinating Virginia's review of environmental impacts for electric power generating projects and power line projects in conjunction with the licensing process of the State Corporation Commission.

DOCUMENT SUBMISSIONS

In order to ensure an effective coordinated review of the environmental impact analysis may be sent directly to OEIR. We request that you submit one electronic to eir@deq.virginia.gov (25 MB maximum) or make the documents available for download at a website, file transfer protocol (ftp) site or the VITA LFT file share system (Requires an "invitation" for access. An invitation request should be sent to eir@deq.virginia.gov.). The required "Wetlands Impact Consultation" can be sent directly to Michelle Henicheck at michelle.henicheck @deq.virginia.gov or at the address above.

ENVIRONMENTAL REVIEW UNDER VIRGINIA CODE 56-46.1

While this Office does not participate in scoping efforts beyond the advice given herein, other agencies are free to provide scoping comments concerning the preparation of the environmental impact analysis document. Accordingly, we have coordinated your request with the following state agencies and those localities and Planning District Commissions, including but not limited to:

Department of Environmental Quality:
- DEQ Regional Office
- Air Division
- Office of Wetlands and Stream Protection
- Office of Local Government Programs
- Division of Land Protection and Revitalization
- Office of Stormwater Management

Department of Conservation and Recreation
Department of Health
Department of Agriculture and Consumer Services
Department of Wildlife Resources
Virginia Marine Resources Commission
Department of Historic Resources
Department of Mines, Minerals, and Energy
Department of Forestry
Department of Transportation

DATA BASE ASSISTANCE

Below is a list of databases that may assist you in the preparation of a NEPA document:

- DEQ Online Database: Virginia Environmental Geographic Information Systems

  Information on Permitted Solid Waste Management Facilities, Impaired Waters, Petroleum Releases, Registered Petroleum Facilities, Permitted Discharge (Virginia Pollution Discharge Elimination System Permits) Facilities, Resource Conservation and Recovery Act (RCRA) Sites, Water Monitoring Stations, National Wetlands Inventory:
  - www.deq.virginia.gov/ConnectWithDEQ/VEGIS.aspx

- DEQ Virginia Coastal Geospatial and Educational Mapping System (GEMS)

  Virginia's coastal resource data and maps; coastal laws and policies; facts on coastal resource values; and direct links to collaborating agencies responsible for current data:
  - https://www.deq.virginia.gov/?splash=https%3a%2f%2fgaia.vcu.edu%2fportal%2fapps%2fsites%2f%23%2fgemsmaps&____isexternal=true

- MARCO Mid-Atlantic Ocean Data Portal

  The Mid-Atlantic Ocean Data Portal is a publicly available online toolkit and resource center that consolidates available data and enables users to visualize and analyze ocean resources and human use information such as fishing grounds, recreational areas, shipping lanes, habitat areas, and energy sites, among others.

  - http://portal.midatlanticocean.org/visualize/#x=-73.24&y=38.93&z=7&logo=true&controls=true&basemap=Ocean&tab=data&legends=false&layers=true

- DHR Data Sharing System.

Survey records in the DHR inventory:

- www.dhr.virginia.gov/archives/data_sharing_sys.htm

- DCR Natural Heritage Search

  Produces lists of resources that occur in specific counties, watersheds or physiographic regions:
  - www.dcr.virginia.gov/natural_heritage/dbsearchtool.shtml

- Wetland Condition Assessment Tool (WetCAT)
  - https://www.deq.virginia.gov/our-programs/water/wetlands-streams/wetcat

- DWR Fish and Wildlife Information Service

  Information about Virginia's Wildlife resources:
  - http://vafwis.org/fwis/

- Total Maximum Daily Loads Approved Reports
  - https://www.deq.virginia.gov/programs/water/waterqualityinformationtmdls/tmdl/tmdldevelopment/approvedtmdlreports.aspx

- Virginia Outdoors Foundation: Identify VOF-protected land
  - http://vof.maps.arcgis.com/home/index.html

- Environmental Protection Agency (EPA) Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Database: Superfund Information Systems

  Information on hazardous waste sites, potentially hazardous waste sites and remedial activities across the nation, including sites that are on the National Priorities List (NPL) or being considered for the NPL:
  - www.epa.gov/superfund/sites/cursites/index.htm

- EPA RCRAInfo Search

  Information on hazardous waste facilities:
  - www.epa.gov/enviro/facts/rcrainfo/search.html

- Total Maximum Daily Loads Approved Reports
  - https://www.deq.virginia.gov/our-programs/water/water-quality/tmdl-development/approved-tmdls

- EPA Envirofacts Database

  EPA Environmental Information, including EPA-Regulated Facilities and Toxics Release Inventory Reports:
  - www.epa.gov/enviro/index.html

- EPA NEPAssist Database

  Facilitates the environmental review process and project planning:
  http://nepaassisttool.epa.gov/nepaassist/entry.aspx

If you have questions about the environmental review process, please feel free to contact me (telephone (804) 659-1915 or e-mail bettina.rayfield@deq.virginia.gov).

I hope this information is helpful to you.

Sincerely,

Bettina Rayfield, Program Manager
Environmental Impact Review and
Long-Range Priorities

ERM

222 South 9th Street
Suite 2900
Minneapolis, Minnesota
55402

Telephone: (804) 253-1090
Fax: (804) 253-1091

www.erm.com

November 20, 2023

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

Subject: Wetland and Waterbody Desktop Summary
230 kV Germanna Lines and Germanna Substation
New SCC Filing

Dear Ms. Rayfield:

Environmental Resources Management (ERM), on behalf of Virginia Electric and Power Company (Dominion Energy Virginia, Dominion, or the Company), conducted a desktop wetland and waterbody review of publicly available information for the proposed 230 kilovolt (kV) Germanna Lines and Germanna Substation project (Project) located within Culpeper County, Virginia. This delineation was done using desktop resources and methodology. A field delineation is required to verify the accuracy and extent of aquatic resource boundaries. The Project route alternatives are shown in Attachment 1, with wetland boundaries identified in this desktop review shown in Attachment 2.

Dominion Energy Virginia is filing an application with the State Corporation Commission (SCC) to:

- Construct a new overhead 230 kV double circuit transmission line by cutting the Company's 230 kV Cirrus-Gordonsville Line #2199 at Structure #2199/102, resulting in 230 kV Cirrus-Germanna Line #2331 and 230 kV Germanna-Gordonsville Line #2199 (the Germanna Lines). From the cut-in location, the Germanna Lines will extend approximately 1.8 miles in new right-of-way to the proposed Germanna Substation;
- Construct a new 230-34.5 kV substation (Germanna Substation) on property to be obtained by the Company; and
- Perform relay resets at the Company's existing Gordonsville and Remington Substations.

The Company proposes to construct and operate the Germanna Lines and Substation to provide service requested by a customer in Culpeper County, to maintain reliable service for the overall growth in the load area surrounding the existing Culpeper Substation, and to comply with mandatory North American Electric Reliability Corporation standards. The Company considered the facilities required to construct and operate the Project, amount of new rights-of-way that will be required, amount of existing development in each area, potential for environmental impacts on communities, and the relative cost of the Project.

The purpose of this desktop analysis is to identify and evaluate potential impacts of the Project on aquatic resources (streams, creeks, runs, and open water features) in the area. In accordance with Virginia Department of Environmental Quality (DEQ) and the SCC's Memorandum of Agreement, the evaluation was conducted using various data sets that may indicate wetland location and type. This report is being submitted to the DEQ as part of the DEQ Wetland Impacts Consultation.

This assessment did not include field investigations required for wetland delineations in accordance with the U.S. Army Corps of Engineers Wetland Delineation Manual (Environmental Laboratory, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0).

Project Study Area and Potential Routes

A study area was developed encompassing an area containing the Project origin and termination points for the planned facilities (i.e., Dominion's existing Line #2199 and the planned location of the Germanna Substation) as well as an area broad enough for the identification of reasonable route alternatives meeting the Project objectives. Additionally, and to the extent practicable, the limits of the study area were defined by reference to easily distinguishable landmarks, such as roads or other recognizable features.

Based on the above, ERM and Dominion defined the boundaries of the study area for the Project as follows:

- The intersection of the Company's existing Line #2199 and Carrico Mills Road to the north;
- The southern boundary of a proposed solar facility (Greenwood Solar Facility) to the south;
- Carrico Mills Road to the east; and
- The Company's existing Line #2199 to the west.

The study area encompasses approximately 2,488 acres within the Stevensburg Magisterial District, in the area north of Batna, south of Brandy Station, east of Lignum, and west of the Town of Culpeper in Culpeper County. The Project is located east of the Company's 230 kV Cirrus-Gordonsville Line #2199 with the study area encompassing lands both north and south of Germanna Highway. The Project vicinity is shown in Attachment 1.

Dominion identified three overhead routes that would involve construction of a new overhead 230 kV double circuit transmission line, which would cut-in to the Company's existing 230 kV Line #2199 to the west and connect to the proposed Germanna Substation south of Germanna Highway, described below:

Proposed Route Alternatives

Alternative Route 1

Alternative Route 1 of the Germanna Lines is approximately 2.4 miles in length. Beginning at the cut-in location at Structure #2199/76, the route travels approximately 0.5 mile southeast, then turns south for 1.4 miles. The route then turns west for 0.1 mile before turning south for another 0.4 mile, terminating at the proposed Germanna Substation. In total, Alternative Route 1 measures approximately 2.4 miles in length with a 100-foot-wide right-of-way encompassing about 34.2 acres inclusive of the proposed substation site.

Alternative Route 2

Alternative Route 2 of the Germanna Lines is approximately 1.8 miles in length. Beginning at the cut-in location at Structure #2199/102, the route travels approximately 0.3 mile southwest, crosses Batna Road, then turns east for approximately 1.5 miles before turning north for another 0.1 mile, terminating at the

proposed Germanna Substation. Alternative Route 2 measures approximately 1.8 miles in length with a 100-foot-wide right-of-way encompassing about 26.7 acres inclusive of the proposed substation site.

Alternative Route 3

Alternative Route 3 of the Germanna Lines is approximately 2.0 miles in length. Beginning at the cut-in location at Structure #2199/103, the route travels approximately 0.3 mile southwest, turns east for approximately 0.2 mile, crossing Batna Road, then turns north for 0.1 mile before turning east for 1.0 mile, then turns north for another 0.1 mile, terminating at the proposed Germanna Substation. In total, the route measures approximately 2.0 miles in length with a 100-foot-wide right-of-way encompassing about 28.9 acres, inclusive of the proposed substation site.

Germanna Substation

The proposed 230-34.5 kV Germanna Substation will be located on approximately 6.1 acres 0.2 mile southwest of Germanna Highway. Impacts associated with the substation footprint are included in the impacts for each route alternative.

Desktop Evaluation Methodology

The area of effect considered for this study consists of the proposed rights-of-way identified above within which the electric transmission lines would be constructed and operated. Data sources used for this review include the following, each of which is described briefly below:

- USA National Agricultural Imagery Program (NAIP) Natural Color Images, Virginia, 1-meter pixel resolution, photo date 2023 (NAIP 2023)
- USA NAIP Imagery: Color Infrared NAIP Infrared Images, Virginia, 1-meter pixel resolution (NAIP 2021)
- Current aerial imagery taken in June 2022 (Planet Imagery 2022)
- Historic aerial imagery (Google LLC 2022)
- ESRI World Topographic Map, multiple scales (ESRI, et al., 2023)
- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) mapping (2022) (USFWS 2022)
- U.S. Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS) Soil Survey Geographic (SSURGO) database (USDA-NRCS 2023)
- USGS National Hydrography Dataset (NHD) (USGS 2020)

Natural Color and Infrared Aerial Photography

Recent (2023) natural color aerial photography was used to provide a visual overview of the Project area and to assist in evaluating current conditions. Infrared aerial photography was used to identify the potential presence of wetlands based on signatures associated with the levels of reflectance. For example, areas that are inundated with water appear very dark (almost black) due to the low level of reflectance in the

infrared spectrum. The presence of these dark colors can be used as a potential indicator of hydric or inundated soils that are likely associated with wetlands (NAIP 2021).

Topographic Maps

Recent ESRI world topographic maps show the topography of the area as well as other important landscape features such as forest cover, development, buildings, agricultural areas, streams, lakes, and wetlands (ESRI et al., 2023).

USFWS National Wetland Inventory Mapping

NWI maps provide the boundaries and classifications of potential wetland areas as mapped by the USFWS (USFWS 2022). NWI data is based primarily on aerial photo interpretations with limited ground-truthing and may represent incorrect boundaries or wetland cover types. NWI data can be unreliable in some areas, especially in forested landscapes, where aerial photography is used as the major data source. The classifications of the majority of the NWI polygons in the study area appear to be accurate based on a review of the cover types observed in the aerial photography. However, in areas where there was an obvious discrepancy between the NWI classification and the aerial photography, ERM modified the classification to more accurately reflect current conditions. In order to acknowledge ERM's adjustment of NWI classifications where appropriate, all the wetland types referenced in this assessment are referred to as "assigned wetland cover types" regardless of whether the cover type was actually modified from the NWI classification.

USDA-NRCS Soils Data

Soils in the study area were identified and assessed using the SSURGO database, which is a digital version of the original county soil surveys (USDA-NRCS 2023). The attribute data within the SSURGO database provides the proportionate extent of the component soils and their properties (e.g., hydric rating) for each soil map unit. The soils in the study area were grouped into three categories based on the hydric rating of the component soils within each map unit: hydric, partially hydric, and non-hydric. Hydric soils were defined as those where the major component soils, and minor components in some cases, are designated as hydric. Hydric components in these map units account for more than 80 percent of the map unit. Partially hydric soils include map units that only contain minor component soils that are designated as hydric. The partially hydric map units in the Project area contain 10 percent or less hydric soils. The remaining map units do not contain any component soils that are designated as hydric. Areas mapped as hydric or partially hydric have a higher probability of containing wetlands than areas with no hydric soils.

USGS National Hydrography Dataset

The National Hydrography Dataset (NHD) dataset contains features such as lakes, ponds, streams, rivers, and canals (USGS 2020). The waterbodies mapped by the NHD appeared generally consistent with those visible on the USGS maps and aerial photography.

Probability Analysis

ERM used a stepwise process to identify probable wetland areas along the proposed routes, as follows:

1. Infrared and natural color aerial photography was used in conjunction with topographic maps and soils maps to identify potential wetland areas. Boundaries were assigned to the areas that appeared to

exhibit wetland signatures based on this review and a cover type was determined based on aerial photo interpretation. For the purpose of the study, these areas are referred to as Interpreted Wetlands.

2. To further determine the probability of a wetland occurring within a given location, the Interpreted Wetland polygon shape files were digitally layered with the NWI mapping and soils information from the SSURGO database.

3. The probability of a wetland occurring was assigned based on the number of overlapping data layers (i.e., indicators of potential wetland presence) that occurred in a particular area.

The criteria assigned to each probability are outlined in Table 1.

Table 1: Criteria Used to Rank the Probability of Wetland Occurrence

Probability	Criteria
High	Areas where layers of hydric soils, Interpreted Wetlands, and NWI data overlap
Medium/High	NWI data overlaps hydric soils; or NWI data overlaps Interpreted Wetlands with or without partially hydric soils; or Hydric soils overlap Interpreted Wetlands
Medium	Interpreted Wetlands with or without overlap by partially hydric soils
Medium/Low	Hydric soils only; or NWI data with or without overlap by partially hydric soils
Low	Partially hydric soils only
Very Low	Non-hydric soils only

Wetland and Waterbody Crossings

The desktop analysis provides a probability of wetlands and waterbody occurrence within each route. As stated above, field delineations were not performed and would be required to verify the accuracy and extent of aquatic resource boundaries. A range of wetland occurrence probabilities are reported by this study from very low to high. The probability of wetland occurrence increases as multiple indicators begin to overlap towards the “high” end of the spectrum. The medium, medium-high, and high probability categories are the most reliable representation of in-situ conditions, due to overlapping data sets, and these categories are reported in the summary below as a percentage of the total acreage of each route. Attachment 2 depicts the interpreted wetlands displayed on color base map images.

Results

Results of the probability analysis are presented in Table 2 below. Summaries are provided in the sections following the table.

Table 2: Summary of the Probabilities of Wetland and Waterbody Occurrence along Project Route Alternatives [a,b]

Probability	Total within right-of-way (acres) [c]	Wetland and Waterbody type (acres)				
		PEM Emergent	PFO Forested	PSS Scrub-shrub	Riverine Stream	PUB Freshwater pond
Alternative Route 1						
High	0.2	NA	0.1	NA	0.1	NA
Medium/High	0.7	0.0	0.6	NA	0.1	NA
Medium	0.4	NA	0.3	NA	0.1	NA
Medium/Low	11.0	NA	NA	NA	0.0	NA
Low	21.7	NA	NA	NA	NA	NA
Very Low	0.2	NA	0.1	NA	0.1	NA
Alternative Route 2						
High	0.3	0.0	0.3	0.0	0.1	NA
Medium/High	2.2	0.0	1.9	0.1	0.1	NA
Medium	0.6	0.1	0.5	NA	NA	NA
Medium/Low	10.5	NA	NA	NA	NA	NA
Low	8.7	NA	NA	NA	NA	NA
Very Low	4.3	NA	NA	NA	NA	NA
Alternative Route 3						
High	0.3	0.0	0.3	0.0	0.1	NA
Medium/High	2.1	0.0	1.9	0.1	0.1	NA
Medium	0.5	NA	0.5	NA	NA	NA
Medium/Low	11.0	NA	NA	NA	NA	NA
Low	10.5	NA	NA	NA	NA	NA
Very Low	4.3	NA	NA	NA	NA	NA

Note: Totals may not equal the sum of addends due to rounding.

NA: Not applicable due to absence of wetland or waterbody type within the alternative route

a Numbers in this table have been rounded for presentation purposes; as a result, the totals may not reflect the sum of the addends.

b Germanna Substation wetlands and waterbodies are included within each route rather than individually.

c Total acres may not total the sum of wetland and waterbody types because some of the lower probability rankings do not overlap with NWI or interpreted wetlands, and therefore do not have a wetland/waterbody type associated with them.

Wetland Crossings

Alternative Route 1

The length of the corridor for Alternative Route 1 is approximately 2.4 miles and encompasses a total of approximately 34.2 acres (including the 6.1-acre Germanna Substation footprint). Based on the methodology discussed above, the right-of-way footprint will encompass approximately 3.8 percent (1.3 acres) of land with a medium or higher probability of containing wetlands and waterbodies.

Alternative Route 2

The length of the corridor for Alternative Route 2 is approximately 1.8 miles and encompasses a total of approximately 26.7 acres (including the 6.1-acre Germanna Substation footprint). Based on the methodology discussed above, the right-of-way footprint will encompass approximately 11.6 percent (3.1 acres) of land with a medium or higher probability of containing wetlands and waterbodies.

Alternative Route 3

The length of the corridor for Alternative Route 3 is approximately 2.0 miles and encompasses a total of approximately 28.9 acres (including the 6.1-acre Germanna Substation footprint). Based on the methodology discussed above, the right-of-way footprint will encompass approximately 10.4 percent (3.0 acres) of land with a medium or higher probability of containing wetlands and waterbodies.

Waterbody Crossings

ERM identified and mapped waterbodies in the study area using similar publicly available GIS databases as those used to identify and map wetlands. Waterbodies crossed by the alternative routes include the perennial Mountain Run and unnamed, intermittent tributaries to Mountain Run, Potato Run, and Brook Run, described below.

Alternative Route 1

Two NHD-mapped waterbody crossings, consisting of perennial Mountain Run and an unnamed, intermittent tributary to Mountain Run, are crossed by Alternative Route 1. Based on ERM's desktop wetland and waterbody analysis, the Alternative Route 1 right-of-way would encompass approximately 0.3 acre of riverine waterbodies.

Alternative Route 2

Four NHD-mapped waterbody crossings, consisting of 1 unnamed intermittent tributary to Potato Run and 3 unnamed intermittent tributaries to Brook Run, are crossed by Alternative Route 2. Based on ERM's desktop wetland and waterbody analysis, the Alternative Route 2 right-of-way would encompass approximately 0.2 acre of riverine waterbodies.

Alternative Route 3

Four NHD-mapped waterbody crossings, consisting of 1 unnamed intermittent tributary to Potato Run and 3 unnamed intermittent tributaries to Brook Run, are crossed by Alternative Route 3. Based on ERM's desktop wetland and waterbody analysis, the Alternative Route 3 right-of-way would encompass approximately 0.1 acre of riverine waterbodies.

Project Impacts

Avoiding or minimizing new impacts on wetlands and streams was among the criteria used in developing routes for the Project. To minimize impacts on wetland areas, the transmission line has been designed to span or avoid wetlands where possible, keeping transmission structures outside of wetlands to the extent practicable. Direct impacts to wetlands would be limited to placement of structures within wetlands if unavoidable and the permanent conversion of PSS/PFO wetlands within the right-of-way to PSS or PEM type wetlands. Within the Germanna Substation, less than 0.1 acre of PEM wetlands would be permanently converted to impervious surface, however, this impact would be permitted by the customer rather than by the Company, as part of their building pad preparation for the substation. Based on aerial imagery, this portion of wetland is a farmed section of on the external edge of a larger wetland complex and its fill would not affect the overall wetland hydrology or contours.

Excluding the Germanna Substation footprint, there would be no change in contours of wetlands and waterbodies, or redirection of the flow of water, and the amount of spoil from foundations and structure placement would be minimal. Excess soil in wetlands generated through foundation construction would be mitigated through Best Management Practices (erosion and sediment controls) and would be removed from the wetland.

The majority of potential direct impacts on wetlands due to Project construction would be temporary in nature. Mats would be used for construction equipment to travel over wetlands, as appropriate. Due to the absence of an existing right-of-way, some new access roads may be necessary along the route. If a section of line cannot be accessed from existing roads, Dominion Energy Virginia may need to install a culvert, ford, or temporary bridge along the right-of-way to cross small streams. In such cases, some temporary fill material in wetlands adjacent to such crossings may be required. This fill would be placed on erosion control fabric and removed when work is completed, returning ground elevations to original contours. When siting transmission lines, perpendicular crossings of wetland systems are prioritized to minimize direct impacts to these sensitive areas and reduce overall impacts to the watershed.

Where the removal of trees or shrubby vegetation occurs within wetlands, Dominion Energy Virginia would use the least intrusive method reasonably possible to clear the corridor. Hand cutting of vegetation would be conducted, where needed, to avoid and minimize impacts on streams and/or wetlands. Where tree clearing is required within the new right-of-way, PFO and PSS wetlands would be permanently converted to PSS or PEM wetland types. Forested wetlands and riparian buffers provide functions such as peak flood flow reduction, nutrient and sediment capture, filtration of pollutants to adjacent waterbodies, and habitat diversity. The conversion of forested wetlands would reduce or eliminate some of these functions.

Required tree removal adjacent to waterbodies would reduce riparian buffer functions such as stream bank stabilization and erosion control, nutrient and sediment filtration, floodwater storage and peak flow reduction, and water temperature modification from shading. Vegetation within the right-of-way would be allowed to return to maintained grasses and shrubs after construction, which would provide some filtration stabilization to help protect waterbodies from pollutants. Within the stream buffers (100 feet), all trees will be hand felled with stumps left in place to reduce the potential for erosion. Shrubs and trees with a diameter at breast height of less than three inches will be left in place unless it impedes temporary access where they would be clipped, leaving roots in place which will be able to naturally regenerate.

Summary

This Wetland and Waterbody Summary report was prepared in accordance with the Memorandum of Agreement between the DEQ and the SCC for the purpose of initiating a Wetlands Impact Consultation. Please note that a formal onsite wetland delineation was not conducted as part of this review.

In addition, there is a Project website where the SCC application will be available after filing, as well as maps and discussions about the Project. It can be accessed by going to: https://www.dominionenergy.com/germanna.

If you have any questions regarding this wetland assessment, please contact me at 612-347-7178 or by email at mariah.weitzenkamp@erm.com.

Sincerely,

Mariah Weitzenkamp
Environmental Resources Management

cc: James Young, Dominion Energy Virginia
Heather Kennedy, Dominion Energy Virginia

Enclosures: Attachments 1 and 2

References

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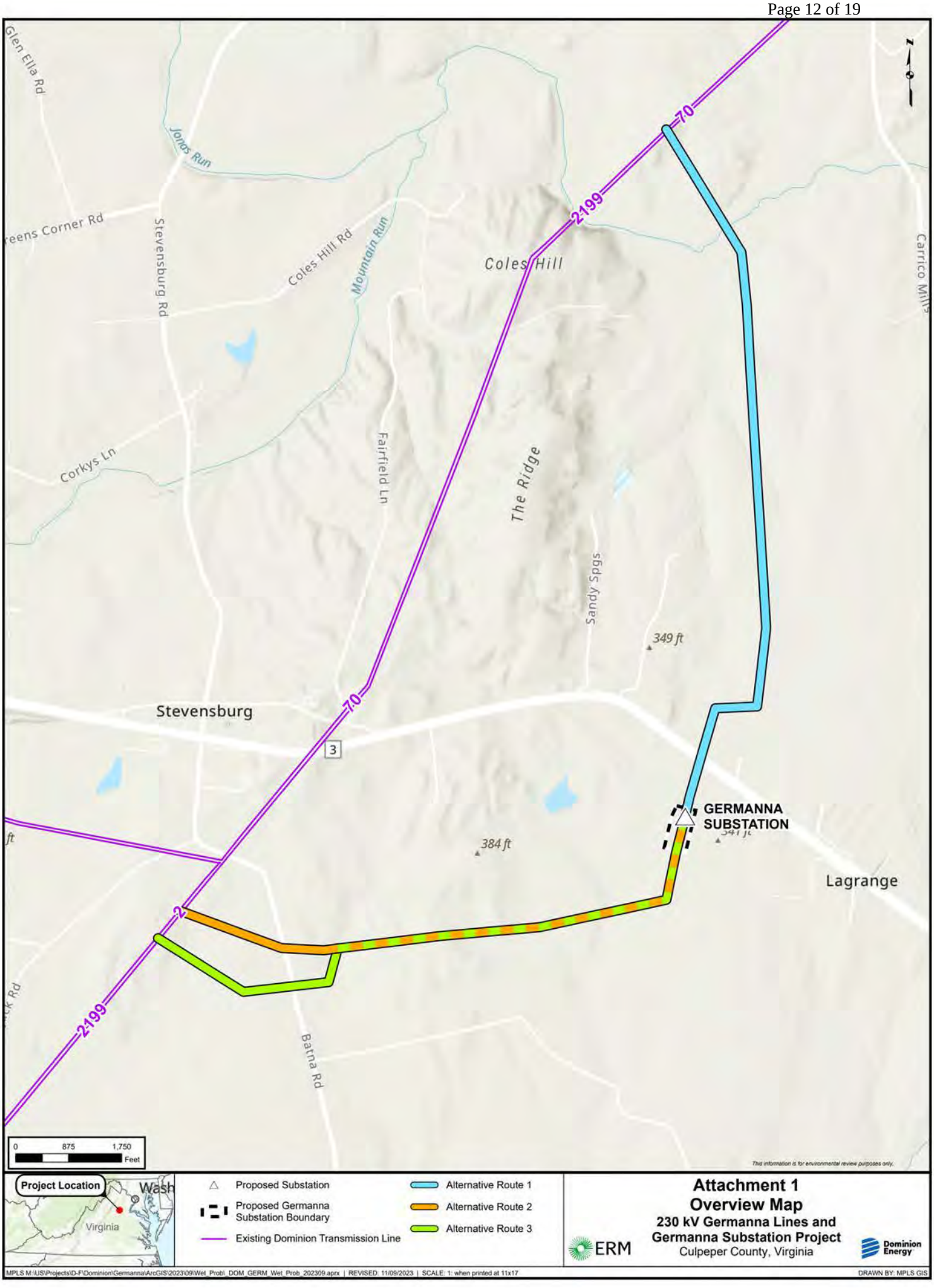
ATTACHMENT 1


Glen Ella Rd
Jones Run
Stevensburg Rd
Coles Hill Rd
Mountain Run
Coles Hill
Carrico Mills
Corkys Ln
Fairfield Ln
The Ridge
Sandy Spgs
349 ft
Stevensburg
3
70
2199
GERMANNA SUBSTATION
384 ft
Lagrange
2
Batna Rd
0 875 1,750 Feet
This information is for environmental review purposes only.
Project Location
Virginia
Proposed Substation
Proposed Germanna Substation Boundary
Existing Dominion Transmission Line
Alternative Route 1
Alternative Route 2
Alternative Route 3
Attachment 1
Overview Map
230 kV Germanna Lines and Germanna Substation Project
Culpeper County, Virginia
ERM
Dominion Energy
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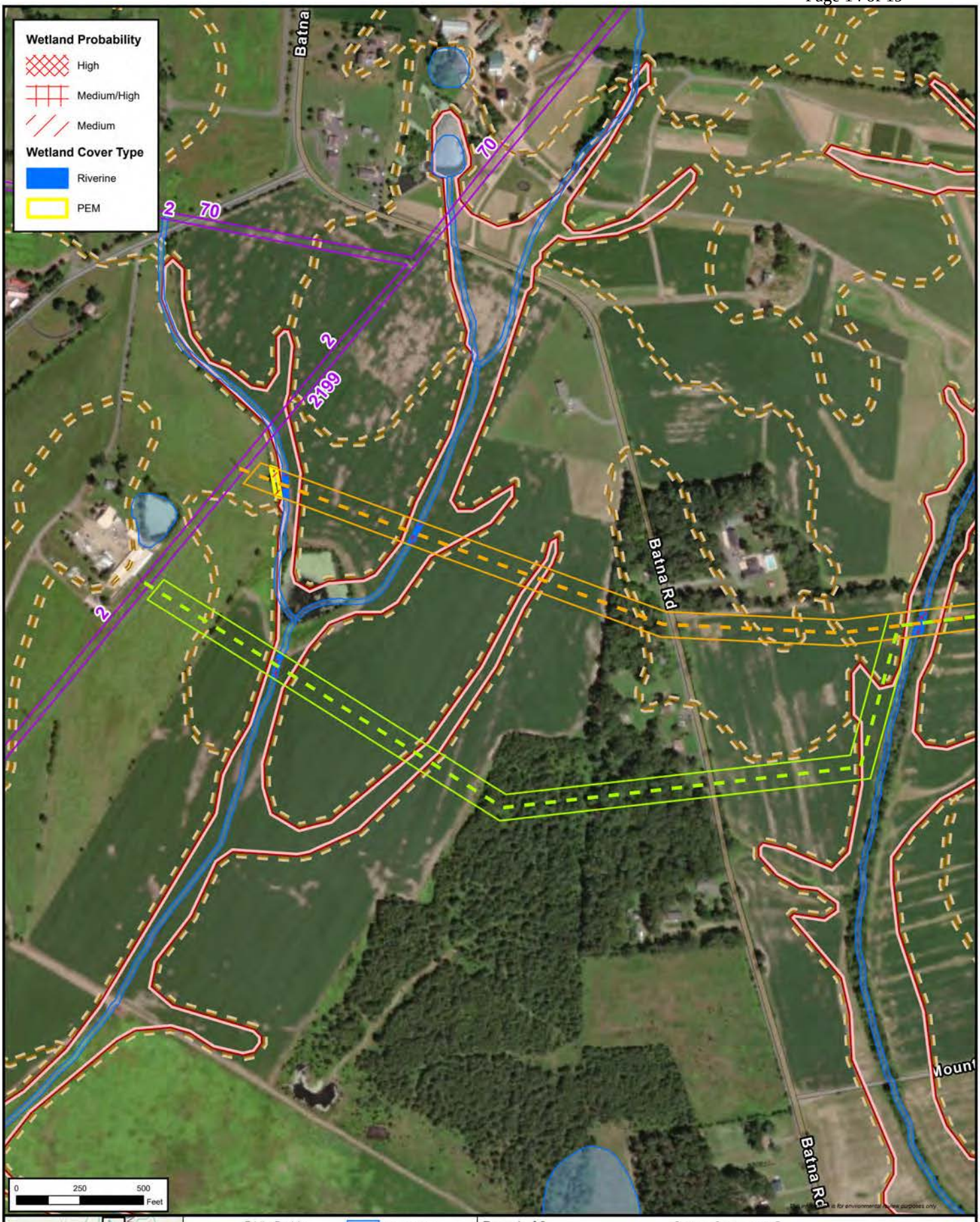

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Attachment 2
Wetland Probability Map Set
230 kV Germanna Lines and Germanna Substation Project
Culpeper County, Virginia

ERM

Dominion Energy

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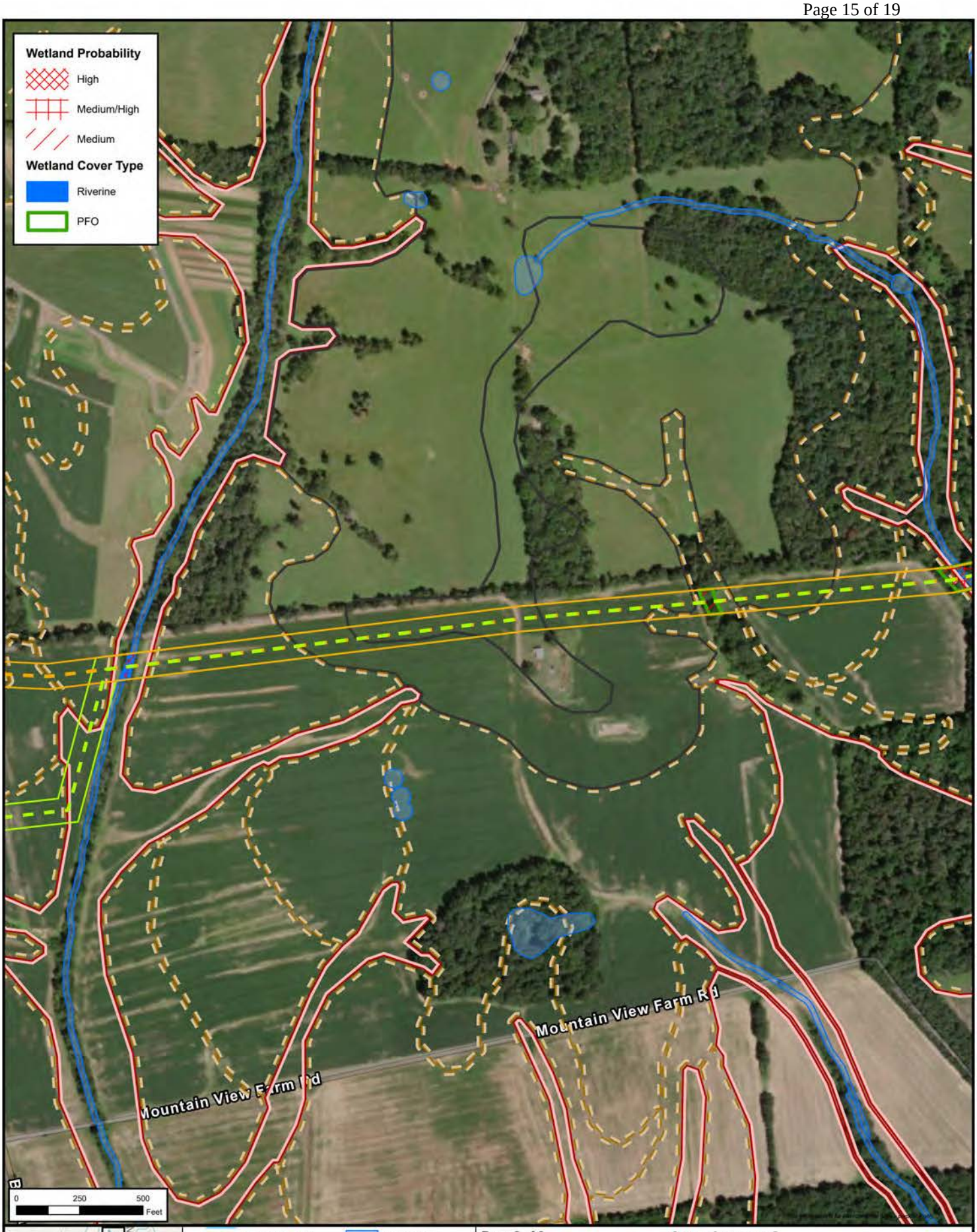
Wetland Probability
High
Medium/High
Medium
Wetland Cover Type
Riverine
PFO
Mountain View Farm Rd
Mountain View Farm Rd
0
250
500
Feet
Alternative Route 1
Alternative Route 2
Alternative Route 3
NWI Wetland
SSURGO Soil Hydric Rating
Hydric
Partially Hydric
Not Hydric
Page 2 of 6
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Wetland Probability Map Set
230 kV Germanna Lines and
Germanna Substation Project
Culpeper County, Virginia
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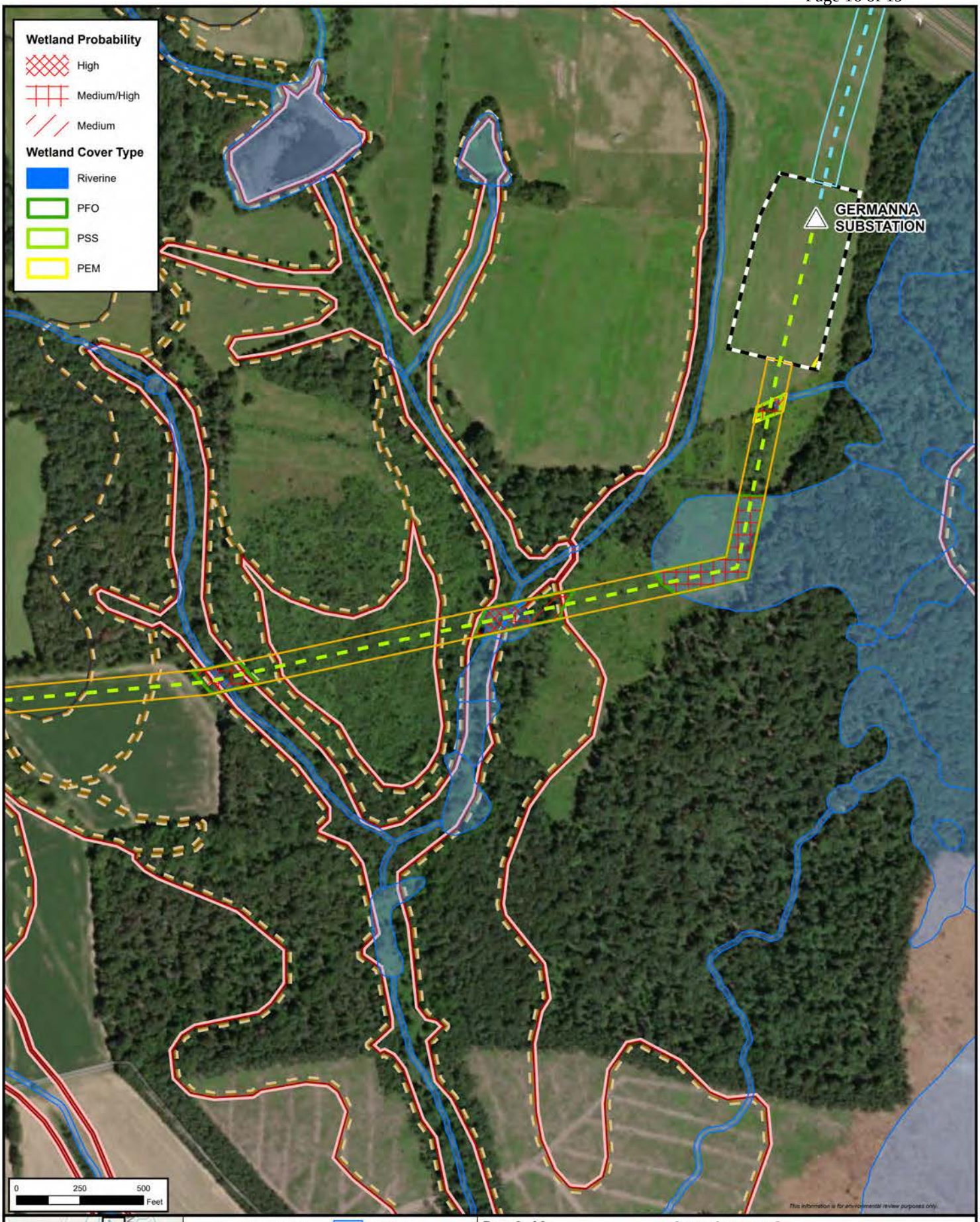
Wetland Probability
High
Medium/High
Medium
Wetland Cover Type
Riverine
PFO
PSS
PEM
GERMANNA SUBSTATION
0
250
500
Feet
This information is for environmental review purposes only.
Mills Rd
1
2
3
4
5
6
Proposed Substation
Proposed Germanna Substation Boundary
Alternative Route 1
Alternative Route 2
Alternative Route 3
NWI Wetland
SSURGO Soil Hydric Rating
Hydric
Partially Hydric
Not Hydric
N
Page 3 of 6
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Germanna Substation Project
Culpeper County, Virginia
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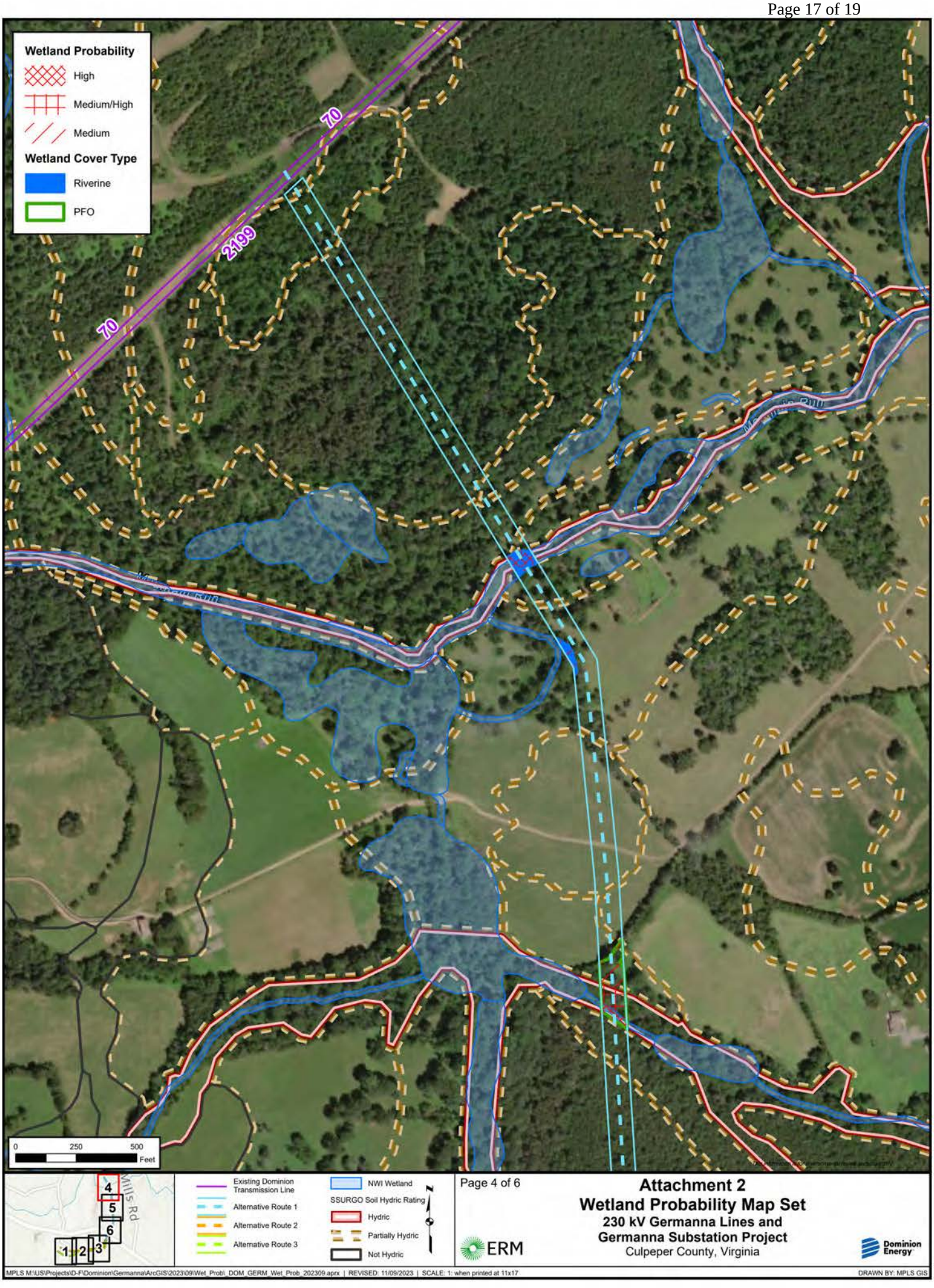
Wetland Probability
High
Medium/High
Medium
Wetland Cover Type
Riverine
PFO
70
2199
70
0
250
500
Feet
Existing Dominion Transmission Line
Alternative Route 1
Alternative Route 2
Alternative Route 3
NWI Wetland
SSURGO Soil Hydric Rating
Hydric
Partially Hydric
Not Hydric
Page 4 of 6
Attachment 2
Wetland Probability Map Set
230 kV Germanna Lines and
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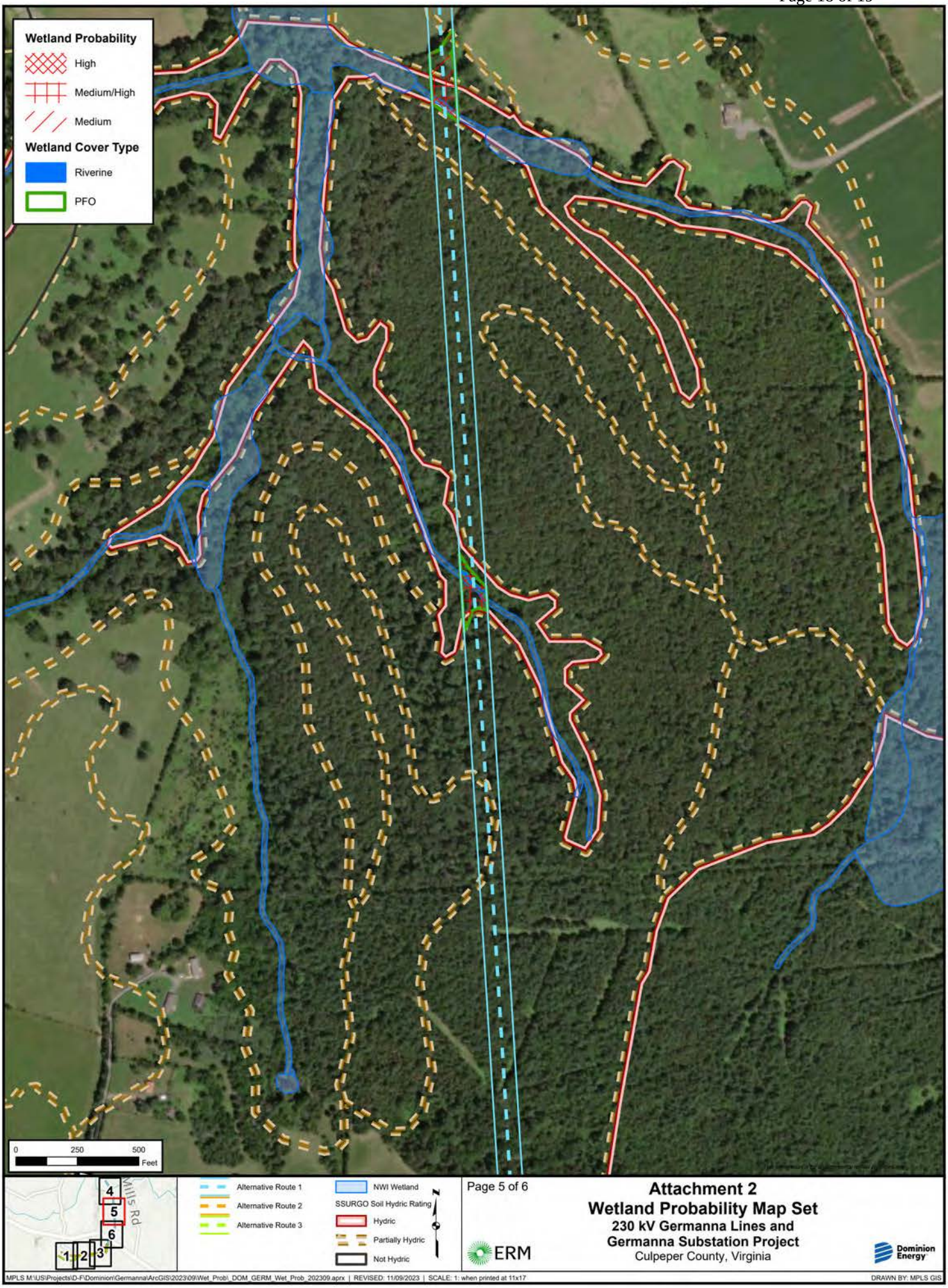
Wetland Probability
High
Medium/High
Medium
Wetland Cover Type
Riverine
PFO
0
250
500
Feet
Mills Rd
4
5
6
1
2
3
Alternative Route 1
Alternative Route 2
Alternative Route 3
NWI Wetland
SSURGO Soil Hydric Rating
Hydric
Partially Hydric
Not Hydric
N
Page 5 of 6
Attachment 2
Wetland Probability Map Set
230 kV Germanna Lines and
Germanna Substation Project
Culpeper County, Virginia
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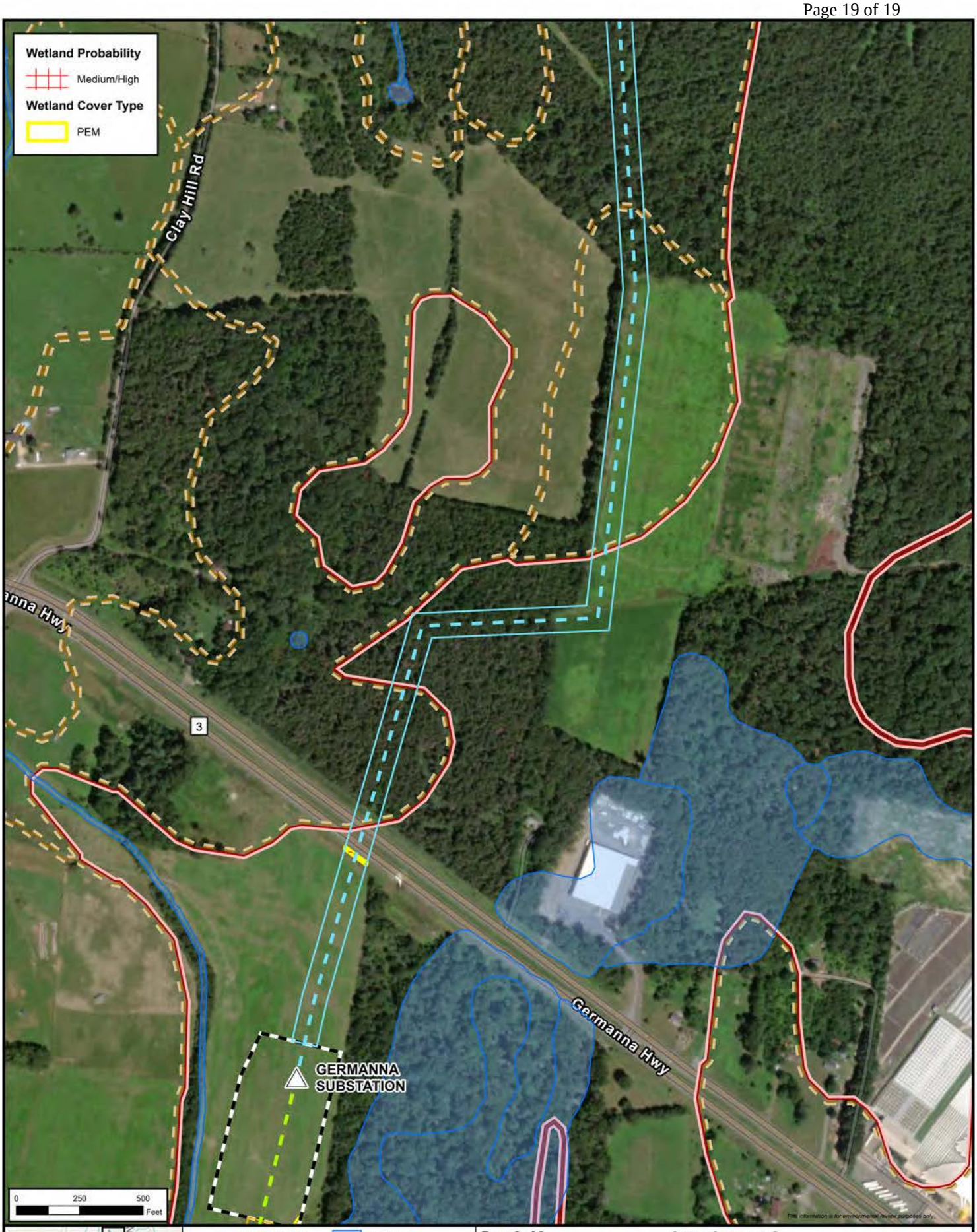
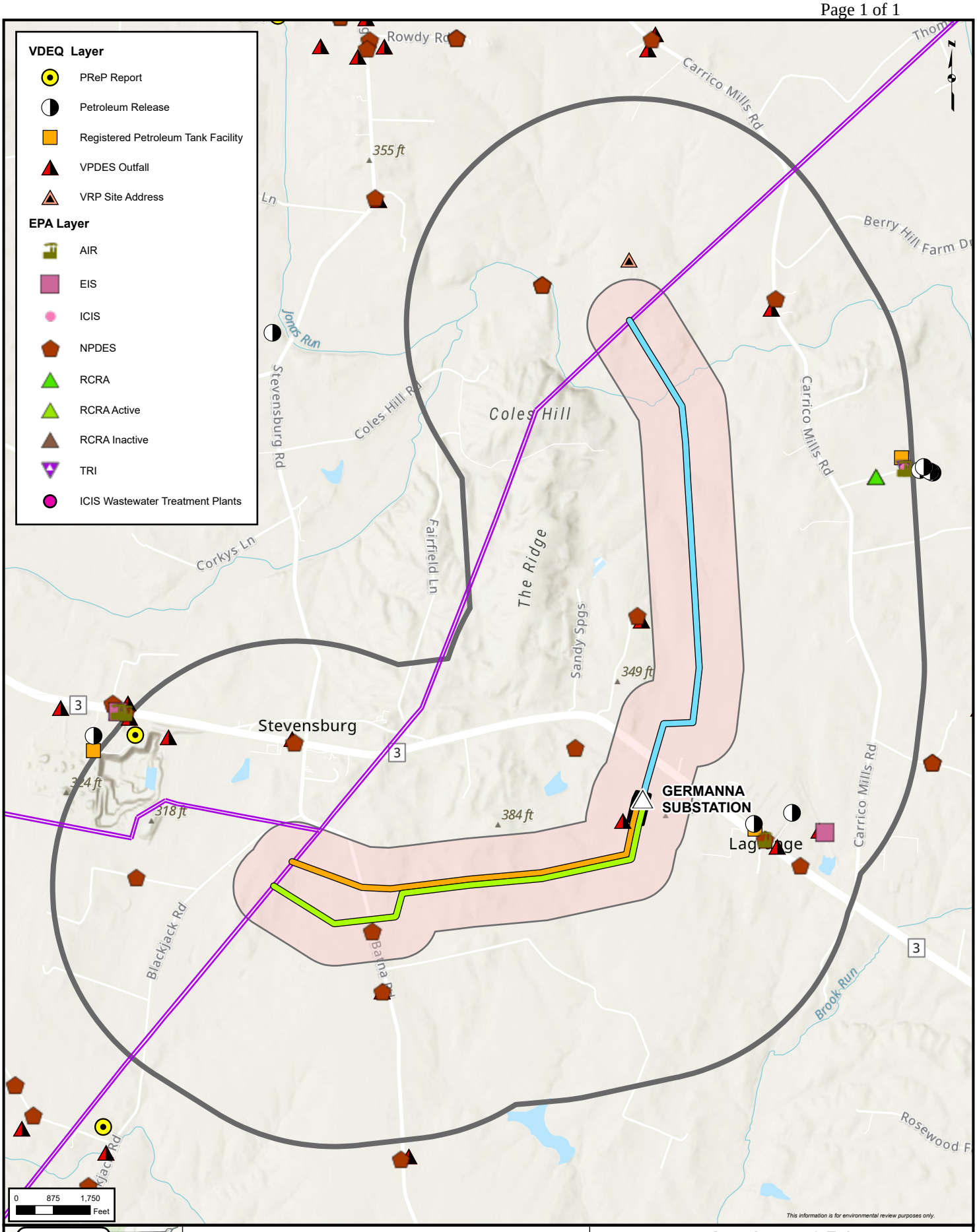

Wetland Probability
Medium/High
Wetland Cover Type
PEM
Clay Hill Rd
Germanna Hwy
3
GERMANNA SUBSTATION
0
250
500
Feet
Proposed Substation
Proposed Germanna Substation Boundary
Alternative Route 1
Alternative Route 2
Alternative Route 3
NWI Wetland
SSURGO Soil Hydric Rating
Hydric
Partially Hydric
Not Hydric
N
Page 6 of 6
Attachment 2
Wetland Probability Map Set
230 kV Germanna Lines and
Germanna Substation Project
Culpeper County, Virginia
ERM
Dominion Energy
MPLS M:\US\Projects\D-F\Dominion\Germanna\ArcGIS\2023\09\Wet_Prob_DOM_GERM_Wet_Prob_202309.aprx | REVISED: 11/09/2023 | SCALE: 1: when printed at 11x17
DRAWN BY: MPLS GIS


VDEQ Layer
PReP Report
Petroleum Release
Registered Petroleum Tank Facility
VPDES Outfall
VRP Site Address
EPA Layer
AIR
EIS
ICIS
NPDES
RCRA
RCRA Active
RCRA Inactive
TRI
ICIS Wastewater Treatment Plants
Rowdy Rd
Carrico Mills Rd
355 ft
Berry Hill Farm Dr
Jones Run
Stevensburg Rd
Coles Hill Rd
Coles Hill
Fairfield Ln
The Ridge
Sandy Spgs
349 ft
Corkys Ln
Stevensburg
3
324 ft
318 ft
384 ft
GERMANNA SUBSTATION
Blackjack Rd
Brook Run
Rosewood
0 875 1,750 Feet
This information is for environmental review purposes only.
Project Location
Virginia
Proposed Substation
Alternative Route 1
Proposed Route (Route 2)
Alternative Route 3
Proposed Germanna Substation Boundary
Existing Dominion Transmission Line
1,000-Foot Buffer of Project Impacts
1-Mile Buffer of Project Impacts
Attachment 2.F-1
Solid and Hazardous Waste Sites
Germanna 230 kV Lines and Substation Project
Culpeper County, Virginia
ERM
Dominion Energy
MPLS M:\US\Projects\D-F\Dominion\Germanna\ArcGIS\2023\10\DEQ_DOM_GERM_DEQ_Supp.aprx | REVISED: 10/12/2023 | SCALE: 1: when printed at 11x17
DRAWN BY: MPLS GIS

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

September 22, 2023

Briana Cooney
Environmental Resources Management
222 South 9th Street, Suite 2900
Minneapolis, MN 55402

Re: 0617696, Germanna

Dear Ms. Cooney:

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

Terrestrial Resources

According to DCR's diabase screening layer and review by a DCR biologist, several rare plants, which are typically associated with prairie vegetation and inhabit semi-open diabase glades in Virginia, may occur at this location if suitable habitat is present. Diabase glades are characterized by historically fire-dominated grassland vegetation on relatively nutrient-rich soils underlain by Triassic bedrock. Diabase flatrock, a hard, dark-colored volcanic rock, is found primarily in northern Virginia counties and is located within the geologic formation known as the Triassic Basin. Where the bedrock is exposed, a distinctive community type of drought-tolerant plants occurs. Diabase flatrocks are extremely rare natural communities that are threatened by activities such as quarrying and road construction (Rawinski, 1995).

In Northern Virginia, diabase supports occurrences of several global and state rare plant species: Earleaf False foxglove (*Agalinis auriculata*, G3/S1/NL/NL), American bluehearts (*Buchnera americana*, G5?/S1S2/NL/NL), Downy phlox (*Phlox pilosa*, G5/S1/NL/NL), Torrey's Mountain-mint (*Pycnanthemum torreyi*, G2/S2/SOC/LT), Stiff goldenrod (*Solidago rigida var. rigida*, G5T5/S2/NL/NL), and Hairy hedgenettle (*Stachys arenicola*, G4?/S1/NL/NL).

Please note that Torrey's Mountain-mint is listed as threatened by the Virginia Department of Agriculture and Consumer Services (VDACS). Torrey's Mountain-mint is also listed as a Species of Concern (SOC) by United States Fish and Wildlife Service (USFWS); however, this is not a legal designation.

In addition, according to DCR's predicted suitable habitat modeling and review by a DCR biologist, there is a potential for Loggerhead Shrike (*Lanius ludovicianus*, G4/S1B, S2N/NL/LT) to occur in the project area if suitable habitat exists on site.

Loogerhead Shrikes breed throughout most of the United States and southern Canada, through Mexico and into Central America (NatureServe, 2009). In Virginia, there are records throughout most of the state; however, its current strong hold seems to be the Shenandoah Valley. It usually nests, forages, and perches in open fields and pastures where there are scattered trees for nesting and telephone wires or fences for perching (Hamel, 1992). Essential habitat requirements include open country with scattered trees or shrubs and conspicuous perches. A thorny shrub, such as hawthorn, is a favored nesting site. Loggerhead shrikes sometimes impale their food on thorny shrubs, barbed-wire fences, and other suitable objects to be eaten later or to feed to their young. Please note that the Loggerhead shrike is currently classified as threatened by the Virginia Department of Wildlife Resources (VDWR).

Threats to the Loggerhead shrike include loss of open habitats through reforestation and conversion to cropland, and the removal of hedgerows (Fraser, 1991). They may experience negative impacts from insecticide use and predation (NatureServe, 2009).

Furthermore, there is potential for Piedmont Hardpan Forest, Piedmont Upland Depression Swamp, and Basic Oak-Hickory Forest communities to occur with the project area. The Piedmont Hardpan Forest ecological group contains a group of oak-hickory forests that occupy gentle to flat Piedmont uplands with impermeable clay subsoils. On high bedrock terraces of the Potomac Gorge in northern Virginia and occasionally elsewhere, flat-lying bedrock underlying shallow soil acts as a surrogate "hardpan" and supports similar vegetation.

In Virginia, Piedmont Upland Depression Swamp wetlands are scattered throughout the eastern and central Piedmont. They are most numerous in Mesozoic basins and areas underlain by mafic rocks or acidic slates. Habitats include shallow, seasonally flooded upland basins, as well as broad, wet bottoms along small streams. Because of low relief, headwater drainages in parts of the Piedmont are very diffuse, with sluggish, usually intermittent flows and no active alluvial deposition.

The principal habitats for Basic Oak-Hickory Forests in Virginia are submesic to subxeric uplands over basic igneous and metamorphic rocks such as diabase, gabbro, amphibolite, and metabasalt (greenstone). Hickories are especially abundant in these forests and may dominate some stands. Communities in this group are scattered to locally extensive throughout the Virginia Piedmont and on lower-elevation slopes of the northern Blue Ridge; a very few stands on fertile sites of the inner Coastal Plain have also been documented (Fleming et. al., 2021).

Due to the potential for this site to support populations of natural heritage resources, DCR recommends an inventory for rare plants associated with diabase soils, the Loggerhead Shrike, and significant natural communities in the study area. In addition to the predicted suitable habitat model for the Loggerhead Shrike included in the provided shapefile, a DCR biologist has identified additional areas that should be surveyed (see Figure 1). With the survey results we can more accurately evaluate potential impacts to natural heritage resources and offer specific protection recommendations for minimizing impacts to the documented resources.

DCR-Division of Natural Heritage biologists are qualified to conduct inventories for rare, threatened, and endangered species. Due to the potential for rare plants DCR- DNH is interested in accessing the site. Please contact Anne Chazal, Natural Heritage Chief Biologist, at anne.chazal@dcr.virginia.gov or 804-786-9014 to discuss access, availability, and rates for field work.

Due to the legal status of the Loggerhead shrike, DCR recommends coordination with Virginia's regulatory authority for the management and protection of this species, the VDWR, to ensure compliance with the Virginia Endangered Species Act **(**VA ST §§ 29.1-563 – 570).

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. Survey results should be coordinated with DCR-DNH. Upon review of the results, if it is determined the species is present, and there is a likelihood of a negative impact

on the species, DCR-DNH will recommend coordination with VDACS to ensure compliance with Virginia's Endangered Plant and Insect Species Act.

Aquatic Resources

According to DCR's predicted suitable habitat modeling and review by a DCR biologist, there is a potential for the Dwarf Wedgemussel (*Alasmidonta heterodon*, G1G2/S1/LE/LE) and the Yellow Lance (*Elliptio lanceolata*, G2/S2/LT/LT) to occur in Mountain Run River, within the project area.

The Dwarf Wedgemussel grows to a length of approximately 30 mm. This species inhabits creeks of varying sizes, residing in muddy sand, sand, and gravel bottoms, in areas of slow to moderate current and little silt deposition (USFWS, 1993). Currently, this species exists in widely scattered, small populations in the Chowan, James, York, Rappahannock, and Potomac River drainages. Its native host fishes include Mottled sculpin (*Cottus bairdi*), Johnny darters (*Etheostoma nigrum*), Tessellated darters (*Etheostoma olmstedi*) and Sculpins (Cottus sp.) (Michaelson and Neves, 1995). Please note that this species is currently classified as endangered by the United States Fish and Wildlife Service (USFWS) and the Virginia Department of Wildlife Resources (VDWR).

The Yellow Lance occurs in mid-sized rivers and second and third order streams. To survive, it needs a silt-free, stable streambed and well-oxygenated water that is free of pollutants. This species has been the subject of taxonomic debate in recent years (NatureServe, 2009). Currently in Virginia, the Yellow lance is recognized from populations in the Chowan, James, York, and Rappahannock drainages. Its range also extends into Neuse-Tar river system in North Carolina. In recent years, significant population declines have been noted across its range (NatureServe, 2009). Please note that this species is currently classified as threatened by the United States Fish and Wildlife Service (USFWS) and the Virginia Department of Wildlife Resources (VDWR).

Considered good indicators of the health of aquatic ecosystems, freshwater mussels are dependent on good water quality, good physical habitat conditions, and an environment that will support populations of host fish species (Williams et al., 1993). Because mussels are sedentary organisms, they are sensitive to water quality degradation related to increased sedimentation and pollution. They are also sensitive to habitat destruction through dam construction, channelization, and dredging, and the invasion of exotic mollusk species. The Yellow lance may be particularly sensitive to chemical pollutants and exposure to fine sediments from erosion (NatureServe, 2009).

To minimize adverse impacts to the aquatic ecosystem as a result of the proposed activities, DCR recommends the implementation of and strict adherence to applicable state and local erosion and sediment control/storm water management laws and regulations.

Karst Resources

A portion of this project has intersected the karst bedrock screening layer. Encountering undocumented caves, sinkholes or other sensitive karst features in this area is possible. During every phase of the project, DCR recommends stabilization of the soil around the site. Minimizing surface disturbance, strict use of E&S control measures appropriate for the location and adherence to best management practices appropriate for karst will help to reduce any potential impact to the karst, groundwater and surface water resources as well as any associated fauna and flora.

If karst features such as sinkholes, caves, disappearing streams, and large springs are encountered during the project, please coordinate with Wil Orndorff (540-230-5960, Wil.Orndorff@dcr.virginia.gov) the Virginia DCR, Division of Natural Heritage Karst Protection Coordinator, to document and minimize adverse impacts. Activities such as discharge of runoff to sinkholes or sinking streams, filling of sinkholes, and alteration of cave entrances can lead to environmental impacts including surface collapse, flooding, erosion and sedimentation, contamination of groundwater and springs, and degradation of subterranean habitat for natural heritage resources (e.g. cave adapted invertebrates, bats). These potential impacts are not necessarily limited to the immediate project area, as

karst systems can transport water and associated contaminants rapidly over relatively long distances, depending on the nature of the local karst system. If the project involves filling or "improvement" of sinkholes or cave openings, DCR would like detailed location information and copies of the design specifications. In cases where sinkhole improvement is for storm water discharge, copies of VDOT Form EQ-120 will suffice.

Additional Comments

If tree removal is necessary beyond existing rights-of-way (ROW), the proposed project will impact multiple Ecological Cores **(C4 and C5)** as identified in the Virginia Natural Landscape Assessment (https://www.dcr.virginia.gov/natural-heritage/vaconvisvnla). Mapped cores in the project area can be viewed via the Virginia Natural Heritage Data Explorer, available here: http://vanhde.org/content/map.

Ecological Cores are areas of at least 100 acres of continuous interior, natural cover that provide habitat for a wide range of species, from interior-dependent forest species to habitat generalists, as well as species that utilize marsh, dune, and beach habitats. Interior core areas begin 100 meters inside core edges and continue to the deepest parts of cores. Cores also provide the natural, economic, and quality of life benefits of open space, recreation, thermal moderation, water quality (including drinking water recharge and protection, and erosion prevention), and air quality (including sequestration of carbon, absorption of gaseous pollutants, and production of oxygen). Cores are ranked from C1 to C5 (C5 being the least significant) using nine prioritization criteria, including the habitats of natural heritage resources they contain.

Impacts to cores occur when their natural cover is partially or completely converted permanently to developed land uses. Habitat conversion to development causes reductions in ecosystem processes, native biodiversity, and habitat quality due to habitat loss; less viable plant and animal populations; increased predation; and increased introduction and establishment of invasive species.

DCR recommends avoidance of impacts to cores. When avoidance cannot be achieved, DCR recommends minimizing the area of impacts overall and concentrating the impacted area at the edges of cores, so that the most interior remains intact.

DCR also recommends the development and implementation of an invasive species plan to be included as part of the maintenance practices for the right-of-way (ROW). The invasive species plan should include an invasive species inventory for the project area based on the current DCR Invasive Species List (http://www.dcr.virginia.gov/natural-heritage/document/nh-invasive-plant-list-2014.pdf) and methods for treating the invasives. DCR also recommends the ROW restoration and maintenance practices planned include appropriate revegetation using native species in a mix of grasses and forbs, robust monitoring and an adaptive management plan to provide guidance if initial revegetation efforts are unsuccessful or if invasive species outbreaks occur.

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

New and updated information is continually added to Biotics. Please re-submit a completed order form and project map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

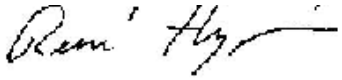
A fee of $800.00 has been assessed for the service of providing this information. Please find attached an invoice for that amount. Please return one copy of the invoice along with your remittance made payable to the Treasurer of Virginia, DCR Finance, 600 East Main Street, 24th Floor, Richmond, VA 23219. Payment is due within thirty days of the invoice date. Please note late payment may result in the suspension of project review service for future projects.

The Virginia Department of Wildlife Resources (VDWR) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not

documented in this letter. Their database may be accessed https://services.dwr.virginia.gov/fwis/ or contact Amy Martin at 804-367-2211 or amy.martin@dwr.virginia.gov.

Should you have any questions or concerns, feel free to contact me at 804-371-2708. Thank you for the opportunity to comment on this project.

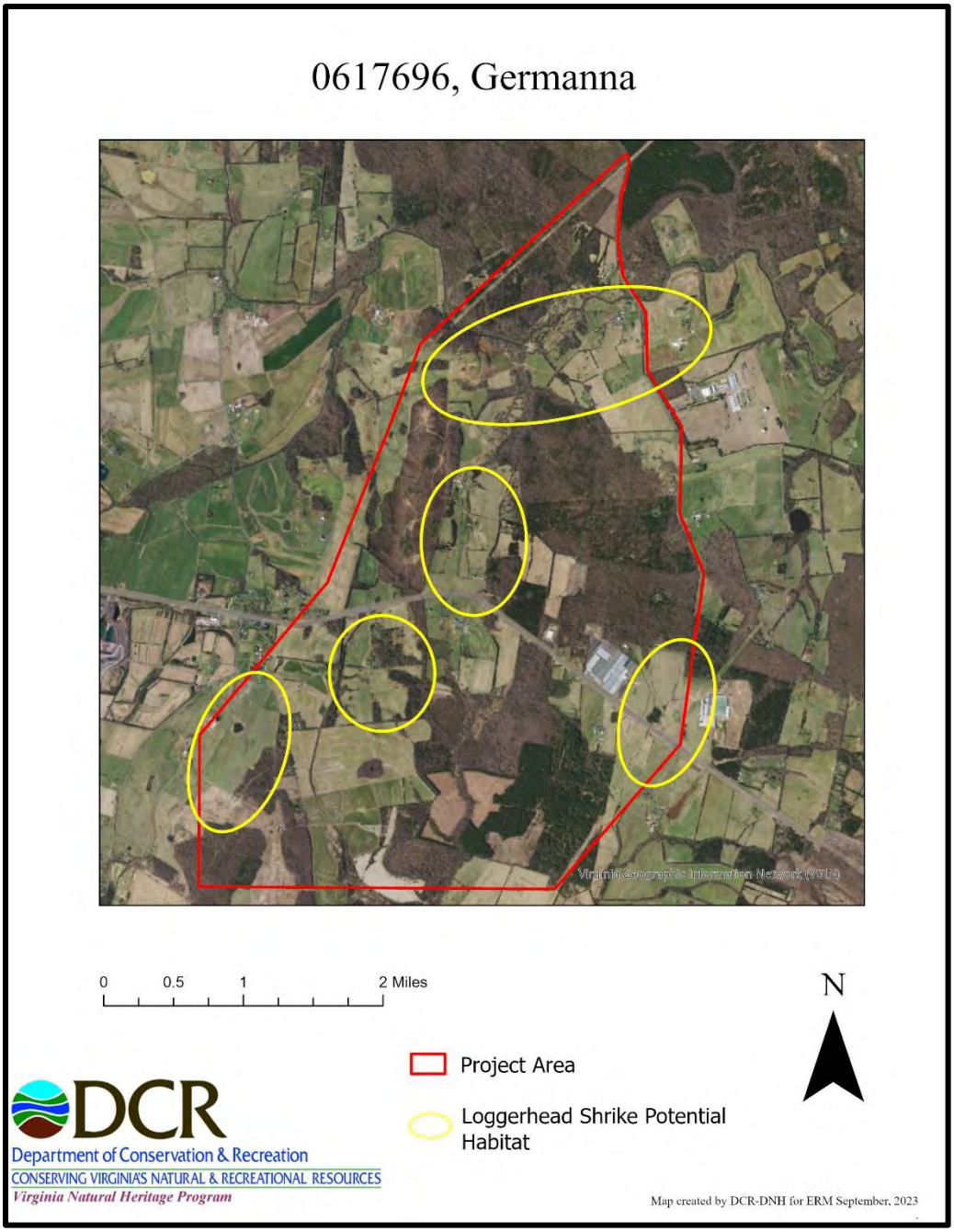
Sincerely,



S. René Hypes
Natural Heritage Project Review Coordinator

Cc: Wil Orndorff, DCR-Karst
Amy Martin, VDWR

Figure 1. Areas with potential to support habitat for the Loggerhead Shrike.



Literature Cited

Fleming, G.P., K.D. Patterson, and K. Taverna. 2021. The Natural Communities of Virginia: a Classification of Ecological Community Groups and Community Types. Third approximation. Version 3.3. Virginia Department of Conservation and Recreation, Division of Natural Heritage, Richmond, VA. www.dcr.virginia.gov/natural-heritage/natural-communities/ [Accessed: *22-September-2023*]

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Site Location

38,26,52.1 -77,52,21.9
is **the Search Point**

Show Position Rings
○ Yes ◉ No
1/2 mile and 1/8 mile at the **Search Point**

Show Search Area
◉ Yes ○ No
2.6 Search distance miles radius

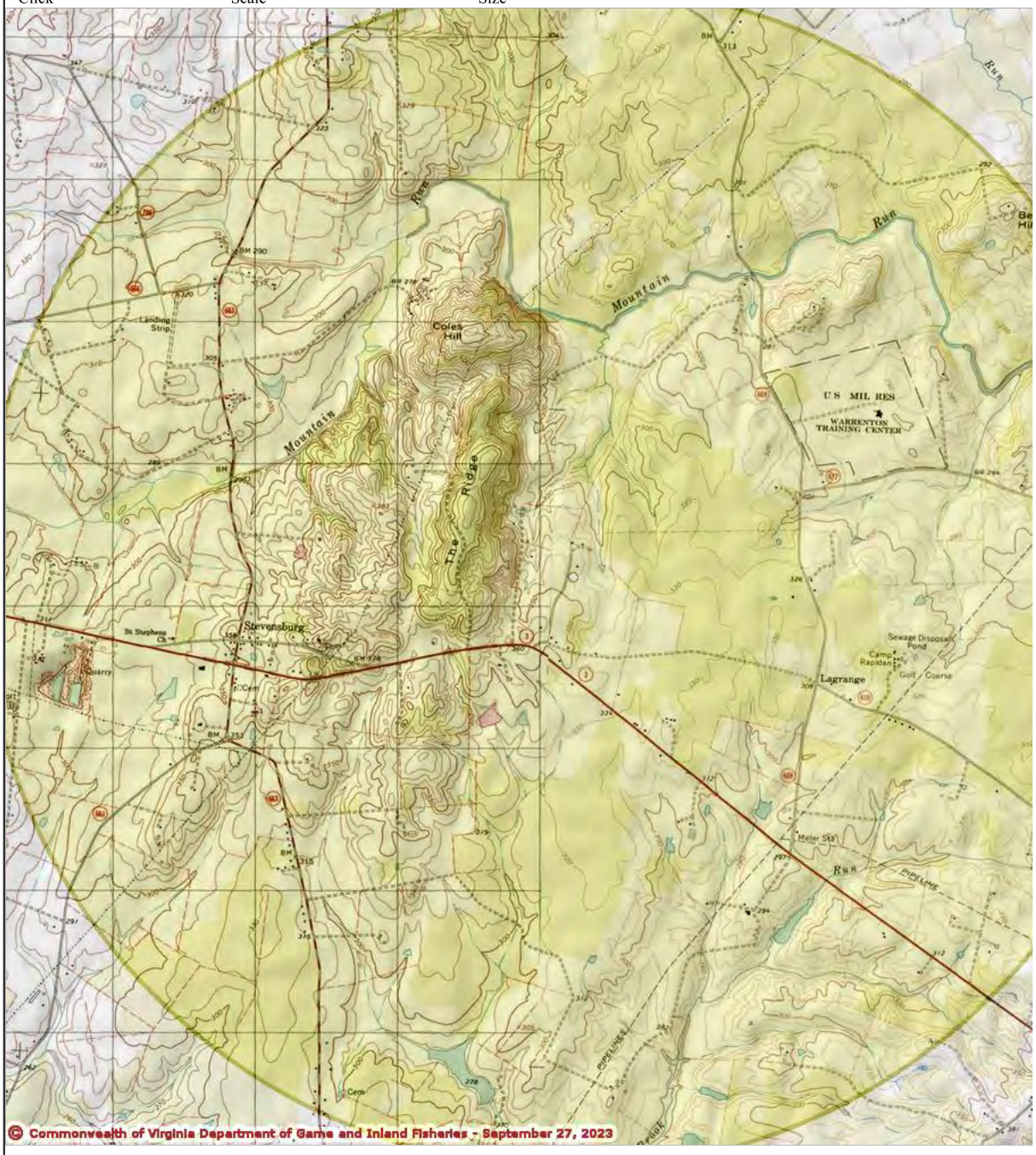
Search Point is at map center

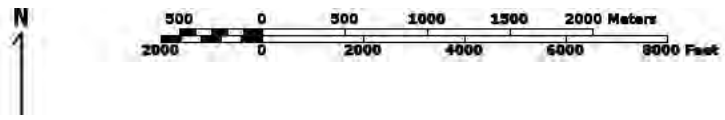
Base Map Choices
Topography

Map Overlay Choices
Current List: Search

Map Overlay Legend
2.6 mile radius Search Area

back 38,29,01.7 -77,50,19.1 Refresh Browser Page
Map Click Pan Id M Map Scale In Zoom Out Screen Size Small Size Big Help





Point of Search 38,26,52.1 -77,52,21.9
Map Location 38,26,52.1 -77,52,21.9

Select **Coordinate System:**
◉ Degrees,Minutes,Seconds Latitude - Longitude
○ Decimal Degrees Latitude - Longitude
○ Meters UTM NAD83 East North Zone
○ Meters UTM NAD27 East North Zone

Base Map source: Topographic maps from TOPO! copyright 2006 (see National Geographic Maps for details)

Map projection is UTM Zone 18 NAD 1983 with left 245300 and top 4263412. Pixel size is 8 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 1000 columns by 1000 rows for a total of 1000000 pixles. The map display represents 8000 meters east to west by 8000 meters north to south for a total of 64.0 square kilometers. The map display represents 26251 feet east to west by 26251 feet north to south for a total of 24.7 square miles.

Topographic maps and Black and white aerial photography for year 1990+-
are from the United States Department of the Interior, United States Geological Survey.
Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.
Shaded topographic maps are from TOPO! ©2006 National Geographic
http://www.national.geographic.com/topo
All other map products are from the Commonwealth of Virginia Department of Wildlife Resources.

map assembled 2023-09-27 17:24:00 (qa/qc March 21, 2016 12:20 - tn=1528887.0 dist=4183 I)
$poi=38.4478056 -77.8727500

VaFWIS Search Report Compiled on 9/27/2023, 6:00:55 PM

Help

Known or likely to occur within a **2.6 mile radius around point 38.4478056 -77.8727500** in **047 Culpeper County, VA**

View Map of Site Location

392 Known or Likely Species ordered by Status Concern for Conservation (displaying first 20) (17 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
050022	FEST	Ia	Bat, northern long-eared	Myotis septentrionalis		BOVA
060003	FESE	Ia	Wedgemussel, dwarf	Alasmidonta heterodon		BOVA
060029	FTST	IIa	Lance, yellow	Elliptio lanceolata		BOVA,HU6
050020	SE	Ia	Bat, little brown	Myotis lucifugus		BOVA
050027	FPSE	Ia	Bat, tri-colored	Perimyotis subflavus		BOVA
040293	ST	Ia	Shrike, loggerhead	Lanius ludovicianus		BOVA,HU6
060081	ST	IIa	Floater, green	Lasmigona subviridis		BOVA
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
100079	FC	IIIa	Butterfly, monarch	Danaus plexippus		BOVA
030063	CC	IIIa	Turtle, spotted	Clemmys guttata		BOVA
030012	CC	IVa	Rattlesnake, timber	Crotalus horridus		BOVA
100248		Ia	Fritillary, regal	Speyeria idalia idalia		BOVA,HU6
040052		IIa	Duck, American black	Anas rubripes		BOVA,HU6
040320		IIa	Warbler, cerulean	Setophaga cerulea		BOVA,HU6
040140		IIa	Woodcock, American	Scolopax minor		BOVA,HU6
040203		IIb	Cuckoo, black-billed	Coccyzus erythropthalmus		BOVA
040105		IIb	Rail, king	Rallus elegans		BOVA
010131		IIIa	Eel, American	Anguilla rostrata	Yes	BOVA,SppObs,HU6
030068		IIIa	Turtle, woodland box	Terrapene carolina carolina		BOVA,HU6
040100		IIIa	Bobwhite, northern	Colinus virginianus	Yes	BOVA,BBA,SppObs,HU6

To view **All 392 species** View 392

*FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; CC=Collection Concern

**I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need;
IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need
Virginia Widlife Action Plan Conservation Opportunity Ranking:
a - On the ground management strategies/actions exist and can be feasibly implemented.;
b - On the ground actions or research needs have been identified but cannot feasibly be implemented at this time.;
c - No on the ground actions or research needs have been identified or all identified conservation opportunities have been exhausted.

View Map of All Query Results from All Observation Tables

Bat Colonies or Hibernacula: **Not Known**

Anadromous Fish Use Streams

N/A

Impediments to Fish Passage (1 records)

View Map of All Fish Impediments

ID	Name	River	View Map
16	MILLER PLACE DAM	BROOK RUN	Yes

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters

N/A

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests

N/A

Species Observations (24 records - displaying first 20)

View Map of All Query Results
Species Observations

obsID	class	Date Observed	Observer	N Species			View Map
				Different Species	Highest TE*	Highest Tier**	
620268	SppObs	Jun 25 2013	Rick; Browder| Gabriel; Darkwah| Meghan; Bandura| Dan ; F	5		III	Yes
620960	SppObs	Jun 18 2013	Rick; Browder| Gabriel; Darkwah| Meghan; Bandura| Dan ; F	6		III	Yes
350571	SppObs	Jun 10 2007	Jay Keller	18		III	Yes
350555	SppObs	Jun 10 2007	Jay Keller	14		III	Yes
350558	SppObs	Jun 10 2007	Jay Keller	12		III	Yes
350567	SppObs	Jun 10 2007	Jay Keller	13		III	Yes
350581	SppObs	Jun 10 2007	Jay Keller	19		III	Yes
58204	SppObs	Jun 25 1999	Ryan W. Boggs and Louis Seivard (principle permittee), Dept. of Environmental Quality	3		III	Yes
350569	SppObs	Jun 10 2007	Jay Keller	10		IV	Yes
350566	SppObs	Jun 10 2007	Jay Keller	11		IV	Yes
85814	SppObs	Mar 27 2002	Ron Hughes	1		IV	Yes
55594	SppObs	Jun 6 1995	DOROSHEFF, GATENBY, VAUGHAN, AND ENSIGN, VIRGINIA COOPERATIVE FISH AND WILDLIFE RESEARCH UNIT.	3		IV	Yes
350556	SppObs	Jun 11 2007	Jay Keller	1			Yes
85813	SppObs	Mar 27 2002	Ron Hughes	1			Yes
85817	SppObs	Mar 27 2002	Ron Hughes	1			Yes
85806	SppObs	Mar 27 2002	Ron Hughes	1			Yes
85816	SppObs	Mar 27 2002	Ron Hughes	1			Yes

85812	SppObs	Mar 27 2002	Ron Hughes	1			Yes
65888	SppObs	Dec 10 2001	RON HUGHES (PRINCIPLE PERMITTEE), VDGIF	1			Yes
67846	SppObs	May 31 2001	Rick Browder (Principle Permittee)	3			Yes

Displayed 20 Species Observations

Selected 24 Observations View all 24 Species Observations

Habitat Predicted for Aquatic WAP Tier I & II Species

N/A

Habitat Predicted for Terrestrial WAP Tier I & II Species

N/A

Virginia Breeding Bird Atlas Blocks (3 records)

View Map of All Query Results
Virginia Breeding Bird Atlas Blocks

BBA ID	Atlas Quadrangle Block Name	Breeding Bird Atlas Species			View Map
		Different Species	Highest TE*	Highest Tier**	
47164	Culpeper East, CE	15		IV	Yes
47162	Culpeper East, NE	7		III	Yes
47166	Culpeper East, SE	64		III	Yes

Public Holdings:

N/A

Summary of BOVA Species Associated with Cities and Counties of the Commonwealth of Virginia:

FIPS Code	City and County Name	Different Species	Highest TE	Highest Tier
047	Culpeper	349	FESE	I

USGS 7.5' Quadrangles:
Culpeper East
Germanna Bridge

USGS NRCS Watersheds in Virginia:

N/A

USGS National 6th Order Watersheds Summary of Wildlife Action Plan Tier I, II, III, and IV Species:

HU6 Code	USGS 6th Order Hydrologic Unit	Different Species	Highest TE	Highest Tier
RA19	Mountain Run-Hiders Branch	50	ST	I
RA20	Jonas Run	47		II
RA21	Mountain Run-Flat Run	50	FTST	II
RA39	Rapidan River-Potato Run	55	FTST	I

Compiled on 9/27/2023, 6:00:55 PM I1528891.0 report=all searchType= R dist= 4183 poi= 38.4478056 -77.8727500

PixelSize=64; Anadromous=0.016849; BBA=0.028922; BECAR=0.016983; Bats=0.016284; Buffer=0.10823; County=0.046366; HU6=0.052847; Impediments=0.017311; Init=0.139881; PublicLands=0.021138; Quad=0.027264; SppObs=0.196002; TEWaters=0.017093; TierReaches=0.018905; TierTerrestrial=0.038564; Total=0.866576; Tracking_BOVA=0.15974; Trout=0.020375; huva=0.02816

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
Phone: (804) 693-6694 Fax: (804) 693-9032

In Reply Refer To:
Project Code: 2023-0126764
Project Name: Germanna

September 08, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Project Code in the header of this

letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
(804) 693-6694

PROJECT SUMMARY

Project Code: 2023-0126764
Project Name: Germanna
Project Type: Transmission Line - New Constr - Above Ground
Project Description: This request is a part of a pre-permitting effort to determine feasibility of overhead powerline routes.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.44848195,-77.87141402451033,14z

Counties: Culpeper County, Virginia

ENDANGERED SPECIES ACT SPECIES

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

CLAMS

NAME	STATUS
Dwarf Wedgemussel *Alasmidonta heterodon* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/784	Endangered
Yellow Lance *Elliptio lanceolata* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4511	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE

SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Jul 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Eastern Whip-poor-will *Antrostomus vociferus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Aug 20
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere
Kentucky Warbler *Oporornis formosus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
King Rail *Rallus elegans* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8936	Breeds May 1 to Sep 5
Prairie Warbler *Dendroica discolor* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Prothonotary Warbler *Protonotaria citrea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere

NAME	BREEDING SEASON
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)

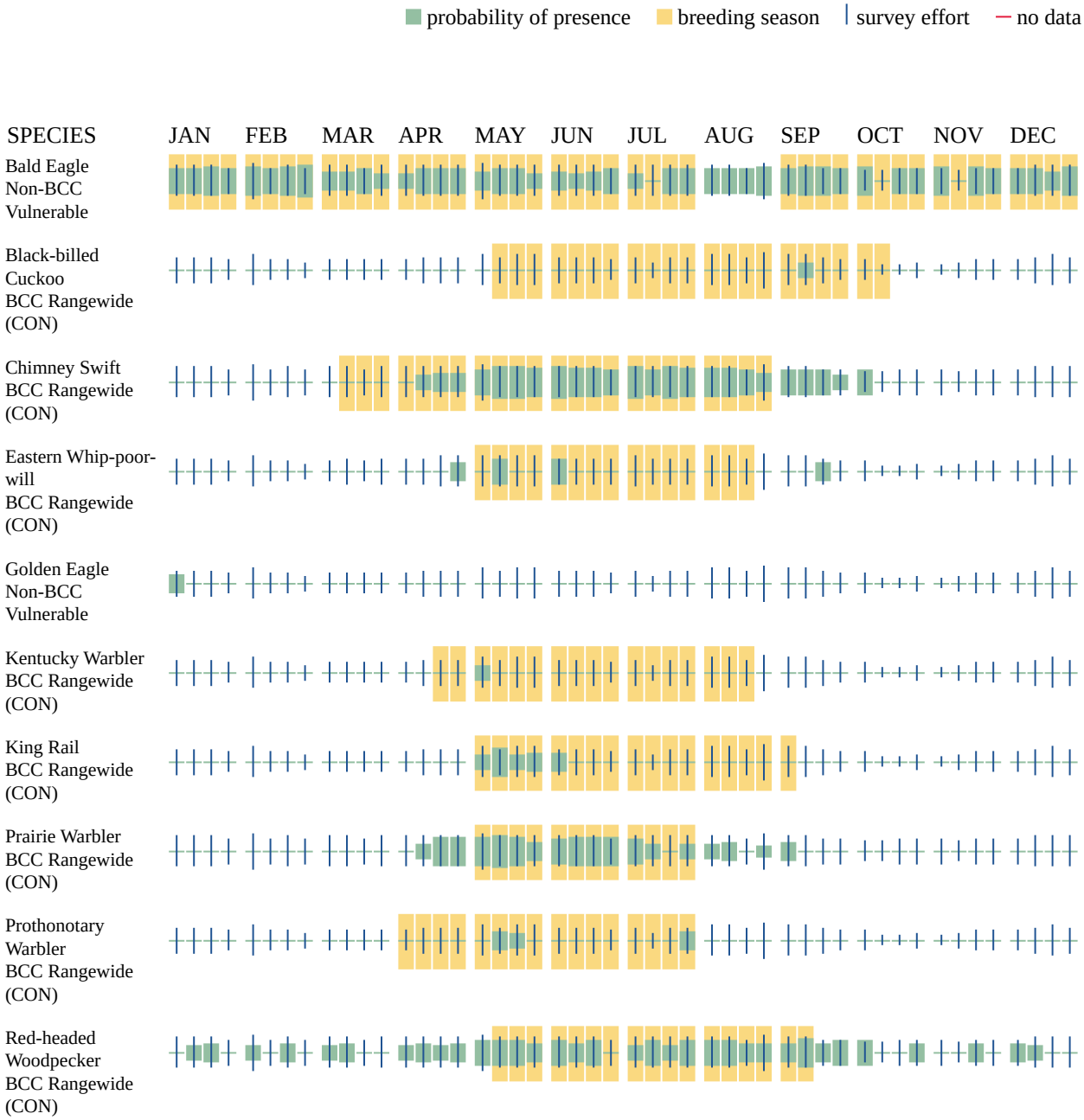
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

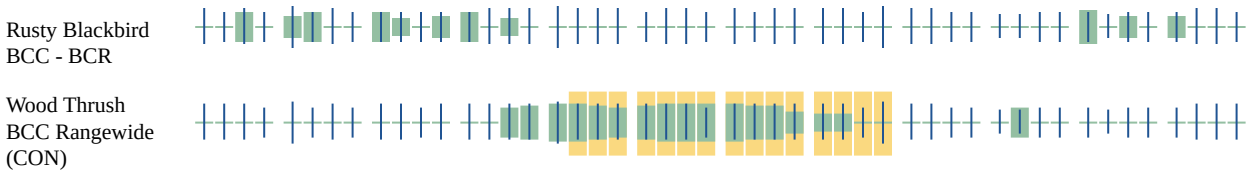
Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

MIGRATORY BIRDS FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

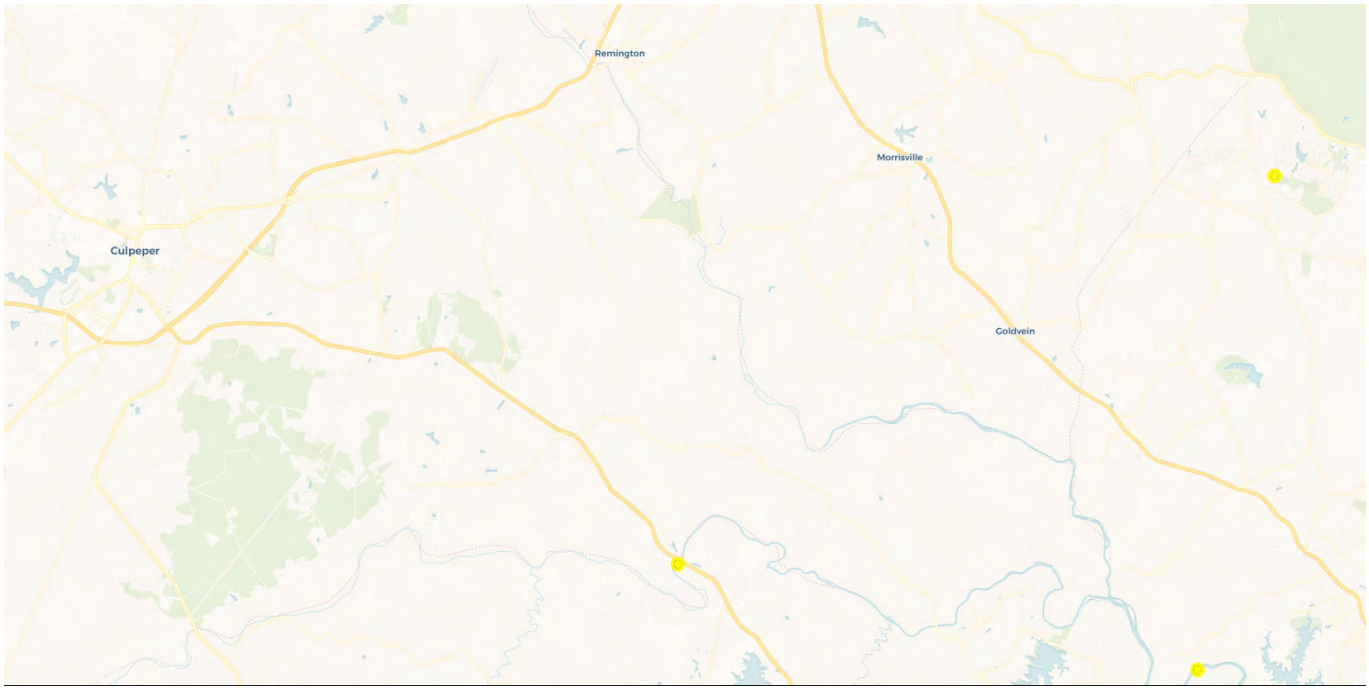
What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

IPAC USER CONTACT INFORMATION

Agency: Environmental Resources Management
Name: Briana Cooney
Address: 222 South 9th Street
Address Line 2: Suite 2900
City: Minneapolis
State: MN
Zip: 55402
Email briana.cooney@erm.com
Phone: 6123477114

CCB Mapping Portal



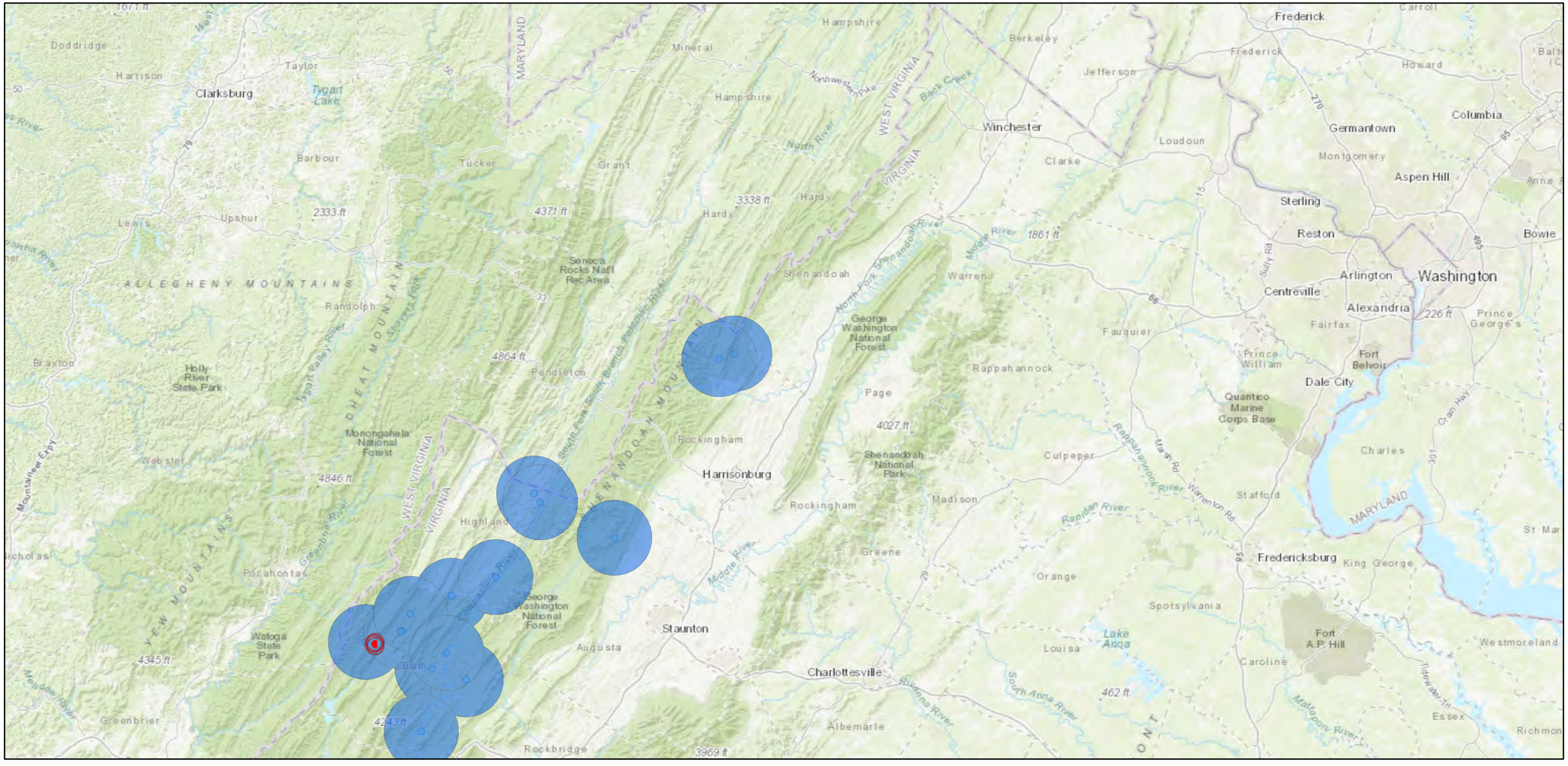
Layers: VA Eagle Nest Locator, VA Eagle Nest Buffers

Map Center [longitude, latitude]: [-77.81959533691406, 38.46770248982633]

Map Link:
https://ccbbirds.org/maps/#layer=VA+Eagle+Nest+Locator&layer=VA+Eagle+Nest+Buffers&zoom=12&lat=38.46770248982633&lng=-77.81959533691406&legend=legend_tab_7c321b7e-e523-11e4-aaa0-0e0c41326911&base=Street+Map+%28OSM%2FCarto%29

Report Generated On: 04/04/2023

NLEB Locations and Roost Trees - Germanna



4/4/2023, 11:25:01 AM

- NLEB Known Occupied Maternity Roost (Summer Habitat)
- NLEB Hibernaculum 5.5 Mile Buffer
- NLEB Hibernaculum Half Mile Buffer

1:1,155,581

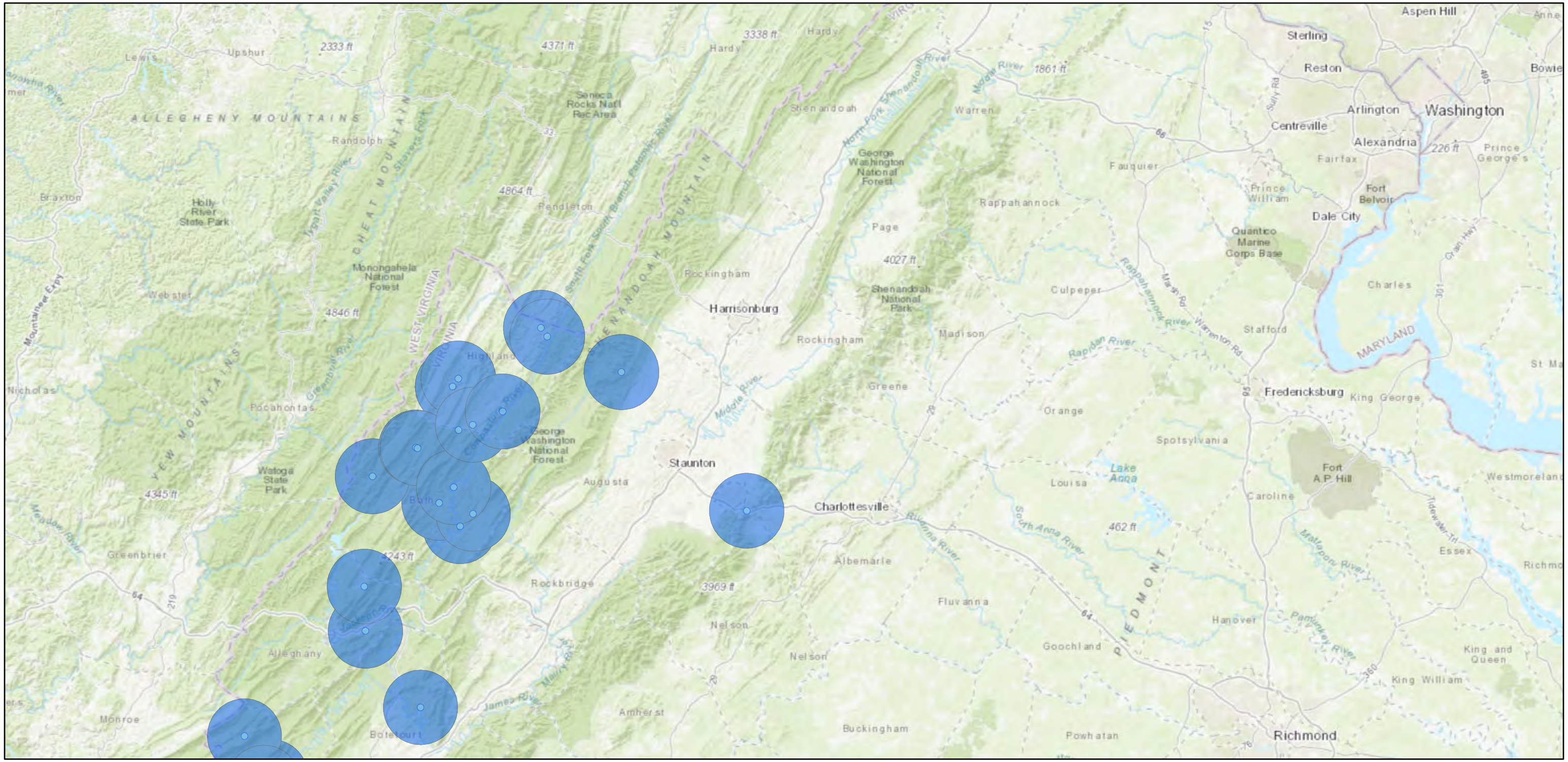
0 10 20 40 mi

0 15 30 60 km

Esri, HERE, Garmin, FAO, USGS, NGA, EPA, NPS

VA Dept. Game & Inland Fisheries
Esri, HERE, Garmin, FAO, USGS, NGA, EPA, NPS |

MYLU-PESU Locations and Roost Trees - Germanna



4/4/2023, 11:17:57 AM

Tri-colored and Little Brown Hibernaculum Half Mile Buffer

Tri-colored and Little Brown Hibernaculum 5.5 Mile Buffer

1:1,155,581

0 10 20 40 mi

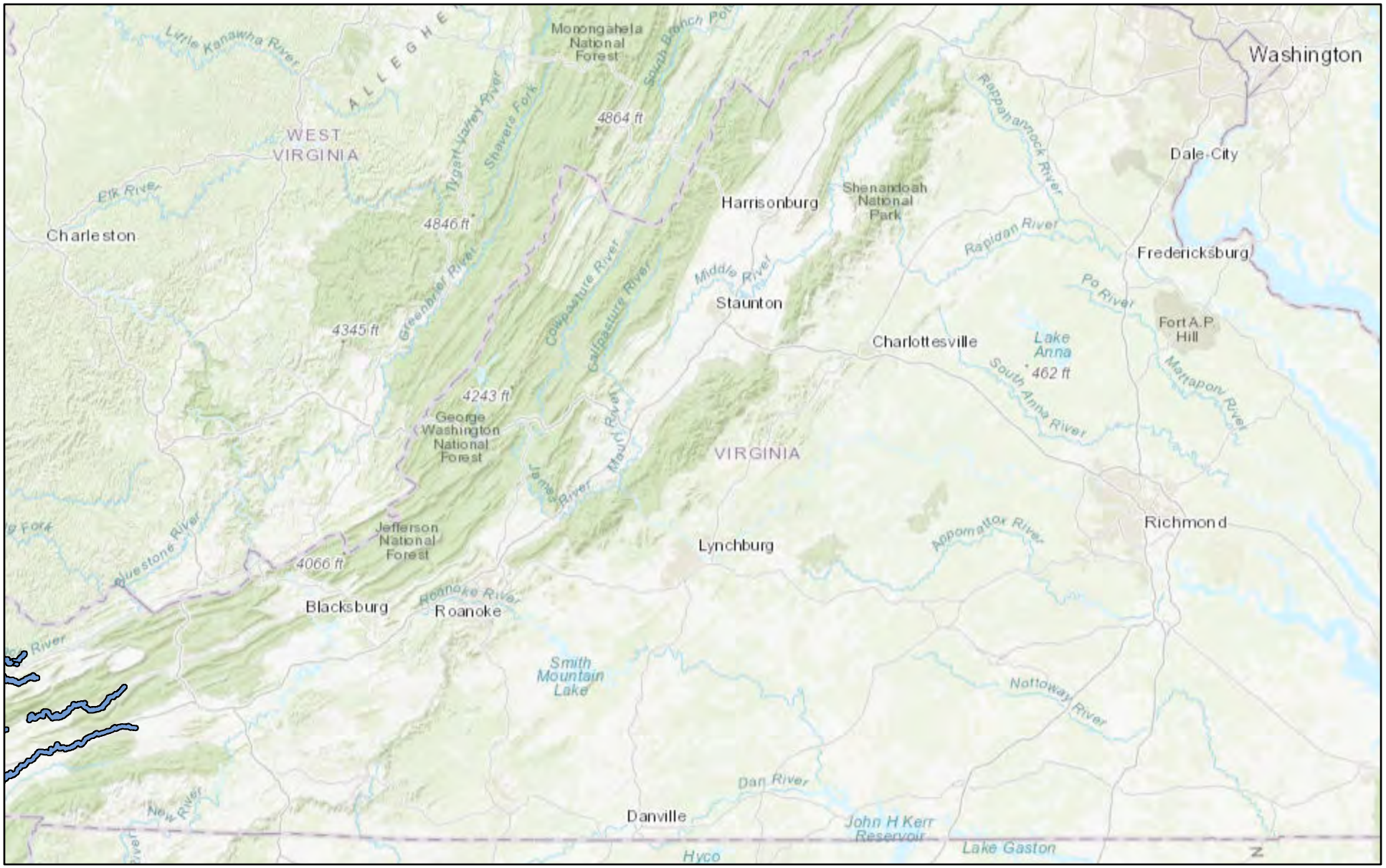
0 15 30 60 km

Esri, HERE, Garmin, FAO, USGS, NGA, EPA, NPS

Dept. Game and Inland Fisheries

Esri, HERE, Garmin, FAO, USGS, NGA, EPA, NPS |

Critical Habitat - Germanna



April 4, 2023

Virginia Critical Habitat (published)

1:2,311,162

0 15 30 60 mi

0 25 50 100 km

Esri, HERE, Garmin, FAO, USGS, EPA, NPS

Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

1111 E. Main Street, Suite 1400, Richmond, Virginia 23219
P.O. Box 1105, Richmond, Virginia 23218
(800) 592-5482
www.deq.virginia.gov

Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director
(804) 698-4000

August 13, 2019

Mr. Jason E. Williams
Director Environmental Services
Dominion Energy
5000 Dominion Boulevard
Glen Allen, VA 23060

Transmitted electronically: jason.e.william@dominionenergy.com

Subject: Dominion Energy (Electric Transmission) – Annual Standards and Specifications for Erosion & Sediment Control and Stormwater Management (AS&S for ESC and SWM)

Dear Mr. Williams:

The Virginia Department of Environmental Quality ("DEQ") hereby approves the Annual Standards and Specifications for Erosion & Sediment Control and Stormwater Management for Dominion Energy (Electric Transmission) dated "May 29, 2019". This coverage is effective from August 13, 2019 to August 12, 2020.

To ensure compliance with approved specifications, the Virginia Erosion and Sediment Control Law and the Virginia Stormwater Management Act, DEQ staff will conduct random site inspections, respond to complaints, and provide on-site technical assistance with specific erosion and sediment control and stormwater management measures and plan implementation.

Please note that your approved Annual Standards and Specifications include the following requirements:

1. Variance, exception, and deviation requests must be submitted separately from this Annual Standards and Specifications submission to DEQ. DEQ may require project-specific plans associated with variance requests to be submitted for review and approval.

2. The following information must be submitted to DEQ for each project at least two weeks in advance of the commencement of regulated land-disturbing activities. Notifications shall be sent by email to: StandardsandSpecs@deq.virginia.gov
   - i: Project name or project number;
   - ii: Project location (including nearest intersection, latitude and longitude, access point);
   - iii: On-site project manager name and contact info;
   - iv: Responsible Land Disturber (RLD) name and contact info;
   - v: Project description;

vi: Acreage of disturbance for project;
vii: Project start and finish date; and
viii: Any variances/exceptions/waivers associated with this project.

3. Project tracking of all regulated land disturbing activities (LDA) must be submitted to the DEQ on a bi-annual basis. Project tracking records shall contain the same information as required in the two week e-notifications for each regulated LDA.
4. Erosion & Sediment Control and Stormwater Management plan review and approval must be conducted by DEQ-Certified plan reviewers and documented in writing.

To ensure an efficient information exchange and response to inquiries, the DEQ Central Office is your primary point of contact. Central Office staff will coordinate with our Regional Office staff as appropriate.

Thank you very much for your submission and continued efforts to conserve and protect Virginia's precious natural resources.

Sincerely,

Jaime B. Robb

Jaime B. Robb, Manager
Office of Stormwater Management

Cc: Amelia Boschen, *Amelia.h.boschen@dominionenergy.com*
Elizabeth Hester, *Elizabeth.l.hester@dominionenergy.com*
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Case Decision Information:
As provided by Rule 2A:2 of the Supreme Court of Virginia, you have thirty days from the date of service (the date you actually received this decision or the date it was mailed to you, whichever occurred first) within which to appeal this decision by filing a notice of appeal in accordance with the Rules of the Supreme Court of Virginia with the Director, Department of Environmental Quality. In the event that this decision is served on you by mail, three days are added to that period.

Germanna Electric Transmission Project

Pre-Application Analysis

16 November 2023

Project No.: 0617696

The business of sustainability

ERM

Signature page

16 November 2023

Germanna Electric Transmission Project

Pre-Application Analysis

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EXECUTIVE SUMMARY

This report presents the findings of the pre-application analysis for Virginia Electric and Power Company's (Dominion Energy Virginia, Dominion, or the Company) proposed Germanna 230 kV (kilovolt) Electric Transmission Project (Project) in Culpeper County, Virginia. For this Project, the Company proposes to:

- Construct a new approximately 1.8-mile-long overhead 230 kV double circuit transmission line within a 100-foot-wide right-of-way by cutting the Company's 230 kV Cirrus-Gordonsville Line (#2199) at Structure #2199/102, resulting in the 230 kV Cirrus-Germanna Line (#2331) and 230 kV Germanna-Gordonsville Line (#2199), referred to here as the Germanna Lines;
- Construct a new 230-34.5 kV substation, referred to as the Germanna Substation, about 0.4 mile southeast of the intersection of State Route 3 (Germanna Highway) and Clay Hill Road to service a new data center campus development; and
- Perform relay resets at the Company's existing Gordonsville and Remington Substations in Orange and Culpeper Counties, Virginia, respectively.[1]

ERM identified three overhead route alternatives (Route 1, Route 2, and Route 3), as discussed in the Environmental Routing Study that will be attached to the Virginia State Corporation Commission (SCC) application for the Project.

This pre-application analysis assesses and compares potential impacts on previously recorded historic and archaeological resources in relation to each route alternative. Impacts from the proposed Germanna Substation are also considered, although they would be the same for all of the route alternatives. Environmental Resources Management, Inc. (ERM) conducted the analysis on behalf of Dominion Energy Virginia to assist in the development of a feasible Project design that minimizes impacts to historic resources. The pre-application analysis is a required study for transmission line projects regulated by the SCC. The study was completed in accordance with the Virginia Department of Historic Resources' (VDHR's) *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (VDHR 2008) (Guidelines).

Two known archaeological sites, considered not eligible for listing in the National Register of Historic Places (NRHP), are located in the right-of-way of two route alternatives discussed in this study. One site is located within the right-of-way for Route 1, while another site is located within the right-of-way for Route 3. No previously recorded archaeological sites are within the right-of-way for Route 2. The archaeological sites associated with each route and their current NRHP status are summarized in the table below. While no transmission structures are planned to be placed within the boundaries of these sites regardless of the route selected, the sites could be impacted by construction traffic or clearing within the right-of-way. A confident evaluation of the nature of archaeological deposits at each site and impacts on the sites from prior land use activities would require a field survey.

Seven previously recorded historic architectural resources meeting criteria specified in the Guidelines fall within study tiers defined by the VDHR for identifying aboveground historic sites along and near transmission line routes. Since a large portion of Routes 2 and 3 use a common alignment, impacts on some resources would be identical if either of these routes is selected for the Project. The likely impacts on individual historic resources associated with each route alternative are presented in the table below.

Route 1 passes near the smallest number of considered historic resources (three), while Route 2 passes near six, and Route 3 passes near seven. ERM recommends that Route 1 would have no impact on one resource, a minimal impact on one resource, and a moderate impact on the third resource; that Route 2 would have no impact on one resource, a minimal impact on four resources, and a moderate impact on

[1] The existing Gordonsville and Remington Substations are not discussed further in this study.

one resource; and that Route 3 would have no impact on one resource, a minimal impact on five resources, and a moderate impact on one resource.

Considering both archaeological and historic resources, Route 1 appears to present the least impact on cultural resources, with one archaeological site in the right-of-way, and the smallest number of considered historic resources near this alternative. Route 3 appears to present the greatest impact on cultural resources, with one archaeological site in the right-of-way, and seven considered historic resources in its vicinity.

Executive Summary of National Register Status of Considered Archaeological Resources in the Study Area of the Route Alternatives

Considered Resource	Alternative Routes		
	Route 1	Route 2	Route 3
44CU0185	Not Eligible	-	-
44CU0190	-	-	Not Eligible

Executive Summary of Project Impacts to Considered Aboveground Historic Resources in the Study Area of the Route Alternatives

Considered Resource	Alternative Routes		
	Route 1	Route 2	Route 3
023-0018	-	Minimal	Minimal
023-0020	None	Minimal	Minimal
023-0068	Moderate	Moderate	Moderate
023-0084	-	None	None
023-5055	Minimal	Minimal	Minimal
023-5494	-	-	Minimal
068-5007	-	Minimal	Minimal

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Acronyms and Abbreviations

Name	Description
3D	three dimensional
ABPP	American Battlefield Protection Program
CWSAC	Civil War Sites Advisory Commission
CWT	Civil War Trust
ERM	Environmental Resources Management
ESRI	Environmental Systems Research Institute
GNSS	Global Navigation Satellite System
HABS	Historic American Buildings Survey
HAER	Historic American Engineering Record
HALS	Historic American Landscape Survey
ISO	International Organization for Standardization
JPEG	Joint Photographic Experts Group format
kV	kilovolt
LPC	Lidar Point Cloud
MPD	Multiple Property Documentation
NHL	National Historic Landmark
NPS	National Park Service
NRHP	National Register of Historic Places
PBR	Physically Based Rendering
PDF	Portable Document Format
Project	Germanna Electric Transmission Project
RAW	an unprocessed image
ROW	Right-Of-Way
SCC	State Corporation Commission
SLR	Single-Lens Reflex
SP	Simulation Point
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
V-CRIS	Virginia Cultural Resource Information System
VDHR	Virginia Department of Historic Resources
VLR	Virginia Landmarks Register

INTRODUCTION

This report presents the findings of the pre-application analysis prepared by Environmental Resources Management, Inc. (ERM) on behalf of Virginia Electric and Power Company (Dominion Energy Virginia or the Company) for the proposed Germanna Electric Transmission Project (Project) in Culpeper County, Virginia. For this Project,

the Company proposes to:

- Construct a new approximately 1.8-mile-long overhead 230 kV double circuit transmission line within a 100-foot-wide right-of-way by cutting the Company's 230 kV Cirrus-Gordonsville Line (#2199) at Structure #2199/102, resulting in the 230 kV Cirrus-Germanna Line (#2331) and 230 kV Germanna-Gordonsville Line (#2199), referred to here as the Germanna Lines;
- Construct a new 230-34.5 kV substation, referred to as the Germanna Substation, about 0.4 mile southeast of the intersection of State Route 3 (Germanna Highway) and Clay Hill Road to service a new data center campus development; and
- Perform relay resets at the Company's existing Gordonsville and Remington Substations in Orange and Culpeper Counties, Virginia, respectively.[2]

ERM identified and assessed three overhead Route Alternatives (Route 1, Route 2, and Route 3) as discussed in the Environmental Routing Study that will be attached to the Virginia State Corporation Commission (SCC) application for the Project.

This pre-application analysis assesses potential impacts on previously recorded historic and archaeological resources in relation to each route alternative. Impacts from the proposed Germanna Substation are also considered, although they would be the same for all of the route alternatives. ERM conducted the analysis on behalf of Dominion Energy Virginia to assist in the development of a feasible Project design that minimizes impacts to historic resources. The pre-application analysis is a required study for transmission line projects regulated by the Virginia SCC. The study was completed in accordance with the Virginia Department of Historic Resources' (VDHR's) *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (VDHR 2008) (Guidelines).

Overview

Three route alternatives (Routes 1, 2, and 3) are under consideration for the new overhead transmission lines. A map depicting each route alternative and the proposed Germanna Substation is provided as Figure 1.1-1.

Route 1

Route 1 originates at existing Structure #2199/76 along Line #2199 approximately 0.8 mile west of the intersection of Mountain Run and Carrico Mills Road and about 0.6 mile northeast of Coles Hill. From here, the route initially heads southeast for approximately 0.5 mile, passing through mostly forested land and crossing Mountain Run. It then turns southward and continues approximately 1.4 mile across mostly forested lands, but also isolated parcels of cleared agricultural land to the north and south. Route 1 then cuts west for about 0.1 mile, passing from agricultural land back into forest, before turning slightly southwest and continuing another approximately 0.4 mile through forest and agricultural land with a crossing of Germanna Highway about 0.3 mile southeast of the intersection of the highway and Clay Hill Road. The route terminates in an undeveloped clearing on the south side of Germanna Highway at the

[2] The existing Gordonsville and Remington Substations are not discussed further in this study.

proposed site for the Germanna Substation. In total, Route 1 measures approximately 2.4 miles in length with a right-of-way encompassing about 34.0 acres, inclusive of the proposed substation site.

Route 2

Route 2 originates at existing Structure #2199/102 along Line #2199 near Mountain Run Junction, about 0.2 mile southwest of the line's intersection with Batna Road. From here, the route heads southeast for approximately 0.3 mile, mostly through cleared agricultural land, to a crossing of Batna Road. The route then heads eastward for about 0.8 mile, mainly across cleared agricultural land, then turns and heads northeast for approximately 0.4 mile through a mix of forested and recently timbered land. The route then turns north and continues for 0.3 mile through cleared agricultural land to the proposed site of the Germanna Substation. Route 2 measures approximately 1.8 miles in total length with a right-of-way encompassing about 26.5 acres, inclusive of the proposed substation site.

Route 3

Route 3 begins approximately 0.2 mile southwest of Mountain Run Junction at existing Structure #2199/103 along Line #2199. From here, the route heads southeast for approximately 0.3 mile across mostly agricultural fields, then continues about 0.2 mile east through forested land to a crossing of Batna Road. The route then heads approximately 0.2 mile to the west and north across cleared agricultural land to an intersection with Route 2. It then follows the same alignment as Route 2 to the site of the proposed Germanna Substation. In total, the route measures approximately 2.0 miles in length with a right-of-way encompassing about 28.7 acres, inclusive of the proposed substation site.

Management Recommendations

There are two archaeological sites within the right-of-way of the route alternatives. One site is located within the right-of-way for Route 1, while another site is located within the right-of-way for Route 3. No previously recorded archaeological sites are present within the right-of-way for Route 2. Both archaeological sites have been formally determined not eligible for listing in the National Register of Historic Places (NRHP). While no transmission structures for the routes are planned to be placed within either site boundary, the sites could be impacted by construction traffic or clearing within the right-of-way depending on the route selected for the Project. A confident determination regarding the nature of archaeological deposits at each site and impacts on the sites from prior land use activities would require a field survey.

Seven previously recorded historic architectural resources meeting criteria specified in the Guidelines fall within study tiers defined by the VDHR for identifying aboveground historic sites along and near transmission line routes. Since a large portion of Routes 2 and 3 use a common alignment, impacts on some resources would be identical for either alternative.

Route 1 passes near the smallest number of considered historic resources (three), while Route 2 passes near six, and Route 3 passes near seven. ERM recommends that Route 1 would have no impact on one resource, a minimal impact on one resource, and a moderate impact on the third resource; that Route 2 would have no impact on one resource, a minimal impact on four resources, and a moderate impact on one resource; and that Route 3 would have no impact on one resource, a minimal impact on five resources, and a moderate impact on one resource.

Based on the above discussion, ERM recommends that Route 1 would have the smallest impact on cultural resources, with one NRHP-ineligible archaeological site within the right-of-way, and only three considered historic resources near the route. ERM recommends that Route 1 would have no impact on 023-0020, while that resource would be minimally impacted by Routes 2 and 3. In addition, although ERM recommends that Route 1 would have a minimal impact on 023-5055 and a moderate impact on

023-0068, ERM also recommends the same impact categories for both resources when assessing Routes 2 and 3. Route 3 appears to present the greatest impact on cultural resources, with one archaeological site in the right-of-way, and seven considered historic resources in its vicinity. Thus, Route 1 appears to present the best possible route for the Project with respect to known cultural resource impacts. More information about each resource and the nature of potential impacts associated with the various route alternatives are found in the sections that follow.

Figure 1.1-1
Overview of Transmission Line Segments under Consideration for the Project Route Alternatives
Germanna Electric Transmission Project
Dominion Energy Virginia
Culpepper County, VA

Figure 1.1-1: Overview of Transmission Line Segments under Consideration for the Project Route Alternatives

RECORDS REVIEW

Data Collection Approach

ERM conducted an analysis of potential cultural resource impacts for the alternative routes under consideration in accordance with the Guidelines. For each route, this analysis identified and considered the following previously recorded resources:

- National Historic Landmarks (NHLs) within a 1.5-mile radius of each centerline;
- NRHP-listed properties, NHLs, battlefields, and historic landscapes within a 1.0-mile radius of each centerline;
- NRHP-eligible and NRHP-listed properties, NHLs, battlefields, and historic landscapes within a 0.5-mile radius of each centerline; and
- All of the above qualifying resources as well as archaeological sites within the right-of-way for each alternative route.

Information on the considered resources in each study tier was collected from the Virginia Cultural Resource Information System (V-CRIS). ERM additionally:

- collected information from the Museum of Culpepper History (2023) and Historic Germanna (2023) to identify locally significant resources within a 1.0-mile radius of the centerline for each route; and
- collected information on battlefields surveyed and assessed by the National Park Service's American Battlefield Protection Program (ABPP).

No additional resources (locally significant sites and ABPP study areas, core areas, or potential NRHP boundaries for battlefields) were identified within the relevant study tiers for each route, beyond those otherwise included in the VCRIS.

Along with the records review carried out for the four tiers as defined by VDHR, ERM also conducted field assessments of the considered aboveground resources for each route alternative in accordance with the Guidelines. Digital photographs were taken of each historic resource in addition to views from each resource towards the alternative routes. Photo simulations and vegetative visual analyses were then prepared to assess potential viewshed impacts from construction of the transmission line alternatives for each considered resource. For previously recorded archaeological sites under consideration, aerial photographs were examined to assess the current land condition and the spatial relationship between the sites and any existing or planned transmission lines.

Archaeological Resources

Crossings of archaeological sites were considered a constraint in this study due to the potential for an electric transmission line to impact archaeological deposits in these areas (for example, due to transmission structure placement, tree clearing, or heavy equipment traffic within a site). The known archaeological sites in the right-of-way for each alternative transmission line route are summarized in Table 2.2-1 and their locations are depicted on Figure 2.2-1. Individual maps for each alternative route are provided in Attachment 1.

Both previously recorded sites within the right-of-way for the route alternatives have been determined not eligible for the NRHP. A confident and complete assessment of the current integrity and condition of each site would require archaeological field investigations, which would be completed for the alternative selected by the SCC for the Germanna Laines in a subsequent phase of studies for the Project.

Figure 2.2-1: Locations of Archaeological Resources within the Right-of-Way for Each Route Alternative (Redacted)

Table 2.2-1: Archaeological Resources in the Right-of-Way of Route Alternatives

Route Alternative	Greenfield or Existing/Expanded Right-of-way?	Site Number	Description	NRHP Status
Route 1	Existing/Expanded ROW	44CU0185		Not Eligible
Route 2	-	-	-	-
Route 3	Existing/Expanded ROW	44CU0190		Not Eligible

ROW = right-of-way

Historic Resources

Each alternative route under consideration has the potential to impact a number of historic resources. The following discussion summarizes the known resources in the vicinity of each Project alternative according to VDHR's tiered study area model. The locations of the considered historic resources and the proposed route alternatives are shown in Figure 2.3-1. Individual maps for each route alternative are located in Attachment 1.

The resources located within the right-of-way of a route alternative may be subject to both direct impacts from placement of the line across the property as well as visual impacts from a change to the viewshed due to the introduction of new transmission line structures and conductors. Resources outside the proposed right-of-way would be subject only to viewshed effects. In the 0.5-mile tier, for example, resources may be visually impacted unless topography or vegetation obscures the view to the transmission line. At a distance of over 0.5 mile, it becomes less likely that a resource would be within line-of-sight of the proposed transmission line. However, the full architectural survey required in the second stage of VDHR's transmission line review process would determine which resources actually would be visually impacted. Some of the resources in the 0.5-mile tier also extend into the 1.0-mile tier. Beyond 1.0 mile, it becomes less likely that a given resource would be within line-of-sight of the proposed Project. In the case of the current Project, no qualifying NHL resources are located within 1.5 mile of the alternative routes, so no impacts were assessed at this distance.

Because of the overlap among two of the route alternatives and the large size of several resources considered in the study, some of the same cultural resources would be impacted, regardless of the route selected for the Project (although the distance from the proposed transmission line would differ in some cases). The nature of these impacts, while estimated in this study with the assistance of photo simulations, would depend on the final Project design in which the exact placement and height of transmission line structures will be determined. Once a route is selected for the Project, that route will be subject to a full historic architectural survey, additional (as of yet, unrecorded) historic properties may be identified in the survey area, and actual Project impacts will be assessed. The survey area will be defined based on the height of the proposed transmission line structures, topography, tree cover, and other factors impacting the line-of-sight from historic resources to the selected route.

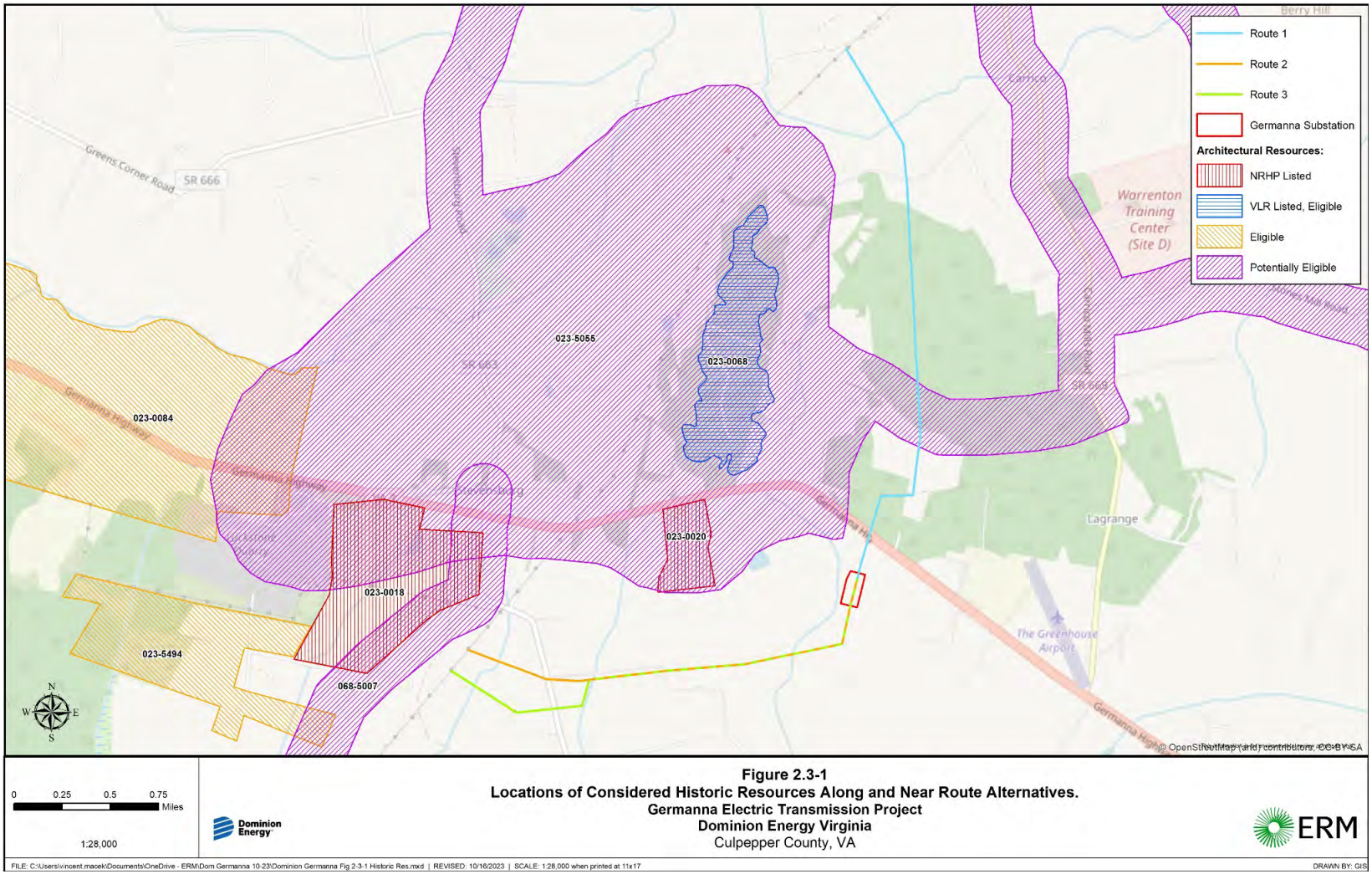

Figure 2.3-1: Locations of Considered Historic Resources Along and Near Route Alternatives

Route 1

The considered resources that lie within the VDHR tiers for Route 1 are presented in Table 2.3-1 and depicted in Attachment 1, Sheet 1. There are three aboveground historic resources identified within the VDHR tiers for Route 1. The considered resources were subjected to field reconnaissance and a preliminary assessment of impacts, discussed in the next chapter.

Table 2.3-1: Historic Resources in VDHR Tiers for Route 1

Buffer (miles)	Resource Category	Resource Number	Description
0.5 to 1.0	National Register Properties (Listed)	023-0020*	La Grange/Salubria
	VLR Listed (Battlefield)	023-0068*	Hansbrough Ridge Winter Encampment District
0.0 (within ROW)	National Register – potentially eligible (Battlefield)	023-5055*	Brandy Station Battlefield

** Resource is within the designated tiers for the proposed Germanna Substation*

Route 2

The considered resources that lie within the VDHR tiers for Route 2 are presented in Table 2.3-2 and depicted in Attachment 1, Sheet 2. There are six aboveground historic resources identified within the VDHR tiers for Route 2. The considered resources were subjected to field reconnaissance and a preliminary assessment of impacts, discussed in the next chapter.

Table 2.3-2: Historic Resources in VDHR Tiers for Route 2

Buffer (miles)	Resource Category	Resource Number	Description
0.5 to 1.0	VLR Listed (Battlefield)	023-0068*	Hansbrough Ridge Winter Encampment District
	National Register – eligible (Historic Landscape)	023-0084	Mount Pony Rural Historic District
0.0 to 0.5	National Register Properties (Listed)	023-0018	Rose Hill/Game Preserve
		023-0020*	La Grange/Salubria
	National Register – potentially eligible (Battlefield)	023-5055*	Brandy Station Battlefield
		068-5007	Battle of Morton's Ford

** Resource is within the designated tiers for the proposed Germanna Substation*

Route 3

The considered resources that lie within the VDHR tiers for Route 3 are presented in Table 2.3-3 and depicted in Attachment 1, Sheet 3. There are seven aboveground historic resources identified within the VDHR tiers for Route 3. The considered resources were subjected to field reconnaissance and a preliminary assessment of impacts, discussed in the next chapter.

Table 2.3-3: Historic Resources in VDHR Tiers for Route 3

Buffer (miles)	Resource Category	Resource Number	Description
0.5 to 1.0	VLR Listed (Battlefield)	023-0068*	Hansbrough Ridge Winter Encampment District
	National Register – eligible (Historic Landscape)	023-0084	Mount Pony Rural Historic District
0.0 to 0.5	National Register Properties (Listed)	023-0018	Rose Hill/Game Preserve
		023-0020*	La Grange/Salubria
	National Register – potentially eligible (Battlefield)	023-5055*	Brandy Station Battlefield
		068-5007	Battle of Morton's Ford
	National Register – eligible	023-5494	Farmstead

** Resource is within the designated tiers for the proposed Germanna Substation*

Previous Surveys

Portions of the various route alternatives have previously been surveyed for cultural resources. Four previous cultural resources surveys overlap portions of the route alternatives. Information on these previous surveys—including VDHR survey number, report title, report authors, and report date—is provided in Table 2.4-1. The extent of the previous survey coverage is depicted on maps provided in Attachment 2. Below is a summary of the survey coverage as it pertains to the route alternatives discussed in the study.

Table 2.4-1: Cultural Resource Surveys Covering Portions of the Route Alternatives

VDHR Survey #	Title	Author(s)	Date
CU-026	An Archaeological Survey for the Proposed Route 3 Improvements and Stevensburg Bypass Project, Culpeper County, Virginia	Ricardo Fernandez-Sardina, Eric Griffitts	1998
CU-069	Phase I Archaeological Survey of Greenwood Solar I, Culpeper County, Virginia	Carol D. Tyrer, Dawn M. Muir	2018
CU-071	A Phase I Archaeological Survey of Approximately 2.2 Acres at 19095 Salubria Lane for the Dominion Energy Strategic Underground Project in Culpeper County, Virginia	Donald Sadler, Brynn Stewart	2019
CU-080	Phase I Cultural Resource Survey of the ±97.6-Hectare (±241-Acre) DCA60 and DCA61 Project Area, Culpeper County, Virginia	David H. Dutton, Dara Friedberg	2021

STAGE I PRE-APPLICATION ANALYSIS FINDINGS

Methods of Analysis

Fieldwork for the pre-application analysis was conducted by Secretary of the Interior Qualified architectural historians Emily Dodson, MacKenzie Carroll, Michael Langmyer, Haley Hoffman, and/or Sonja Lengel on August 8–12, 2022, September 13, 2022, November 1, 2022, April 20–24, 2023, August 27, 2023, and October 23, 2023. The fieldwork involved photographing seven resources requiring visual assessment according to the Guidelines and examining potential line-of-sight views from each resource toward the route alternatives. For resources where property owner approval was granted for historic resource documentation, photographs were taken toward the route alternative(s) from the property at the most prominent view of the landscape. When permission to access such locations was not available, photographs were taken from the public right-of-way (typically a road) nearest to the resource facing toward the applicable route(s).

Panoramic photographs were taken from each resource, with an effort to capture the direction with the clearest, most unobstructed view toward the applicable route or routes. The precise location of the photograph was captured with a mobile tablet device connected to a sub-meter accurate Global Navigation Satellite System (GNSS) receiver, the Trimble R1. The locations where photographs were taken were noted as Simulation Points (SPs). Site visits to the SPs were prioritized based on their location relative to the resource, so that viewpoints east of the resource were visited in the morning and viewpoints west of the resource were visited in the afternoon. This helped ensure, where possible, that the sun was behind the photographer at the time the viewpoint photography was captured. Additionally, minor adjustments to position were made to obtain as clear a view to the site center as possible, avoiding trees, landscaping, or built obstructions. Tablets recorded the center bearing, angle of view, altitude, and camera lens height. Upon receipt of the viewpoint location information, the viewpoints were plotted onto open-source mapping from the Environmental Systems Research Institute (ESRI) using the Universal Transverse Mercator (UTM) 18N coordinate system.

The process of taking panoramas included setting up the tripod and camera. The camera was placed on the panoramic head in a landscape orientation where its lens height was confirmed and set at 1.5 meters (note: a portrait camera orientation was sometimes used in situations where the viewpoint is very close to a development so that the top of the development is not cut off by the image boundaries). The tripod head and camera combination were then leveled. With the camera's viewfinder centered on the perceived site center, exposure and focus settings were taken. These were then fixed manually on the camera so that they could not be inadvertently altered. The head was rotated 90 degrees to the left where the first frame of the 360-degree sequence was then taken. Each subsequent frame was taken using a 50 percent overlap of the previous frame until the full 360-degree sequence was captured. The camera was then removed from the tripod and a viewpoint location photograph was captured showing the tripod in its position.

The following camera and tripod configuration was used:

- Camera body: Nikon D800 professional specification digital SLR (full frame CMOS sensor)
- Camera lens: Nikkor AF 50mm f1.8 prime
- Tripod: Manfrotto 055MF4 with Manfrotto 438 ball leveler
- Panoramic head: Manfrotto 303SPH

The following camera settings were used for all photography:

- Camera mode: Manual Priority
- ISO: 100

- Aperture: f13
- Image format: RAW

After the photos were complete, they were uploaded to a server to begin the simulation/visualization process. The single-frame photographs were opened in Adobe Photoshop CC 2022 where they were checked and any camera sensor dust spots were removed before being saved as high-resolution JPEG images. If required, discrete color and tonal adjustments were made to each frame before they were saved. The single-frame photographs were stitched together in PTGui Pro version 12.11 professional photographic stitching software using cylindrical projection settings. The camera locations were plotted in Global Mapper version 23.1. Digital models of the transmission line structures were provided by Dominion Energy Virginia, then edited for visualization and textured in Autodesk 3DS Max 2021. The position of each structure was provided by Dominion Energy Virginia for Routes 2 and 3. For Route 1, typical spacing was provided by Dominion, and iToo RailClone for Autodesk 3DS Max 2021 was used to project structure locations. The transmission structures along each route were rendered in Vray version 5.2 from each SP camera location. 3D imagery was produced at the field of view using camera matching. Renderings for each route and each transmission line structure combination were then exported for use as an overlay.

Detailed, correctly dimensioned 3D computer models of the transmission structures along each route were generated using Autodesk 3DS Max 2021 and iToo RailClone. The virtual 3D model of the structures was created using real-world measurements and elevation drawings provided by the Company. These were textured using Vray PBR materials to simulate the weathering steel texture of the proposed structures. The detailed, textured models were rendered to a digital image using a simulated physical camera and a sun and sky simulation lighting model in the computer software consistent with conditions within the original viewpoint photography.

Photomontages were produced by overlaying the rendered image on the photograph, using known control points and the wireline imagery showing the tower columns at the correct height and distance. Final adjustments were then made to the brightness and contrast of the rendered images to match them to the photograph. Final photomontages were prepared from each viewpoint for each route. These were then opened in Adobe Photoshop CC 2022 where minor changes were made such as placing relevant tree/building/hedge screening or telegraph wires over the proposed development renders where necessary. The final images were then cropped to the proportions required for the visual simulation figures, and the visualization figures were prepared in Adobe InDesign CC2022 and exported in a PDF format.

Additional viewshed renderings were conducted to assess the visibility from Hansbrough Ridge Winter Encampment District to the three proposed route alternatives. In order to complete this, Digital Surface Model viewshed analyses were prepared using a Digital Elevation Model derived from National Elevation Dataset 1/3 arc second Elevation Dataset. Focal points were placed along the centerline at locations preliminarily assigned by engineering. Structure heights ranged from 105 feet (32.0 meters) to 125 feet (38.1 meters) above the ground, as noted in the structures' attributes. Vegetation data was derived by combining the Virginia Landcover data with the tree heights (in meters) from the USDA LANDFIRE dataset. The resulting visual analyses are presented in Attachment 6.

Structure Types and Right-of-Way Widths

The Company proposes to use several structure types for the Germanna Lines, which will be constructed within a new right-of-way measuring 100 feet in width for the majority of the route (see Attachment 3, Figures 1 through 7). Specifically, in order to construct the Germanna Lines, the existing double circuit Structure #2199/102 / #2/488 will be removed and replaced with one single circuit monopole (Structure

#2/488) and one double circuit 2-pole structure (Structure #2199/102 / #2331/102). . ERM will provide a revised assessment of Project impacts, if necessary, based on the final design.

Assessment of Potential Impacts

The assessment of potential Project impacts on individual resources made use of the visual assessment findings and categorized the severity level of impacts according to the following scale devised by VDHR:

- **None**–Project is not visible from the resource.
- **Minimal**–Viewsheds have existing transmission lines, there would be only a minor change in height, and/or other views are partially obscured by topography or vegetation.
- **Moderate**–Viewsheds have more expansive views of the transmission line, more dramatic changes in height are proposed, and/or the overall visibility of the Project would be greater.
- **Severe**–Existing viewshed contains no transmission line, the view to the Project would be relatively unobstructed, the new transmission line would introduce a significant change to the setting of historic properties, and/or a dramatic change in the height of an existing transmission line would take place in close proximity to historic properties.

Historic Resource Descriptions

023-0018, Rose Hill Farm/Game Preserve

023-0018 is located on the west side of Batna Road/ Route 663 in Stevensburg. The resource is situated on a 207.45-acre parcel consisting of agricultural land divided into sections by dense tree lines. The resource contains a house accessed via a paved private drive, approximately 610 feet from its intersection with Batna Road/Route 663. Due to the lack of access, ERM architectural historians took photos from the public right-of-way (Attachment 4, Figure 1).

023-0018 was first surveyed in 1937 for a Historic American Buildings Survey (HABS)/Historic American Engineering Record (HAER)/Historic American Landscape Survey (HALS) documentation (Jeffries 1937). It was subsequently surveyed eight more times through 2018 (Johnson 1958a; Reed 1968; Neville 1993a; Covington 1997; Kuhn and Yengling 2009a; Taylor 2017; Muir 2018a; Neville 2018). The 2018 survey was conducted by Ashley Neville and John Salmon who noted an I-house and multiple outbuildings. The I-house was described as a circa 1855, two-and-a-half story, central-passage building built in the Federal/ Adamesque style (Neville and Salmon 2019). It has a gabled, standing-seam metal roof, clapboard siding, and a stone foundation. Two interior-end brick chimneys and six-over-six and nine-over-nine double-hung wood sash windows are visible from the public road. The dwelling is accessed via a portico with a pediment and Doric columns.

The resource also includes a circa 1810 “Old Hall” or school, circa 1835 smokehouse, detached kitchen, ice house, a circa 1826 Nalle cemetery, a circa 1850 Ashby-Covington cemetery, a circa 1870 pole barn, a circa 1955 grain house, two circa 1960 garages, and a circa 2009 bird house. Servant/slave quarters were noted during prior surveys; however, they were believed to be no longer extant by the time of the 2019 NRHP nomination. ERM did not note any changes since the previous survey.

Rose Hill Farm/Game Preserve was listed on the VLR in December 2019 and later listed on the NRHP in August of 2020. 023-5494 lies within the half-mile study tier for Routes 2 and 3.

023-0020, La Grange/Salubria

023-0020 is located at 19173 Salubria Lane, which is south of Germanna Highway in Stevensburg. The resource is situated on a 19.55-acre lot surrounded by rural agricultural land in all directions. Dense forest

covers the southern portion of the resource's boundaries, while the northern portion has been cleared of most vegetation.

023-0020 was first surveyed for the HABS Inventory in July 1947 (Waterman 1947). Since then, it has been surveyed numerous times, with the most recent recordation being in 2018 (Johnson 1958b; Neville 1993b; Maroney 2008; Stoyko 2009; Ellis 2011; Melinat 2015; Dutton 2017; Muir 2018b). 023-0020 encompasses a post-1742 dwelling, two post-1850 Antebellum period cemeteries, a post-1900 silo and corn crib, a post-1946 secondary dwelling and tenant house, and a post-1990 shed and two barns. The primary dwelling is located approximately 0.26 mile south of the intersection of Germanna Highway and Salubria Lane via a gravel drive. It is a Georgian style, two-story structure featuring a hipped roof and Flemish bond brick exterior coated in stucco on the façade (Attachment 4, Figure 2). Two interior brick chimneys are located on the east and west elevations.

The cemeteries, Salubria Community Cemetery and Grayson Cemetery are situated approximately 300 feet northeast of the primary dwelling. The Salubria Community Cemetery contains 57 grave shafts and 36 grave markers, while the Grayson Cemetery contains only three grave markers. The silo and corn crib locations were not noted on the V-CRIS forms and could not be located on aerial imagery. However, they both date between the Reconstruction and Growth Period from 1866–1916. The secondary dwelling is located approximately 0.15 mile to the north-northwest of the primary dwelling. It features a side-gable roof with two dormers and a central brick chimney. The exterior is clad in aluminum siding and sits on a concrete block foundation. The tenant house is situated to the southwest of the primary dwelling. It features a side-gable roof with stucco exterior. The remaining post-1990 shed and two barns are all located behind the tenant house. The shed is prefabricated and both barns are clad in wood with gable roofs. Prior survey noted all structures and features as being in good condition with the exception of the Salubria Community Cemetery, which appeared to be deteriorated.

The resource was added to the VLR in December of 1969 and was later listed on the NRHP in February of 1970. 023-0020 lies within the one-mile study tier for Route 1 and the half-mile study tier for Routes 2 and 3.

023-0068, Hansbrough Ridge Winter Encampment District

023-0068, Hansbrough Ridge Winter Encampment District, is located approximately 2 miles east of the village of Stevensburg, bounded on the south by Germanna Highway (Virginia State Route 3) and on the north by Cole's Hill, which was separated from the ridge by a prominent gap. The resource is defined by a prominent north-south trending ridge that was the scene of fighting during the Civil War Battle of Brandy Station in June 1863, as well as the site of the 1863–1864 winter encampment of the Second Corps of the Army of the Potomac (Attachment 4, Figure 3). The resource encompasses approximately 223 acres, defined by the extent of surface features and artifacts related to the engagement and the encampment.

023-0068 is listed in the VLR as part of the Army of the Potomac Winter Encampment, Culpeper and Fauquier Counties, 1863–1864 Multiple Property Documentation (MPD). The main camp area (approximately 110 acres) consists of surface remnants of stone foundations, depressions, rock piles, road traces, fortification trenches, ditches, and berms that were mapped during an archaeological evaluation of two parcels containing 174 acres that were purchased by the Civil War Trust (CWT) and are now part of a VDHR historic preservation easement (Thompson 2017). Although limited subsurface testing was conducted, the evaluation identified over 750 surface features, which helped define the 70-acre archaeological site 44CU0174.

Hansbrough Ridge served as the winter encampment of the Third Division, Second Corps, of the Union's Army of the Potomac from early December 1863 to May 4, 1864. Infantry regiments representing New York, Ohio, Indiana, and West Virginia were stationed here and constructed huts, camp roads, fortifications, trenches, and other features on the ridge. The Army of the Potomac's winter encampment

occupied a number of sites in Culpeper and Fauquier counties, arranged around Major General George G. Meade's headquarters at Brandy Station. The army's corps were stationed in separate camps arranged in a south-facing semi-circle linked by signal stations located on prominent elevations. The encampment is considered the largest winter quarters of the war and included some 100,000 soldiers. The encampment played a vital role in the war, providing rest and recuperation to veteran fighters and training for new recruits, both of which were critical for maintaining the army's strength in advance of the 1864 campaign (Thompson 2017).

Following the difficult campaign of 1863 in which the Army of the Potomac had suffered significant losses at Chancellorsville and Gettysburg and spent the remainder of the summer wearily parrying Lee's advances, General Meade hoped to revive his army over the winter. The terms of about half of the army would be expiring in the spring of 1864, and their experience during the winter would likely influence their decision regarding whether to re-enlist. Likewise, new conscripts were in need of training and mentoring from veteran soldiers (Dial 1991).

Meade deployed a defense perimeter around the encampments, with cavalry scouts backed by infantry pickets. The First and Third Brigades of the Second Corps were camped at Hansbrough Ridge and Cole Hill, while the Second Brigade was detached as a picket about 4 miles to the south at Stony Point. The Fifth Corps was camped at Rappahannock Station to the northeast, while the First Corps was located to the west at Culpeper Court House. The Sixth and Third corps were located to the north and south of Meade's headquarters at Brady Station, about 4.5 miles north of Hansbrough Ridge (American Battlefield Trust 2018a).

Hansbrough Ridge offered a secure defensive position, as well as a vantage point from which to observe any Confederate movements to the south. Having gained experience during the previous winter, Union troops began construction of their encampments based on guidelines provided by the U.S. Army, as well as by the existing conditions. The arrangement of camps was aided by knowledge that good drainage, camp cleanliness, and an organized site plan would promote the most pleasant and healthful experience. Camps were organized with separate areas for officers and enlisted men, and the quarters arranged by company along streets of specified width. Areas were set aside for mess tents, equipment and supplies, and latrines. Hansbrough Ridge was also the site of a hospital that consisted of log huts with canvas roofs connected by wooden boardwalks and arranged around a yard with a brush border and a flagpole in the center. Agents of the Christian Commission and Sanitary Commission were on site to inspect the camps for cleanliness and provide supplies, advice, and comfort (American Battlefield Trust 2018b; Thompson 2017).

Soldiers in the encampment were housed in huts that varied in character, but were typically constructed of log walls, with a canvas or plank roof and equipped with a stove or fireplace constructed of stone or sticks and mud, with a barrel chimney. The floor was sometimes dug out below grade. As many as 16 men occupied each hut. The huts were arranged in rows, with corduroy roads forming streets. In addition to military drills, the soldiers were occupied with a variety of tasks, including constructing roads, bridges, and fortifications, maintaining their camp, standing guard, and conducting patrols. Despite the hard work, the cold weather, and the often sloppy conditions, compared to the rigors of campaigning, the winter encampment was a welcome relief, and many soldiers expressed a fondness for their camp. When the army left camp in May 1864, by all accounts, it was larger, stronger, and more professional than when it had entered in December (Dial 1991; Thompson 2017).

The Hansbrough Ridge Winter Encampment District was determined eligible for the NRHP and listed on the VLR in 1991. 023-0068 lies within the one-mile study tier for Routes 1, 2, and 3.

023-0084, Mount Pony Rural Historic District

The Mount Pony Rural Historic District is located on the east side of James Madison Highway spanning north and south along Germanna Highway on the outskirts of the town of Culpeper. The historic district is irregular in shape and encompasses approximately 3,910 acres within a rural agricultural area (Attachment 4, Figure 4).

023-0084 was surveyed in 1995 by Laura Campbell and 2009 by Patti Kuhn and Mike Yengling. Campbell noted that the district contained a variety of building types, including houses, tenant houses, and associated farmland. The district as a whole has changed very little since its inception, and any changes/additions to individual buildings reflect the evolution of a farming community (Campbell 1995). Properties within the district date from pre-revolutionary to World War II (1734 to 1941). No changes were noted in the 2009 survey other than the widening of Germanna Highway (Kuhn and Yengling 2009b). ERM did not notice any changes since the previous survey.

Six previously recorded resources (farms) are considered contributing resources to the district. Two of the resources have been determined not eligible for the NRHP (023-5022 and 023-5035), one is eligible for the NRHP (023-5029), and one is individually unevaluated (023-0036). The Croftburn Farm (023-5040) and Signal Hill/Mount Castle (023-5023) are individually listed on the NRHP. Nine other resources are located in the district boundary, but their V-CRIS forms mention no determination of their contributing status. The district's landscape consists of open land and rolling hills.

The district was determined eligible for the NRHP under Criterion A (embodying broad patterns of history) at the local level in the area of agriculture. 023-0084 lies within the one-mile study tier for Routes 2 and 3.

023-5055, Brandy Station Battlefield

023-5055, Brandy Station Battlefield, is located in Culpeper and Fauquier Counties. The resource represents three geographical areas that contain the significant sites and related features that played an important role in the Civil War Battle of Brandy Station, which took place June 9, 1863. It was the opening engagement of General Robert E. Lee's Gettysburg Campaign (American Battlefield Trust 2023a; Gossett 2005). The boundaries of the resource are represented by the Civil War Sites Advisory Commission (CWSAC) Study Area boundary defined for its 1993 report and subsequent revisions (American Battlefield Protection Program [ABPP] 2009; CWSAC 1999). Route 1 falls within the Study Area, while Routes 2 and 3 fall within both the Study Area and the Core Area. The Core Area is where a portion of Major General Alfred Pleasonton's cavalry corps of the Army of the Potomac had advanced against the Confederate right flank in an attempt to get behind Jeb Stuart's cavalry at Brandy Station. The Stevensburg engagement took place at the south end of the prominent Hansbrough Ridge, where the Germanna Road entered the village of Stevensburg (Attachment 4, Figure 5).

The Battle of Brandy Station was a pitched battle between the cavalry corps of the Army of the Potomac and the Army of Northern Virginia, regarded as the largest cavalry battle ever on U.S. soil. After success at Chancellorsville in early May, General Lee was confident that he could successfully take the war to the northern states and began a withdrawal from his position at Fredericksburg. He planned to pass through Culpeper County and into the Shenandoah Valley where he could secure supplies. To shield his movement, he stationed Jeb Stuart's seasoned cavalry corps on his right at Brandy Station, where he could monitor any Union effort to cross the Rappahannock River. Lee needed to get a head start on his march to the Shenandoah, since he would be vulnerable to attack during the movement (Hawks 2023).

However, General Hooker, in command of the Army of the Potomac, knew that a movement was afoot and suspected Lee might make an assault on the capital. He sent the cavalry corps under Pleasanton to investigate, ordering him to "disperse and destroy" Stuart's cavalry. Pleasonton crossed the Rappahannock at two locations in the early morning of June 9th, hoping to crush Stuart between the

pinchers of his two columns. Pleasonton did catch Stuart unprepared, but the southern crossing of the river at Kelly's Ford was delayed, then blocked by a Confederate brigade on the Brandy Station Road, and the Union was unable to gain a decisive advantage. Instead, Brigadier General John Buford, in command of the northern column of cavalry, could make little headway on Fleetwood Hill, which stood between his forces and Brandy Station. It was not until the arrival of David Gregg's command, which had taken a back road from Kelly's Ford to get into Stuart's rear, that Buford was able to take possession of Fleetwood Hill. The victory was short-lived, however, and the Confederates managed to hold Brandy Station, forcing a Union retreat across the Rappahannock. Although technically a Confederate victory, the Union cavalry under Pleasonton had comported themselves well against Stuart's renowned horsemen, who had outmaneuvered them for the first two years of the war. The confidence gained would serve them well in the upcoming Gettysburg campaign (National Park Service 2023).

The action at Stevensburg was somewhat tangential to the overall battle, as Colonel Alfred Duffié's forces drove the Confederates from the town but were called back to Brandy Station too late to assist Buford (Brandy Station Foundation 2010). The Confederate defense at Stevensburg was under the command of Colonel Matthew C. Butler, who was stationed in reserve at Brandy Station with about 200 members of the 2nd South Carolina regiment. Upon receiving word that a force of Union cavalry about 2,000 strong were advancing on Stevensburg, Butler headed southwest to Hansbrough Ridge, where he deployed his men along the ridge facing east, with Stevensburg at his rear. His small force was divided into three commands of approximately 60 men each, with Captain T. E. Screven to the north, Butler in the middle, and Lieutenant Colonel Frank Hampton at the southern edge of the ridge.

Butler's men were able to hold off the initial assault on the line by Union Cavalry under Colonel Duffié, who then determined to concentrate his forces at Hansbrough Gap, where the Germanna Road passed through the ridge to Stevensburg. As the federal lines began their assault, the 4th Virginia Cavalry under Colonel Williams C. Wickham arrived over the "Mountain Road" behind the ridge to reinforce Hampton, who would have undoubtedly been overwhelmed. Taking positions on either side of the gap, the Confederates were able to rain fire into the Union ranks. However, Hampton's retreat in the face of the onslaught ran into the 4th Virginia as it attempted to organize its defensive line. In the confusion, the Union cavalry rode into the line and the Confederates retreated in confusion back through town with the blue coats in pursuit. Duffié's men were descending the west side of Hansbrough Ridge when Wickham organized a line across Mountain Run to try to stop the Union advance. The pursuit was interrupted, however, when Duffié received an order from General Gregg to come to his aid at Brandy Station. Duffié withdrew, but by the time he arrived to assist Gregg, Pleasanton had already given the command to withdraw (Hall 2023).

023-5055 has been determined potentially eligible for the NRHP for its association with the events connected to the Battle of Brandy Station. It is also associated with the Hansbrough Ridge portion of the NRHP-eligible Army of the Potomac Winter Encampment, Culpeper and Fauquier Counties, 1863–1864 Multiple Property Documentation (MPD), which is located wholly within 023-5055 (Thompson 2017). A portion of the battlefield lies within the right-of-way for Route 1. Additionally, it lies within the half-mile study tier for Routes 2 and 3.

023-5494, Farmstead

023-5055 is located at 19564 Alvere Road, which is west of Blackjack Road/Route 661 in Stevensburg. The resource is situated on a 210.83-acre lot, which straddles Alvere Road and is surrounded by rural agricultural land in all directions. Farther west lies a dense forest and to the north is an aggregate supplier. Vegetation is minimal, with the only predominant feature consisting of tree lined property boundaries defining neighboring fields.

023-5494 was first surveyed in June of 2018 by Dawn Muir, and was determined eligible for the NRHP by VDHR in May of 2019. The original surveyor did not have access to the property, and thus, the resource was determined eligible for the purposes of a previous project. The resource encompassed a dwelling, four barns, a pole barn, and remains of a foundation dating to circa 1938 and an additional shed of unknown date (Muir 2018c). The dwelling is located at the end of Alvere Road as it turns west. Although not visible from the public right-of-way, the dwelling appears to have a square footprint with a pyramidal standing seam metal roof. A partial-length front porch is on the east elevation and two rear additions are off the west elevation, all of which are visible on aerial imagery (Google Earth 2023).

The four associated barns, the pole barn, and shed are located approximately 850 feet to the southeast of the dwelling; they are accessible via a dirt and gravel drive south of Alvere Road. All four barns and the pole barn are of wood frame construction with gabled roofs clad in standing seam metal, built with no discernable style (Attachment 4, Figure 6). Prior survey noted their condition as being fair; however, during the current survey their condition has deteriorated and is recommended as fair to poor.

023-5494 was determined eligible by VDHR in May of 2019. 023-5494 lies within the half-mile study area for Route 3.

068-5007, Battle of Morton's Ford

068-5007, the Civil War Battle of Morton's Ford, is located in Orange and Culpeper Counties. The resource represents the geographical areas that contain the significant sites and related features that played an important role in the Battle of Morton's Ford, which took place February 6–7, 1864. The engagement was part of a cover for a raid up the Peninsula toward Richmond. Federal forces attempted to cross the Rapidan River at several locations, including Morton's Ford, where the most intense fighting took place. The attacks stalled on the second day of fighting and the Union withdrew (American Battlefield Trust 2023b; Mahood 2003). The boundaries of the resource are represented by the CWSAC Study Area boundary defined for its 1993 report and subsequent revisions (American Battlefield Protection Program [ABPP] 2009; CWSAC 1999). The Project area falls within the northern part of the Study Area around the village of Stevensburg, which represents the approach road taken by Brigadier General John C. Caldwell on his approach to Morton's Ford, about 3.5 miles to the south (Attachment 4, Figure 7).

In the winter of 1864, General Benjamin Butler, in command of the Department of Virginia and North Carolina, became convinced that General Robert E. Lee had sent a significant contingent of his forces at Richmond to North Carolina, leaving the city vulnerable. Over the objections of a number of his generals, but with the blessing of general-in-chief Henry W. Halleck, Butler proceeded with a plan to send three units of the Army of the Potomac across the Rapidan as a distraction from a push by the main body of the army up the Peninsula toward Richmond. Caldwell's Second Corps crossed at Morton's Ford, while the First Corps crossed at Raccoon Ford, and a cavalry unit crossed at Robertson's Ford. Joshua Owen's brigade of Alexander Hays's division was able to make the crossing against a small force protecting the crossing, but Edward Johnson's division of Richard S. Ewell's corps had established entrenchments overlooking the south side of the river and was able to pin Owen between the Confederates and the river. Hays sent the remainder of his division across to hold the crossing, but after an attack by Johnson at dusk, was forced to withdraw across the river overnight. The action at Morton's Ford cost the Union 262 casualties compared to 60 for the Confederates and accomplished nothing, as the First Corps failed to cross the river, Ewell was never in need of reinforcements, and the attack on Richmond never occurred due to a tip from a Union deserter (Mahood 2003; Trinque 1994).

068-5007 has been determined potentially eligible for the NRHP for its association with the events connected to the Battle of Morton's Ford. 068-5007 lies within the half-mile study tier for Routes 2 and 3.

Historic Resource Findings for Route 1

023-0020, La Grange/Salubria

La Grange/Salubria is located approximately 0.57 mile to the west of Route 1, where the route uses a greenfield alignment, and 0.51 mile to the west of the proposed Germanna Substation (Attachment 5, Figure 1). The area between the resource and the route consists of rolling hills and intermittent groupings of trees. Due to the distance and intervening vegetation, 023-0020 would have no view to Route 1, as illustrated by the photo simulation from SP 25 (Attachment 5, Figure 2). Because there are no sight lines from La Grange/Salubria to Route 1, there would be **No Impact** on this resource from the route.

023-0068, Hansbrough Ridge Winter Encampment District

Hansbrough Ridge Winter Encampment District is located approximately 0.52 mile to the northwest of Route 1, where the route uses a greenfield alignment, and 0.58 mile to the northwest of the proposed Germanna Substation (Attachment 5, Figure 3). The area between the resource and the transmission line consists of farmsteads, agricultural fields, and dense forest. Dominion Energy's existing Line #2199/#70 runs north to south, to the west of the district. An existing distribution line bisects the resource, running from east to west. If selected for the Project, Route 1 would create a new 100-foot-wide transmission corridor east of the site.

Three photo simulations were prepared from SP 1, SP 2A, and SP 11. As ERM had permission to enter the district, SP 1 was taken at the southeastern corner of the district, SP 2A was taken from the middle of the district, and SP 11 was taken from the northern edge of the district. As shown from SP 1, Route 1 would be visible from the highest point in the district (Attachment 5, Figure 4). While the tree cut itself is not visible, due to distance, at least one monopole is visible in the distance. SP 2A also shows four monopoles along Route 1 visible through a clearing in the woods (Attachment 5, Figure 5). However, the final simulation, SP 11, shows no line of sight towards Route 1 in that location due to distance and dense vegetation (Attachment 5, Figure 6). Thus, Route 1 would be visible in the higher elevation areas of the ridge, but not visible where there is dense vegetation surrounding the route.

ERM conducted additional modeling using the vegetative viewshed analysis, which analyzes vantage points across the resource and in the surrounding area looking towards Route 1. The model depicts where there is potential for any transmission structures to be visible and quantifies the number of structures likely to be visible. According to the analysis, there may be potential to see 12–16 structures from the southern part of the resource, and 4–8 structures from the eastern half of the resource (Attachment 6, Figure 1); however, the western half of the resource would have no views towards Route 1.

Although there is an existing transmission line that has already affected the district's historic viewshed towards the west and north, the addition of Route 1 would introduce modern elements to the eastern viewshed, which currently features no visible modern features. In addition, the areas of high elevation on the ridge are important components of the district's landscape that contribute to its eligibility for listing on the NRHP and VLR. Thus, ERM recommends that Route 1 would have a **Moderate Impact** on 023-0068.

023-5055, Brandy Station Battlefield

The Route 1 right-of-way would run through the Brandy Station Battlefield ABPP Potential National Register (PotNR) Area along a greenfield alignment, approximately 0.57 mile north of the proposed Germanna Substation (Attachment 5, Figure 7). Route 1 would also be 0.28 mile from the battlefield Core Area. The route would cut into Dominion Energy Virginia's existing Line #2199/#70 approximately 1.4 miles north of the crossing. If Route 1 is selected for the Project, it would create a right-of-way through 023-5055 measuring 100 feet wide, from which vegetation would be removed for the installation of the

new transmission line. The majority of the landscape surrounding the battlefield and Route 1 is a combination of agricultural land and residential properties. The recorded boundary for the resource's ABPP PotNR boundary encompasses approximately 31,032.54 acres, of which only 4.58 acres would be within the Route 1 right-of-way (0.26 mile of its linear extent).

Two existing Dominion Energy Virginia transmission lines, Line #2199/#70 and #70/#2 run through the battlefield, although Line #70/#2 only runs through approximately 600 feet of the southern boundary. Line #2199/#70 runs through approximately 2.05 miles of the battlefield boundary, with 0.83 mile of that running through the Core Area. These areas of development have already had a direct impact on the battlefield.

Three photo simulations were prepared from SP 5 along Clay Hill Road, SP 18 (N) along Germanna Highway, and SP 24 along Germanna Highway. These three points were chosen because they provide the closest visual representation from public right-of-way from the west and south of where Route 1 would cross though the battlefield's boundary. As shown by SP 5, Route 1 would be visible to drivers and pedestrians along Clay Hill Road when looking to the southeast where there is an open field leading up to a line of trees. Only the top half of one structure would be visible from this location; however, the visible pole is within the battlefield's PotNR Area (Attachment 5, Figure 8). SP 18 (N) shows that Route 1 would be visible from the edge of the ABPP Core Area where it crosses over Germanna Highway, outside of the battlefield's boundary. Here, again, only one structure is visible (Attachment 5, Figure 9). Additional poles and the proposed substation would not be visible from either of these locations.

SP 24, also located on Germanna Highway, is on the eastern edge of the battlefield boundary. Route 1 and the proposed Germanna Substation would be visible from this location (Attachment 5, Figure 10). This portion of the route would not require any tree clearing, as it is in an open field; however, tree clearing would be needed on the north side of Germanna Highway, and would be visible from that location. It is also important to note that Route 1 would be visible from Hansbrough Ridge Winter Encampment District (023-0068), which is located in the battlefield boundary. As this location is higher in elevation than those SPs taken closer to Route 1, the route would be visible. As with the other locations, these views are minor in comparison to the battlefield viewscape as a whole.

The construction of Route 1 would introduce modern elements and some tree clearing to the eastern portion of the battlefield, where there currently are trees and agricultural land. However, this viewshed change is minor, in relation to the battlefield as a whole. In addition, the battlefield has already experienced tree clearing with the construction of the two existing transmission lines. As the proposed route would introduce additional modern elements to the battlefield, ERM recommends that there would be a **Minimal Impact** to this resource from Route 1.

Historic Resource Findings for Route 2

023-0018, Rose Hill Farm/Game Preserve

Rose Hill Farm/Game Preserve is located approximately 960 feet to the west of Route 2, where the route connects to Dominion Energy Virginia's existing Line #2199/#2 (Attachment 5, Figure 11). The area between the route and the resource is mostly rural and consists of the existing line and agricultural fields. Dominion's existing Line #70/#2 currently bisects the resource, running east to west. If Route 2 is selected for the Project, it would create a new transmission right-of-way measuring 100 feet in width near the resource.

Two photo simulations were prepared for 023-0018 at SP 10.4 and SP 9. Both were taken at Blackjack Road and were chosen due to their location at the eastern boundary of the resource, closest to the route. SP 10.4 was taken at the intersection of Dominion's existing Line #70/#2. Currently, one can see Line #70/#2, as well as Dominion's existing Lines #2199/#70 and #2199/#2. These lines are already visible in

the landscape. It is important to note, however, that another transmission line (#2276) will be built prior to the Project. Line #2276 would be built to the north, running parallel to Dominion's existing Line #70/#2. The connection of these lines is named Mountain Run Junction, which will also include a rebuild of Line #70/#2 from 115 kV to 230 kV. Thus, the proposed view from SP 10.4 includes the rebuild of Line #70/#2 as well as the construction of Line #2276. To differentiate between Mountain Run Junction and Route 2, the lines associated with Mountain Run Junction are colored in blue, while Route 2 is brown (Attachment 5, Figure 12).

As shown in SP 10.4, the construction of Route 2 would introduce additional modern elements to this landscape (see Attachment 5, Figure 12). As Lines #2276 and #70/#2 will be extremely prominent in the landscape and will bisect the resource, the construction of Route 2 would produce a very minor change in the viewshed by comparison. When moving farther south, Route 2 would not be visible, as shown in SP 9 (Attachment 5, Figure 13).

In summary, Route 2 would only be visible from the northern half of the resource, but as the Mountain Run Junction would be built prior to Route 2, Route 2's construction would be very minor in comparison. Thus, ERM recommends that there would be a **Minimal Impact** to this resource from Route 2.

023-0020, La Grange/Salubria

La Grange/Salubria is located approximately 0.31 mile to the north of Route 2, where the route uses a greenfield alignment, and 0.51 mile to the northwest of the proposed Germanna Substation (Attachment 5, Figure 14). The area between the route and the resource consists of open land, with groupings of trees. If Route 2 is selected for the Project, it would create a new transmission right-of-way measuring 100 feet in width near the resource.

Five photo simulations were prepared from SP 21 (N), SP 20 (N), SP 3 (N), SP 83, and SP 85. SP 21 (N) was chosen because it was the closest point from the edge of the resource's southern boundary to Route 2. SP 20 (N) and SP 3 (N) are located farther away from Route 2, but still inside the resource's boundary. SP 83 and 85 were added at a later date to include more simulations showing the viewshed from the main house towards the route. Both SP 83 and 85 were taken to the west of Salubria Lane, with SP 83 taken from the front porch of the house, and SP 85 taken from the southern edge of the property boundary, farther southeast from SP 21 (N).

At SP 21 (N), the new transmission structures would be visible in the distance (Attachment 5, Figure 15); however, due to the intervening grouping of trees, only the very tops of the transmission structures would be visible. This could be more visible during off-leaf seasons, but still only the tops could be seen. SP 21 (N) is in the resource's southwestern corner, which has the most unobstructed view towards Route 2 compared with other areas within the resource. This is evident through the simulations for SP 20 (N) and SP 3 (N), which were taken farther north (Attachment 5, Figures 16 and 17). Both locations have no view of Route 2 due to intervening vegetation, dense tree coverage, and distance. Two additional simulations were taken from the main house on the property. SP 83, taken from the front porch, would have two poles barely visible in the distance, while SP 85, taken farther southeast of SP 21 (N), shows three visible poles behind a tree line (Attachment 5, Figures 18 and 19). Only the areas in the southwestern corner of the resource boundary would have a view towards Route 2.

Views to the south on the southwestern boundary of the resource would have a line of sight towards Route 2, but the vast majority of the resource would experience no viewshed change. In addition, the view of the route would be in the distance, and small from the southern boundary's vantage point. The view to the south from the resource's southwestern boundary would be changed by Route 2, which would introduce modern elements to a view that currently only contains open field and trees. Thus, ERM recommends that there would be a **Minimal Impact** to this resource from Route 2.

023-0068, Hansbrough Ridge Winter Encampment District

Hansbrough Ridge Winter Encampment District is located approximately 0.63 mile to the northwest of Route 2, where the route uses a greenfield alignment, and 0.58 mile to the northwest of the proposed Germanna Substation (Attachment 5, Figure 20). The area between the district and the route consists of open fields, rolling hills, and groupings of trees. Dominion Energy Virginia's existing Line #2199/#70 runs north-to-south on the west side of the district. An existing distribution line bisects the resource, running from east to west. If Route 2 is selected for the Project, it would create a new transmission right-of-way measuring 100 feet in width near the resource.

Two photo simulations were prepared from SP 1 and SP 14. As ERM had permission to enter the district, SP 1 was taken at the southeastern corner of the district, at its highest point. SP 14 is right outside the district boundary on Germanna Highway. Only three structures associated with Route 2 would be visible in the distance from SP 1, a vantage point on top of the ridge looking to the southeast (Attachment 5, Figure 21). SP 14 also shows four visible transmission structures that would be visible in the distance, when looking south from Germanna Highway (Attachment 5, Figure 22). While this constitutes a change in the viewshed with the introduction of modern elements into the landscape, Route 2 would only be visible at a distance.

ERM conducted additional modeling using the vegetative viewshed analysis, which analyzes vantage points across the resource and in the surrounding area looking towards Route 2. The model depicts where there is potential for any transmission structures to be visible and quantifies the number of structures likely to be visible. According to the analysis, there may be potential to see 4–8 structures from the southern half of the resource (Attachment 6, Figure 2). However, it is important to note that the western and northern portions of the resource would have no views towards Route 2.

Although there is an existing transmission line that has already affected the district's historic viewshed towards the west and north, the addition of Route 2 would introduce modern elements to the southern viewshed, which currently features only a distribution line. In addition, the areas of high elevation in the ridge are important components of the district's landscape that contribute to its eligibility for listing on the NRHP and VLR. Thus, ERM recommends that Route 2 would have a **Moderate Impact** on 023-0068.

023-0084, Mount Pony Rural Historic District

The Mount Pony Rural Historic District is located approximately 0.91 mile to the northwest of Route 2 where the route uses a greenfield alignment (Attachment 5, Figure 23). The area between the district and the route consists of agricultural fields and farmsteads, as well as Dominion Energy Virginia's existing Lines #2199/#2 and #70/#2. One simulation was prepared for the resource, from SP 12 along Germanna Highway (Attachment 5, Figure 24). As shown in the simulation, there would be no view to the route due to distance and elevation change. Therefore, there would be **No Impact** on this resource from Route 2.

023-5055, Brandy Station Battlefield

023-5055 is located approximately 0.20 mile to the north and northwest of Route 2 and 714 feet to the north-northwest of the proposed Germanna Substation (Attachment 5, Figure 25). The route would use a greenfield alignment until it meets up with Dominion Energy Virginia's existing Line #2199/#2. The area between the route and the resource consists of agricultural land, rolling hills, farmsteads, and groupings of trees. The recorded boundary for the resource's ABPP PotNR Area boundary encompasses approximately 31,032.54 acres. If Route 2 is selected for the Project, it would create a new transmission right-of-way measuring 100 feet in width near the resource.

Two existing Dominion Energy Virginia transmission lines, Line #2199/#70 and Line #70/#2, run through the battlefield, although Line #70/#2 only runs through approximately 600 feet of the southern boundary.

Line #2199/#70 runs through approximately 2.05 miles of the battlefield boundary. These areas of development have already had a direct impact on the battlefield.

Three photo simulations were prepared from SP 16, 21 (N), and 24, all located on Germanna Highway. SP 16 and 24 were chosen because they are the closest points to the route from the public right-of-way, while SP 21 was chosen because it was at the southern boundary of the resource. SP 21 (N) is on private property, where ERM was granted access. SP 16, the westernmost point, shows that one pole would be visible in the distance (Attachment 5, Figure 26). SP 21 (N) is on the southern boundary of the battlefield and shows that transmission structures could be seen in the distance (Attachment 5, Figure 27); however, due to the intervening grouping of trees, only the very tops of the transmission structures would be visible. The structures could be more visible during off-leaf seasons, but still only the tops of the transmission line structures would be discernable. This SP is located at a private residence, and would only be accessible to those living or visiting there. For the majority of the population driving on the public road, there would be no view of Route 2.

SP 24 is at the eastern boundary of the battlefield, and has the most visibility towards Route 2. Here, the route and the proposed Germanna Substation would be visible due to their close proximity to the resource (Attachment 5, Figure 28). It is also important to note that Route 2 would be visible from Hansbrough Ridge Winter Encampment District (023-0068), which is located in the battlefield boundary. As this location is higher in elevation than those SPs closer to Route 2, the route would be visible. Still, these views are minor in relation to the battlefield viewscape as a whole. In addition, Dominion's existing transmission lines already bisect the battlefield, which have introduced modern elements into the battlefield.

The construction of Route 2 would introduce additional modern elements to the battlefield's southern viewshed, where there currently are trees and agricultural land. The visibility is mostly focused in areas of high elevation and near the eastern border of the battlefield, but this viewshed change is minor, in relation to the battlefield as a whole. In addition, the battlefield has already experienced tree clearing with the construction of the two existing transmission lines. As the proposed route would introduce additional modern elements to the battlefield, ERM recommends that there would be a **Minimal Impact** to this resource from Route 2.

068-5007, Battle of Morton's Ford

068-5007 is located approximately 357 feet to the northwest of Route 2, along a greenfield alignment, where the route connects with Dominion Energy Virginia's existing Line #2199/#2 (Attachment 5, Figure 29). The area between the route and the resource consists of agricultural field. Dominion's existing Line #70/#2 intersects the resource. The battlefield is approximately 6,710 acres of which only a small portion of the northern part of the resource would have a view towards Route 2.

Two photo simulations were completed for 068-5007: SP 10.4 and SP 9, both taken along Blackjack Road. These locations were chosen because they were closest to Route 2 from the public-right-of-way. The photographs from SP 10.4 were taken at the intersection of Blackjack Road and Line #70/#2. Currently, one can see Line #70/#2, as well as Dominion's existing Lines #2199/#70 and #2199/#2. These lines are already visible in the landscape. It is important to note that another transmission line (#2276) will be built prior to the construction of Route 2. Line #2276 would be built to the north, running parallel to Dominion's existing Line #70/#2. The connection of these lines is named Mountain Run Junction, which will also include a rebuild of Line #70/#2 from 115 kV to 230 kV. Thus, the proposed view from SP 10.4 includes the rebuild of Line #70/#2 as well as the construction of Line #2276. To differentiate between Mountain Run Junction and Route 2, the lines associated with Mountain Run Junction are colored in blue, while Route 2 is brown (Attachment 5, Figure 30). By the time the Project is built, these lines would be present in the landscape.

As shown in SP 10.4, the construction of Route 2 would introduce additional modern elements to this landscape (see Attachment 5, Figure 30). As Lines #2276 and #70/#2 will be extremely prominent in the landscape and will bisect the resource, the construction of Route 2 would produce a very minor change in the viewshed by comparison. When moving farther south, Route 2 would not be visible, as shown in SP 9 (Attachment 5, Figure 31).

The construction of Route 2 would add additional modern elements to the battlefield's eastern viewshed, but these views would be limited to a small section in the northern part of the battlefield boundary. The majority of the battlefield would have no view towards the route. In addition, the Mountain Run Junction transmission line would be built prior to Route 2, and Route 2's construction would be very minor in comparison. Because of this, ERM recommends that there would be a **Minimal Impact** to the Battle of Morton's Ford from Route 2.

Historic Resource Findings for Route 3

023-0018, Rose Hill Farm/Game Preserve

Rose Hill Farm/Game Preserve is located approximately 0.23 mile to the west of Route 3, where Route 3 connects to Dominion Energy Virginia's existing Line #2199/#2 (Attachment 5, Figure 32). The area between the route and the resource is mostly rural and consists of the existing line and agricultural fields. Dominion's existing line currently bisects the resource, running east to west. If Route 3 is selected for the Project, it would create a new transmission right-of-way measuring 100 feet in width near the resource.

Two photo simulations were prepared for 023-0018 at SP 10.4 and SP 9. Both are along Blackjack Road, which forms the eastern boundary of the resource, closest to Route 3. SP 10.4 is at the intersection of Dominion Energy's existing Line #70/#2. Currently, one can see Line #70/#2, as well as Dominion Energy's existing Lines #2199/#70 and #2199/#2 from vantage points at Rose Hill Farm/Game Preserve. It is important to note, however, that another transmission line (#2276) will be built prior to the Project. Line #2276 would be built to the north, running parallel to Dominion Energy's existing Line #70/#2. The connection of these lines is named Mountain Run Junction, which will also include a rebuild of Line #70/#2 from 115 kV to 230 kV. Thus, the proposed view from SP 10.4 includes the rebuild of Line #70/#2 as well as the construction of Line #2276. To differentiate between Mountain Run Junction and Route 3, the lines associated with Mountain Run Junction are colored in blue, while Route 3 is brown (Attachment 5, Figure 33).

As shown in the SP 10.4 photo simulation, the construction of Route 3 would introduce additional modern elements to this landscape (see Attachment 5, Figure 33). As Lines #2276 and #70/#2 will be extremely prominent in the resource's viewshed and will bisect the resource, the construction of Route 3 would produce a very minor change in the viewshed by comparison. Farther to the south, Route 3 would still be visible, although the poles would only be visible in the distance where the existing route is already visible, as shown from SP 9 (Attachment 5, Figure 34).

In summary, Route 3 would visible from the eastern edge of the resource boundary, but as the Mountain Run Junction transmission line would be built prior to the Project, Route 3's construction would be very minor in comparison. Thus, ERM recommends that there would be a **Minimal Impact** to Rose Hill Farm/Game Preserve from Route 3.

023-0020, La Grange/Salubria

Route 3 follows the same alignment and would use the same design as Route 2 where it passes near resource 023-0020. La Grange/Salubria is located approximately 0.31 mile to the north of Route 3, where the route uses a greenfield alignment, and 0.51 mile to the northwest of the proposed Germanna Substation (Attachment 5, Figure 35). The area between the route and the resource consists of open

land, with groupings of trees. If Route 3 is selected for the Project, it would create a new transmission right-of-way measuring 100 feet in width near the resource.

Five photo simulations were prepared from SP 21 (N), SP 20 (N), SP 3 (N), SP 83, and SP 85. SP 21 (N) was chosen because it was the closest point from the edge of the resource's southern boundary to Route 3. SP 20 (N) and SP 3 (N) are located farther away from Route 3, but still inside the resource's boundary. SP 3 and 5 were added at a later date to include more simulations showing the viewshed from the main house towards the route. Both SP 83 and 85 were taken to the west of Salubria Lane, with SP 83 taken from the front porch of the house, and SP 85 taken from the southern edge of the property boundary, farther southeast of SP 21 (N).

At SP 21 (N), the new transmission structures would be visible in the distance (Attachment 5, Figure 36); however, due to the intervening grouping of trees, only the very tops of the transmission structures would be visible. They could be more visible during off-leaf seasons, but still only the tops could be seen. In addition, this SP is located at the resource's southwestern corner, which has the most unobstructed views towards Route 3 than any other area in the resource. This is evident through the simulations from SP 20 (N) and SP 3 (N), which were taken farther north (Attachment 5, Figures 37 and 38). Both locations have no line of sight to Route 3 due to intervening vegetation, dense tree coverage, and distance. SP 83, taken from the front porch, would have two poles barely visible in the distance, while SP 85, taken farther southeast of SP 21 (N), shows three visible poles behind a tree line (Attachment 5, Figures 39 and 40). Only the areas in the southwestern corner of the resource boundary would have a view towards Route 3.

Views from the southwestern boundary of the resource would have a line of sight towards Route 3, but the vast majority of the resource would experience no viewshed change. In addition, the view of the route would be in the distance, and small from the southern boundary's vantage point. The view to the south from the resource's southwestern boundary would introduce modern elements to a view that currently only contains open field and trees. Thus, ERM recommends that there would be a **Minimal Impact** to this resource from Route 3.

023-0068, Hansbrough Ridge Winter Encampment District

Route 3 follows the same alignment and would use the same design as Route 2 where it passes near resource 023-0068. Hansbrough Ridge Winter Encampment District is located approximately 0.63 mile to the northwest of Route 3, where the route uses a greenfield alignment, and 0.58 mile to the northwest of the proposed Germanna Substation (Attachment 5, Figure 41). The area between the district and the route consists of open fields, rolling hills, and groupings of trees. Dominion Energy Virginia's existing Line #2199/#70 runs north-to-south on the west side of the district. An existing distribution line bisects the resource, running from east to west. If Route 3 is selected for the Project, it would create a new transmission right-of-way measuring 100 feet in width near the resource.

Two photo simulations were prepared from SP 1 and SP 14. As ERM had permission to enter the district, SP 1 was taken at the southeastern corner of the district, at its highest point. SP 14 was taken right outside the district boundary, on Germanna Highway. As shown in SP 1, only three structures associated with Route 3 would be visible in the distance from this location on top of the ridge looking to the southeast (Attachment 5, Figure 42). SP 14 also shows four transmission structures that would be visible in the distance when looking south from Germanna Highway (Attachment 5, Figure 43). While this constitutes a change in the viewshed with the introduction of modern elements into the landscape, Route 3 would only be visible at a distance.

ERM conducted additional modeling using the vegetative viewshed analysis, which analyzes vantage points across the resource and in the surrounding area looking towards Route 3. The model depicts where there is potential for any transmission structures to be visible and quantifies the number of structures likely to be visible. According to the analysis, there may be potential to see 4–8 structures from

the southern half of the resource (Attachment 6, Figure 3). However, it is important to note that the western and northern portions of the resource would have no views towards Route 3.

Although there is an existing transmission line that has already affected the district's historic viewshed towards the west and north, the addition of Route 3 would introduce modern elements to the southern viewshed, which currently features only a small distribution line. In addition, the areas of high elevation in the ridge are important components of the district's landscape that contribute to its eligibility for listing on the NRHP and VLR. Thus, ERM recommends that Route 3 would have a **Moderate Impact** on 023-0068.

023-0084, Mount Pony Rural Historic District

The Mount Pony Rural Historic District is located approximately 0.92 mile to the northwest of Route 3 where the route uses a greenfield alignment (Attachment 5, Figure 44). The area between the district and the route consists of agricultural fields and farmsteads, as well as Dominion Energy Virginia's existing #2199/#2 and #70/#2. One simulation was prepared for the resource, from SP 12 along Germanna Highway (Attachment 5, Figure 45). As shown in the simulation, there would be no view to the route due to distance and a change in elevation. Therefore, there would be **No Impact** on this resource from Route 3.

023-5055, Brandy Station Battlefield

Route 3 follows mainly the same alignment and would use the same design as Route 2 where it passes near resource 023-5055. Route 3 only differs from Route 2 where it connects to Dominion Energy Virginia's existing Line #2199/#2. Here, Route 3 is farther south than Route 2 for approximately 0.66 mile. 023-5055 is located approximately 0.20 mile to the north and northwest of Route 3 and 714 feet to the north-northwest of the proposed Germanna Substation (Attachment 5, Figure 46). The route would use a greenfield alignment until it meets up with Dominion's existing Line #2199. The area between the route and the resource consists of agricultural land, rolling hills, farmsteads, and groupings of trees. The recorded boundary for the resource's ABPP PotNR Area boundary encompasses approximately 31,032.54 acres. If Route 3 is selected for the Project, it would create a new transmission right-of-way measuring 100 feet in width near the resource.

Two existing Dominion Energy Virginia transmission lines, Line #2199/#70 and Line #70/#2, run through the battlefield, although Line #70/#2 only runs through approximately 600 feet of the southern boundary. Line #2199/#70 runs through approximately 2.05 miles of the battlefield boundary. These areas of development have already had a direct impact on the battlefield.

Three photo simulations were prepared from SP 16, 21 (N), and 24, all located on Germanna Highway. SP 16 and 24 were chosen because they are the closest points to the route from the public right-of-way, while SP 21 (N) was chosen because it was at the southern boundary of the resource. SP 21 (N) is on private property, where ERM was granted access. SP 16, the westernmost point, shows that four poles would be visible in the distance (Attachment 5, Figure 47). SP 21 (N) is on the southern boundary of the battlefield and shows that transmission structures would be visible in the distance there as well (Attachment 5, Figure 48), but due to the intervening grouping of trees, only the very tops of the transmission structures could be seen. They would be more visible during off-leaf seasons, but still only the tops would be discernable. This SP is located at a private residence, and would only be accessible to those living or visiting there. For the majority of the population driving on the public road, there would be no view of Route 3.

SP 24 is on the eastern boundary of the battlefield, and has the most unobstructed view towards Route 3. Here, the route and the proposed Germanna Substation are visible due to their close proximity to the resource (Attachment 5, Figure 49). It is also important to note that Route 3 would be visible from Hansbrough Ridge Winter Encampment District (023-0068), which is located within the battlefield

boundary. As this location is higher in elevation than those SPs closer to Route 3, the route would be visible. Still, these views are minor in relation to the battlefield as a whole. In addition, Dominion's existing lines already bisect the battlefield, which has introduced modern elements into the battlefield viewscape.

The construction of Route 3 would introduce additional modern elements to the battlefield's southern viewshed, where there currently are trees and agricultural land. The visibility is mostly focused in areas of high elevation and near the eastern border of the battlefield, but this viewshed change is minor in relation to the battlefield as a whole. In addition, the battlefield has already experienced tree clearing with the construction of the two existing transmission lines. As the proposed route would introduce additional modern elements to the battlefield, ERM recommends that there would be a **Minimal Impact** to this resource from Route 3.

023-5494, Farmstead

The farmstead associated with 023-5494 is located approximately 0.50 mile to the southwest of Route 3 where the route uses a greenfield alignment (Attachment 5, Figure 50). The area between the district and the route is rural, with rolling hills as well as Dominion Energy Virginia's existing Line #2199/#2. One simulation was prepared for the resource from SP 17 along Blackjack Road (Attachment 5, Figure 51). As shown in the simulation, there would be three visible poles associated with Route 3 where it connects to Line #2199/#2. Because the existing transmission line is more prominent in the landscape, the construction of Route 3 is minor in comparison. Thus, ERM recommends that there would be a **Minimal Impact** to this resource from Route 3.

068-5007, Battle of Morton's Ford

068-5007 is located approximately 610 feet to the northwest of Route 3, along a greenfield alignment, where the route connects with Dominion Energy Virginia's existing Line #2199/#2 (Attachment 5, Figure 52). The area between the route and the resource consists of agricultural field. Dominion's existing Line #70/#2 intersects the resource. The battlefield is approximately 6,710 acres of which only a small portion of the northern part of the battlefield would have a view towards Route 3.

Two photo simulations were completed for 068-5007: SP 10.4 and SP 9, both taken along Blackjack Road. These locations were chosen because they were closest to Route 3 from the public-right-of-way. The photographs from SP 10.4 were taken at the intersection of Blackjack Road and Line #70/#2. Currently, one can see Line #70/#2, as well as Dominion's existing Lines #2199/#70 and #2199/#2. These lines are already visible in the landscape. It is important to note that another transmission line (#2276) will be built prior to the construction of Route 3. Line #2276 would be built to the north, running parallel to Dominion's existing Line #70/#2. The connection of these lines is named Mountain Run Junction, which will also include a rebuild of Line #70/#2 from 115 kV to 230 kV. Thus, the proposed view from SP 10.4 includes the rebuild of Line #70/#2 as well as the construction of Line #2276. To differentiate between Mountain Run Junction and Route 3, the lines associated with Mountain Run Junction are colored in blue, while Route 3 is brown (Attachment 5, Figure 53).

As shown in SP 10.4, the construction of Route 3 would introduce additional modern elements to this landscape (see Attachment 5, Figure 53). As Lines #2276 and #70/#2 will be extremely prominent in the landscape and will bisect the resource, the construction of Route 3 would produce a very minor change in the viewshed by comparison. When moving farther south, Route 3 would still be visible, although the poles would only be visible in the distance, where the existing route is already visible, as shown from SP 9 (Attachment 5, Figure 54).

The construction of Route 3 would add additional modern elements to the battlefield's eastern viewshed, but these views would be limited to a small section in the northern part of the resource boundary. The majority of the battlefield would have no view towards the route. In addition, as the Mountain Run

Junction transmission line would be built prior to Route 3, Route 3's construction would be very minor in comparison. Because of this, ERM recommends that there would be a **Minimal Impact** to this resource from Route 3.

Archaeology Findings

Two known archaeological sites are located in the right-of-way of the transmission line route alternatives (Table 3.8-1). 44CU0185 is located within the right-of-way of Route 1. 44CU0190 is located within the right-of-way of Route 3. No previously recorded sites were identified within the right-of-way for Route 2.

The sites that would be impacted by each alternative route are described below. The descriptions include information on the eligibility of each site for listing in the NRHP as well as an assessment of each site's condition based on desktop review. A confident evaluation of the nature of archaeological deposits at each site and impacts from prior land use activities would require a field survey to verify the desktop analysis.

Table 3.8-1: Archaeological Resources within the Right-of-Way for the Alternate Routes

Considered Resource	Alternative Route		
	Germanna Line		
	Route 1	Route 2	Route 3
44CU0185	X	-	-
44CU0190	-	-	X
Total Resources	1	0	1

"X" indicates that the resource is within the right-of-way of the route.

Route 1

One archaeological sites lies within the right-of-way for Route 1: 44CU0185. This site, locally known as the Laurel Hill site, was surveyed on October 26, 2017 by Dutton and Associates, LLC. It was defined as a 0.14-acre historic artifact scatter dating from the Antebellum period (1830–1860) to the Civil War (1861–1865). The majority of the site exists in an existing cut transmission corridor surrounded by a forested area. [redacted] The site has been determined not eligible for listing in the NRHP. The overall integrity of the archaeological deposits at the site has likely been disturbed by the construction of the existing transmission line, and the previous survey reports that a portion of the site has been destroyed. Given that Route 1 intersects the site where the route ties into the existing transmission line, it is unlikely that any intact cultural remains would be encountered there. The condition of the site would be confirmed during the Phase I survey to be completed for the Project if Route 1 is selected as the preferred alternative.

Route 2

No archaeological sites fall within the right-of-way for this route.

Route 3

One archaeological site lies within the right-of-way for Route 3. Site 44CU0190 is a 6.11-acre historic farmstead [redacted]. The site consists of a historic artifact scatter dating from the World War I to World War II period (1917–1945) to the

Post Cold War period (1993-present). 44CU0190 is situated on an existing farmstead consisting of a residential structure, several large outbuildings, and a small pond, all encompassed within historic architectural resource 023-5465.

Several structures within the site are shown on an aerial image dating from 1957, but the pond is not evident until it appears on a 1994 aerial. An image from 2002 depicts an additional building (a dairy barn) and a concrete slab within the site along its western boundary, and a subsequent image from 2009 shows a new roof over the concrete slab.[3] Aerial photographs show no change to the site conditions from 2009 to 2015, but an aerial from 2017 shows damage to the dairy barn and adjacent buildings, two which of which appear destroyed; however, these buildings date from the late twentieth century and are not associated with the historic occupation of the site. The site has been determined not eligible for listing on the NRHP.

[redacted] The portion of Route 3 that is located in the site is entirely within the existing right-of-way of Line #2199/#2. While no transmission structures for Route 3 would be placed within the site boundary, the site could be impacted by construction traffic or clearing within the transmission line right-of-way in an area that has already experienced such impacts.

[3] The dairy barn appears to have been built between 1994 and 2002 based on aerial imagery.

CONCLUSION AND RECOMMENDATIONS

As part of the effort to evaluate potential impacts from alternative routes associated with the Project, the pre-application analysis gathered information on archaeological and historic architectural resources that qualify for consideration according to the VDHR Guidelines for transmission line projects.

There are two archaeological sites within the right-of-way of the route alternatives. One site is located within the right-of-way for Route 1 (44CU0185), while another site (44CU0190) is located within the right-of-way for Route 3. No archaeological sites were identified within the right-of-way for Route 2. The sites are considered not eligible for listing on the NRHP and are unlikely to warrant further consideration in the context of the Project. It is possible that the sites have been impacted by prior construction.

Seven aboveground historic resources fall within the VDHR study tiers for the alternative routes under consideration (023-0018, 023-0020, 023-0068, 023-0084, 023-5055, 023-5494, and 068-5007). Since a large portion of Routes 2 and 3 use a common alignment, impacts on some resources would be identical if either route is selected. A comparison of the number of resources impacted and the degree of impact for each alternative route is presented in Table 4-1. The specific resources affected by each alternative are covered in the subsections that follow.

Table 4-1: Comparison of Project Impacts on Historic Resources in the Study Areas of the Alternative Routes

Route Alternative	Number of Considered Resources in Each Impact Category				
	None	Minimal	Moderate	Severe	Totals
Route 1	1	1	1	0	3
Route 2	1	4	1	0	6
Route 3	1	5	1	0	7

Final assessments of Project impacts will be dependent on the completion of identification-phase archaeological and historic structure surveys along the route selected by the SCC and review of survey results by VDHR and other consulting parties. For any resources where the agencies concur in a finding of moderate or severe impact, the Company will propose treatments to avoid, minimize, or mitigate those impacts. Treatment options for archaeological sites could include selective structure placement to avoid direct impacts on sites, minor route adjustments to avoid crossing sites, or archaeological data recovery. Treatment options for aboveground historic resources could include detailed site documentation, historic research, and historic preservation studies; preparation of digital media or museum-type exhibits on sites for public interpretation; installation of historic markers or signs; installation of vegetative screening; or contributions to historical preservation organizations or specific preservation projects. Additional mitigation measures could be identified through consultation with VDHR and other consulting parties.

Route 1

Three previously recorded historic architectural resources meet the criteria specified in the Guidelines within the VDHR study tiers for Route 1 (Table 4.1-1). The route would have no impact on one, a minimal impact on one, and a moderate impact on one.

Table 4.1-1: Impacts to Historic Resources in the VDHR Study Tiers for Route 1

Buffer (miles)	Resource Category	Resource Number	Description	Impact
1.0 to 1.5	National Historic Landmarks	-	-	-
0.5 to 1.0	National Register Properties (Listed)	023-0020*	La Grange/Salubria	None
	VLR Listed (Battlefield)	023-0068*	Hansbrough Ridge Winter Encampment District	Moderate
0.0 to 0.5	National Register - eligible	-	-	-
0.0 (within ROW)	National Historic Landmarks, National Register Properties – potentially eligible (battlefield)	023-5055*	Brandy Station Battlefield	Minimal

** Resource is within the designated tiers for the proposed Germanna Substation*

Route 2

Six previously recorded historic architectural resources meet the criteria specified in the Guidelines within the VDHR study tiers for Route 2 (Table 4.2-1). The route would have no impact on one, a minimal impact on four, and a moderate impact on one on these resources.

Table 4.2-1: Impacts to Historic Resources in the VDHR Study Tiers for Route 2

Buffer (miles)	Resource Category	Resource Number	Description	Impact
1.0 to 1.5	National Historic Landmarks	-	-	-
0.5 to 1.0	National Register – potentially eligible (Battlefield)	023-0068*	Hansbrough Ridge Winter Encampment District	Moderate
	National Register – eligible (Historic Landscape)	023-0084	Mount Pony Rural Historic District	None
0.0 to 0.5	National Register Properties (Listed)	023-0018	Rose Hill/Game Preserve	Minimal
		023-0020*	La Grange/Salubria	Minimal
	National Register – potentially eligible (Battlefield)	023-5055*	Brandy Station Battlefield	Minimal
		068-5007	Battle of Morton's Ford	Minimal
0.0 (within ROW)	National Historic Landmarks, National Register Properties – potentially eligible (battlefield)	-	-	-

** Resource is within the designated tiers for the proposed Germanna Substation*

Route 3

Seven previously recorded historic architectural resources meet the criteria specified in the Guidelines within the VDHR study tiers for Route 3 (Table 4.2-1). The route would have no impact on one resource, a minimal impact on five, and a moderate impact on one of these resources.

Table 4.2-1: Impacts to Historic Resources in the VDHR Study Tiers for Route 3

Buffer (miles)	Resource Category	Resource Number	Description	Impact
1.0 to 1.5	National Historic Landmarks	-	-	-
0.5 to 1.0	National Register – potentially eligible (Battlefield)	023-0068*	Hansbrough Ridge Winter Encampment District	Moderate
	National Register – eligible (Historic Landscape)	023-0084	Mount Pony Rural Historic District	None
0.0 to 0.5	National Register Properties (Listed)	023-0018	Rose Hill/Game Preserve	Minimal
		023-0020*	La Grange/Salubria	Minimal
	National Register – potentially eligible (Battlefield)	023-5055*	Brandy Station Battlefield	Minimal
		068-5007	Battle of Morton's Ford	Minimal
	National Register – eligible	023-5494	Farmstead	Minimal
0.0 (within ROW)	National Historic Landmarks, National Register Properties – potentially eligible (battlefield)	-	-	-

** Resource is within the designated tiers for the proposed Germanna Substation*

Future Investigations

The next stage of assessing impacts on historic resources will be to conduct an identification-phase field survey to identify and assess resources along the route selected by the SCC for the Project. Survey of the approved route alternative will be conducted in accordance with the following guidelines:

- Guidelines for Assessing Impacts of Proposed Electrical Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia (VDHR 2008);
- Guidelines for Conducting Historic Resources Survey in Virginia (VDHR 2017);
- National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation (National Park Service [NPS] 1995).

The survey teams will be led by individuals meeting the Secretary of the Interior's professional qualifications standards for archaeology and architectural history, respectively. Teams will traverse the length of the Project corridor, revisiting previously recorded archaeological and historic architectural resources and documenting additional as-of-yet unrecorded resources in the survey area defined in the Guidelines for the Project design. The archaeological survey will adhere to VDHR survey standards (VDHR 2017) and will entail systematic coverage of the approved route. All material culture, including artifacts and features, that could be 50 years old or older will be recorded. Sites will be delineated within the proposed right-of-way and investigations will include subsurface testing sufficient to inform recommendations of potential eligibility for the NRHP under Criterion D. Each site will be fully documented with appropriate mapping, digital photography, and artifact collection/analysis. Site forms will be prepared for V-CRIS submittal along with full descriptions in the technical report.

During the course of the historic architectural survey, all structures determined to be of age will be photographed and marked on the applicable U.S. Geological Survey (USGS) quadrangle map. While the NPS Bulletin 15 (NPS 1995) defines a historic property as a resource that is 50 years or older, for the purposes of this Project, survey will include those 45 years or older to accommodate the length of time needed to complete the permitting phase for the Project. Furthermore, the survey will also record those

resources that may have reached significance prior to the 50 (45) year age threshold, in accordance with NPS guidance, if they are integral parts of districts, or have sufficient merit to be considered eligible for the NRHP on their own.

Digital photographs will be taken to record the historic resources' overall appearance and details. Sketch maps will be drawn depicting the relationship of dwellings to outbuildings and associated landscape features. Additional information on the structures' appearance and integrity will be recorded to assist in making recommendations of NRHP eligibility. Historic maps, aerial photographs, and tax assessor data will be consulted to assist in dating the resources. Resources identified in the field effort will be reported to the VDHR, V-CRIS numbers will be obtained, and shapefiles and database information will be provided. Sufficient information will be collected to make recommendations for each identified historic resource regarding eligibility for listing on the NRHP and to assess Project impacts.

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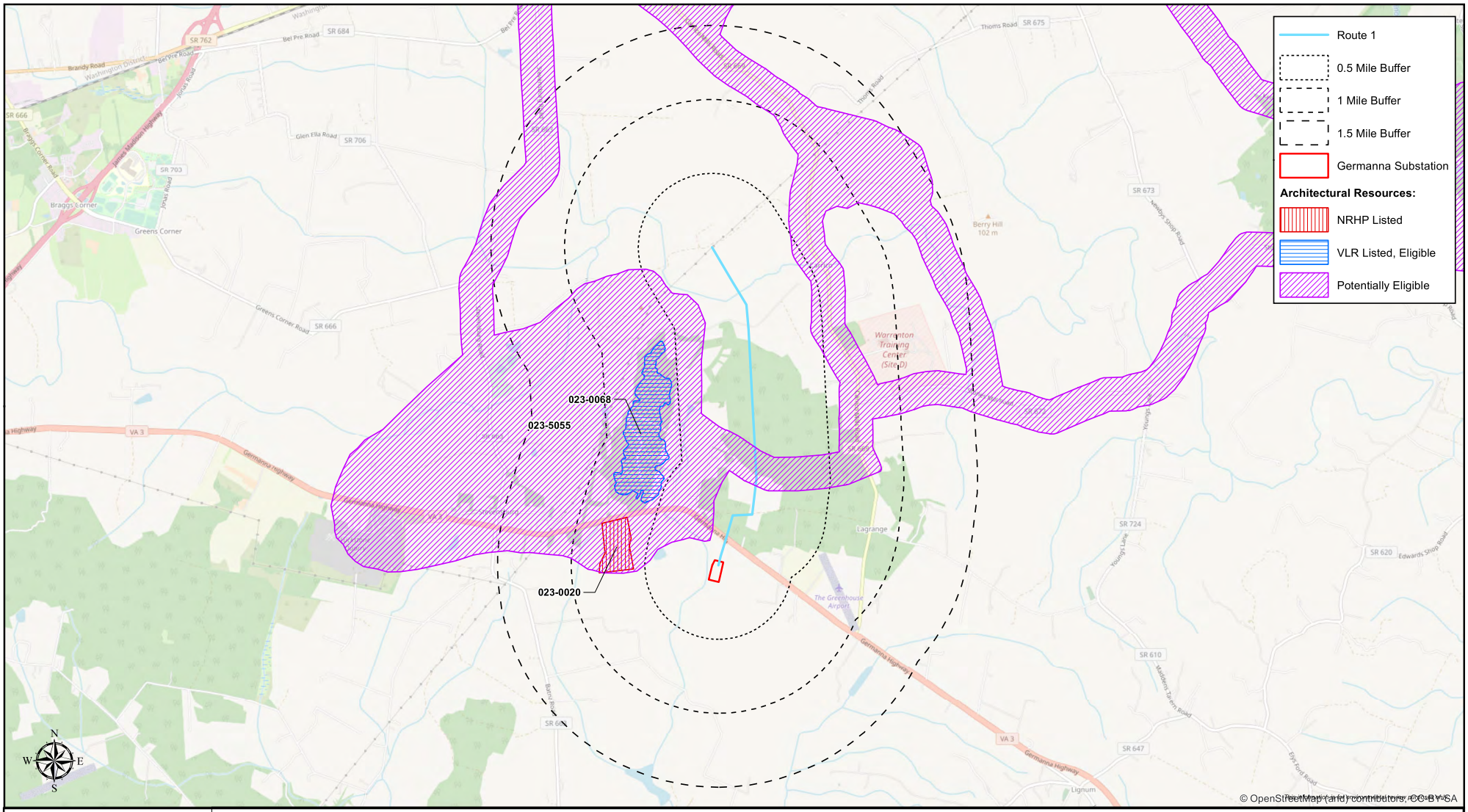
ATTACHMENT 1 LOCATIONS OF CONSIDERED HISTORIC RESOURCES ASSOCIATED WITH PROPOSED PROJECT ALTERNATIVES



Attachment 1, Sheet 1
Locations of Considered Resources Associated with Project Alternatives - Route 1
Germanna Electric Transmission Project
Dominion Energy Virginia
Culpepper County, VA

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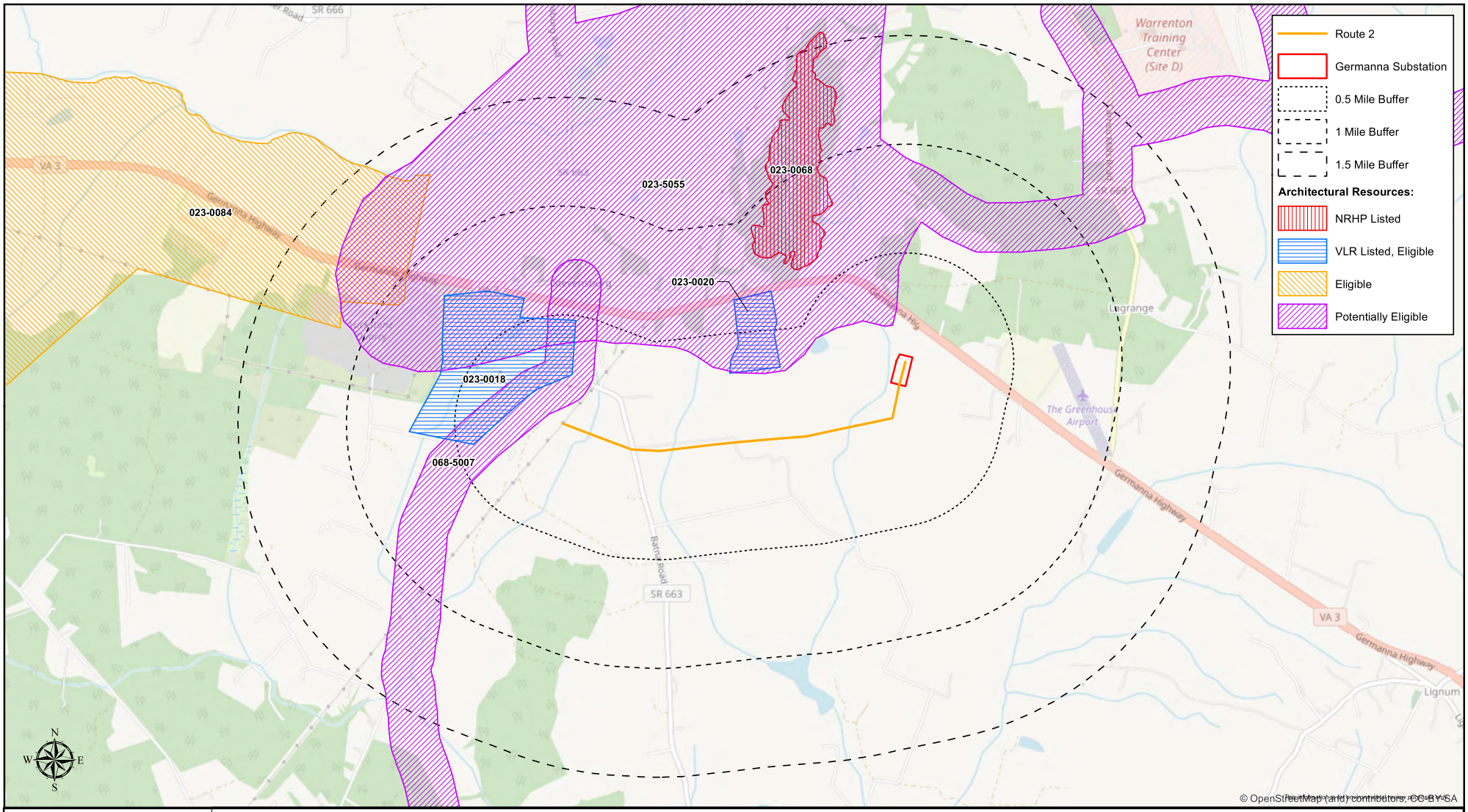

Attachment 1, Sheet 2
Locations of Considered Resources Associated with Project Alternatives - Route 2
Germanna Electric Transmission Project
Dominion Energy Virginia
Culpepper County, VA

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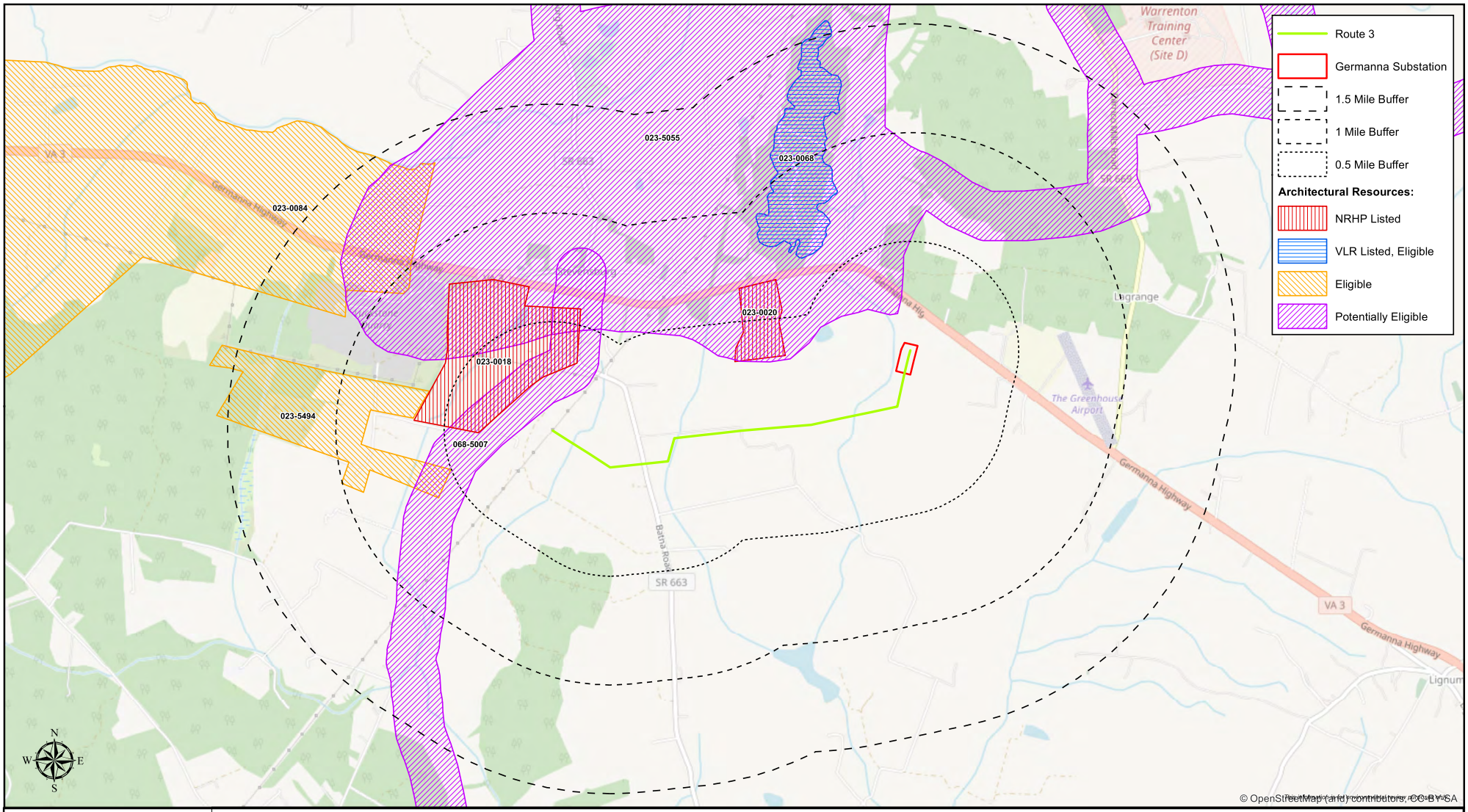

Attachment 1, Sheet 3
Locations of Considered Resources Associated with Project Alternatives - Route 3
Germanna Electric Transmission Project
Dominion Energy Virginia
Culpepper County, VA

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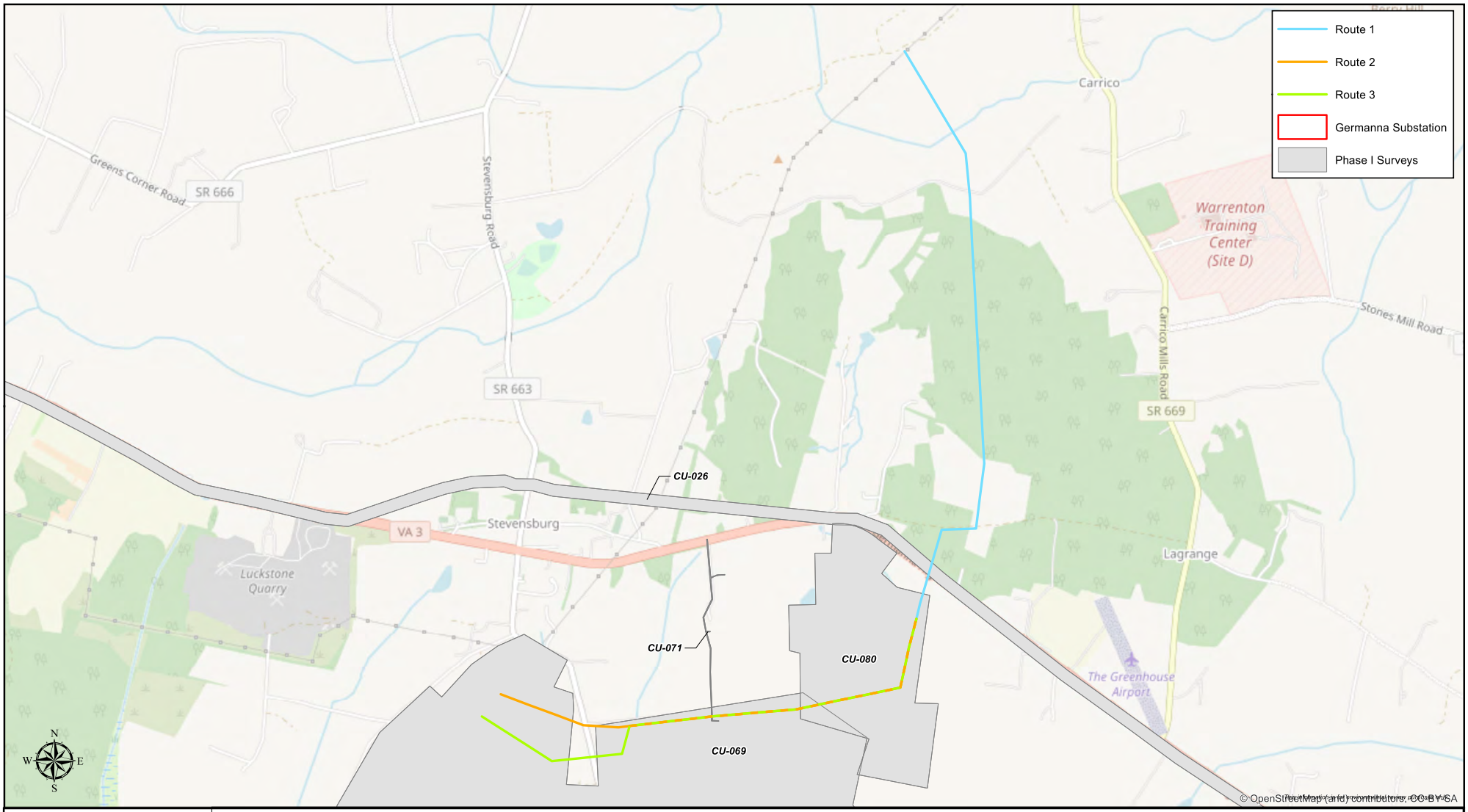
ATTACHMENT 2 CULTURAL RESOURCES SURVEY COVERING PORTIONS OF ALTERNATIVE ROUTES



0 0.25 0.5 0.75 Miles

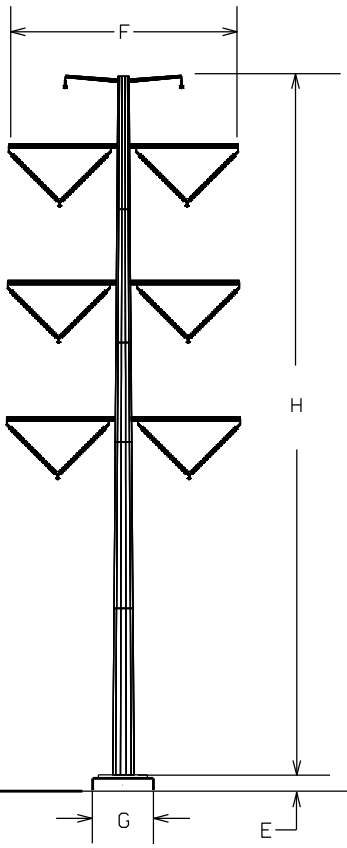
1:28,000

Attachment 2
Cultural Resource Surveys Covering Portions of Alternative Routes
Germanna Electric Transmission Project
Dominion Energy Virginia
Culpepper County, VA

FILE: C:\Users\vincent.macek\Documents\OneDrive - ERM\Dom Germanna 10-23\Dominion Germanna Attachment 2 Surveys.mxd | REVISED: 10/16/2023 | SCALE: 1:28,000 when printed at 11x17 DRAWN BY: GIS

ATTACHMENT 3 TYPICAL DESIGN AND LAYOUT

230KV LINE #2331 CIRRUS - GERMANNA
230KV LINE #2199 GERMANNA - GORDONSVILLE



DOUBLE CIRCUIT SUSPENSION MONOPOLE STRUCTURE

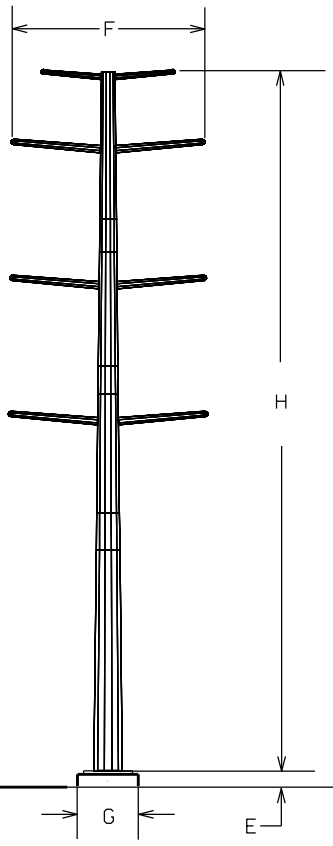
A. MAPPING OF THE ROUTE:	SEE ATTACHMENT II.B.3.e
B. RATIONALE FOR STRUCTURE TYPE:	ACCOMMODATES BOTH CIRCUITS REDUCES BLOWOUT FOOTPRINT.
C. LENGTH OF R/W (STRUCTURE QTY):	1.8 MILES (7)
D. STRUCTURE MATERIAL: RATIONAL FOR MATERIAL:	WEATHERING STEEL WEATHERING STEEL WAS SELECTED TO MATCH THE STEEL POLE STRUCTURES CARRYING EXISTING LINE #2199
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:	105' 125' 115'
I. AVERAGE SPAN LENGTH (RANGE):	648' (404' - 845') (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.

Figure 2

230KV LINE #2331 CIRRUS - GERMANNA
230KV LINE #2199 GERMANNA - GORDONSVILLE



DOUBLE CIRCUIT DEADEND MONOPOLE STRUCTURE

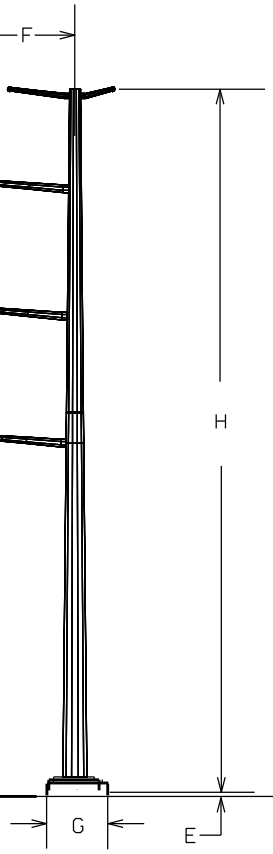
A. MAPPING OF THE ROUTE:	SEE ATTACHMENT II.B.3.e
B. RATIONALE FOR STRUCTURE TYPE:	MAINTAINS THE EXISTING CIRCUITS VERTICAL CONFIGURATION.
C. LENGTH OF R/W (STRUCTURE QTY):	1.8 MILES (7)
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONAL FOR MATERIAL:	WEATHERING STEEL WAS SELECTED TO MATCH THE STEEL POLE STRUCTURES CARRYING EXISTING LINE #2199
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:	105'
MAXIMUM STRUCTURE HEIGHT:	125'
AVERAGE STRUCTURE HEIGHT:	113'
I. AVERAGE SPAN LENGTH (RANGE):	590' (302' - 781') (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.

Figure 3

115KV LINE #2 OAK GREEN - REMINGTON



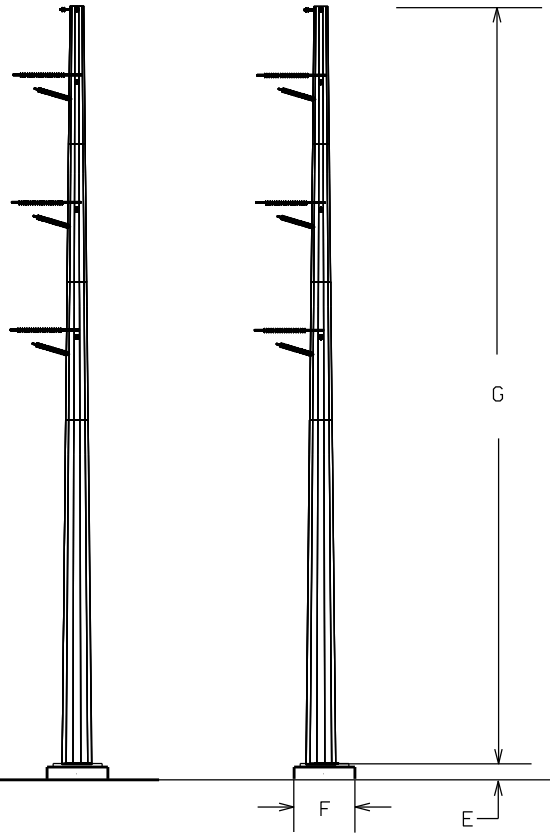
SINGLE CIRCUIT DEADEND MONOPOLE STRUCTURE

A. MAPPING OF THE ROUTE:	SEE ATTACHMENT II.B.3.e
B. RATIONALE FOR STRUCTURE TYPE:	MAINTAINS THE EXISTING CIRCUITS VERTICAL CONFIGURATION.
C. LENGTH OF R/W (STRUCTURE QTY):	0.11 MILES (1)
D. STRUCTURE MATERIAL: RATIONAL FOR MATERIAL:	WEATHERING STEEL WEATHERING STEEL WAS SELECTED TO MATCH THE STEEL POLE STRUCTURES CARRYING EXISTING LINE #2
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' 110' 110'
I. AVERAGE SPAN LENGTH (RANGE):	606' (N/A) (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 #2331 CIRRUS - GERMANNA
230KV LINE #2199 GERMANNA - GORDONSVILLE



DOUBLE CIRCUIT DEADEND 2-POLE STRUCTURE

A. MAPPING OF THE ROUTE:	SEE ATTACHMENT II.B.3.e
B. RATIONALE FOR STRUCTURE TYPE:	MAINTAINS THE EXISTING CIRCUITS VERTICAL CONFIGURATION.
C. LENGTH OF R/W (STRUCTURE QTY):	1.8 MILES (2)
D. STRUCTURE MATERIAL: RATIONAL FOR MATERIAL:	WEATHERING STEEL WEATHERING STEEL WAS SELECTED TO MATCH THE STEEL POLE STRUCTURES CARRYING EXISTING LINE #2199
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:	110' 115' 113'
H. AVERAGE SPAN LENGTH (RANGE):	572' (549' - 596') (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.

ATTACHMENT 4 HISTORIC RESOURCE PHOTOS

Figure 1. 023-0018, Rose Hill Farm/Game Preserve, I-House, view to the west.

Figure 2. 023-0020, La Grange/Salubria, Georgian dwelling, view to the south.

Figure 3. 023-0068, Hansbrough Ridge Winter Encampment District, view to the north.

Figure 4. 023-0084, Mount Pony Rural Historic District, overview, view to the west.

Figure 5. 023-5055, Brandy Station Battlefield, view to the north.

Figure 6. 023-5494, Farmstead, outbuildings, view to the west.

Figure 7. 068-5007, Battle of Morton's Ford, view to the east.

ATTACHMENT 5 PHOTO SIMULATIONS

Figure 1: Aerial photograph depicting land use and photo view for 023-0020.

Existing View

Proposed view showing location of hidden transmission line structures

Dominion Energy™ ERM

Viewpoint Location UTM Zone 18N:	248332E 4258872N
View Direction:	138 degrees
Viewpoint Elevation:	261 feet
Distance to Development:	4529 feet
Horizontal Field of View:	115 degrees

Date of Photography:	27th August 2023 11:27
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 2
Viewpoint SP 25
Germanna Hwy E of Salubria Ln
023-0020

Pre-Application Analysis
Germanna

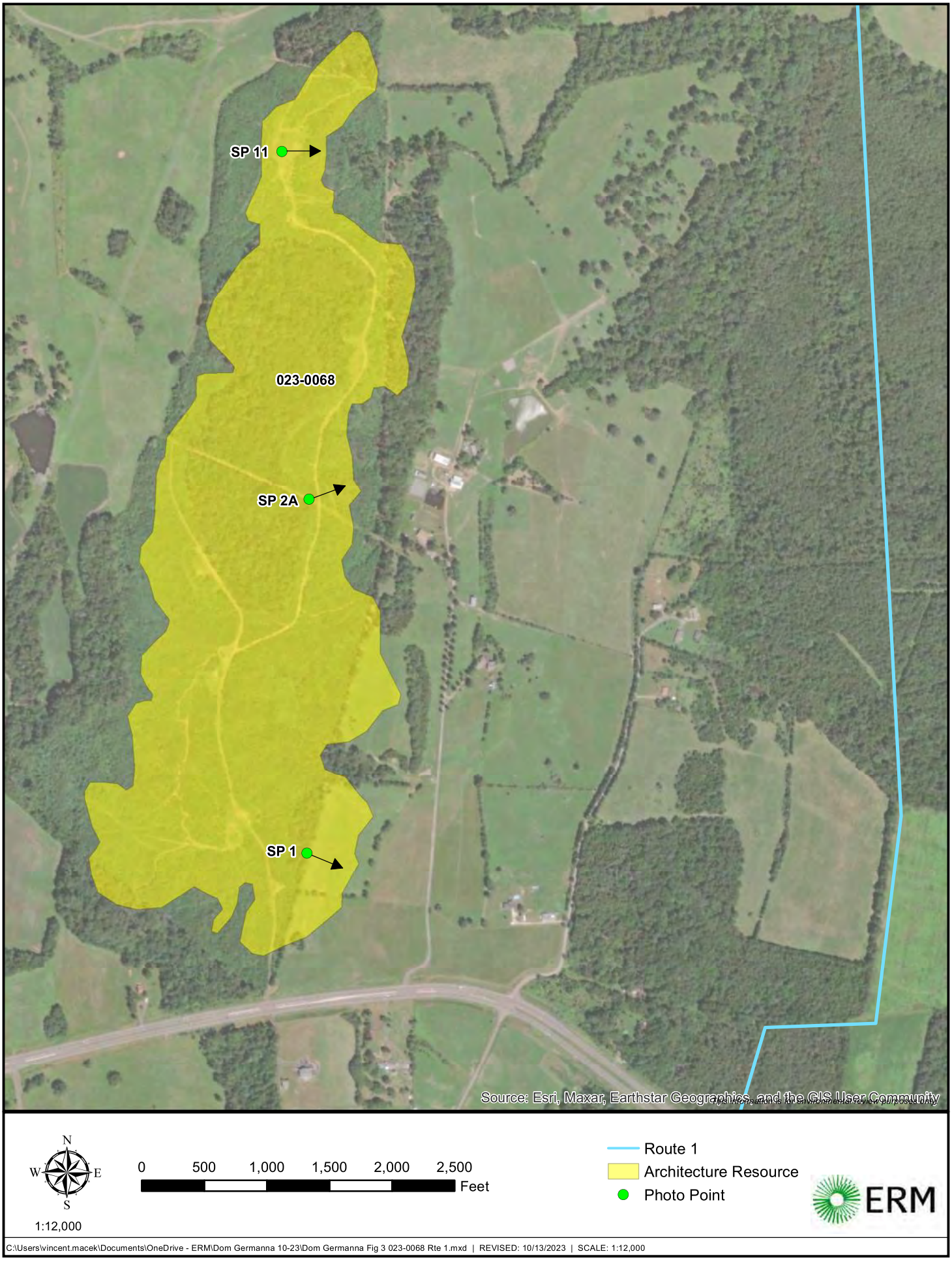


Figure 3: Aerial photograph depicting land use and photo view for 023-0068.

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	248615E 4259210N
View Direction:	150 degrees
Viewpoint Elevation:	428 feet
Distance to Development:	3854 feet
Horizontal Field of View:	96 degrees

Date of Photography:	10th August 2022 11:05
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	57 inches

VIEWPOINT CONTEXT

Figure 4
Viewpoint SP 1
Sandy Spgs N of Germanna Hwy
023-0068

Pre-Application Analysis
Germanna

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	248641E 4259883N
View Direction:	117 degrees
Viewpoint Elevation:	461 feet
Distance to Development:	4524 feet
Horizontal Field of View:	46 degrees

Date of Photography:	10th August 2022 10:22
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	59 inches

VIEWPOINT CONTEXT

Figure 5
Viewpoint SP 2A
Sandy Spgs N of Germanna Hwy
023-0068

Pre-Application Analysis
Germanna

Existing View

Proposed view showing location of hidden transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	248609E 4260546N
View Direction:	99 degrees
Viewpoint Elevation:	427 feet
Distance to Development:	4591 feet
Horizontal Field of View:	80 degrees

Date of Photography:	10th August 2022 11:53
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	60 inches

VIEWPOINT CONTEXT

Figure 6
Viewpoint SP 11
Coles Hill Rd SE of Fairfield Ln
023-0068

Pre-Application Analysis
Germanna

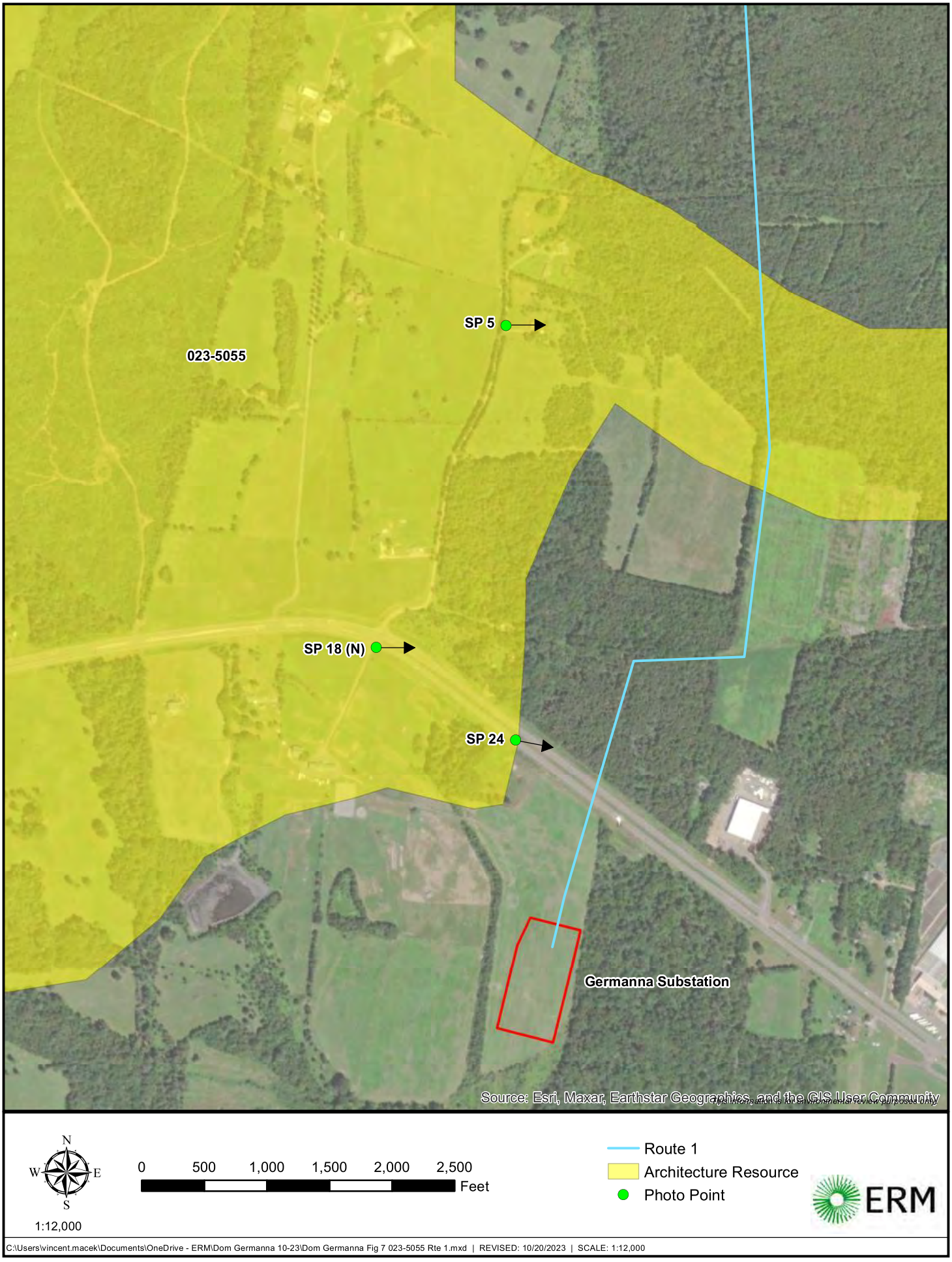


Figure 7: Aerial photograph depicting land use and photo view for 023-5055.

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	249257E 4259497N
View Direction:	171 degrees
Viewpoint Elevation:	561 feet
Distance to Development:	1986 feet
Horizontal Field of View:	89 degrees

Date of Photography:	9th August 2022 18:28
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	59 inches

VIEWPOINT CONTEXT

Figure 8
Viewpoint SP 5
Clay Hill Rd N of Germanna Hwy
023-5055

Pre-Application Analysis
Germanna

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	248990E 4258893N
View Direction:	153 degrees
Viewpoint Elevation:	349 feet
Distance to Development:	1943 feet
Horizontal Field of View:	89 degrees

Date of Photography:	12th August 2022 16:07
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 9
Viewpoint SP 18
Germanna Hwy at Clay Hill Rd
023-5055

Pre-Application Analysis
Germanna

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	249247E 4258702N
View Direction:	180 degrees
Viewpoint Elevation:	240 feet
Distance to Development:	671 feet
Horizontal Field of View:	89 degrees

Date of Photography:	27th August 2023 12:14
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	59 inches

VIEWPOINT CONTEXT

Figure 10
Viewpoint SP 24
Germanna Hwy SE of Clay Hill Rd
023-5055

Pre-Application Analysis
Germanna

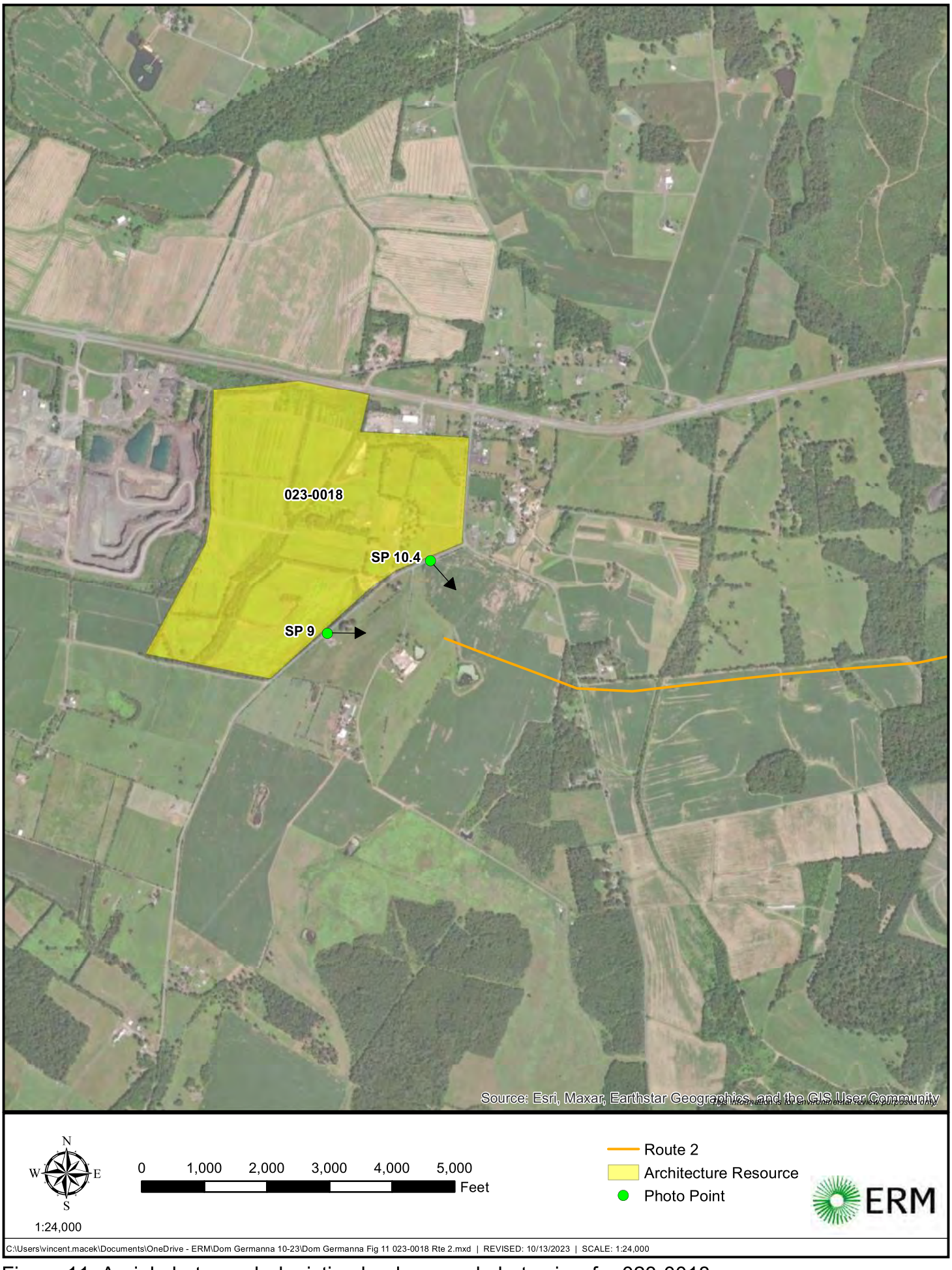


Figure 11: Aerial photograph depicting land use and photo view for 023-0018.

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	246709E 4258231N
View Direction:	140 degrees
Viewpoint Elevation:	346 feet
Distance to Development:	1260 feet
Horizontal Field of View:	100 degrees

Date of Photography:	1st November 2022 12:02
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 12
Viewpoint SP 10.4
Blackjack Rd W of Batna Rd
023-0018

Pre-Application Analysis
Germanna

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	246307E 4257967N
View Direction:	87 degrees
Viewpoint Elevation:	319 feet
Distance to Development:	1873 feet
Horizontal Field of View:	88 degrees

Date of Photography:	9th August 2022 10:53
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	59 inches

VIEWPOINT CONTEXT

Figure 13
Viewpoint SP 9
Blackjack Rd NE of Alvere Rd
023-0018

Pre-Application Analysis
Germanna

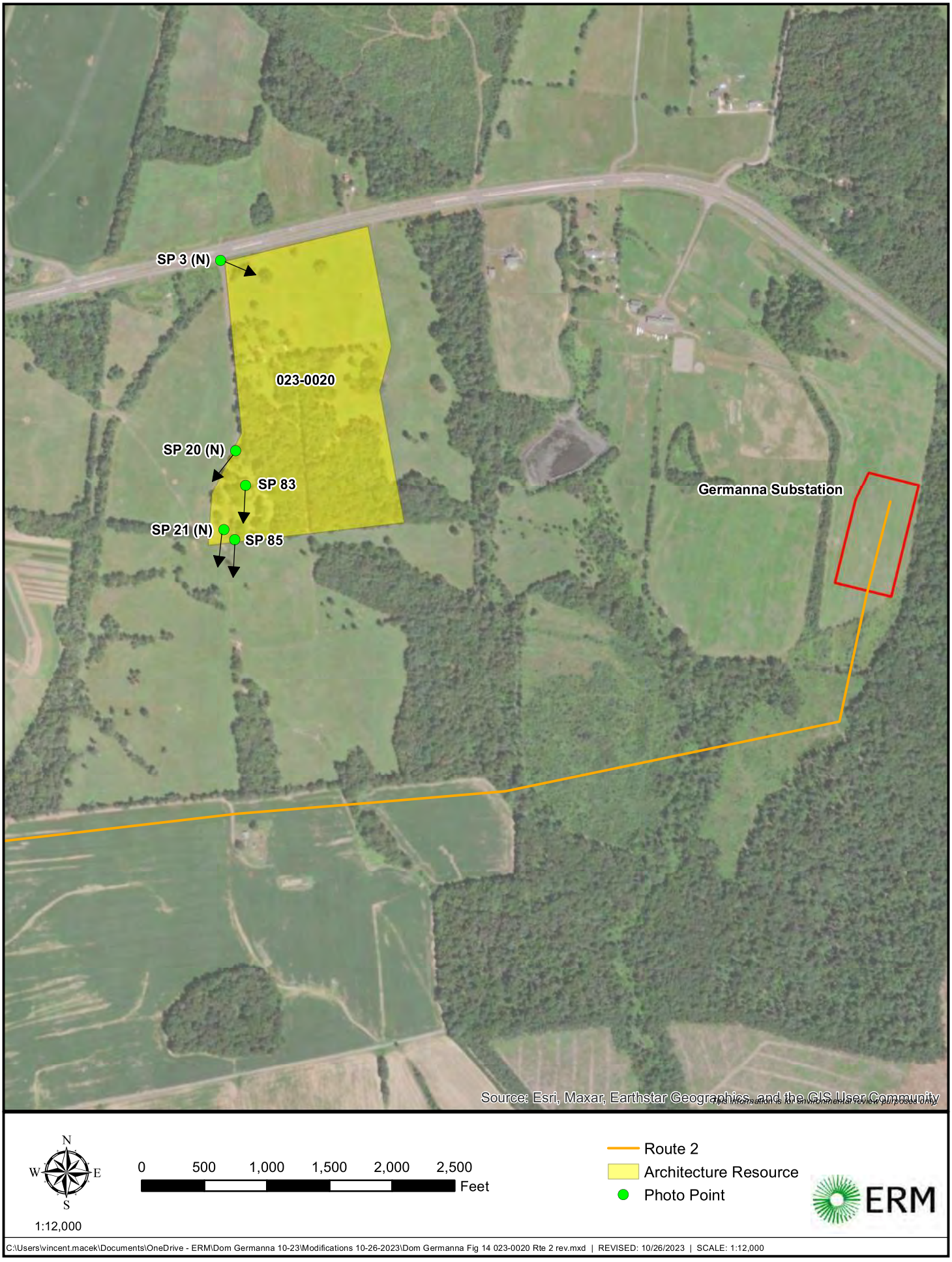


Figure 14: Aerial photograph depicting land use and photo view for 023-0020.

Existing View

Proposed view showing location of transmission line structures

Dominion Energy℠

ERM

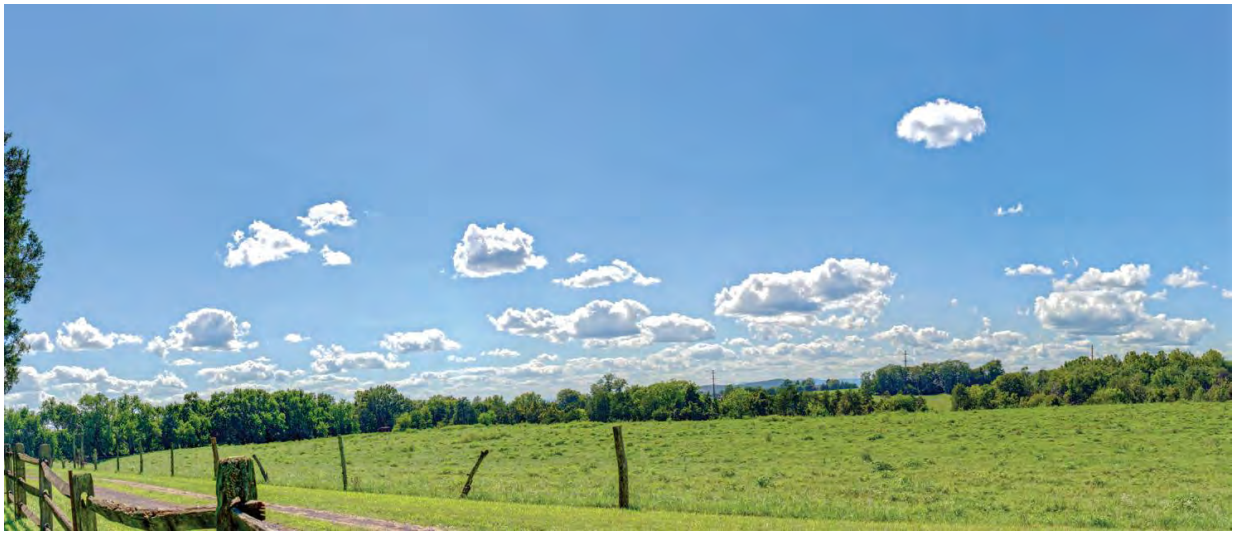
Viewpoint Location UTM Zone 18N:	248034E 4258299N
View Direction:	195 degrees
Viewpoint Elevation:	384 feet
Distance to Development:	2212 feet
Horizontal Field of View:	90 degrees

Date of Photography:	12th August 2022 15:43
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	61 inches

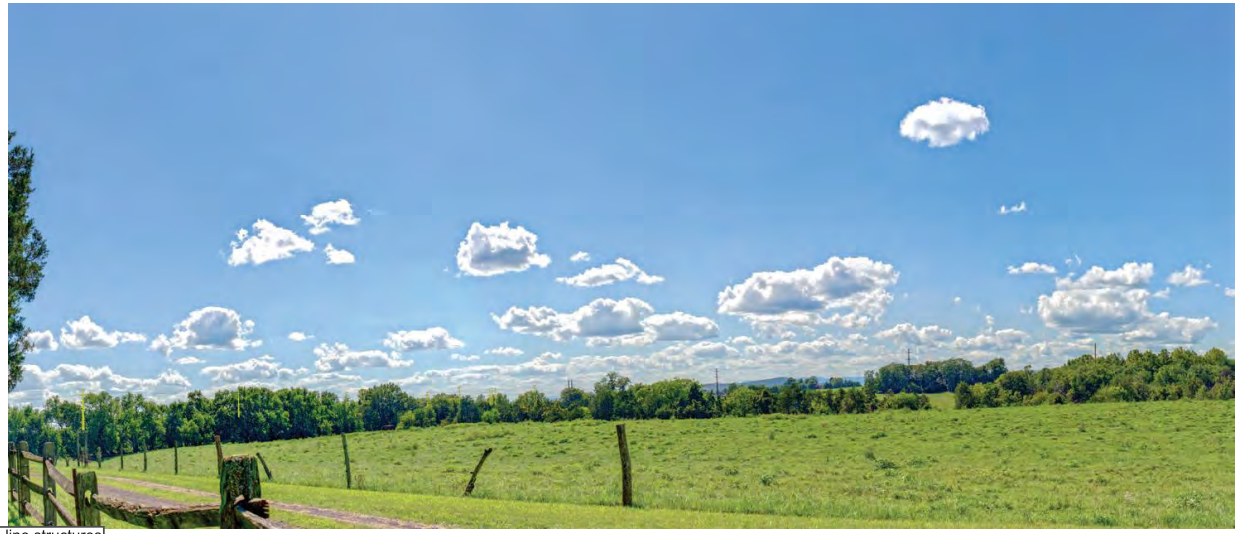
VIEWPOINT CONTEXT

Figure 15
Viewpoint SP 21
Salubria Ln S of Germanna Hwy
023-0020

Pre-Application Analysis
Germanna



Existing View



Proposed view showing location of hidden transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	248061E 4258449N
View Direction:	260 degrees
Viewpoint Elevation:	385 feet
Distance to Development:	2834 feet
Horizontal Field of View:	78 degrees

Date of Photography:	12th August 2022 15:33
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	58 inches

VIEWPOINT CONTEXT

Figure 16
Viewpoint SP 20
Salubria Ln S of Germanna Hwy
023-0020

Pre-Application Analysis
Germanna

Existing View

Proposed view showing location of hidden transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	248043E 4258812N
View Direction:	122 degrees
Viewpoint Elevation:	367 feet
Distance to Development:	4359 feet
Horizontal Field of View:	120 degrees

Date of Photography:	12th August 2022 15:56
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	61 inches

VIEWPOINT CONTEXT

Figure 17
Viewpoint SP 3
Salubria Ln at Germanna Hwy
023-0020

Pre-Application Analysis
Germanna

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	248078E 4258383N
View Direction:	177 degrees
Viewpoint Elevation:	400 feet
Distance to Development:	2549 feet
Horizontal Field of View:	89 degrees

Date of Photography:	10th October 2023 12:58
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	65 inches

VIEWPOINT CONTEXT

Figure 18
Viewpoint SP 83
Salubria Ln S of Germanna Hwy
023-0020

Pre-Application Analysis
Germanna

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	248054E 4258280N
View Direction:	168 degrees
Viewpoint Elevation:	385 feet
Distance to Development:	2126 feet
Horizontal Field of View:	89 degrees

Date of Photography:	10th October 2023 13:24
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 19
Viewpoint SP 85
Salubria Ln S of Germanna Hwy
023-0020

Pre-Application Analysis
Germanna

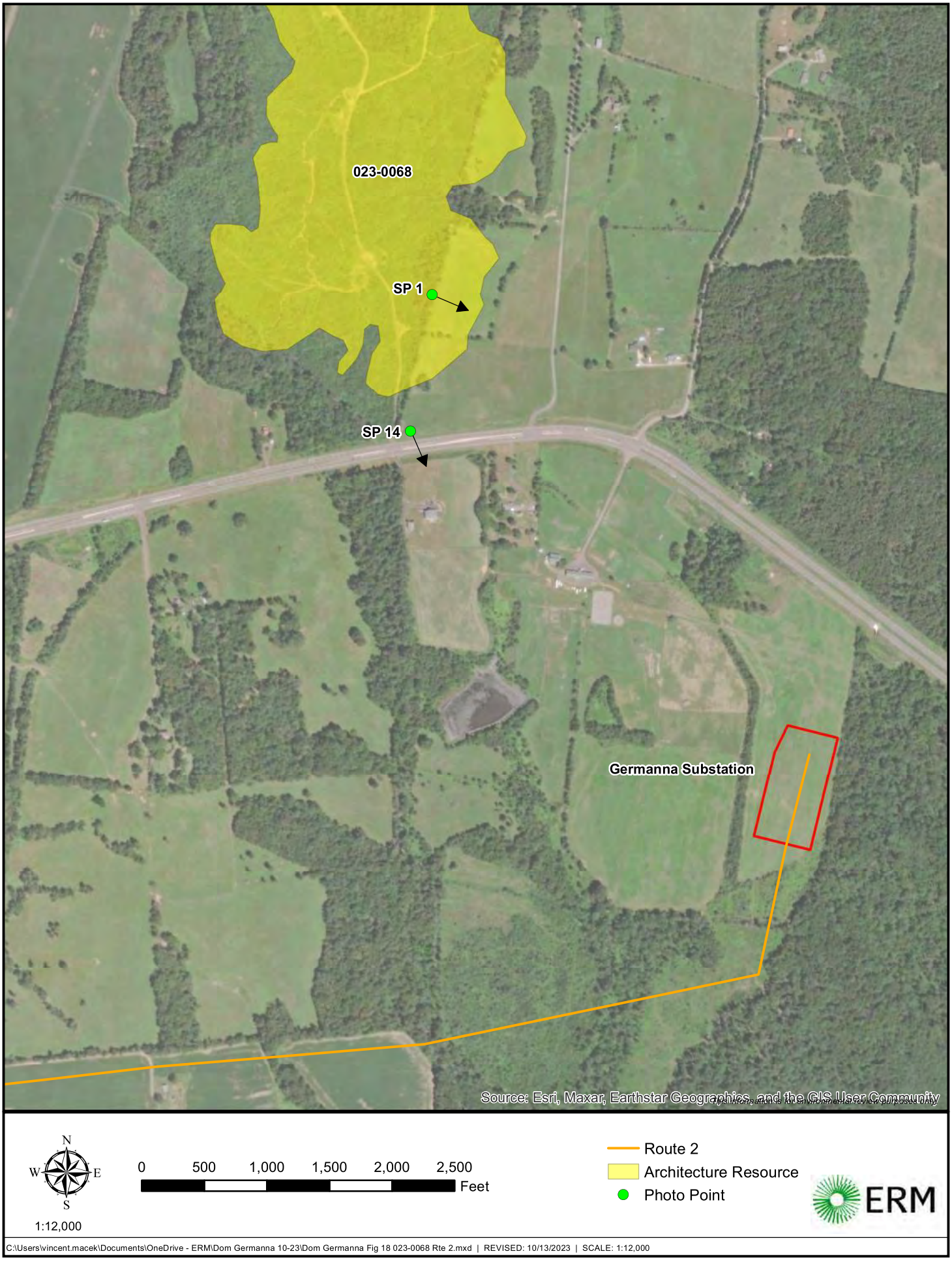


Figure 20: Aerial photograph depicting land use and photo view for 023-0068.

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	248615E 4259210N
View Direction:	150 degrees
Viewpoint Elevation:	428 feet
Distance to Development:	5789 feet
Horizontal Field of View:	96 degrees

Date of Photography:	10th August 2022 11:05
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	57 inches

VIEWPOINT CONTEXT

Figure 21
Viewpoint SP 1
Sandy Spgs N of Germanna Hwy
023-0068

Pre-Application Analysis
Germanna

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	248566E 4258952N
View Direction:	136 degrees
Viewpoint Elevation:	389 feet
Distance to Development:	4759 feet
Horizontal Field of View:	88 degrees

Date of Photography:	10th August 2022 17:02
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	59 inches

VIEWPOINT CONTEXT

Figure 22
Viewpoint SP 14
Germanna Hwy W of Sandy Spgs
023-0068

Pre-Application Analysis
Germanna

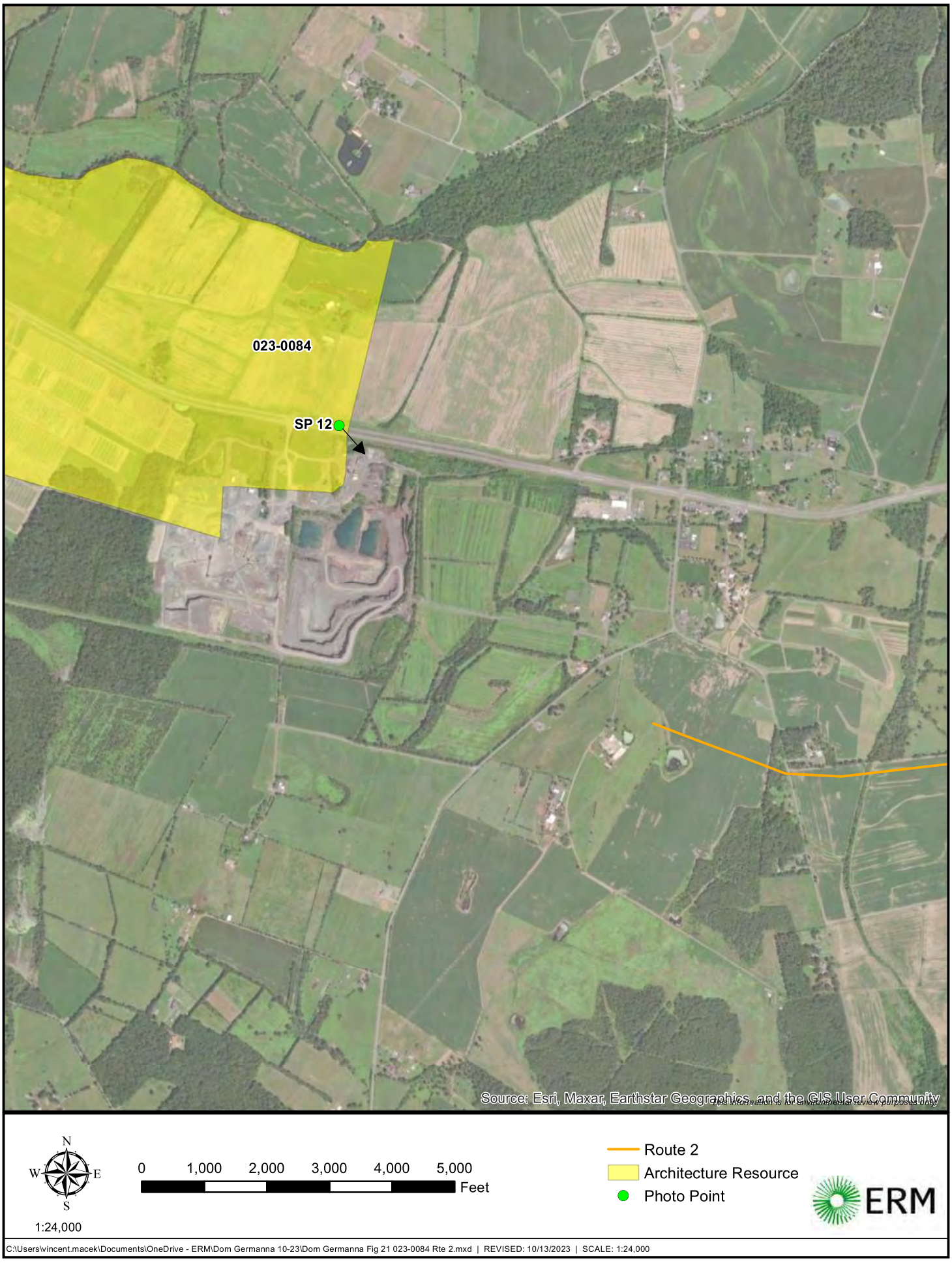


Figure 23: Aerial photograph depicting land use and photo view for 023-0084.

Existing View

Proposed view showing location of hidden transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	245590E 4259105N
View Direction:	113 degrees
Viewpoint Elevation:	310 feet
Distance to Development:	6983 feet
Horizontal Field of View:	89 degrees

Date of Photography:	8th August 2022 11:30
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	61 inches

VIEWPOINT CONTEXT

Figure 24
Viewpoint SP 12
Germanna Hwy E of Clover Hill Rd
023-0084

Pre-Application Analysis
Germanna

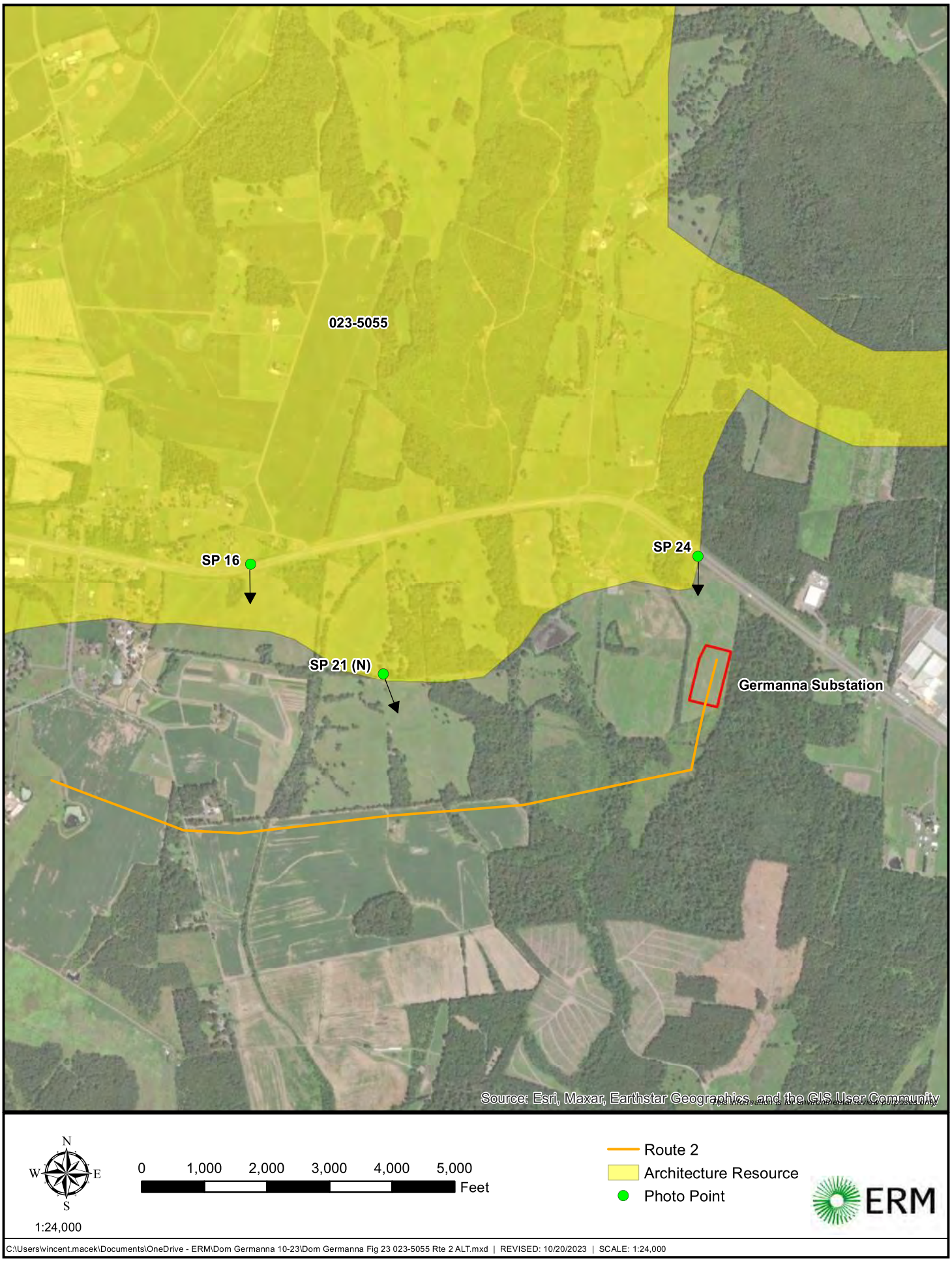


Figure 25: Aerial photograph depicting land use and photo view for 023-5055.

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	247540E 4258733N
View Direction:	158 degrees
Viewpoint Elevation:	381 feet
Distance to Development:	4193 feet
Horizontal Field of View:	85 degrees

Date of Photography:	8th August 2022 13:46
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	59 inches

VIEWPOINT CONTEXT

Figure 26
Viewpoint SP 16
Germanna Hwy W of York Rd
023-5055

Pre-Application Analysis
Germanna

Existing View

Proposed view showing location of transmission line structures

Dominion Energy℠

ERM

Viewpoint Location UTM Zone 18N:	248034E 4258299N
View Direction:	195 degrees
Viewpoint Elevation:	384 feet
Distance to Development:	2212 feet
Horizontal Field of View:	90 degrees

Date of Photography:	12th August 2022 15:43
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	61 inches

VIEWPOINT CONTEXT

Figure 27
Viewpoint SP 21
Salubria Ln S of Germanna Hwy
023-5055

Pre-Application Analysis
Germanna

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	249247E 4258702N
View Direction:	180 degrees
Viewpoint Elevation:	240 feet
Distance to Development:	1651 feet
Horizontal Field of View:	89 degrees

Date of Photography:	27th August 2023 12:14
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	59 inches

VIEWPOINT CONTEXT

Figure 28
Viewpoint SP 24
Germanna Hwy SE of Clay Hill Rd
023-5055

Pre-Application Analysis
Germanna

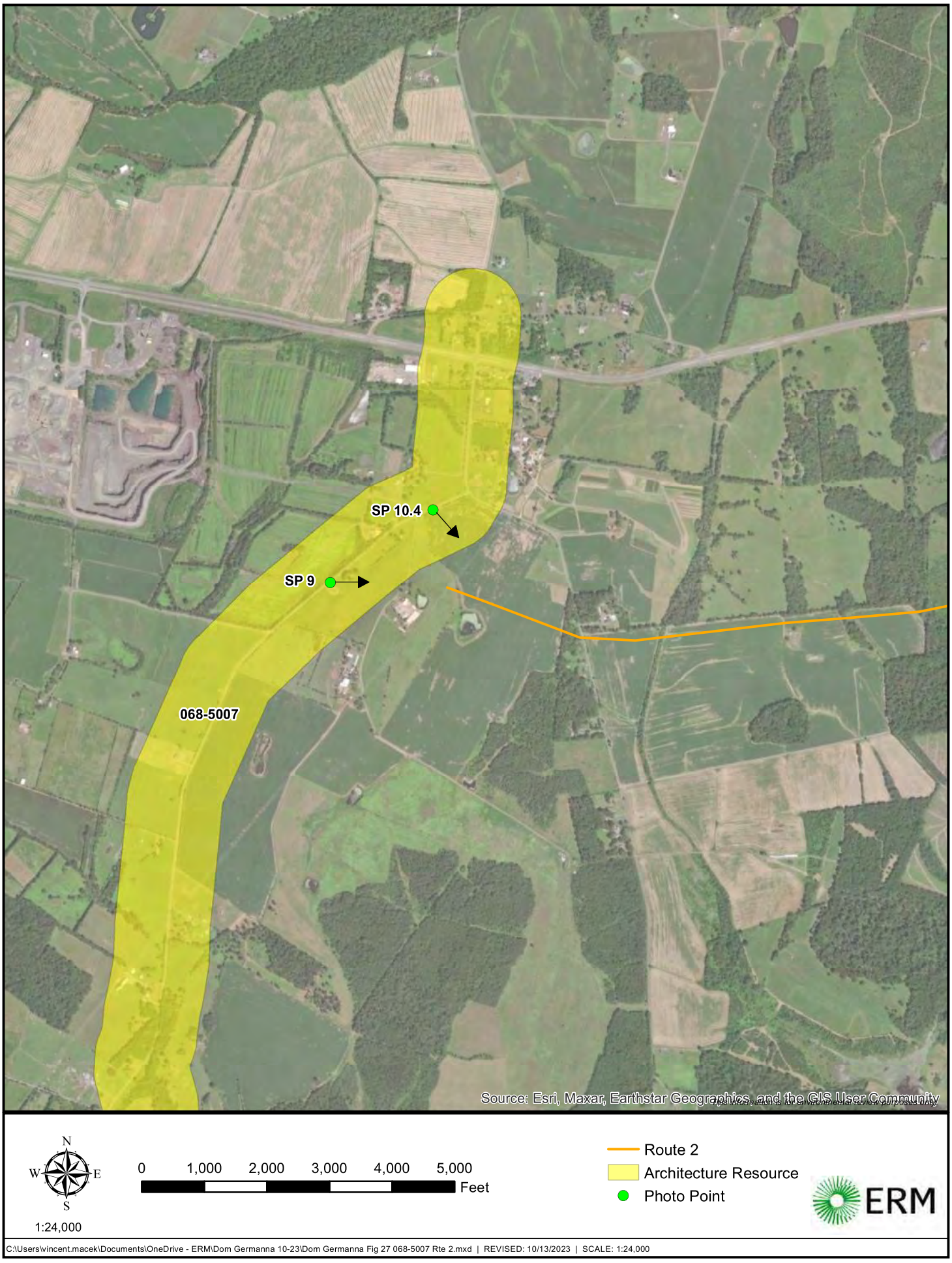


Figure 29: Aerial photograph depicting land use and photo view for 068-5007.

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	246709E 4258231N
View Direction:	140 degrees
Viewpoint Elevation:	346 feet
Distance to Development:	1260 feet
Horizontal Field of View:	100 degrees

Date of Photography:	1st November 2022 12:02
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 30
Viewpoint SP 10.4
Blackjack Rd W of Batna Rd
068-5007

Pre-Application Analysis
Germanna

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	246307E 4257967N
View Direction:	87 degrees
Viewpoint Elevation:	319 feet
Distance to Development:	1873 feet
Horizontal Field of View:	88 degrees

Date of Photography:	9th August 2022 10:53
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	59 inches

VIEWPOINT CONTEXT

Figure 31
Viewpoint SP 9
Blackjack Rd NE of Alvere Rd
068-5007

Pre-Application Analysis
Germanna

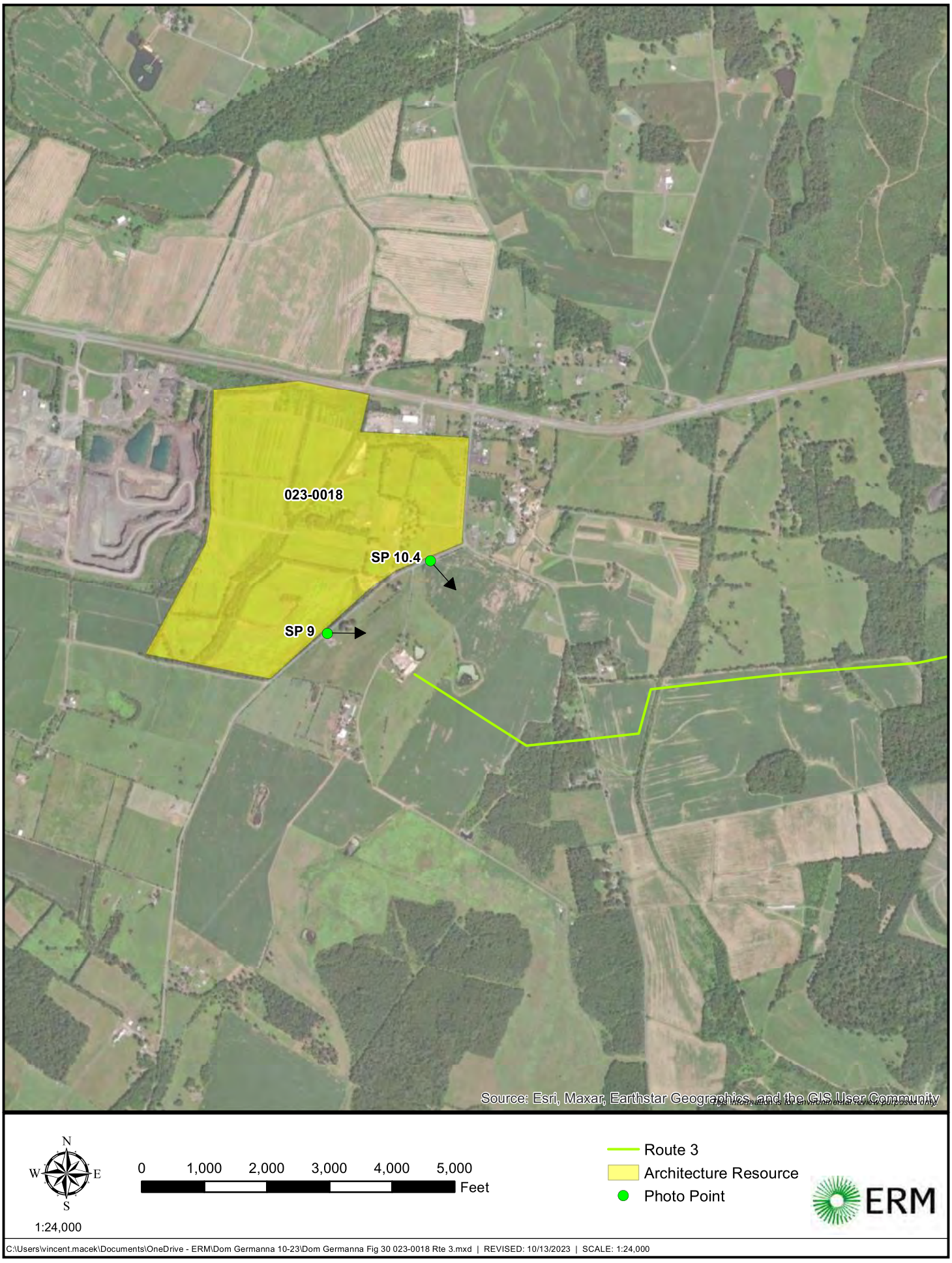


Figure 32: Aerial photograph depicting land use and photo view for 023-0018.

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	246709E 4258231N
View Direction:	140 degrees
Viewpoint Elevation:	346 feet
Distance to Development:	1807 feet
Horizontal Field of View:	100 degrees

Date of Photography:	1st November 2022 12:02
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 33
Viewpoint SP 10.4
Blackjack Rd W of Batna Rd
023-0018

Pre-Application Analysis
Germanna

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	246307E 4257967N
View Direction:	87 degrees
Viewpoint Elevation:	319 feet
Distance to Development:	1537 feet
Horizontal Field of View:	88 degrees

Date of Photography:	9th August 2022 10:53
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	59 inches

VIEWPOINT CONTEXT

Figure 34
Viewpoint SP 9
Blackjack Rd NE of Alvere Rd
068-5007

Pre-Application Analysis
Germanna

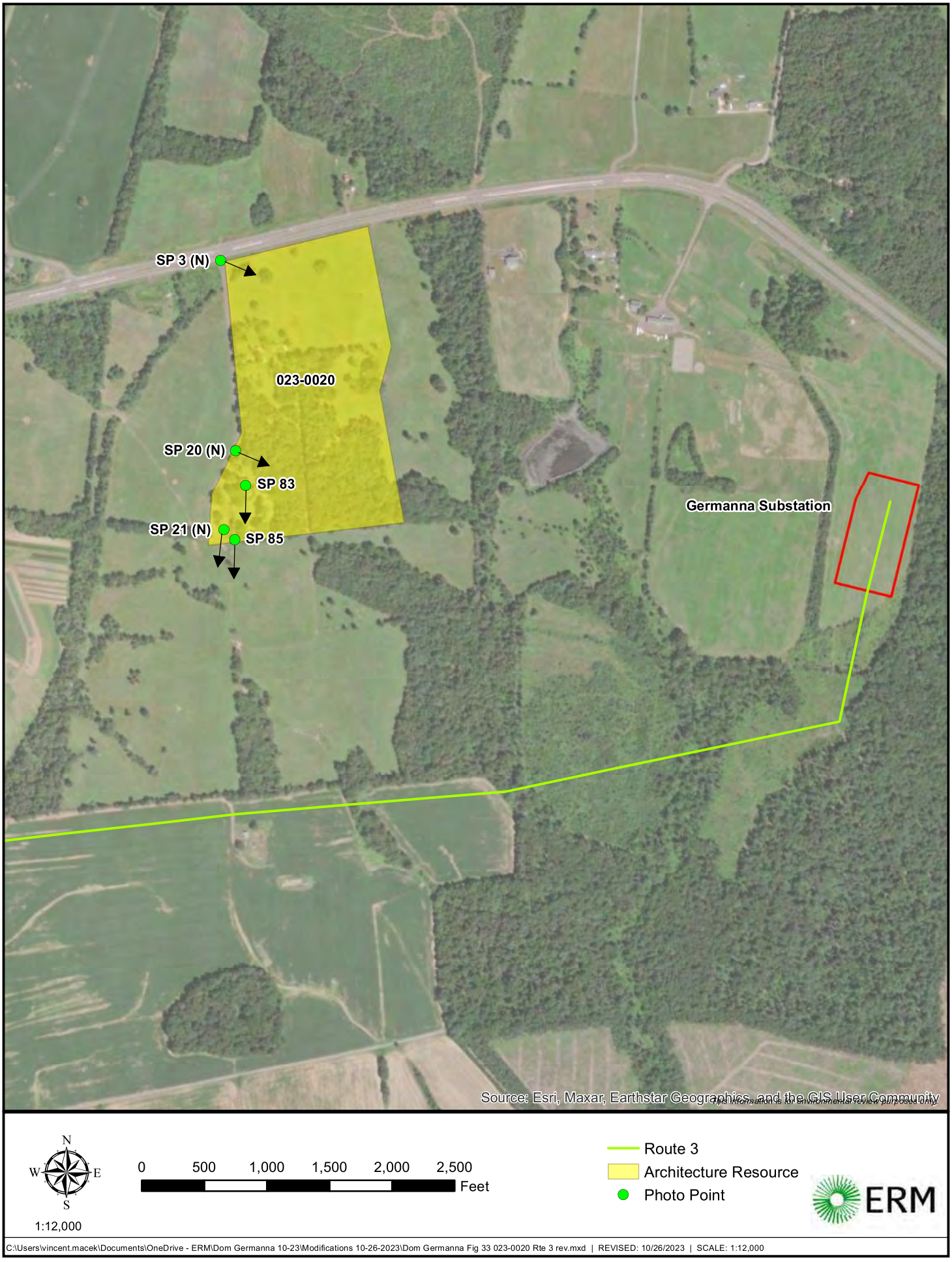


Figure 35: Aerial photograph depicting land use and photo view for 023-0020.

Existing View

Proposed view showing location of transmission line structures

Dominion Energy℠

ERM

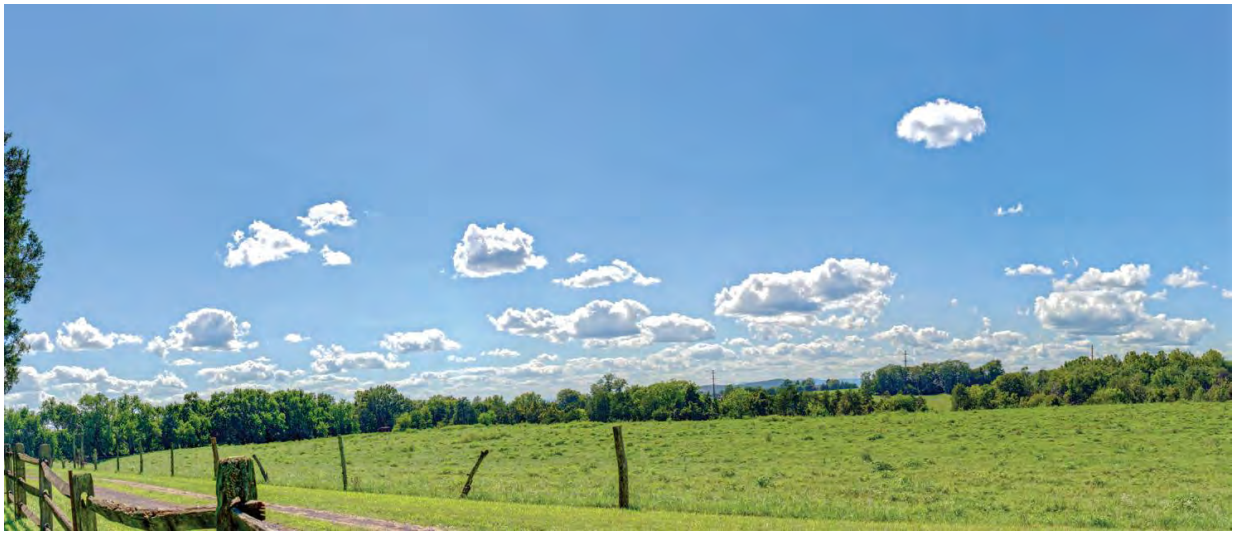
Viewpoint Location UTM Zone 18N:	248034E 4258299N
View Direction:	195 degrees
Viewpoint Elevation:	384 feet
Distance to Development:	2212 feet
Horizontal Field of View:	90 degrees

Date of Photography:	12th August 2022 15:43
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	61 inches

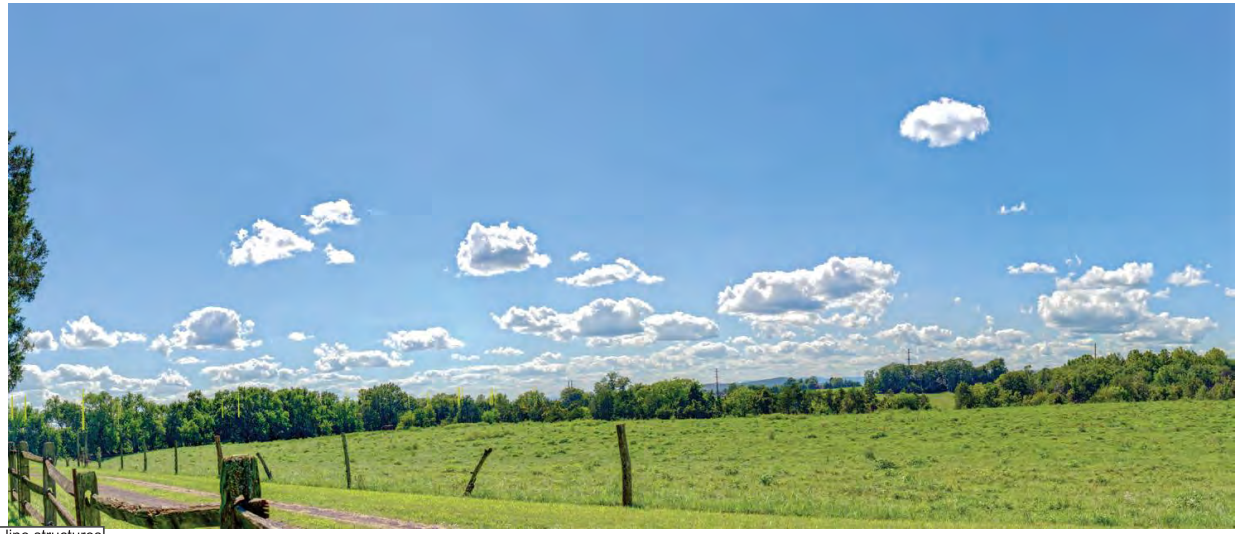
VIEWPOINT CONTEXT

Figure 36
Viewpoint SP 21
Salubria Ln S of Germanna Hwy
023-0020

Pre-Application Analysis
Germanna



Existing View



Proposed view showing location of hidden transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	248061E 4258449N
View Direction:	260 degrees
Viewpoint Elevation:	385 feet
Distance to Development:	2834 feet
Horizontal Field of View:	78 degrees

Date of Photography:	12th August 2022 15:33
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	58 inches

VIEWPOINT CONTEXT

Figure 37
Viewpoint SP 20
Salubria Ln S of Germanna Hwy
023-0020

Pre-Application Analysis
Germanna

Existing View

Proposed view showing location of hidden transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	248043E 4258812N
View Direction:	122 degrees
Viewpoint Elevation:	367 feet
Distance to Development:	4359 feet
Horizontal Field of View:	120 degrees

Date of Photography:	12th August 2022 15:56
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	61 inches

VIEWPOINT CONTEXT

Figure 38
Viewpoint SP 3
Salubria Ln at Germanna Hwy
023-0020

Pre-Application Analysis
Germanna

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	248078E 4258383N
View Direction:	177 degrees
Viewpoint Elevation:	400 feet
Distance to Development:	2549 feet
Horizontal Field of View:	89 degrees

Date of Photography:	10th October 2023 12:58
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	65 inches

VIEWPOINT CONTEXT

Figure 39
Viewpoint SP 83
Salubria Ln S of Germanna Hwy
023-0020

Pre-Application Analysis
Germanna

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	248054E 4258280N
View Direction:	168 degrees
Viewpoint Elevation:	385 feet
Distance to Development:	2126 feet
Horizontal Field of View:	89 degrees

Date of Photography:	10th October 2023 13:24
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 40
Viewpoint SP 85
Salubria Ln S of Germanna Hwy
023-0020

Pre-Application Analysis
Germanna

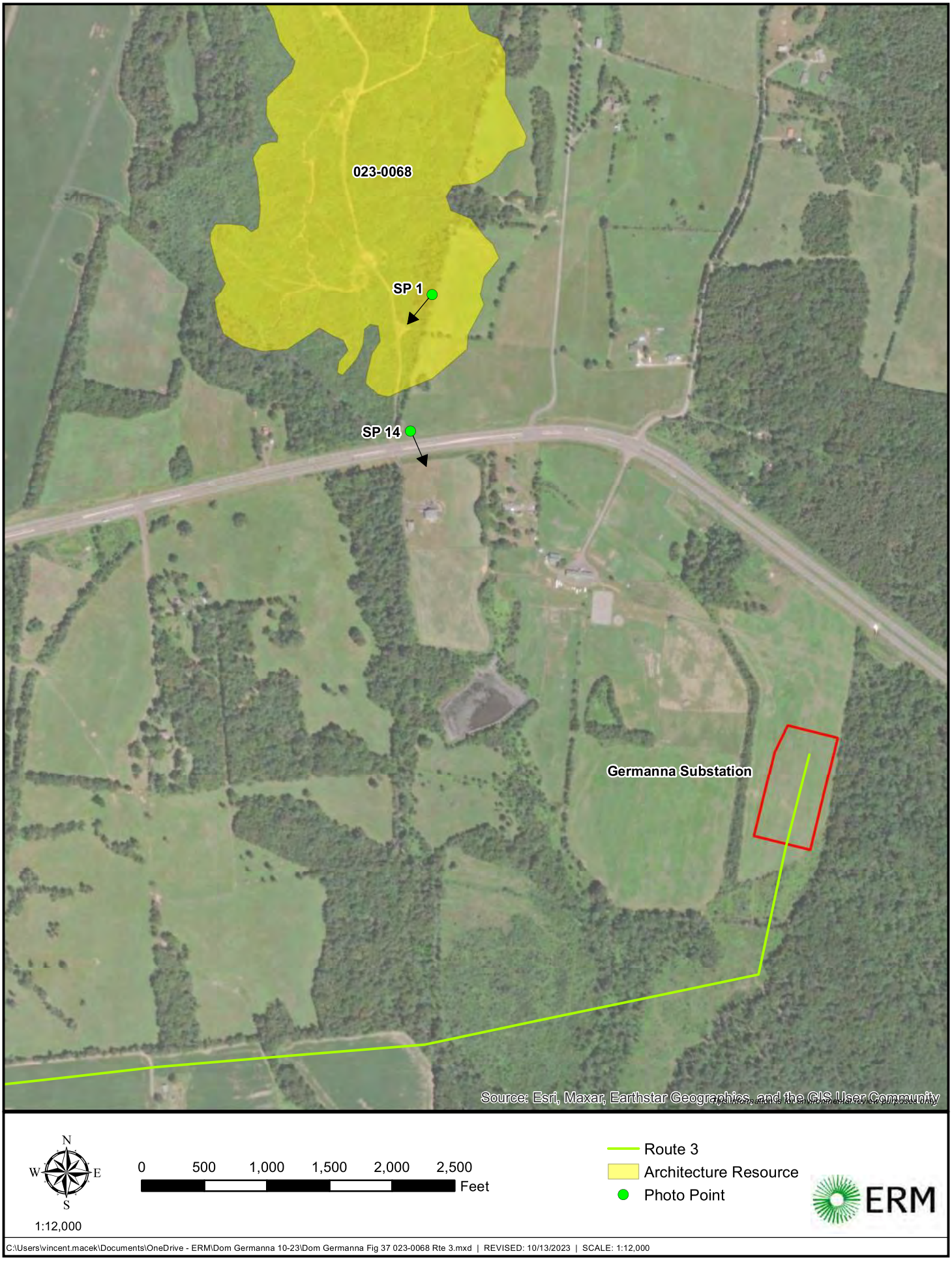


Figure 41: Aerial photograph depicting land use and photo view for 023-0068.

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	248615E 4259210N
View Direction:	150 degrees
Viewpoint Elevation:	428 feet
Distance to Development:	5789 feet
Horizontal Field of View:	96 degrees

Date of Photography:	10th August 2022 11:05
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	57 inches

VIEWPOINT CONTEXT

Figure 42
Viewpoint SP 1
Sandy Spgs N of Germanna Hwy
023-0068

Pre-Application Analysis
Germanna

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	248566E 4258952N
View Direction:	136 degrees
Viewpoint Elevation:	389 feet
Distance to Development:	4759 feet
Horizontal Field of View:	88 degrees

Date of Photography:	10th August 2022 17:02
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	59 inches

VIEWPOINT CONTEXT

Figure 43
Viewpoint SP 14
Germanna Hwy W of Sandy Spgs
023-0068

Pre-Application Analysis
Germanna

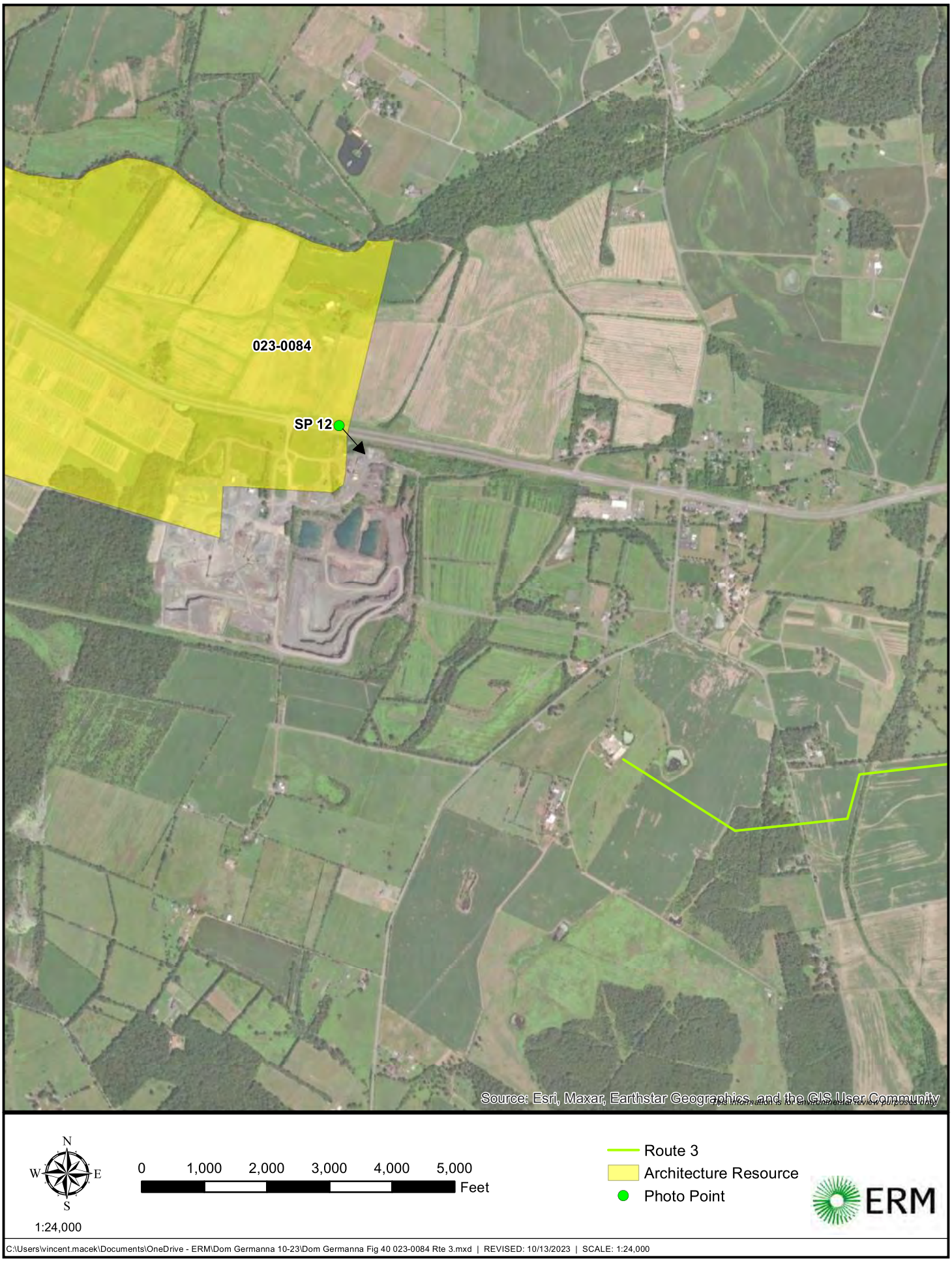


Figure 44: Aerial photograph depicting land use and photo view for 023-0084.

Existing View

Proposed view showing location of hidden transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	245590E 4259105N
View Direction:	113 degrees
Viewpoint Elevation:	310 feet
Distance to Development:	7007 feet
Horizontal Field of View:	89 degrees

Date of Photography:	8th August 2022 11:30
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	61 inches

VIEWPOINT CONTEXT

Figure 45
Viewpoint SP 12
Germanna Hwy E of Clover Hill Rd
023-0084

Pre-Application Analysis
Germanna

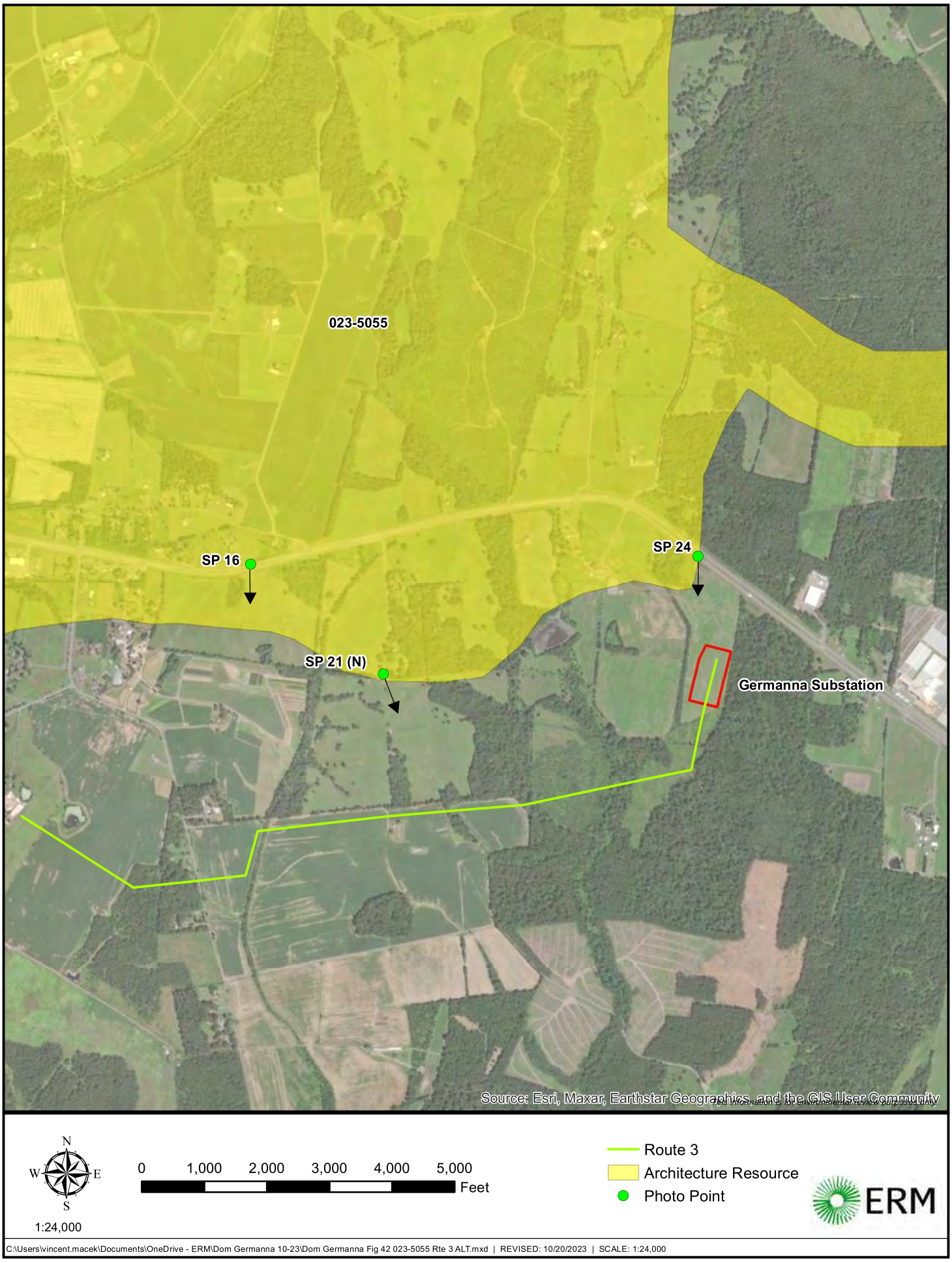


Figure 46: Aerial photograph depicting land use and photo view for 023-5055.

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	247540E 4258733N
View Direction:	158 degrees
Viewpoint Elevation:	381 feet
Distance to Development:	4193 feet
Horizontal Field of View:	85 degrees

Date of Photography:	8th August 2022 13:46
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	59 inches

VIEWPOINT CONTEXT

Figure 47
Viewpoint SP 16
Germanna Hwy W of York Rd
023-5055

Pre-Application Analysis
Germanna

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	248034E 4258299N
View Direction:	195 degrees
Viewpoint Elevation:	384 feet
Distance to Development:	2212 feet
Horizontal Field of View:	90 degrees

Date of Photography:	12th August 2022 15:43
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	61 inches

VIEWPOINT CONTEXT

Figure 48
Viewpoint SP 21
Salubria Ln S of Germanna Hwy
023-5055

Pre-Application Analysis
Germanna

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	249247E 4258702N
View Direction:	180 degrees
Viewpoint Elevation:	240 feet
Distance to Development:	1651 feet
Horizontal Field of View:	89 degrees

Date of Photography:	27th August 2023 12:14
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	59 inches

VIEWPOINT CONTEXT

Figure 49
Viewpoint SP 24
Germanna Hwy SE of Clay Hill Rd
023-5055

Pre-Application Analysis
Germanna

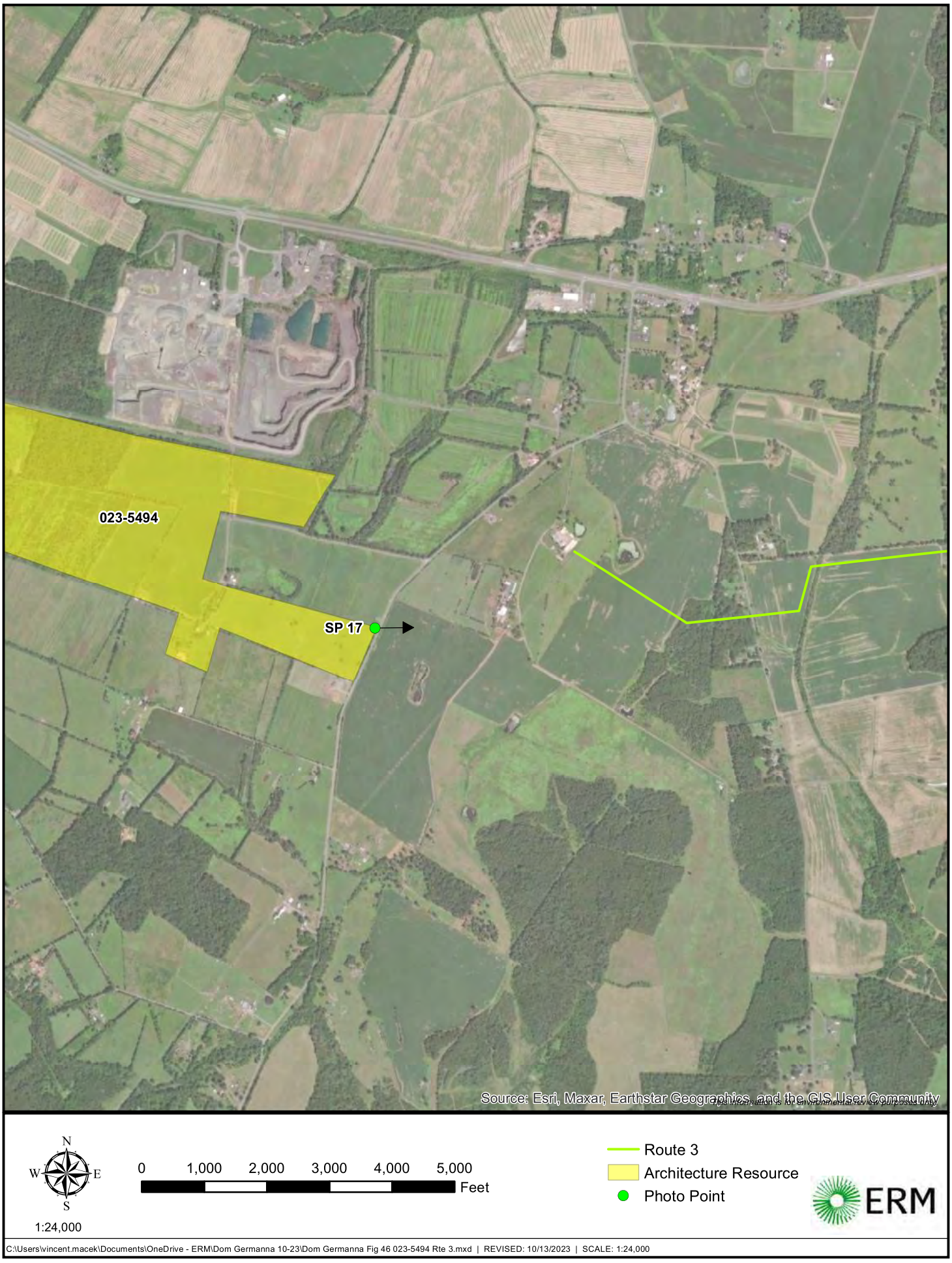


Figure 50: Aerial photograph depicting land use and photo view for 023-5494.

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	245886E 4257550N
View Direction:	77 degrees
Viewpoint Elevation:	309 feet
Distance to Development:	3284 feet
Horizontal Field of View:	78 degrees

Date of Photography:	21st April 2023 13:02
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	61 inches

VIEWPOINT CONTEXT

Figure 51
Viewpoint SP 17
Blackjack Rd S of Alvere Rd
023-5494

Pre-Application Analysis
Germanna

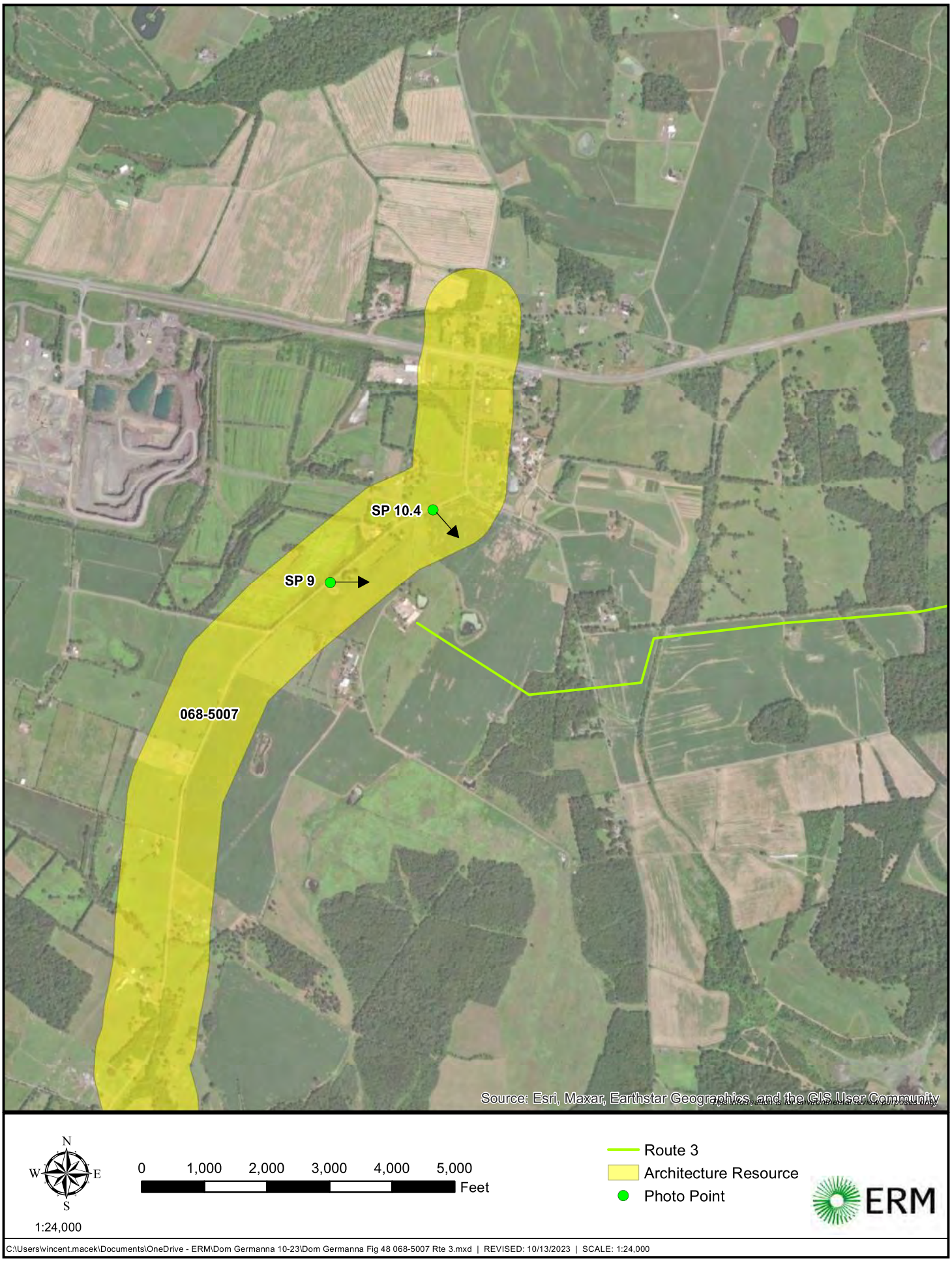


Figure 52: Aerial photograph depicting land use and photo view for 068-5007.

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	246709E 4258231N
View Direction:	140 degrees
Viewpoint Elevation:	346 feet
Distance to Development:	1807 feet
Horizontal Field of View:	100 degrees

Date of Photography:	1st November 2022 12:02
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 53
Viewpoint SP 10.4
Blackjack Rd W of Batna Rd
068-5007

Pre-Application Analysis
Germanna

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	246307E 4257967N
View Direction:	87 degrees
Viewpoint Elevation:	319 feet
Distance to Development:	1537 feet
Horizontal Field of View:	88 degrees

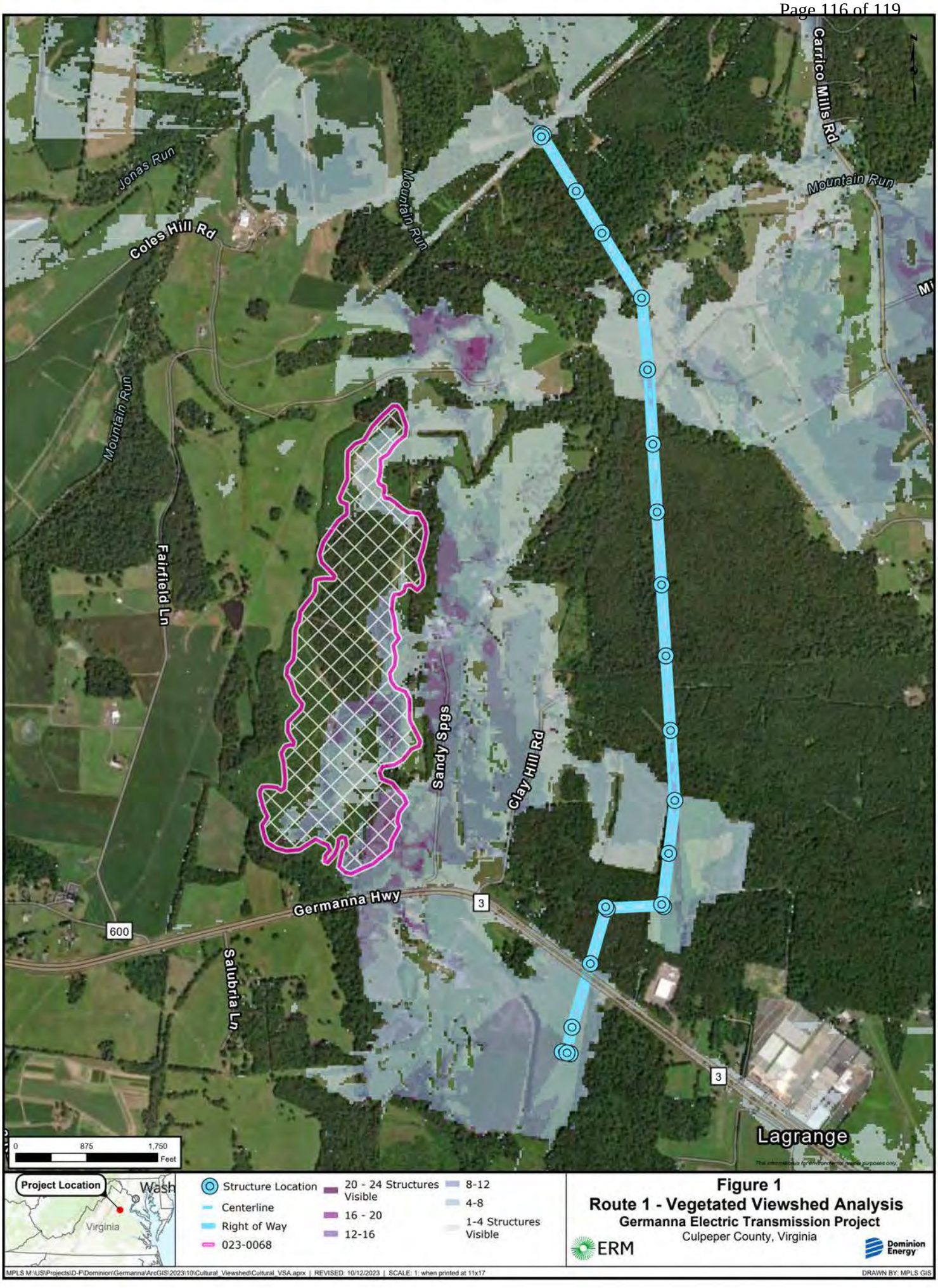
Date of Photography:	9th August 2022 10:53
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	59 inches

VIEWPOINT CONTEXT

Figure 54
Viewpoint SP 9
Blackjack Rd NE of Alvere Rd
068-5007

Pre-Application Analysis
Germanna

ATTACHMENT 6 VEGETATIVE VISUAL ANALYSIS


Carrico Mills Rd
Jonas Run
Mountain Run
Coles Hill Rd
Mountain Run
Mountain Run
Fairfield Ln
Sandy Spgs
Clay Hill Rd
Germanna Hwy
600
3
Salubria Ln
3
Lagrange
0
875
1,750
Feet
Project Location
Virginia
Structure Location
Centerline
Right of Way
023-0068
20 - 24 Structures Visible
16 - 20
12-16
8-12
4-8
1-4 Structures Visible
Figure 1
Route 1 - Vegetated Viewshed Analysis
Germanna Electric Transmission Project
Culpeper County, Virginia
ERM
Dominion Energy
MPLS M:\US\Projects\D-F\Dominion\Germanna\ArcGIS\2023\10\Cultural_Viewshed\Cultural_VSA.aprx | REVISED: 10/12/2023 | SCALE: 1: when printed at 11x17
DRAWN BY: MPLS GIS

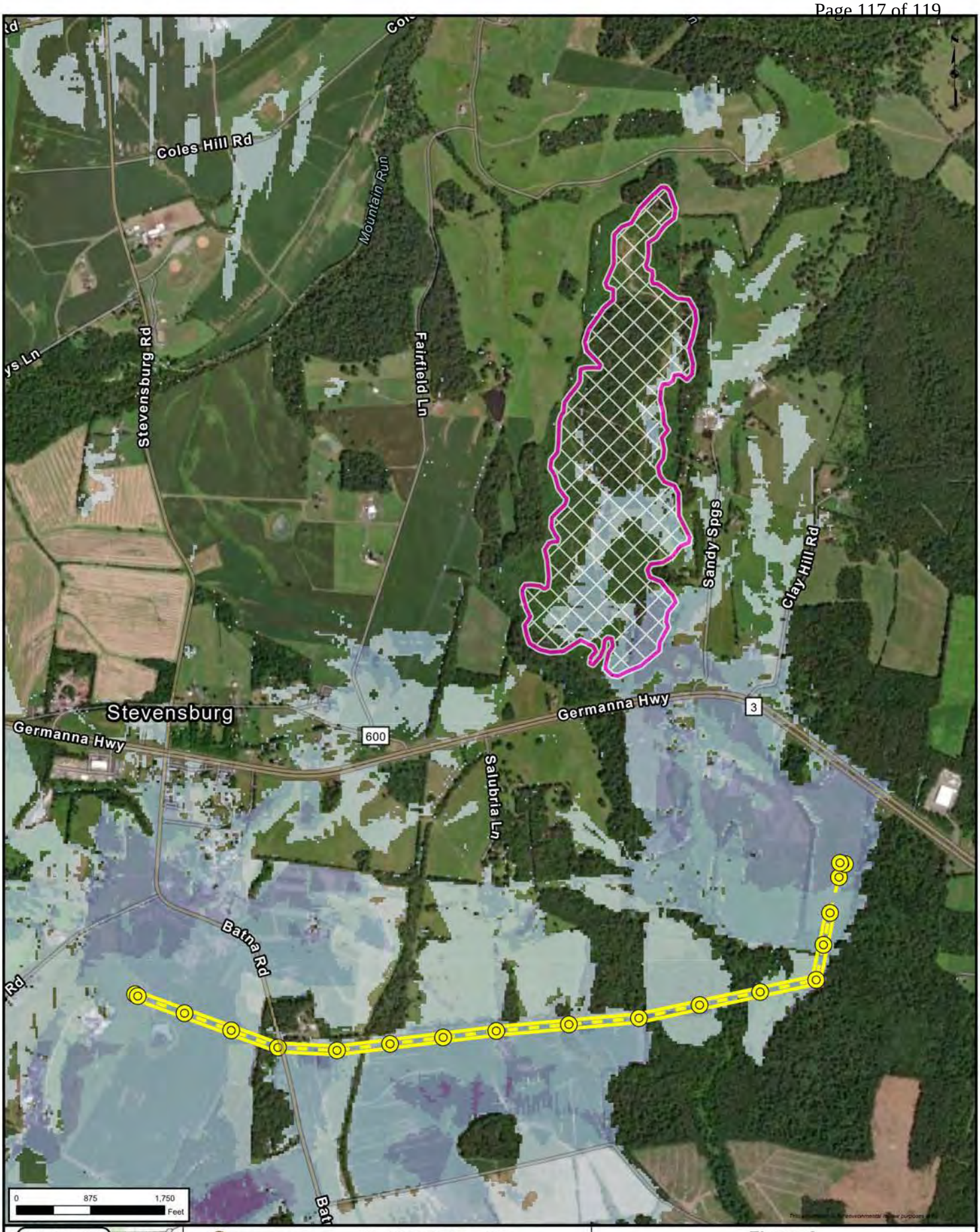
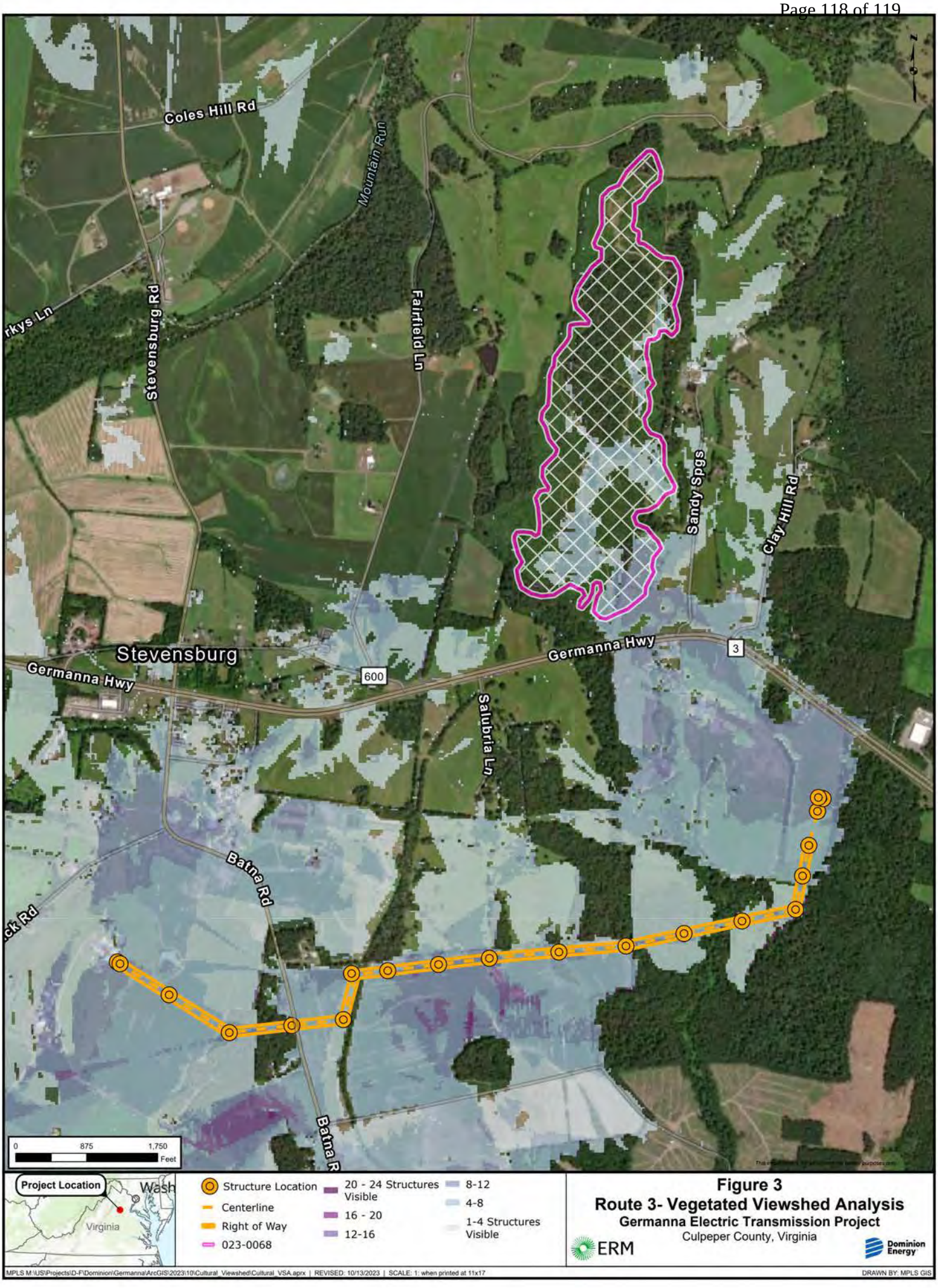


Figure 2
Route 2 - Vegetated Viewshed Analysis
Germanna Electric Transmission Project
Culpeper County, Virginia

ERM
Dominion Energy

MPLS M:\US\Projects\D-F\Dominion\Germanna\ArcGIS\2023\10\Cultural_Viewshed\Cultural_VSA.aprx | REVISED: 10/12/2023 | SCALE: 1: when printed at 11x17
DRAWN BY: MPLS GIS


Coles Hill Rd
Mountain Run
Stevensburg Rd
Fairfield Ln
Sandy Spgs
Clay Hill Rd
Stevensburg
Germanna Hwy
600
Germanna Hwy
3
Salubria Ln
Batna Rd
Batna R
0
875
1,750
Feet
Project Location
Virginia
Structure Location
Centerline
Right of Way
023-0068
20 - 24 Structures Visible
16 - 20
12-16
8-12
4-8
1-4 Structures Visible
Figure 3
Route 3- Vegetated Viewshed Analysis
Germanna Electric Transmission Project
Culpeper County, Virginia
ERM
Dominion Energy
MPLS M:\US\Projects\D-F\Dominion\Germanna\ArcGIS\2023\10\Cultural_Viewshed\Cultural_VSA.aprx | REVISED: 10/13/2023 | SCALE: 1: when printed at 11x17
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From: Simpson, Craig (VDOT) <Craig.Simpson@vdot.virginia.gov>
Sent: Tuesday, October 24, 2023 3:46 PM
To: Greg R Baka (DEV Trans Distribution - 1) <Greg.R.Baka@dominionenergy.com>
Cc: Nesbit, D. Mark (VDOT) <Daniel.Nesbit@vdot.virginia.gov>; Settle, Karen S. (VDOT) <Karen.Settle@VDOT.Virginia.gov>; Barron, L. Marshall (VDOT) <Marshall.Barron@VDOT.Virginia.gov>; Nelson, Sean C., PE (VDOT) <Sean.Nelson@VDOT.Virginia.gov>; Davison, P.E., Ben (VDOT) <Ben.Davison@vdot.virginia.gov>
Subject: [EXTERNAL] RE: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation, in Culpeper County, Virginia

Good Afternoon Greg,

Please see the VDOT comments on the Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation concept.

Thank you,

Craig Simpson, P.E., PTOE
Assistant Resident Engineer - Land Use
Virginia Department of Transportation
Cell: 540-229-1164
Craig.Simpson@VDOT.Virginia.gov

Visit the Land Developers Information Center at:http://www.virginiadot.org/info/land_use.asp

From: Nelson, Sean C., PE (VDOT) <Sean.Nelson@VDOT.Virginia.gov>
Sent: Friday, October 20, 2023 7:49 AM
To: Simpson, Craig (VDOT) <Craig.Simpson@vdot.virginia.gov>
Cc: Nesbit, D. Mark (VDOT) <Daniel.Nesbit@vdot.virginia.gov>; Settle, Karen S. (VDOT) <Karen.Settle@VDOT.Virginia.gov>; Barron, L. Marshall (VDOT) <Marshall.Barron@VDOT.Virginia.gov>
Subject: Fwd: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation, in Culpeper County, Virginia

Craig can you review and respond on my behalf

Get Outlook for Android

From: Greg.R.Baka@dominionenergy.com <Greg.R.Baka@dominionenergy.com>
Sent: Thursday, October 19, 2023 5:58:59 PM

To: Nelson, Sean C., PE (VDOT) <sean.nelson@vdot.virginia.gov>
Cc: Brach.A.Prough@dominionenergy.com <Brach.A.Prough@dominionenergy.com>; james.p.young@dominionenergy.com <james.p.young@dominionenergy.com>; ahaynes@mcguirewoods.com <ahaynes@mcguirewoods.com>
Subject: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation, in Culpeper County, Virginia

Mr. Nelson,

Dominion Energy Virginia is proposing to construct a new overhead 230 kV double circuit transmission line (the "Germanna Lines") on new right-of-way by cutting the Company's existing 230 kV Line #2199 and extending the lines to the Company's proposed new 230 kV substation (the "Germanna Substation"), in Culpeper County, Virginia.

In advance of filing an application for a CPCN from the Commission, the Company respectfully requests that you submit any comments or additional information that would have bearing on the proposed Project within 30 days of the date of this letter. Enclosed is a Project Overview Map depicting the proposed location of the 230 kV Germanna Lines and Germanna Substation.

Thank you,

Greg Baka
Electric Transmission – Local Permitting Consultant
Dominion Energy
5000 Dominion Blvd; 3rd Floor
Glen Allen, VA 23060
804-201-3053 cell
greg.r.baka@dominionenergy.com

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transmission in error, please reply immediately to the sender that you have received the message in error, and delete it. Thank you.

COMMONWEALTH of VIRGINIA
DEPARTMENT OF TRANSPORTATION
457 East Shirley Avenue
Warrenton, Virginia 20186

Stephen C. Brich, P.E.
Commissioner

Date: October 24, 2023

To: Greg Baka – Local Permitting Consultant

cc: Sean Nelson, P.E. VDOT; Mark Nesbit, P.E. VDOT; Ben Davison, P.E. VDOT

Re: **Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation, in Culpeper County, Virginia**

Dear Mr. Baka,

The above referenced Preliminary 230 kV Germanna Lines and Germanna Substation package was received by VDOT on October 19, 2023.

VDOTs understanding is that Dominion Energy Virginia (Dominion) is proposing to construct a new overhead 230 kV double circuit transmission line (the "Germanna Lines") on new right-of-way by cutting the Company's existing 230 kV Line #2199 and extending the lines to the Company's proposed new 230 kV substation (the "Germanna Substation"), in Culpeper County, Virginia (collectively, the "Project").

Please see the following VDOT comments below:

General:

1. Overhead utility installations within nonlimited access highways shall conform with 24VAC30-151-330. (Overhead utility installations within nonlimited access highways.)
2. New overhead installations crossings shall provide a minimum of 18 feet of vertical clearance or at a minimum height as established by the National Electric Safety Code (see 24VAC30-151-760), whichever is greater.
3. The current routing appears to be crossing VDOT ROW at skewed angles. Transmission line crossing of VDOT ROW shall be located on a line that is perpendicular to the highway alignment.
4. Transmission line structures shall be located outside of VDOT right-of-way. Any structures and/or poles shall be located as far away from VDOT right-of-way as possible to prevent conflict with future roadway improvement projects.

5. Highway crossings should be grouped at one location whenever practical, and as near as possible to right angles to the center of the road.
    a. Can the proposed Route and Alternative Route 2 be collocated to one crossing location of Route 663 (Batna Rd.)?
6. Route 3 has a functional classification of Principal Arterial. New overhead crossing of Arterial roadways should be limited if possible. All reasonable alternatives should be considered prior to the approval of new overhead crossings of Arterial roadways.

Please note that comments provided are based on a preliminary concept. Additional comments may forthcoming once a detailed permit package has been received.

Please contact me at 540-229-1164 or craig.simpson@vdot.virginia.gov if there are any questions or concerns.

Sincerely,

Craig Simpson, P.E.
Assistant Resident Engineer – Land Use
Warrenton Residency

From: Denny, S. Scott (DOAV) <Scott.Denny@doav.virginia.gov>
Sent: Wednesday, October 25, 2023 2:18 PM
To: Greg R Baka (DEV Trans Distribution - 1) <Greg.R.Baka@dominionenergy.com>; darin.clipper@faa.gov (darin.clipper@faa.gov) <darin.clipper@faa.gov>
Subject: [EXTERNAL] Re: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation, in Culpeper County, Virginia

Attached is the DOAV comment letter regarding Aeronautical study #2023-AEA-13070-OE.

From: Greg.R.Baka@dominionenergy.com <Greg.R.Baka@dominionenergy.com>
Sent: Thursday, October 19, 2023 5:47 PM
To: Denny, S. Scott (DOAV) <scott.denny@doav.virginia.gov>
Cc: Brach.A.Prough@dominionenergy.com <Brach.A.Prough@dominionenergy.com>; james.p.young@dominionenergy.com <james.p.young@dominionenergy.com>; ahaynes@mcguirewoods.com <ahaynes@mcguirewoods.com>
Subject: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation, in Culpeper County, Virginia

Mr. Denny,

Dominion Energy Virginia is proposing to construct a new overhead 230 kV double circuit transmission line (the "Germanna Lines") on new right-of-way by cutting the Company's existing 230 kV Line #2199 and extending the lines to the Company's proposed new 230 kV substation (the "Germanna Substation"), in Culpeper County, Virginia.

In advance of filing an application for a CPCN from the Commission, the Company respectfully requests that you submit any comments or additional information that would have bearing on the proposed Project within 30 days of the date of this letter. Enclosed is a Project Overview Map depicting the proposed location of the 230 kV Germanna Lines and Germanna Substation.

Thank you,

Greg Baka
Electric Transmission – Local Permitting Consultant
Dominion Energy
5000 Dominion Blvd; 3rd Floor
Glen Allen, VA 23060
804-201-3053 cell
greg.r.baka@dominionenergy.com

October 25, 2023

Mr. Darrin Clipper
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, Texas 76177

RE: Aeronautical Study # 2023-AEA-13070-OE

Dear Mr. Clipper:

The Virginia Department of Aviation has reviewed the Public Notice for Aeronautical Study # 2023-AEA-13070-OE received dated October 19, 2023. While the Department does not endorse any FAR Part 77 penetrations, staff will not object to the placement of the proposed tower provided the location does not result in the increase to any instrument approach procedure minimums at the Manassas Regional Airport.

Please feel free to contact me if you have any questions regarding this matter at (804) 236-3638.

Sincerely,

S. Scott Denny
Senior Aviation Planner
Virginia Department of Aviation

From: Denny, S. Scott (DOAV) <Scott.Denny@doav.virginia.gov>
Sent: Tuesday, October 31, 2023 2:22 PM
To: Greg R Baka (DEV Trans Distribution - 1) <Greg.R.Baka@dominionenergy.com>
Subject: [EXTERNAL] Re: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation, in Culpeper County, Virginia

Greg:

RE: Dominion Energy's Proposed 230kV Germanna Lines and Germana Substation in Culpeper County Virginia

After reviewing the information provided in your October 19, 2023 email, it appears as though the Alternative 1 route for the proposed Germanna Lines and Germanna Substation project is within 20,000 linear feet of the Culpeper Regional Airport. Therefore, a 7460 must be submitted to the FAA. Provided the airspace study determines there is no hazard to air navigation as a result of the proposed project, the Department has no objection to the project as it has been submitted. Please let me know if you have any questions regarding this matter.

Sincerely,

S. Scott Denny
Senior Aviation Planner
Virginia Department of Aviation

From: Greg.R.Baka@dominionenergy.com <Greg.R.Baka@dominionenergy.com>
Sent: Thursday, October 19, 2023 5:47 PM
To: Denny, S. Scott (DOAV) <scott.denny@doav.virginia.gov>
Cc: Brach.A.Prough@dominionenergy.com <Brach.A.Prough@dominionenergy.com>; james.p.young@dominionenergy.com <james.p.young@dominionenergy.com>; ahaynes@mcguirewoods.com <ahaynes@mcguirewoods.com>
Subject: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation, in Culpeper County, Virginia

Mr. Denny,

Dominion Energy Virginia is proposing to construct a new overhead 230 kV double circuit transmission line (the "Germanna Lines") on new right-of-way by cutting the Company's existing 230 kV Line #2199 and

extending the lines to the Company's proposed new 230 kV substation (the "Germanna Substation"), in Culpeper County, Virginia.

In advance of filing an application for a CPCN from the Commission, the Company respectfully requests that you submit any comments or additional information that would have bearing on the proposed Project within 30 days of the date of this letter. Enclosed is a Project Overview Map depicting the proposed location of the 230 kV Germanna Lines and Germanna Substation.

Thank you,

Greg Baka
Electric Transmission – Local Permitting Consultant
Dominion Energy
5000 Dominion Blvd; 3rd Floor
Glen Allen, VA 23060
804-201-3053 cell
greg.r.baka@dominionenergy.com

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From: Denny, S. Scott (DOAV) <Scott.Denny@doav.virginia.gov>
Sent: Monday, November 13, 2023 1:30 PM
To: Laura P Meadows (DEV Trans Distribution - 1) <Laura.P.Meadows@dominionenergy.com>
Subject: [EXTERNAL] Re: Dominion Energy Virginia's Proposed 230kV Germanna Lines and Germanna Substation Project - Revision

Ms. Meadows:

The Virginia Department of Aviation has reviewed the revised location map for the Germanna 230kV Transmission Line in Culpeper County. Following our review, it was determined that a portion of the proposed line is located within 20,000 linear feet of the Culpeper Regional Airport. Therefore a 7460 form must be submitted to the Federal Aviation Administration (FAA) to determine the potential effects the project may have to the airport. Submission of the 7460 form to the FAA will initiate an airspace study. Provided the airspace study reveals the project will not result in the increase to any instrument approach procedure minimums at the Culpeper Regional Airport and the FAA issues a "Determination of No Hazard", the Department will not object to the project as it has been presented.

Please feel free to contact me if you have any questions regarding this matter.

Sincerely,

S. Scott Denny
Senior Aviation Planner

From: Laura.P.Meadows@dominionenergy.com <Laura.P.Meadows@dominionenergy.com>
Sent: Friday, November 10, 2023 4:18 PM
To: Denny, S. Scott (DOAV) <scott.denny@doav.virginia.gov>
Cc: Greg.R.Baka@dominionenergy.com <Greg.R.Baka@dominionenergy.com>
Subject: Dominion Energy Virginia's Proposed 230kV Germanna Lines and Germanna Substation Project - Revision

Good Afternoon Mr. Denny,

Attached, please find a revised request for comment for Dominion Energy Virginia’s proposed 230kV Germanna Lines and Germanna Substation project. Please contact Greg Baka should you have any questions or require any additional information.

Thank you,

Laura

Laura Meadows
Supervisor - Siting and Permitting
Electric Transmission

Dominion Energy
5000 Dominion Boulevard, 3rd Floor SW, Glen Allen, VA 23060
C: 804.239.8246

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From: 9-AJO-AWA-OEGroup (FAA) <OEGroup@faa.gov>
Sent: Wednesday, October 25, 2023 3:09 PM
To: Greg R Baka (DEV Trans Distribution - 1) <Greg.R.Baka@dominionenergy.com>; 9-AJO-AWA-OEGroup (FAA) <OEGroup@faa.gov>
Cc: Brach A Prough (Services - 6) <Brach.A.Prough@dominionenergy.com>; James P Young (Services - 6) <james.p.young@dominionenergy.com>; Haynes, Anne Hampton <ahaynes@mcguirewoods.com>
Subject: [EXTERNAL] RE: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation, in Culpeper County, Virginia

Hello Greg,

Anyone planning construction that meets notice criteria under 14 C.F.R. Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace, must notify the FAA 45 days prior to construction. The FAA then conducts an aeronautical study on the proposed construction described in the notice.

Visit https://oeaaa.faa.gov/ to file a notice.

Please click here for step-by-step instructions on how to E-file your proposal with the FAA.

Thank you,

The Obstruction Evaluation (OE) Group
Federal Aviation Administration
OEGroup@faa.gov

From: Greg.R.Baka@dominionenergy.com <Greg.R.Baka@dominionenergy.com>
Sent: Thursday, October 19, 2023 5:39 PM
To: 9-AJO-AWA-OEGroup (FAA) <OEGroup@faa.gov>
Cc: Brach.A.Prough@dominionenergy.com; james.p.young@dominionenergy.com; ahaynes@mcguirewoods.com
Subject: Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation, in Culpeper County, Virginia

Mr. Helvey,

Dominion Energy Virginia is proposing to construct a new overhead 230 kV double circuit transmission line (the "Germanna Lines") on new right-of-way by cutting the Company's existing 230 kV Line #2199 and extending the lines to the Company's proposed new 230 kV substation (the "Germanna Substation"), in Culpeper County, Virginia.

In advance of filing an application for a CPCN from the Commission, the Company respectfully requests that you submit any comments or additional information that would have bearing on the proposed Project within 30 days of the date of this letter. Enclosed is a Project Overview Map depicting the proposed location of the 230 kV Germanna Lines and Germanna Substation.

Thank you,

Greg Baka
Electric Transmission – Local Permitting Consultant
Dominion Energy
5000 Dominion Blvd; 3rd Floor
Glen Allen, VA 23060
804-201-3053 cell
greg.r.baka@dominionenergy.com

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From: 9-AJO-AWA-OEGroup (FAA) <OEGroup@faa.gov>
Sent: Thursday, November 16, 2023 7:44 AM
To: Laura P Meadows (DEV Trans Distribution - 1) <Laura.P.Meadows@dominionenergy.com>
Cc: Greg R Baka (DEV Trans Distribution - 1) <Greg.R.Baka@dominionenergy.com>
Subject: [EXTERNAL] RE: Dominion Energy Virginia's Proposed 230kV Germanna Lines and Germanna Substation Project - Revision

Hi, Laura,

Mr. Helvey is no longer with Obstruction Evaluation Group. Have you filed for the proposed project? If you did do you have an Aeronautical Study Number (ASN)?

If not filed, below are instructions:

Anyone planning construction that meets notice criteria under 14 C.F.R. Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace, must notify the FAA 45 days prior to construction. The FAA then conducts an aeronautical study on the proposed construction described in the notice.

Visit https://oeaaa.faa.gov/ [oeaaa.faa.gov] to file a notice.

Please click here [oeaaa.faa.gov] for step-by-step instructions on how to E-file your proposal with the FAA.

Thank you,

The Obstruction Evaluation (OE) Group
Federal Aviation Administration
OEGroup@faa.gov

From: Laura.P.Meadows@dominionenergy.com <Laura.P.Meadows@dominionenergy.com>
Sent: Friday, November 10, 2023 4:17 PM
To: 9-AJO-AWA-OEGroup (FAA) <OEGroup@faa.gov>
Cc: Greg.R.Baka@dominionenergy.com
Subject: Dominion Energy Virginia's Proposed 230kV Germanna Lines and Germanna Substation Project - Revision

Good Afternoon Mr. Helvey,

Attached, please find a revised request for comment for Dominion Energy Virginia's proposed 230kV Germanna Lines and Germanna Substation project. Please contact Greg Baka should you have any questions or require any additional information.

Thank you,
Laura

Laura Meadows
Supervisor - Siting and Permitting
Electric Transmission

Dominion Energy
5000 Dominion Boulevard, 3rd Floor SW, Glen Allen, VA 23060
C: 804.239.8246

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From: Warren, Arlene <arlene.warren@vdh.virginia.gov>
Sent: Tuesday, June 22, 2021 7:53 AM
To: Rachel.M.Studebaker@dominionenergy.com
Subject: [EXTERNAL] Re: FW: SCC Case No. PUR-2021-00010/DEQ21-013S

This is an EXTERNAL email that was NOT sent from Dominion Energy. Are you expecting this message? Are you expecting a link or attachment? DO NOT click links or open attachments until you verify them

The proposal from Dominion is reasonable and we consider it acceptable.

Best Regards,

Arlene Fields Warren

GIS Program Support Technician

Office of Drinking Water

Virginia Department of Health

109 Governor Street

Richmond, VA 23219

(804) 864-7781

On Thu, Jun 17, 2021 at 4:33 PM Rachel.M.Studebaker@dominionenergy.com <Rachel.M.Studebaker@dominionenergy.com> wrote:

Hello Ms. Warren,

I am reaching out in regard to the DEQ Report for SCC Case No. PUR-2021-00010/DEQ21-013S (230 kV lines #2113 and #2154 Transmission Line Rebuilds and Related Projects). As part of the VDH ODW review, it was recommended that all wells within a 1,000-foot radius of the project site be field marked and protected from accidental damage. It is our custom construction process to not conduct any work outside of the existing right-of-way (ROW), with the exception of entry using existing access roads, and use DEQ approved erosion and sediment controls. These well are located outside of the project area ROW on private land and Dominion Energy does not have permission to enter private property to field mark the wells.

Therefore, we are proposing to plot and call out the wells on the Erosion and Sediment control plans as a way of flagging them for the construction team for protection from accidental damage. Is this a sufficient approach to comply with the ODW recommendation?

Thank you,

Rachel Studebaker

Environmental Specialist II

Dominion Energy Services

120 Tredegar Street, Richmond, VA 23219

Office: (804) 273-4086

Cell: (804) 217-1847

#

From: Warren, Arlene (VDH) <Arlene.Warren@vdh.virginia.gov>
Sent: Tuesday, November 14, 2023 7:29 AM
To: James P Young (Services - 6) <james.p.young@dominionenergy.com>
Cc: Environmental Impact Review (DEQ) <eir@deq.virginia.gov>
Subject: [EXTERNAL] RE: Proposed 230 kV Germanna Lines and Germanna Substation Project - Culpeper County, VA - CPCN agency Notification

Project Name: Proposed 230 kV Germanna Lines and Germanna Substation
Project #: **N/A**
UPC #: N/A
Location: Culpeper County

VDH – Office of Drinking Water has reviewed the above project. Below are our comments as they relate to proximity to **public drinking water sources** (groundwater wells, springs and surface water intakes). Potential impacts to public water distribution systems or sanitary sewage collection systems **must be verified by the local utility.**

The following public groundwater wells are located within a 1-mile radius of the project site:

PWS ID Number	City/County	System Name	Facility Name
6047705	CULPEPER COUNTY	D-22 WATERWORKS	WELL 4 (BY CL2 BLDG)
6047705	CULPEPER COUNTY	D-22 WATERWORKS	WELL 8 (IN FIELD NEAR CARRICO MILLS RD)
6047014	CULPEPER COUNTY	BELL NURSERY - CULPEPER	WELL 3

There are no surface water intakes located within a 5-mile radius of the project site.

The project is within the watershed of the following public surface water sources:

PWS ID Number	System Name	Facility Name
6179100	STAFFORD COUNTY UTILITIES	RAPPAHANNOCK RIVER TRANSFER INTAKE
6177300	SPOTSYLVANIA COUNTY UTILITIES	RAPPAHANNOCK RIVER INTAKE
6137999	WILDERNESS WTP	RAPIDAN RIVER INTAKE

Best Management Practices should be employed, including Erosion & Sedimentation Controls and Spill Prevention Controls & Countermeasures on the project site.

Materials should be managed while on site and during transport to prevent impacts to nearby surface water.

The Virginia Department of Health – Office of Drinking Water appreciates the opportunity to provide comments. If you have any questions, please let me know.

Best Regards,

Arlene F. Warren
GIS Program Support Technician
Mobile 804-389-2167 (office/cell/text)
Email arlene.warren@vdh.virginia.gov
VDH, Office of Drinking Water
109 Governor Street, 6th Floor
Richmond, VA 23219

From: james.p.young@dominionenergy.com <james.p.young@dominionenergy.com>
Sent: Thursday, October 19, 2023 8:45 PM
To: Rayfield, Bettina (DEQ) <bettina.rayfield@deq.virginia.gov>; Hypes, Rene (DCR) <Rene.Hypes@dcr.virginia.gov>; DCR-PRR Environmental Review (DCR) <envreview@dcr.virginia.gov>; Kirchen, Roger (DHR) <roger.kirchen@dhr.virginia.gov>; Martin, Amy (DWR) <Amy.Martin@dwr.virginia.gov>; keith.r.goodwin@usace.army.mil; Didier, Karl (Virginia) <karl.didier@dof.virginia.gov>; MRC - Scoping (MRC) <scoping@mrc.virginia.gov>; Troy Andersen <troy_andersen@fws.gov>; Birge, Tiffany (MRC) <Tiffany.Birge@mrc.virginia.gov>; Tignor, Keith (VDACS) <keith.tignor@vdacs.virginia.gov>; Warren, Arlene (VDH) <Arlene.Warren@vdh.virginia.gov>
Cc: ahaynes@mcguirewoods.com; jvalaika@mcguirewoods.com; Stacey.T.Ellis@dominionenergy.com; jake.rosenberg@erm.com; mariah.weitzenkamp@erm.com
Subject: Proposed 230 kV Germanna Lines and Germanna Substation Project - Culpeper County, VA - CPCN agency Notification
Importance: High

Good Evening,

Please see the attached agency notification, associated project location map, and shapefiles for the Dominion Energy Virginia's Proposed 230 kV Germanna Lines and Germanna Substation Project - Culpeper County, VA - CPCN agency Notification.

If you have any questions or need additional information, please feel free to contact me.

Thank you and appreciate your time and review

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