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

Before the State Corporation Commission of Virginia

Fentress-Yadkin 500 kV Line #588 Rebuild and New 500 kV Fentress-Yadkin Line #5005

Application No. 336

Case No. PUR-2024-00105

Filed: June 13, 2024

Volume 2 of 2

BEFORE THE
STATE CORPORATION COMMISSION
OF VIRGINIA

APPLICATION OF
VIRGINIA ELECTRIC AND POWER COMPANY
FOR APPROVAL OF ELECTRIC TRANSMISSION FACILITIES

Fentress-Yadkin 500 kV Line #588 Rebuild and New 500 kV Fentress-Yadkin Line #5005

Application No. 336

DEQ Supplement

Case No. PUR-2024-00105

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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 Fentress-Yadkin 500 kV Line #588 Rebuild and New 500 kV Fentress-Yadkin Line #5005 (the "Project") by DEQ and other relevant agencies.

1. Project Description

In order to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, and to help reliably and successfully integrate the Coastal Virginia Offshore Wind Commercial Project ("CVOW project" or "CVOW") with the Company's Transmission System as requested by Dominion Energy Virginia's Generation Construction Group ("Dominion Generation" or the "Customer"), the Company proposes in the City of Chesapeake, Virginia, predominantly within existing rights-of-way, to:

(i) Rebuild the Company's existing overhead single circuit 500 kV Fentress-Yadkin Line #588 to address the condition of Line #588, which is approaching its end of service life. Specifically, as proposed, rebuild the approximately 13.5-mile-long Line #588, which currently is supported primarily by single circuit 500 kV weathering steel (COR-TEN®) lattice structures, with primarily single circuit 500 kV dulled galvanized steel monopole structures entirely within the existing right-of-way, which is currently maintained at 150 feet wide,[1] or on Company-owned property. Additionally, replace the existing three-phase twin-bundled 2500 Aluminum Conductor Alloy Reinforced ("ACAR") conductors with three-phase triple-bundled 1351.5 Aluminum Conductor Steel Reinforced ("ACSR") conductors with a summer transfer capability of 4,357 MVA for the entire 13.5 miles. Collectively, this work is referred to as the Line #588 Rebuild.

(ii) Construct a new overhead single circuit 500 kV transmission line originating at the Company's existing Fentress Substation and continuing approximately 13.5 miles to terminate at the existing Yadkin Substation, resulting in 500 kV Fentress-Yadkin Line #5005. Specifically, as proposed, the new Line #5005 will be installed with the rebuilt Line #588 entirely within the existing right-of-way, which is currently maintained at 150 feet wide, or on Company-owned property, supported primarily by single circuit 500 kV dulled galvanized steel monopole structures. Additionally, the proposed Line #5005 will utilize three-phase triple-bundled 1351.5 ACSR conductors with a summer transfer capability of 4,357 MVA. Collectively, this work is referred to as the proposed Line #5005.

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[1] For approximately 5.7 miles from the existing Fentress Substation to Structure #588/223, the existing Line #588 right-of-way is 235 feet wide. For the remaining 7.8 miles to the existing Yadkin Substation, the existing Line #588 right-of-way is 150 feet wide. The entire 13.5-mile existing transmission corridor containing Line #588 currently is cleared and maintained at 150 feet wide. As proposed, the Project is not anticipated to require clearing of any of the additional 85 feet of existing right-of-way for the rebuilt Line #588 or for the proposed new Line #5005, as described herein. *But see*, Section I.F of the Appendix as to a Constraint Design Segment that would utilize the entire 235-foot-wide existing right-of-way for approximately 1.6 miles of the 13.5-mile right-of-way corridor, as defined and discussed therein.

(iii) Perform substation-related work at the Company's existing Fentress Substation and Yadkin Substation.

The Line #588 Rebuild, the proposed Fentress-Yadkin Line #5005, and the substation-related work at the Fentress and Yadkin Substations are collectively referred to as the "Project."

The Project to optimize the existing 13.5-mile transmission corridor is necessary to address the condition of Line #588, which is approaching its end of life, and to help resolve identified NERC Reliability Standard contingency conditions related to CVOW integrating with the transmission system with the addition of new Line #5005, thereby allowing the Company to maintain the structural integrity and reliability of the transmission system.

The total length of the existing right-of-way, which is currently maintained at 150 feet in width, and Company-owned property to be used for the Project, as proposed, is approximately 13.5 miles (the "Proposed Route"). Because the existing right-of-way and Company-owned property are adequate for the proposed Project, no new right-of-way is required. Given the availability of existing right-of-way and the statutory preference given to the use of existing right-of-way, and because additional costs and environmental impacts would be associated with the acquisition of and construction on new right-of-way, the Company did not consider any alternate routes requiring new right-of-way for the Project. Instead, the Company presents the Proposed Route for the Commission's consideration and notice.

Proposed Route

The Proposed Route for rebuilt Line #588 and proposed Line #5005 begins at the Fentress Substation located east of Fentress Loop and west of Chesapeake & Albemarle Railroad. The Proposed Route exits the Fentress Substation within the existing right-of-way corridor, which is currently cleared and maintained at a width of 150 feet. The Proposed Route then crosses Fentress Loop and continues west through the Etheridge Woods, Brandermill, and Etheridge Meadows developments. It then crosses Chesapeake Expressway/Route 168. From there, the Proposed Route continues southwest, crossing Battlefield Boulevard, Hanbury Road, and Johnstown Road. The Proposed Route then turns northwest and continues towards the Great Dismal Swamp National Wildlife Refuge, passing north of Chesapeake Regional Airport and crossing Route 17/Dominion Boulevard and Deep Creek Park. The Proposed Route next crosses the Deep Creek Canal/Intracoastal Waterway and passes northeast of the Great Dismal Swamp National Wildlife Refuge before crossing the Culpepper Landing and Elmwood Landing developments. From here, the Proposed Route generally trends north before terminating at the existing Yadkin Substation, located on Yadkin Road north and east of Interstate 64 and south of Norfolk Southern Railroad.

Structure Design

Proposed Project

For construction of the Line #588 Rebuild and proposed Line #5005, the Company plans to remove all the existing single circuit 500 kV structures supporting Line #588 from Structure #588/186A to Structure #588/254, which are primarily weathering steel (COR-TEN®) lattice structures. As proposed in Section I.A of the Appendix, the Company plans to replace the removed structures with two side-by-side single circuit 500 kV structures, which primarily will be dulled galvanized steel monopole structures, in order to support the rebuilt Line #588 and proposed Line #5005 for approximately 13.5 miles entirely within the existing right-of-way, which is currently maintained at 150 feet wide, or on Company-owned property.

Additionally, the Line #588 Rebuild includes replacing the existing three-phase twin-bundled 2500 ACAR conductors with three-phase triple-bundled 1351.5 ACSR conductors. The existing Line #588 2500 ACAR conductors have a normal/emergency transfer capability of 3,426 MVA. The proposed Line #588 1351.5 ACSR conductors have a normal/emergency transfer capability of 4,357 MVA.

Constraint Design Segment

The Company currently is coordinating with landowners along an approximately 1.6-mile segment of the existing Line #588 right-of-way corridor where there are easement constraints limiting the heights of the proposed Line #588 and Line #5005 structures to 150 feet. In the event the Company is unable to successfully remove these constraints, the Company has identified a limited structure design segment option solely for this approximately 1.6-mile segment of the existing transmission right-of-way corridor ("Constraint Design Segment"). Specifically, if necessary, the Company would replace the removed Line #588 structures within the approximately 1.6-mile Constraint Design Segment with two side-by-side single circuit 500 kV dulled galvanized steel monopoles in a delta configuration (*i.e.*, arms on both sides of the structures). The structures within the Constraint Design Segment that would be replaced with monopoles in a delta configuration are existing Structure #588/240 through existing Structure #588/249.[2] The same conductors as proposed for the Project would be utilized along this segment.

While a delta configuration would maintain the structures' heights within the existing easement limitations along this approximately 1.6-mile segment, the Constraint Design Segment will require clearing and utilization of the entire 235-foot-width of the

[2] To be clear, the Constraint Design Segment begins mid-span between Structures #588/239 and #588/240 and then ends mid-span between Structures #588/249 and #588/250. However, only Structures #588/240-249 would be replaced with monopoles in a delta configuration under the Constraint Design Segment.

Company's existing right-of-way, which is currently maintained at 150 feet.[3] This would require approximately 8.8 acres of additional tree clearing compared to the proposed Project.

The Constraint Design Segment is in an area characterized by residential development. In order to accommodate the delta configured monopoles, the centerline of the Constraint Design Segment will shift within the existing 235-foot-wide right-of-way approximately 40 feet to the north, bringing proposed Line #588 closer to residences, compared to the Proposed Route, which uses the maintained 150-foot-wide right-of-way. This shift increases the number of dwellings within 500 feet of the centerline by 27, within 250 feet by 22, and within 100 feet by 5.

Due to the additional tree clearing and increased proximity to residences that will result from the Constraint Design Segment compared to the proposed Project along the same 1.6-mile segment, the Company supports the Project as proposed, and has identified this design option solely in the event the Company is unable to remove the easement constraints along this segment of the Company's existing right-of-way corridor. To the extent the Company is able to remove the constraints from all or a significant portion of this 1.6-mile segment, the Company will withdraw or submit a revised[4] Constraint Design Segment at the appropriate time. See Section I.F of the Appendix for additional details regarding the Constraint Design Segment.

Discussion and Analysis of Impacts

For purposes of the discussion and analysis of impacts in this DEQ Supplement, please note the following:

- The "Proposed Route" for the proposed Project is approximately 13.5 miles and is entirely within the existing right-of-way, which is currently maintained at 150 feet in width,[5] and Company-owned property to be used for the Project, as proposed.

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[3] As noted previously, for approximately 5.6 miles from the existing Fentress Substation to Structure #588/223, the existing Line #588 right-of-way is 235 feet wide, but is only cleared and maintained at 150 feet. The Constraint Design Segment, which is within the 5.6-mile segment of the Company's existing 235-foot-wide right-of-way, would require clearing of an additional 85 feet of the Company's existing right-of-way for construction, operation, and maintenance of the Constraint Design Segment. To be clear, the Project *as proposed* would not require clearing of the additional 85 feet of existing right-of-way. *See supra*, n. 1.

[4] For example, if constraints were removed from a contiguous 1.0-mile portion of the Constraint Design Segment, the Company would submit an updated map similar to Appendix Attachment I.F.1 that would identify the approximately 0.6-mile Constraint Design Segment.

[5] *See supra*, n. 1; *see also* Section I.F of the Appendix. While the approximately 1.6-mile Constraint Design Segment would utilize an additional 85 feet of right-of-way (235 feet total) in order to install a limited structure design segment option, as defined and discussed in Section I.F of the Appendix, it is important to note that the existing right-of-way in that 1.6-mile segment (235 feet) is adequate.

- The "Constraint Design Segment" refers to the 1.6-mile segment of the Proposed Route where the Company may be required to expand the width of its maintained right-of-way an additional 85 feet within the existing right-of-way for a total of existing 235 feet for that 1.6-mile segment. Where applicable, the incremental additional impacts associated with the Constraint Design Segment are noted herein.
- Note that the length and route of the Proposed Route is the same whether the 1.6-mile Constraint Design Segment is used or not. Additionally, note that regardless, the entirety of the Constraint Design Segment is within the Company's existing right-of-way. See Attachment II.A.2 to the Appendix.

2. Environmental Analysis

The Company solicited comments from relevant state and local agencies about the proposed Project in letters sent on May 14, 2024. Copies of the May 14, 2024 letters are included as Attachment 2.[6]

A. Air Quality

The Company will control fugitive dust during construction of the Project in accordance with DEQ regulations. During construction, if the weather is dry for an extended period of time, 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 below in Section 2.H. 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.

The existing transmission right-of-way corridor is currently maintained at 150 feet for the operation of Line #588. Tree clearing is required for the Proposed Route on existing Company easements to accommodate the Line #5005 exit from Fentress Substation, as well as for the Constraint Design Segment, as further described in Section 2.L, and some trimming of tree limbs along the right-of-way edges may also be required to support construction activities or danger tree removal. The Company does not expect to burn cleared material, but, if necessary, the Company will coordinate with the responsible locality to obtain permits, comply with any conditions set forth by the locality, or take actions as otherwise set forth in the Company's right-of-way easements. The Company's tree clearing methods are described in Section 2.L.

[6] The May 14, 2024 letters were sent to the list of agencies identified in Section V.C of the Appendix.

B. Water Source

No water source is required for transmission lines. This discussion focuses on waterbodies that will be crossed by the proposed transmission lines.

The proposed Project is located within the Hampton Roads and Albemarle watersheds, Hydrologic Unit Codes 02080208 and 03010205 respectively. According to the United States Geological Survey ("USGS") topographic quadrangles (Norfolk South [2022], Deep Creek [2022] and Fentress, Virginia), the existing transmission line corridor crosses Deep Creek, Dismal Swamp Canal/Intracoastal Waterway, New Mill Creek, Poplar Branch Ditch, and Coopers Ditch.

During detailed engineering, the Company will aim to span these waterbodies with no foundations being located below ordinary high water or mean high water marks, if possible. Any clearing, if required, in the vicinity of streams will be performed by hand within 100 feet of both sides, and vegetation less than three inches in diameter will be left undisturbed.

The Company solicited comments from the Virginia Marine Resources Commission ("VMRC") regarding the proposed Project on May 14, 2024. If necessary, a Joint Permit Application will be submitted for review by the VMRC, DEQ, and the United States Army Corps of Engineers (the "Corps") to authorize jurisdictional crossings and for any impacts to jurisdictional features. See Section 2.D below.

C. Discharge of Cooling Waters

No discharge of cooling waters is associated with the Project.

D. Tidal and Non-tidal Wetlands

On behalf of the Company, C2 Environmental, Inc. ("C2E") conducted a wetland desktop review to identify potential wetlands, streams and other waters of the United States ("WOTUS") crossed by the Proposed Route and Constraint Design Segment. Sources for this desktop review include the United States Fish and Wildlife Service ("USFWS") National Wetland Inventory, the U.S. Department of Agriculture-Natural Resources Conservation Service Soil Survey data, USGS topographic maps and digital elevation model data, Virginia Geographic Information Network ortho-rectified natural color and infrared images, Federal Emergency Management Agency ("FEMA") 100-year floodplain maps, and historic aerial imagery (Google Earth). A copy of the Wetland Desktop Review is included in Attachment 2.D.1.

Total jurisdictional resources crossed by the Proposed Route and Constraint Design Segment, as estimated using desktop resources, are summarized in the table below and depicted in Attachment 2.D.1.

Table D-1. Results of Desktop Wetland Review

Proposed Route Summary				
	Low	**Medium**	**High**	**Total**
E2EM/E2SS Wetlands	-	-	1.2 AC	1.2 AC
PEM/PSS Wetlands	0.5 AC	21.2 AC	25.2 AC	46.9 AC
PFO Wetlands	-	-	0.7 AC	0.7 AC
Tidal Stream Channel	-	-	-	4.2 AC (3,220 LF)
Non-tidal Stream Channel	-	-	-	1.5 AC (6,222 LF)
Jurisdictional Ditch	-	-	-	2.1 AC (21,892 LF)
Open Water	-	-	-	27.9 AC
Constraint Design Segment Summary				
PEM/PSS Wetlands	-	-	1,577 SF	0.4 AC
PFO Wetlands	0.3 AC	0.2 AC	-	0.5 AC
Tidal Stream Channel	-	-	-	1.6 AC (1,548 LF)
Non-tidal Stream Channel	-	-	-	536 SF (154 LF)
Jurisdictional Ditch	-	-	-	923 SF (231 LF)
Open Water	-	-	-	0.2 AC

Prior to construction, the Company will delineate wetlands and other WOTUS using the *Routine Determination Method*, as outlined in the *1987 Corps of Engineers Wetland Delineation Manual* and methods described in the *2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region* (Version 2.0). The Company will obtain all necessary permits for activities that will impact jurisdictional resources.

The Company solicited comments from the DEQ Office of Wetlands and Stream Protection ("OWSP") on May 14, 2024. The Company received a response from DEQ-OWSP on June 10, 2024, and that response is included as Attachment 2.D.2.

E. Floodplains

As depicted on the FEMA online Flood Insurance Rate Maps #5100340022D, #5100340047D, #5100340034D, #5100340048D, #5100340049D, #5100340050D, #5100340063D, #5100340064D, #5100340051D, and #5100340052D (effective date 12/16/2014), the Project area lies within Zone X, areas of minimal flood hazard, and Zone AE, base flood elevation and 100-year floodplain. The Company will coordinate with the local floodplain administrator as required.

F. Solid and Hazardous Waste

Environmentally regulated sites that use and/or store hazardous materials or waste-producing facilities operating under regulatory permits in the vicinity of the Proposed

Route and Constraint Design Segment have been identified using publicly available GIS databases obtained from the United States Environmental Protection Agency ("EPA") and the DEQ. These databases provide information about a variety of facilities, sites, or places subject to environmental regulation or of environmental interest, including 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; Pollution Response Programs ("PREP" 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.

Sites regulated by the EPA under the Clean Air Act ("CAA") Compliance Monitoring Program, Toxic Release Inventory ("TRI"), National Pollutant Discharge Elimination System ("NPDES") and RCRA, and sites regulated by the DEQ under the Air, Solid Waste, Virginia Pollutant Discharge Elimination System ("VPDES"), Voluntary Response Program ("VRP"), and Registered Petroleum Tank Facilities programs not associated with a petroleum leak, site assessment, remediation, corrective action or emergency response case are anticipated to have no effect on, and will not be affected by, the Proposed Route or Constraint Design Segment. These sites are not discussed further.

Sites within 0.5 mile of the Proposed Route and Constraint Design Segment regulated by the EPA as Superfund, Brownfield, and RCRA, and regulated by the DEQ, including Petroleum Release, VRP, and PREP sites were evaluated for potential impacts, as summarized in Table F-1. The locations of the sites are depicted in Attachment 2.F.1.

Based on the EPA's "Cleanups in My Community" database, no Brownfield or Superfund sites are located within 0.5 mile of the Proposed Route or Constraint Design Segment. Further, based on a review of DEQ Petroleum Release, VRP, and PREP databases, no VPR sites were located within the 0.5-mile search radius. Seventeen PREP sites were identified within the search radius, all of which were identified as closed. None of the PREP sites were crossed by the Proposed Route or Constraint Design Segment, and therefore, they are not expected to impact the proposed Project. Twenty-nine petroleum release sites were identified within the 0.5-mile search radius, all of which were identified by the DEQ as closed.[7] The nearest site (PC Number: 20185247) to the Project area is approximately 156 feet away from the Project centerline. The 29 petroleum release sites are summarized in Table F-1, and the locations of the sites are depicted in Attachment 2.F.1.

[7] Note that there are 29 petroleum release sites within 0.5 mile of the Project as proposed and the Constraint Design Segment (combined). There are 28 petroleum release sites within 0.5 mile of the Project as proposed (*i.e.*, excluding the Constraint Design Segment).

Table F-1. Petroleum release sites identified by DEQ within 0.5-mile of the Proposed Route

Site Name	PC Number	Release Date	Distance to Proposed Route Centerline (FT)
Elam Organization LLC Property	20185247	2018-05-07	156
MSH Homes Inc Property	20225149	2022-02-02	248
Lashbrook Mike and Sandra Residence	20215116	2020-12-10	355
Huddleston Residence	20135089	2013-02-27	887
Johnstown Estates Property (Former Huddleston Residence)	20155208	2015-04-10	889
Poe Doris C Residence	20165245	2016-05-26	1071
Gibson Residence	20155226	2015-05-04	1127
Duckworth Charlene L Et Als Property	20235130	2023-04-05	1130
Sandstone Quay LLC Property	20195122	2018-12-17	1167
Peoples Esther Residence	20215239	2021-05-06	1254
Weldon Jarrell S Residence	20035104	2003-03-04	1339
Cassell Ernestine Residence	20105089	2009-12-10	1484
Gregory Shelby Residence	20225036	2021-08-16	1544
GSB Auto Auctions	20005211	2000-05-03	1600
Tukiendorf Edward and Denise Property	20205158	2020-02-27	1648
Waste Management of Hampton Road	19910846	1990-12-13	1732
Ashley Residence	20145186	2014-04-28	1739
DW LAND LLC Property	20245053	2023-09-20	1789
Winslow Residence	20155172	2015-02-24	1803
Mahoney Robert and Diane Property	20235165	2023-06-21	1997
Chaplins Corner General Store	20055053	2004-08-30	2080
Fusch Property	20145199	2014-05-16	2085
Miller Residence	19952259	1994-10-11	2114
Biemiller Property	20175270	2017-05-12	2126
Old Dominion Container Repair Incorporated	20075007	2006-07-25	2177
BP Amoco Station - 1040 S Battlefield Boulevard	20025101	2002-06-17	2208
Jastrubo Residence	20175256	2017-05-01	2489
Vance Darren and Mariela Property	20185187	2018-03-01	2498
*Bruno Property	20185117	2017-11-28	2625

*Note: PC Number 20185117 is included if the Company moves forward with the Constraint Design Segment.

EPA Regulated Sites

No CERCLA/Superfund or Brownfield sites were identified within the 0.5-mile search radius for the Proposed Route or the Constraint Design Segment. No RCRA sites are crossed and, as such, are not anticipated to impact nor be impacted by the Proposed Route or the Constraint Design Segment.

DEQ Regulated Sites

None of the solid waste permits found were listed as Active and none of the petroleum release sites were listed as Open within the 0.5-mile search radius from the Proposed Route or the Constraint Design Segment. One additional petroleum release site, PC: 20185117 (see Table F-1), is located within the search radius of the Constraint Design Segment; however, the DEQ has listed the site as Closed.

EPA and DEQ Regulated Sites within 200 feet

One petroleum release site (PC: 20185247) is located within 200 feet of the Proposed Route. However, DEQ has listed the site as Closed. Other EPA and DEQ regulated sites fall outside of 200 feet.

Based on C2E's review, there would not be any incremental impacts associated with the Constraint Design Segment in regards to EPA regulated sites, and the impacts associated with the DEQ regulated sites for the Constraint Design Segment are substantially similar to the impacts associated with the Proposed Route.

Summary

In summary, all of the Petroleum Release cases within close proximity to the Proposed Route and Constraint Design Segment have been closed by the DEQ. The DEQ deems a petroleum release closed once there is no further risk to the general public, although petroleum residue might remain. The DEQ's risk assessments do not always consider the risk associated with temporary excavations and construction. Although the Project involves construction of overhead lines, some subsurface work is required during installation of the proposed structures. This disturbance occurs at discrete locations along the route, with temporary spoils contained as they are generated. The Company has a procedure in place to safely identify, manage, and dispose of any suspected hazardous or contaminated media encountered during construction. If contaminated soil or groundwater are identified, the associated regulatory agency will be coordinated with and the soils disposed of in accordance with applicable regulations. Therefore, the Company believes that no further evaluation of the petroleum release sites is warranted.

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. This is 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, C2E conducted online database searches to identify federal- and state-listed threatened and endangered species that may occur in the vicinity of the Proposed Route and Constraint Design Segment, including the Virginia Department of Conservation and Recreation ("DCR") Natural Heritage Data Explorer ("NHDE"). The NHDE includes Conservation Sites, Stream Conservation Units ("SCUs"), General Location Areas for Natural Heritage Resources, and Ecological Cores. C2E also searched 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 vicinity. The identified federal- and state-listed threatened and endangered species within the vicinity are presented in Table G-1 below, and the individual search results are included as Attachment 2.G.1.

Searches of the above referenced databases identified multiple federal- and state-listed threatened and endangered species potentially occurring in the vicinity of the Project (see Table G-1). The federally listed species include the Northern long-eared bat ("NLEB") (*Myotis septentrionalis*) and West Indian manatee (*Trichechus manatus*); both of which are also listed at the state level. Five state-listed species were identified and confirmed by VAFWIS as occurring within a 2-mile radius of the Proposed Route, including the Tricolored bat (*Perimyotis subflavus*) (or "TCB"), Rafinesque's eastern big-eared bat (*Corynorhinus rafinesquii macrotis*), Canebrake rattlesnake (*Crotalus horridus),* Peregrine falcon (*Falco peregrinus*), and Raven's seedbox (*Ludwigia ravenii*). The federal listing of the Tricolored bat has been proposed but the species has not been officially listed.

To obtain the most current eagle nest data, C2E 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. The CCB mapping portal did not identify any bald eagle or osprey nests within 660 feet of the Proposed Route or Constraint Design Segment. Further, according to the USFWS Bald Eagle Concentration Area Map, the proposed Project is not located within a designated Eagle Concentration Area.

Based on queries of the above referenced sources, the following federal- and/or state-listed threatened and endangered species have the potential to occur within the vicinity of the Proposed Route or Constraint Design Segment (Table G-1).

Table G-1. Potential Federal- and State-Listed Species in the vicinity of the Proposed Route and Constraint Design Segment

Species (*Scientific Name*)	Status	Database	Habitat	Results
Northern long-eared bat *(Myotis septentrionalis)*	FE, ST	USFWS IPaC DWR 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.	Potential year-round habitat may be present but no hibernacula or known maternity roost trees identified within 0.5 mile.
Tricolored bat *(Perimyotis subflavus)*	FPE, SE	USFWS IPaC, DWR VAFWIS, DCR NHDE	Typically roost in trees near forest edges during summer. Hibernate deep in caves or mines in areas with warm, stable temperatures during winter.	Summer foraging habitat may be present, but no hibernacula or roost trees identified within 0.5 mile.
West Indian Manatee *(Trichechus manatus)*	FT, SE	DWR VAFWIS	Habitat includes shallow coastal waters, estuaries, bays, rivers, and lakes; throughout most of the range, manatees appear to prefer rivers and estuaries over marine habitats	Species documented within 2 miles of the Project; however, no in-stream work is planned. No impacts are anticipated.
Rafinesque's eastern big-eared bat *(Corynorhinus rafinesquii macrotis)*	SE	DWR VAFWIS, DCR NHDE	Typically roost in cave entrances, hollow trees, abandoned buildings, and under bridges. Preferred summer and winter habitat includes bottomland hardwoods and swamps in the Coastal Plain	Year-round habitat for this species may be present and the species has been documented within 2 miles of the Project.

Species (*Scientific Name*)	Status	Database	Habitat	Results
Canebrake Rattlesnake *(Crotalus horridus)*	SE	DWR VAFWIS, DCR NHDE	Generally associated with mature hardwood forests, mixed hardwood-pine forests, cane thickets, and in the ridges and glades of swampy areas. Areas with numerous logs, significant leaf litter and humus also provide suitable habitat. This species has also been known to occupy disturbed areas, such as farm fields and cut-overs	Species documented within the project vicinity and suitable habitat may be present.
Peregrine Falcon *(Falco peregrinus)*	ST	DWR VAFWIS	Nest on cliffs, bluffs, talus slopes, old tree hollows, and abandoned nests of other birds of prey.	Species documented within 2 miles of the Project. No impacts to this species are expected given the species nesting habits and the proposed scope of work.
Raven's Seedbox *(Ludwigia ravenii)*	SE	DCR NHDE	Restricted to open, wet, peaty places, such as ditches and the margins of swamps, ponds, and bogs. Species is considered an obligate wetland plant.	Species documented within the project vicinity and suitable habitat may be present.

Federal/State Status: F= Federal, S=State, T=Threatened, E=Endangered, C= Candidate, P=Proposed

The Company requested comments from the USFWS, DWR, and DCR regarding the proposed Project on May 14, 2024 and a Project Review request was submitted to DCR

on March 11, 2024 for the Proposed Route.[8] DCR completed its Project Review, as discussed in detail below, and provided its response on March 26, 2024. See Attachment 2.G.2. The DCR Project Review did not include the Constraint Design Segment.

DCR noted the potential for Eastern big-eared bat (*Corynorhinus rafinesquii macrotis*) to occur in the Project area if suitable habitat exists on site. Threats to this species include tree removal and is currently classified as endangered by DWR. DCR recommends avoiding tree removal in bottomland habitats and assessing large potential roost trees for bat presence/absence. DCR also recommends coordinating with DWR if removal of potential roost habitat for the Eastern big-eared bat becomes necessary to ensure compliance with the Virginia Endangered Species Act. The Company will coordinate with the appropriate agencies, as necessary, should these conditions present.

DCR identified the potential for the Northern long-eared bat (*Myotis septentrionalis*) to occur within the Project area and recommended coordination with the USFWS and DWR due to the legal status of the species. The Company is actively monitoring regulatory changes, requirements, and guidance associated with the NLEB and TCB. The Company will coordinate with the appropriate agencies, as necessary, should tree clearing be required for the proposed Project.

DCR also noted the Project, as proposed in the Project Review, will not affect any documented state-listed plants or insects.

DCR did not identify any Ecological Cores intersected by the Project, as proposed in the Project Review. However, upon review of the DCR NHDE, the Constraint Design Segment may intersect Ecological Core ID: 73737, which is ranked C5 (general ecological integrity), *i.e.*, the lowest ecological value. The DCR defines areas of 100 acres or greater of contiguous natural land cover associated with areas of high ecological value as ecological cores, which provide refuge for thousands of species of animals and plants, in addition to a variety of recreational opportunities and open space resources for the public. Because the quality of ecological cores varies across different landscapes, the DCR evaluates ecological cores using an Ecological Integrity Score that ranks the relative contribution of different ecosystem services, from C5 (General) to C1 (Outstanding).

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

[8] The Project as submitted to DCR for review excluded the Constraint Design Segment but included a small segment of proposed Line #5005 exiting the Fentress Substation on City-owned property. Since submission of the Project to DCR for review, the Company identified a route option that allowed it to continue proposed Line #5005 on existing right-of-way or Company-owned property. The Company understands that the Constraint Design Segment will be reviewed in the context of this Supplement.

heritage information if the scope of the Project changes and/or six months have passed before this information is utilized.[9]

H. Erosion and Sediment Control

The DEQ approved the Company's *Standards & Specification for Erosion & Sediment Control and Stormwater Management for Construction and Maintenance 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 disturbed areas. A copy of the current DEQ approval letter dated February 27, 2024, is provided as Attachment 2.H.1. According to the approval letter, coverage is effective from February 27, 2024, through February 26, 2025.

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

The Company retained Dutton + Associates to conduct a Stage I Pre-Application Analysis ("Stage I Analysis") of potential impacts on cultural resources for the proposed Project in accordance with the Virginia Department of Historic Resources' ("VDHR") *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (Guidelines) (VDHR 2008). A copy of the Stage I Analysis, which was provided to VDHR on June 12, 2024, is included as Attachment 2.I.1. 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 the Project centerline;
- National Register of Historic Places ("NRHP")-listed properties, battlefields, and historic landscapes located within a 1.0-mile radius of the Project centerline;
- NRHP-eligible and -listed properties, NHLs, battlefields, and historic landscapes within a 0.5-mile radius of the Project centerline;
- Qualifying architectural resources and archeological sites located within the right-of-way for each route.

Information and cultural resources within each of these study tiers was obtained from the Virginia Cultural Resources Information Systems ("VCRIS"). Review of the VDHR

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

VCRIS records for archaeological resources identified four previously recorded sites within or crossed by the Proposed Route,[10] summarized in Table I-1 below.

Site 44CS0033 is a Prehistoric site from 15000 B.C. to 1606 A.D. The site was initially recorded in 1979 based on information provided to the VDHR by a local informant who has collected surface materials from the site. Based upon recent aerial photography, much of the site is now occupied by a large manmade pond and the rest of the site is developed with suburban residential homes. Based on the boundaries of the site as mapped in VCRIS, the site is crossed by the proposed Project with one existing structure just outside the boundary and one proposed structure just inside.

Site 44CS0267 is a canal initially recorded in 2000 and is the archaeological identifier for VDHR #131-0051. The site stretches roughly 4.5 miles through primarily rural, and agricultural areas with several modern road crossings. Based on recent aerial photography, several of the road crossings have likely been impacted by realignment and culverts, however, much of the rest of the alignment through files appears less disturbed. Based on the boundaries of the site as mapped in VCRIS, the site is crossed by the proposed Project, with the nearest structure roughly 250 feet away.

Site 44CS0294 is a trash scatter initially identified in 2010 as part of a survey for a municipal park. The site was identified based upon surface collection and shovel testing. Due to a lack of stratigraphic integrity and the absence of dateable cultural layers or features coupled with the recent date of the artifacts, the site was recommended not eligible for listing in the NRHP and was concurred with by the VDHR. Based upon the boundaries of the site as mapped in VCRIS, the site is crossed by the proposed Project. The nearest structures to be replaced as part of the proposed Project are roughly 400 feet away.

Site 44CS0295 is a railroad bed initially identified as part of a survey for a municipal park. A portion of the linear site was identified in the field while other portions were based upon map projection. It was noted that intact portions warrant further investigation to assess integrity and eligibility, and the VDHR subsequently noted that the site is potentially NRHP-eligible as a contributing component to the Dismal Swamp Canal (VDHR #131-0035). Based upon the boundaries of the site as mapped in VCRIS, the site is crossed by the proposed Project. The nearest structures to be replaced as part of the proposed Project are roughly 300 feet away.

[10] Project right-of-way, as proposed, excludes the Constraint Design Segment.

Table I-1. Previously Recorded Archaeological Resources Considered in the Stage 1 Analysis

VDHR#	Site Name/Description	NRHP Status
44CS0033	No Data	Not Evaluated
44CS0267	Canal	Not Evaluated
44CS0294	Trash Scatter	DHR Staff: Not Eligible
44CS0295	Railroad Bed	DHR Staff: Eligible

Dismal Swamp Canal (VDHR #131-0035) – The Dismal Swamp Canal stretches for 22 miles from Deep Creek in Chesapeake, Virginia to South Mills in Camden, North Carolina. The Dismal Swamp Canal was listed in the NRHP in 1988 due to its role as the key transportation artery between southeast Virginia and northeast North Carolina during the nineteenth century, one of the nation's earliest canals, a major waterway for recreational watercraft and activities, and one of the primary routes for carrying wood products out of the Great Dismal Swamp during the nineteenth century.

Herring Canal (VDHR #131-0051) – Herring Canal, or Ditch, began as a mill race and subsequently was extended and enlarged to carry produce and timber from the farms that bordered it. Herring Ditch was one of many small canals and waterways constructed after 1800 that were associated with the Dismal Swamp Canal. Although the subject property is no longer maintained as a transportation route, part of its length is maintained by the City of Chesapeake for purposes of stormwater management. The Herring Canal was determined by the VDHR to be potentially eligible for listing in the NRHP in 2000.

Centerville-Fentress Historic District (VDHR #131-5071) – The Centreville-Fentress Historic District is centered on the site of the Centreville Station of the Norfolk-Southern Railroad. The Centreville-Fentress Historic District is a good example of a late-nineteenth- and early-twentieth-century village and agricultural community. Norfolk County was a leading truck farm county during this period, and the proposed district reflects the contributions of trucking to the growth, development, and character of the agricultural belt of Norfolk County, now the city of Chesapeake, Virginia. As such, the district was listed in the NRHP in 2003.

Lindsay Canal (VDHR #131-5076) – The Lindsay Canal is named for Ambrose Harvey Lindsay, who was known as one of the most successful farmers in Norfolk County in the early-twentieth century. Lindsay constructed the canal to haul products and material from his vast farm to his Portsmouth company location and for agricultural drainage. The canal connected the farm by water to the Dismal Swamp Canal via the Herring Ditch. At this time, the canal is no longer used for transportation, but continues to serve a drainage purpose. The canal was determined potentially eligible for listing in the NRHP by the VDHR in 2008.

Portsmouth Ditch (VDHR #131-5833) – The Portsmouth Ditch is one of the longest and earliest ditches excavated in the Great Dismal Swamp. While drainage ditches are a common resource type throughout the Great Dismal Swamp, Portsmouth Ditch conveys a unique and significant associations for its role within the Lake Drummond Canal and Water Company's attempt to extract the area's water. It was therefore determined potentially eligible for listing in the NRHP by the VDHR in 2016.

Table I-2. Previously Recorded Architectural Resources Considered in the Stage 1 Analysis

VDHR #	Resource Name	NRHP-Status	Distance from Project
131-0035	Dismal Swamp Canal	NRHP-Listed	Directly Crossed
131-0051	Herring Canal	NRHP-Eligible	Directly Crossed
131-5071	Centerville-Fentress Historic District	NRHP-Listed	~0.17 Mile
131-5076	Lindsay Canal	NRHP-Eligible	Directly Crossed
131-5833	Portsmouth Ditch	NRHP-Eligible	~0.43 Mile

The Constraint Design Segment proposes shorter structures than the proposed Project. Therefore, the Constraint Design Segment has not been evaluated in the Stage 1, despite additional right-of-way clearing, as the current evaluation of taller structures is more conservative. Any reduction in structure height would help mitigate potential viewshed impacts.

The Company solicited comments from VDHR regarding the proposed Project.

J. Chesapeake Bay Preservation Areas

The City of Chesapeake is a locality subject to the Chesapeake Bay Preservation Act ("CBPA"), which regulates development of lands that could impact water quality in the Chesapeake Bay and its tributaries. Chesapeake Bay Preservation Areas that help maintain water quality are broken into Resource Protection Areas ("RPAs"), including tidal wetlands, tidal waterbodies, perennially flowing streams, wetlands associated with perennially flowing streams, and a 100-foot buffer around them; and Resource Management Areas, land that could degrade water quality or value of RPAs. As such, RPAs are located around perennial waterbodies and associated wetland areas along the Proposed Route and Constraint Design Segment, including Deep Creek, New Mill Creek, other unnamed tributaries, and their associated wetlands.

Construction, installation, operation, and maintenance of electric transmission lines are conditionally exempt from the CBPA 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. In addition, the Company will use Best Management Practices to limit

impacts to RPAs to the minimum extent possible while safely and effectively constructing and maintaining its infrastructure.

K. Wildlife Resources

Relevant agency databases were reviewed and requests for comments from the USFWS, DWR, and DCR were submitted to determine if the 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.

In addition, the Company is actively monitoring regulatory changes and requirements associated with the NLEB and how it could potentially impact construction timing associated with TOYRs. The USFWS has indicated that it plans to issue final NLEB guidance to replace the interim guidance by April 1, 2024; however, the interim guidance has been extended by USFWS until late summer 2024. The Company actively is tracking updates from the USFWS with respect to the final guidance. Once issued, the Company plans to review and follow the final guidance to the extent it applies to the Company's projects. Until the final guidance is issued, the Company will continue following the interim guidance. For projects that may require additional coordination, the Company will coordinate with the USFWS.

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

L. Recreation, Agricultural and Forest Resources

The area crossed by the Project is characterized by low-density residential, agricultural, and business/commercial land use. The Proposed Route is expected to have minimal incremental impacts on recreational, agricultural, and forest resources as the right-of-way is existing.

The Proposed Route crosses Deep Creek Park, which is a City-owned recreational facility largely consisting of sports fields and paved walking trails, some of which are directly crossed. The Proposed Route crosses Etheridge Point green space, which does not appear to have any defined recreational features, and Etheridge Lakes Park, which consists of a playground and forested area. The Constraint Design Segment also crosses Etheridge Point green space and will require clearing approximately 0.3 acre of the existing, unmaintained right-of-way at this location. The Company will coordinate with the City of Chesapeake for impacts to recreation at these locations resulting from temporary

construction activities and from permanent tree clearing associated with the Constraint Design Segment, should the Company pursue that option.

The City of Chesapeake does not contain Agricultural and Forestal Districts within its jurisdiction under Va. Code § 3.2-205 B. Agricultural uses are present within the existing right-of-way and these activities have been occurring within the right-of-way while the existing transmission line has been in operation. The proposed Project may result in temporary impacts to farmland during construction but would otherwise not be expected to impact farmlands and would not alter the agricultural use. U.S. Department of Agriculture ("USDA") National Resource Conservation Service soils data indicate the proposed Project crosses a total of approximately 9.8 acres of prime farmland and approximately 3.9 acres of farmland of statewide importance. The Constraint Design Segment will cross an additional approximately 2.9 acres of prime farmland and no additional farmland of statewide importance.

The Virginia Scenic Rivers Program identifies and designates outstanding scenic, recreational, and historic waterbodies of statewide significance to conserve their natural corridors. There are no designated scenic rivers crossed by the Proposed Route or the Constraint Design Segment.

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 but can be held in perpetuity. No easements of this type are crossed by the Proposed Route or the Constraint Design Segment.

The Proposed Route uses existing right-of-way, which is cleared and maintained at 150 feet for the operation of Line #588, or is located on Company-owned property. Where new line construction is required on Company-owned property for the Line #5005 exit from Fentress Substation, approximately 0.8 acre of tree clearing will be required. Further, routine right-of-way maintenance requires trimming of tree limbs along the right-of-way edges and/or trimming for access roads along the corridor to support construction activities. 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 inspect the rights-of-way within the field and designate any danger trees present. Qualified contractors working in accordance with the Company's Electric Transmission specifications will perform all danger tree cutting. As such, the Project is expected to have minimal impacts on forest resources.

If the Company pursues the 1.6-mile Constraint Design Segment, approximately 8.8 acres of additional tree clearing will be required to expand the maintained width of the existing

right-of-way from 150 feet to the full 235 feet. Beyond the right-of-way limits, tree trimming and danger tree removal will also be required, as described above for the proposed Project.

On May 14, 2024, the Company solicited DCR, VOF, and the Virginia Department of Forestry ("VDOF") for comments on 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 rights-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 the 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, based on a discussion between Company and the DCR Department of Natural Heritage ("DCR-DNH") representatives, the Company reviewed its Integrated Vegetation Management Plan ("IVMP") for application to both woody and herbaceous species based on the species list available on the DCR website. The Company continues to coordinate with DCR-DNH on an addendum to the IVMP to further explain how the Company's operations and maintenance forestry program addresses invasive species. In November 2023, the Company submitted the addendum draft to DCR for review and continued discussions. DCR provided an initial response to the addendum in January 2024. The Company will continue to meet with DCR to further discuss the documentation provided. Once the addendum is finalized, the Company will report on the results of its communications with DCR in future transmission certificate of public convenience and necessity filings.[11]

[11] *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,

N. Geology and Mineral Resources

The Project is located in the Coastal Plain physiographic province of Virginia, whose geology consists of a series of sedimentary rock. Located east of the Piedmont geologic province, this area is characterized by a terraced landscape that stair-steps down towards the Atlantic coast and to the major rivers. C2E reviewed the Virginia Department of Energy ("VDOE") webmaps for Geology Mineral Resources and Mineral Mining, USGS topographic quadrangles, and recent (2023) digital aerial photographs to identify mineral resources in the vicinity of the Project. According to these resources, the area surrounding the Project consists primarily of sand and silt and no active or abandoned mines or quarries were identified within the right-of-way or immediately adjacent to the Project. As such, the Company does not anticipate that the Proposed Route or the Constraint Design Segment will result in negative impacts on the geology or mineral resources.

O. Transportation Infrastructure

Road and Railroad Crossings

No railroads are crossed by the Proposed Route or the Constraint Design Segment.

The existing transmission line corridor extends approximately 13.5 miles from the Company's existing Yadkin Substation to the existing Fentress Substation in City of Chesapeake, Virginia, and features numerous crossings of State- and City-maintained roads, private roads, and driveways. Major road crossings include Battlefield Boulevard/Route 168, Chesapeake Expressway/Route 168, Dominion Boulevard/Route 17, George Washington Highway/Route 17, and Interstate 64. Each road crossing will now consist of two overhead transmission lines, rebuilt Line #588 and new Line #5005. The Constraint Design Segment will not add any additional road crossings.

Temporary closures of roads and or traffic lanes could be required during construction of the Project. The vertical clearance above all road crossings will increase compared to the existing transmission line crossings for both the proposed Project and the Constraint Design Segment. As such, no long-term impacts to roads are anticipated. The Company will comply with the Virginia Department of Transportation ("VDOT") and City of Chesapeake requirements for access to the rights-of-way from public roads. The

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Final Order at 9-11 (Aug. 31, 2022) *(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 (June 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)*.

Company will work with the City of Chesapeake to ensure existing and planned roads and proposed transmission facilities can co-exist.

On May 14, 2024, the Company solicited comments from VDOT on the proposed Project. VDOT responded in an email on May 21, 2024, and confirmed the requirement for a land use permit and traffic control plan. See Attachment 2.O.1. The Company will submit applications for land use permits and traffic control plans to VDOT for the aerial crossings of VDOT-maintained roads and construction entrances from the VDOT right-of-way as needed. These permits will be obtained prior to construction.

Airports

The design of the existing transmission line corridor and proposed structure heights prevent interference with pilots' safe air travel in and out of airports. Such hazards or impediments include interference with navigation, communication equipment, and glare from materials and external lights.

The Company reviewed the FAA's website[12] 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 nautical miles (nm) of the proposed Project. The review identified the following airports:

Airport Name	Approximate Distance and Direction from Proposed Project (nautical miles)	Use
Hampton Roads Executive Airport (PVG)	4.75 NM northwest	Public
Chesapeake Regional Airport (CPK)	1.95 NM southwest	Public
Fentress Naval Auxiliary Landing Field (NEF)	2.66 NM east	Private

The Company engaged ASCA Safety to conduct an analysis to determine if any of the FAA defined Civil Airport Imaginary Surface would be penetrated by structures proposed by the Project. Based on the results of this analysis, it was determined there would be no potential for penetration into any of the imaginary surfaces associated with these airports, and thus there would be no impacts to navigable airspace from the Proposed Route. The Constraint Design Segment was not evaluated since the structure heights are approximately the same or shorter than the Proposed Route. However, new structures along the Proposed Route do penetrate the Notification Surface and as such, the Company will submit an FAA Form 7460-1 pursuant to 14 CFR Part 77 for any structures that meet

[12] *See* https://oeaaa.faa.gov/oeaaa/external/portal.jsp.

the review criteria. 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.

The Company solicited comments from the Virginia Department of Aviation ("DOAv") on May 14, 2024. The DOAv responded via email on May 14, 2024, which stated that a 7460 must be submitted to the Federal Aviation Administration ("FAA") for evaluation. See Attachment 2.O.2. The Company will coordinate with VDOT, DOAv, and the FAA as necessary to obtain all appropriate approvals.

P. Drinking Water Wells

In recent past, Dominion Energy Virginia has received a response from the Virginia Department of Health ("VDH"), Office of Drinking Water ("ODW") regarding potential Project impacts to public water distribution or sanitary sewage collection systems and well protection. In response to the recommendation in those matters, the Company has noted in prior DEQ Supplements that, as a general matter, water wells within 1,000 feet of the Project may be outside of the transmission line corridor and located on private property, and the Company does not have the ability or right to field mark wells on private property. To the extent VDH-ODW makes a similar recommendation in this proceeding, the Company notes that in June 2021, the Company contacted VDH-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. Accordingly, 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.

Q. Pollution Prevention

Generally as to pollution prevention, as part of Dominion Energy Virginia's environmental compliance, the Company has a comprehensive Environmental Management System Manual in place that ensures it is committed to 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

May 14, 2024

BY E-MAIL

SCC ELECTRIC TRANSMISSION PROJECT NOTIFICATION

RE: Dominion Energy Virginia's Proposed Fentress-Yadkin 500 kV Line #588 Rebuild and New 500 kV Fentress-Yadkin Line #5005

Dear Ms. Henicheck:

Dominion Energy Virginia (the "Company") is proposing to rebuild the existing 500 kV Fentress-Yadkin Line #588 (the "Line #588 Rebuild") and construct a new overhead single circuit 500 kV transmission line (the "proposed Line #5005") almost entirely within the Company's existing Line #588 transmission right-of-way corridor (collectively, the "Project"). The Project is located in the City of Chesapeake, Virginia, and will include substation-related work at the Company's expanded Fentress Substation and existing Yadkin Substation as well as new right-of-way required for a minor shift of existing Line #565 at Yadkin and for Line #5005 at Fentress, both of which are still under consideration. The Project is necessary to maintain the overall long-term reliability of its transmission system.

The Company is preparing to file an application for certificate of public convenience and necessity ("CPCN") with the Virginia State Corporation Commission (the "Commission"). Pursuant to the July 2003 Memorandum Wetlands Impact Consultation between the Company and the Department of Environmental Quality (the "DEQ"), Dominion Energy Virginia is sending this letter to initiate consultation with the DEQ prior to filing an application for a CPCN from the Commission.

A wetland delineation has not been conducted by the Company at this time. However, C2 Environmental, Inc. conducted a wetland desktop study to identify probable wetlands based on a review of multiple data sources.[1] The tables below provide a summary of the medium to high probability of wetlands expected to be present within the proposed Project.

[1] Desktop resources utilized include: National Wetlands Inventory (NWI) wetland mapping, National Resource Conservation Service soils data, Federal Emergency Management Agency 100-Year Floodplain mapping, U.S. Geologic Survey topographic maps, topographic data, and aerial and infrared imagery.

Table 1. Proposed Route (Line #588 Rebuild & Proposed Line #5005) – Results of Desktop Wetland Review

Resource	Probability			Total
	Low	Medium	High	
Estuarine Emergent/Estuarine Scrub-Shrub (E2EM/E2SS) Wetlands	-	-	1.2 AC	1.2 AC
Palustrine Emergent/Palustrine Scrub-Shrub (PEM/PSS) Wetlands	0.5 AC	21.7 AC	25.3 AC	47.5
Palustrine Forested (PFO) Wetlands		0.5 AC	1.6 AC	2.1 AC
Palustrine Unconsolidated Bottom (PUB) Open Water	-	-	-	27.9 AC
Tidal (R1) Steam Channel	-	-	-	4.2 AC (3,220 LF)
Non-Tidal Stream Channel	-	-	-	1.6 AC (6,861 LF)
Jurisdictional Ditch	-	-	-	2.1 (21,892 LF)

Table 2. Constraint Design Segment – Results of Desktop Wetland Review

Resource	Probability			Total
	Low	Medium	High	
Palustrine Emergent/Palustrine Scrub-Shrub (PEM/PSS) Wetlands	0.3 AC	0.1 AC	1,577 SF	0.4 AC
Palustrine Forested (PFO) Wetland	0.3 AC	0.2 AC	-	0.5 AC
Palustrine Unconsolidated Bottom (PUB) Open Water	-	-	-	0.2 AC
Tidal (R1) Steam Channel	-	-	-	1.6 AC (1,548 LF)
Non-Tidal Stream Channel	-	-	-	536 AC (154 LF)
Jurisdictional Ditch	-	-	-	923 AC (231 LF)

Table 3. The Variation – Results of Desktop Wetland Review

Resource	Probability			Total
	Low	Medium	High	
Estuarine Emergent/Estuarine Scrub-Shrub (E2EM/E2SS) Wetland	-	-	1,518 SF	1,518 SF
Palustrine Forested (PFO) Wetland	-	-	0.7 AC	0.7 AC
Non-Tidal Stream Channel	-	-	-	601 SF (75 LF)

The full Wetland Desktop Study will be submitted once finalized. Prior to construction, a wetland delineation will be conducted using the Routine Determination Method, as outlined in the *1987 Corps of Engineers Wetland Delineation Manual and methods described in the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0)*. The Company will obtain all necessary permits for activities that will impact jurisdictional resources.

Enclosed is a Project Overview Map and GIS shapefile of the proposed project. Please note that the Project Overview Map and associated GIS shapefile depicted therein are preliminary in nature and are subject to final engineering. All final materials, including maps, will be available in the Company's application filing to the SCC. If there are any questions, please do not hesitate to contact Ginny Gills at (804) 201-3635 or virginia.b.gills@dominionenergy.com.

The Company appreciates your assistance with this project review and looks forward to any additional information you may have to offer.

Regards,

Elizabeth "Tibby" L. Hester
Authorized Representative
Manager, Environmental and Sustainability

Attachments: Project Overview Map
Project GIS Shapefile

PROJECT OVERVIEW MAP

Fentress-Yadkin 500 kV Line #588 Rebuild and
New 500 kV Fentress-Yadkin Line #5005

City of Chesapeake, Virginia

Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0326	JRC	05/09/24

0 0.75 1.5 3 Miles

Scale is 1 IN = 1.5 MI when printed at original size of 11x17

- Existing Line #588 Right-of-Way
- Constraint Design Segment
- Existing Line #565 Centerline
- Proposed Line #565 Relocation
- Proposed Line #5005 Substation Exit
- Existing Substation
- Dominion Owned Substation Parcel
- Limited Access
- US or VA Primary Highway
- Local Main Road
- County Boundary
- NHD Stream/River
- NHD Waterbody

Notes:
1. Basemap from ESRI World Topographic Map
2. Project Right-of-Way and centerline provided by Dominion Energy Virginia
3. Parcels, Roads and railroads from Virginia Geographic Information Network
4. Streams, rivers, and waterbodies from U.S. Geological Survey National Hydrography Data

ENVIRONMENTAL

Dominion Energy

SHEET 1 OF 1

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

May 14, 2024

BY E-MAIL

SCC ELECTRIC TRANSMISSION PROJECT NOTIFICATION

RE: Dominion Energy Virginia's Proposed Fentress-Yadkin 500 kV Line #588 Rebuild and New 500 kV Fentress-Yadkin Line #5005

To Whom It May Concern:

Dominion Energy Virginia (the "Company") is proposing to rebuild the existing 500 kV Fentress-Yadkin Line #588 (the "Line #588 Rebuild") and construct a new overhead single circuit 500 kV transmission line (the "proposed Line #5005") almost entirely within the Company's existing Line #588 transmission right-of-way corridor (collectively, the "Project"). The Project is located in the City of Chesapeake, Virginia, and will include substation-related work at the Company's expanded Fentress Substation and existing Yadkin Substation as well as new right-of-way required for a minor shift of existing Line #565 at Yadkin and for Line #5005 at Fentress, both of which are still under consideration. The Project is necessary to maintain the overall long-term reliability of its transmission system.

The Company is preparing to file an application for certificate of public convenience and necessity ("CPCN") with the State Corporation Commission of Virginia (the "Commission"). In advance of filing an application for a CPCN from the Commission, the Company respectfully requests that you submit any comments or additional information that would have bearing on the proposed Project within 30 days of the date of this letter.

Enclosed is a Project Overview Map depicting the alignment of the proposed Project, 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 proposed Project to assist in the project review. If you have any questions, please do not hesitate to contact Ginny Gills at (804) 201-3635 or virginia.b.gills@dominionenergy.com.

The Company appreciates your assistance with this project review and looks forward to any additional information you may have to offer.

Regards,

Elizabeth “Tibby” L. Hester
Authorized Representative
Manager, Environmental and Sustainability

Attachments: Project Overview Map
Project GIS Shapefile

PROJECT OVERVIEW MAP

Fentress-Yadkin 500 kV Line #588 Rebuild and
New 500 kV Fentress-Yadkin Line #5005

City of Chesapeake, Virginia

Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0326	JRC	05/09/24

0 0.75 1.5 3 Miles

Scale is 1 IN = 1.5 MI when printed at original size of 11x17

- Existing Line #588 Right-of-Way
- Constraint Design Segment
- Existing Line #565 Centerline
- Proposed Line #565 Relocation
- Proposed Line #5005 Substation Exit
- Existing Substation
- Dominion Owned Substation Parcel
- Limited Access
- US or VA Primary Highway
- Local Main Road
- County Boundary
- NHD Stream/River
- NHD Waterbody

Notes:
1. Basemap from ESRI World Topographic Map
2. Project Right-of-Way and centerline provided by Dominion Energy Virginia
3. Parcels, Roads and railroads from Virginia Geographic Information Network
4. Streams, rivers, and waterbodies from U.S. Geological Survey National Hydrography Data

ENVIRONMENTAL

Dominion Energy

SHEET 1 OF 1

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5/9/2024 3:46:54 PM

BY EMAIL

May 14, 2024

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

RE: Dominion Energy Virginia's Fentress-Yadkin 500 kV Line #588 Rebuild and New 500 kV Fentress-Yadkin Line #5005

Dear Mr. Kirchen:

Dominion Energy Virginia (the "Company") is proposing to rebuild the existing 500 kV Fentress-Yadkin Line #588 (the "Line #588 Rebuild") and construct a new overhead single circuit 500 kV transmission line (the "proposed Line #5005") almost entirely within the Company's existing Line #588 transmission right-of-way corridor (collectively, the "Project"). The Project is located in the City of Chesapeake, Virginia, and will include substation-related work at the Company's expanded Fentress Substation and existing Yadkin Substation as well as new right-of-way required for a minor shift of existing Line #565 at Yadkin and for Line #5005 at Fentress, both of which are still under consideration. The Project is necessary to maintain the overall long-term reliability of its transmission system.

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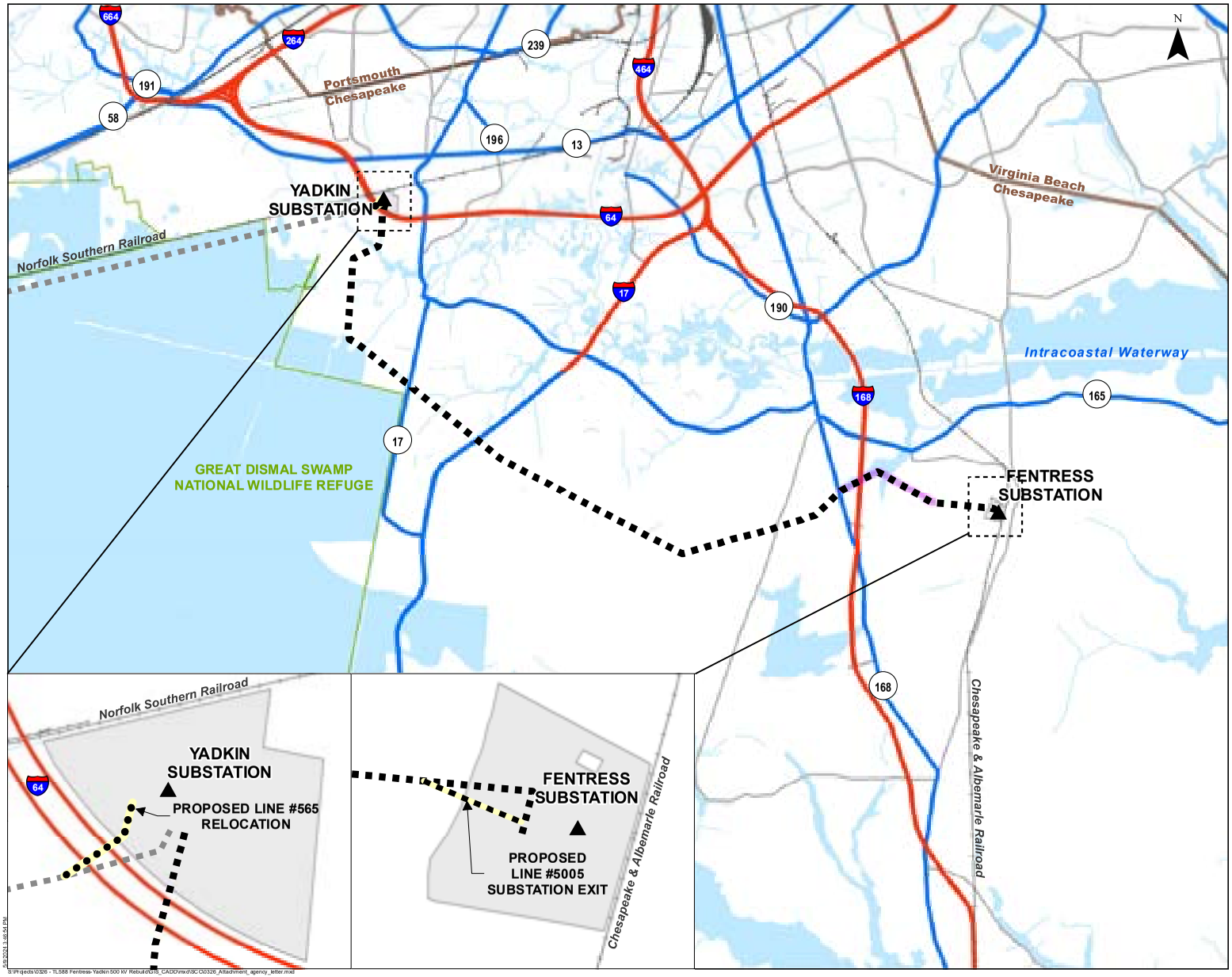
If you would like to receive a GIS shapefile of the proposed Project to assist in your project review or if you have any questions, please do not hesitate to contact Lane Carr at 804-310-9658 or Lane.E,Carr@dominionenergy.com. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Regards,

Lane Carr
Siting and Permitting Specialist, Electric Transmission

Attachment: Project Overview Map



PROJECT OVERVIEW MAP

Fentress-Yadkin 500 kV Line #588 Rebuild and
New 500 kV Fentress-Yadkin Line #5005

City of Chesapeake, Virginia

Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0326	JRC	05/09/24

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SHEET 1 OF 1

BY EMAIL

May 14, 2024

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

RE: Dominion Energy Virginia's Fentress-Yadkin 500 kV Line #588 Rebuild and New 500 kV Fentress-Yadkin Line #5005

Dear Mr. Denny:

Dominion Energy Virginia (the "Company") is proposing to rebuild the existing 500 kV Fentress-Yadkin Line #588 (the "Line #588 Rebuild") and construct a new overhead single circuit 500 kV transmission line (the "proposed Line #5005") almost entirely within the Company's existing Line #588 transmission right-of-way corridor (collectively, the "Project"). The Project is located in the City of Chesapeake, Virginia, and will include substation-related work at the Company's expanded Fentress Substation and existing Yadkin Substation as well as new right-of-way required for a minor shift of existing Line #565 at Yadkin and for Line #5005 at Fentress, both of which are still under consideration. The Project is necessary to maintain the overall long-term reliability of its transmission system.

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Regards,

Lane Carr
Siting and Permitting Specialist, Electric Transmission

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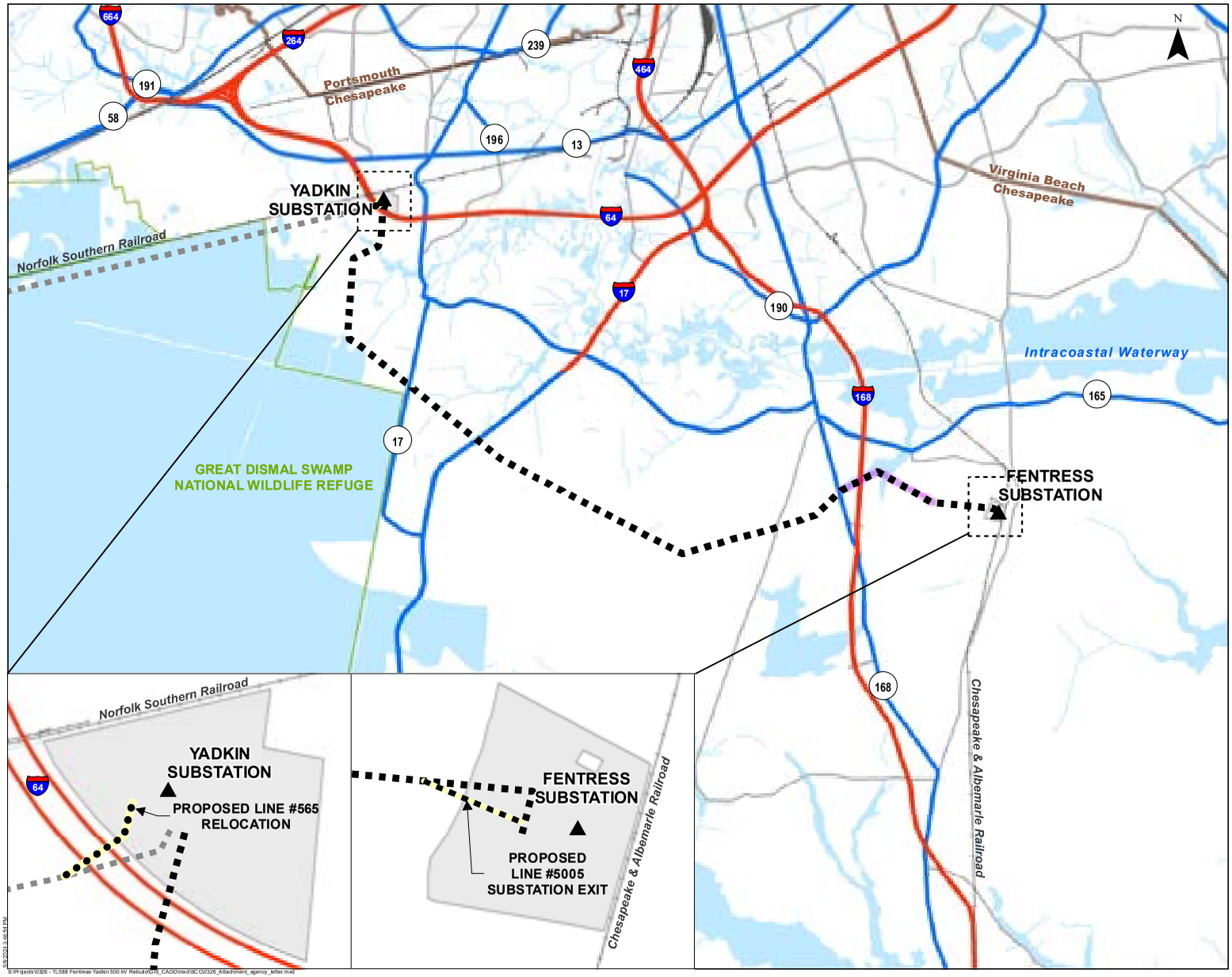

PROJECT OVERVIEW MAP

Fentress-Yadkin 500 kV Line #588 Rebuild and
New 500 kV Fentress-Yadkin Line #5005

City of Chesapeake, Virginia

Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0326	JRC	05/09/24

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SHEET 1 OF 1

BY EMAIL

May 14, 2024

Mr. Christopher G. Hall, P.E
Hampton Roads District Engineer
Virginia Department of Transportation
7511 Burbage Drive
Suffolk, Virginia 23435

RE: Dominion Energy Virginia's Fentress-Yadkin 500 kV Line #588 Rebuild and New 500 kV Fentress-Yadkin Line #5005

Dear Mr. Hall:

Dominion Energy Virginia (the "Company") is proposing to rebuild the existing 500 kV Fentress-Yadkin Line #588 (the "Line #588 Rebuild") and construct a new overhead single circuit 500 kV transmission line (the "proposed Line #5005") almost entirely within the Company's existing Line #588 transmission right-of-way corridor (collectively, the "Project"). The Project is located in the City of Chesapeake, Virginia, and will include substation-related work at the Company's expanded Fentress Substation and existing Yadkin Substation as well as new right-of-way required for a minor shift of existing Line #565 at Yadkin and for Line #5005 at Fentress, both of which are still under consideration. The Project is necessary to maintain the overall long-term reliability of its transmission system.

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Regards,

Lane Carr
Siting and Permitting Specialist, Electric Transmission

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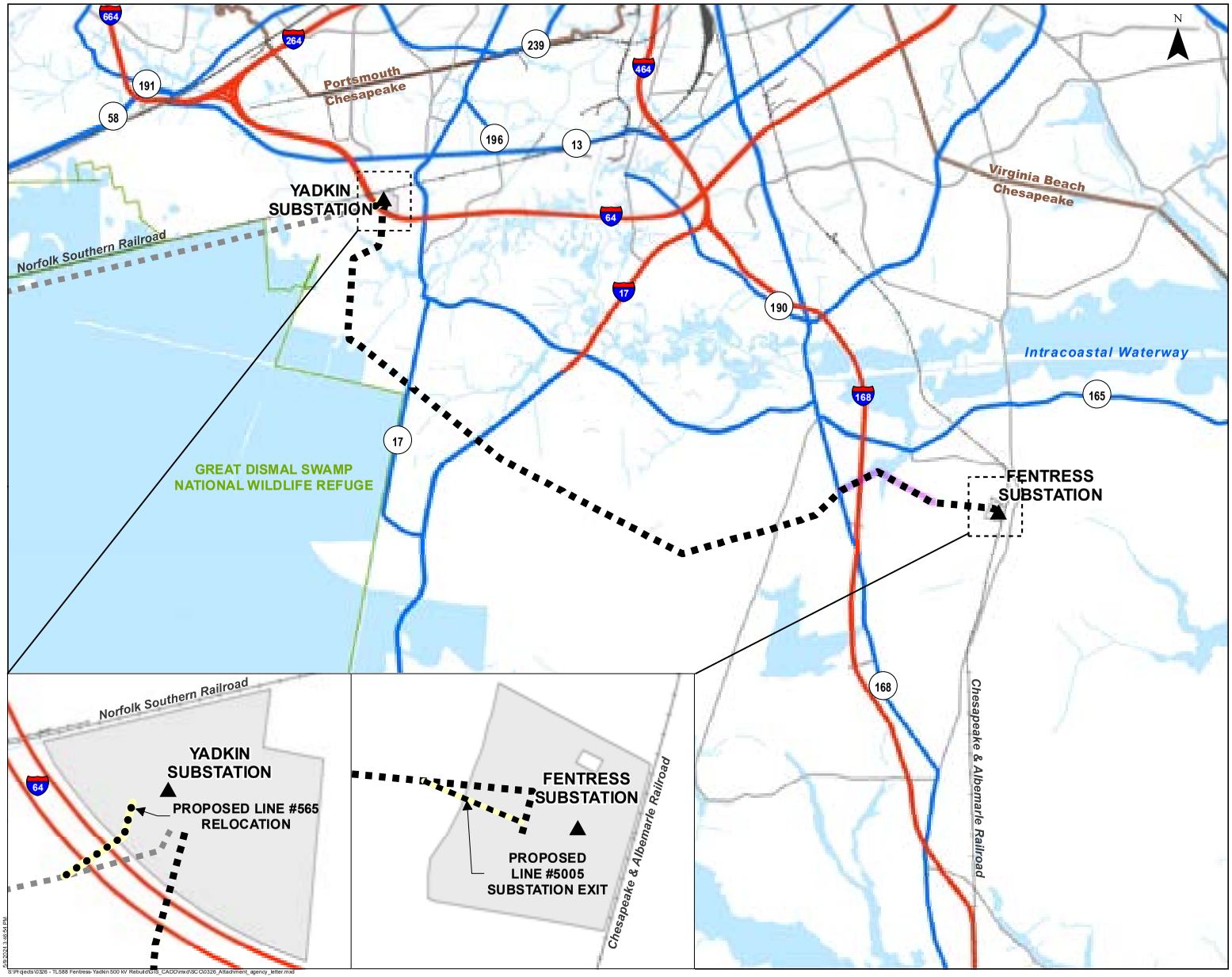

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Fentress-Yadkin 500 kV Line #588 Rebuild and
New 500 kV Fentress-Yadkin Line #5005

City of Chesapeake, Virginia

Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
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SHEET 1 OF 1

BY EMAIL

May 14, 2024

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

RE: Dominion Energy Virginia's Fentress-Yadkin 500 kV Line #588 Rebuild and New 500 kV Fentress-Yadkin Line #5005

Dear Ms. Little:

Dominion Energy Virginia (the "Company") is proposing to rebuild the existing 500 kV Fentress-Yadkin Line #588 (the "Line #588 Rebuild") and construct a new overhead single circuit 500 kV transmission line (the "proposed Line #5005") almost entirely within the Company's existing Line #588 transmission right-of-way corridor (collectively, the "Project"). The Project is located in the City of Chesapeake, Virginia, and will include substation-related work at the Company's expanded Fentress Substation and existing Yadkin Substation as well as new right-of-way required for a minor shift of existing Line #565 at Yadkin and for Line #5005 at Fentress, both of which are still under consideration. The Project is necessary to maintain the overall long-term reliability of its transmission system.

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Regards,

Lane Carr
Siting and Permitting Specialist, Electric Transmission

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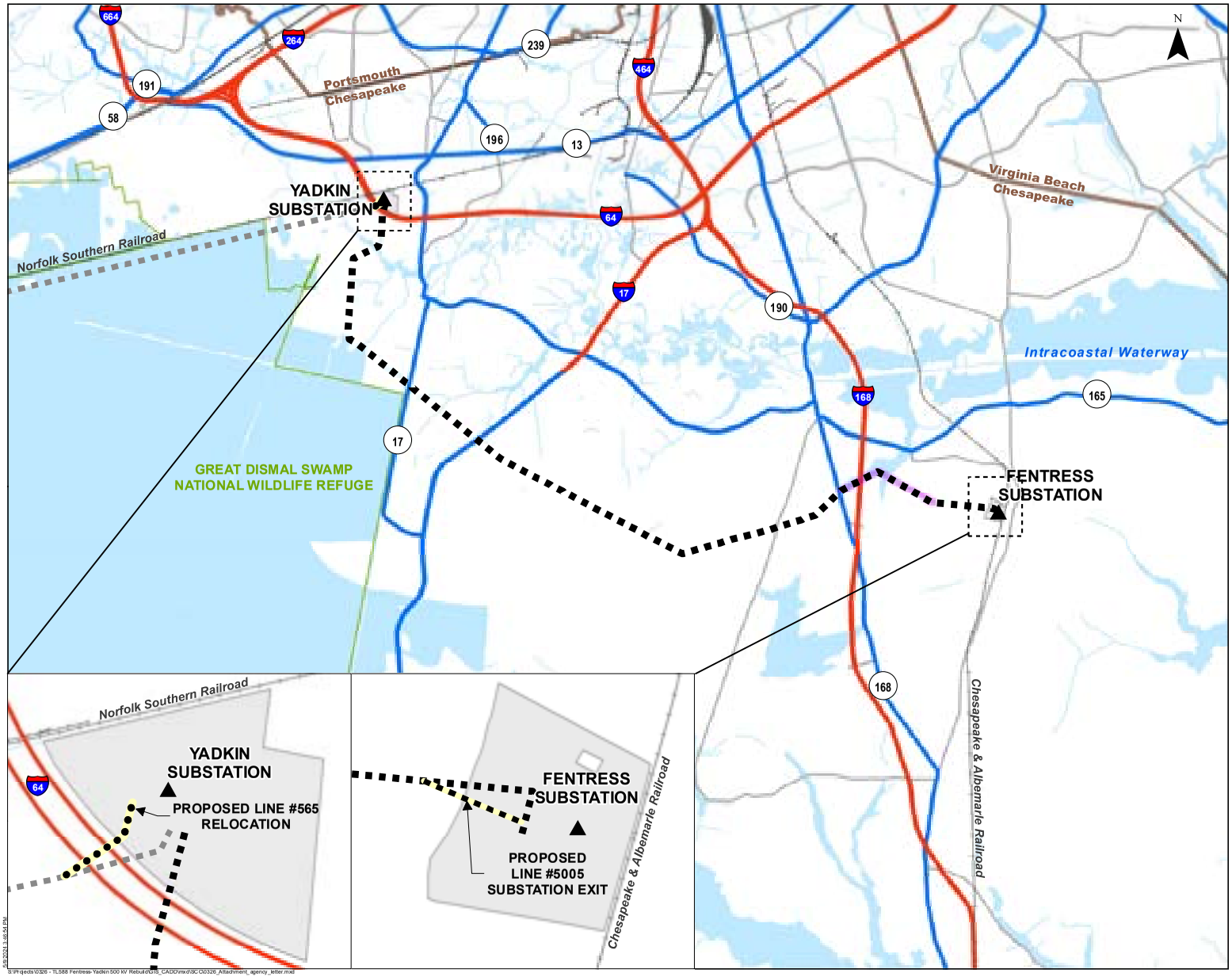

PROJECT OVERVIEW MAP

Fentress-Yadkin 500 kV Line #588 Rebuild and
New 500 kV Fentress-Yadkin Line #5005

City of Chesapeake, Virginia

Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0326	JRC	05/09/24

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SHEET 1 OF 1

DESKTOP WETLAND REVIEW
FENTRESS – YADKIN 500 KV LINE #588 REBUILD AND NEW 500 KV FENTRESS – YADKIN LINE #5005

City of Chesapeake, Virginia

Prepared For:

Dominion Energy Virginia
c/o Virginia Gills
120 Tredegar Street
Richmond, Virginia 23219

Prepared By:

C2 Environmental, Inc.
11846 Rock Landing Drive, Suite A
Newport News, Virginia 23606
Project No. 0326

May 2024

TABLE OF CONTENTS

TABLES

APPENDICES

1.0 INTRODUCTION

C2 Environmental (C2 Env) has been retained by Dominion Energy Virginia (Dominion or the Company) to complete a desktop wetland review on the proposed Fentress – Yadkin 500 kV Line #588 Rebuild and New 500 kV Fentress – Yadkin Line #5005 project in the City of Chesapeake. Dominion is proposing to rebuild the existing 500 kV Fentress-Yadkin Line #588 and construct a new overhead single circuit 500 kV transmission line entirely within the Company's existing Line #588 transmission right-of-way corridor between the Yadkin and Fentress Substations. The Company is also considering a limited structure design segment option for an approximately 1.6 mile section on the north side of the existing right-of-way, referenced as the Constraint Design Segment. This is also included in the desktop wetland review and illustrated on the enclosed Desktop Wetland Review Map.

It should be noted that this study does not include any on-site wetland delineation field investigations utilizing the *1987 Army Corps of Engineers Wetland Delineation Manual* in conjunction with the *2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (version 2.0)*. Rather, publicly available data was used to identify the potential limits of wetlands and other Waters of the U.S. (WOUS).

2.0 DESKTOP DATA SOURCES

Resources used to complete the desktop review include the following:

- VGIN aerial imagery dated 2021;
- VGIN infrared imagery dated 2021;
- Google Earth historic imagery ranging from 1994 to 2023;
- U.S. Geologic Survey (USGS) topographic maps;
- USGS Digital Elevation Model (DEM) 1-meter contour data;
- U.S. Department of Agriculture National Resources Conservation Service (USDA-NRCS) hydric soil survey data;
- U.S. Fish and wildlife service (USFWS) National Wetland Inventory (NWI) wetland mapping;
- Federal Emergency Management Agency (FEMA) 100-year floodplain maps

3.0 METHODOLOGY AND WETLAND OCCURANCE PROBABILITY

Using the available infrared and aerial imagery along with the DEM and USGS topography, potential wetland areas were identified within the study area. The areas identified using the aerial imagery were typically darker in color, which is indicative of inundation or saturated soil conditions associated with wetlands. In many instances these dark signature areas are confined to concave landscapes as defined by the topography. However, wetland occurrence is not limited to concave landforms and can occur in flat landscapes. A probability of occurrence was assigned to each potential wetland based upon the presence or absence of additional supporting data layers including USDA-NRCS hydric soil data, NWI wetland mapping, and FEMA 100-year floodplain maps. Table 1 lists the probability criteria of wetland occurrence based upon the number of layers present in a given area. It should be

noted that streams, jurisdictional ditches, and open water (palustrine unconsolidated bottom) have not been assigned a probability of occurrence and have been identified based upon their consistent presence in multiple years of aerials.

Table 1: Criteria for Probability of Wetland Occurrence

Probability	Criteria
Low	Areas identified with only topography and aerials.
Medium	Areas identified with topography and aerials with one additional data source (NRCS hydric soil mapping, NWI wetland mapping, or FEMA 100-year floodplain maps).
High	Areas identified with topography and aerials with two or more additional data sources (NRCS hydric soil mapping, NWI wetland mapping, or FEMA 100-year floodplain maps).

4.0 RESULTS

The results of the desktop wetland review are provided in the Desktop Wetland Review Map (Appendix A). The Cowardin Classification of the wetlands within the existing ROW have been combined into palustrine scrub-shrub (PSS) / palustrine emergent wetlands (PEM) or estuarine emergent (E2EM) / estuarine scrub-shrub E2ES) if in a tidal area and not separated. This is because it is difficult to differentiate between scrub-shrub and emergent wetlands within the existing ROW even with the highest resolution aerials. The distinction between tidal and non-tidal resources has been approximated by utilizing tidal data from the closest NOAA tidal station. Table 2 lists wetland acreages by probability as well as palustrine unconsolidated bottom (PUB) open water features, stream channels, and jurisdictional ditches.

Table 2: Results of Desktop Wetland Review

Proposed Route Summary				
	Low	**Medium**	**High**	**Total**
E2EM/E2SS Wetlands	-	-	1.2 AC	1.2 AC
PEM/PSS Wetlands	0.5 AC	21.2 AC	25.2 AC	46.9 AC
PFO Wetlands	-	-	0.7 AC	0.7 AC
Tidal Stream Channel	-	-	-	4.2 AC (3,220 LF)
Non-tidal Stream Channel	-	-	-	1.5 AC (6,222 LF)
Jurisdictional Ditch	-	-	-	2.1 AC (21,892 LF)
Open Water	-	-	-	27.9 AC
Constraint Design Segment Summary				
PEM/PSS Wetlands	-	-	1,577 SF	1,577 SF
PFO Wetlands	0.3 AC	0.2 AC	-	0.5 AC
Tidal Stream Channel	-	-	-	1.6 AC (1,548 LF)
Non-tidal Stream Channel	-	-	-	536 SF (154 LF)
Jurisdictional Ditch	-	-	-	923 SF (231 LF)
Open Water	-	-	-	0.2 AC

5.0 CONCLUSION

C2 Env performed a desktop wetland review on the proposed Fentress – Yadkin 500 kV Line #588 Rebuild and New 500 kV Fentress – Yadkin #5005 project to determine the potential limits of wetlands and other WOUS within the project area using publicly available off-site resources. Prior to any land disturbing activities, C2 Env recommends a detailed delineation of wetlands and other WOUS followed by confirmation by U.S. Army Corps of Engineers.

APPENDIX A

Project Graphics

Proposed Route Summary		
Study Area +/- 282.6 AC		
Desktop Cowardin Classification	Area (+/-)	Length (+/-)
Estuarine Emergent/Estuarine Scrub-Shrub (E2EM/E2SS) Wetlands - High Probability	1.2 AC	--
Palustrine Emergent/Palustrine Scrub-Shrub (PEM/PSS) Wetlands - High Probability	25.2 AC	--
Palustrine Emergent/Palustrine Scrub-Shrub (PEM/PSS) Wetlands - Medium Probability	21.2 AC	--
Palustrine Emergent/Palustrine Scrub-Shrub (PEM/PSS) Wetlands - Low Probability	0.5 AC	--
Palustrine Forested (PFO) Wetlands - High Probability	0.7 AC	--
Tidal (R1) Stream Channel	4.2 AC	3,220 LF
Non-Tidal Stream Channel	1.5 AC	6,222 LF
Jurisdictional Ditch (JD)	2.1 AC	21,892 LF
Palustrine Unconsolidated Bottom (PUB) Open Water	27.9 AC	--
Constraint Design Segment Summary		
Study Area +/- 14.9 AC		
Desktop Cowardin Classification	Area (+/-)	Length (+/-)
Palustrine Emergent/Palustrine Scrub-Shrub (PEM/PSS) Wetlands - High Probability	1,577 SF	--
Palustrine Forested (PFO) Wetlands - Medium Probability	0.2 AC	--
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Tidal (R1) Stream Channel	1.6 AC	1,548 LF
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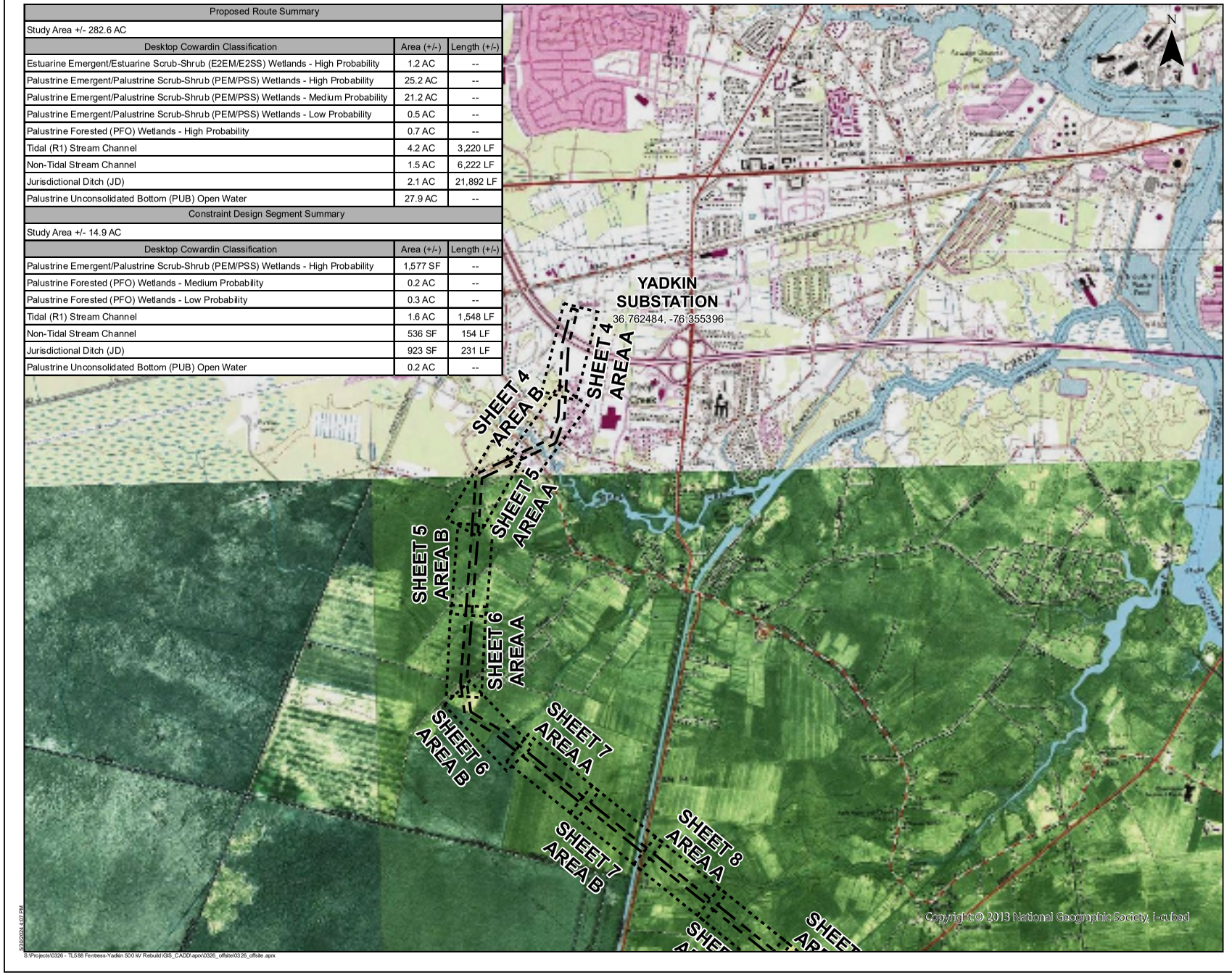


DESKTOP WETLAND REVIEW MAP

Fentress - Yadkin 500 kV Line #588 & #5005
City of Chesapeake, Virginia

Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0326	ZTW	05/30/24

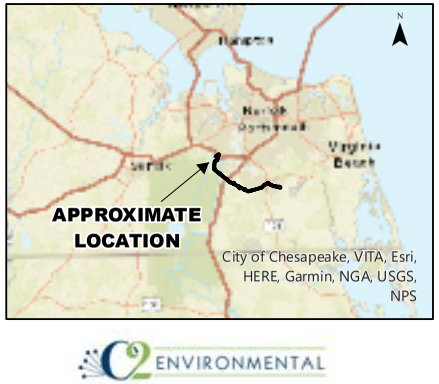
0 0.25 0.5 1 Miles

Scale is 1 IN = 0.5 MI when printed at original size of 11x17

SITE DATA

- Proposed Route
- Constraint Design Segment
- Map Sheet

Notes:
1. Basemap from ESRI World Street Map, VGIN 2021 aerial imagery, USGS Fentress, Deep Creek, and Norfolk South, VA Topographic Quad Maps.
2. Road centerlines and parcels from VGIN.
3. Structure locations and right-of-way dimensions provided by Dominion Energy Virginia.
4. Contours generated from USGS 1-meter DEM Norfolk, VA 2013.
5. Desktop wetland evaluation conducted by C2 Environmental, Inc., during Desktop wetland linework created by C2 Environmental. See Report May 2024 for methodology.
6. Mean high water (MHW) and mean low water (MLW) elevations have been approximated using tidal data from the closest NOAA tidal station Money Point.



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DESKTOP WETLAND REVIEW MAP

Fentress - Yadkin 500 kV Line #588 & #5005
City of Chesapeake, Virginia

Client:
Dominion Energy Virginia

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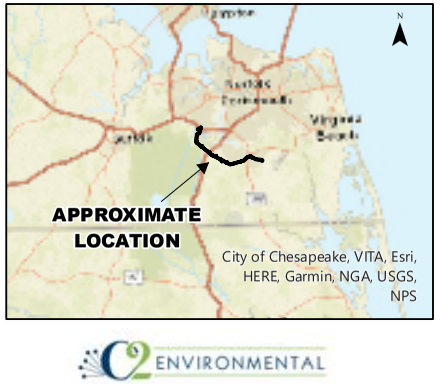

C2 ENVIRONMENTAL

SHEET 2 OF 19

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DESKTOP WETLAND REVIEW MAP

Fentress - Yadkin 500 kV Line #588 & #5005
City of Chesapeake, Virginia

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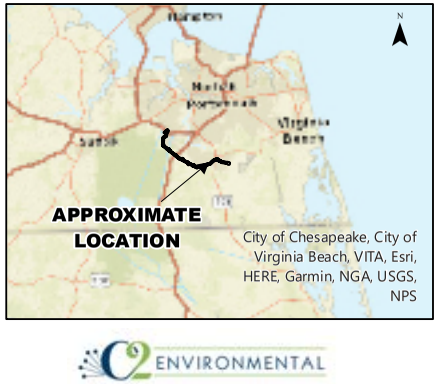
4. Contours generated from USGS 1-meter DEM Norfolk, VA 2013.
5. Desktop wetland evaluation conducted by C2 Environmental, Inc., during Desktop wetland linework created by C2 Environmental. See Report May 2024 for methodology.
6. Mean high water (MHW) and mean low water (MLW) elevations have been approximated using tidal data from the closest NOAA tidal station Money Point.



C2 ENVIRONMENTAL

SHEET 3 OF 19

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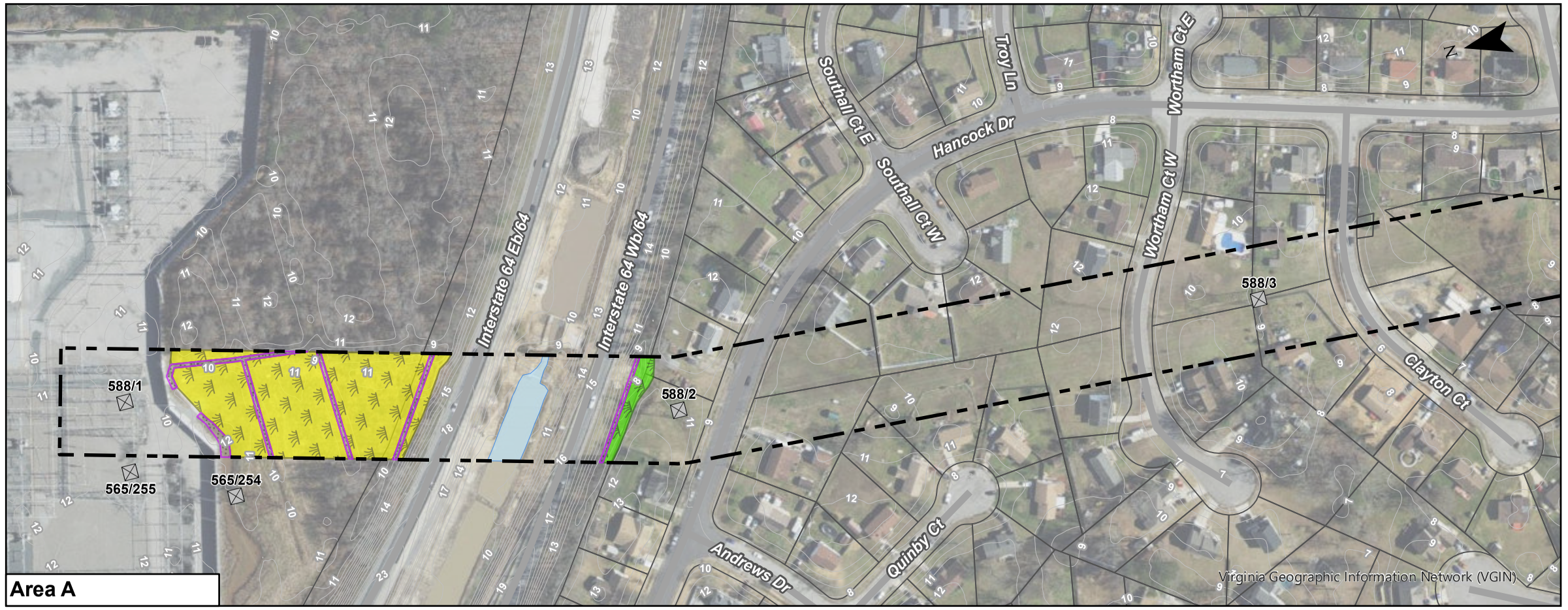

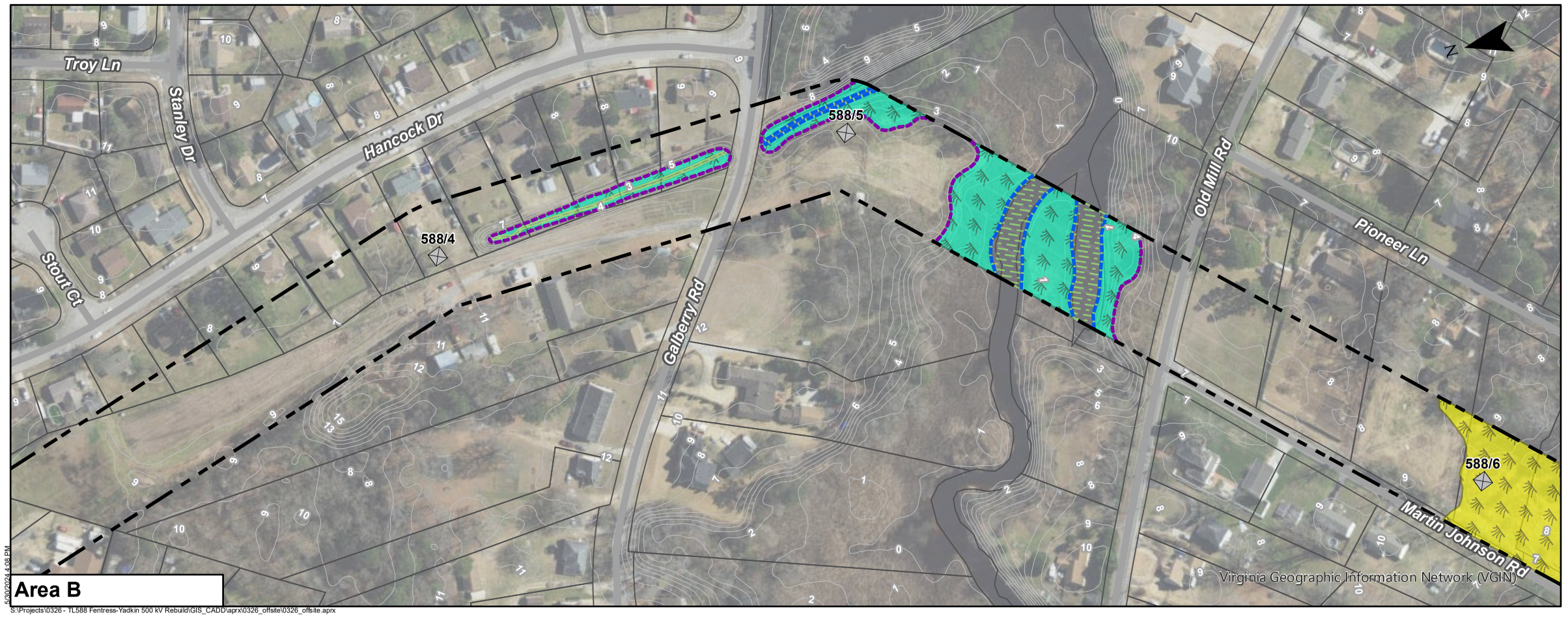

DESKTOP WETLAND REVIEW MAP

Fentress - Yadkin 500 kV Line #588 & #5005
City of Chesapeake, Virginia

Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0326	ZTW	05/30/24

0 100 200 400 Feet
Scale is 1 IN = 200 FT when printed at original size of 11x17

SITE DATA

- Proposed Route
- Constraint Design Segment
- Existing Structure Location
- Approximate Tidal R1 Stream Channel Limits
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- Approximate Mean High Water
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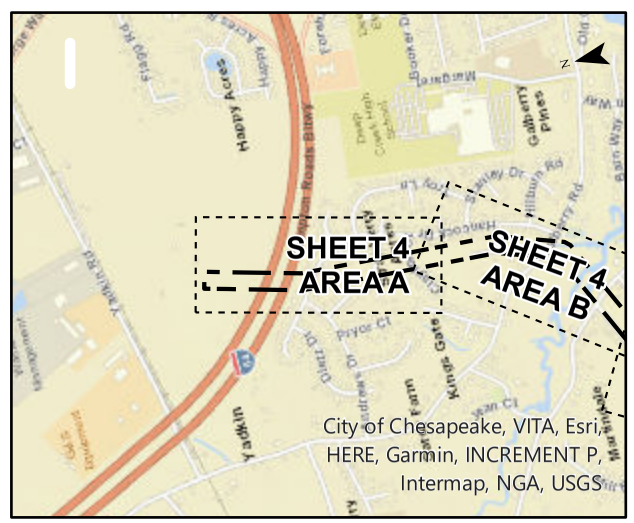
- Existing 1 FT Contour
- Parcel Boundary



C2 ENVIRONMENTAL

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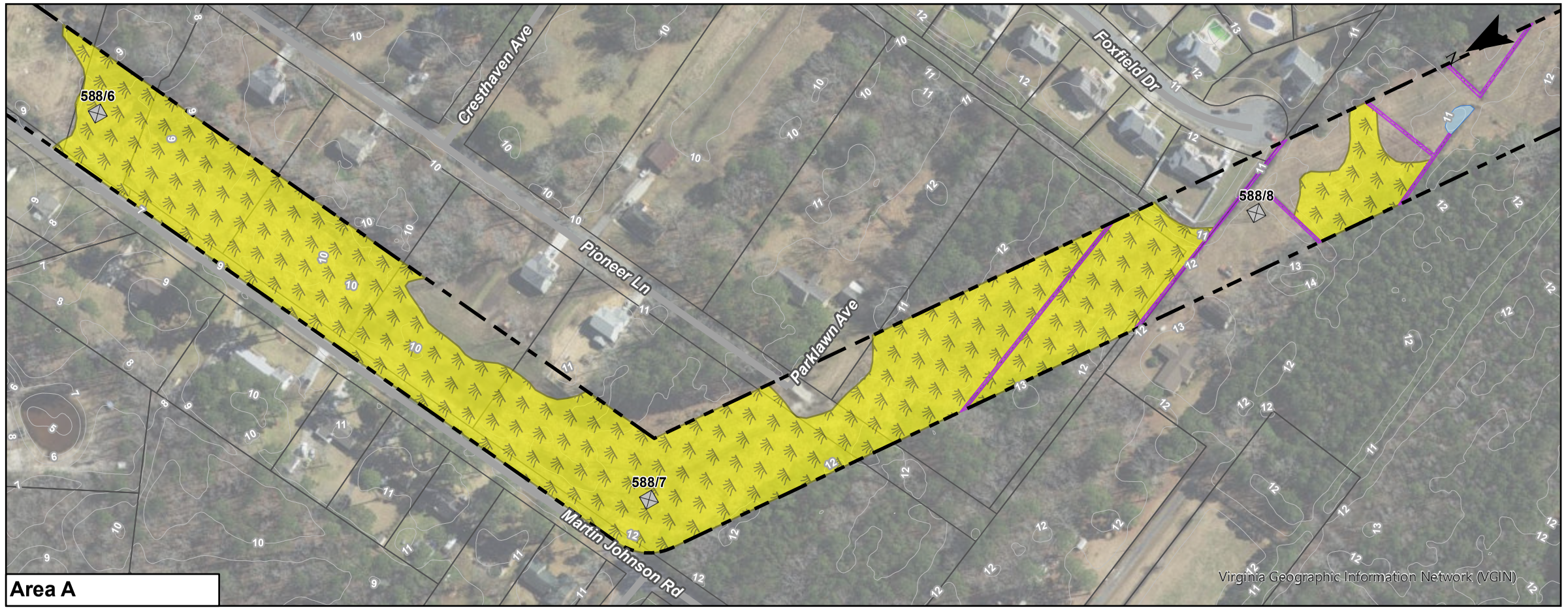
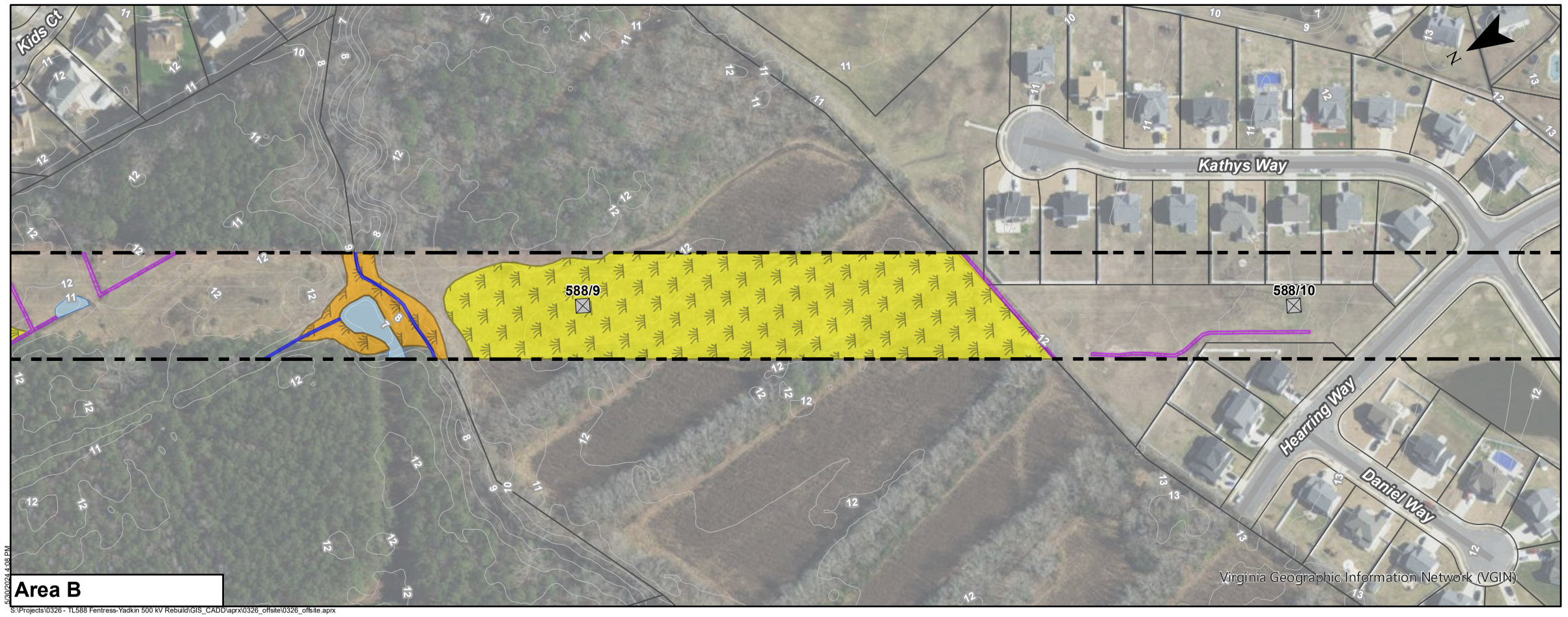


Area A



Area B

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DESKTOP WETLAND REVIEW MAP

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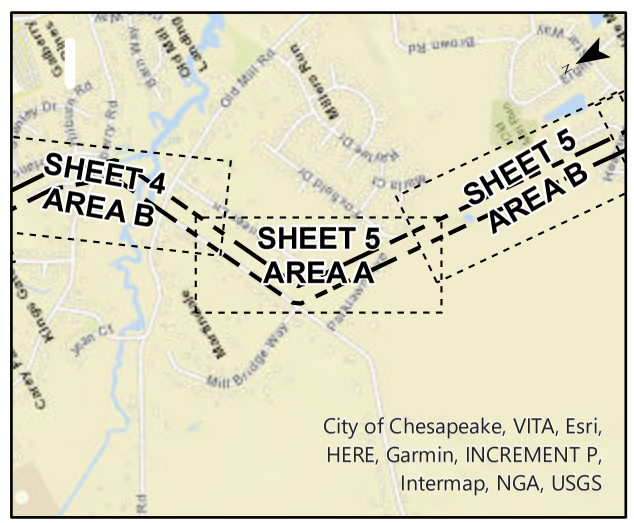
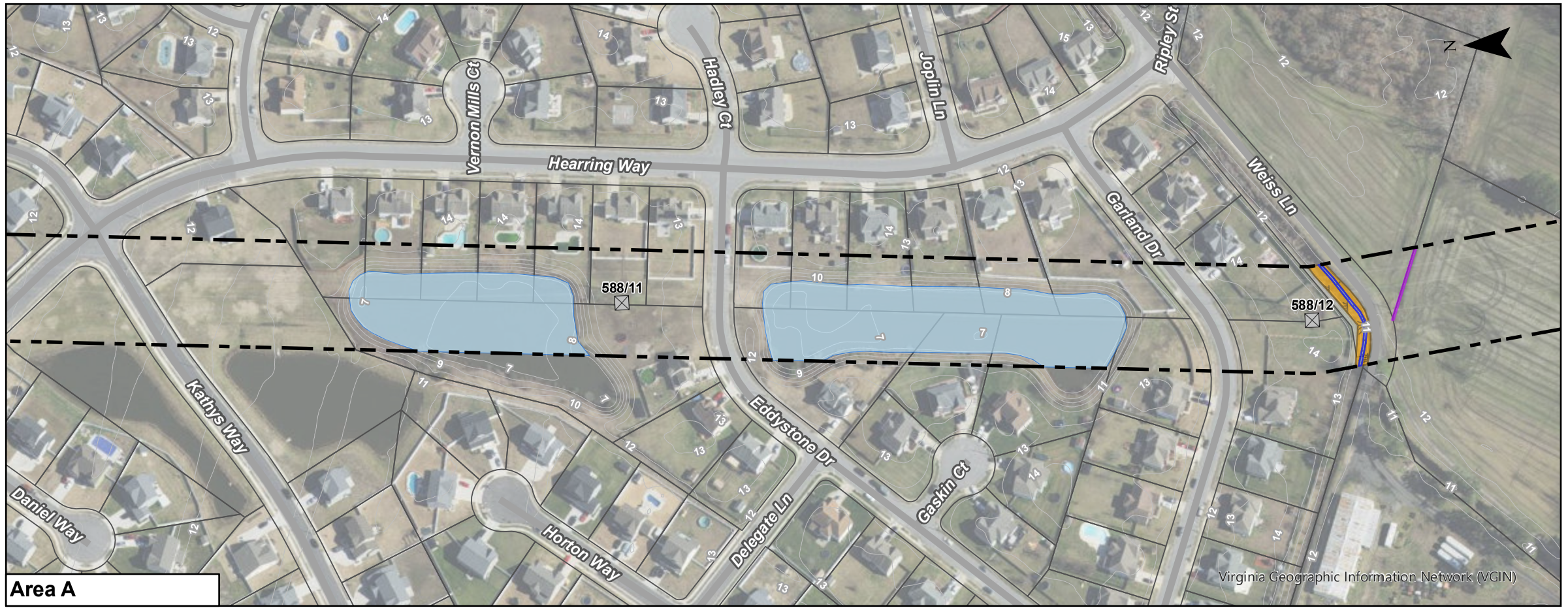


C2 ENVIRONMENTAL

SHEET 5 OF 19



Area A

Area B

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DESKTOP WETLAND REVIEW MAP

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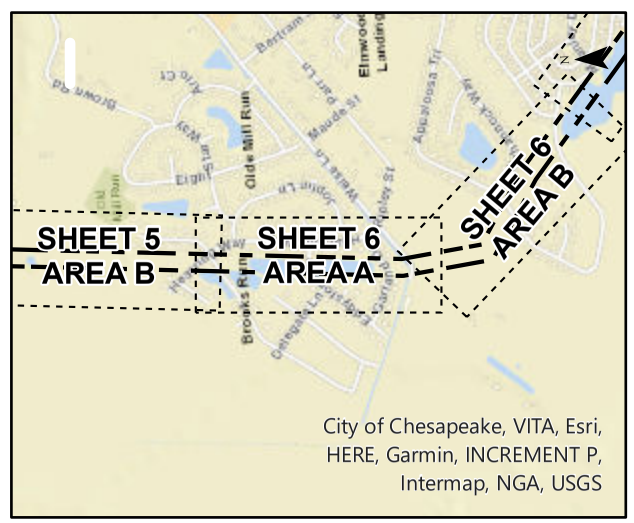
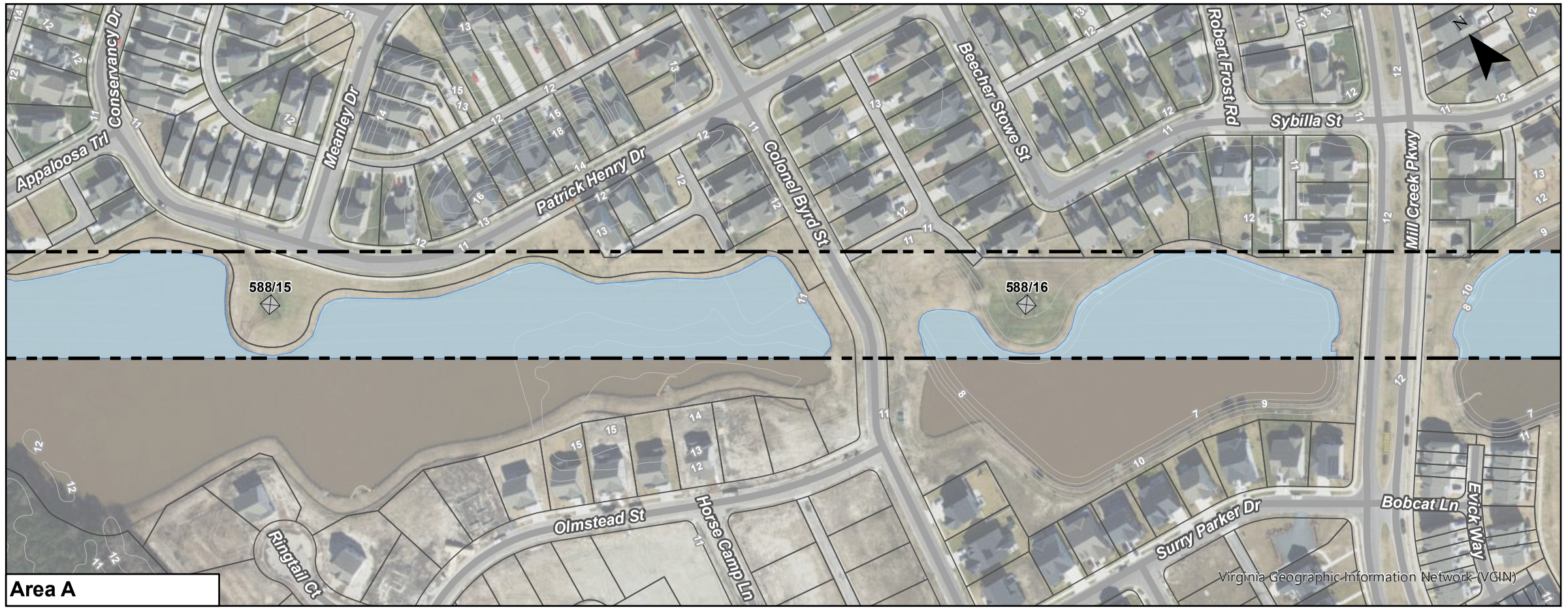
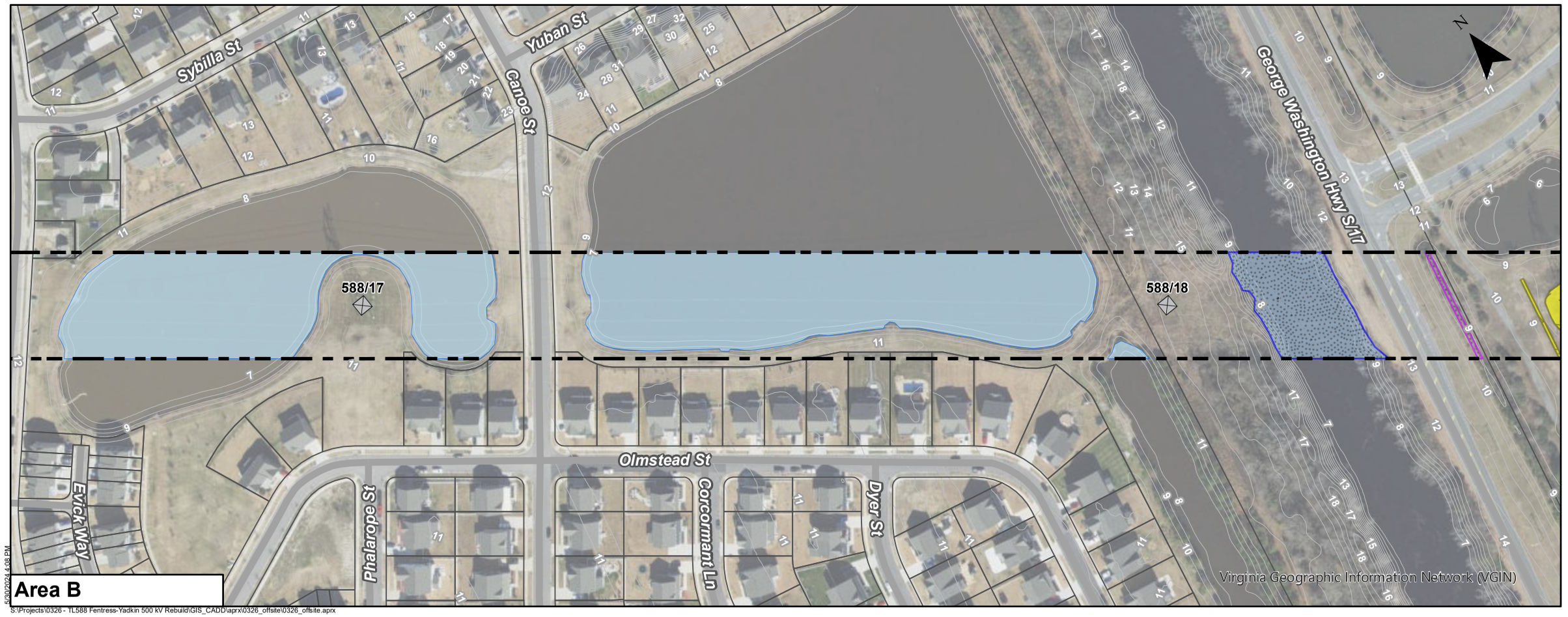


C2 ENVIRONMENTAL





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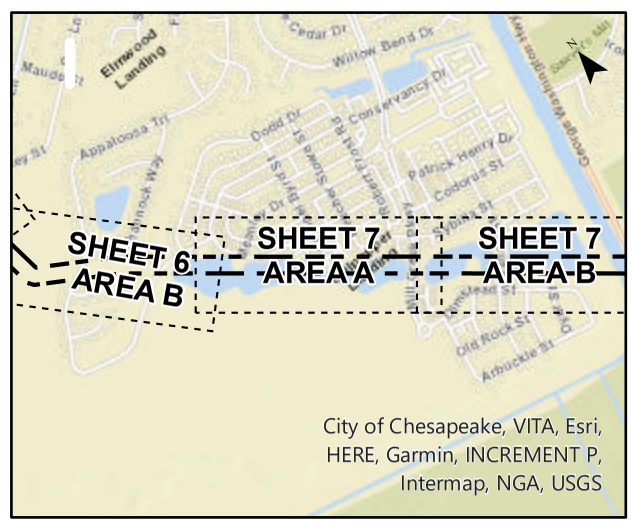

C2 ENVIRONMENTAL

SHEET 7 OF 19

Area A

Area B

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DESKTOP WETLAND REVIEW MAP

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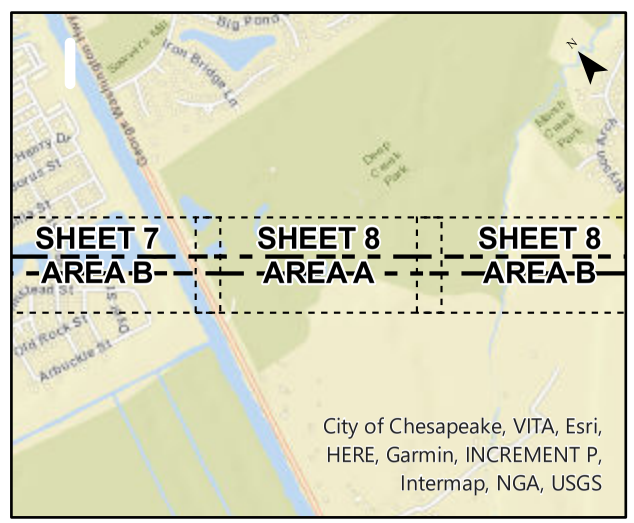
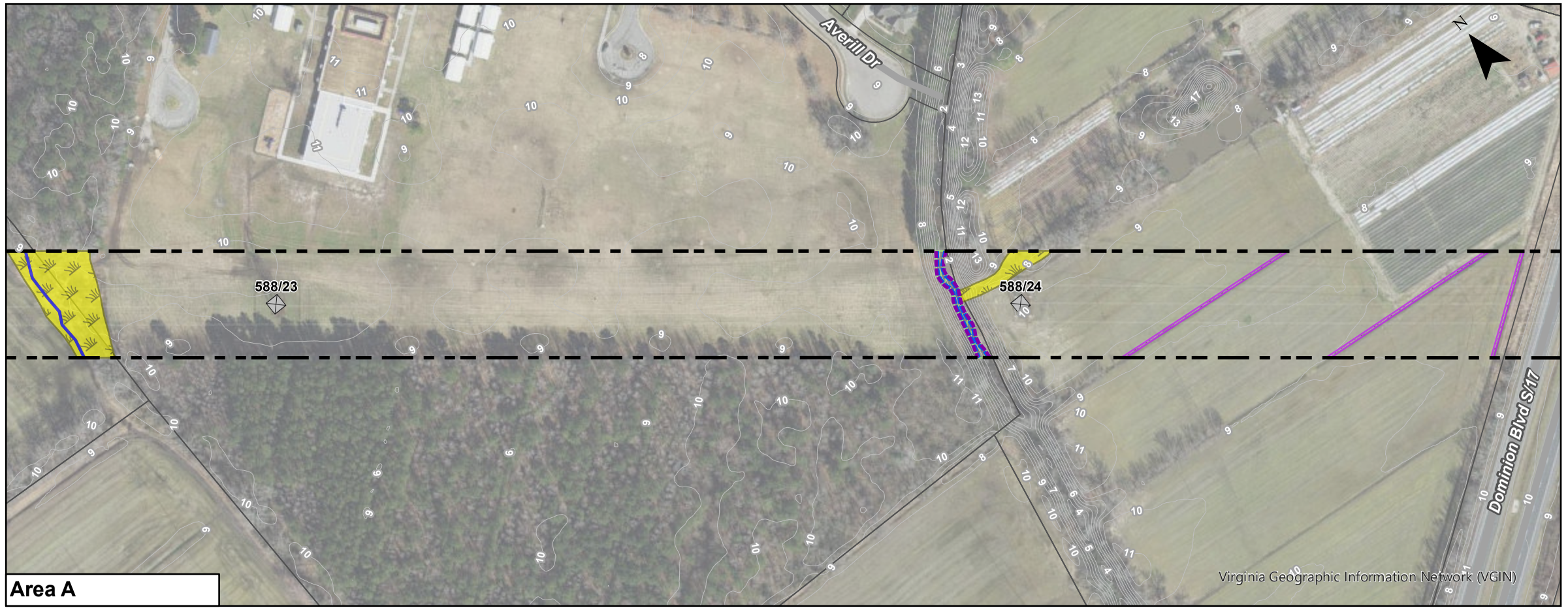
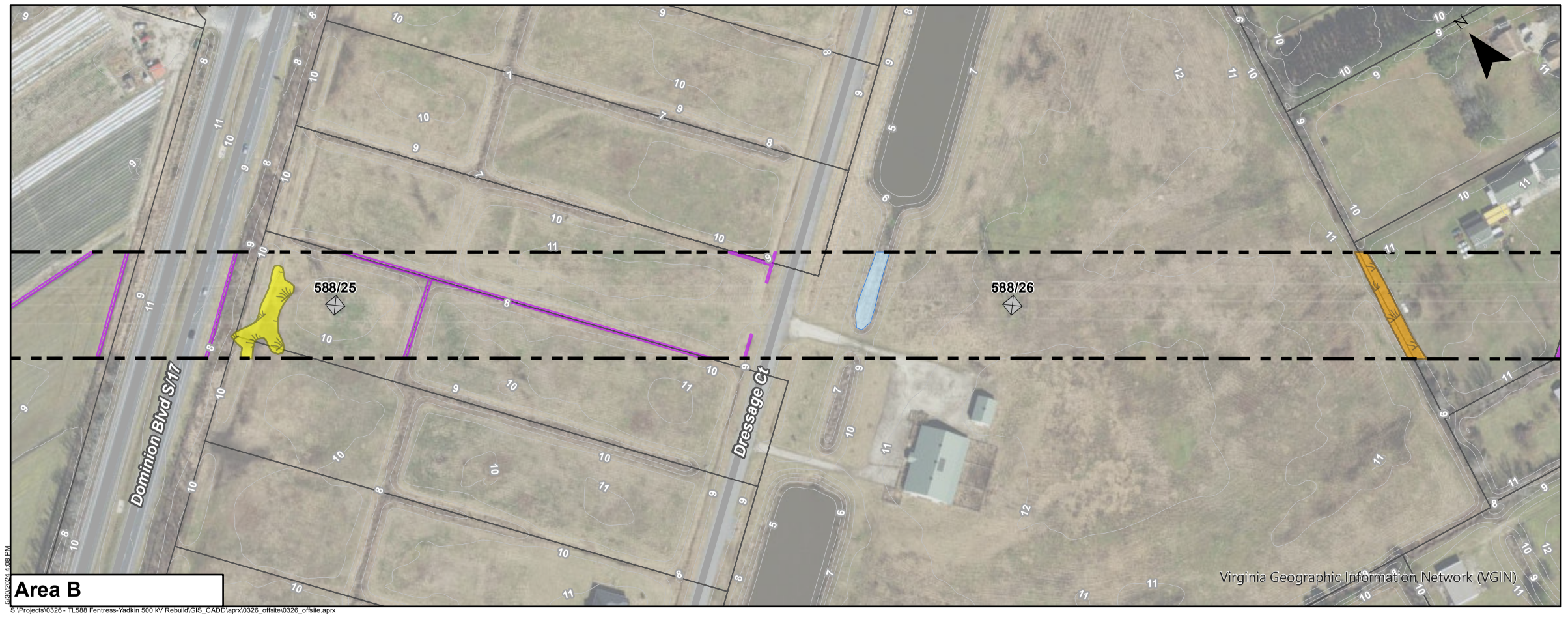


C2 ENVIRONMENTAL





DESKTOP WETLAND REVIEW MAP

Fentress - Yadkin 500 kV Line #588 & #5005
City of Chesapeake, Virginia

Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
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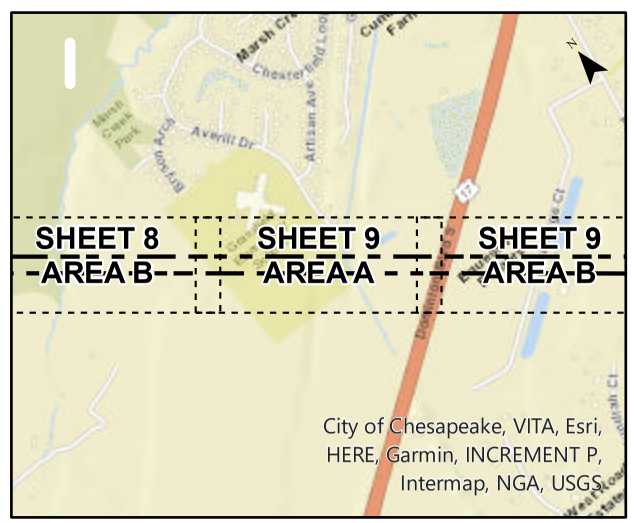

C2 ENVIRONMENTAL

SHEET 9 OF 19

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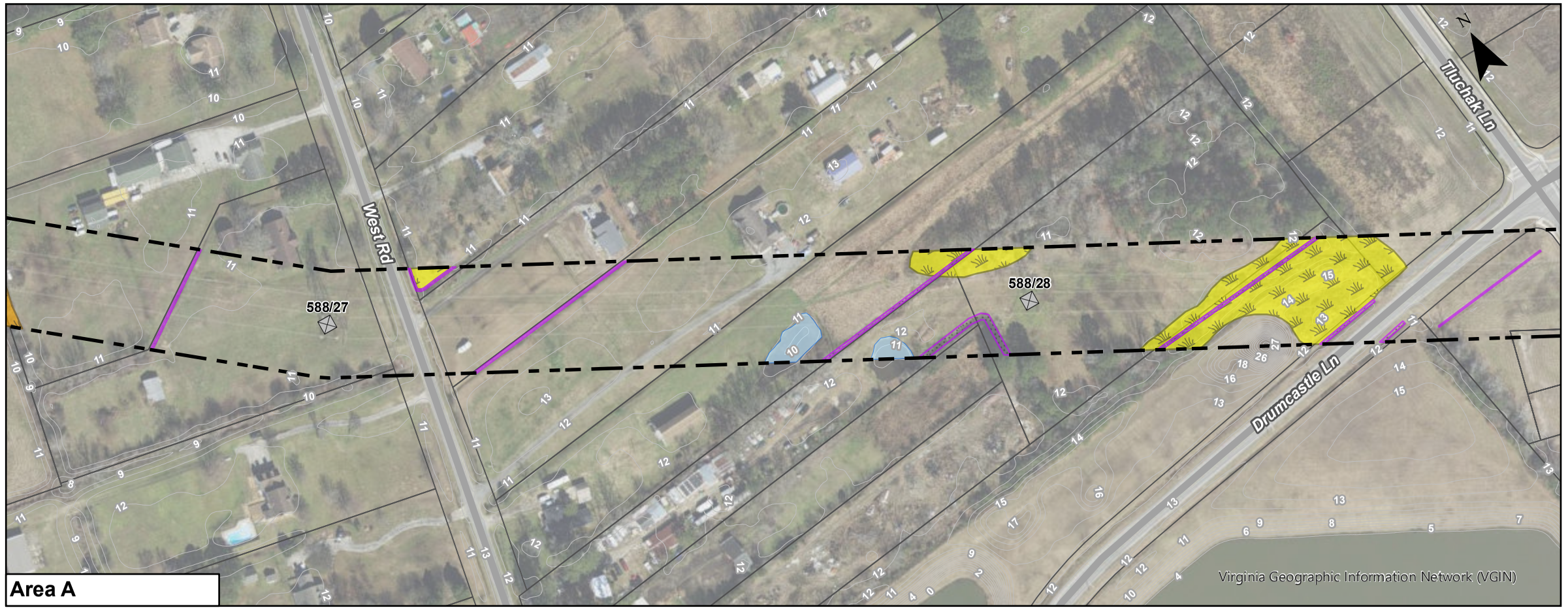
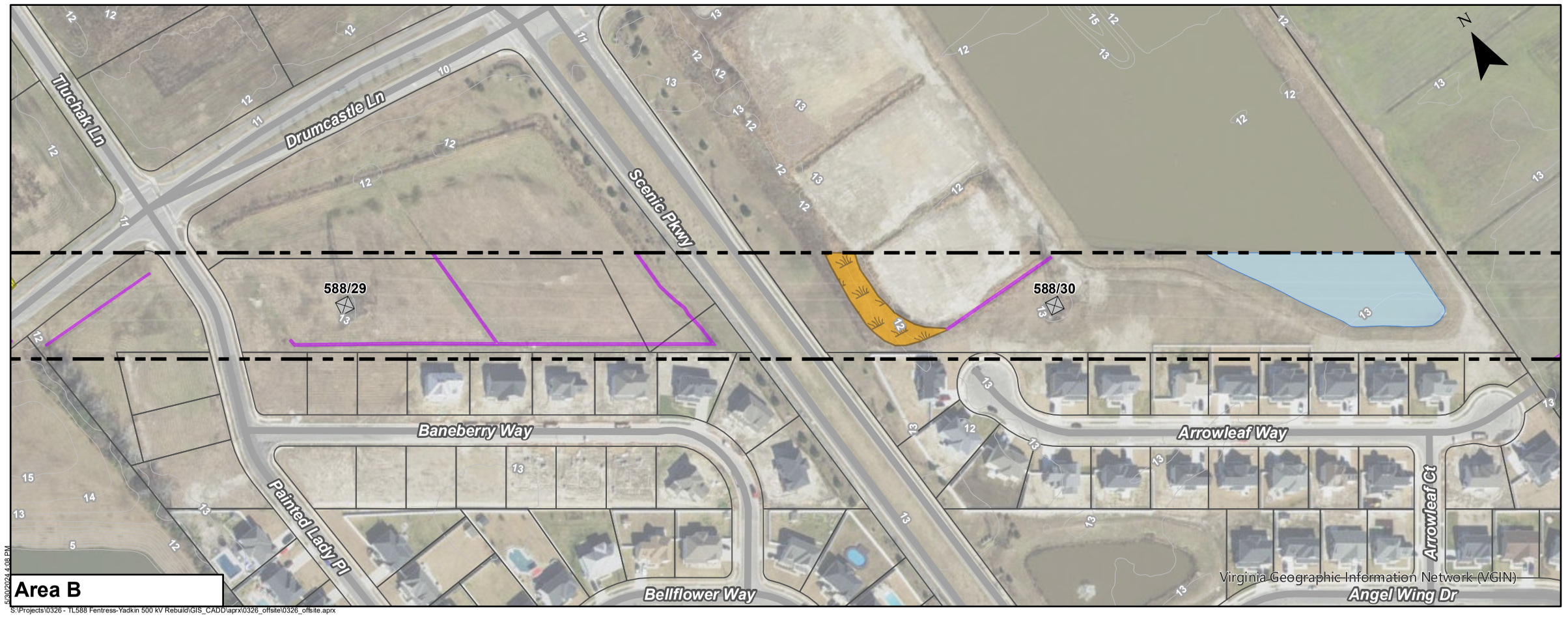


Area A



Area B

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DESKTOP WETLAND REVIEW MAP

Fentress - Yadkin 500 kV Line #588 & #5005
City of Chesapeake, Virginia

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Dominion Energy Virginia

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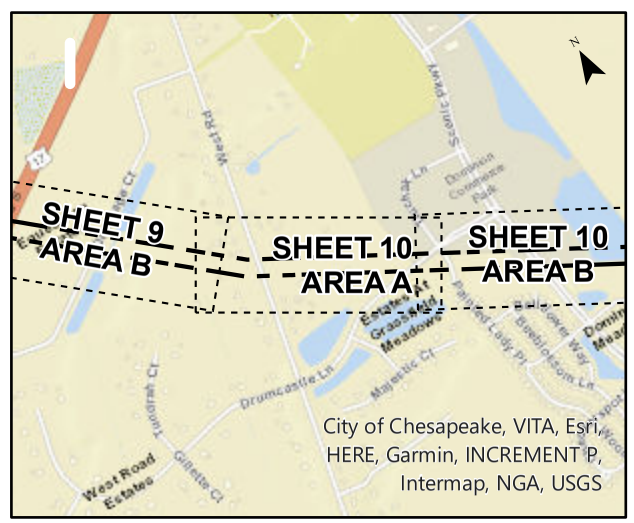

C2 ENVIRONMENTAL

SHEET 10 OF 19

DESKTOP WETLAND REVIEW MAP

Fentress - Yadkin 500 kV Line #588 & #5005
City of Chesapeake, Virginia

Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
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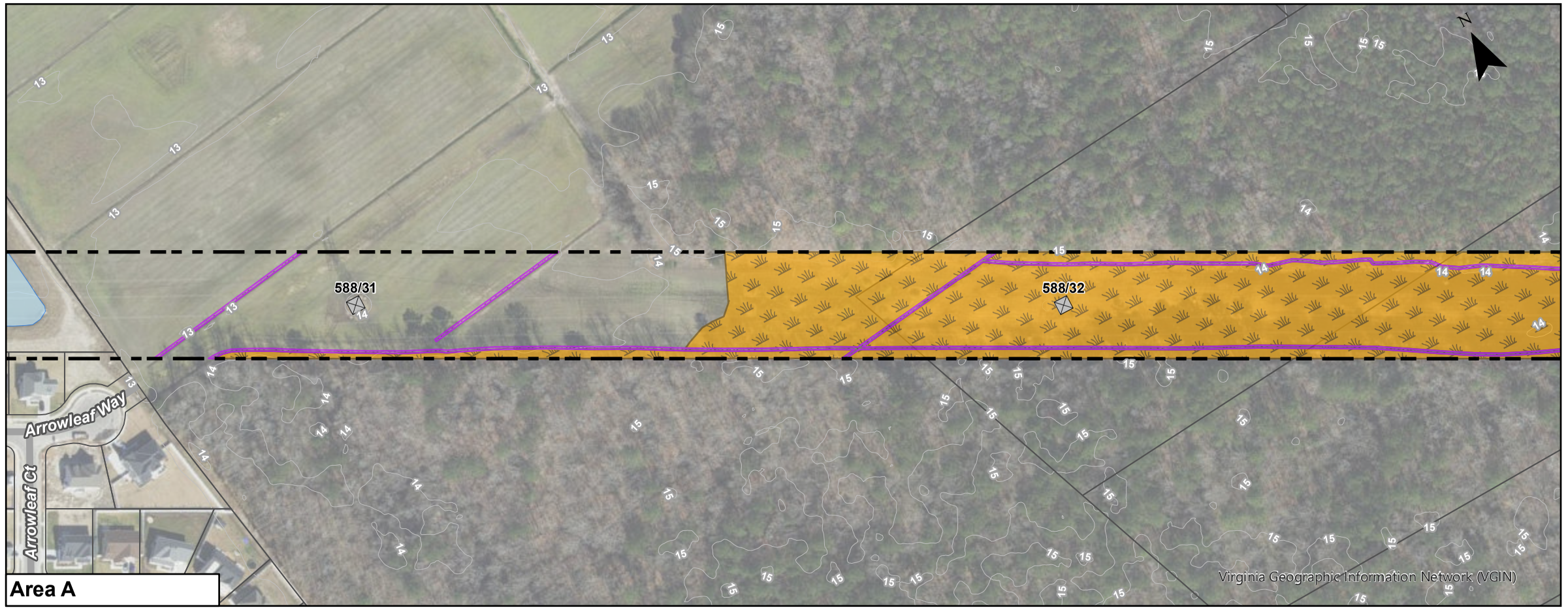
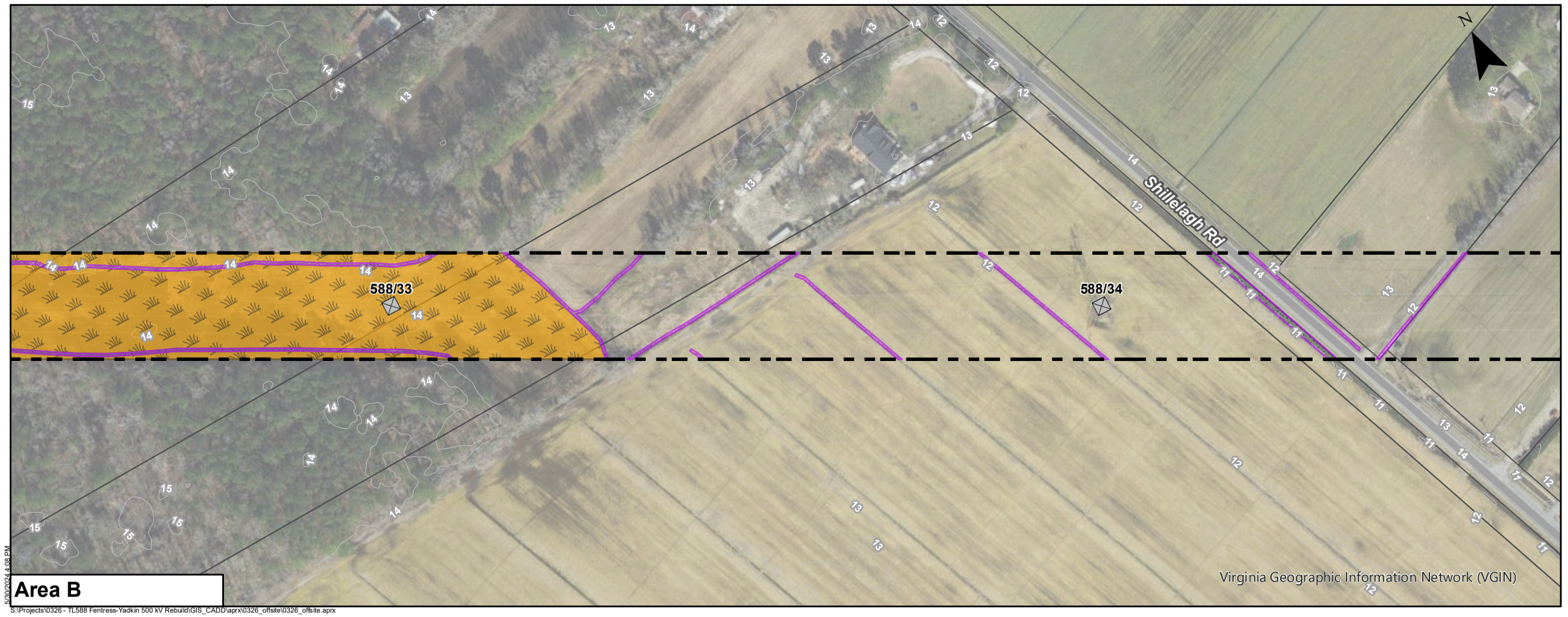


Area A



Area B

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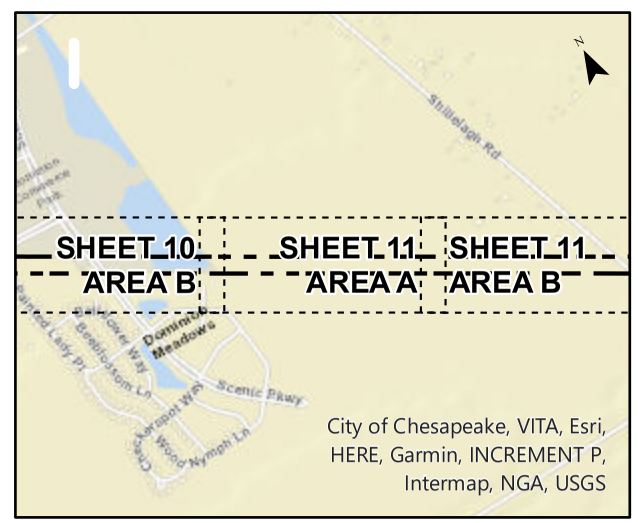
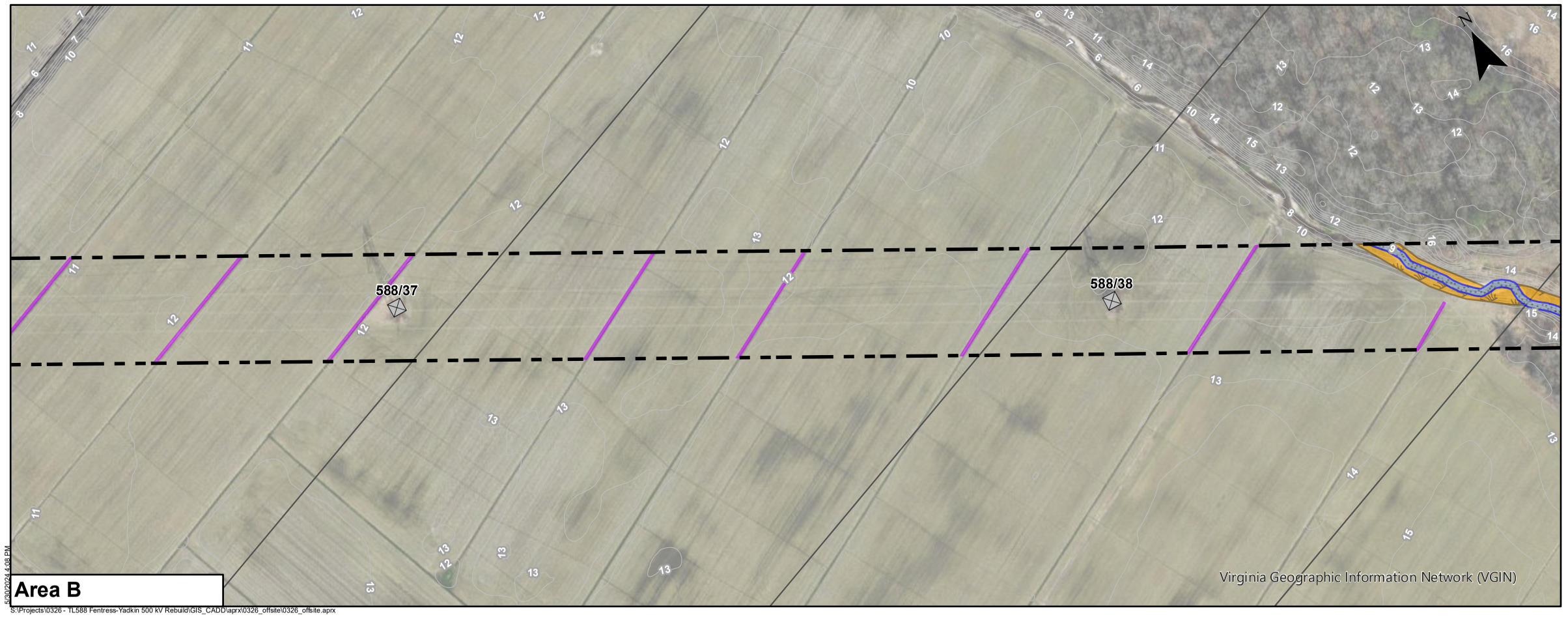


C2 ENVIRONMENTAL

Area A



Area B

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DESKTOP WETLAND REVIEW MAP

Fentress - Yadkin 500 kV Line #588 & #5005
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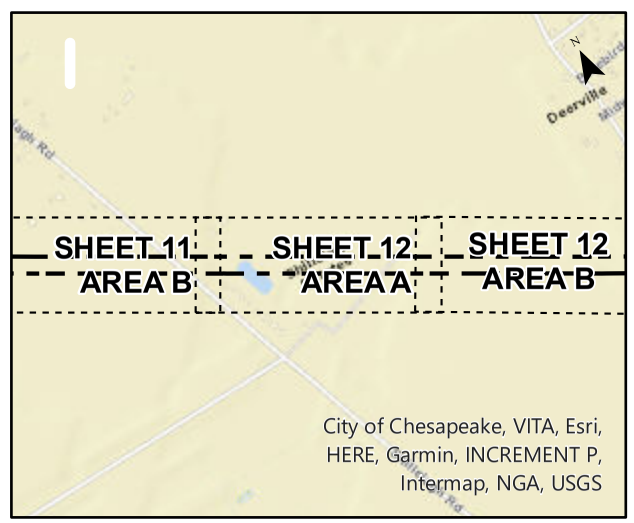
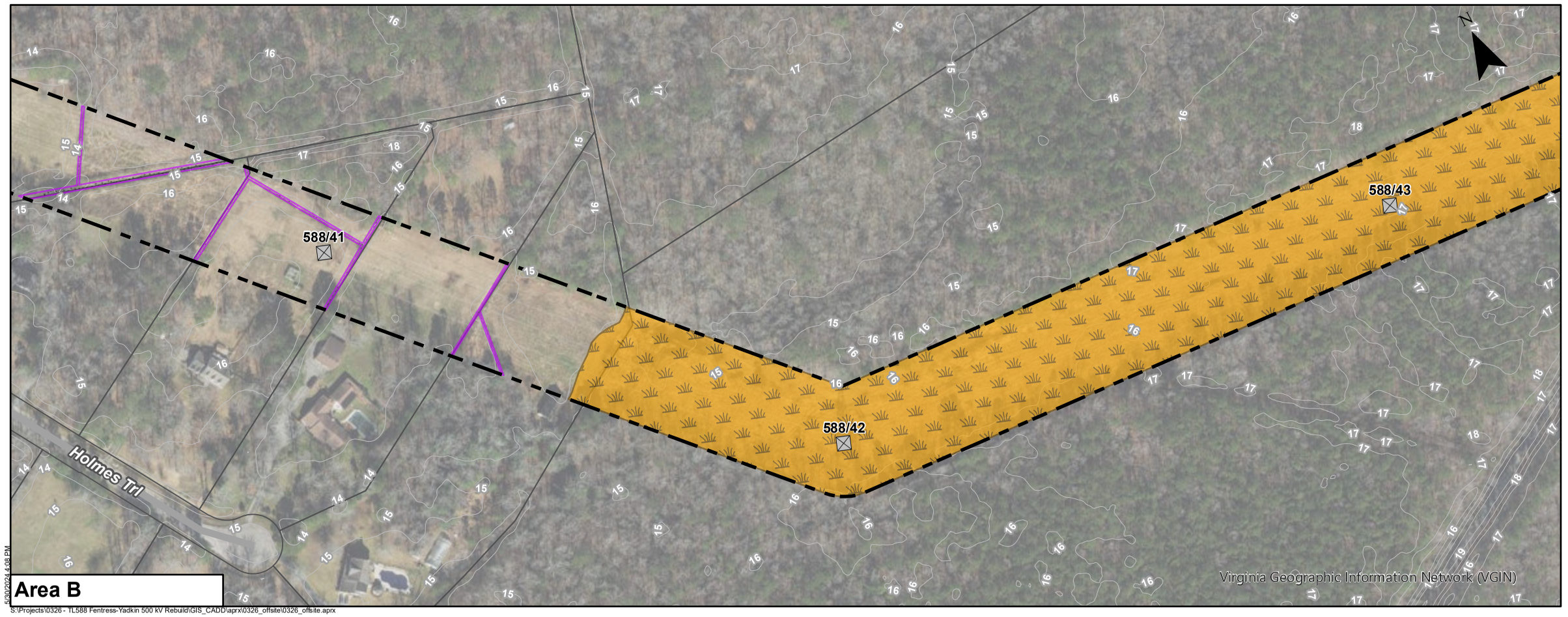


C2 ENVIRONMENTAL

SHEET 12 OF 19



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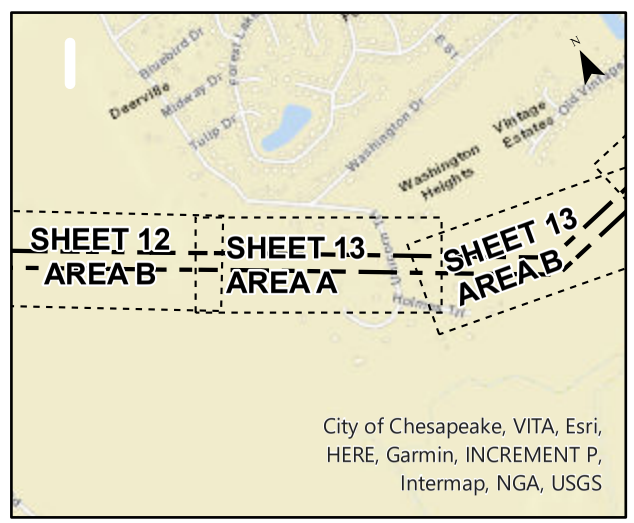
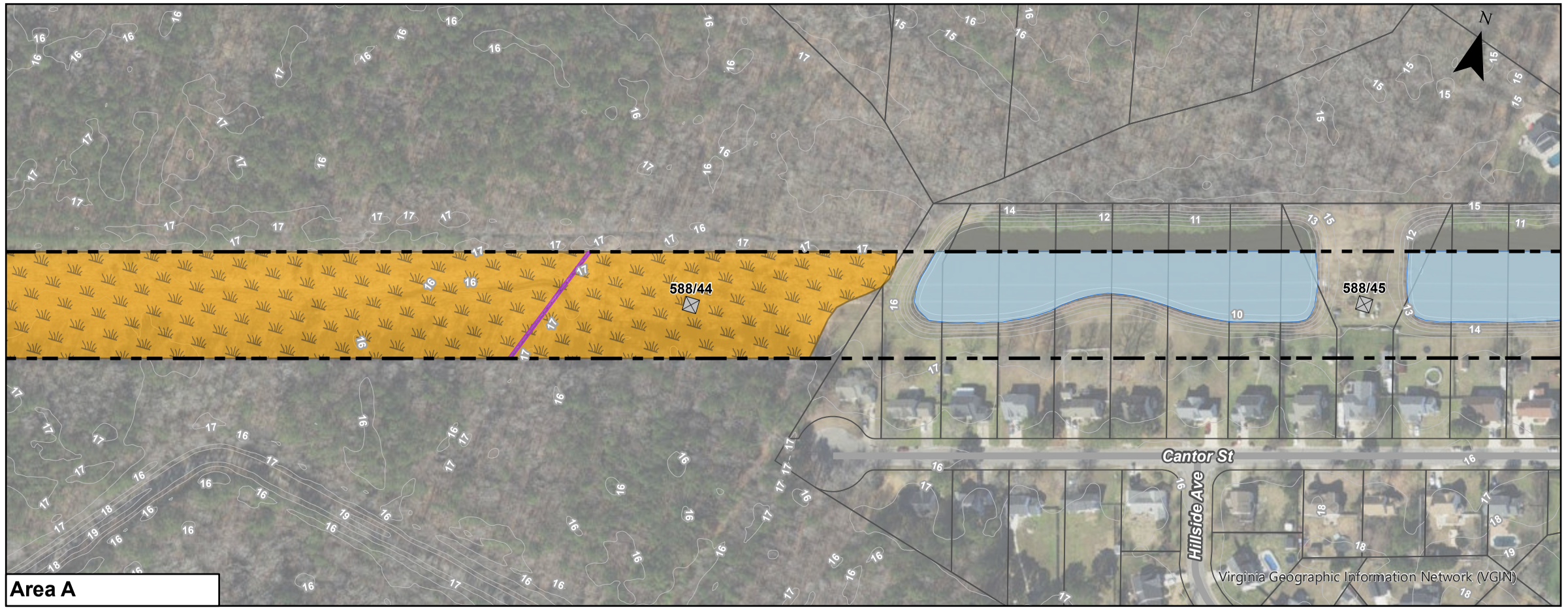
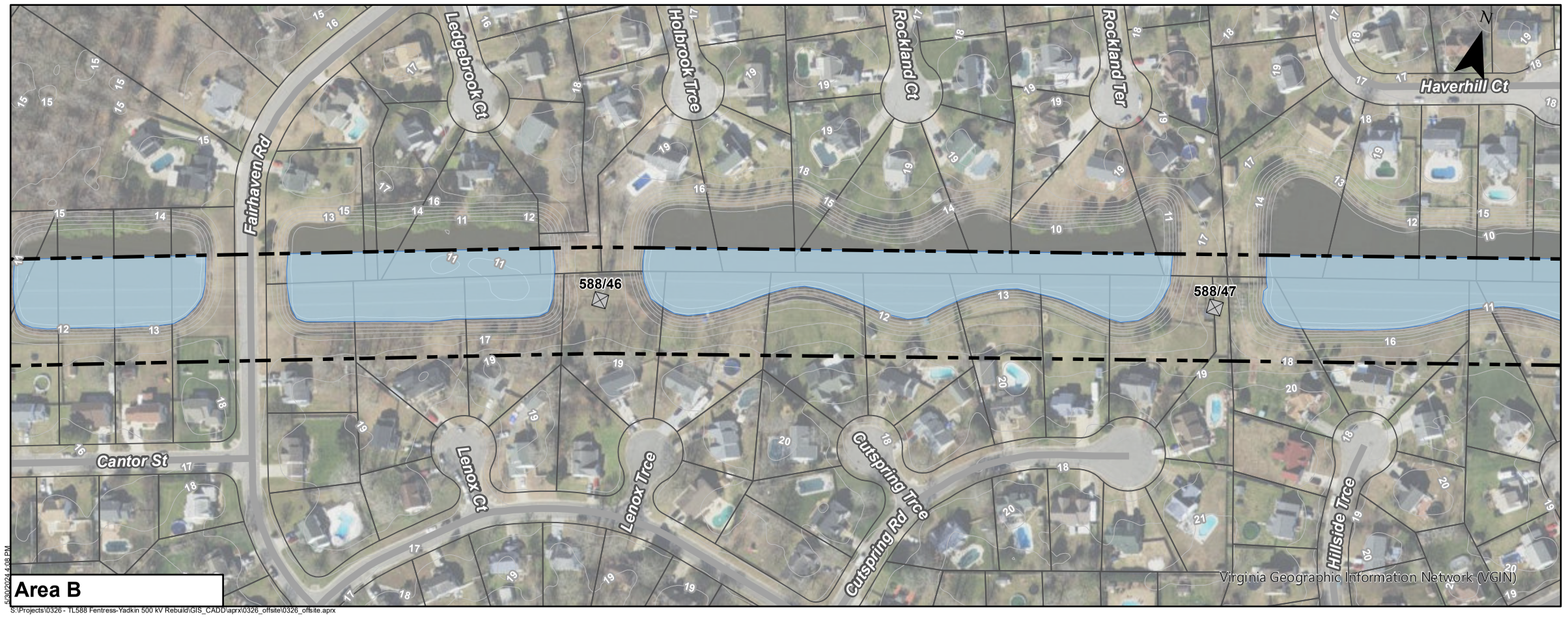


C2 ENVIRONMENTAL

SHEET 13 OF 19





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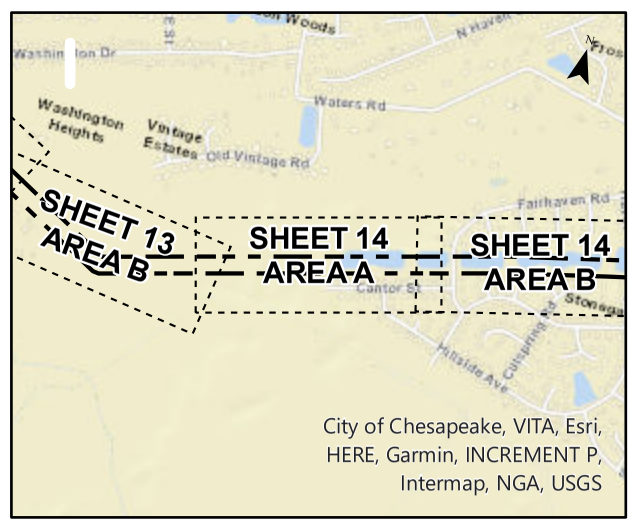
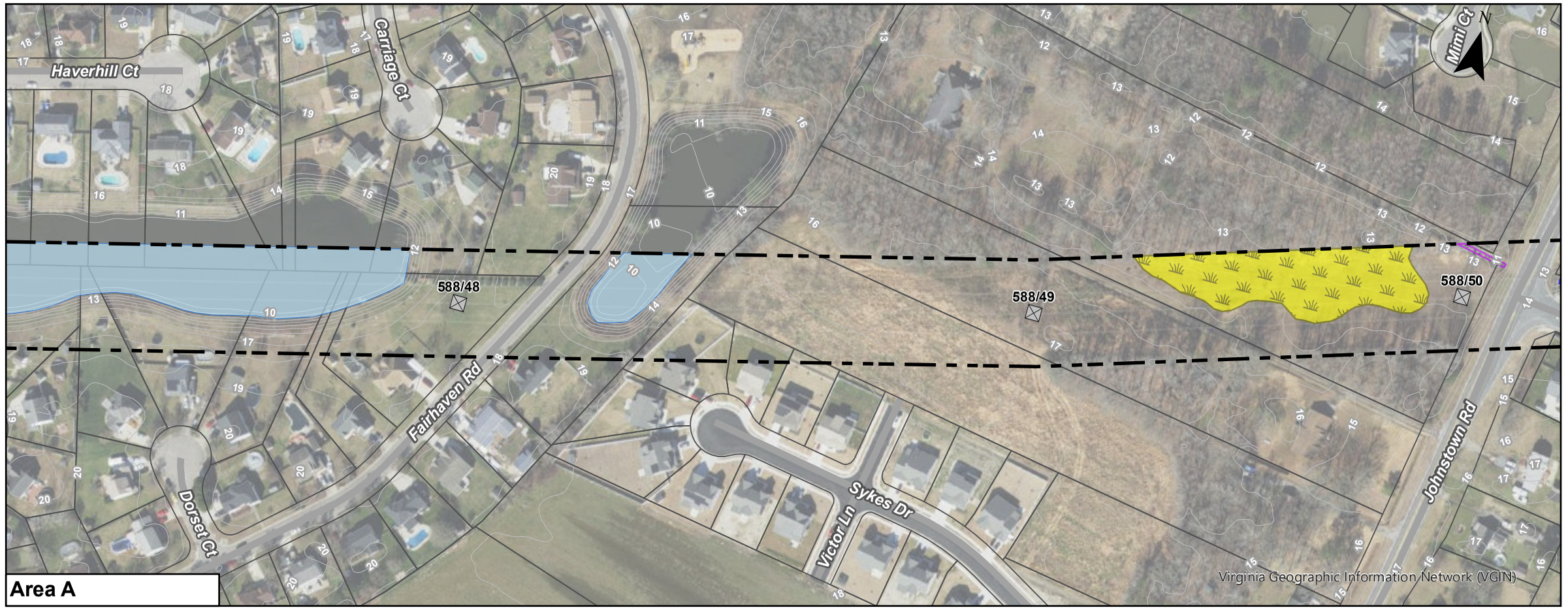
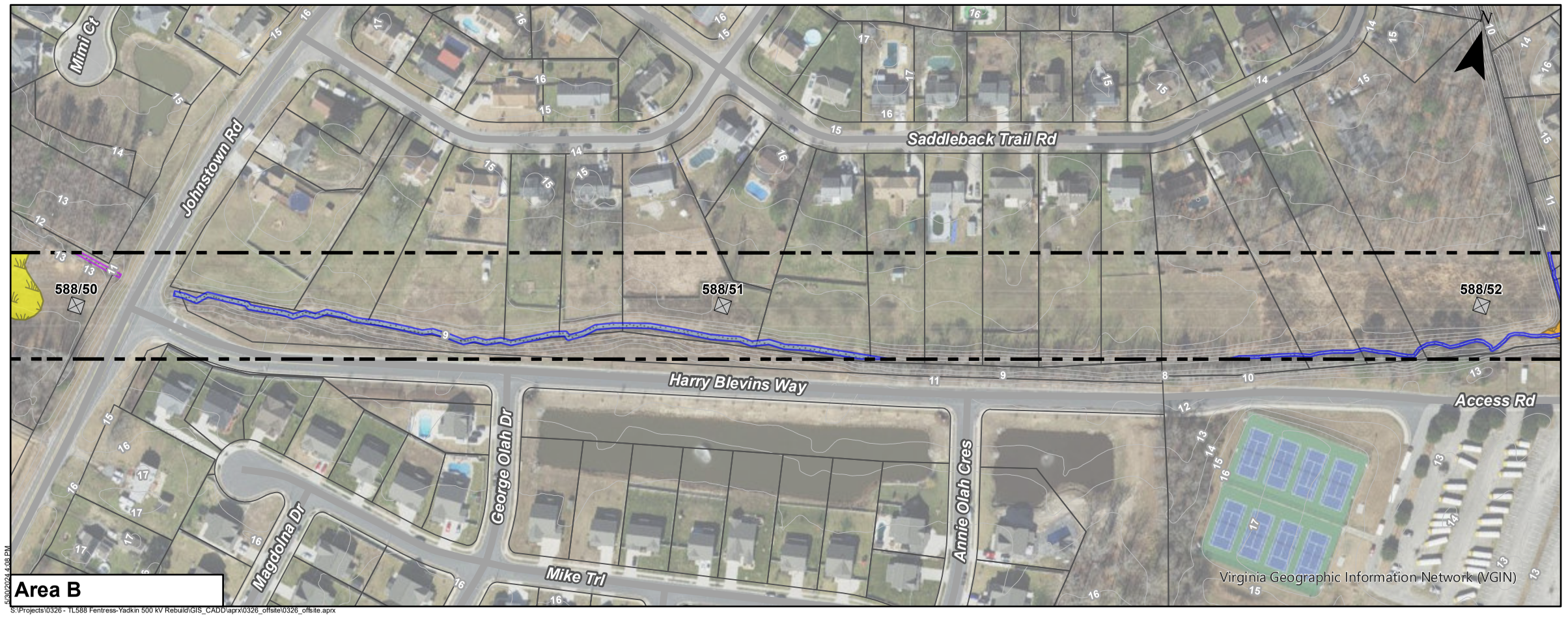


C2 ENVIRONMENTAL

SHEET 14 OF 19



Area A



Area B

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DESKTOP WETLAND REVIEW MAP

Fentress - Yadkin 500 kV Line #588 & #5005
City of Chesapeake, Virginia

Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0326	ZTW	05/30/24

0 100 200 400 Feet

Scale is 1 IN = 200 FT when printed at original size of 11x17

SITE DATA

- Proposed Route
- Constraint Design Segment
- Existing Structure Location
- Approximate Tidal R1 Stream Channel Limits
- Approximate Non-Tidal Stream Channel Limits
- Approximate E2EM/E2SS High Probability Wetland Limits
- Approximate PEM/PSS High Probability Wetland Limits
- Approximate PEM/PSS Medium Probability Wetland Limits
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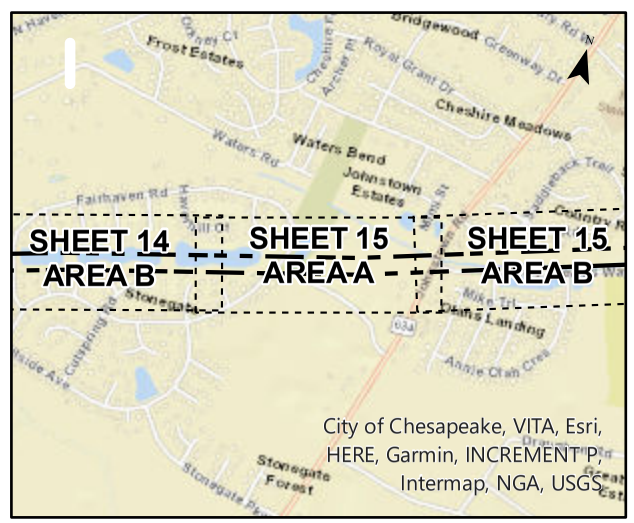
- Approximate PFO High Probability Wetland Limits
- Approximate PFO Medium Probability Wetland Limits
- Approximate PFO Low Probability Wetland Limits
- Approximate PUB Open Water Limits
- Approximate Jurisdictional Ditch Limits
- Approximate Mean High Water
- Approximate Mean Low Water
- Existing 1 FT Contour
- Parcel Boundary



C2 ENVIRONMENTAL

SHEET 15 OF 19

DESKTOP WETLAND REVIEW MAP

Fentress - Yadkin 500 kV Line #588 & #5005
City of Chesapeake, Virginia

Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0326	ZTW	05/30/24

0 100 200 400 Feet
Scale is 1 IN = 200 FT when printed at original size of 11x17

SITE DATA

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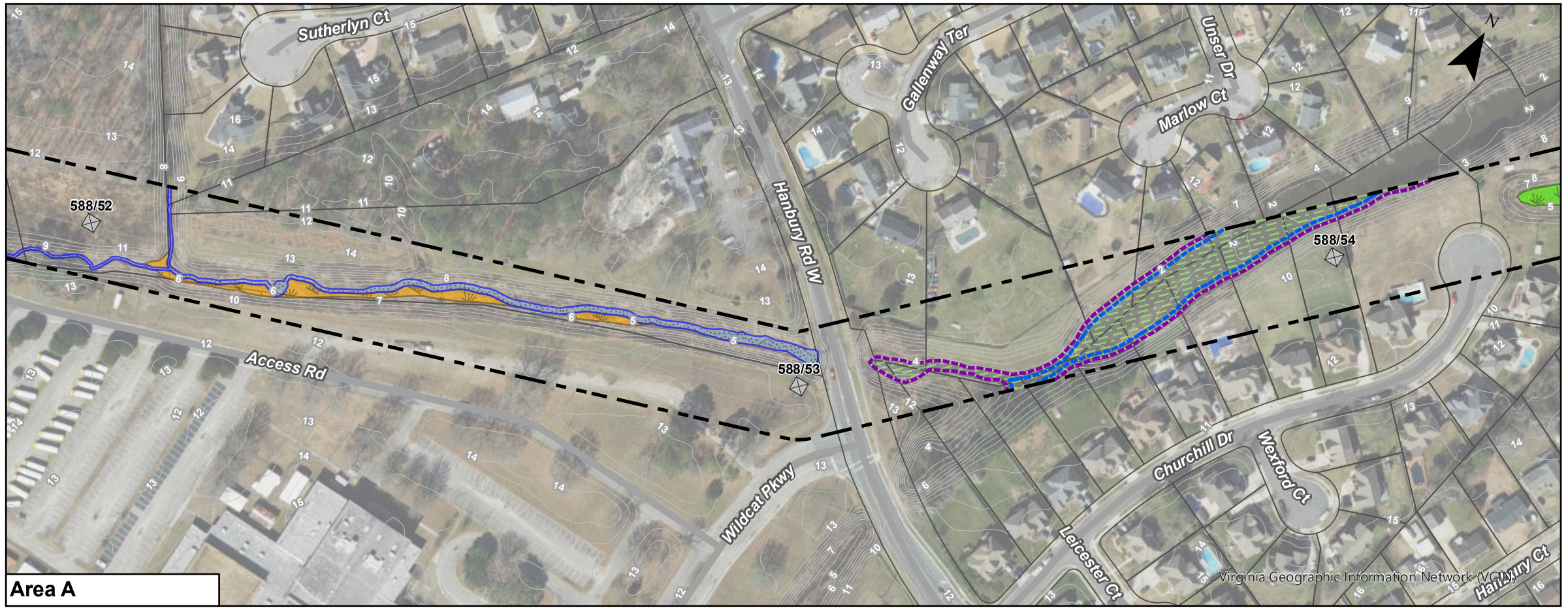
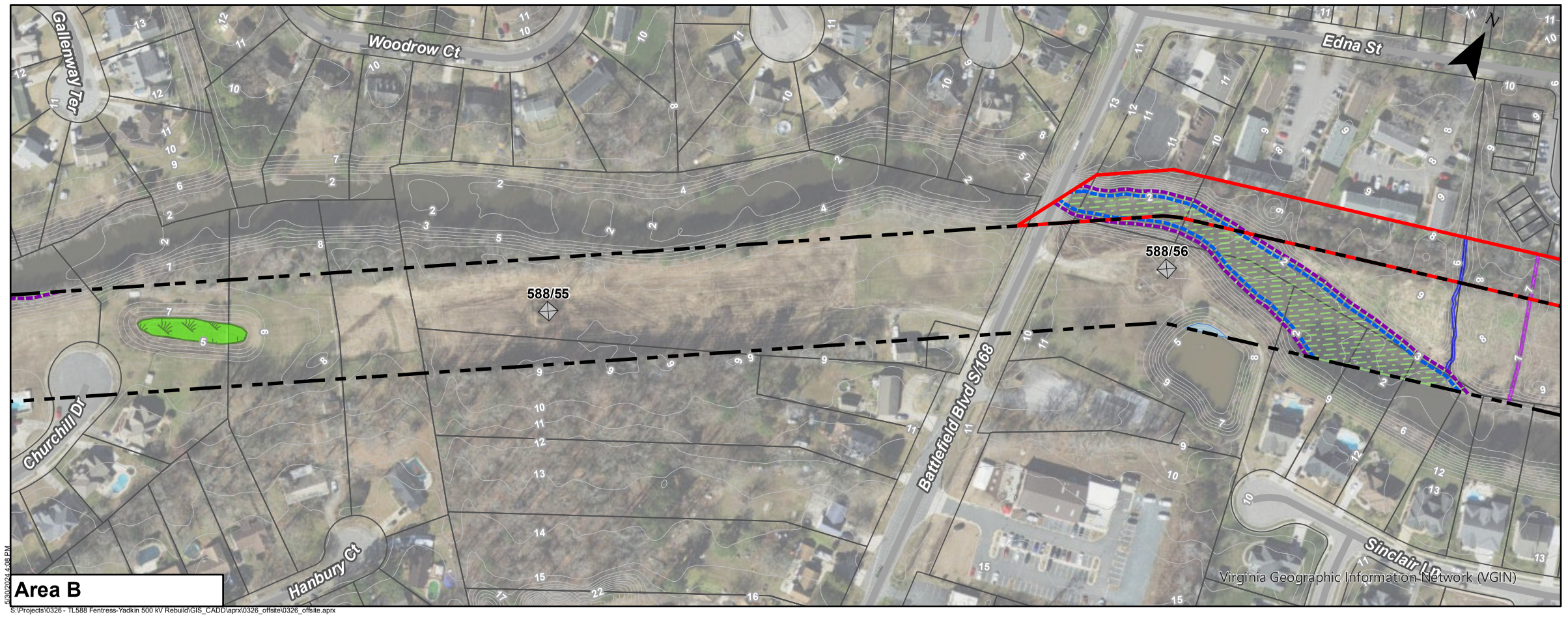
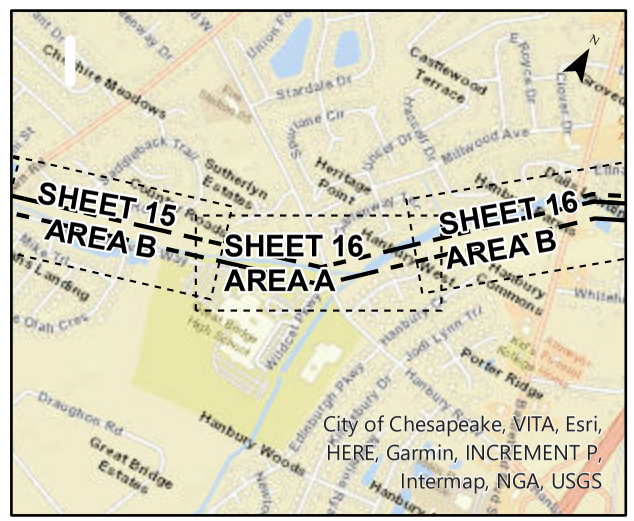
- Approximate Mean High Water
- Approximate Mean Low Water
- Existing 1 FT Contour
- Parcel Boundary







C2 ENVIRONMENTAL

SHEET 16 OF 19

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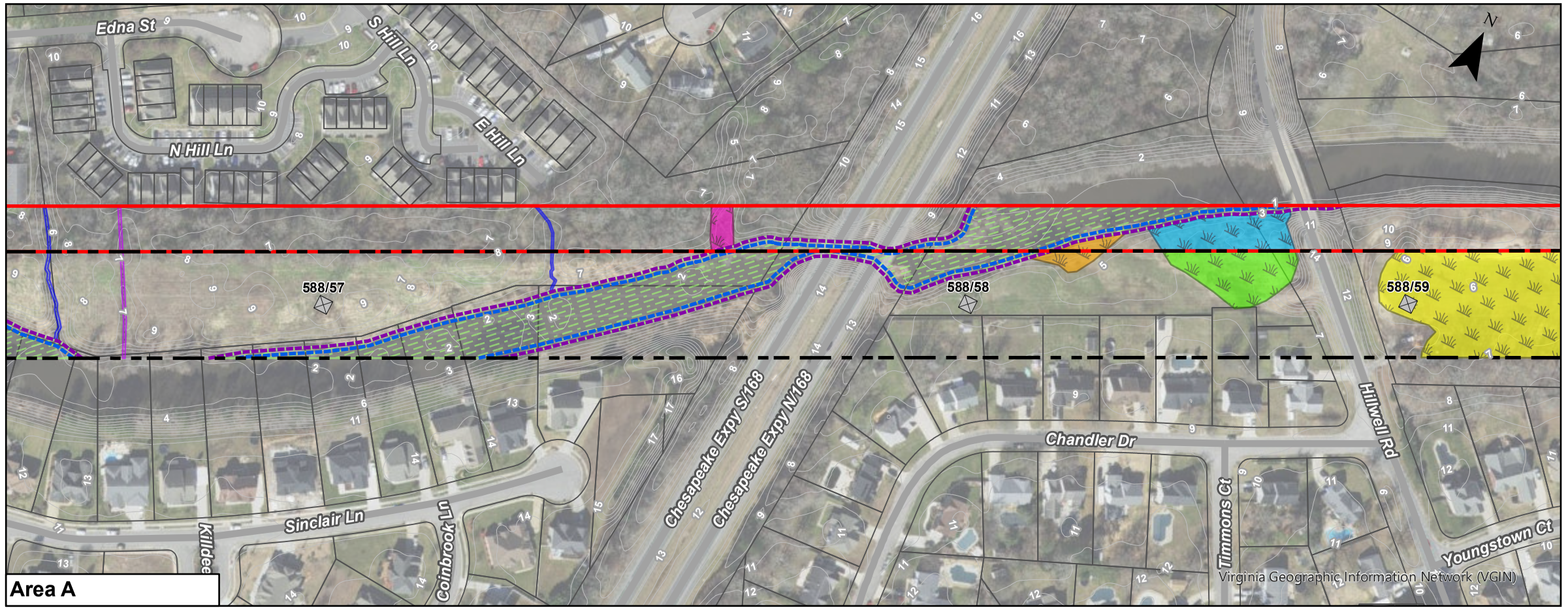

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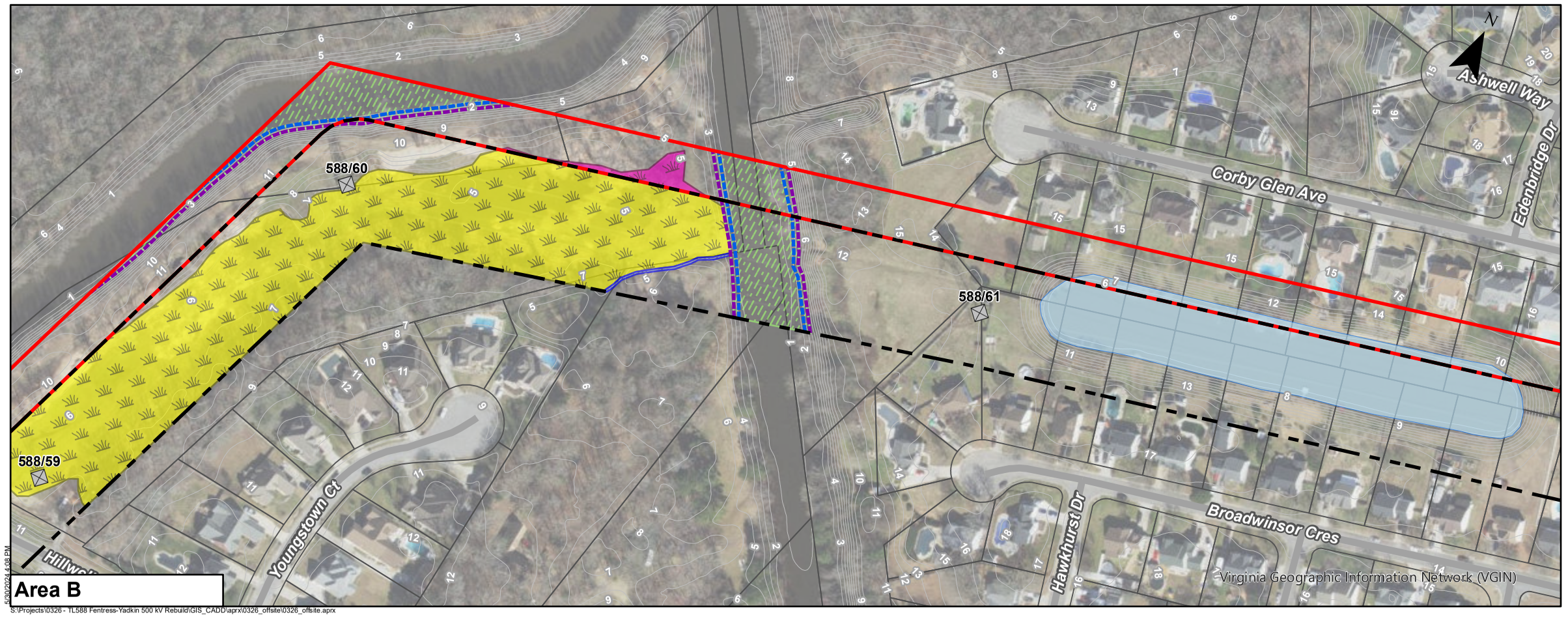

Area B

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DESKTOP WETLAND REVIEW MAP

Fentress - Yadkin 500 kV Line #588 & #5005
City of Chesapeake, Virginia

Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0326	ZTW	05/30/24

0 100 200 400 Feet
Scale is 1 IN = 200 FT when printed at original size of 11x17

SITE DATA

- Proposed Route
- Constraint Design Segment
- Existing Structure Location
- Approximate Tidal R1 Stream Channel Limits
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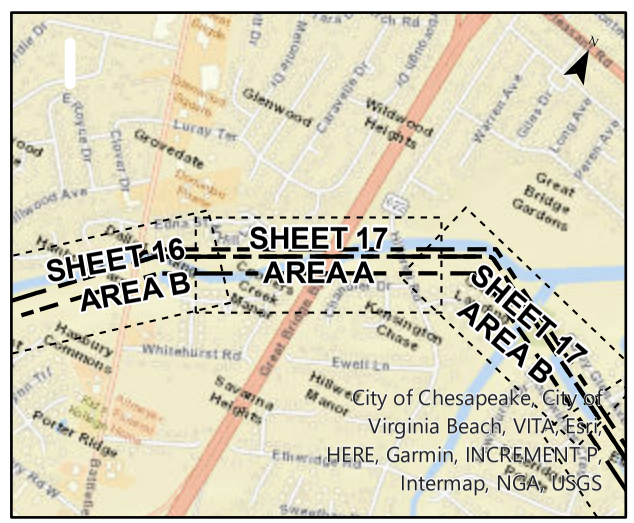
- Approximate PFO Medium Probability Wetland Limits
- Approximate PFO Low Probability Wetland Limits
- Approximate PUB Open Water Limits
- Approximate Jurisdictional Ditch Limits
- Approximate Mean High Water
- Approximate Mean Low Water
- Existing 1 FT Contour
- Parcel Boundary



C2 ENVIRONMENTAL

SHEET 17 OF 19

DESKTOP WETLAND REVIEW MAP

Fentress - Yadkin 500 kV Line #588 & #5005
City of Chesapeake, Virginia

Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0326	ZTW	05/30/24

0 100 200 400 Feet
Scale is 1 IN = 200 FT when printed at original size of 11x17

SITE DATA

- Proposed Route
- Constraint Design Segment
- Existing Structure Location
- Approximate Tidal R1 Stream Channel Limits
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- Approximate E2EM/E2SS High Probability Wetland Limits
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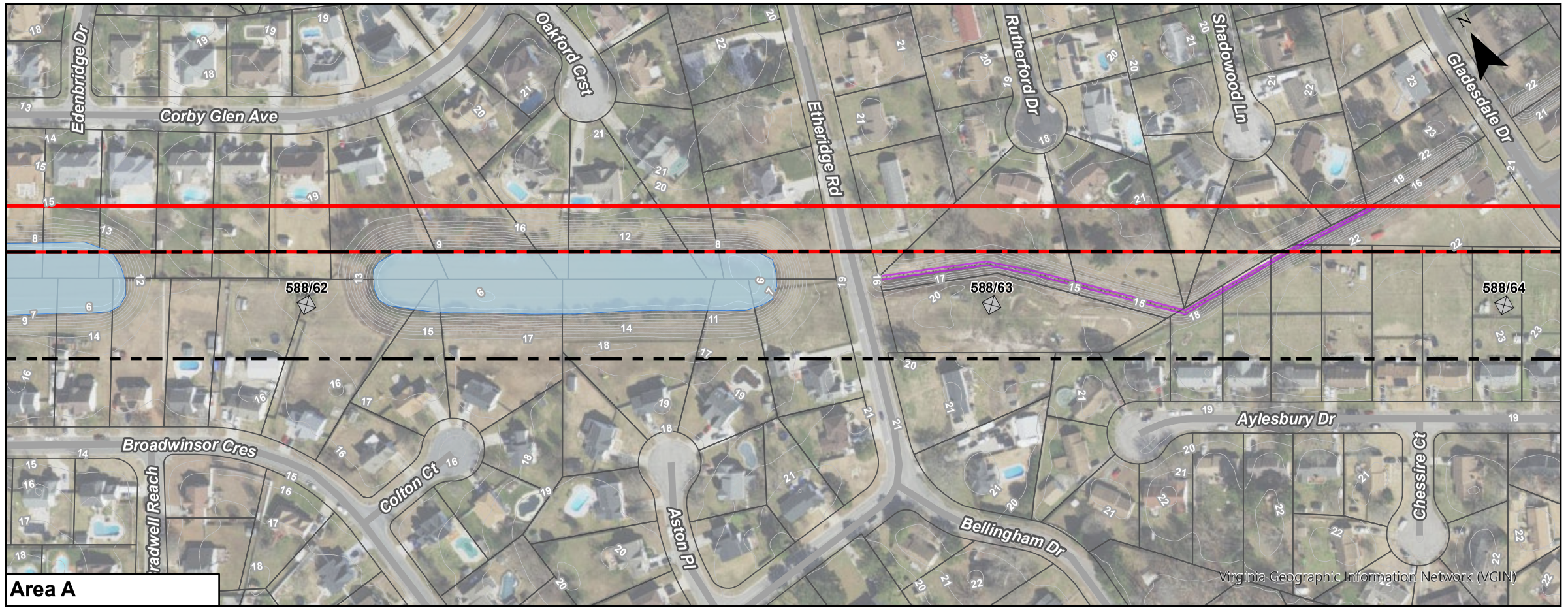
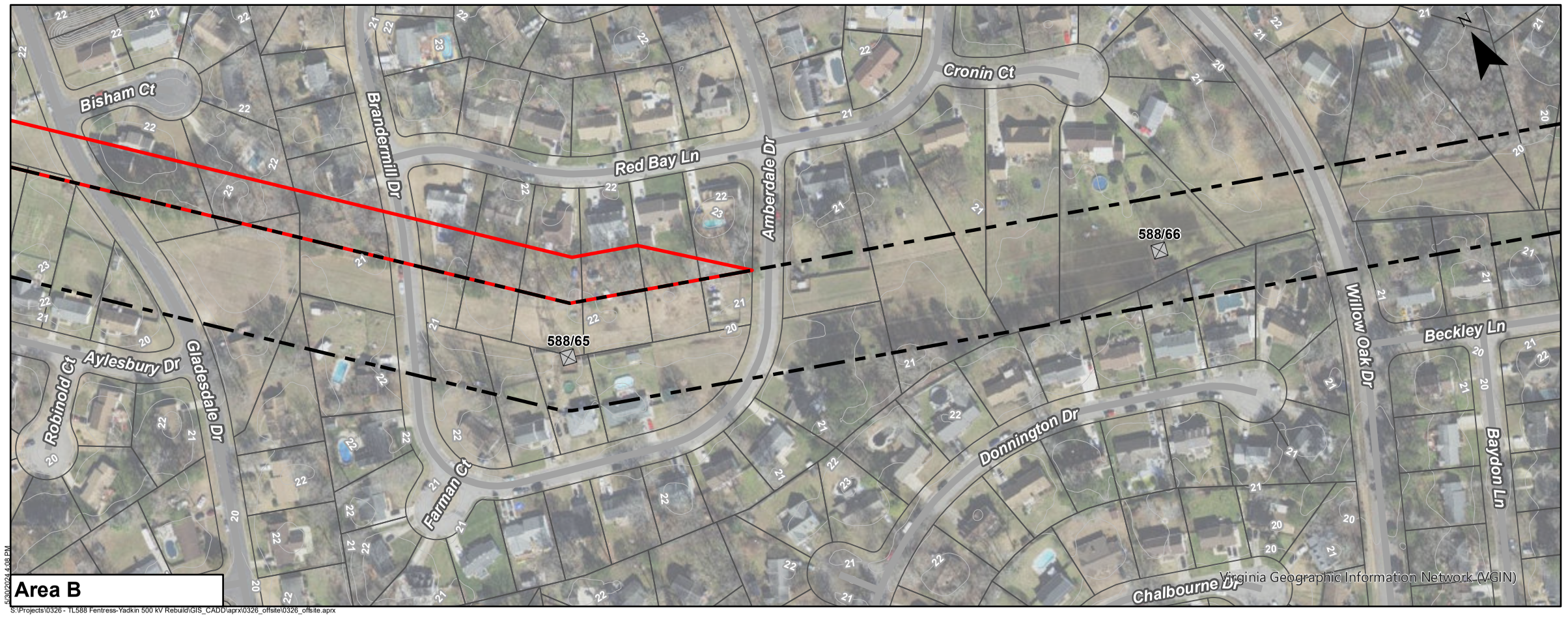
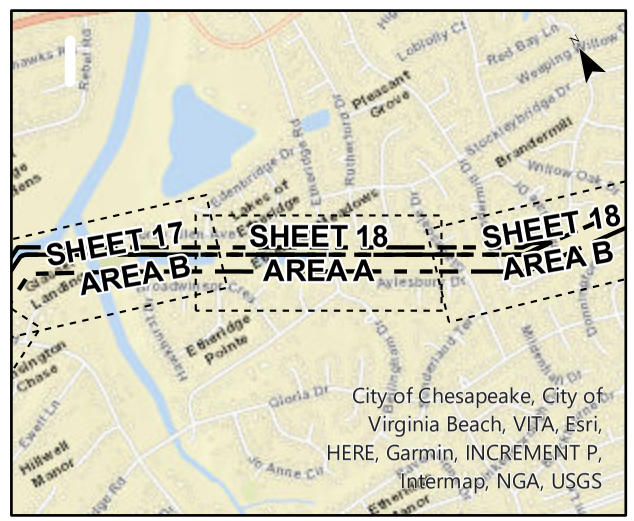
- Approximate Jurisdictional Ditch Limits
- Approximate Mean High Water
- Approximate Mean Low Water
- Existing 1 FT Contour
- Parcel Boundary







C2 ENVIRONMENTAL

SHEET 18 OF 19

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DESKTOP WETLAND REVIEW MAP

Fentress - Yadkin 500 kV Line #588 & #5005
City of Chesapeake, Virginia

Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0326	ZTW	05/30/24

0 100 200 400 Feet
Scale is 1 IN = 200 FT when printed at original size of 11x17

SITE DATA

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- Constraint Design Segment
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- Approximate Tidal R1 Stream Channel Limits
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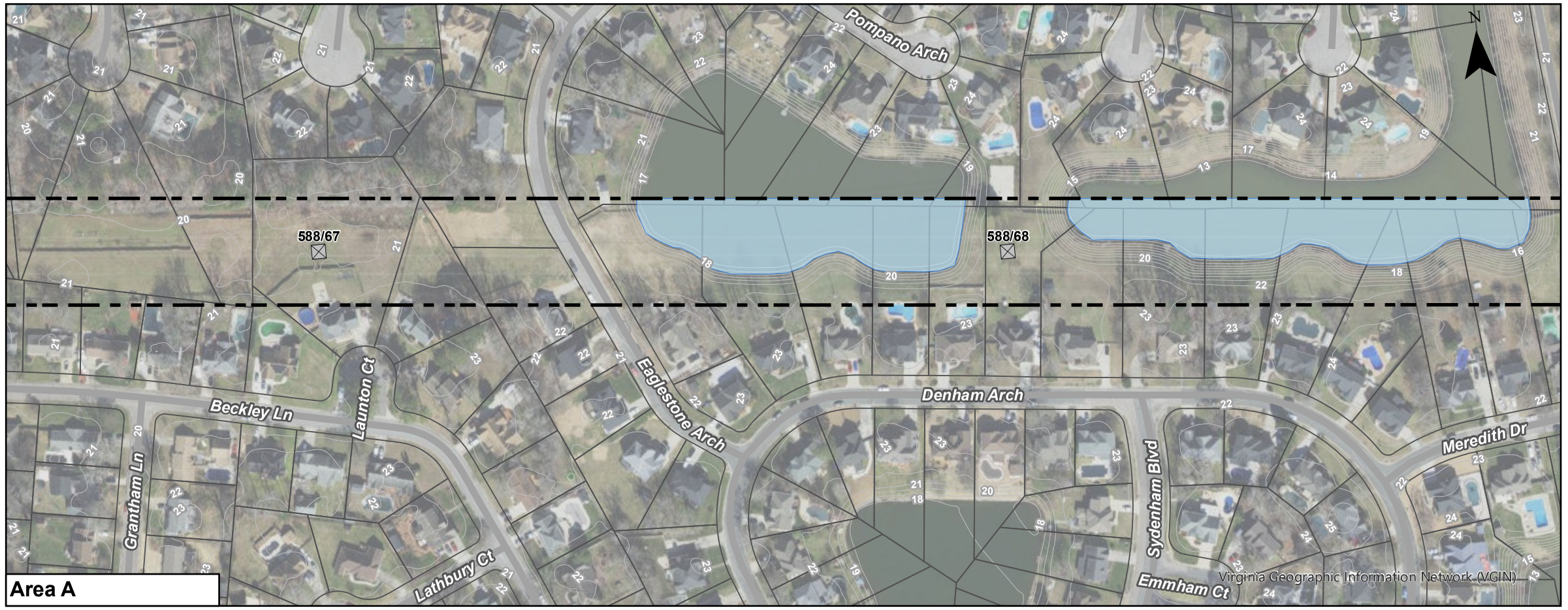
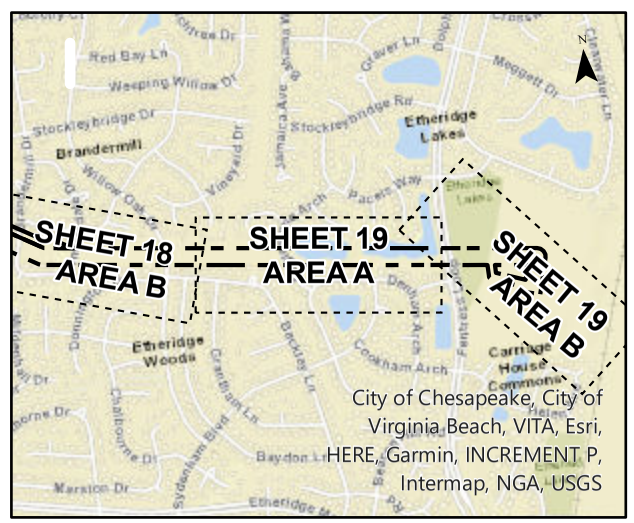


Area A

Area B



C2 ENVIRONMENTAL

SHEET 19 OF 19

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Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

www.deq.virginia.gov

Travis A. Voyles
Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus
Director

June 10, 2024

Elizabeth "Tibby" L. Hester
Dominion Energy and Sustainability
120 Tredegar Street
Richmond, VA 23219

Dear Ms. Hester,

In accordance with the Department of Environmental Quality-State Corporation Commission *Memorandum of Agreement Regarding Wetland Impact Consultation* (July 2003), we have reviewed the information submitted by Dominion Energy Virginia. Dominion is proposing to rebuild the existing 500 kV Fentress-Yadkin Line #588 and construct a new overhead single circuit 500 kV transmission line almost entirely within Dominion's existing right-of-way. The project is located in the City of Chesapeake, Virginia and will include substation-related work at Dominion's expanded Fentress Substation and existing Yadkin Substation as well as new right-of-way required for a minor shit of existing Line #565 at Yadkin and for Line #5005 at Fentress.

Summary of Findings
A jurisdictional wetland and waters delineation has not been conducted at this time; however, C2 Environmental, Inc. conducted a wetland desktop study to identify probable wetlands based on a review of multiple data sources. The full Wetland Desktop Study will be submitted once finalized. Subsequently, a field wetland delineation will be conducted and the extent of wetlands of other waters of the United States will be submitted to the U.S. Army Corps of Engineers for confirmation. Table 1 below provides a summary of the medium to high probability wetlands that could be affected within the proposed project right-of-way.

Table 1. Proposed Route (Line #588 Rebuild & Proposed Line #5005) – Results of Desktop Wetland Review

Resource	Probability			Total
	Low	Medium	High	
Estuarine Emergent/Estuarine Scrub-Shrub (E2EM/E2SS) Wetlands	-	-	1.2 AC	1.2 AC
Palustrine Emergent/Palustrine Scrub-Shrub (PEM/PSS) Wetlands	0.5 AC	21.7 AC	25.3 AC	47.5
Palustrine Forested (PFO) Wetlands		0.5 AC	1.6 AC	2.1 AC

Palustrine Unconsolidated Bottom (PUB) Open Water	-	-	-	27.9 AC
Tidal (R1) Steam Channel	-	-	-	4.2 AC (3,220 LF)
Non-Tidal Stream Channel	-	-	-	1.6 AC (6,861 LF)
Jurisdictional Ditch	-	-	-	2.1 (21,892 LF)

Table 2. Constraint Design Segment – Results of Desktop Wetland Review

Resource	Probability			Total
	Low	Medium	High	
Palustrine Emergent/Palustrine Scrub-Shrub (PEM/PSS) Wetlands	0.3 AC	0.1 AC	1,577 SF	0.4 AC
Palustrine Forested (PFO) Wetland	0.3 AC	0.2 AC	-	0.5 AC
Palustrine Unconsolidated Bottom (PUB) Open Water	-	-	-	0.2 AC
Tidal (R1) Steam Channel	-	-	-	1.6 AC (1,548 LF)
Non-Tidal Stream Channel	-	-	-	536 AC (154 LF)
Jurisdictional Ditch	-	-	-	923 AC (231 LF)

Table 3. The Variation – Results of Desktop Wetland Review

Resource	Probability			Total
	Low	Medium	High	
Estuarine Emergent/Estuarine Scrub-Shrub (E2EM/E2SS) Wetland	-	-	1,518 SF	1,518 SF
Palustrine Forested (PFO) Wetland	-	-	0.7 AC	0.7 AC
Non-Tidal Stream Channel	-	-	-	601 SF (75 LF)

Water Quality and Wetlands. The disturbance of land and surface waters, which include wetlands, open water, and streams, may require prior approval by the Virginia Department of Environmental Quality (DEQ); the U.S. Army Corps of Engineers (USACE); the Virginia Marine Resources Commission (VMRC); and/or local government wetlands boards (generally in the northern and piedmont regions of Virginia). Measures such as but not limited to Best Management Practices (BMPs) must be taken to first avoid and minimize impacts to surface waters during construction activities, including potential water quality impacts resulting from construction site runoff. Unavoidable impacts may require compensatory mitigation.

The USACE and DEQ work in conjunction to provide official confirmation of whether there are federal and/or state jurisdictional surface waters that may be impacted by the proposed project. DEQ may confirm additional waters as jurisdictional beyond those under federal authority. VMRC provides its own review to determine its agency jurisdiction. Review of National Wetland Inventory maps or topographic maps for locating wetlands, open waters, or streams may not be sufficient; there may need to be a site-specific review by a qualified professional.

If construction activities will occur in or along any streams (perennial, intermittent, or ephemeral), open water, or wetlands, the applicant should contact the DEQ-VWP manager at the DEQ regional office closest to the project location (https://www.deq.virginia.gov/get-involved/about-us/contact-us) to determine the need for any permits prior to commencing work that could impact surface waters. Even if there will be no intentional placement of fill material in jurisdictional waters, potential water quality impacts resulting from construction site surface runoff must be minimized. This can be achieved by using BMPs. DEQ's permit need decisions neither replace nor supersede requirements set forth by other local, state, federal, and tribal laws, nor eliminate the need to obtain additional permits, approvals, consultations, or authorizations as required by law before proposed activities may commence.

Erosion and Sediment Control and Storm Water Management. DEQ has regulatory authority for the Virginia Pollutant Discharge Elimination System (VPDES) programs related to municipal separate storm sewer systems (MS4s) and construction activities. Erosion and sediment control (ESC) measures are addressed in local ordinances and State regulations. Additional information is available at https://www.deq.virginia.gov/permits/water/stormwater-construction. Non-point source pollution resulting from this project should be minimized by using effective erosion and sediment control practices and structures. Consideration should also be given to denuded areas to be promptly revegetated following construction work. If the total land disturbance exceeds 10,000 square feet, an ESC plan will be required. Some localities also require an ESC plan for disturbances less than 10,000 square feet. A stormwater management plan may also be required. For any land disturbing activities equal to one acre or more, you are required to apply for coverage under the VPDES General Permit for Discharges of Storm Water from Construction Activities. The Virginia Stormwater Management Permit Authority may be DEQ or the locality.

Recommendations and Potential Permits:

Based upon review of the information provided, DEQ's Virginia Water Protection (VWP) Permit Program offers the following general recommendations concerning potential surface water impacts:

1. Prior to commencing project work, all surface waters on the project site should be delineated by a qualified professional and verified by the USACE or DEQ. Note that the USACE can confirm boundaries of federal jurisdictional waters and state jurisdictional waters but may only provide confirmation of Waters of the United States (WOTUS) boundaries. Except in couple of situations, DEQ provides confirmation of all state surface waters boundaries, whether or not the USACE has jurisdiction.
2. Wetland, stream, and open water impacts should be avoided and minimized to the maximum extent practicable.
3. If the scope of the project changes, additional review will be necessary by one or more offices in the Commonwealth's Secretariat of Natural Resources and/or the USACE.
4. At a minimum, any required compensation for permanent impacts to State Waters, including the compensation for permanent conversion of forested wetlands and scrub-shrub wetlands to emergent wetlands, should be in accordance with all applicable state regulations and laws. The typical ratios for permanent conversion impacts is 1:1 (not a standard ratio). Secondary impacts (e.g., loss of hydrology, significant temporary impacts, etc.) should also be considered, and may require compensatory mitigation at the standard ratios, unless determined otherwise based on project-specific considerations. Permanent impacts to forested or converted wetlands are required to be compensated by establishing or restoring new forested or scrub-shrub wetlands, within the

impacted watershed. Compensation is preferred through available sources of mitigation bank and in-lieu program wetland mitigation credits.

5. Any temporary impacts to surface waters associated with this project should be restored to pre-existing conditions.

6. No activity may substantially disrupt the movement of aquatic life indigenous to the water body, including those species which normally migrate through the area, unless the primary purpose of the activity is to impound water. Culverts placed in streams must be installed to maintain low flow conditions. No activity may cause more than minimal adverse effect on navigation. Furthermore, the activity must not impede the passage of normal or expected high flows and the structure or discharge must withstand expected high flows.

7. Erosion and sedimentation controls (ESC) should be designed in accordance with the most recent version of the Virginia Stormwater Management Handbook. These controls should be placed prior to clearing and grading and maintained in good working order to minimize impacts to state waters. These controls should also remain in place until the area is stabilized and should then be removed. Any exposed slopes and streambanks should be stabilized immediately upon completion of work in each permitted area. All denuded areas should be properly stabilized in accordance with the most recent Virginia Stormwater Management Handbook. Please note that on June 22, 2023, Virginia's State Water Control Board adopted new Virginia Erosion and Stormwater Management Regulations (9VAC25-875) to consolidate program requirements and correct inconsistencies between erosion and sediment control and stormwater management program regulations. Additionally, the project will require coverage under the new Construction General Permit. These changes will become effective on July 1, 2024.

8. No machinery may enter state surface waters, unless authorized by a Virginia Water Protection (VWP) individual permit, general permit, or general permit coverage.

9. Heavy equipment in temporarily impacted surface waters should be placed on mats, geotextile fabric, or other suitable material, to minimize soil disturbance to the maximum extent practicable. Equipment and materials should be removed immediately upon completion of work.

10. Activities should be conducted in accordance with any time-of-year restriction(s) as recommended by the Department of Wildlife Resources, the Department of Conservation and Recreation (DCR), the Virginia Marine Resources Commission (VMRC), and the U.S. Fish and Wildlife Service (USFWS), or other protective measures for listed threatened or endangered species and/or critical habitat. The permittee should retain a copy of any DEQ and resource agency correspondence concerning species or habitats for the duration of the construction phase of the project.

11. All construction, construction access, and demolition activities associated with this project should be accomplished in a manner that minimizes construction materials or waste materials from entering surface waters, unless authorized by a Virginia Water Protection (VWP) individual permit, general permit, or general permit coverage. Wet, excess, or waste concrete is prohibited from entering surface waters.

12. Herbicides used in or around any surface water should be approved for aquatic use by the United States Environmental Protection Agency (EPA) or the USFWS. Use of herbicides in state waters shall be performed in accordance with Code of Virginia Chapter 39 - Pesticide Control (§§ 3.2-3900 through 3.2-3947) and 9VAC25-800 et. seq. These herbicides should be applied according to label directions by an herbicide applicator licensed by the Virginia Department of Agriculture and Consumer Services (VDACS), Office of Pesticide Services. A non-petroleum-based surfactant should be used in or around any surface waters.

Permits:

Based on DEQ's review of Dominion's report dated May 14, 2024, the proposed project may require a Virginia Water Protection (VWP) individual permit or general permit coverage. The applicant may submit a Joint Permit Application (JPA) in accordance with form instructions for further evaluation and final permit need determination by DEQ.

Should you have any questions, please don't hesitate to contact me at 804-965-4329 or at **michelle.henicheck@deq.virginia.gov.**

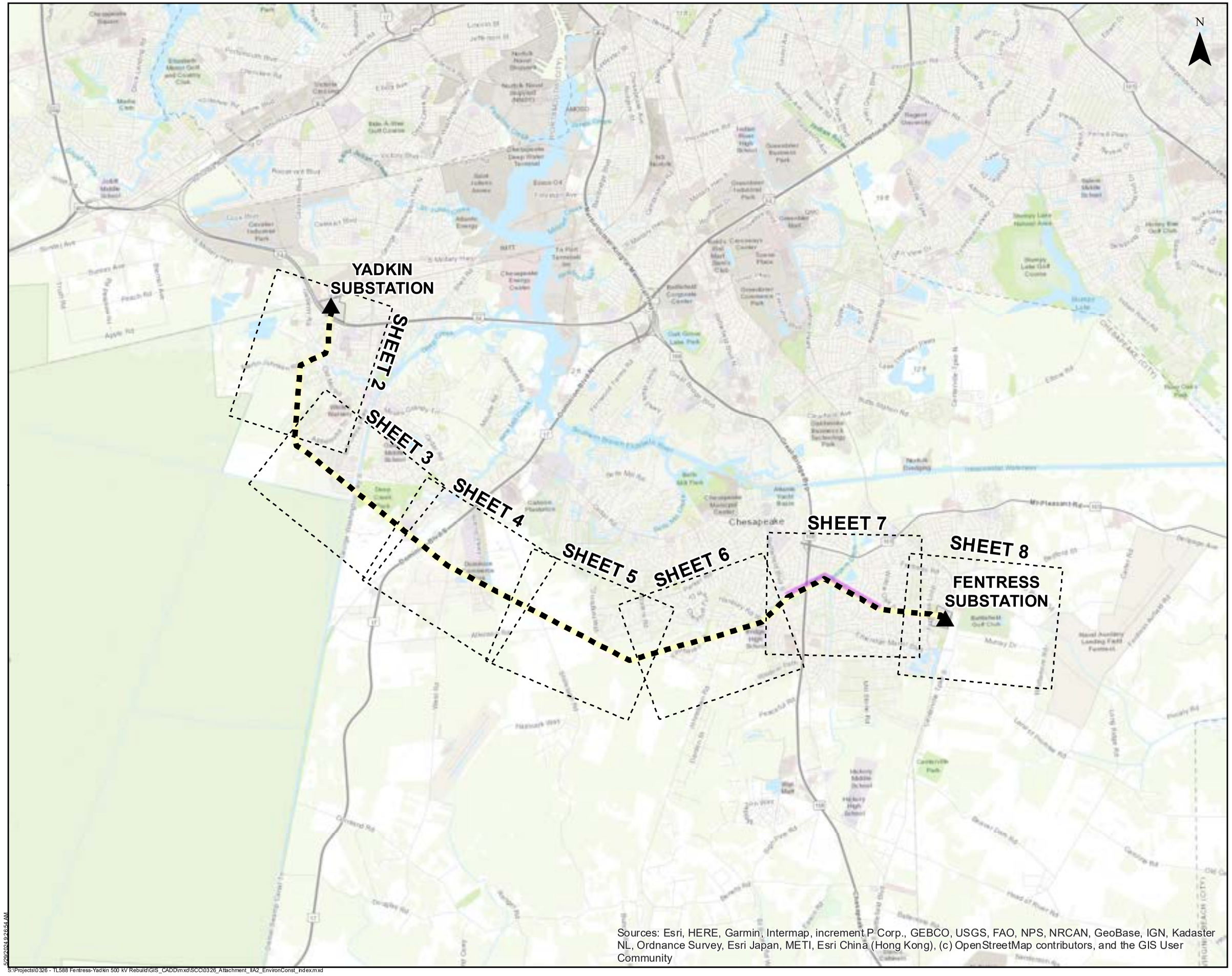
Sincerely,

Michelle Henicheck

Michelle Henicheck, PWS
Senior Wetland Ecologist
Virginia Department of Environmental Quality
Office of Wetlands & Stream Protection

Phone: 804-965-4329
Email: Michelle.Henicheck@DEQ.Virginia.gov
DEQ Office Address:
1111 E. Main Street
Richmond, VA 23219

Cc: Jeff Hannah, DEQ - TRO
Bettina Rayfield, DEQ - Office of Environmental Review



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ATTACHMENT 2. F. 1.

SOLID & HAZARDOUS WASTE SITES

Fentress-Yadkin 500 kV Line #588 Rebuild and
New 500 kV Fentress-Yadkin Line #5005

City of Chesapeake, Virginia

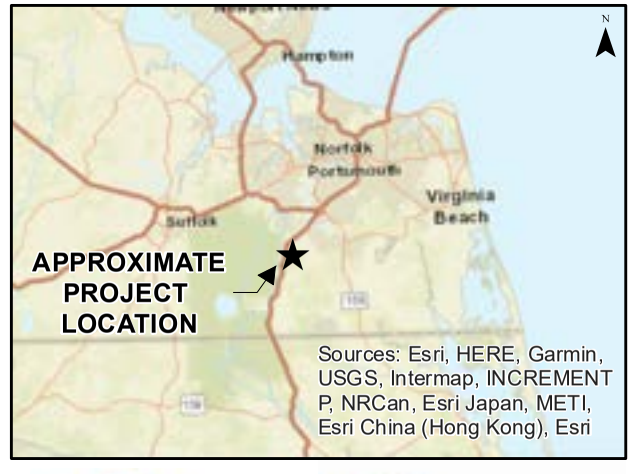
Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0326	JRC	05/29/24

0 0.75 1.5 3 Miles
Scale is 1 IN = 1.5 MI when printed at original size of 11x17

- Existing Line #588 Right-of-Way
- Constraint Design Segment
- Existing Substation
- Dominion Owned Substation Parcel

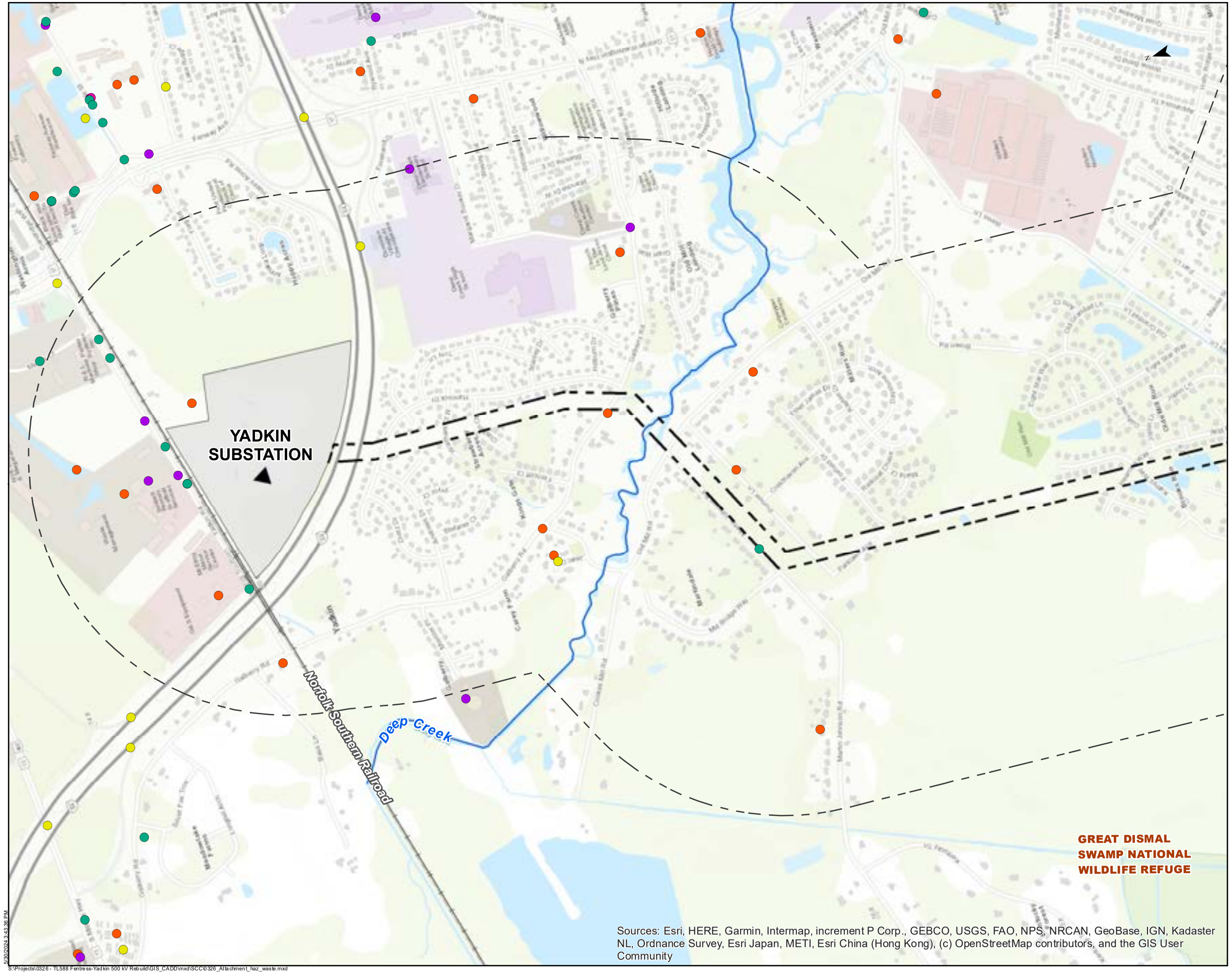
Notes:
1. Basemap from ESRI Topographic and World Street Map
2. Project centerline and right-of-way provided by Dominion Energy Virginia
3. Hazardous and solid waste sites from the United States Environmental Protection Agency and the Virginia Department of Environmental Quality
4. Railroads from Virginia Geographic Information Network
5. Stream centerlines from U.S. Geological Survey National Hydrography Dataset



ENVIRONMENTAL

Dominion Energy

SHEET 1 OF 8



ATTACHMENT 2. F. 1.

SOLID & HAZARDOUS WASTE SITES

Fentress-Yadkin 500 kV Line #588 Rebuild and
New 500 kV Fentress-Yadkin Line #5005

City of Chesapeake, Virginia

Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0326	JRC	05/30/24

0 500 1,000 2,000 Feet

Scale is 1 IN = 1,000 FT when printed at original size of 11x17

- Existing Line #588 Right-of-Way (150 FT)
- 0.5 Mile Search Radius
- Constraint Design Segment Right-of-Way (85 FT)
- Existing Substation
- Dominion Owned Substation Parcel
- RCRA Site
- VRP Site
- PReP Site
- Solid Waste Permit
- Registered Petroleum Tank Facility
- Petroleum Release Site
- Railroad
- USGS National Hydrography Stream Centerline

ENVIRONMENTAL

Dominion Energy

SHEET 2 OF 8

ATTACHMENT 2. F. 1.

SOLID & HAZARDOUS WASTE SITES

Fentress-Yadkin 500 kV Line #588 Rebuild and
New 500 kV Fentress-Yadkin Line #5005

City of Chesapeake, Virginia

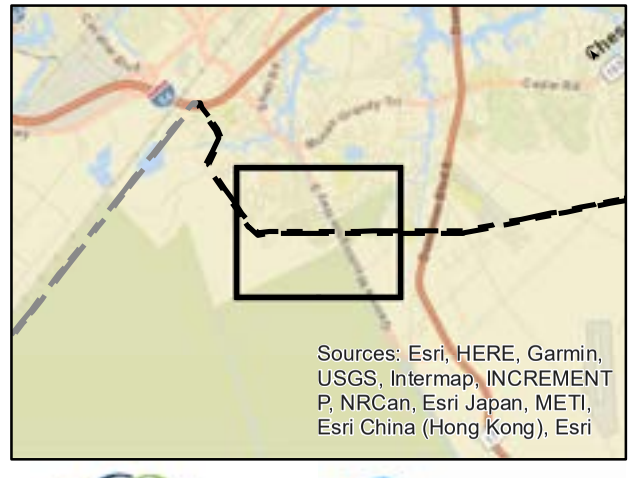
Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0326	JRC	05/30/24

0 500 1,000 2,000 Feet

Scale is 1 IN = 1,000 FT when printed at original size of 11x17

- Existing Line #588 Right-of-Way (150 FT)
- 0.5 Mile Search Radius
- Constraint Design Segment Right-of-Way (85 FT)
- Existing Substation
- Dominion Owned Substation Parcel
- RCRA Site
- VRP Site
- PReP Site
- Solid Waste Permit
- Registered Petroleum Tank Facility
- Petroleum Release Site
- Railroad
- USGS National Hydrography Stream Centerline



ENVIRONMENTAL

Dominion Energy

SHEET 3 OF 8

Dismal Swamp Canal

New Mill Creek

Park

GREAT DISMAL SWAMP NATIONAL WILDLIFE REFUGE

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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ATTACHMENT 2. F. 1.

SOLID & HAZARDOUS WASTE SITES

Fentress-Yadkin 500 kV Line #588 Rebuild and
New 500 kV Fentress-Yadkin Line #5005

City of Chesapeake, Virginia

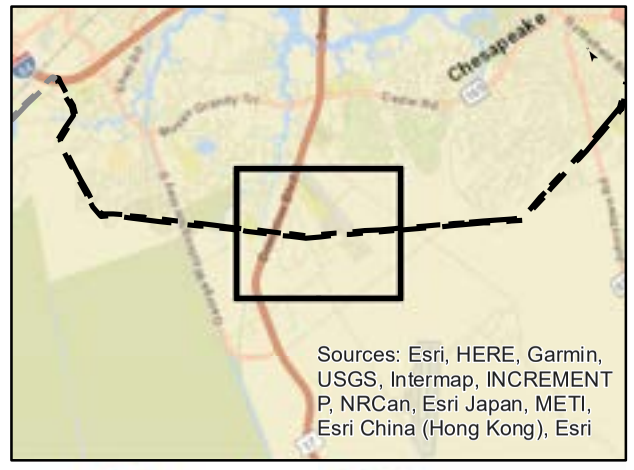
Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0326	JRC	05/30/24

0 500 1,000 2,000 Feet

Scale is 1 IN = 1,000 FT when printed at original size of 11x17

- Existing Line #588 Right-of-Way (150 FT)
- 0.5 Mile Search Radius
- Constraint Design Segment Right-of-Way (85 FT)
- Existing Substation
- Dominion Owned Substation Parcel
- RCRA Site
- VRP Site
- PReP Site
- Solid Waste Permit
- Registered Petroleum Tank Facility
- Petroleum Release Site
- Railroad
- USGS National Hydrography Stream Centerline



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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ENVIRONMENTAL

Dominion Energy

SHEET 4 OF 8

ATTACHMENT 2. F. 1.

SOLID & HAZARDOUS WASTE SITES

Fentress-Yadkin 500 kV Line #588 Rebuild and
New 500 kV Fentress-Yadkin Line #5005

City of Chesapeake, Virginia

Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0326	JRC	05/30/24

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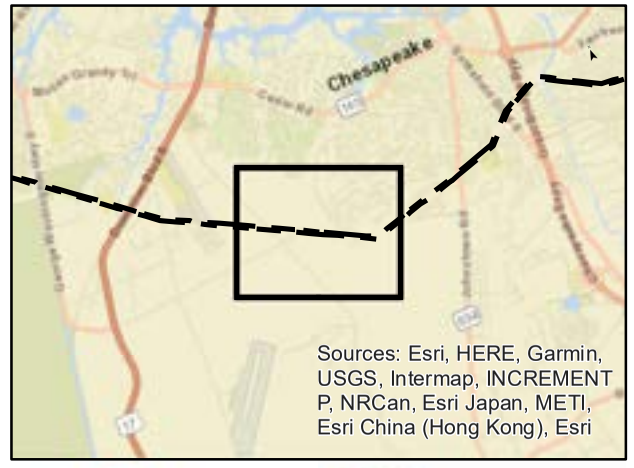
- USGS National Hydrography Stream Centerline



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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ENVIRONMENTAL

Dominion Energy

SHEET 5 OF 8

ATTACHMENT 2. F. 1.

SOLID & HAZARDOUS WASTE SITES

Fentress-Yadkin 500 kV Line #588 Rebuild and
New 500 kV Fentress-Yadkin Line #5005

City of Chesapeake, Virginia

Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0326	JRC	05/30/24

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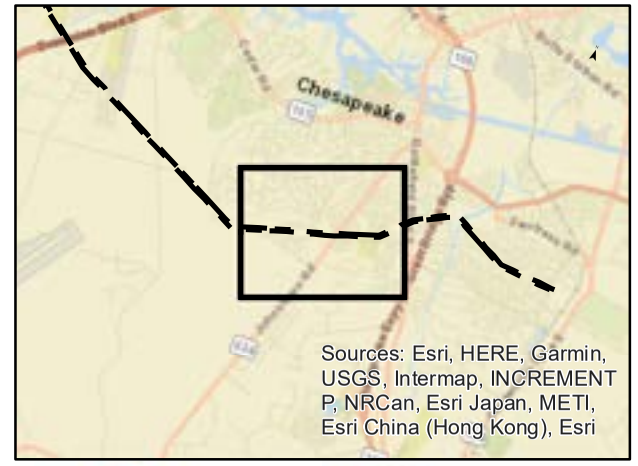

Sources: Esri, HERE, Garmin, Interm
NL, Ordnance Survey, Esri Jap
Community

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ENVIRONMENTAL

Dominion Energy

SHEET 6 OF 8

ATTACHMENT 2. F. 1.

SOLID & HAZARDOUS WASTE SITES

Fentress-Yadkin 500 kV Line #588 Rebuild and
New 500 kV Fentress-Yadkin Line #5005

City of Chesapeake, Virginia

Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
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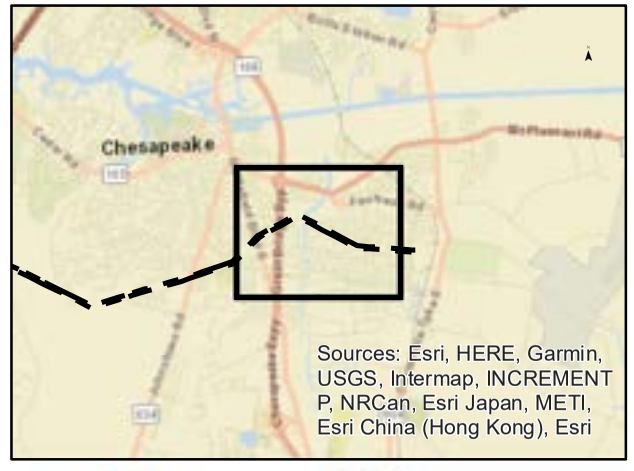

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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ENVIRONMENTAL

Dominion Energy

SHEET 7 OF 8

ATTACHMENT 2. F. 1.

SOLID & HAZARDOUS WASTE SITES

Fentress-Yadkin 500 kV Line #588 Rebuild and
New 500 kV Fentress-Yadkin Line #5005

City of Chesapeake, Virginia

Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0326	JRC	05/30/24

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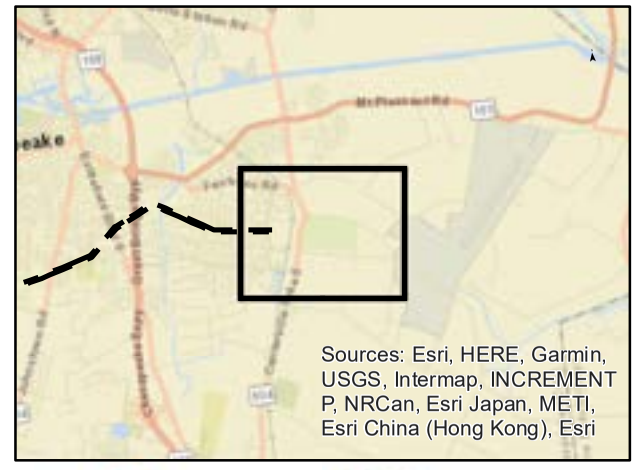
- Solid Waste Permit
- Registered Petroleum Tank Facility
- Petroleum Release Site
- Railroad
- USGS National Hydrography Stream Centerline

FENTRESS SUBSTATION

Navy Auxiliary Landing Field Fentress

Chesapeake & Albemarle Railroad

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri

ENVIRONMENTAL

Dominion Energy

SHEET 8 OF 8

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APPENDIX 2.G.1.

Natural Heritage, Threatened and Endangered Species Database Search Results

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: January 26, 2024
Project Code: 2024-0041570
Project Name: TL588 Fentress - Yadkin 500 kV Rebuild

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
- Bald & Golden Eagles
- 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: 2024-0041570
Project Name: TL588 Fentress - Yadkin 500 kV Rebuild
Project Type: Distribution Line - Maintenance/Modification - Above Ground
Project Description: Dominion is proposing to rebuild approximately 13.51 miles of 500kV overhead electric transmission line from the Yadkin Substation to the Fentress Substation in the City of Chesapeake, Virginia.
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@36.7235675,-76.35264194999999,14z

Counties: Chesapeake County, Virginia

ENDANGERED SPECIES ACT SPECIES

There is a total of 3 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.

---

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

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.

BALD & GOLDEN EAGLES

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

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

---

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

There are bald and/or golden eagles in your project area.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below 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. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 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 "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

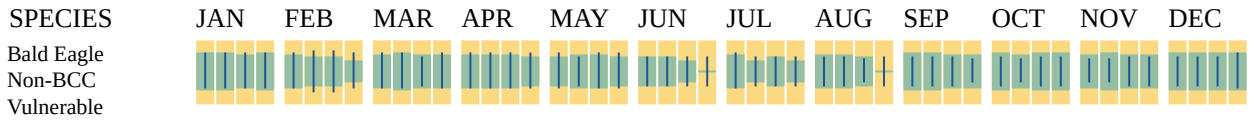
Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

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

■ probability of presence ■ breeding season | survey effort – no data



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- 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
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

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[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

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)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Kestrel *Falco sparverius paulus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9587	Breeds Apr 1 to Aug 31
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. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Aug 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
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9454	Breeds May 20 to Jul 31
Brown-headed Nuthatch *Sitta pusilla* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9427	Breeds Mar 1 to Jul 15
Canada Warbler *Cardellina canadensis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9643	Breeds May 20 to Aug 10
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9406	Breeds Mar 15 to Aug 25

NAME	BREEDING SEASON
Coastal (waynes) Black-throated Green Warbler *Setophaga virens waynei* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/11879	Breeds May 1 to Aug 15
Kentucky Warbler *Oporornis formosus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9443	Breeds Apr 20 to Aug 20
Painted Bunting *Passerina ciris* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9511	Breeds Apr 25 to Aug 15
Pectoral Sandpiper *Calidris melanotos* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9561	Breeds elsewhere
Prairie Warbler *Dendroica discolor* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9513	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. https://ecos.fws.gov/ecp/species/9439	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. https://ecos.fws.gov/ecp/species/9398	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 https://ecos.fws.gov/ecp/species/9478	Breeds elsewhere
Swallow-tailed Kite *Elanoides forficatus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8938	Breeds Mar 10 to Jun 30
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9431	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 "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
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No Data (–)
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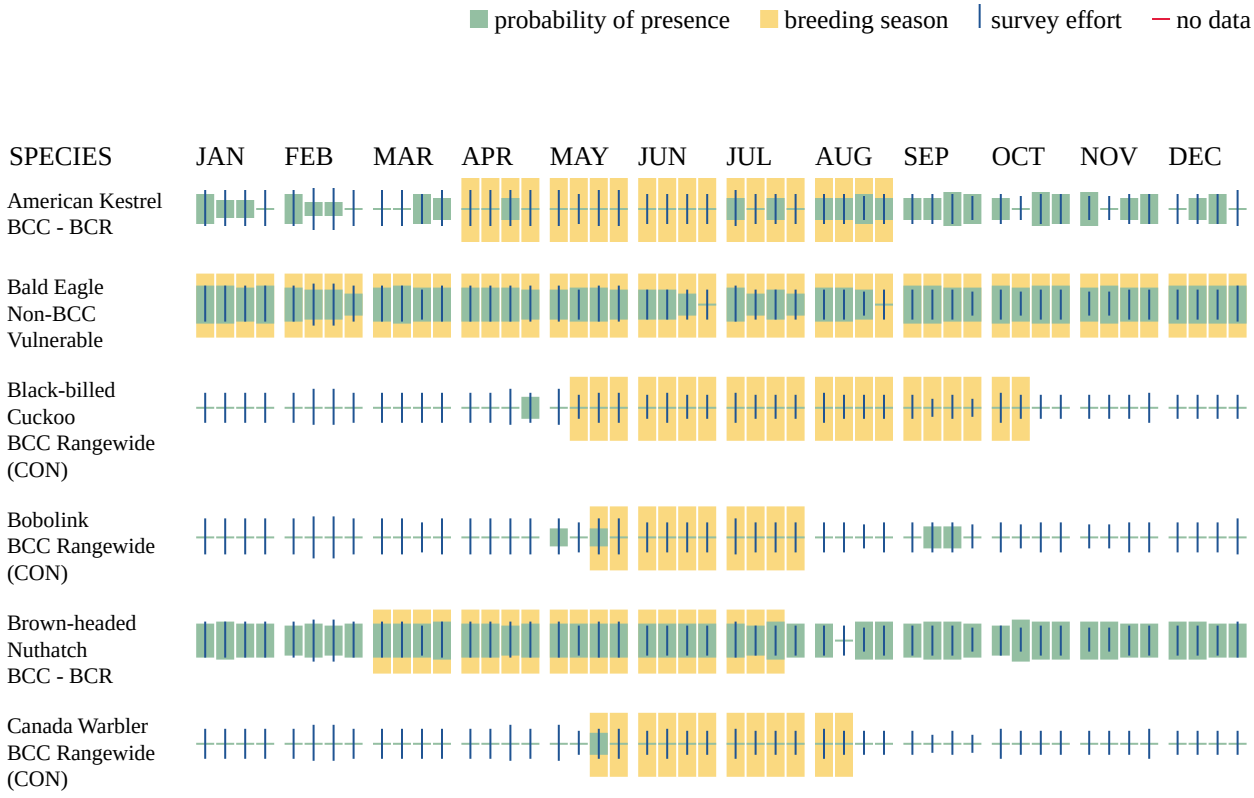

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- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

IPAC USER CONTACT INFORMATION

Agency: C2 Environmental, Inc.
Name: Annette Williamson
Address: 11846 Rock Landing
Address Line 2: Suite A
City: Newport News
State: VA
Zip: 23606
Email awilliamson@c2environmental.com
Phone: 7579994902

VaFWIS Search Report Compiled on 1/26/2024, 4:14:04 PM

Help

Known or likely to occur within a **2 mile buffer around line beginning 36.7179900 -76.2989499** in **550 Chesapeake City, 740 Portsmouth City, VA**

View Map of Site Location

565 Known or Likely Species ordered by Status Concern for Conservation
(displaying first 36) (36 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
030074	FESE	Ia	Turtle, Kemp's ridley sea	Lepidochelys kempii		BOVA
050022	FEST	Ia	Bat, northern long-eared	Myotis septentrionalis		BOVA,HU6
010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus		BOVA
030071	FTST	Ia	Turtle, loggerhead sea	Caretta caretta		BOVA
040144	FTST	Ia	Knot, red	Calidris canutus rufa		BOVA,HU6
040110	FTSE	Ia	Rail, eastern black	Laterallus jamaicensis jamaicensis		BOVA,HU6
040120	FTST	IIa	Plover, piping	Charadrius melodus		BOVA
120030	FTSE	IVb	Manatee, West Indian	Trichechus manatus	Yes	BOVA,SppObs,HU6
040118	SE	Ia	Plover, Wilson's	Charadrius wilsonia		BOVA
050034	SE	Ia	Bat, Rafinesque's eastern big-eared	Corynorhinus rafinesquii macrotis	Yes	BOVA,SppObs,HU6
050027	FPSE	Ia	Bat, tri-colored	Perimyotis subflavus	Yes	BOVA,SppObs,HU6
030013	SE	IIa	Rattlesnake, canebrake	Crotalus horridus	Yes	BOVA,Habitat,SppObs,HU6
040096	ST	Ia	Falcon, peregrine	Falco peregrinus	Yes	BOVA,SppObs,HU6
040293	ST	Ia	Shrike, loggerhead	Lanius ludovicianus		BOVA
040379	ST	Ia	Sparrow, Henslow's	Centronyx henslowii		HU6
040179	ST	Ia	Tern, gull-billed	Gelochelidon nilotica		BOVA
020044	ST	IIa	Salamander, Mabee's	Ambystoma mabeei		HU6
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
100079	FC	IIIa	Butterfly, monarch	Danaus plexippus		BOVA
030067	CC	IIa	Terrapin, northern diamond-backed	Malaclemys terrapin terrapin		BOVA,HU6
030063	CC	IIIa	Turtle, spotted	Clemmys guttata	Yes	BOVA,SppObs,HU6
030031	CC	IIIc	Kingsnake, scarlet	Lampropeltis elapsoides		BOVA
040040		Ia	Ibis, glossy	Plegadis falcinellus		BOVA,HU6
040213		Ic	Owl, northern saw-whet	Aegolius acadicus		HU6
040422		Ic	Warbler, Wayne's	Setophaga virens waynei	Potential	Habitat,HU6
020063		IIa	Toad, oak	Anaxyrus quercicus		BOVA,HU6
040052		IIa	Duck, American black	Anas rubripes		BOVA,HU6
040033		IIa	Egret, snowy	Egretta thula	Potential	BOVA,BBA
040029		IIa	Heron, little blue	Egretta caerulea caerulea		BOVA
040036		IIa	Night-heron, yellow-crowned	Nyctanassa violacea violacea	Potential	BOVA,BBA
040181		IIa	Tern, common	Sterna hirundo		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,HU6
040105		IIb	Rail, king	Rallus elegans	Potential	BOVA,Habitat,HU6
040304		IIc	Warbler, Swainson's	Limnothlypis swainsonii		BOVA,HU6

To view **All 565 species** View 565

*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

N/A

Colonial Water Bird Survey (2 records)

View Map of All Query Results
Colonial Water Bird Survey

Colony_Name	N Obs	Latest Date	N Species			View Map
			Different Species	Highest TE*	Highest Tier**	
Urban, Fentress, Chesapeake	1	May 19 2013	1			Yes
Great Bridge	1	May 21 2003	1			Yes

Displayed 2 Colonial Water Bird Survey

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 (146 records - displaying first 35 , 35 Observations with Threatened or Endangered species)

View Map of All Query Results
Species Observations

obsID	class	Date Observed	Observer	N Species			View Map
				Different Species	Highest TE*	Highest Tier**	
62897	SppObs	Oct 3 1992	Mark Swingle, Marine Science Museum	1	FTSE	IV	Yes
617738	SppObs	Aug 23 2012	Seth; Bishop	1	SE	I	Yes

311359	SppObs	May 9 2005	JOSEPH C. MITCHELL (PRINCIPLE PERMITTEE), DEPT. BIOLOGY UNIV. RICHMOND	1	SE	I	Yes
62331	SppObs	May 16 1998	Brian Saunders	1	SE	I	Yes
62293	SppObs	Oct 29 1997	Brian Saunders	1	SE	I	Yes
50653	SppObs	Oct 14 1997	Brian Saunders, VDGIF	1	SE	I	Yes
50650	SppObs	Oct 13 1997	Brian Saunders, VDGIF	1	SE	I	Yes
50649	SppObs	Oct 11 1997	Brian Saunders, VDGIF	1	SE	I	Yes
50648	SppObs	Sep 30 1997	Brian Saunders, VDGIF	1	SE	I	Yes
50652	SppObs	Sep 26 1997	Brian Saunders, VDGIF	1	SE	I	Yes
50651	SppObs	Sep 17 1997	Brian Saunders, VDGIF	1	SE	I	Yes
50639	SppObs	Aug 15 1997	Brian Saunders, VDGIF	1	SE	I	Yes
50640	SppObs	Jul 20 1997	Brian Saunders, VDGIF	1	SE	I	Yes
50574	SppObs	Jun 11 1997	Brian Saunders, VDGIF	1	SE	I	Yes
8842	SppObs	Jun 18 1993	M K Clark, NC State Mus of Nat Sci, S B Williams, NCSMNS	1	SE	I	Yes
8806	SppObs	Jul 1 1992	D Schwab, VDGIF	1	SE	I	Yes
4083	SppObs	Jul 1 1992	Don Schwab	1	SE	I	Yes
619239	SppObs	May 6 2013	Joseph; Mitchell| Lindsay; Eiser Quillen	1	SE	II	Yes
615439	SppObs	May 6 2013	Joseph; Mitchell| Lindsay; Eiser	1	SE	II	Yes
900009	SppObs	Jun 29 2010	Edna Yeley (confirmed by JD Kloepfer)	1	SE	II	Yes
65790	SppObs	Aug 26 1999	ALAN H. SAVITZKY (PRINCIPLE PERMITTEE), CHRISTOPHER E. PATTERSEN (COLLECTOR)	1	SE	II	Yes
8229	SppObs	Oct 21 1995	David Byrd	1	SE	II	Yes
6562	SppObs	Sep 7 1993	Alan H. Savitzky	1	SE	II	Yes
4918	SppObs	Oct 19 1985	Gary M. Williamson	1	SE	II	Yes
8866	SppObs	Oct 19 1985	G. WILLIAMSON, SENOIR NATURALIST NORTHWEST RIVER PARK, CITY OF CHESAPEAKE	1	SE	II	Yes
8861	SppObs	Jul 16 1981	G. WILLIAMSON, SENOIR NATURALIST NORTHWEST RIVER PARK, CITY OF CHESAPEAKE	1	SE	II	Yes
4903	SppObs	Jul 10 1981	Gary M. Williamson	1	SE	II	Yes
4896	SppObs	Apr 10 1980	Gary M. Williamson	1	SE	II	Yes
4932	SppObs	Jan 1 1900	Don Schwab, VDGIF	1	SE	II	Yes
366362	SppObs	Jan 1 1900		2	SE	II	Yes
366336	SppObs	Jan 1 1900		2	SE	II	Yes
62360	SppObs	Sep 24 1999	Michael A. Yates	1	ST	I	Yes
632280	SppObs	Jul 25 2019	Caroline Byrne	4	FPSE	I	Yes
632277	SppObs	Jul 19 2019	Caroline Byrne	4	FPSE	I	Yes

311595	SppObs	May 12 2005	JOSEPH C. MITCHELL (PRINCIPLE PERMITTEE), DEPT. BIOLOGY UNIV. RICHMOND	12	CC	III	Yes

Displayed 35 Species Observations

Selected 146 Observations View all 146 Species Observations

Habitat Predicted for Aquatic WAP Tier I & II Species

N/A

Habitat Predicted for Terrestrial WAP Tier I & II Species (4 Species)

View Map of Combined Terrestrial Habitat Predicted for 4 WAP Tier I & II Species Listed Below

ordered by Status Concern for Conservation

BOVA Code	Status*	Tier**	Common Name	Scientific Name	View Map
030013	SE	IIa	Rattlesnake, canebrake	Crotalus horridus	Yes
040422		Ic	Warbler, Wayne's	Setophaga virens waynei	Yes
040105		IIb	Rail, king	Rallus elegans	Yes
050008			Shrew, Dismal Swamp southeastern	Sorex longirostris fisheri	Yes

Virginia Breeding Bird Atlas Blocks (6 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**	
59036	Bowers Hill, SE	67		II	Yes
60021	Deep Creek, NW	27		IV	Yes
60026	Deep Creek, SE	71		III	Yes
61026	Fentress, SE	78		III	Yes
61025	Fentress, SW	2		III	Yes
59022	Lake Drummond NW, NE	36		III	Yes

Public Holdings: (3 names)

Name	Agency	Level
Dismal Swamp Wildlife Management Area	Va DGIF	
Fentress Landing field	Dept. of the Navy	Federal
Great Dismal Swamp National Wildlife Refuge	U.S. Fish and Wildlife Service	Federal

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
550	Chesapeake City	491	FESE	I
740	Portsmouth City	414	FESE	I

USGS 7.5' Quadrangles:
Lake Drummond NW
Bowers Hill
Deep Creek
Norfolk South
Fentress

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
AS07	Northwest River-Twelve Foot Ditch	73	FTSE	I
AS09	Northwest River-US Naval Reservation	77	FESE	I
AS12	Chesapeake Canal	84	FTSE	I
AS15	Pocaty River	86	FTSE	I
JL51	Southern Branch Elizabeth River-New Mill Creek	75	FTSE	I
JL52	Dismal Swamp-Dismal Swamp Canal-Big Entry Ditch	74	FTSE	I
JL53	Southern Branch Elizabeth River-Deep Creek	90	FTSE	I
JL55	Western Branch Elizabeth River	91	FTSE	I

Compiled on 1/26/2024, 4:14:04 PM I1710904.0 report=all searchType= L dist= 3218 poi= 36.7179900 -76.2989499 siteDD= 36.7621670 -76.3554558;36.7598570 -76.3562968;36.7543860 -76.3568238;36.7526280 -76.3576298;36.7501030 -76.3645868;36.7346810 -76.3664758;36.7323040 -76.3661588;36.7310140 -76.3636358;36.7050500 -76.3253468;36.6870470 -76.2851128;36.6831920 -76.2761548;36.6879110 -76.2527798;36.6910310 -76.2393928;36.6963100 -76.2323008;36.7002390 -76.2221298;36.6931770 -76.2072788;36.6915350 -76.1903688;36.6905530 -76.1906988;

PixelSize=64; Anadromous=0.025553; BBA=0.060954; BECAR=0.021392; Bats=0.022445; Buffer=0.469558; County=0.080993; HU6=0.13404; Impediments=0.021886; Init=0.503905; PublicLands=0.042905; Quad=0.075646; SppObs=0.469784; TEWaters=0.03707; TierReaches=0.079734; TierTerrestrial=0.327318; Total=2.224615; Tracking_BOVA=0.196654; Trout=0.039651; huva=0.080946

CCB Mapping Portal

Layers: VA Eagle Nest Locator, VA Eagle Nest Buffers

Map Center [longitude, latitude]: [-76.25301361083984, 36.72099868793134]

Map Link:
https://ccbbirds.org/maps/#layer=VA+Eagle+Nest+Locator&layer=VA+Eagle+Nest+Buffers&zoom=13&lat=36.72099868793134&lng=-76.25301361083984&legend=legend_tab_7c321b7e-e523-11e4-aaa0-0e0c41326911&base=World+Imagery+%28ESRI%29

Report Generated On: 03/13/2024

CCB Mapping Portal

Layers: OspreyWatch Nests

Map Center [longitude, latitude]: [-76.25301361083984, 36.72099868793134]

Map Link:
https://ccbbirds.org/maps/#layer=OspreyWatch+Nests&zoom=13&lat=36.72099868793134&lng=-76.25301361083984&legend=legend_tab_41b097d8-e52c-11e4-b6e6-0e853d047bba&base=World+Imagery+%28ESRI%29

Report Generated On: 03/13/2024

Natural Heritage Resources

Your Criteria

Federal Legal Status: LE - Listed endangered,LT - Listed threatened

State Legal Status: LE - Listed endangered,LT - Listed threatened

Watershed (8 digit HUC): 02080208 - Hampton Roads,03010205 - Albemarle

Subwatershed (12 digit HUC): JL51 - Southern Branch Elizabeth River-New Mill Creek,JL52 - Dismal Swamp-Dismal Swamp Canal-Big Entry Ditch,JL53 - Southern Branch Elizabeth River-Deep Creek,AS09 - Northwest River,AS12 - Chesapeake Canal-Stumpy Lake,AS15 - Pocaty River

Search Run: 5/21/2024 17:26:16 PM

Result Summary

Total Species returned: 11

Total Communities returned: 0

Click scientific names below to go to NatureServe report.

Click column headings for an explanation of species and community ranks.

Common Name/Natural Community	Scientific Name	Scientific Name Linked	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences	Virginia Coastal Zone
Albemarle								
Chesapeake Canal-Stumpy Lake								
REPTILES								
Canebrake Rattlesnake	Crotalus horridus [Coastal Plain population]	Crotalus horridus [Coastal Plain population]	G4T4Q	S1	None	LE	19	Y
Dismal Swamp-Dismal Swamp Canal-Big Entry Ditch								
REPTILES								
Canebrake Rattlesnake	Crotalus horridus [Coastal Plain population]	Crotalus horridus [Coastal Plain population]	G4T4Q	S1	None	LE	19	Y
Northwest River								
REPTILES								
Canebrake Rattlesnake	Crotalus horridus [Coastal Plain population]	Crotalus horridus [Coastal Plain population]	G4T4Q	S1	None	LE	19	Y
Pocaty River								

Common Name/Natural Community	Scientific Name	Scientific Name Linked	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences	Virginia Coastal Zone
MAMMALS								
Eastern Big-eared Bat	Corynorhinus rafinesquii macrotis	Corynorhinus rafinesquii macrotis	G3G4T3	S2	None	LE	45	Y
Tricolored bat (=Eastern pipistrelle)	Perimyotis subflavus	Perimyotis subflavus	G3G4	S1S3	PE	LE	44	Y
REPTILES								
Canebrake Rattlesnake	Crotalus horridus [Coastal Plain population]	Crotalus horridus [Coastal Plain population]	G4T4Q	S1	None	LE	19	Y
Southern Branch Elizabeth River-Deep Creek								
REPTILES								
Canebrake Rattlesnake	Crotalus horridus [Coastal Plain population]	Crotalus horridus [Coastal Plain population]	G4T4Q	S1	None	LE	19	Y
Southern Branch Elizabeth River-New Mill Creek								
VASCULAR PLANTS								
Raven's Seedbox	Ludwigia ravenii	Ludwigia ravenii	G1G2	S1	SOC	LE	16	Y

Hampton Roads

Dismal Swamp-Dismal Swamp Canal-Big Entry Ditch								
REPTILES								
Canebrake Rattlesnake	Crotalus horridus [Coastal Plain population]	Crotalus horridus [Coastal Plain population]	G4T4Q	S1	None	LE	19	Y
Southern Branch Elizabeth River-Deep Creek								
REPTILES								
Canebrake Rattlesnake	Crotalus horridus [Coastal Plain population]	Crotalus horridus [Coastal Plain population]	G4T4Q	S1	None	LE	19	Y
Southern Branch Elizabeth River-New Mill Creek								
VASCULAR PLANTS								
Raven's Seedbox	Ludwigia ravenii	Ludwigia ravenii	G1G2	S1	SOC	LE	16	Y

Note: On-line queries provide basic information from DCR's databases at the time of the request. They are NOT to be substituted for a project review or for on-site surveys required for environmental assessments of specific project areas.

For Additional Information on locations of Natural Heritage Resources please submit an information request.

To Contribute information on locations of natural heritage resources, please fill out and submit a rare species sighting form.

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

Travis A. Voyles
Secretary of Natural and Historic Resources

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

February 27, 2024

Dominion Energy
120 Tredegar Street
Richmond, VA 23219
Attn: Elizabeth L. Hester

Transmitted Via Email: (Elizabeth.l.hester@dominionenergy.com)

Re: Dominion Energy (Electric Transmission) - AS&S - Program Renewal – 2024/2025

Dear Ms. Hester:

The Virginia Department of Environmental Quality (DEQ) hereby approves the Annual Standards and Specifications for Erosion & Sediment Control and Stormwater Management for Construction and Maintenance of Linear Electric Transmission Facilities for Dominion Energy's document dated "February 2024". This coverage is effective from February 27, 2024, to February 26, 2025.

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 to DEQ separately from this Annual Standards and Specifications' submission. DEQ may require project-specific plans associated with such 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
    a. Project name or project number;
    b. Project location (including nearest intersection, latitude and longitude, access point);
    c. On-site project manager name and contact info;

d. Responsible Land Disturber (RLD) name and contact info;
e. Project description;
f. Acreage of disturbance for project;
g. Project start and finish date; and
h. Any variances/exceptions/deviations associated with this project.

3. Project tracking of all regulated land disturbing activities (LDA) must be submitted to DEQ once per 6-month period. 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 plans must be reviewed by DEQ-certified Plan Reviewers. Dominion Energy, as the AS&S holder, retains the authority to approve plans and must do so in writing. Should an AS&S holder contract out to a third-party to fulfill the plan review function, the third-party Plan Reviewer may recommend approval of the plan, but final approval must come from the AS&S holder.

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

Please contact Abigail Snider at 804-486-0365 or Abigail.Snider@deq.virginia.gov if you have any questions about this letter.

Respectfully,

Kyle Kennedy, Manager
Office of Stormwater Management

Cc: Larry Gavan, DEQ-CO
Antony Angueira, DEQ-CO

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

March 26, 2024

Alyssa Johnson
C2 Environmental, Inc.
11846 Rock Landing Drive, Suite A
Newport News, VA 23606

Re: 0326, Lines 588 & 5005 Fentress-Yadkin 500kV Transmission Line Project

Dear Ms. Johnson:

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.

According to predicted suitable habitat modeling, there is potential for Eastern big-eared bat (*Corynorhinus rafinesquii macrotis*, G3G4T3/S2/NL/LE) to occur in the project area if suitable habitat exists on site. The Eastern big-eared bat is named for its enormous ears twice the length of its head, is extremely rare in Virginia and is currently known only from the southeastern portion of the state. Although widespread throughout the southeast, they are never found in large numbers. These bats roost singly or in small groups in hollow trees or abandoned buildings. They forage only after dark primarily in mature forests of both upland and lowland areas along permanent bodies of water (NatureServe, 2009). The details of this bat's feeding behavior and much of its natural history remain a mystery. Lack of information regarding the ecology of the Eastern big-eared bat, and their sensitivity to disturbance, make them particularly vulnerable to destruction of roost sites and feeding areas where their presence goes undetected (Handley and Schwab 1991, Harvey 1992).

Threats to this species include forest destruction, particularly hollow tree removal, decreasing availability of abandoned buildings, and possibly, insecticides. Please note that this species is currently classified as endangered by the Virginia Department of Wildlife Resources (VDWR).

DCR recommends avoiding tree removal in bottomland habitats and assessing any large potential roost trees and/or abandoned structures on the property for bat presence/absence. DCR also recommends coordination with DWR if removal of potential roost habitat for the Eastern big-eared bat becomes necessary to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 – 570).

DCR 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 to the extent that it is consistent with erosion and sediment control requirements, robust monitoring, and an adaptive management plan to provide guidance if initial revegetation efforts are unsuccessful or if invasive species outbreaks occur.

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. The current activity will not affect any documented state-listed plants or insects.

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 $390.00 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 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. According to the information currently in our files, there is potential for the Northern long-eared bat (*Myotis septentrionalis,* G2G3/S1S3/LE/LT) to occur within the project area. Due to the legal status of the Northern long-eared bat, DCR recommends coordination with the United States Fish and Wildlife Service (USFWS) and the VDWR to ensure compliance with protected species legislation.

Should you have any questions or concerns, please contact me at 804-225-2429. Thank you for the opportunity to comment on this project.

Sincerely,

Tyler Meader
Natural Heritage Locality Liaison

Cc: Amy Martin, VDWR

Literature Cited

Handley, C.O., and D. Schwab. 1991. Eastern big-eared bat. In Virginia's Endangered Species: Proceedings of a Symposium. K. Terwilliger ed. The McDonald and Woodward Publishing Company, Blacksburg, Virginia. p. 571-573.

Harvey, M.J. 1992. Bats of the Eastern United States. Arkansas Game and Fish Commission, Little Rock, Arkansas. pp.46

NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: March 31, 2010).

Commonwealth of Virginia

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Travis A. Voyles
Secretary of Natural and Historic Resources

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

February 27, 2024

Dominion Energy
120 Tredegar Street
Richmond, VA 23219
Attn: Elizabeth L. Hester

Transmitted Via Email: (Elizabeth.l.hester@dominionenergy.com)

Re: Dominion Energy (Electric Transmission) - AS&S - Program Renewal – 2024/2025

Dear Ms. Hester:

The Virginia Department of Environmental Quality (DEQ) hereby approves the Annual Standards and Specifications for Erosion & Sediment Control and Stormwater Management for Construction and Maintenance of Linear Electric Transmission Facilities for Dominion Energy's document dated "February 2024". This coverage is effective from February 27, 2024, to February 26, 2025.

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 to DEQ separately from this Annual Standards and Specifications' submission. DEQ may require project-specific plans associated with such 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
    a. Project name or project number;
    b. Project location (including nearest intersection, latitude and longitude, access point);
    c. On-site project manager name and contact info;

d. Responsible Land Disturber (RLD) name and contact info;
e. Project description;
f. Acreage of disturbance for project;
g. Project start and finish date; and
h. Any variances/exceptions/deviations associated with this project.

3. Project tracking of all regulated land disturbing activities (LDA) must be submitted to DEQ once per 6-month period. 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 plans must be reviewed by DEQ-certified Plan Reviewers. Dominion Energy, as the AS&S holder, retains the authority to approve plans and must do so in writing. Should an AS&S holder contract out to a third-party to fulfill the plan review function, the third-party Plan Reviewer may recommend approval of the plan, but final approval must come from the AS&S holder.

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

Please contact Abigail Snider at 804-486-0365 or Abigail.Snider@deq.virginia.gov if you have any questions about this letter.

Respectfully,

Kyle Kennedy, Manager
Office of Stormwater Management

Cc: Larry Gavan, DEQ-CO
Antony Angueira, DEQ-CO

REDACTED

REPORT >

Pre-Application Analysis of Cultural Resources for the Fentress-Yadkin 500 kV Line #588 Rebuild and New 500 kV Fentress-Yadkin Line #5005

LOCATION > City of Chesapeake, Virginia

DATE> JUNE 2024

PREPARED FOR >

Dominion Energy

PREPARED BY >

Dutton + Associates, LLC

PROJECT REVIEW # >

Dutton + Associates

CULTURAL RESOURCE SURVEY, PLANNING, AND MANAGEMENT

REDACTED

SCC Pre-Application Analysis of Cultural Resources for the Fentress-Yadkin 500 kV Line #588 Rebuild and New 500 kV Fentress-Yadkin Line #5005

City of Chesapeake, Virginia

***PREPARED FOR*:**
DOMINION ENERGY
10900 NUCKOLS ROAD, 4TH FLOOR
GLEN ALLEN, VA 23060

***PREPARED BY*:**
DUTTON + ASSOCIATES, LLC
1115 Crowder Drive
Midlothian, Virginia 23236
804.644.8290

PRINCIPAL INVESTIGATOR:
Robert J. Taylor, Jr. M.A.

June 2024

ABSTRACT

In June 2024, Dutton + Associates, LLC (D+A) completed a Pre-Application Analysis (analysis) of cultural resources for the Fentress-Yadkin 500 kV Line #588 Rebuild and New 500 kV Fentress-Yadkin Line #5005 in Chesapeake, Virginia (from hereon referred to as the Fentress-Yadkin Projects). The analysis was performed for Virginia Electric and Power Company (Dominion Energy Virginia, Dominion, or the Company) in support of a State Corporation Commission (SCC) application for the Project. The analysis was conducted in accordance with Virginia Department of Historic Resources' (VDHR) guidance titled Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia (January 2008) and Commonwealth of Virginia State Corporation Commission Division of Public Utility Regulation Guidelines for Transmission Line Applications Filed Under Title 56 of the Code of Virginia (August 2017).

The Fentress-Yadkin Projects involves the rebuild of approximately 13.5 miles of existing 500 kV transmission line, and construction of a new, adjacent line, that runs from the Yadkin Substation on Yadkin Road to the Fentress Substation on Meredith Drive and Fentress Loop in Chesapeake, Virginia. The project is needed in order to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation Reliability Standards, and to help reliably and successfully integrate the Coastal Virginia Offshore Wind Commercial Project (CVOW) with the transmission system, Dominion Energy proposes:

1. *<u>Line #588 Rebuild</u>. Rebuild the approximately 13.5-mile-long existing overhead single circuit 500 kV Fentress-Yadkin Line #588, which is approaching its end of service life. Line #588 currently is supported primarily by single circuit 500 kV weathering steel lattice structures. The existing structures will be replaced primarily with single circuit 500 kV dulled galvanized steel monopole structures entirely within the existing right-of-way, currently maintained at 150 feet wide.*

2. *<u>Proposed Line #5005</u>. Construct a new overhead single circuit 500 kV transmission line originating at the existing Fentress Substation and continuing approximately 13.5 miles to the existing Yadkin Substation, resulting in 500 kV Fentress-Yadkin Line #5005. Line #5005 will be installed with the rebuilt Line #588 entirely within the existing, maintained right-of-way. Structures will primarily be single circuit 500 kV dulled galvanized steel monopoles.*

The existing Line 588 steel lattice structures are centered within the ROW and average 115-feet in height. The Line 588 replacement structures and the proposed Line 5005 structures, both of which are primarily monopole structures, will be set generally side-by-side within existing, maintained ROW and will average approximately 185 feet in height.

The background research conducted as part of this analysis was consistent with VDHR guidance and designed to identify all previously recorded National Historic Landmarks (NHL) located within 1.5-miles of the proposed Project or closer, all National Register of Historic Places (NRHP)-listed properties, battlefields, and historic landscapes located within 1-mile of the

proposed Project or closer, all historic properties considered eligible for listing in the NRHP located within 0.5-miles of the proposed Project or closer, and all archaeological sites located directly within the proposed Project area. Historic properties include architectural and archaeological (terrestrial and underwater) resources, historic and cultural landscapes, battlefields, and historic districts. For each historic property within the defined tiers, a review of existing documentation and a field reconnaissance was undertaken to assess each property's significant character-defining features, as well as the character of its current setting. Following identification of historic properties, D+A assessed the potential for impacts to any identified properties as a result of the proposed Project. Specific attention was given to determining whether or not construction related to the Project could introduce new visual elements into the property's viewshed or directly impact the property through construction, which would either directly or indirectly alter those qualities or characteristics that qualify the historic property for listing in the NRHP.

Review of the VDHR VCRIS inventory records revealed a total of four-hundred-six (406) previously recorded architectural resources are located within 1.5 mile of the project alignment. Of these, there are no (0) NHLs located within 1.5 mile of the proposed project or closer, two (2) NRHP-listed properties located within 1.0 mile or closer of the project, and three (3) properties that have been determined eligible or potentially eligible for listing in the NRHP by the VDHR within 0.5 mile or closer of the project. One (1) of the NRHP-listed resources and two (2) of the NRHP-eligible resources are directly crossed by the project alignment.

Assessment of impacts found that the project extends through an area of ongoing suburban development, and therefore the historic rural setting of some of the historic properties remains generally intact, while for others it has been compromised by modern development. Similarly, existing viewsheds and visibility of the transmission line to be rebuilt as part of this project varies from open and unobstructed to partially and completed screened. Overall, however, it was found that the level of impact resulting from the project will be no more than minimal to any of the historic properties. For several properties, there is no visibility of the existing transmission line or structures nor is there anticipated to be any visibility of the replacement structures, despite the height increase, due to vegetation and other screening within the intervening landscape. For other properties, there is already visibility of multiple transmission structures, in some cases across open field, and therefore even with the increase in height, the replacement structures are anticipated to generally be visible from the same vantages with no cumulative increase in visibility. As such, the change would not introduce any substantially different feature into the setting or viewshed from the property. ***Therefore, it is D+A's recommendation that there will be no more than a minimal impact to any historic property within the study tiers for the Fentress-Yadkin Projects.***

Potential impacts summary for architectural resources.

VDHR #	*Resource Name, Address*	*NRHP-Status*	*Distance from Project*	*Recommended Impact*
131-0035	*Dismal Swamp Canal*	*NRHP-Listed*	*Directly Crossed by the project*	*Minimal Impact*
131-0051	*Herring Canal*	*NRHP-Eligible*	*Directly Crossed by the project*	*Minimal Impact*

VDHR #	*Resource Name, Address*	*NRHP-Status*	*Distance from Project*	*Recommended Impact*
131-5071	*Centerville-Fentress Historic District*	*NRHP-Listed*	*~0.17 Mile from nearest portion of the project*	*Minimal Impact*
131-5076	*Lindsay Canal*	*NRHP-Eligible*	*Directly Crossed by the project*	*Minimal Impact*
131-5833	*Portsmouth Ditch*	*NRHP-Eligible*	*~0.43 Mile from nearest portion of the project*	*No Impact*

With regards to archaeology, portions of the project area have been subject to previous phase I survey, however, these are primarily limited to linear corridors associated with utility or infrastructure projects crossing the project ROW. As a result of these surveys, four (4) previously recorded sites are located directly within or crossed by the project ROW. One of the sites has been determined potentially eligible for listing in the NRHP, one has been determined not eligible, and the other two have not been formally evaluated. While no survey or formal investigation of these archaeological sites was conducted as part of this effort, review of aerial photography reveals that portions of all four sites may have been destroyed, however, some portions may remain intact. ***It is therefore D+A's recommendation that that any portion of the project area that has not been subject to accepted cultural resource survey be investigated, and any previously recorded and newly identified sites should be evaluated and assessed for project impacts as additional project construction details become available.***

Summary of potential impacts summary for archaeological resources.

VDHR #	*Description; Temporal Context*	*NRHP Status*	*Proximity to Project*	*Impacts/ Recommendation*
44CS0033	*No Data; Prehistoric/Unknown (15000 B.C. - 1606 A.D.)*	*Not Evaluated*	REDACTED	*No Impact/ No further consideration*
44CS0267	*Canal; No Data*	*Not Evaluated*	REDACTED	*TBD/ Investigate further as project details become available*
44CS0294	*Trash Scatter; 20th Century: 1st half (1900 - 1949)*	*DHR Staff: Not Eligible*	REDACTED	*No Impact/ No further consideration*
44CS0295	*Railroad Bed; 19th Century: 4th quarter (1875 - 1899), 20th Century: 1st half (1900 - 1949)*	*DHR Staff: Eligible*	REDACTED	*TBD/ Investigate further as project details become available*

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1. INTRODUCTION

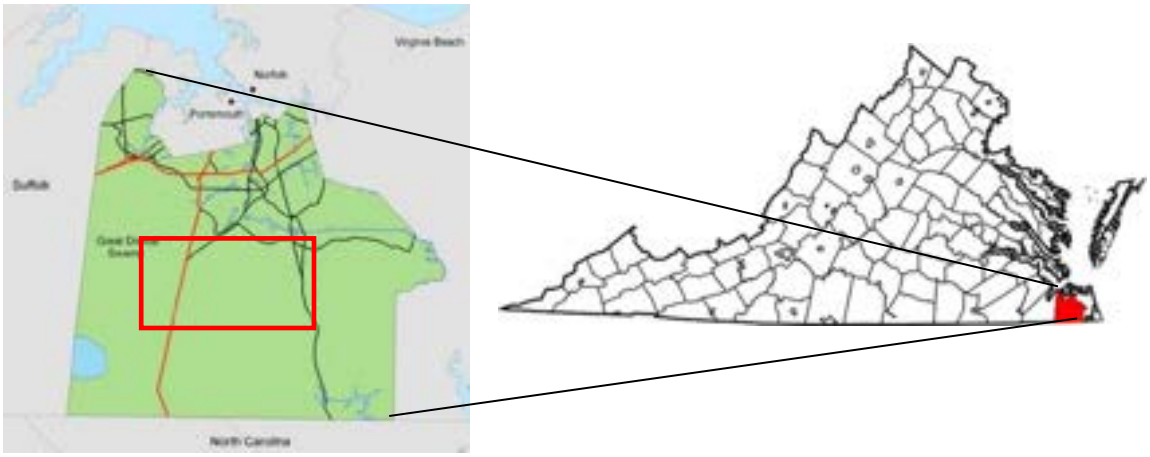
In June 2024, Dutton + Associates, LLC (D+A) completed a Pre-Application Analysis (analysis) of cultural resources for the Fentress-Yadkin 500 kV Line #588 Rebuild and New 500 kV Fentress-Yadkin Line #5005 in Chesapeake, Virginia (from hereon referred to as the Fentress-Yadkin Projects) (Figure 1-1). The analysis was performed for Virginia Electric and Power Company (Dominion Energy Virginia, Dominion, or the Company) in support of a State Corporation Commission (SCC) application for the Project. The analysis was conducted in accordance with Virginia Department of Historic Resources' (VDHR) guidance titled *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (January 2008) and Commonwealth of Virginia State Corporation Commission Division of Public Utility Regulation *Guidelines for Transmission Line Applications Filed Under Title 56 of the Code of Virginia* (August 2017).

This analysis was performed at a level that meets the purpose and intent of VDHR and the SCC's guidance based upon project data and engineering available at the time of the study. It provides information on the presence of previously recorded National Historic Landmark (NHL) properties located within a 1.5-mile buffer area established around the project, properties listed on the National Register of Historic Places (NRHP), battlefields, and historic landscapes located within a 1-mile buffer around the project, properties previously determined eligible for listing in the NRHP located within a 0.5-mile buffer area around the project, and previously identified archaeological resources directly within the project area. This analysis will not satisfy Section 106 identification and evaluation requirements in the event federal permits or licenses are needed; however, it can be used as a planning document to assist in making decisions under Section 106 as to whether further cultural resource identification efforts may be warranted.

This report contains a research design which describes the scope and methodology of the analysis, discussion of previously identified historic properties, and an assessment of potential impacts. D+A Senior Architectural Historian Robert J. Taylor, Jr. M.A. served as Principal Investigator and oversaw the general course of the project and supervised all aspects of the work. Copies of all notes, maps, correspondence, and historical research materials are on file at the D+A main office in Midlothian, Virginia.

Fentress-Yadkin Vicinity

City of Chesapeake



Project Alignment

Figure 1-1: General location of the project.

2. PROJECT DESCRIPTION

The Fentress-Yadkin Projects involves the rebuild of approximately 13.5 miles of existing 500 kV transmission line, and construction of a new, adjacent line, that runs from the Yadkin Substation on Yadkin Road to the Fentress Substation on Meredith Drive and Fentress Loop in Chesapeake, Virginia (Figure 2-1). The project is needed in order to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation Reliability Standards, and to help reliably and successfully integrate the Coastal Virginia Offshore Wind Commercial Project (CVOW) with the transmission system, Dominion Energy proposes:

3. Line #588 Rebuild. Rebuild the approximately 13.5-mile-long existing overhead single circuit 500 kV Fentress-Yadkin Line #588, which is approaching its end of service life. Line #588 currently is supported primarily by single circuit 500 kV weathering steel lattice structures. The existing structures will be replaced primarily with single circuit 500 kV dulled galvanized steel monopole structures entirely within the existing right-of-way, currently maintained at 150 feet wide.

4. Proposed Line #5005. Construct a new overhead single circuit 500 kV transmission line originating at the existing Fentress Substation and continuing approximately 13.5 miles to the existing Yadkin Substation, resulting in 500 kV Fentress-Yadkin Line #5005. Line #5005 will be installed with the rebuilt Line #588 entirely within the existing, maintained right-of-way. Structures will primarily be single circuit 500 kV dulled galvanized steel monopoles.

The existing Line 588 steel lattice structures are centered within the ROW and average 115-feet in height. The Line 588 replacement monopole structures and the proposed Line 5005 monopole structures, both of which are primarily monopole structures, will be set generally side-by-side within existing, maintained ROW and will average 185 feet in height (Figure 2-2).

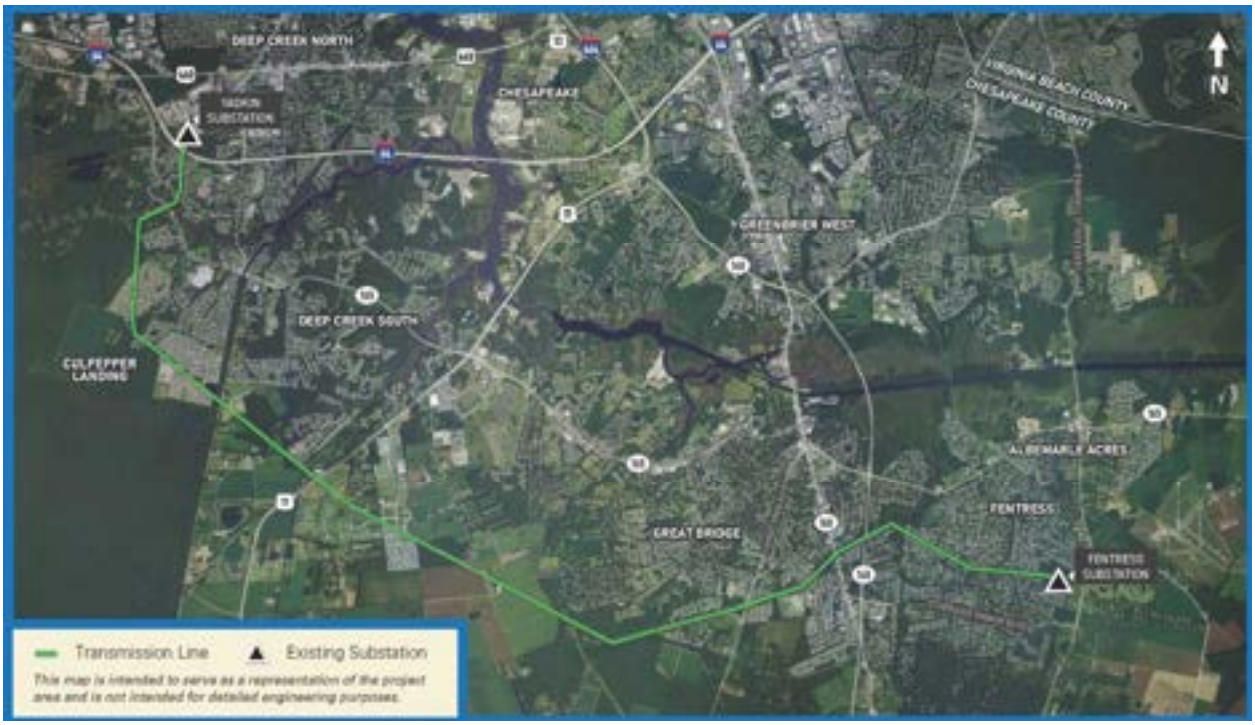


Figure 2-1: Project overview map. Source: Dominion Energy

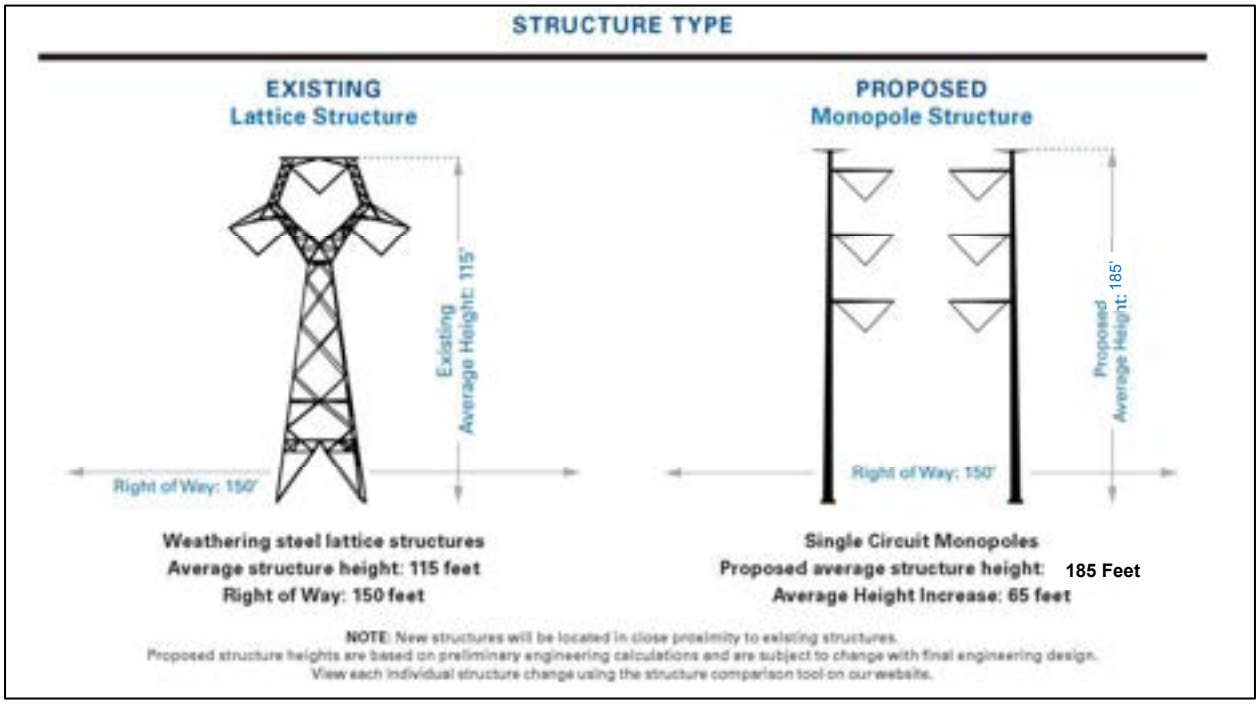


Figure 2-2: Existing and Proposed Structure Comparison. Source: Dominion Energy

3. RESEARCH DESIGN

The intent of this effort was to identify all known historic properties within the vicinity of the proposed project study area in order to assess them for potential impacts brought about by the project. Historic properties include architectural and archaeological (terrestrial and underwater) resources, historic and cultural landscapes, battlefields, and historic districts. For each previously recorded historic property, an examination of property documentation, current aerial photography, and a field reconnaissance was undertaken to assess each property's integrity of feeling, setting, and association, and to provide photo documentation of the property including views toward the proposed project. The D+A personnel who directed and conducted this survey meet the professional qualification standards of the Department of the Interior (48 FR 44738-9).

ARCHIVAL RESEARCH

In March 2024, D+A conducted archival research with the goal of identifying all previously recorded historic properties and any additional historic property locations referred to in historic documents and other archives, as well as consultation with local informants and other professionals with intimate knowledge of the project area as appropriate. Background research was conducted at the VDHR and on the internet and included the following sources:

- VDHR Virginia Cultural Resource Information System (VCRIS) site files; and
- National Park Service (NPS), American Battlefield Protection Program (ABPP), maps and related documentation.
- Fairfax County Office of Historic Preservation
- Loudoun County Historic and Cultural Sites

Data collection was performed according to VDHR guidance in *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (January 2008) and was organized in a multi-tier approach. As such, the effort was designed to identify all previously recorded NHL's located within 1.5-miles of the proposed project study area, all historic properties listed in the NRHP, battlefields, and historic landscapes located within 1-mile of the project study area, all historic properties previously determined eligible for listing in the NRHP located within 0.5-mile of the project study area, as well as all archaeological sites located directly within the project area.

FIELD RECONNAISSANCE

Field reconnaissance included visual inspection of historic properties within the study tiers, although no inspection of archaeological sites or subsurface testing was performed at this time. Visual inspection included digital photo documentation of each property's existing conditions including its setting and views toward the proposed project. Photographs were taken of primary resource elevations, general setting, and existing viewsheds. All photographs were taken from public right-of-way or where property access was granted.

ASSESSMENT OF POTENTIAL IMPACTS

Following identification and field inspection of historic properties, D+A assessed each architectural resource for potential impacts brought about by the proposed project. Assessment of impacts was conducted through a combination of field inspection, digital photography, review of topography and aerial photography, and photo simulation. Photo simulation was conducted from representative vantage points within or near each resource property deemed most likely to have a change in visibility as a result of the project. The photo simulation entailed digital photography, towards the project, which was then loaded into a computer with location coordinates and ground-elevation. The transmission line structures to be rebuilt as part of the project were then also computer modeled to represent the location, height, and configuration following construction. These models were then overlaid onto the digital photograph so that the existing (unaltered) view can be compared with the simulated view that illustrates the proposed structures, as they would appear on the landscape.

Archaeological assessment was limited to desktop review of project improvements in relation to previously delineated site boundaries, however, existing conditions of sites remain unknown at this level of investigation.

When assessing impacts, D+A considered those qualities and characteristics that qualify the property for listing and whether the project has the potential to alter or diminish the integrity of the property and its associated significance. Specific attention was given to determining whether or not the proposed project would introduce new visual elements into a property's viewshed, which would either directly or indirectly alter those qualities or characteristics that qualify the historic property for listing in the NRHP. Identified impacts were characterized as severe, moderate, minimal, or none in accordance with the following guidance:

According to VDHR guidance, project impacts are characterized as such:

- **None** – Project is not visible from the property.
- **Minimal** – Occur within viewsheds that have existing transmission lines, locations where there will only be a minor change in tower height, and/or views that have been partially obstructed by intervening topography and vegetation.
- **Moderate** – Include viewsheds with expansive views of the transmission line, more dramatic changes in the line and tower height, and/or an overall increase in the visibility of the route from the historic properties.
- **Severe** – Occur within viewsheds that do not have existing transmission lines and where the views are primarily unobstructed, locations where there will be a dramatic increase in tower visibility due to the close proximity of the route to historic properties, and viewsheds where the visual introduction of the transmission line is a significant change in the setting of the historic properties.

REPORT PREPARATION

The results of the archival resource, field inspection, and analysis were synthesized and summarized in a summary report accompanied by maps, illustrations, and photographs as appropriate. All research material and documentation generated by this project is on file at D+A's office in Midlothian, Virginia.

4. ARCHIVES SEARCH

This section includes a summary of efforts to identify previously known and recorded cultural resources within the tiered study buffers. It includes lists, maps, and descriptive data on all previously conducted cultural resource surveys, and previously recorded architectural resources and archaeological sites according to the VDHR archives and VCRIS database.

PREVIOUSLY SURVEYED AREAS

VDHR and VCRIS records indicate that there have been twenty-three (23) prior Phase I cultural resource surveys within 1-mile of the project ROW, five (5) of which overlap with or include portions of the project ROW (Table 4-1). These surveys are at a minimum archaeological in nature, although some include architectural resources as well. The five surveys overlapping the project ROW were conducted for transportation and utility-related projects, as well as some private development projects. As a result of these prior surveys, short lengths of the overall project ROW have been subject to survey although most of the ROW remains unsurveyed. The five previously conducted cultural resource surveys that include portions of the project ROW are listed in Table 4-1 and illustrated in Figure 4-1.

Table 4-1: Previously conducted cultural resource surveys that include portions of the project ROW. Source: VDHR.

VDHR Survey #	Title	Author	Date	Project Review #
CS-036	A Phase I Cultural Resource Survey of the Proposed Alternatives to the Route 17 Widening Project, City of Chesapeake, Virginia	WMCAR	1994	1991-1646
CS-102	Phase I Cultural Resources Survey of Deep Creek Ball Park Property, City of Chesapeake, Virginia	CIRCA	2010	2010-0129
CS-105	Phase I Testing along the Dismal Swamp Canal and Building Assessment of the Dismal Swamp Canal Company Toll House, City of Chesapeake, Virginia, and Camden County, North Carolina Technical Report No. 8	JMA	2011	N/A
CS-135	Phase I Archaeological Survey of the Chesapeake Solar Project Site, City of Chesapeake, Virginia	CIRCA	2018	2018-3542
CS-161	Phase I Cultural Resources Survey of the Line 16 Great Bridge to Hickory 115 kV Transmission Line Rebuild, Chesapeake, Virginia	DUTTON	2020	2020-4477

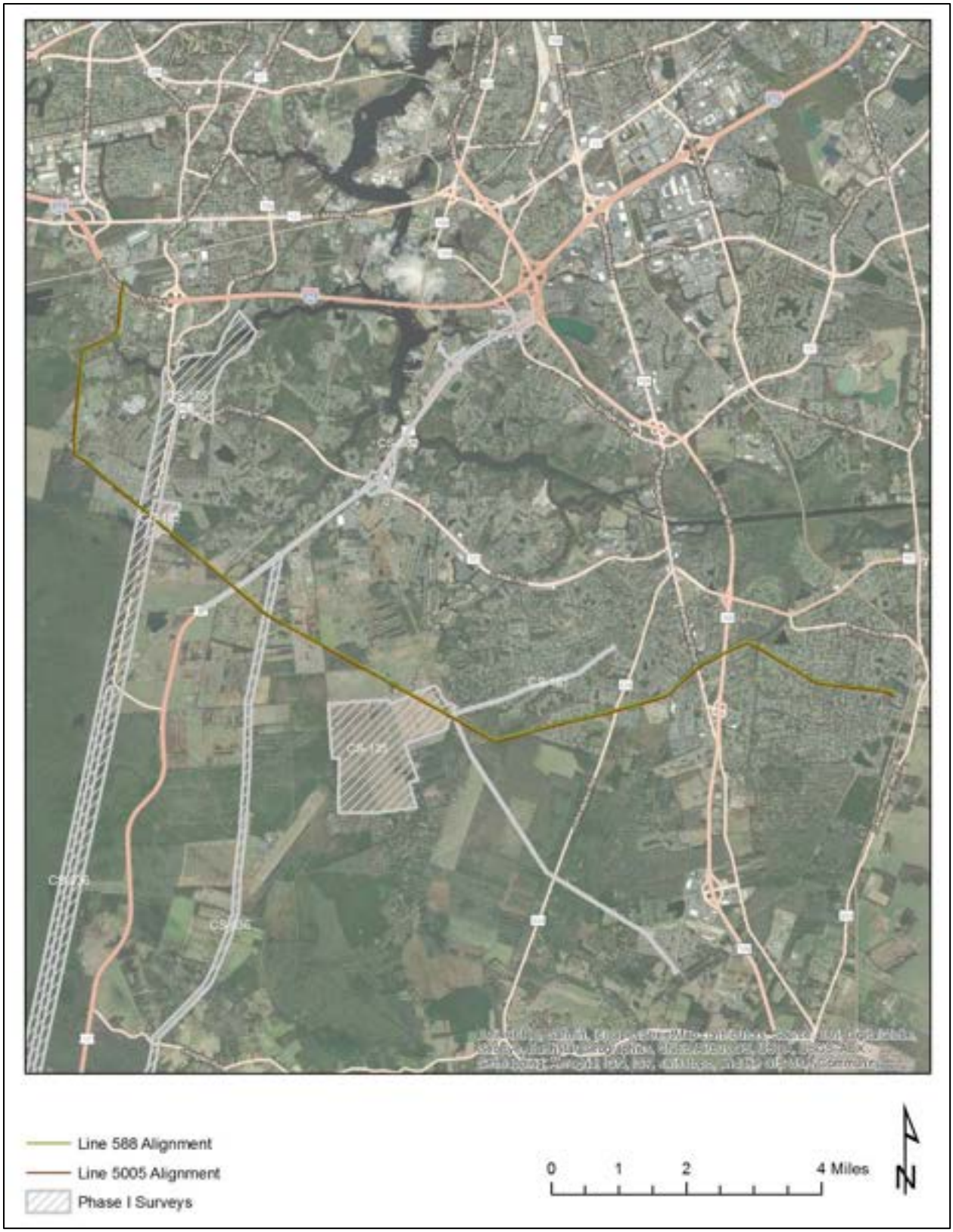


Figure 4-1: Previously conducted surveys that include portions of the project ROW. Source: VCRIS

ARCHITECTURAL RESOURCES

Review of the VDHR VCRIS inventory records revealed a total of four-hundred-six (406) previously recorded architectural resources are located within 1.5 mile of the project alignment. Of these, there are no (0) NHLs located within 1.5 mile of the proposed project or closer, two (2) NRHP-listed properties located within 1.0 mile or closer of the project, and three (3) properties that have been determined eligible or potentially eligible for listing in the NRHP by the VDHR within 0.5 mile or closer of the project. One (1) of the NRHP-listed resources and two (2) of the NRHP-eligible resources are directly crossed by the project alignment.

Table 4-2 lists all NHLs, NRHP-listed, and NRHP-eligible resources within their respective buffered tiers. A map of all previously recorded architectural resources within 1.5-mile of the project study area is depicted in Figure 4-2 and a map of any NHL, NRHP-listed, and NRHP-eligible resources within their respective study tiers are included in Figure 4-3.

Table 4-2: Considered Architectural Resources within their respective tiered buffer zones for the project. Source: VCRIS

Buffer(miles)	Considered Resources	VDHR #	Description
1.5	National Historic Landmarks	None	None
1.0	National Historic Landmarks	None	None
	National Register- Listed	None	None
	Battlefields	None	None
	Historic Landscapes	None	None
0.5	National Historic Landmarks	None	None
	National Register- Listed	131-5071	Centerville-Fentress Historic District
	Battlefields	None	None
	Historic Landscapes	None	None
	National Register- Eligible	131-5833	Portsmouth Ditch
0.0 (ROW)	National Historic Landmarks	None	None
	National Register - Listed	131-0035	Dismal Swamp Canal
	Battlefields	None	None
	Historic Landscapes	None	None
	National Register- Eligible	131-0051	Herring Canal
		131-5076	Lindsay Canal

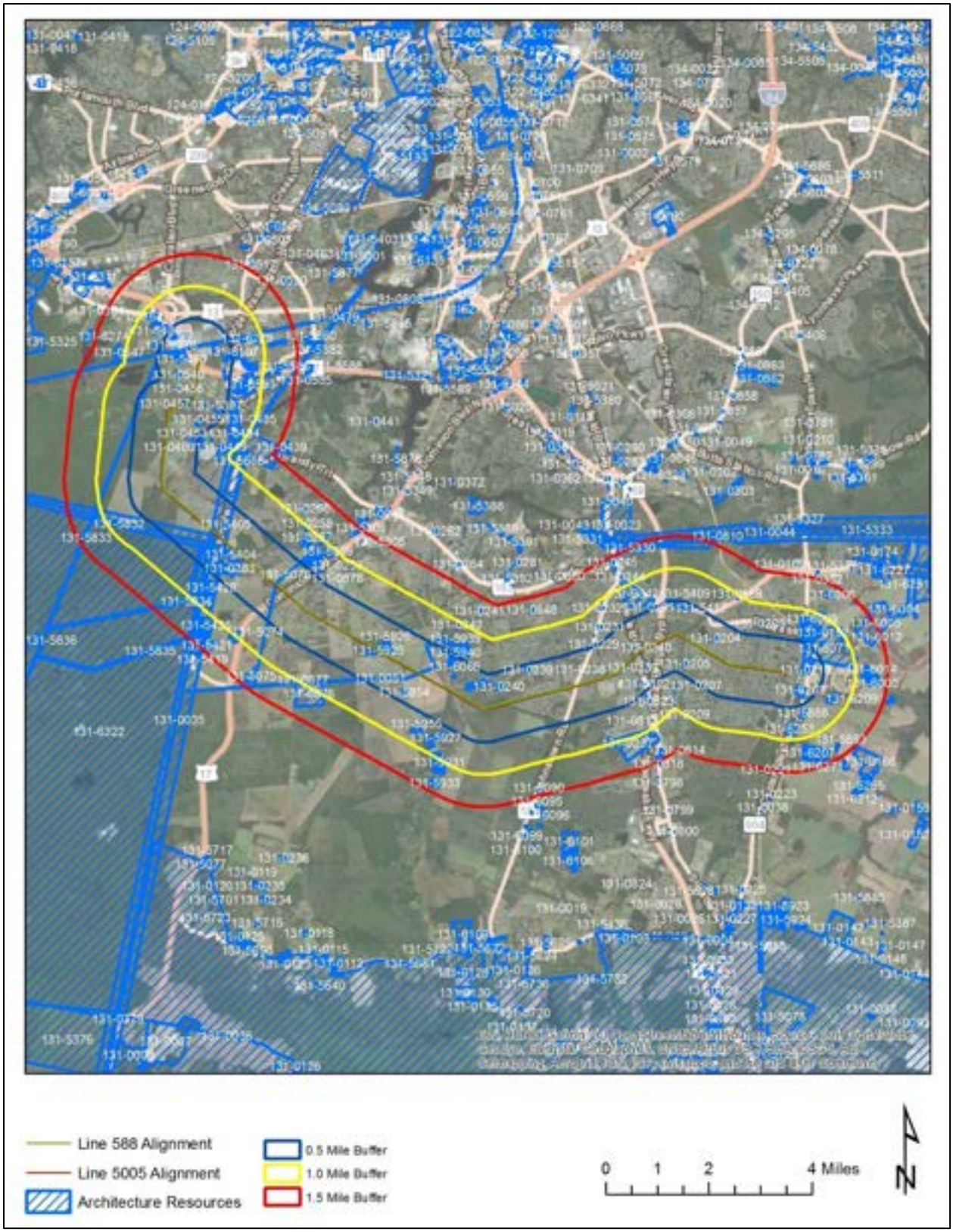


Figure 4-2: All previously identified architectural resources within 1.5-miles of the project alignment. Source: VCRIS

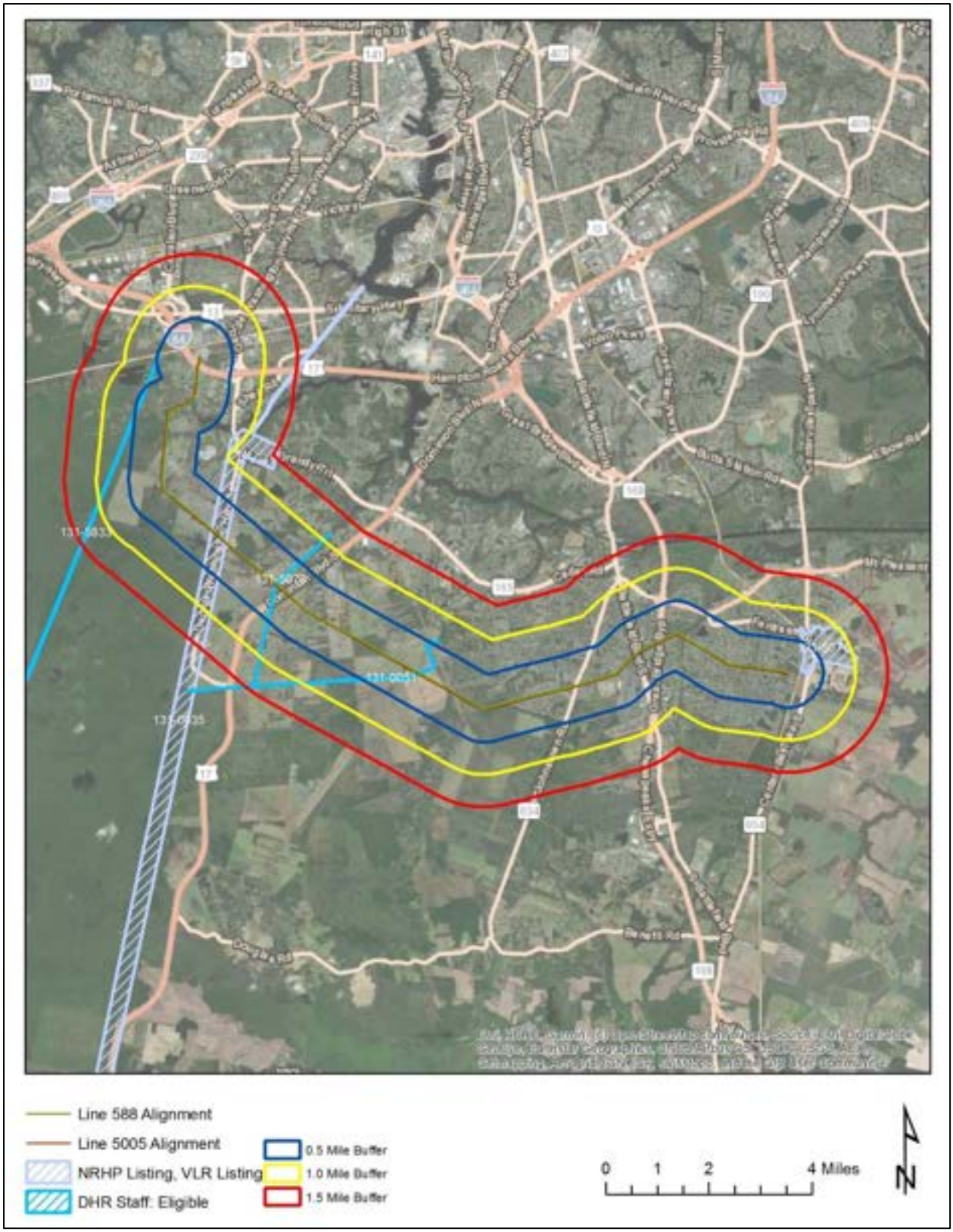


Figure 4-3: Considered architectural resources within their respective tiers around the project alignment. Source: VCRIS

ARCHAEOLOGICAL SITES

Review of the VDHR VCRIS records reveals there are thirty-eight (38) previously recorded archaeological sites within one mile of the project. These include prehistoric lithic scatters and camps, as well as historic domestic sites, farmsteads, canals and associated features, a railroad bed, cemeteries, and trash scatters. Of these, three (3) have been determined eligible or potentially eligible for listing in the NRHP, seven (7) have been determined not eligible for listing, and the remaining sites have not been formally evaluated. Four (4) of the sites are located within or crossed by the project ROW.

Table 4-3 lists all previously recorded archaeological resources within one-mile of the project and Table 4-4 provides additional information on the sites that are located within the project ROW. Figure 4-4 illustrates the locations of all previously recorded sites within one mile of the project area and Figure 4-5 details the location of the archaeological sites located within the project ROW.

Table 4-3: Previously recorded archaeological resources within one mile of the project area. Bold listings denote sites listed in- or eligible for the NRHP. Orange highlight denotes site is located within or crossed by the project ROW.

VDHR #	Type	Temporal Association	NRHP Status
44CS0004	No Data	No Data	Not Evaluated
44CS0031	No Data	Archaic (8500 - 1201 B.C.), 18th Century: 1st half (1700 - 1749)	Not Evaluated
44CS0032	No Data	Archaic (8500 - 1201 B.C.)	Not Evaluated
44CS0033	No Data	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44CS0034	No Data	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44CS0037	No Data	No Data	Not Evaluated
44CS0056	No Data	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44CS0057	No Data	No Data	Not Evaluated
44CS0058	No Data	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44CS0059	No Data	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44CS0065	No Data	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44CS0067	No Data	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44CS0068	No Data	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44CS0267	No Data	No Data	Not Evaluated
44CS0294	Trash scatter	20th Century: 1st half (1900 - 1949)	DHR Staff: Not Eligible
44CS0295	**Railroad bed**	**19th Century: 4th quarter (1875 - 1899), 20th Century: 1st half (1900 - 1949)**	**DHR Staff: Eligible**
44CS0305	**Canal lock**	**19th Century: 1st half (1800 - 1849)**	**DHR Staff: Eligible**
44CS0306	Trash scatter	19th Century: 1st quarter (1800 - 1825), 19th Century: 4th quarter (1875 - 1899)	DHR Staff: Not Eligible
44CS0309	Dwelling, single	19th Century: 4th quarter (1875 - 1899)	Not Evaluated
44CS0310	Farmstead	19th Century: 4th quarter (1875 - 1899)	Not Evaluated

VDHR #	Type	Temporal Association	NRHP Status
44CS0313	Canal lock	19th Century (1800 - 1899), 20th Century (1900 - 1999)	Not Evaluated
44CS0317	Cemetery	World War I to World War II (1917 - 1945), The New Dominion (1946 - 1988)	DHR Staff: Not Eligible
44CS0321	Lithic scatter	Pre-Contact	DHR Staff: Not Eligible
44CS0322	Other	Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991)	Not Evaluated
44CS0326	Other	Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991)	Not Evaluated
44CS0327	Other	The New Dominion (1946 - 1991)	Not Evaluated
44CS0328	Cemetery	World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991)	Not Evaluated
44CS0329	Lithic scatter	Pre-Contact	DHR Staff: Not Eligible
44CS0331	Artifact scatter	Middle Archaic Period (6500 - 3001 B.C.E), Early National Period (1790 - 1829), Antebellum Period (1830 - 1860), Civil War (1861 - 1865), Reconstruction and Growth (1866 - 1916)	Not Evaluated
44CS0332	Artifact scatter	Early National Period (1790 - 1829), Antebellum Period (1830 - 1860), Civil War (1861 - 1865), Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945)	Not Evaluated
44CS0333	Artifact scatter	Early National Period (1790 - 1829), Antebellum Period (1830 - 1860), Civil War (1861 - 1865), Reconstruction and Growth (1866 - 1916)	Not Evaluated
44CS0334	Artifact scatter	Pre-Contact, Early National Period (1790 - 1829), Antebellum Period (1830 - 1860), Civil War (1861 - 1865), Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991)	Not Evaluated
44CS0335	Artifact scatter	Early National Period (1790 - 1829), Antebellum Period (1830 - 1860), Civil War (1861 - 1865), Reconstruction and Growth (1866 - 1916)	Not Evaluated
44CS0346	**Artifact scatter**	**Pre-Contact**	**DHR Evaluation Committee: Eligible**
44CS0348	Dwelling, single	Colony to Nation (1751 - 1789), Early National Period (1790 - 1829), Antebellum Period (1830 - 1860), Civil War (1861 - 1865), Reconstruction and Growth (1866 - 1916)	DHR Evaluation Committee: Not Eligible
44CS0351	Dwelling, single	Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945)	DHR Staff: Not Eligible
44CS0366	Artifact scatter	Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991), Post Cold War (1992 - Present)	Not Evaluated
44CS0372	Cemetery	Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991)	Not Evaluated

Table 4-4: Previously recorded archaeological resources crossed by the project ROW with proximity to nearest proposed transmission line structure.

VDHR #	Description	NRHP Status	Proximity to Project
44CS0033	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated	REDACTED
44CS0267	No Data	Not Evaluated	REDACTED
44CS0294	Trash Scatter, 20th Century: 1st half (1900 - 1949)	DHR Staff: Not Eligible	REDACTED
44CS0295	Railroad Bed, 19th Century: 4th quarter (1875 - 1899), 20th Century: 1st half (1900 - 1949)	DHR Staff: Eligible	REDACTED

SENSITIVE ARCHAEOLOGICAL
DATA REDACTED

Figure 4-4: Previously recorded archaeological resources located within 1- mile of project. Source: VCRIS

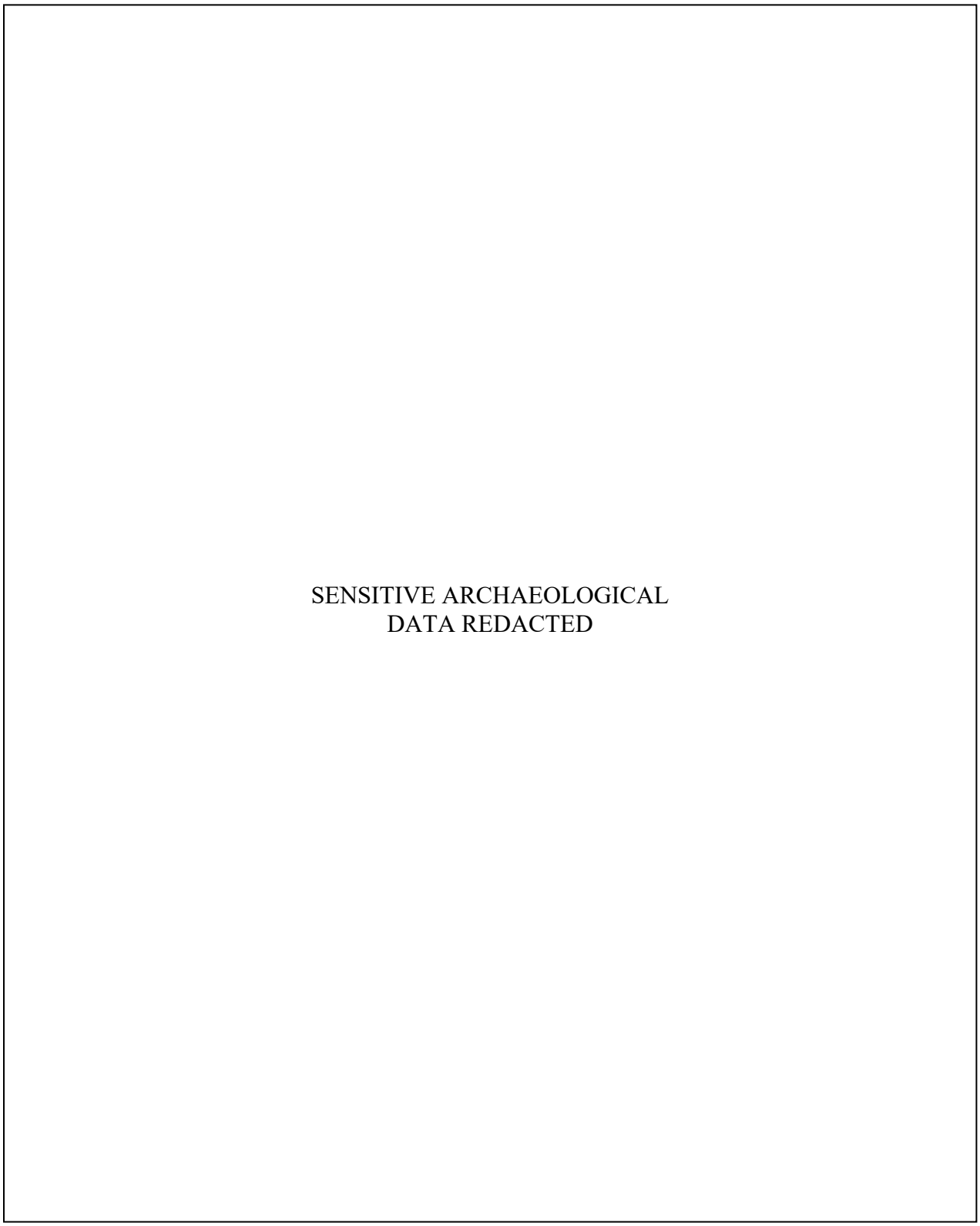


Figure 4-5: Map of previously recorded archaeological resources within or crossed by the project ROW. Source: VCRIS

NPS AMERICAN BATTLEFIELD PROTECTION PROGRAM (ABPP)

A review of the National Park Service (NPS) ABPP records reveals that no portions of any delineated battlefield are located within one mile of the project.

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5. RESULTS OF FIELD RECONNAISSANCE

In accordance with the VDHR guidelines for assessing impacts of proposed electric transmission lines on historic resources, considered architectural properties identified within the VDHR-defined study tiers around the project study area were field verified for existing conditions and photo documented (Table 5-1 and Figure 5-1).

Table 5-1: Considered architectural resources and distance to project.

VDHR #	Resource Name/ Address	NRHP-Status	Distance from project
131-0035	Dismal Swamp Canal	NRHP-Listed	Directly Crossed by the project
131-0051	Herring Canal	NRHP-Eligible	Directly Crossed by the project
131-5071	Centerville-Fentress Historic District	NRHP-Listed	~0.17 Mile from nearest portion of the project
131-5076	Lindsay Canal	NRHP-Eligible	Directly Crossed by the project
131-5833	Portsmouth Ditch	NRHP-Eligible	~0.43 Mile from nearest portion of the project

Inspection and analysis of the setting around the resource and views towards the project route alternatives were also conducted to assess potential project impacts. For the purposes of this analysis, an impact is one that alters, either directly or indirectly, those qualities or characteristics that qualify a particular property for listing in the NRHP and does so in a manner that diminishes the integrity of a property's materials, workmanship, design, location, setting, feeling, and/or association. With respect to transmission lines, direct impacts typically are associated with ground disturbance resulting from ROW clearing and structure construction. Indirect impacts typically are associated with the introduction of new visual elements or changes to the physical features of a property's setting or viewshed. According to VDHR guidance, project impacts are characterized by the definitions below.

- **None** – Project is not visible from the property.
- **Minimal** – Occur within viewsheds that have existing transmission lines, locations where there will only be a minor change in tower height, and/or views that have been partially obstructed by intervening topography and vegetation.
- **Moderate** – Include viewsheds with expansive views of the transmission line, more dramatic changes in the line and tower height, and/or an overall increase in the visibility of the route from the historic properties.
- **Severe** – Occur within viewsheds that do not have existing transmission lines and where the views are primarily unobstructed, locations where there will be a dramatic increase in tower visibility due to the close proximity of the route to historic properties, and viewsheds where the visual introduction of the transmission line is a significant change in the setting of the historic properties.

The results of the field reconnaissance and assessment are summarized in the following pages.

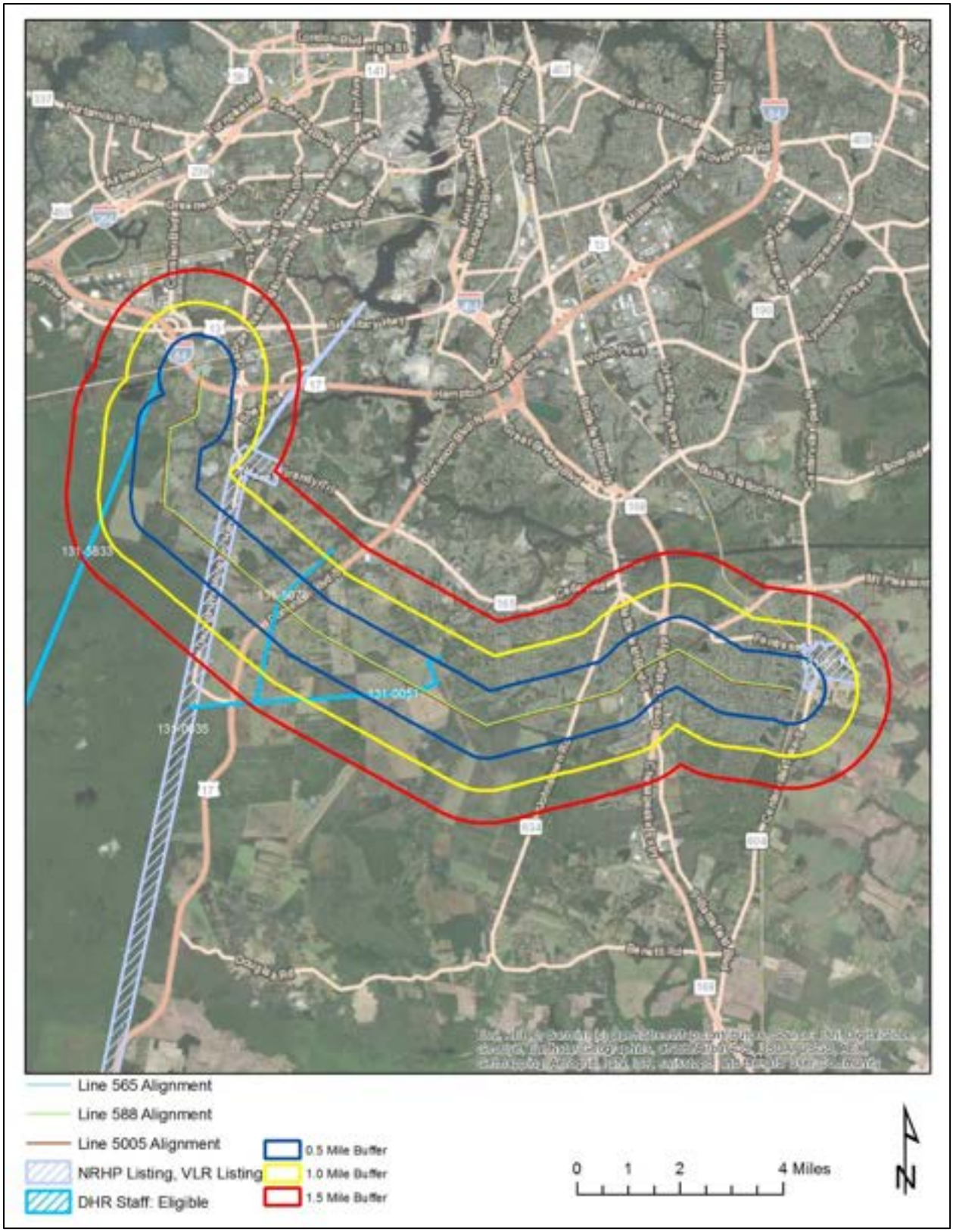

Figure 5-1: Considered architectural resources within their respective tiers around project alignment. Source: VCRIS

VDHR ID# 131-0035
Dismal Swamp Canal

The Dismal Swamp Canal stretches for 22 miles from Deep Creek in Chesapeake, Virginia to South Mills in Camden, North Carolina. The Dismal Swamp Canal Company began construction on the canal in 1793 and completed the structure in 1805. The Dismal Swamp Canal represents a significant factor in the historic development of the localities in two states. It represented a remarkable achievement of hand labor construction at the turn of the 19th century in one of the most uninviting areas of the region. The economic ledgers of the two operating companies showed red much of the time, but this was not because of mismanagement, rather it was high maintenance costs, the need for costly improvements, and most of all, adversity--the arrival of a competitive canal and the Civil War. The Dismal Swamp Canal was staggered by its adversities, but recovered so well that it bettered its competition, the Albemarle and Chesapeake Canal. The blow from which the Dismal Swamp Canal could not recover was the Federal Government's purchase of the Albemarle and Chesapeake Canal and making it toll free. Many other canals succumbed to the railroad. Probably, both Virginia-Carolina canal companies saw the handwriting on the wall when pressure by maritime interests brought about a toll-free inland waterway through government purchase of the Cape Cod and Chesapeake-Delaware Canals. The Dismal Swamp Canal was listed in the NRHP in 1988, under Criterion A in the area of Transportation due to its role as the key transportation artery between southeast Virginia and northeast North Carolina during the nineteenth century; in the area of Maritime History as one of the nation’s earliest canals; in the area of Recreation as a major waterway for recreational watercraft and activities; and in the area of Commerce as one of the primary routes for carrying wood products out of the Great Dismal Swamp during the nineteenth century. It is also listed under Criterion C in the area of Engineering as an early summit canal utilizing only two locks.

As an ***NRHP-listed*** resource located within one mile of the project alignment, an assessment of potential impacts was conducted. To assess potential project impacts, a site visit was made to the

portion of the canal located within the one-mile study tier to inspect the setting and viewshed of the resource with emphasis on views towards the project and associated improvements. Photographs were taken from the publicly-accessible locations along the canal towards the project alignment to document current conditions, lines of sight, and the extent of visibility of existing infrastructure. Photo simulation was also conducted from representative vantage points to model the visibility of proposed replacement structures in relation to existing structures.

Although the Dismal Swamp Canal stretches nearly 20 miles in Virginia from the Southern Branch of the Elizabeth River to Lake Drummond with an extension to the Pasquotank River in North Carolina, just a short segment of the canal is located within the one-mile study tier for this project and subject to assessment as part of this effort. This is centered on a point where the project alignment crosses the canal near Deep Creek Park. Along this length, the canal is paralleled by US-17 and traverses a rapidly developing suburban area as well as the large public Deep Creek Park. While the project alignment is suspended across the canal, the nearest structures are roughly 185 feet away to the west side and 400 feet away to the east side of the crossing.

Inspection was conducted from along the length of US-17 bordering the canal, as well as from a public walking trail along the road and leading into the Deep Creek Park. This revealed that the existing transmission line to be rebuilt as part of this project is highly visible from the immediate vicinity of the crossing with multiple structures visible up and down the ROW in both directions. However, the line and existing structures quickly become screened from along the road and trail at points further from the crossing due to existing vegetation patterns in the area. The canal itself is lined by vegetation and additional wooded areas and pockets of trees are scattered throughout the surrounding landscape.

The existing transmission line structures located within the viewshed of the canal (one-half mile) currently range from 116 to 161 feet tall, and will be replaced with structures that will range from 187 to 197 feet tall, resulting in an increase of 31 to 71 feet for individual structures (Table 5-2). The existing steel lattice structures will all be replaced on a one-to-one basis with a pair of monopoles in generally the same locations.

Table 5-2: Existing and proposed heights of structures within one-half mile of the Dismal Swamp Canal.

Existing Structure Number	Existing Pole Height	Proposed Structure Number Line 588/Line 5005		Proposed Pole Height Line 588/Line 5005		Height Difference
588/16	121	588/200	5005/17	192	192	71
588/17	136	588/201	5005/18	197	197	61
588/18	161	588/202	5005/19	192	192	31
588/19	161	588/203	5005/20	192	192	31
588/20	136	588/204	5005/21	197	197	61
588/21	116	588/205	5005/22	187	187	71
588/22	116	588/206	5005/23	187	187	71

With this increase in height, it is anticipated that there will be a change in appearance of the structures from the immediate vicinity where many are already visible, however, the change in structure type from steel lattice to monopole is expected to reduce the overall change in visibility.

The increase is also anticipated to introduce additional visibility of the line and individual structures from vantage points further up and down US-17 and the adjacent walking trail as a small number of structures currently screened by vegetation may rise above the treeline. However, with the existing vegetation in the area, and the limited publicly-accessible vantage points bordering the canal, the overall change in visibility and setting is expected to be minimal. This was confirmed with photo simulation that illustrates the replacement structures will generally remain visible where existing structures are already visible, and will be screened where the existing structures are already screened by vegetation from more distant vantages.

As such, the project will not introduce a substantial change in setting or viewshed of or from publicly-accessible vantage points along the Dismal Swamp Canal. Therefore, it is D+A's recommendation that the Fentress-Yadkin Projects will result in no more than a ***minimal impact*** to the Dismal Swamp Canal per VDHR's impact characterization scale.

Figure 5-2 illustrates the location of the Dismal Swamp Canal in relation to the project alignment and study buffers, with the location and direction of representative photographs and photo simulations. Representative photographs and photo simulations are provided in Figure 5-3 through Figure 5-16.

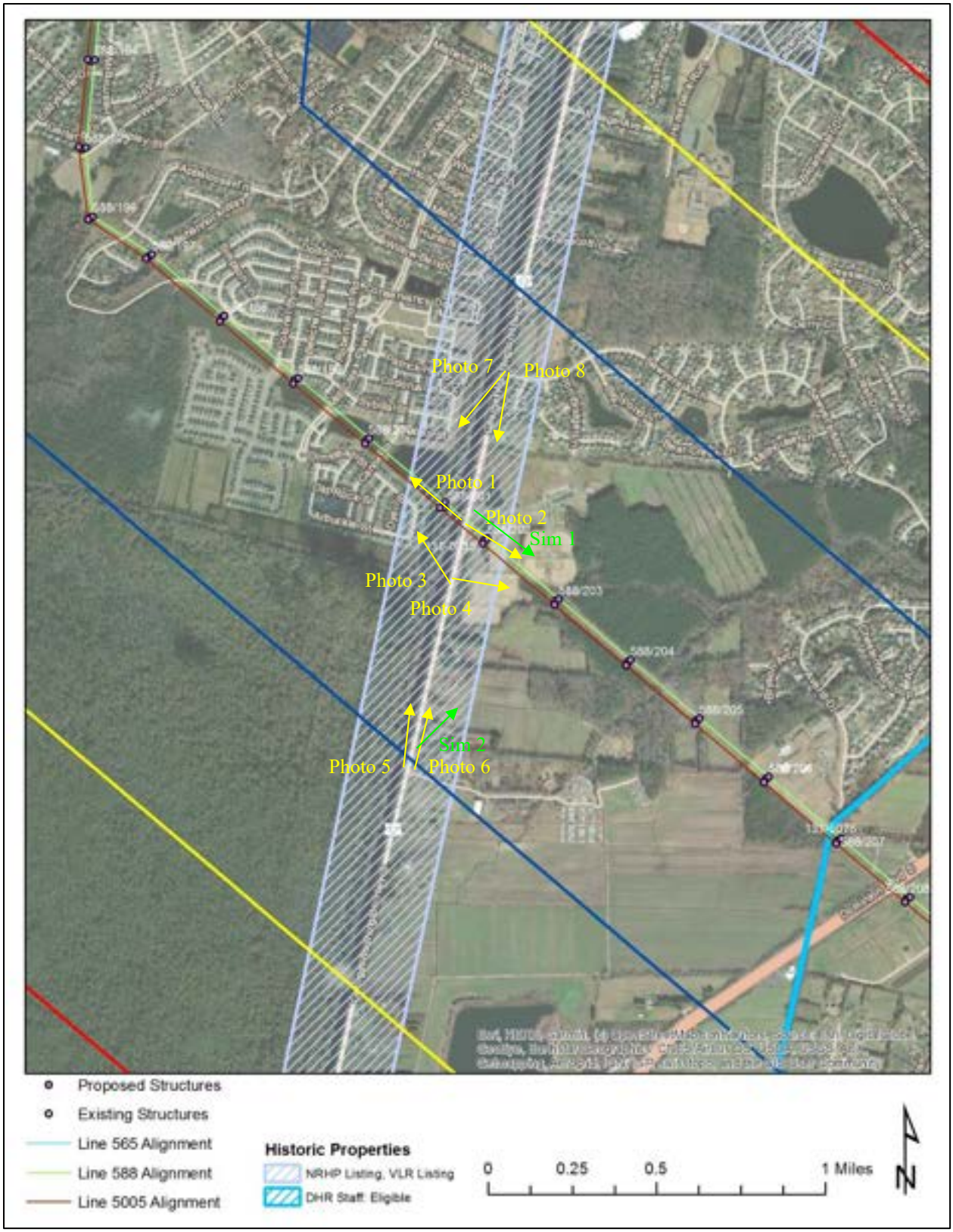

Figure 5-2: Dismal Swamp Canal in relation to the project alignment with locations and direction of representative photographs shown in yellow and photo simulation shown in green.

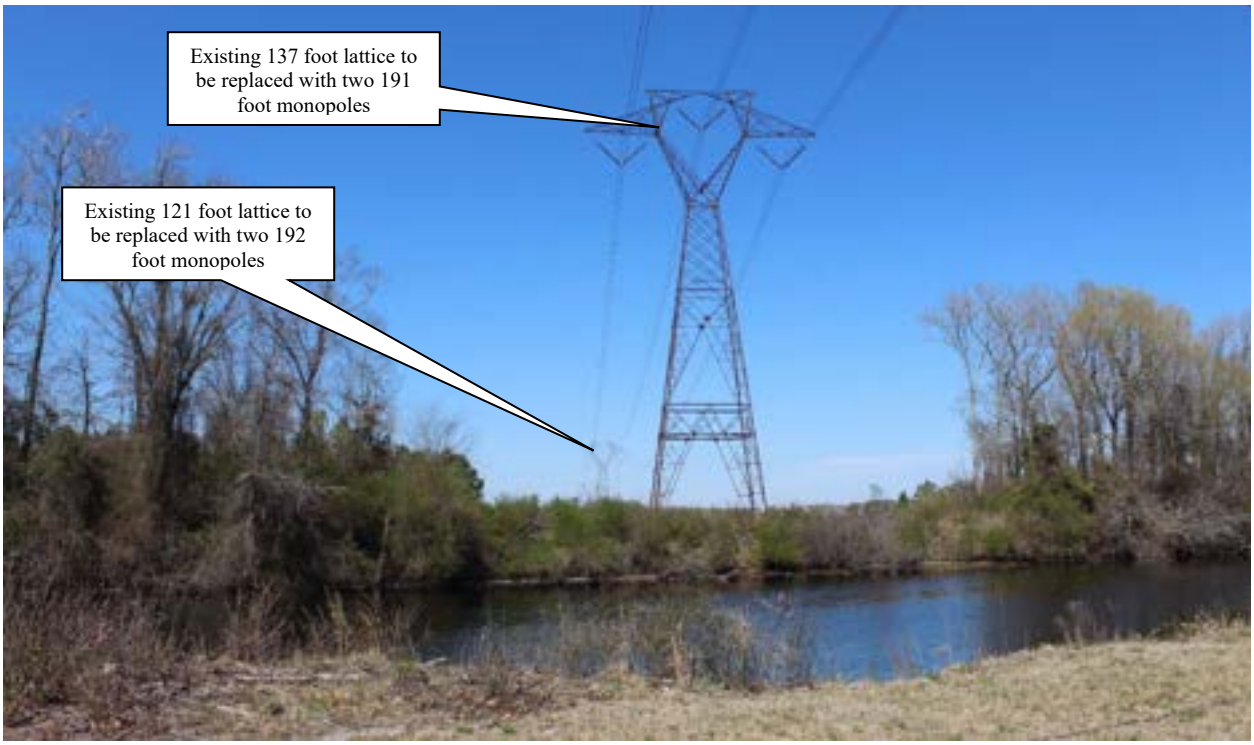

Figure 5-3: Photo location 1- View from Dismal Swamp Canal at project alignment, facing northwest.

Figure 5-4: Photo location 2- View from Dismal Swamp Canal at project alignment, facing southeast.

Figure 5-5: Photo location 3- View from Dismal Swamp Canal trail ~0.11 mile south of project alignment, facing north. (conductor visible spanning road but no existing structures visible and no anticipated visibility of replacement structures)

Figure 5-6: Photo location 4- View from Dismal Swamp Canal trail ~0.11 mile south of project alignment, facing northeast. (one existing structure visible)

Figure 5-7: Photo location 5- View from Dismal Swamp Canal at boat launch ~0.57 mile south of project alignment, facing north. (one existing structure visible through vegetation)

Figure 5-8: Photo location 6- View from Dismal Swamp Canal trail near boat launch ~0.57 mile south of project alignment, facing north. (no existing structures visible and no anticipated visibility of replacement structures)

Figure 5-9: Photo location 7- View from Dismal Swamp Canal at Sawyer Arch Road, facing southwest. (no existing structures visible and no anticipated visibility of replacement structures)

Figure 5-10: Photo location 8- View from Dismal Swamp Canal at Sawyer Arch Road, facing south. (no existing structures visible and no anticipated visibility of replacement structures)

Photo simulations prepared by:
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Viewpoint 2
Dismal Swamp Canal

Fentress-Yadkin 500kV Line #588 Rebuild & New 500kV Fentress-Yadkin Line #5005

Structure #	Height (ft)	Distance (ft)	Structure #	Height (ft)	Distance (ft)
588/203	192	373	5005/20	192	418
588/204	197	1495	5005/21	197	1507
588/205	187	2668	5005/22	187	2675
588/206	187	3795	5005/23	187	3799

Figure 5-11: Location, direction of view, and structures modeled from Deep Creek Park - Simulation location 1 for the Dismal Swamp Canal. Source: GTTE, LLC

Figure 5-12: Existing view from Deep Creek Park – Simulation location 1 for the Dismal Swamp Canal. (Multiple structures visible) Source: GTTE, LLC

Figure 5-13: Proposed view from Deep Creek Park - Simulation location 1 for the Dismal Swamp Canal (Same structures remain visible with limited visibility of additional structures). Source: GTTE, LLC

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Viewpoint 1:
Dismal Swamp Canal

Fentress-Yadkin 500kV Line #588 Rebuild & New 500kV Fentress-Yadkin Line #5005

Structure #	Height (ft)	Distance (ft)	Structure #	Height (ft)	Distance (ft)
588/203	192	3021	5005/20	192	2956
588/204	197	2827	5005/21	197	2758
588/205	187	3107	5005/22	187	3043
588/206	187	3720	5005/23	187	3667

Figure 5-14: Location, direction of view, and structures modeled from Deep Creek Stables - Simulation location 2 for the Dismal Swamp Canal. Source: GTTE, LLC

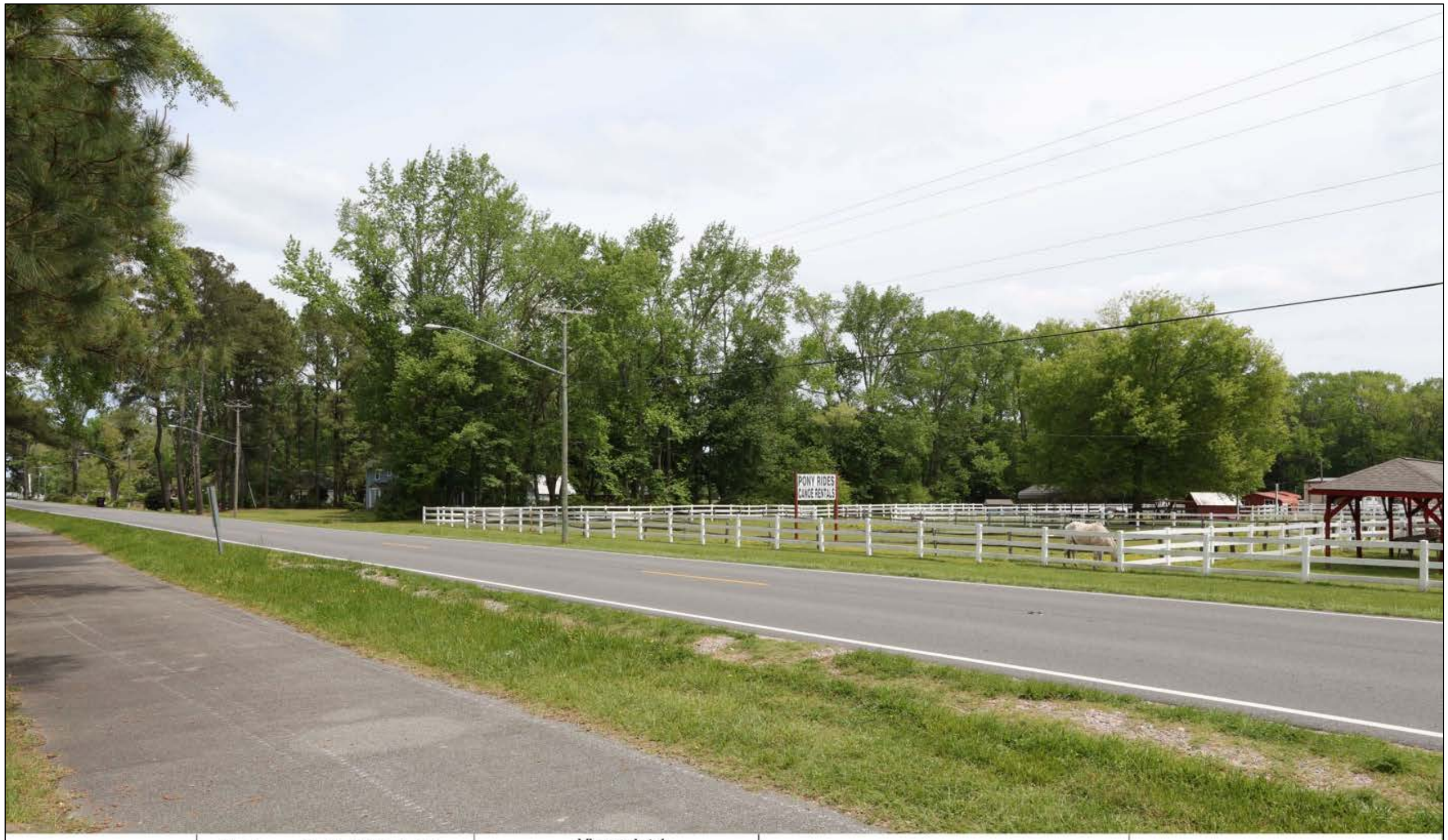

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	Fentress - Yadkin TL Rebuild	Viewpoint 1 Dismal Swamp Canal	Existing View	
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.	

Figure 5-15: Existing view from Deep Creek Stables – Simulation location 2 for the Dismal Swamp Canal. (No structures visible) Source: GTTE, LLC

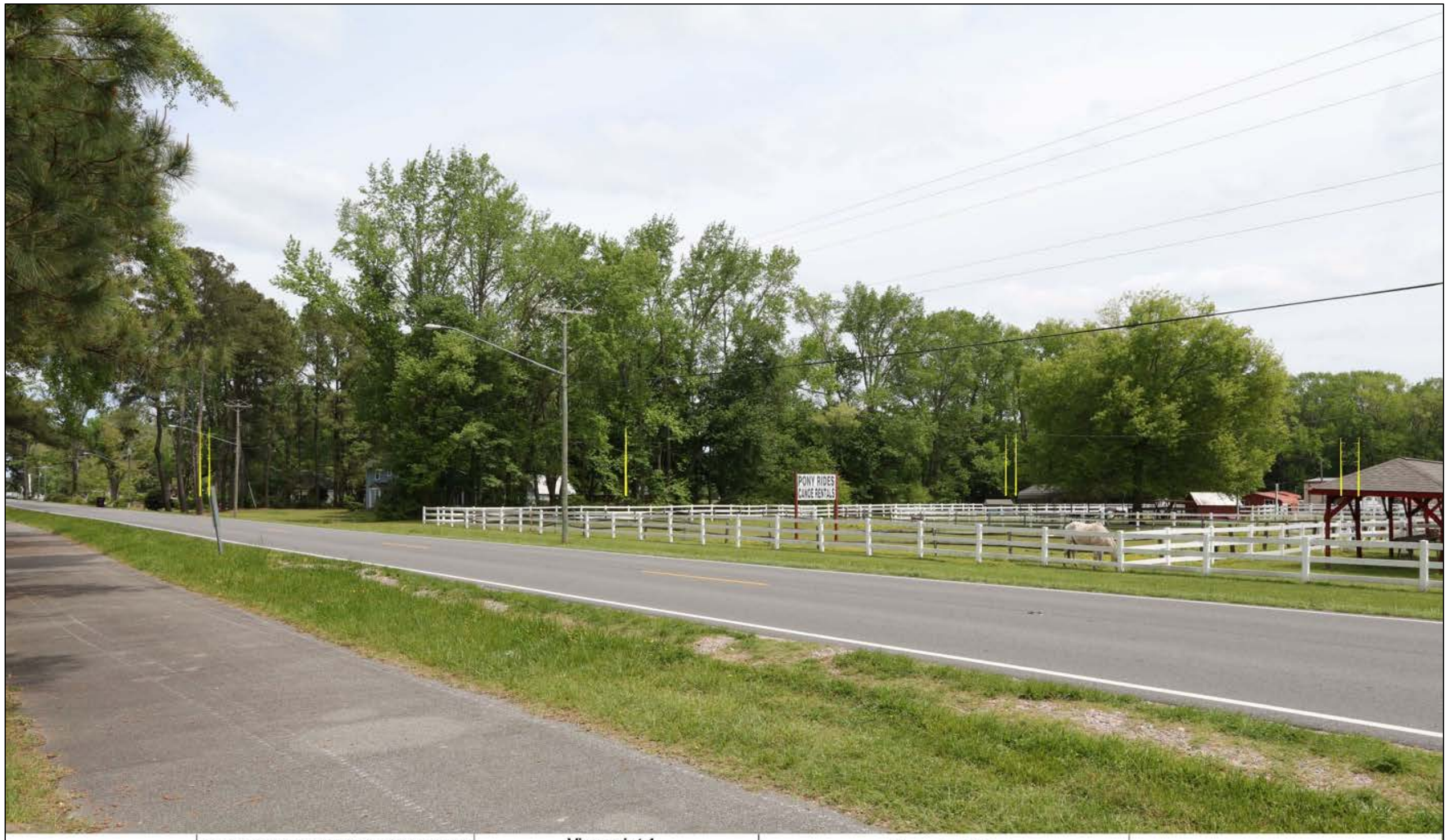

Photo simulations prepared by:
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Fentress-Yadkin 500kV Line #588 Rebuild & New 500kV Fentress-Yadkin Line #5005	**Viewpoint 1 Dismal Swamp Canal**	**Proposed View** (Location of towers not visible are overlaid with yellow tower icon)
Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-16: Proposed view from Deep Creek Stables - Simulation location 2 for the Dismal Swamp Canal (No structures visible). Source: GTTE, LLC

VDHR ID# 131-0051
Herring Canal

Herring Canal, or Ditch, began as a mill race and subsequently was extended and enlarged to carry produce and timber from the farms that bordered it. At the behest of Walter Herron, the Herring Ditch was dug by hand during the circa mid-1820s to provide him with access to the Dismal Swamp Canal. He intended to use the structure for shipping timber products from his property to the canal from which goods could be shipped to coastal markets. This type of activity was not unusual as the use of canal networks was an important aspect of commercial development in Virginia and the nation during the early nineteenth century. At that time, waterways generally provided a more reliable, convenient, and faster method of transport than overland routes. Although the mid-nineteenth century advent of the railroad significantly eroded the Dismal Swamp Canal's commercial base, the waterway continued to operate as a private, for-profit enterprise until 1929 when the federal government purchased the canal. Herring Ditch was one of many small canals and waterways constructed after 1800 that were associated with the Dismal Swamp Canal. Although the subject property is no longer maintained as a transportation route, part of its length is maintained by the City of Chesapeake for purposes of stormwater management. The Herring Canal was determined by the VDHR to be potentially eligible for listing in the NRHP under Criteria A (Transportation/Engineering) and C (Architecture) in 2000.

As a ***potentially NRHP-eligible*** resource located within one-half mile of the project alignment, an assessment of potential impacts was conducted. To assess potential project impacts, a site visit was made to the portion of the canal located within the half-mile study tier to inspect the setting and viewshed of the resource with emphasis on views towards the project and associated improvements. Photographs were taken from the publicly-accessible locations along the canal towards the project alignment to document current conditions, lines of sight, and the extent of visibility of existing infrastructure. Photo simulation was also conducted from representative

vantage points to model the visibility of proposed replacement structures in relation to existing structures.

Although the Herring Canal stretches roughly 4.5 miles from Bells Mill (a tributary of the Elizabeth River) to the Dismal Swamp Canal, just a short segment of the canal is located within the one-half mile study tier for this project and subject to assessment as part of this effort. This includes roughly one-and-a-half-mile of the eastern end of the canal centered on a point where the project alignment crosses the canal just east of Shillelagh Road, just west of the suburban area of Great Bridge. Along this length, the canal traverses a primarily rural area extending through several agricultural fields and crossing beneath Shillelagh Road in a culvert before continuing through additional fields and wooded area on its way towards the Dismal Swamp Canal. Although the project alignment crosses and is suspended above the canal, the nearest structures to be replaced are roughly 250 feet away to the north and 850 feet away to the south.

Inspection was conducted from the public crossing of the canal along Shillelagh Road, roughly one-quarter mile west of where the project alignment crosses the canal. This revealed that the existing transmission line and multiple structures to be rebuilt as part of this project are openly visible as the alignment traverses through a wide agricultural field. As the canal also traverses open agricultural field, it is anticipated that the existing transmission line is visible from along most of the length of canal within one-half mile.

The existing transmission line structures located within the viewshed of the canal (one-half mile) currently range from 105 to 134 feet tall, and will be replaced with structures that will be 187 and 192 feet tall, resulting in an increase of 58 to 86 feet for individual structures. The existing steel lattice structures will all be replaced on a one-to-one basis with a pair of monopoles in generally the same locations.

Table 5-3: Existing and proposed heights of structures within one-half mile of the Herring Canal.

Existing Structure Number	Existing Pole Height	Proposed Structure Number Line 588/Line 5005		Proposed Pole Height Line 588/Line 5005		Height Difference
588/33	121	588/217	5005/34	187	192	66/71
588/34	116	588/218	5005/35	187	187	71
588/35	121	588/219	5005/36	187	187	66
588/36	105	588/220	5005/37	187	187	82
588/37	121	588/221	5005/38	187	187	66
588/38	106	588/222	5005/39	192	192	86
588/39	134	588/223	5005/40	192	192	58

Despite this increase in height, it is anticipated that there will not be a substantial change in visibility of the transmission line. Over one mile of the transmission line and seven structures that cross through open field bordering the canal are already visible without obstruction and several additional structures can be seen above the treelines beyond the field in both directions. The replacement structures will be taller and additional portions of structures already visible may rise above the treeline, however, the change in configuration from lattice to monopole is expected to reduce the perceptible size of the structures. This was confirmed with photo simulation that

illustrates that the number of replacement structures visible will remain similar but be generally less imposing across the landscape.

As such, the project will not introduce any substantial change or compromise to the setting or viewshed of or from publicly-accessible vantage points along the Herring Canal. Therefore, it is D+A's recommendation that the Fentress-Yadkin Projects will result in no more than a ***minimal impact*** to the Herring Canal per VDHR's impact characterization scale.

Figure 5-17 illustrates the location of the Herring Canal in relation to the project alignment and study buffers, with the location and direction of representative photographs and photo simulations. Representative photographs and photo simulations are provided in Figure 5-18 through Figure 5-23.

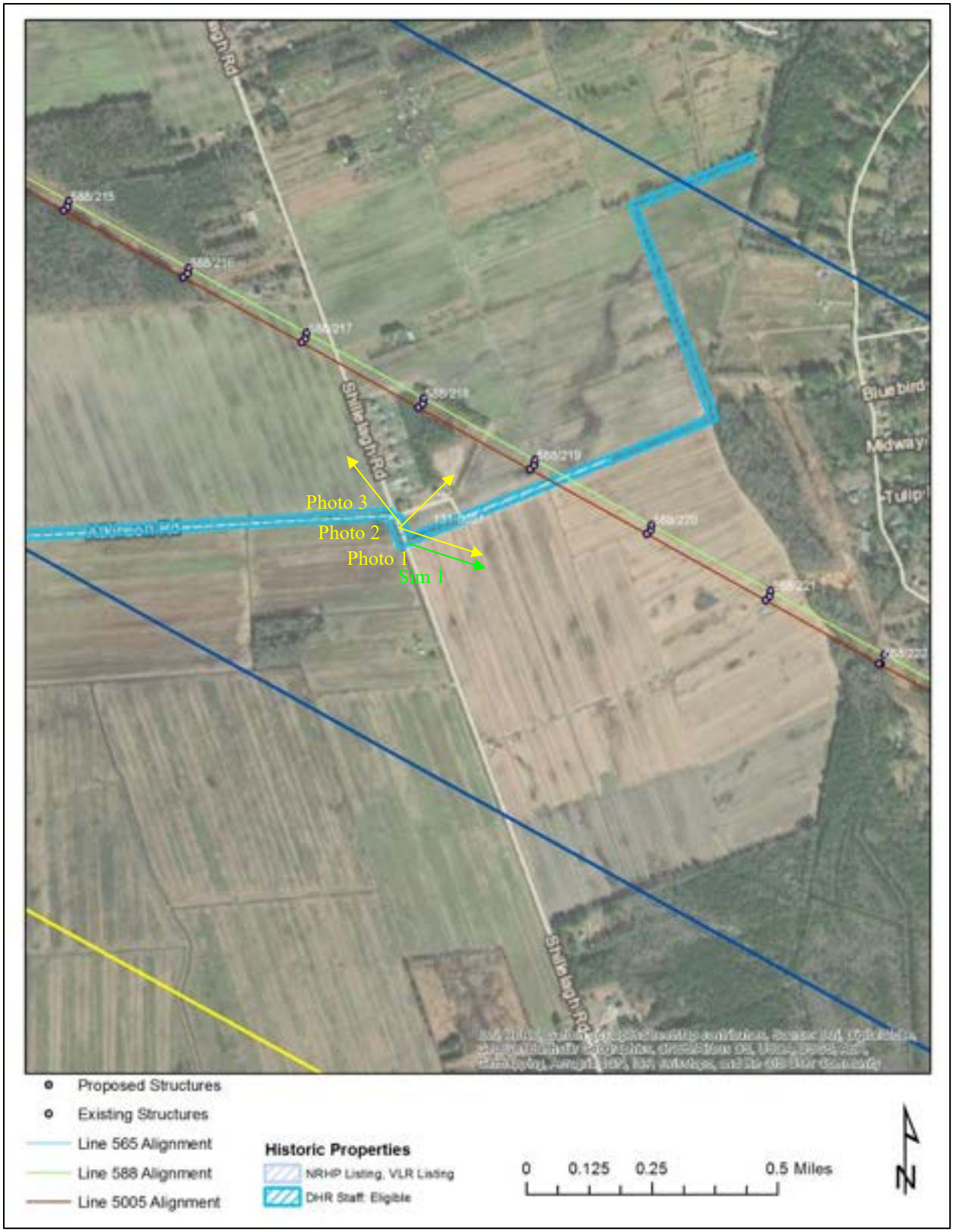

Figure 5-17: Herring Canal in relation to the project alignment with locations and direction of representative photographs shown in yellow and photo simulation shown in green.

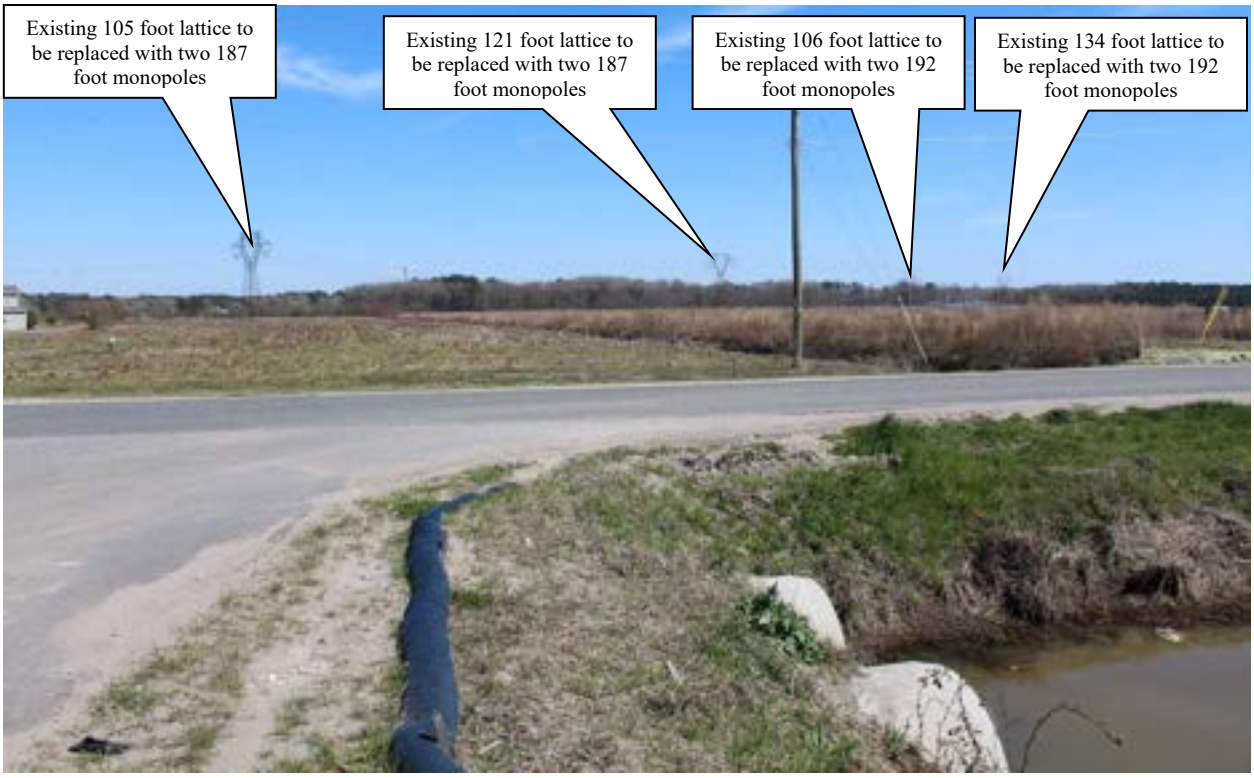

Figure 5-18: Photo location 1- View from Herring Canal at Shillelagh Road, facing east. (multiple existing structures visible across open field and above treeline)

Figure 5-19: Photo location 2- View from Herring Canal at Shillelagh Road, facing northeast. (multiple existing structures visible across open field)

Figure 5-20: Photo location 3- View from Herring Canal at Shillelagh Road, facing north. (multiple existing structures visible across open field and above treeline).

Photo simulations
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Viewpoint 9A
Herring Canal

Fentress-Yadkin 500kV Line #588 Rebuild
& New 500kV Fentress-Yadkin Line #5005

Structure #	Height (ft)	Distance (ft)	Structure #	Height (ft)	Distance (ft)
588/219	187	1004	5005/36	187	936
588/220	187	1293	5005/37	187	1241

Figure 5-21: Location, direction of view, and structures modeled from Shillelagh Road - Simulation location 1 for the Herring Canal. Source: GTTE, LLC

Figure 5-22: Existing view from Shillelagh Road - Simulation location 1 for the Herring Canal. (Multiple structures visible) Source: GTTE, LLC

Figure 5-23: Proposed view from Shillelagh Road - Simulation location 1 for the Herring Canal (Same structures remain visible with limited visibility of additional structures) Source: GTTE, LLC

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VDHR ID# 131-5071
Centreville-Fentress Historic District

The Centreville-Fentress Historic District is centered on the site of the Centreville Station of the Norfolk-Southern Railroad. The core of the district is the small village that surrounds the former Centerville Station of the Norfolk Southern Railroad and the feed and seed/general store that historically operated there. Other resources include a variety of homes, barns, a church, and some commercial buildings. The resources reflect vernacular forms and styles prevalent in rural areas of the region in the late-nineteenth and early-twentieth century. The Centreville/Fentress Historic District is a good example of a late-nineteenth- and early-twentieth-century village and agricultural community. The variety, size, style and architectural integrity of the buildings still standing in the district is a testament to the economic benefit derived from truck farming. Norfolk County was a leading truck farm county during this period, and the proposed district reflects the contributions of trucking to the growth, development and character of the agricultural belt of Norfolk County, now the city of Chesapeake, Virginia. As such, the district was listed in the NRHP in 2003.

As an ***NRHP-listed*** resource located within one-mile of the project alignment, an assessment of potential impacts was conducted. To assess potential project impacts, a site visit was made to the portion of the historic district located within the one-mile study tier to inspect the setting and viewshed with emphasis on views towards the project and associated improvements. Photographs were taken from the publicly-accessible locations throughout the district towards the project alignment to document current conditions, lines of sight, and the extent of visibility of existing infrastructure. Photo simulation was also conducted from representative vantage points to model the visibility of proposed replacement structures in relation to existing structures.

The Centreville-Fentress Historic District is situated to the east of the eastern terminus of the project, roughly 0.15 mile away from the Fentress Substation at the nearest point, although the core of the district around the former Centreville Station is further to the north, roughly 0.6 mile

away. While the project alignment approaches the Fentress substation from the west, extending generally away from the historic district, another existing transmission line that extends in and out of the substation immediately borders the western boundary of the historic district. A third transmission line that extends in and out of the substation runs through the landscape to the south of the historic district. Although the district itself remains sparsely developed and primarily rural, it has been encroached upon from the north, south, and west by modern suburban residential development, as well as associated development including the multiple transmission lines.

As such, views throughout the district include a mix of intact rural historic character in some directions and dense modern suburban development in others. The existing transmission line that borders the western edge of the district (not the subject of this project) is visible above homes and trees from a variety of vantage points throughout the district. The transmission line that extends through the landscape to the south of the district is also visible across open fields and a golf course from a variety of vantages throughout the district. Due to its proximity to the southwestern corner of the district, the Fentress substation which is the eastern terminus of this project is visible from the district, as are several structures along the alignment that are to be replaced as part of this project. However, because the project alignment extends away from the substation and district, visibility is limited to the first several structures.

The existing transmission line structures located within the viewshed of the historic district (one-mile), including those within the Fentress substation and extending away currently range from 106 to 122 feet tall, and will be replaced with structures that will be 115 and 187 feet tall, resulting in an increase of 62 to 81 feet for most individual structures, however, the backbone structure leading into the Fentress Substation (which is the structure in nearest proximity to the historic district) will be decreased in height by 7 feet (Table 5-4). The existing steel lattice structures will all be replaced on a one-to-one basis with a pair of monopoles in generally the same locations with the exception of the backbone structure that will be replaced in approximately the same location with an A-frame structure.

Table 5-4: Existing and proposed heights of structures within one mile of the Centreville-Fentress Historic District.

Existing Structure Number	Existing Pole Height	Proposed Structure Number Line 588/Line 5005		Proposed Pole Height Line 588/Line 5005		Height Difference
588/65	107	588/249	5005/66	172	177	65/70
588/66	116	588/250	5005/67	187	187	71
588/67	106	588/251	5005/68	187	187	81
588/68	120	588/252	5005/69	182	192	62/72
588/69	106	588/253	5005/69A	172	182	66/76
N/A	N/A	588/254	N/A	85	N/A	New
588/70		588/255	N/A	115	N/A	New
N/A	N/A	N/A	5005/70	N/A	152	New
N/A	N/A	N/A	5005/71	N/A	116.5	New
N/A	N/A	N/A	5005/72	N/A	115	New

Despite this increase in height, it is anticipated that there will not be a substantial change in visibility of the transmission line from most vantage points throughout the historic district. The existing line to be rebuilt as part of this project is only visible from the southwestern corner of the historic district and is generally screened from view by intervening development and vegetation from other vantages, including the core of the district along Fentress Road. While the replacement structures will be substantially taller, it is anticipated that due to the distance and angle of view coupled with existing vegetation in the intervening landscape, the replacement structures will not rise above the treeline. It is further noted that the project is set beyond other existing transmission lines in closer proximity, and any visibility from discrete vantages would be seen amongst and behind these lines. This was confirmed with photo simulation from multiple vantages that illustrates all replacement structures will remain screened behind the intervening treeline.

As such, the project will not introduce a substantial change to the existing setting or viewshed of or from the historic district or the majority of contributing resources. Therefore, it is D+A's recommendation that the Fentress-Yadkin Projects will result in no more than a ***minimal impact*** to the Centreville-Fentress Historic District per VDHR's impact characterization scale.

Figure 5-24 illustrates the location of the Centreville-Fentress Historic District in relation to the project alignment and study buffers, with the location and direction of representative photographs and photo simulations. Representative photographs and photo simulations are provided in Figure 5-25 through Figure 5-38.

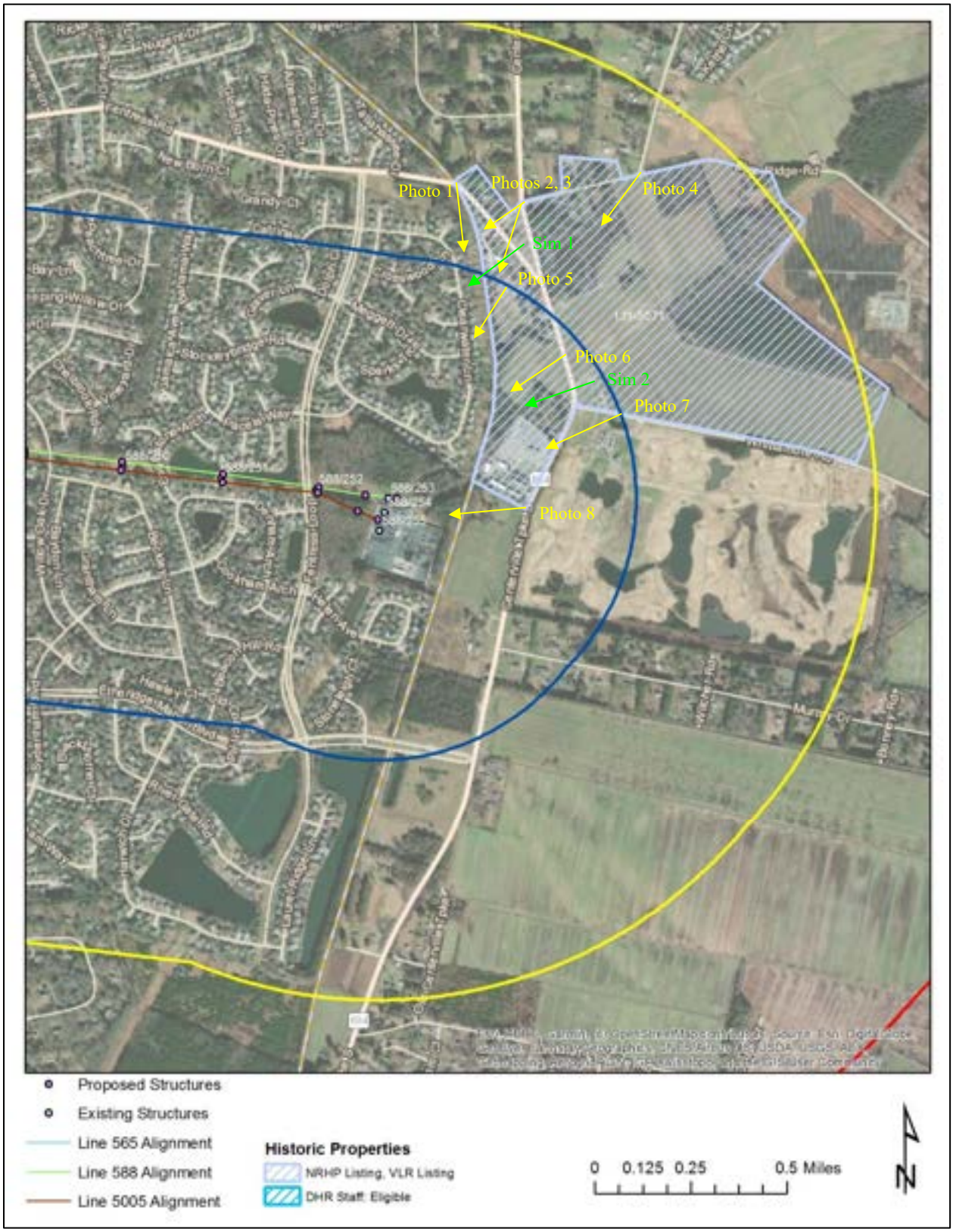

Figure 5-24: Centreville-Fentress Historic District with location and direction of representative photographs and views towards the project depicted in yellow and photo simulations depicted in green.

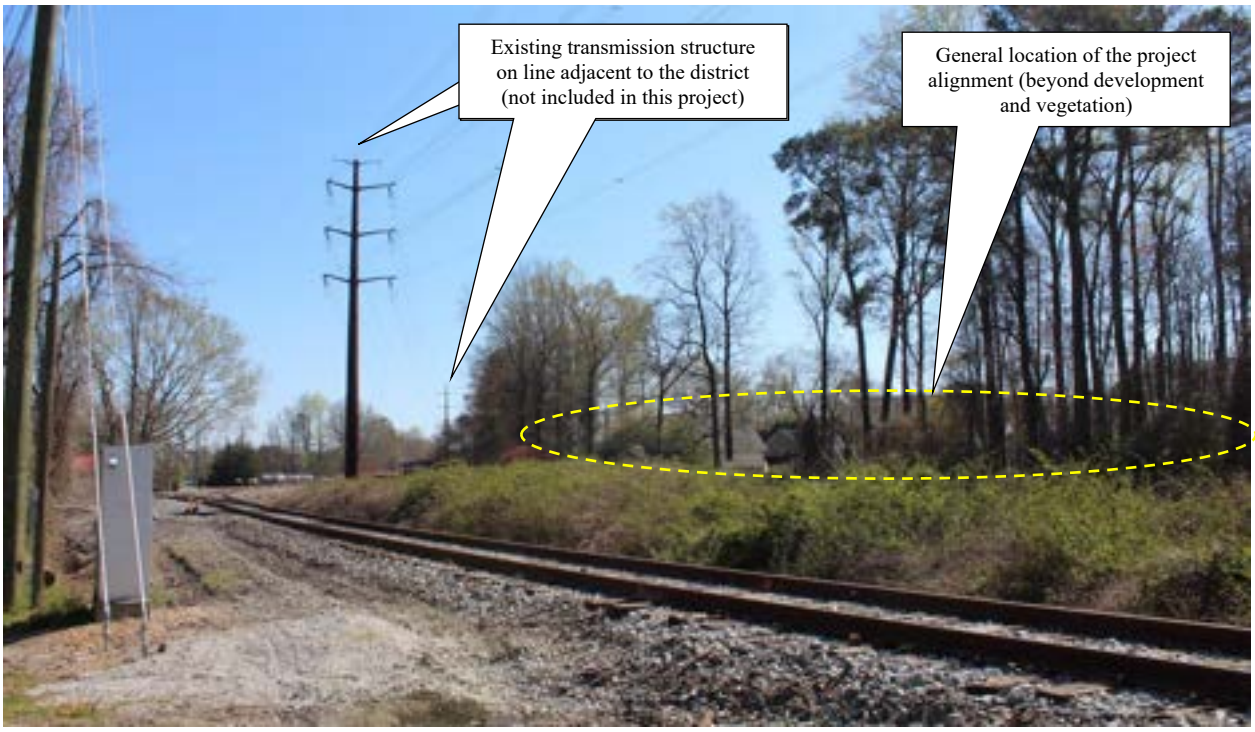

Figure 5-25: Photo location 1- View from northwestern corner of historic district towards the project, facing south. (Existing structures on line not included in this project are visible. No visibility of existing structures on transmission line to be rebuilt as part of this project and no anticipated visibility).

Figure 5-26: Photo location 2- View from Centreville Turnpike at Blue Ridge Road towards the project, facing west (Existing conductor on transmission line not included in this project is visible. No visibility of existing structures on transmission line to be rebuilt as part of this project and no anticipated visibility).

Figure 5-27: Photo location 3- View from Centreville Turnpike at Blue Ridge Road towards the project, facing southwest. (Existing structure on transmission line not included in this project are visible. No visibility of existing structures on transmission line to be rebuilt as part of this project and no anticipated visibility).

Figure 5-28: Photo location 4- View from Blue Ridge Road at School House Road towards the project, facing southeast. (Existing structure on transmission line not included in this project are visible. No visibility of existing structures on transmission line to be rebuilt as part of this project and no anticipated visibility).

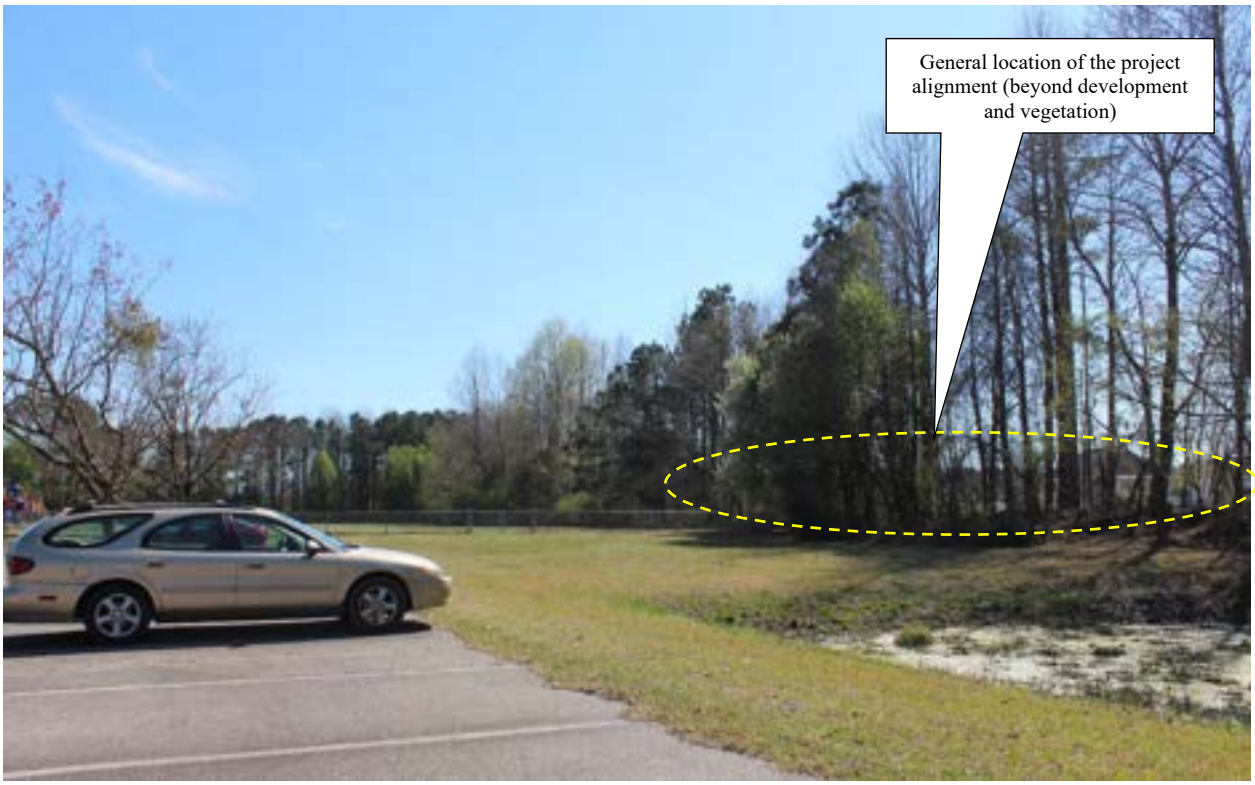

Figure 5-29: Photo location 5- View from Centreville Baptist Church towards the project, facing south. (No visibility of existing structures on transmission line to be rebuilt as part of this project and no anticipated visibility).

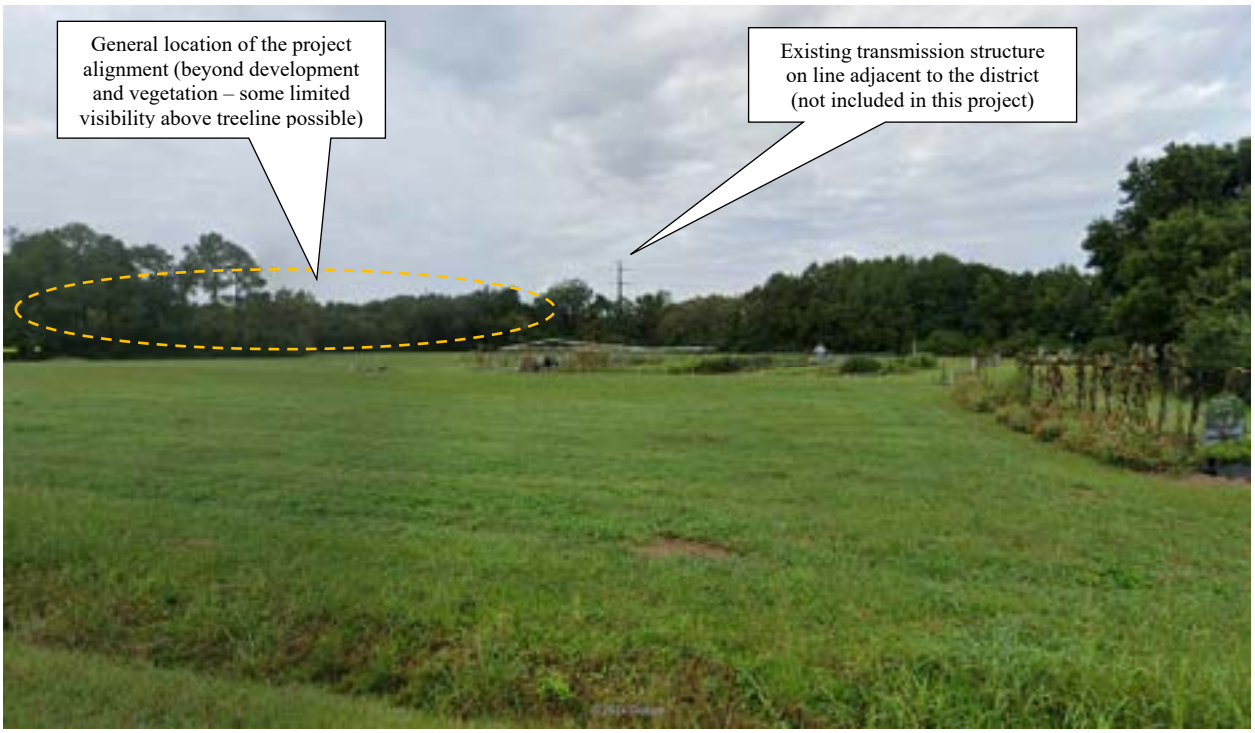

Figure 5-30: Photo location 6- View from Centreville Turnpike north of Whittamore Road, facing southwest (Existing structure on transmission line not included in this project are visible. No visibility of existing structures on transmission line to be rebuilt as part of this project and some limited visibility expected).

Figure 5-31: Photo location 7- View from Whittamore Road towards the project, facing west. (Existing structure on transmission line not included in this project are visible. No visibility of existing structures on transmission line to be rebuilt as part of this project and some limited visibility expected)

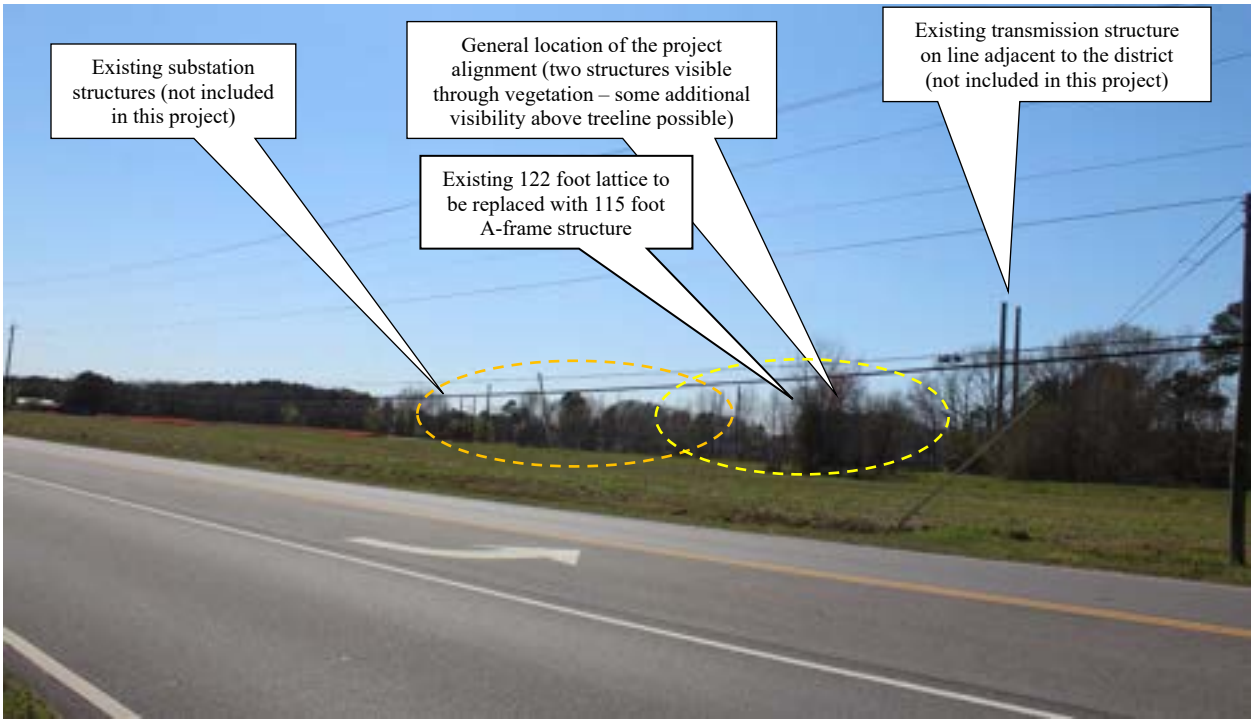

Figure 5-32: Photo location 8- View from Centreville Turnpike at southern edge of historic district towards the project, facing southwest. (Existing structure on transmission line not included in this project are visible. Some visibility of existing structures on transmission line to be rebuilt as part of this project and some additional visibility expected)

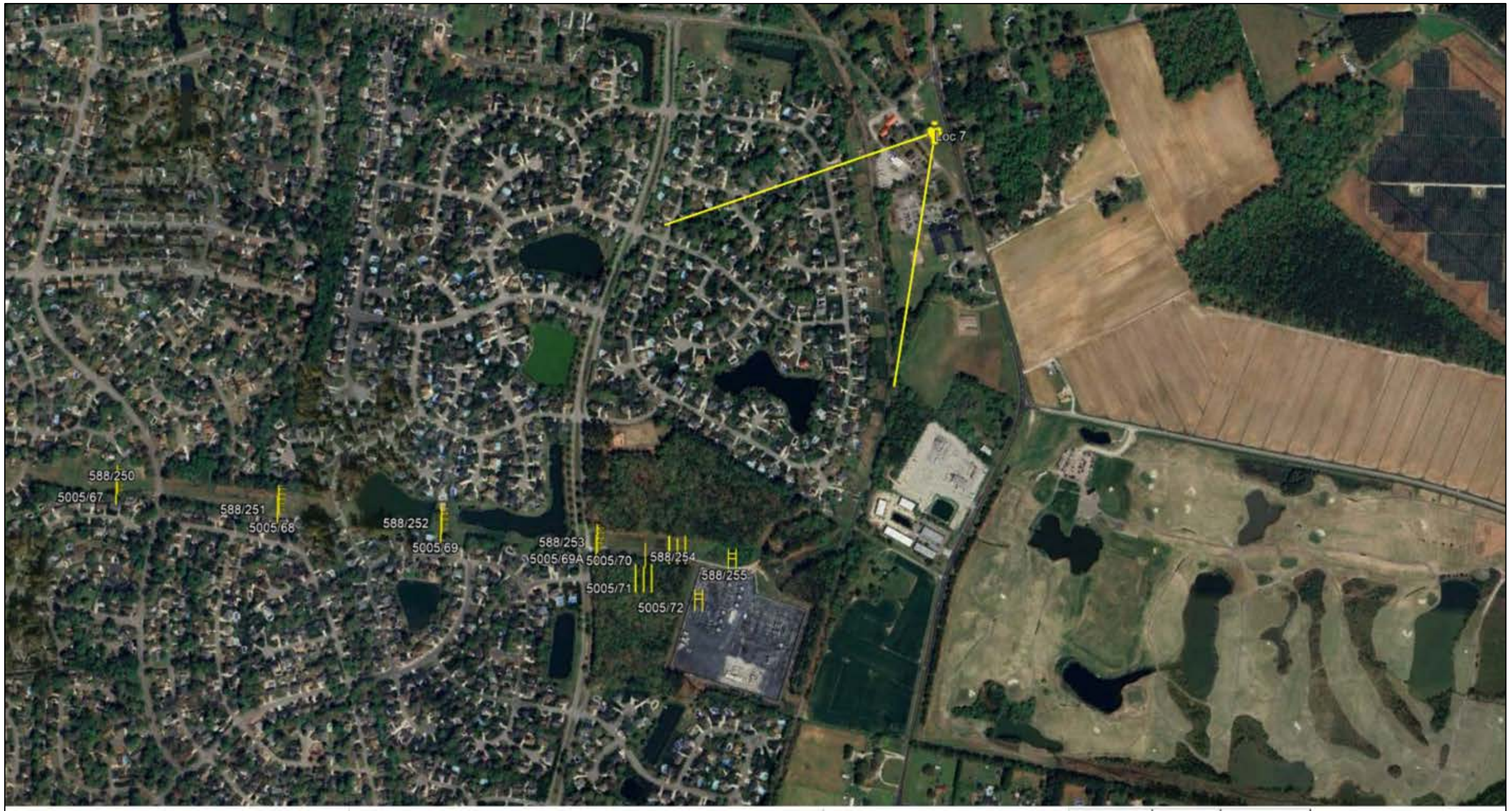

Photo simulations prepared by:
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Viewpoint 7
Centerville-Fentress Historic District

Fentress-Yadkin 500kV Line #588 Rebuild & New 500kV Fentress-Yadkin Line #5005

Structure #	Height (ft)	Distance (ft)
588/249	172	6777
588/250	187	5933
588/251	187	5019
588/252	182	4181
588/253	172	3515
588/254	85	3260
588/255	115	3136

Structure #	Height (ft)	Distance (ft)
5005/66	177	6822
5005/67	187	5968
5005/68	187	5059
5005/69	192	4227
5005/69A	182	3574
5005/70	152	3405
5005/71	116.5	3540
5005/72	115	3477

Figure 5-33: Location, direction of view, and structures modeled from Fentress Road - Simulation location 1 for the Centreville-Fentress Historic District. Source: GTTE, LLC

Figure 5-34: Existing view from Fentress Road - Simulation location 1 for the Centreville-Fentress Historic District. (No structures visible) Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	**Fentress-Yadkin 500kV Line #588 Rebuild & New 500kV Fentress-Yadkin Line #5005**	**Viewpoint 7 Centerville-Fentress Historic District**	**Proposed View** (Location of towers not visible are overlaid with yellow tower icon)	
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.	

Figure 5-35: Proposed view from Fentress Road - Simulation location 1 for the Centreville-Fentress Historic District (No structures visible) Source: GTTE, LLC

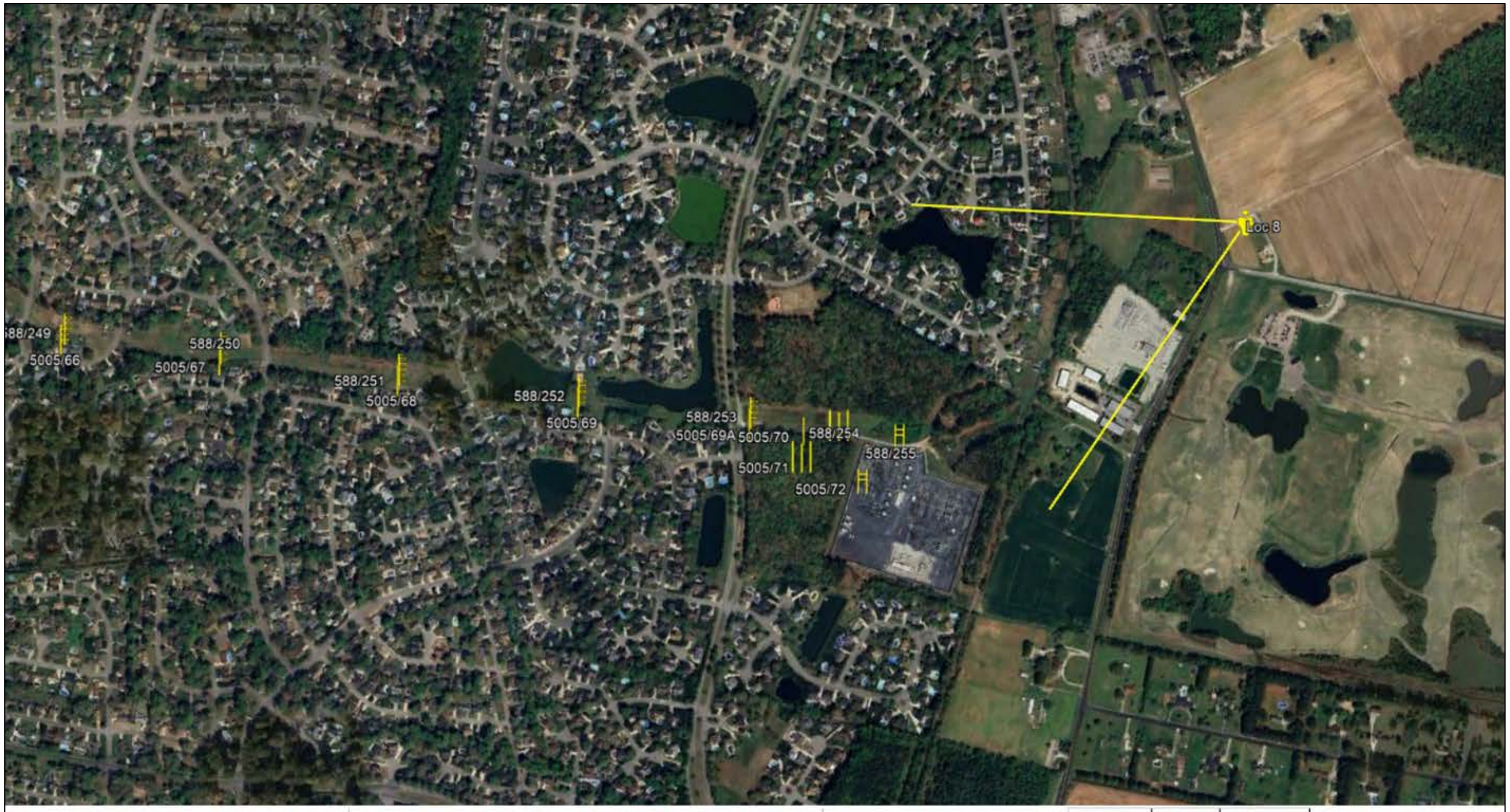

Photo simulations
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Viewpoint 8
Centerville-Fentress Historic District

Fentress-Yadkin 500kV Line #588 Rebuild & New 500kV Fentress-Yadkin Line #5005

Structure #	Height (ft)	Distance (ft)
588/250	187	6254
588/251	187	5205
588/252	182	4165
588/253	172	3208
588/254	85	2740
588/255	115	2462

Structure #	Height (ft)	Distance (ft)
5005/67	187	6272
5005/68	187	5225
5005/69	192	4188
5005/69A	182	3241
5005/70	152	2956
5005/71	116.5	3028
5005/72	115	2795

Figure 5-36: Location, direction of view, and structures modeled from Chesapeake Fire Station 6 - Simulation location 2 for the Centreville-Fentress Historic District. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	**Fentress-Yadkin 500kV Line #588 Rebuild & New 500kV Fentress-Yadkin Line #5005**	**Viewpoint 8 Centerville-Fentress Historic District**	**Existing View**	
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.	

Figure 5-37: Existing view from Chesapeake Fire Station 6 - Simulation location 2 for the Centreville-Fentress Historic District. (No structures visible) Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	**Fentress-Yadkin 500kV Line #588 Rebuild & New 500kV Fentress-Yadkin Line #5005**	**Viewpoint 8 Centerville-Fentress Historic District**	**Proposed View** (Location of towers not visible are overlaid with yellow tower icon)
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-38: Proposed view from Chesapeake Fire Station 6 - Simulation location 2 for the Centreville-Fentress Historic District (No structures visible) Source: GTTE, LLC

VDHR ID# 131-5076
Lindsay Canal

The Lindsay Canal is named for Ambrose Harvey Lindsay, who was known as one of the most successful farmers in Norfolk County in the early-twentieth century. Lindsay constructed the canal to haul products and material from his vast farm to his Portsmouth company location and for agricultural drainage. The canal connected the farm by water to the Dismal Swamp Canal via the Herring Ditch. At this time, the canal is no longer used for transportation, but continues to serve a drainage purpose. The canal was determined potentially eligible for listing in the NRHP under criterion A for transportation and commerce and criterion B for association with Ambrose H. Lindsay by the VDHR in 2008.

As a ***potentially NRHP-eligible*** resource located within one-half mile of the project alignment, an assessment of potential impacts was conducted. To assess potential project impacts, a site visit was made to the portion of the canal located within the half-mile study tier to inspect the setting and viewshed of the resource with emphasis on views towards the project and associated improvements. Photographs were taken from the publicly-accessible locations along the canal towards the project alignment to document current conditions, lines of sight, and the extent of visibility of existing infrastructure. Photo simulation was also conducted from representative vantage points to model the visibility of proposed replacement structures in relation to existing structures.

Although the Lindsay Canal stretches roughly 3 miles from New Mill Creek to the Herring Canal, just a short segment of the canal is located within the one-half mile study tier for this project and subject to assessment as part of this effort. This includes roughly one-mile of the central portion of the canal centered on a point where the project alignment crosses the canal just northwest of US-17. Along this length, the canal traverses a mix of rural and suburban areas, extending along the edge of several residential neighborhoods as well as through large agricultural fields. Although

the project alignment crosses and is suspended above the canal, the nearest structures to be replaced are roughly 0.19 mile away to the northwest and 150 feet away to the southeast.

Because the canal traverses primarily private property throughout the length located within one-half mile, inspection was conducted from the nearest public ROW along cul-de-sac streets in the neighborhood just to the north of the project/canal crossing as well as from a cul-de-sac through a residential development further to the south of the project. This revealed that the existing transmission line and multiple structures to be rebuilt as part of this project are visible above rooftops and treelines from the north and more openly visible as they cross open field through the area to the south. It is noted, however, that inspection was not possible from immediately adjacent to any portion of the canal which is lined along its entire length by vegetation that would likely provide some screening from the canal itself.

The existing transmission line structures located within the viewshed of the canal (one-half mile) currently range from 106 to 127 feet tall, and will be replaced with structures that will be 187 and 192 feet tall, resulting in an increase of 60 to 81 feet for individual structures (Table 5-5). The existing steel lattice structures will all be replaced on a one-to-one basis with a pair of monopoles in generally the same locations.

Table 5-5: Existing and proposed heights of structures within one-half mile of the Lindsay Canal.

Existing Structure Number	Existing Pole Height	Proposed Structure Number Line 588/Line 5005		Proposed Pole Height Line 588/Line 5005		Height Difference
588/22	116	588/206	5005/23	187	187	71
588/23	116	588/207	5005/24	192	192	76
588/24	127	588/208	5005/25	187	187	60
588/25	106	588/209	5005/26	187	187	81
588/26	121	588/210	5005/27	192	192	71

Despite this increase in height, it is anticipated that there not be a substantial change in visibility of the transmission line. Nearly all of the existing structures located within one-half mile to either side of canal are already visible to some degree, whether above homes and treelines or across open field. The replacement structures will be taller and additional portions of structures already visible may rise above the intervening landscape, however, the change in configuration from lattice to monopole is expected to reduce the perceptible size of the structures. This was confirmed with photo simulation that illustrates the number of replacement structures visible will remain similar but be generally less imposing across the landscape.

As such, the project will not introduce any substantial change or compromise to the setting or viewshed of or from publicly-accessible vantage points along the Lindsay Canal. Much of the setting of the canal in proximity to the project is already characterized by extensive suburban development with a variety of other nonhistoric features, including the existing transmission line, and the canal itself is not publicly accessible through this length. Therefore, it is D+A's recommendation that the Fentress-Yadkin Projects will result in no more than a ***minimal impact*** to the Lindsay Canal per VDHR's impact characterization scale.

Figure 5-39 illustrates the location of the Lindsay Canal in relation to the project alignment and study buffers, with the location and direction of representative photographs and photo simulations. Representative photographs and photo simulations are provided in Figure 5-40 through Figure 5-49.

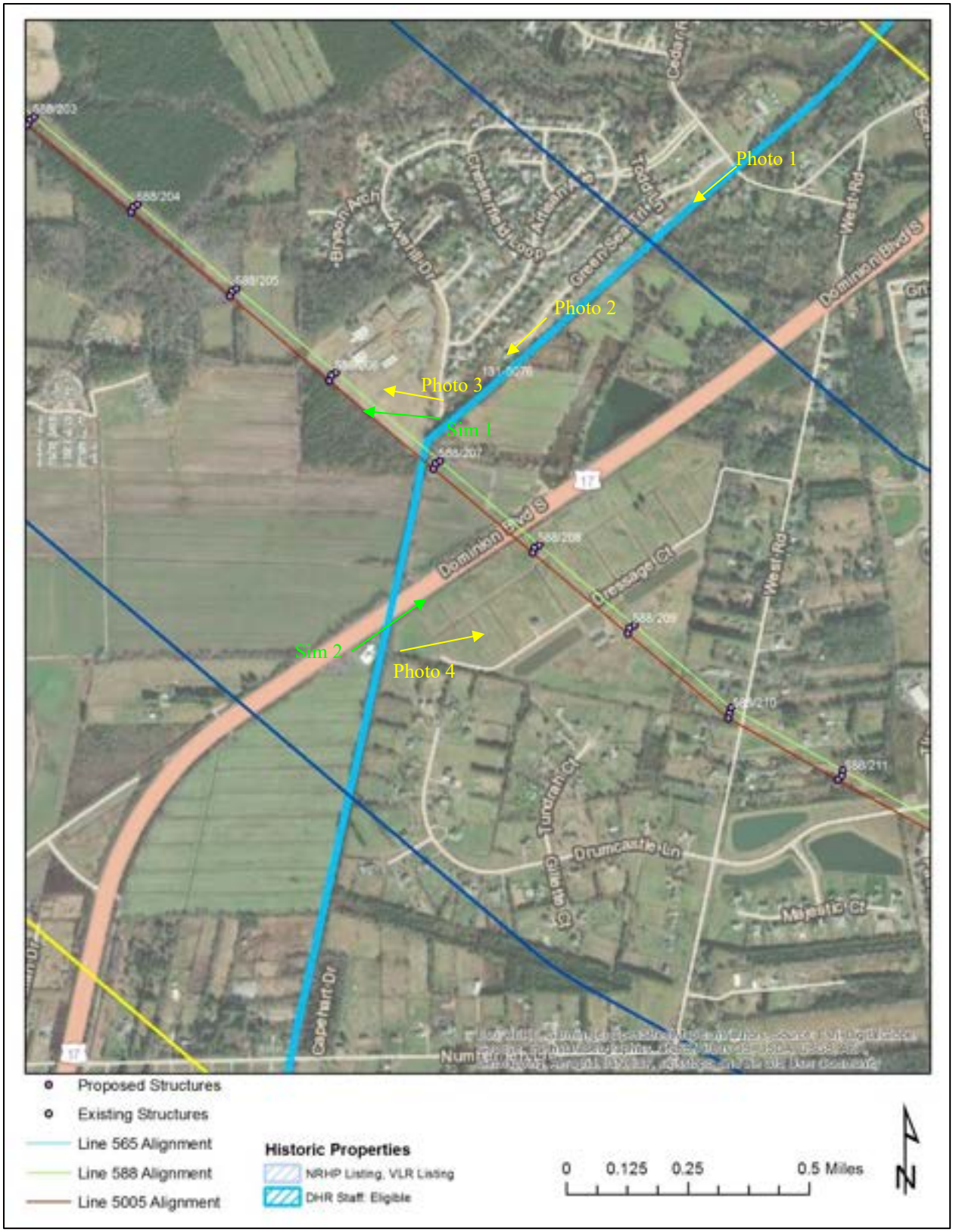

Figure 5-39: Lindsay Canal in relation to the project alignment with locations and direction of representative photographs shown in yellow and photo simulation shown in green.

Figure 5-40: Photo location 1- View from Lindsay Canal at Cedar Road towards the project, facing south. (No visibility of existing transmission line, but some limited visibility of replacement structures above the treeline possible)

Figure 5-41: Photo location 2- View from Green Sea Trail near canal towards the project, facing southwest. (One existing structure visible above treeline with potential for additional structure visibility above treeline)

Figure 5-42: Photo location 3- View from Averill Drive near canal towards the project, facing west. (One existing structure visible above treeline with no anticipated additional visibility)

Figure 5-43: Photo location 4- View from Dressage Court near canal towards the project, facing northeast. (Multiple existing structures visible across open field)

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Viewpoint 4
Lindsay Canal

Fentress-Yadkin 500kV Line #588 Rebuild & New 500kV Fentress-Yadkin Line #5005

Structure #	Height (ft)	Distance (ft)	Structure #	Height (ft)	Distance (ft)
588/204	197	4356	5005/21	197	4362
588/205	187	3182	5005/22	187	3190
588/206	187	2064	5005/23	187	2078
588/207	192	956	5005/24	192	989

Figure 5-44: Location, direction of view, and structures modeled from Averil Drive - Simulation location 1 for the Lindsay Canal. Source: GTTE, LLC

Figure 5-45: Existing view from Averil Drive - Simulation location 1 for the Lindsay Canal. (One structure visible) Source: GTTE, LLC

Figure 5-46: Proposed view from Averil Drive - Simulation location 1 for the Lindsay Canal (Same structure remains visible with limited visibility of additional structures) Source: GTTE, LLC

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Viewpoint 5: Lindsay Canal

Fentress-Yadkin 500kV Line #588 Rebuild & New 500kV Fentress-Yadkin Line #5005

Structure #	Height (ft)	Distance (ft)	Structure #	Height (ft)	Distance (ft)
588/209	187	1907	5005/26	187	1842
588/210	192	2517	5005/27	192	2468
588/211	182	3420	5005/28	182	3391

Figure 5-47: Location, direction of view, and structures modeled from Dome of Canaan Baptist Church - Simulation location 2 for the Lindsay Canal. Source: GTTE, LLC

Figure 5-48: Existing view from Dome of Canaan Baptist Church - Simulation location 2 for the Lindsay Canal. (No structures visible) Source: GTTE, LLC

Figure 5-49: Proposed view from Dome of Canaan Baptist Church - Simulation location 2 for the Lindsay Canal (No structures visible) Source: GTTE, LLC

VDHR ID# 131-5833
Portsmouth Ditch

The Portsmouth Ditch is one of the longest and earliest ditches excavated in the Great Dismal Swamp. The ditch was dug in the late-1890s by the Lake Drummond Canal and Water Company in an effort to divert large quantities of the water to the cities of Porstmouth and Norfolk. At that time, the dark and tanic water located throughout the swamp and in Lake Drummond was considered by many to be a healthful or even medicinal remedy. Despite the company's $90,000 investment and massive amounts of work to dig the ditch, the completed Portsmouth Ditch was never able to be used for its intended purpose due to the original Dismal Swamp Canal Act of 1787 prohibited the use of the swamp waters for anything but the purposes of navigation. Soon thereafter, the canal was acquired by the Camp Manufacturing Company along with the rest of the former Dismal Swamp Land Company's holdings. Through the 1950s, Camp operated a massive logging operation throughout the swamp. As part of their efforts, Camp excavated a number of ditches to aid in draining timbering areas and constructed a network of roads and railroads, often on the berms of these ditches to move the felled timber. Many of the ditches that Camp excavated throughout the first half of the twentieth century relied on Portsmouth Ditch to channel the drained water out of the swamp. As such, the Portsmouth Ditch is representative of the late-nineteenth and early-twentieth century efforts to extract natural resources from the Great Dismal Swamp including water and later timber. While drainage ditches are a common resource type throughout the Great Dismal Swamp, Portsmouth Ditch conveys a unique and significant associations for its role within the Lake Drummond Canal and Water Company's attempt to extract the area's water. It was therefore determined potentially eligible for listing in the NRHP by the VDHR in 2016.

As a ***potentially NRHP-eligible*** resource located within one-half mile of the project alignment, an assessment of potential impacts was conducted. To assess potential project impacts, a site visit was made to the portion of the canal located within the half-mile study tier to inspect the setting and viewshed of the resource with emphasis on views towards the project and associated

improvements. Photographs were taken from the publicly-accessible locations along the canal towards the project alignment to document current conditions, lines of sight, and the extent of visibility of existing infrastructure. Photo simulation was also conducted from representative vantage points to model the visibility of proposed replacement structures in relation to existing structures.

Although the Portsmouth Canal stretches roughly 15 miles from Deep Creek to Lake Drummond, just a short segment of the canal is located within the one-half mile study tier for this project and subject to assessment as part of this effort. This includes roughly one-mile of the northern end of the canal where it traverses a suburban area generally between Cooks Mill Road and Martin Johnson Road. Along this length, the canal is crossed by several roads and traverses pockets of woodland and undeveloped landscape between residential properties lining those roads. The project alignment roughly parallels the canal alignment in this area, extending to within roughly 0.43 mile away at the nearest point.

Inspection was conducted from two public crossings of the canal along Cooks Mill Road and Martin Johnson Road. This revealed that the existing transmission line to be rebuilt as part of this project is not visible from either location or anywhere in the vicinity. The intervening landscape is mostly wooded with isolated residential development and as such, views in the direction of the project are generally short and screened by vegetation.

The existing transmission line structures located within the viewshed of the canal (one-half mile) currently range from 101 to 146 feet tall, and will be replaced with structures that will range from 172 to 198 feet tall, resulting in an increase of 52 to 81 feet for individual structures (Table 5-6). The existing steel lattice structures will all be replaced on a one-to-one basis with a pair of monopoles in generally the same locations.

Table 5-6: Existing and proposed heights of structures within one-half mile of the Portsmouth Canal.

Existing Structure Number	Existing Pole Height	Proposed Structure Number Line 588/Line 5005		Proposed Pole Height Line 588/Line 5005		Height Difference
588/1	122	588/185	N/A	122	N/A	0
588/2	116	588/186	5005/3	172	172	56
588/3	111	588/187	5005/4	182	182	71
588/4	112	588/188	5005/5	182	187	70/75
588/5	118	588/189	5005/6	197	197	79
588/6	146	588/190	5005/7	198	198	52
588/7	101	588/191	5005/8	182	187	81/86
588/8	121	588/192	5005/9	198	198	77
588/9	121	588/193	5005/10	192	192	71

Despite this increase in height, it is anticipated that there will remain no visibility of any replacement structures from public vantage along the Portsmouth Canal due to the intervening vegetation that will continue to screen views in the direction of the project. This was confirmed with photo simulation that illustrates the replacement structures will remain behind and beneath the wooded landscape.

As such, the project will not introduce any change in setting or viewshed of or from publicly-accessible vantage points along the Portsmouth Canal. Therefore, it is D+A's recommendation that the Fentress-Yadkin Projects will result in ***no impact*** to the Portsmouth Canal per VDHR's impact characterization scale.

Figure 5-50 illustrates the location of the Portsmouth Canal in relation to the project alignment and study buffers, with the location and direction of representative photographs and photo simulations. Representative photographs and photo simulations are provided in Figure 5-51 through Figure 5-57.

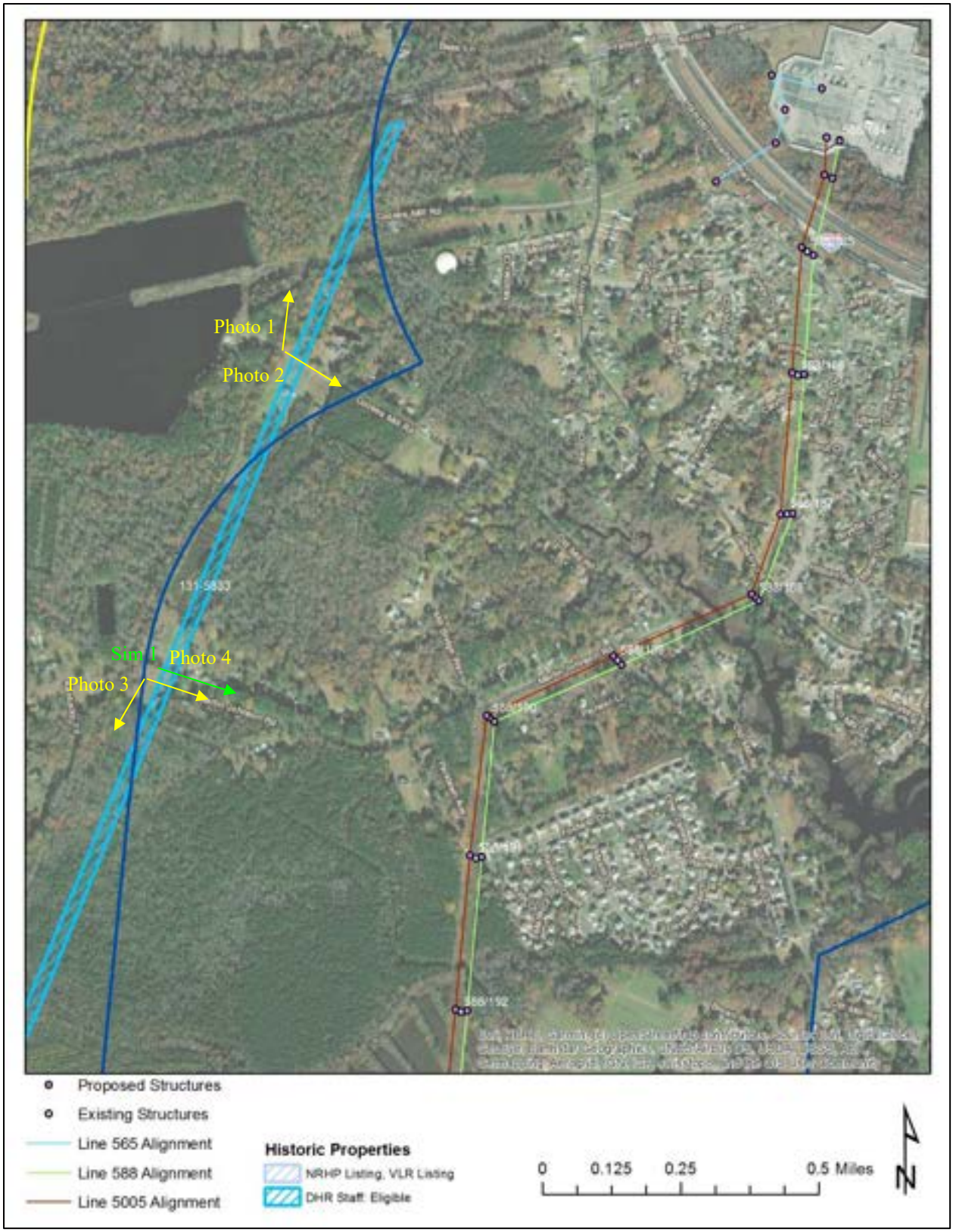

Figure 5-50: Portsmouth Canal in relation to the project alignment with locations and direction of representative photographs shown in yellow and photo simulation shown in green.

Figure 5-51: Photo location 1- View of Portsmouth Canal at Cooks Mill Lane, facing northwest.

Figure 5-52: Photo location 2- View from Portsmouth Canal at Cooks Mill Lane towards the project alignment, facing southeast. (No visibility of existing structures and no anticipated visibility of replacement)

Figure 5-53: Photo location 3- View of Portsmouth Canal at Martin Johnson Road, facing southwest.

Figure 5-54: Photo location 4- View from Portsmouth Canal at Martin Johnson Road towards the project alignment, facing east. (No visibility of existing structures and no anticipated visibility of replacement)

Photo simulations prepared by:
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Viewpoint 3:
Portsmouth Ditch

Fentress-Yadkin 500kV Line #588 Rebuild & New 500kV Fentress-Yadkin Line #5005

Structure #	Height (ft)	Distance (ft)	Structure #	Height (ft)	Distance (ft)
588/188	182	5248	5005/5	187	5185
588/189	197	4892	5005/6	197	4843
588/190	198	3805	5005/7	198	3760
588/191	182	2845	5005/8	187	2775
588/192	198	3057	5005/9	198	2992
588/193	192	3654	5005/10	192	3600

Figure 5-55: Location, direction of view, and structures modeled from Portsmouth Ditch Trailhead - Simulation location 1 for the Portsmouth Canal. Source: GTTE, LLC

Figure 5-56: Existing view from Portsmouth Ditch Trail Head - Simulation location 1 for the Portsmouth Canal. (No structures visible) Source: GTTE, LLC

Figure 5-57: Proposed view from Portsmouth Ditch Trail Head - Simulation location 1 for the Portsmouth Canal (No structures visible) Source: GTTE, LLC

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6. ARCHAEOLOGICAL ASSESSMENT

A review of the VDHR VCRIS records reveals there are four (4) previously recorded archaeological sites located within or crossed by the project ROW. Formal archaeological fieldwork and investigations were not conducted as part of this effort so the existing conditions of the sites are unknown. Project engineering is also still preliminary so the final project alignment, structure locations, and extent of grading and limits of disturbance are uncertain, however, a preliminary assessment of potential impacts was conducted based upon previous site data and preliminary project information available at time of this analysis.

Of the four previously recorded sites within the project ROW, one site, a former railroad bed, has been determined eligible for listing in the NRHP, one has been determined not eligible for listing, and the other two have not been formally evaluated (Table 6-1).

Table 6-1: Previously recorded archaeological resource adjacent to the Project ROW

VDHR #	Site Type	Temporal Association	NRHP Status	Proximity to Project
44CS0033	No Data	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated	REDACTED
44CS0267	Canal	No Data	Not Evaluated	REDACTED
44CS0294	Trash Scatter	20th Century: 1st half (1900 - 1949)	DHR Staff: Not Eligible	REDACTED
44CS0295	Railroad Bed	19th Century: 4th quarter (1875 - 1899), 20th Century: 1st half (1900 - 1949)	DHR Staff: Eligible	REDACTED

Site 44CS0033

This site was initially recorded in 1979 based upon information provided to the VDHR by a local informant who had collected surface materials from the site. Based upon that data, the site was documented as Archaic, however, subsequent analysis of the materials noted that no artifacts substantiate an Archaic temporal designation. It was further noted that an unknown amount of the site was likely destroyed. No recommendation of NRHP-eligibility was provided and the site was not formally evaluated by the VDHR.

SENSITIVE ARCHAEOLOGICAL DATA REDACTED

Based upon the boundaries of the site as mapped in VCRIS, which were not reinvestigated or confirmed as part of this effort, the site is spanned by the project ROW, with roughly 1,000 feet crossed by the ROW, with one existing structure just outside the site boundaries and one proposed structure just inside the site boundary (Figure 6-1).

SENSITIVE ARCHAEOLOGICAL DATA REDACTED

As a result, it is D+A's recommendation that the project is not anticipated to impact any intact portions of the site, and no further consideration is necessary as part of this project.

SENSITIVE ARCHAEOLOGICAL
DATA REDACTED

Figure 6-1: Site 44CS0033 in relation to the project. Source: VCRIS.

Site 44CS0267

This site was initially recorded in 2000 and is the archaeological identifier REDACTED (also recorded as VDHR# 131-0051). Much of the canal was mapped without inspection or survey, SENSITIVE ARCHAEOLOGICAL DATA REDACTED However, it was also noted that nearby sections of the north slopes of the canal to the east and west of the tested area appeared to be less disturbed. The canal was recommended potentially NRHP-eligible under Criterion A, although the site was not formally evaluated by the VDHR.

The site stretches roughly 4.5 miles through primarily rural, and agricultural areas with several modern road crossings. Based upon recent aerial photography, several of the road crossings have likely been impacted by realignment and culverts, however, much of the rest of the alignment through fields appears less disturbed.

Based upon the boundaries of the site as mapped in VCRIS, which were not reinvestigated or confirmed as part of this effort, the site is spanned by the project ROW, with the nearest structure roughly 250 feet away (Figure 6-2). Based upon recent aerial photography, it appears that the portion of the site within the project ROW is likely intact. ***As a result, it is D+A's recommendation that the limits of the site within the project ROW be subject to further investigation as project details become finalized.***

SENSITIVE ARCHAEOLOGICAL
DATA REDACTED

Figure 6-2: Site 44CS0267 in relation to the project. Source: VCRIS.

Site 44CS0294

This site was initially identified in 2010 as part of a survey for a municipal park. The site was identified based upon the results of surface collection and shovel testing resulting in the collection of a large assemblage of twentieth century material interpreted to represent a trash scatter or possible intentional fill of a low, wet area. Due to a lack of stratigraphic integrity and the absence of dateable cultural layers or features coupled with the recent date of the artifacts, the site was recommended not eligible for listing in the NRHP and was concurred with by the VDHR.

SENSITIVE ARCHAEOLOGICAL DATA REDACTED

Based upon the boundaries of the site as mapped in VCRIS, which were not reinvestigated or confirmed as part of this effort, the site is spanned the project ROW, with roughly 300 feet crossed by the ROW. The nearest structures to be replaced as part of the project are roughly 400 feet away to the northwest and 580 feet to the southeast (Figure 6-3). Based upon recent aerial photography, it appears that the site has likely been destroyed. ***As a result, it is D+A's recommendation that the project is not anticipated to impact any intact portions of the site, and no further consideration is necessary as part of this project.***

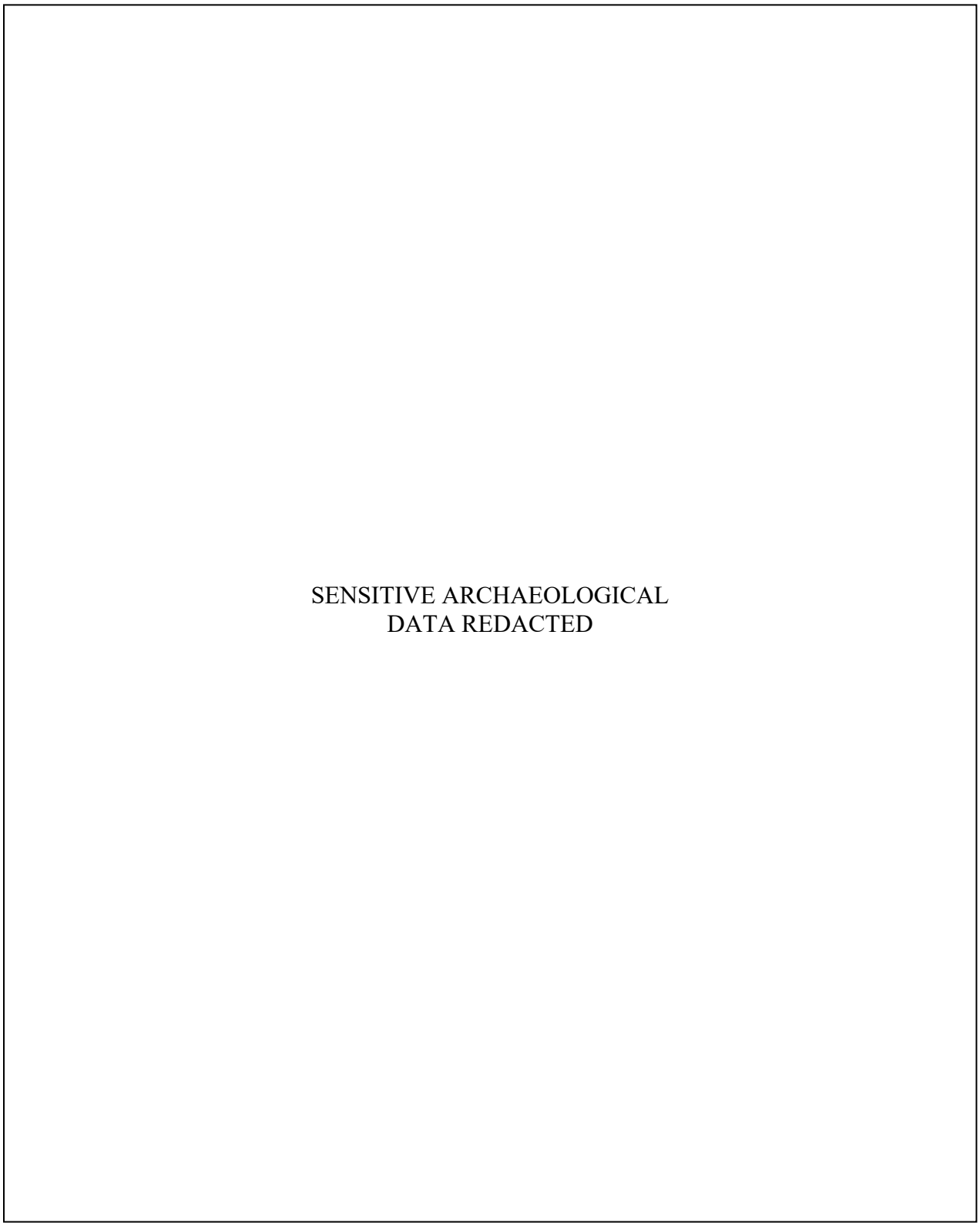

Figure 6-3: Site 44CS0294 in relation to the project. Source: VCRIS.

Site 44CS0295

This site was initially identified in 2010 REDACTED as part of a survey for a municipal park. A portion of the linear site was identified in the field while other portions were based upon map projection. It was noted that intact portions warrant further investigation to assess integrity and eligibility, and the DHR subsequently noted that the site is potentially NRHP-eligible as a contributing component to the Dismal Swamp Canal (VDHR# 131-0035).

SENSITIVE ARCHAEOLOGICAL DATA REDACTED

Based upon the boundaries of the site as mapped in VCRIS, which were not reinvestigated or confirmed as part of this effort, the site is spanned by the project ROW, with roughly 400 feet crossed by the ROW. The nearest structures to be replaced as part of the project are roughly 760 feet away to the northwest and 300 feet to the southeast (Figure 6-4). Based upon recent aerial photography, it appears that portions of the site, including within the project ROW, may remain intact. ***As a result, it is D+A's recommendation that the limits of the site within the project ROW be subject to further investigation as project details become finalized.***

SENSITIVE ARCHAEOLOGICAL
DATA REDACTED

Figure 6-4: Site 44CS0295 in relation to the project. Source: VCRIS.

7. SUMMARY OF POTENTIAL IMPACTS

As part of this pre-application analysis of cultural resources for the Fentress-Yadkin (Projects, potential impacts to previously recorded historic properties that qualify for consideration under VDHR-defined buffered tiers were assessed in accordance with the VDHR guidance. For the purposes of this analysis, an impact is one that alters, either directly or indirectly, those qualities or characteristics that qualify a particular property for listing in the NRHP and does so in a manner that diminishes the integrity of a property's materials, workmanship, design, location, setting, feeling, and/or association. With respect to transmission lines and associated projects, direct impacts typically are associated with ground disturbance resulting from ROW clearing and structure construction. Indirect impacts typically are associated with the introduction of new visual elements or changes to the physical features of a property's setting or viewshed. According to VDHR guidance, project impacts are characterized as such:

- **None** – Project is not visible from the property.
- **Minimal** – Occur within viewsheds that have existing transmission lines, locations where there will only be a minor change in tower height, and/or views that have been partially obstructed by intervening topography and vegetation.
- **Moderate** – Include viewsheds with expansive views of the transmission line, more dramatic changes in the line and tower height, and/or an overall increase in the visibility of the route from the historic properties.
- **Severe** – Occur within viewsheds that do not have existing transmission lines and where the views are primarily unobstructed, locations where there will be a dramatic increase in tower visibility due to the close proximity of the route to historic properties, and viewsheds where the visual introduction of the transmission line is a significant change in the setting of the historic properties.

With regards to architectural resources, there are no (0) NHLs located within 1.5 mile of the proposed project or closer, two (2) NRHP-listed property located within 1.0 mile or closer of the project, and three (3) properties that have been determined eligible or potentially eligible for listing in the NRHP by the VDHR within 0.5 mile or closer of the project. One (1) of the NRHP-listed resources and two (2) of the NRHP-eligible resources are directly crossed by the project alignment.

Assessment of impacts found that the project extends through an area of ongoing suburban development, and therefore the historic rural setting of some of the historic properties remains generally intact, while for others it has been compromised by modern development. Similarly, existing viewsheds and visibility of the transmission line to be rebuilt as part of this project varies from open and unobstructed to partially and completed screened. Overall, however, it was found that the level of impact resulting from the project will be no more than minimal to any of the historic properties. For several properties, there is no visibility of the existing transmission line or structures nor is there anticipated to be any visibility of the replacement structures, despite the height increase, due to vegetation and other screening within the intervening landscape. For other properties, there is already visibility of multiple transmission structures, in some cases across open field, and therefore even with the increase in height, the replacement structures are anticipated to generally be visible from the same vantages with no cumulative increase in visibility. As such, the change would not introduce any substantially

different feature into the setting or viewshed from the property. ***Therefore, it is D+A's recommendation that there will be no more than a minimal impact to any historic property within the study tiers for the Fentress-Yadkin Projects (Table 7-1).***

Table 7-1: Potential impacts summary for architectural resources.

VDHR #	Resource Name, Address	NRHP-Status	Distance from Project	Recommended Impact
131-0035	Dismal Swamp Canal	NRHP-Listed	Directly Crossed by the project	Minimal Impact
131-0051	Herring Canal	NRHP-Eligible	Directly Crossed by the project	Minimal Impact
131-5071	Centerville-Fentress Historic District	NRHP-Listed	~0.17 Mile from nearest portion of the project	Minimal Impact
131-5076	Lindsay Canal	NRHP-Eligible	Directly Crossed by the project	Minimal Impact
131-5833	Portsmouth Ditch	NRHP-Eligible	~0.43 Mile from nearest portion of the project	No Impact

With regards to archaeology, portions of the project area have been subject to previous phase I survey, however, these are primarily limited to linear corridors associated with utility or infrastructure projects crossing the project ROW. As a result of these surveys, four (4) previously recorded sites are located directly within or crossed by the project ROW. One of the sites has been determined potentially eligible for listing in the NRHP, one has been determined not eligible, and the other two have not been formally evaluated. While no survey or formal investigation of these archaeological sites was conducted as part of this effort, review of aerial photography reveals that portions of all four sites may have been destroyed, however, some portions may remain intact. ***It is therefore D+A's recommendation that that any portion of the project area that has not been subject to accepted cultural resource survey be investigated, and any previously recorded and newly identified sites should be evaluated and assessed for project impacts as additional project construction details become available (Table 7-2).***

Table 7-2: Summary of potential impacts summary for archaeological resources.

VDHR #	Description	NRHP Status	Proximity to Project	Impacts/ Recommendation
44CS0033	No Data; Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated	REDACTED	No Impact/ No further consideration
44CS0267	Canal; No Data	Not Evaluated	REDACTED	TBD/ Investigate further as project details become available
44CS0294	Trash Scatter; 20th Century: 1st half (1900 - 1949)	DHR Staff: Not Eligible	REDACTED	No Impact/ No further consideration
44CS0295	Railroad Bed; 19th Century: 4th quarter (1875 - 1899), 20th Century: 1st half (1900 - 1949)	DHR Staff: Eligible	REDACTED	TBD/ Investigate further as project details become available

8. REFERENCES

National Park Service
2009 "Civil War Sites Advisory Commission Report Update and Resurvey," American Battlefield Protection Program

Virginia Department of Historic Resources
2008 *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia*

Virginia Department of Historic Resources
2024 Virginia Cultural Resource Information System (VCRIS) database and GIS server.

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From: Lane E Carr (DEV Trans Distribution - 1)
To: Lane E Carr (DEV Trans Distribution - 1)
Subject: FW: Dominion Energy Project Notification: Fentress-Yadkin Line 588 Rebuild and New Line 5005
Date: Wednesday, May 22, 2024 9:51:24 AM
Attachments: image003.png
Outlook-guo2u5xs.png

From: Adams, Kent (VDOT) <Kent.Adams@vdot.virginia.gov>
Sent: Tuesday, May 21, 2024 8:09 AM
To: Lane E Carr (DEV Trans Distribution - 1) <Lane.E.Carr@dominionenergy.com>
Cc: Simeone, Matthew (VDOT) <Matthew.Simeone@vdot.virginia.gov>; Richter, Allison C., PMP (VDOT) <Allison.Richter@VDOT.Virginia.gov>
Subject: [EXTERNAL] Re: Dominion Energy Project Notification: Fentress-Yadkin Line 588 Rebuild and New Line 5005

Good morning,

Thank you for providing the documentation regarding the rebuild of Line 588. Based off what I am seeing so far it looks as if this will be crossing the limited access right of way on 64 in Chesapeake. The other crossing (168) I believe will be handled through the City of Chesapeake.

Once you have all the information prepared you may submit a land use application online and provide any detail information regarding the line rebuild. We will need to see the traffic control plan for this work, we need to know how many lines will be crossing or need rebuilding, time frame as to when this work will take place, provide information as to whether this can be done at nighttime or daytime, and any other information that you can provide for our review.

I will be the point of contact for any permitting needed for this project.

Please do not hesitate to contact me if you have any questions or concerns, and I will be happy to assist any way I can.

Thank you and have a blessed day!

Kent Adams

Engineer Spec. Supervisor Permits

Interstate Maintenance Office

Virginia Department of Transportation

757-328-3468

kent.adams@VDOT.Virginia.gov

From: Richter, Allison C., PMP (VDOT) <Allison.Richter@VDOT.Virginia.gov>
Sent: Monday, May 20, 2024 11:03 AM
To: Adams, Kent (VDOT) <Kent.Adams@vdot.virginia.gov>
Cc: Reynard, Kenneth (VDOT) <Kenneth.Reynard@vdot.virginia.gov>; Catlett, Tommy (VDOT) <Tommy.Catlett@vdot.virginia.gov>; Simeone, Matthew (VDOT) <Matthew.Simeone@vdot.virginia.gov>
Subject: Fw: Dominion Energy Project Notification: Fentress-Yadkin Line 588 Rebuild and New Line 5005

Kent,
Please review and take action if necessary.

Ken, Tommy, Matt, FYSA

Allison C. Richter, PMP

Deputy District Administrator

Hampton Roads District

Virginia Department of Transportation

O: 757-956-3248

M: 540-903-9017

Allison.Richter@VDOT.Virginia.gov

From: Lane E Carr (DEV Trans Distribution - 1)
Sent: Tuesday, May 14, 2024 1:53 PM

To: 'christopher.hall@vdot.virginia.gov' <christopher.hall@vdot.virginia.gov>
Subject: Dominion Energy Project Notification: Fentress-Yadkin Line 588 Rebuild and New Line 5005

Mr. Hall,

Please find the attached letter and overview map notifying you of the proposed 500 kV Fentress-Yadkin transmission line rebuild and new 500 kV transmission line located in Chesapeake, Virginia.

Please contact me with any questions.

Thank you,

Lane Carr **I** Local Permitting Consultant **I** Electric Transmission
Lane.E.Carr@dominionenergy.com **I** M: 804.310.9658 **I** 5000 Dominion Blvd. 3rd Floor SW, Glen Allen, VA 23060

From: Denny, S. Scott (DOAV)
To: Lane E Carr (DEV Trans Distribution - 1)
Subject: [EXTERNAL] Re: Dominion Energy Project Notification: Fentress-Yadkin Line 588 Rebuild and New Line 5005
Date: Tuesday, May 14, 2024 3:29:16 PM
Attachments: image003.png

Mr. Carr:

Thank you for providing the Virginia Department of Aviation with the information package in your May 14th email. Following our review, it appears as though a portion of the proposed rebuild of Line 550 and the construction of Line 5005 will occur within 20,000 linear feet of both the Chesapeake Regional Airport and the Frentress Naval Airfield. Therefore, a 7460 must be submitted to the Federal Aviation Administration to determine if the proposed project will constitute a hazard to air navigation. Provided the FAA issues a Determination of No Hazard, the Department will have no objection to the project as it has been presented.

Please feel free to contact me if you have any questions regarding this matter at (804) 236-3638.

Sincerely,

S. Scott Denny
Virginia Department of Aviation

From: Lane.E.Carr@dominionenergy.com <Lane.E.Carr@dominionenergy.com>
Sent: Tuesday, May 14, 2024 1:48 PM
To: Denny, S. Scott (DOAV) <scott.denny@doav.virginia.gov>
Subject: Dominion Energy Project Notification: Fentress-Yadkin Line 588 Rebuild and New Line 5005

Mr. Denny,

Please find the attached letter and overview map notifying you of the proposed 500 kV Fentress-Yadkin transmission line rebuild and new 500 kV transmission line located in Chesapeake, Virginia.

Please contact me with any questions.

Thank you,

Lane Carr **I** Local Permitting Consultant **I** Electric Transmission

Lane.E.Carr@dominionenergy.com **I** M: 804.310.9658 **I** 5000 Dominion Blvd. 3rd Floor SW, Glen Allen, VA 23060

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

#