May 6 | 2022

Appendix H-2: Onshore Historic Properties Assessment (Pre-Application Analysis)

Coastal Virginia Offshore Wind Commercial Project

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The assessment presented herein is consistent with the Project Design Envelope considered by Dominion Energy Virginia (Dominion Energy) prior to summer 2022. Due to maturation of the Coastal Virginia Offshore Wind Commercial Project (Project) design, Dominion Energy was able to refine several components of the Project and has subsequently revised the Construction and Operations Plan (COP) as re-submitted in February 2023. The primary changes are summarized as follows:

- The Maximum Layout includes up to 202 wind turbine generators (WTGs), with a maximum WTG capacity of 16 megawatts. As the Preferred Layout, Dominion Energy proposes to install a total of 176, 14.7-megawatt capacity WTGs with 7 additional positions identified as spare WTG locations. For both the Preferred Layout and Maximum Layout, the Offshore Substations will be within the WTG grid pattern oriented at 35 degrees and spaced approximately 0.75 nautical mile (1.39 kilometers) in an east-west direction and 0.93 nautical mile (1.72 kilometers) in a north-south direction.
- Removal of Interconnection Cable Route Options 2, 3, 4, and 5 from consideration. As the Preferred Interconnection Cable Route Option, Dominion Energy proposes to install Interconnection Cable Route Option 1.

The analysis presented in this appendix reflects the initial 205 WTG position layout as well as Interconnection Cable Route Options 1, 2, 3, 4, 5, and 6 as the maximum Project Design Envelope. Reduction in the Project Design Envelope is not anticipated to result in any additional impacts not previously considered in the COP. Therefore, in accordance with the Bureau of Ocean Energy Management's Draft Guidance Regarding the Use of a Project Design Envelope in a Construction and Operations Plan (2018), the appendix has not been revised. Additional details regarding evolution of the Project is provided in Section 2 of the COP and details regarding the full Project Design Envelope are provided in Section 3 of the COP.

APPENDIX H: HISTORIC PROPERTIES ASSESSMENT

This Appendix to the Construction and Operations Plan (COP) (consisting of **Attachments H-1 through H-4**) includes the preliminary results of Historic Properties Assessments conducted by Dominion Energy and its contractors in support of the Coastal Virginia Offshore Wind (CVOW) Commercial Project (the Project). The characterization of historic properties in or near the Project Area, as well as an assessment of potential effects from construction, operation, and decommissioning of the Project, is presented in **COP Section 4.3.3, Aboveground Historic Resources**.

These studies were completed to identify and to assess the Project's potential effects to historic properties listed in or eligible for listing in the National Register of Historic Places (NRHP). These investigations include the architectural investigations related to the impact of the Offshore and Onshore Project Components of the Project as required under the Bureau of Ocean Energy Management (BOEM) *Guidelines for Providing Archaeological and Historic Property Information Pursuant to 30 CFR Part 585* (BOEM 2020), and 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* (VDHR 2008). These studies were prepared to support the integration of the Section 106 process (36 CFR Part 800) of the National Historic Preservation Act (NHPA) of 1966, as amended, with analyses required under the National Environmental Policy Act (NEPA). Coordination of the Section 106 process and NEPA was adopted by BOEM in December 2020 as the federal agency's preferred approach.

To comply with Section 106 of the NHPA, NEPA, as well as the requirements of the State Corporation Commission (SCC), Dominion Energy contracted R. Christopher Goodwin & Associates, Inc. (RCG&A) and Environmental Resources Management (ERM) to conduct desktop and preliminary field surveys of the historic properties that potentially will be impacted by the Offshore and Onshore Project Components, respectively. These details and the results of these surveys are included in the following attachments to this appendix:

- **Attachment H-1: Offshore Historic Properties Assessment**

  Based on RCG&A preliminary findings, the Offshore Project Components are not anticipated to physically alter onshore aboveground historic properties. However, the Project has the potential to introduce new visual and auditory elements that may affect the integrity of setting of onshore aboveground historic properties.

- **Attachment H-2: Onshore Historic Properties Assessment (Pre-Application Analysis)**

  ERM identified ten aboveground historic resources that fall within the VDHR tiers for the Onshore Export Cable Route and Interconnection Cable Route alternatives currently under consideration. Since many of the routes substantially overlap, some resources would have the same impact regardless of the selected alternative. The nature of those impacts, while estimated in this study with the assistance of photo simulations, would depend on the final Project design in which the exact placement and height of transmission line structures would be determined.

- **Attachment H-3: Phase I Historic Architectural Survey of Alternative Routes (Stage 2)**

  ERM identified a total of 322 historic resources in the Preliminary Area of Potential Effects for the Onshore Export Cable Route and Interconnection Cable Route alternatives currently under consideration. Since many of the routes substantially overlap, some resources would have the same impact regardless of the selected alternative. Of these, a total of 13 resources

are listed on or considered eligible for inclusion on the NRHP. The nature of the impact on these resources will depend on the final route selection for the Project.

- **Attachment H-4: VDHR Concurrence and Update Letter for Stage 1**

  On January 5, 2022 VDHR sent a concurrence letter for the Onshore Historic Properties Assessment (Pre-Application Analysis). After the concurrence letter was received, minor route adjustments occurred; therefore ERM provided a letter to the VDHR on February 11, 2022 describing the changes and minor edits to the Stage 1 report. To date, VDHR has not provided comments on these updates, which have been integrated into the Phase I Historic Architectural Survey of Alternative Routes (Stage 2) in Attachment H-3 as appropriate.

The following confidential Attachments describe these results in more detail.

Results of marine and terrestrial archaeological investigations are provided in Appendices F and G of the COP, respectively.

Because this Stage 1 Pre-Application Analysis is a required component of the application Dominion Energy filed with the Virginia SCC for the proposed onshore transmission line, the naming conventions used for different project facilities are consistent with standard Company practice for SCC-regulated facilities. These are different from the naming conventions otherwise used throughout the COP. The table below identifies the project facility names used in the COP and those used in this report.

Construction & Operations Plan	**Stage 1 Pre-Application Analysis and Phase I Historic Architectural Survey of Alternative Routes**
Cable Landing Location	Cable Landing Location
Onshore Export Cable Route – underground transmission line route between the Cable Landing Location and a common point north of Harpers Road	Cable Landing to Harpers (CLH) Route - underground transmission line segment extending from the Cable Landing Location at the Virginia State Military Reservation to a point north of Harpers Road in the City of Virginia Beach
Harpers Switching Station or Chicory Switching Station	Harpers Switching Station or Chicory Switching Station
Interconnection Cables Routes – overhead or hybrid transmission line routes between the switching station north of Harpers Road and the Onshore Substation; includes the following alternative routes: • Interconnection Cable Route Alternative 1 • Interconnection Cable Route Alternative 2 • Interconnection Cable Route Alternative 3 • Interconnection Cable Route Alternative 4 • Interconnection Cable Route Alternative 5 • Interconnection Cable Route Alternative 6	Overhead or hybrid transmission line routes between the switching station north of Harpers Road and Fentress Substation; includes the following alternative routes: • Harpers to Fentress (HF) Route 1 • HF Route 2 • HF Route 3 • HF Route 4 • HF Route 5 • HF Hybrid Route
Onshore Substation	Fentress Substation

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Pre-Application Analysis

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Pre-Application Analysis

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EXECUTIVE SUMMARY

This report presents the findings of the pre-application analysis conducted for Dominion Energy Virginia's proposed Coastal Virginia Offshore Wind (CVOW) Commercial Project (Project). For this Project, Dominion Energy Virginia (Virginia Electric and Power Company or Company) is proposing to construct and operate a commercial offshore wind generating facility and associated infrastructure connecting this facility to the electric transmission grid in Tidewater Virginia. This report addresses the associated onshore infrastructure required for the Project, including an electric transmission line extending from the proposed Cable Landing Location in Virginia Beach to the Company's existing Fentress Substation in the City of Chesapeake. This pre-application analysis is a required study for onshore transmission line projects regulated by the Virginia State Corporation Commission (SCC).

A number of route options are currently under consideration for the proposed onshore transmission line. All of the route options begin with a proposed underground transmission line segment extending from the Cable Landing Location at the Virginia State Military Reservation to a point north of Harpers Road in the City of Virginia Beach. This segment is referred to as the Cable Landing to Harpers (CLH) Route. From the Company's existing Fentress Substation, there are five potential overhead transmission line routes and one underground/overhead hybrid transmission line route under consideration. These segments are referred to as Harpers to Fentress (HF) Routes 1 through 5 and the Hybrid Route.[1]

The HF overhead routes would require a switching station, referred to as the Harpers Switching Station, north of Harpers Road. The HF Hybrid Route would continue in an underground configuration to an alternate site for the switching station on the north side of Princess Anne Road in the City of Virginia Beach. The switching station at this site is referred to as the Chicory Switching Station. From here, the HF Hybrid Route would continue in an overhead configuration to the Fentress Substation in the City of Chesapeake. All of the routing solutions would require an expansion of the Fentress Substation.

This pre-application analysis assesses potential impacts on previously recorded historic resources in relation to each Project alternative route. Environmental Resources Management (ERM) conducted the pre-application analysis on behalf of Dominion Energy Virginia to assist in the development of a feasible Project design that minimizes impacts to historic resources.

Ten resources fall within the study tiers defined by the Virginia Department of Historic Resources (VDHR) for aboveground historic sites for the various route options under consideration. Since each of the routes overlap to some extent, impacts on several aboveground historic resources discussed in this report would be the same regardless of the route option selected for the Project. The likely impacts on individual historic resources associated with each route are presented in the tables below.

As the CLH Route is the only option under consideration for an underground route between the Cable Landing Location north of Harpers Road, it is the expected route for this segment of the Project. For the route options south of this point, it appears that HF Route 1 and the HF Hybrid Route would result in minimal and no impacts, respectively, to the considered resources discussed in this report. In contrast, HF Routes 2, 3, and 5 would result in moderate impacts and HF Route 4 would result in severe impacts to the considered resources. Severe and moderate impacts correspond to an adverse effect under Section 106 of the National Historic Preservation Act (NHPA), while a minimal impact corresponds to no adverse effect, and no impact corresponds to a finding of no effect.

[1] The Company's Construction & Operations Plan (COP) refers to the underground transmission line segment between the Cable Landing Location and the common point north of Harpers Road as the Onshore Export Cable and the overhead or hybrid transmission line segments north of Harpers Road and Fentress Substation as the Onshore Interconnection Cable Routes.

This pre-application analysis on its own does not provide the level of identification and evaluation of historic properties needed to comply with the Bureau of Ocean Energy Management's (BOEM's) review and consultation processes under Section 106 of the NHPA and the National Environmental Policy Act (NEPA). A Phase I Historic Architectural Survey of Alternative Routes was prepared to satisfy BOEM guidelines with respect to historic resource impacts associated with onshore Project components and is included as part of this Appendix.

Executive Summary of Project Impacts to Considered Aboveground Historic Resources in the Study Area of the Proposed Routes[abc]

Considered Resource		Proposed Alternative Routes					
	CLH Route[d]	HF Route 1	HF Route 2	HF Route 3	HF Route 4	HF Route 5	HF Hybrid Route
131-0044/ 131-5333-0002	-	Minimal	Moderate	Moderate	Severe	Moderate	Minimal
131-5071	-	Minimal	Minimal	Minimal	Minimal	Moderate	Minimal
131-5333	-	Minimal	Moderate	Moderate	Severe	Moderate	Minimal
134-0003/ 134-5027-0004	Minimal	-	-	-	-	-	-
134-0038	-	None	None	None	None	None	None
134-0072	-	None	None	None	None	None	None
134-0413	Severe	-	-	-	-	-	-
134-0413-0110	None	-	-	-	-	-	-
134-0702	-	None	None	None	None	None	None
134-0917	None	-	-	-	-	-	-

[a] A severe or moderate impact corresponds to an adverse effect under the Section 106 review process.
[b] A minimal impact corresponds to no adverse effect under the Section 106 review process.
[c] A finding of no impact (none) corresponds to no effect under the Section 106 review process.
[d] The CLH Route is the only option under consideration for the route segment between the Cable Landing Location and south of Harpers Road.

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Acronyms and Abbreviations

Name	Description
BOEM	Bureau of Ocean Energy Management
CLH	Cable Landing to Harpers
COP	Construction and Operations Plan
CVOW	Coastal Virginia Offshore Wind Commercial Project
ABPP	American Battlefield Protection Program
ERM	Environmental Resources Management
ESRI	Environmental Systems Research Institute
CLH	Cable Landing to Harpers Road
GNSS	Global Navigation Satellite System
HF	Harpers to Fentress
ICW	Intracoastal Waterway
ITA	Interfacility Traffic Area
MOA	Memorandum of Agreement
NAS	Naval Air Station
NERC	North American Electric Reliability Corporation
NHL	National Historic Landmark
NPS	National Park Service
NRHP	National Register of Historic Places
ROW	Right-of-Way
SEPG	Southeastern Parkway and Greenway
SMR	State Military Reservation
SP	Simulation Point
TNC	The Nature Conservancy
TL	Transmission Line
USACE	U.S. Army Corps of Engineers
UTM	Universal Transverse Mercator
V-CRIS	Virginia Cultural Resource Information System
VDHR	Virginia Department of Historic Resources
VLR	Virginia Landmarks Register

H-2.1 INTRODUCTION

This report presents the findings of the pre-application analysis prepared by Environmental Resources Management, Inc. (ERM) on behalf of Dominion Energy Virginia (Virginia Electric and Power Company or Company) for an onshore electric transmission line associated with the proposed Coastal Virginia Offshore Wind (CVOW) Commercial Project (Project). The onshore electric transmission line would extend from the Cable Landing Location in the City of Virginia Beach to the Company's existing Fentress Substation in the City of Chesapeake. As discussed in more detail below, several alternative routes for the onshore transmission line are currently under consideration. This pre-application analysis assesses potential impacts on previously recorded historic resources relative to each proposed alternative. ERM conducted the pre-application analysis on behalf of Dominion Energy Virginia to assist in the development of a feasible Project design that minimizes impacts to historic resources.

The proposed onshore transmission line and associated facilities, including a switching station, are needed to reliably interconnect the proposed Project, as requested by the Company's Generation Construction Group, to maintain the structural integrity and reliability of its transmission system consistent with the Company's Facility Interconnection Requirements and in compliance with mandatory North American Electric Reliability Corporation (NERC) Reliability Standards, and to solve identified congestion issues to allow the energy output of the Project onto the Company's transmission system. The proposed Project facilities will support Dominion Energy Virginia's continued reliable electric service to retail and wholesale customers and will support the future overall growth and system generation capability in the area.

H-2.1.1 Overview

The Project will encompass an offshore wind generating facility as well as onshore electrical transmission infrastructure, the latter of which is the focus of the current report. A number of route options are currently under consideration for the proposed onshore transmission line (Figure H-2.1.1-1). All of the options begin with an underground transmission line segment extending from the Cable Landing Location at the Virginia State Military Reservation (SMR) to a point north of Harpers Road in the City of Virginia Beach. This segment is referred to as the Cable Landing to Harpers (CLH) Route. From the Company's existing Fentress Substation, there are five potential overhead transmission line routes and one underground/overhead hybrid transmission line route under consideration. These segments are referred to as Harpers to Fentress (HF) Routes 1 through 5 and the Hybrid Route.[2]

The HF overhead routes would require a switching station, referred to as the Harpers Switching Station, at the north of Harpers Road. The HF Hybrid Route would continue in an underground configuration from the alternate site for the switching station on the north side of Princess Anne Road in the City of Virginia Beach. The switching station at this site is referred to as the Chicory Switching Station. From here, the HF Hybrid Route would continue in an overhead configuration to the Fentress Substation in the City of Chesapeake. The Project also would require an expansion of the Fentress Substation. Furthermore, Dominion Energy intends to lease existing and/or build to suit facilities in the Hampton Roads region of Virginia for an Operations and Maintenance (O&M) facility and construction port. In the event that upgrades or a new, build to suit facility is needed, construction would be undertaken by the lessor and would be separately reviewed and authorized as needed. As such, the construction and O&M ports are not a part of this undertaking and will not be addressed in this analysis.

2 The Company's Construction & Operations Plan (COP) refers to the underground transmission line segment between the Cable Landing Location and the common point north of Harpers Road as the Onshore Export Cable and the overhead or hybrid transmission line segments north of Harpers Road and Fentress Substation as the Onshore Interconnection Cable Routes.

The underground and overhead route segments would require three circuits, with the exception of the CLH Route, which would require nine circuits. For underground segments, each circuit would be installed in separate duct banks. For overhead segments, each circuit typically would be installed on separate monopole structures (except as indicated below).

H-2.1.1.1 Cable Landing to Harpers Route

The CLH Route for the Onshore Export Circuits would include both Horizontal Directional Drill (HDD) and surface trench installation of the proposed underground circuits between the Cable Landing Location and the switching station site north of Harpers Road. After exiting the transition joint bays the nine concrete-encased, underground duct banks would transition to five HDDs for crossing Lake Christine. The HDDs would extend west for approximately 0.3 mile (1,540 feet) passing beneath two branches of the lake separated by a peninsula of USN land at Dam Neck Annex. The HDDs would terminate on the west side of the lake just north of a helicopter landing pad at the north end of Lake Road on the SMR. From here, the underground circuits would be installed by surface trenching in a typical, three-wide, nine-circuit, duct bank configuration. The route would head generally west for about 0.6 mile, mostly crossing parade and training grounds within the SMR.

At a point just east of General Booth Boulevard, the typical, three-wide, duct bank configuration would diverge into five HDDs for crossing General Booth Boulevard, Owl Creek, and associated wetlands. The HDDs would extend approximately 0.4 mile (2,200 feet) to the northwest, leaving the SMR, crossing a City-owned parcel along the creek, and exiting onto U.S. Navy Land at NAS Oceana near Bells Road. The underground circuits would then converge into the typical, three-wide, duct bank configuration and continue west and south on USN land for about 1.0 mile, paralleling Bells Road for 0.6 mile and crossing Birdneck Road and Dominion's existing Lines TL-2118/78 corridor. The CLH Route would then turn south to parallel the east side of Oceana Boulevard for about 1.1 miles, all on USN land. At the intersection of Oceana Boulevard and Harpers Road, the route for the underground circuits would head west to parallel the north side of Harpers Road for about 1.0 mile and terminate at the Harpers Switching Station site on the north side of Harpers Road.

The ROW for underground segments installed by surface trenching would measure 65 feet wide with duct banks for each circuit installed within three parallel trenches excavated within the corridor. Where manholes/splicing vaults are installed, the width of the ROW would expand to 86 feet. The CLH underground route is approximately 4.4 miles in length.

H-2.1.1.2 Harpers to Fentress Route 1

After exiting the Harpers Switching Station, HF Route 1 would proceed generally southwest for about 2.3 miles across both private lands and lands owned by the City of Virginia Beach adjacent to or within the SEPG study corridor. This segment of the route would cross Dam Neck and London Bridge roads and pass between the Prince George Estates, Mayberry, Pine Ridge, and Castleton residential subdivisions. The route would then intersect and parallel Dominion's existing Lines TL-2118/147 corridor for a distance of approximately 1.8 miles, mostly crossing City-owned lands within or adjacent to the SEPG corridor. This segment would pass south of the Castleton residential subdivision and between the Buyrn Farm North, Holland Pines, and Woods of Piney Grove residential subdivisions near Holland Drive.

After leaving Dominion's existing transmission line corridor, HF Route 1 would continue in a southwesterly direction for about 2.1 miles, mostly crossing City-owned lands within the Southeastern Parkway and

Greenbelt (SEPG)[3] corridor, including an undeveloped portion of the Princess Anne Athletic Complex. This segment would cross Dominion's existing Line TL-2085 ROW just east of Landstown Road and intersect with the Line TL-271 ROW just north of Landstown Road. At the intersection with Line TL-271[4], HF Route 1 would follow existing transmission right-of-way for 7.9 miles to the Fentress Substation.

The route would enter the City of Chesapeake southwest of Indian River Farms Park. The Chesapeake portion of the route initially would cross mostly forested lands, including private land, parcels owned by the City of Chesapeake, and a tract owned by TNC. This segment would also cross USACE-owned lands along the Intracoastal Waterway. South of the waterway, the route would mostly cross privately-owned agricultural lands in addition to crossing Mt. Pleasant, Blue Ridge, and Whittamore Roads. The HR Route 1 would pass along the east side of the Battlefield Golf Club. The route would then head west for 1.1 miles along the south side of the golf club before entering Fentress Substation.

The total length of HF Route 1 is approximately 14.37 miles. In areas where this route is greenfield, the ROW for the route would be 140 feet wide. Where the route is collocated with TL-2118/147, the existing ROW would be expanded from 120 feet to 225 feet, and where the route is collocated with TL-271 and TL-2240, the existing ROW generally would be expanded from 120 feet to 160 feet. In those locations along TL-271 where there is existing residential development adjacent to the ROW, the transmission line would be constructed within the existing ROW of TL-271.

H-2.1.1.3 Harpers to Fentress Route 2

HF Route 2 would follow the same alignment as HF Route 1 for approximately 5.5 miles from the Harpers Switching Station site to a point just east of Landstown Road in the Princess Anne Athletic Complex. The route would then head south/southwest for about 1.8 miles across sparsely developed forested and agricultural lands primarily owned by the City of Virginia Beach and managed as part of the City's ITA. After crossing Indian River Road, the route would continue about 1.0 mile to the south across mostly forested private lands to the boundary between Virginia Beach and Chesapeake.

Once in Chesapeake, HF Route 2 would head southwest for approximately 0.9 mile, crossing the Intracoastal Waterway and adjacent federal lands managed by the USACE at a point about 0.6 mile northwest of the North Landing River Bridge. It would then proceed west for 2.6 miles across privately owned forested and agricultural parcels along the south side of the Intracoastal Waterway to an intersection with Dominion's existing Lines TL-271 right-of-way. From here, the route would follow the same alignment as HF Route 1 to the Fentress Substation for a distance of about 1.9 miles.

The total length of HF Route 2 is approximately 15.23 miles. In greenfield areas, the new ROW would be 140 feet wide. Where the route is adjacent to TL-2118/147, the existing ROW would be expanded from 120 feet to 225 feet wide; and where adjacent to TL-271 and TL-2240, the existing ROW would be expanded from 120 feet to 160 feet wide.

H-2.1.1.4 Harpers to Fentress Route 3

HF Route 3 is identical to HF Route 2 with the exception of a segment in Virginia Beach south of NAS Oceana. Unlike HF Route 2, HF Route 3 would turn west after crossing Dam Neck Road, rather than continuing southeast with the SEPG study corridor. The route would then parallel the south side of Dam Neck Road for approximately 1.8 miles, primarily crossing privately owned agricultural and forested lands.

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3 In the 1990s and early 2000s, the Cities of Virginia Beach and Chesapeake and the Virginia Department of Transportation evaluated a potential highway project, referred to as the SEPG, to address traffic congestion in the area. While the project was abandoned, much of the study corridor remains undeveloped, with a large portion of the land in the Virginia Beach portion of the corridor owned by the city.

4 Line 271 also supports idle Line I-74.

At a point about 0.4 mile west of London Bridge Road, the route would turn south and continue for about 1.0 mile across private and city-owned forested lands to Dominion's existing TL-2118/147 corridor. This segment of HF Route 3 includes an approximately 0.5-mile-long crossing of city-owned, open space, undeveloped parkland at Holland Pines Park. The route would then follow the same alignment as HF Route 2 to Fentress Substation.

The total length of HF Route 3 is approximately 15.59 miles. In areas where this route is greenfield, the new ROW would be 140 feet wide. Where the route is adjacent to TL-2118/147, the existing ROW would be expanded from 120 feet to 225 feet wide, and where adjacent to TL-271 and TL-2240, the existing ROW would be expanded from 120 feet to 160 feet wide. Where HF Route 3 parallels TL-2085, the existing ROW would be expanded from 145 feet to 200 feet wide.

H-2.1.1.5 Harpers to Fentress Route 4

HF Route 4 would follow the same alignment as HF Route 1 from the Harpers Switching Station to Dominion's existing TL-2085 ROW near Landstown Road at the Princess Anne Athletic Complex. It would then follow the west side of TL-2085 for approximately 2.8 miles to the south. About 2.5 miles of this route segment would cross primarily undeveloped (agricultural) Virginia Beach city-owned lands adjacent to (on the opposite side of the existing transmission line from) the Courthouse Woods and Courthouse Estates residential subdivisions. The remainder of the segment, about 0.3 mile on the south side of Indian River Road, would cross mostly forested privately owned parcels. The route would then then head east/southeast for approximately 1.2 miles across privately-owned forested tracts to the boundary between the Cities of Virginia Beach and Chesapeake. Once in Chesapeake, the route would continue for 0.5 mile to the east, crossing the Intracoastal Waterway and adjacent USACE lands at a point approximately 0.5 mile northwest of the North Landing Ridge Bridge. It would then follow the same alignment as HF Route 2 to Fentress Substation.

The total length of HF Route 4 is approximately 16.47 miles. In greenfield areas, the new ROW would be 140 feet wide. Where the route is adjacent to TL-2118/147, the existing ROW would be expanded from 120 feet to 225 feet wide, and where the route is adjacent to TL-271 and TL-2240, the existing ROW would be expanded from 120 feet to 160 feet wide. Where HF Route 4 parallels TL-2085, the existing ROW would be expanded from 145 feet to 200 feet wide.

H-2.1.1.6 Harpers to Fentress Route 5

HF Route 5 would follow the same alignment as HF Routes 1 and 2 for approximately 5.5 miles from the Harpers Switching Station site to Dominion's existing Line TL-2085 ROW near Landstown Road at the Princess Anne Athletic Complex. It would then follow the west side of Line TL-2085 for approximately 2.8 miles to the south. About 2.5 miles of this route segment would cross primarily undeveloped (agricultural) lands owned by the City of Virginia Beach adjacent to (but on the opposite side of the existing transmission line from) the Courthouse Woods and Courthouse Estates residential subdivisions. The remainder of this segment, about 0.3 mile on the south side of Indian River Road, would continue along Line TL-2085 across mostly forested, privately owned parcels. The route would then head southwest away from Line TL-2085 for about 1.0 mile, where it would cross the Intracoastal Waterway about 0.1 mile downstream of the North Landing River Bridge and enter the City of Chesapeake.

South of the river, HF Route 5 would cross Mt. Pleasant Road and a short segment (about 320 feet) of USACE land before heading generally south for about 3.9 miles, crossing 1.9 miles of undeveloped USN land along the edge of NALF Fentress and agricultural and forested private lands further south. This segment of the route would cross Mt. Pleasant, Blackwater, and Fentress Airfield roads, pass to the west of North Landing Farms, and parallel Blackwater Road for about 0.8 mile. HF Route 5 would then cross the state-designated scenic Pocaty River, turn southwest, and generally parallel the river through forested

private lands for about 2.2 miles. It would then head west/northwest for about 4.6 miles across sparsely populated, privately owned, agricultural lands. HF Route 5 would then follow Dominion's existing right-of-way for about 0.1 mile west to Fentress Substation.

The total length of HF Route 5 is approximately 20.19 miles. In areas where the route is greenfield, the new ROW would be 140 feet wide. Where the route is adjacent to TL-2118/147, the existing ROW would be expanded from 35 feet to 140 feet wide, and where adjacent to TL-2240, the existing ROW would be expanded from 120 feet to 160 feet wide. Where HF Route 5 parallels TL-2085, the existing ROW would be expanded from 120 feet to 210 feet wide.

H-2.1.1.7 Harpers to Fentress Hybrid Route

The HF Hybrid Route would not have a switching station at Harpers Road. Instead, the HF Hybrid Route would continue underground from the CLH Route to the Chicory Switching Station site near Princess Anne Road in Virginia Beach, a distance of about 4.5 miles. At the Chicory Switching Station, the HF Hybrid Route would transition to a typical, three-circuit, overhead configuration and follow the same alignment as HF Route 1 to Fentress Substation in Chesapeake.

The total length of HF Hybrid Route is approximately 14.4 miles. For the underground segment, the width of the new ROW would be 65 feet, or 86 feet at manhole locations. For the overhead segment in greenfield areas, the new ROW would be 140 feet wide. Where the overhead segment of the route is parallel to TL-271 and TL-224, the existing ROW generally would be expanded from 120 feet to 160 feet wide. In those locations along TL-271 where there is existing residential development adjacent to the ROW, the transmission line would be constructed within the existing ROW of TL-271.

H-2.1.2 Management Recommendations

Ten previously recorded resources fall within the study tiers established by the Virginia Department of Historic Resources (VDHR) for aboveground historic resources along the transmission line options under consideration (Attachment 1).[5] CLH Route is the only option extending from the Cable Landing site to the Harpers Switching Station. Among the HF route alternatives, both HF Route 1 and the HF Hybrid Route have the least impacts in terms of total number of resources impacted and the severity of impacts. More information about the resources subject to potential impacts and the nature of impacts for the proposed alternatives can be found in the sections that follow.

5 For terrestrial archaeological findings, see Phase I A Terrestrial Archaeological Resources Assessment, Appendix G.

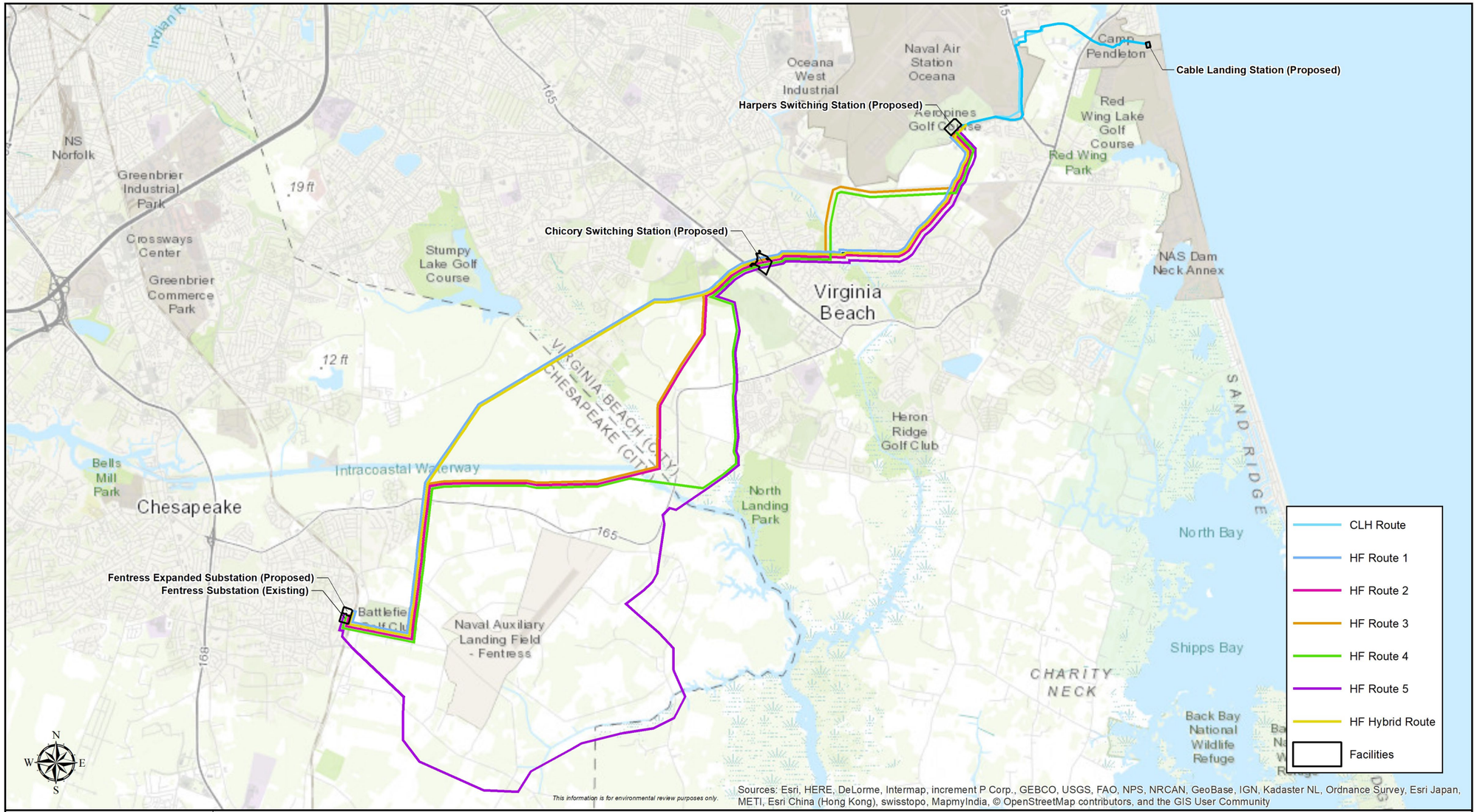

Figure H.2.1.1-1
Overview of Onshore Transmission Line Segments Under Consideration for the Project Alternatives
Coastal Virginia Offshore Wind Commercial Project
Dominion Virginia Power
Virginia Beach and Chesapeake, VA

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Figure H-2.1.1-1: Overview of Onshore Transmission Line Segments under Consideration for the Project

H-2.2 RECORDS REVIEW

H-2.2.1 Data Collection Approach

ERM conducted an analysis of potential cultural resource impacts for the alternative routes under consideration in accordance with the VDHR's 2008 *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (VDHR 2008). ERM additionally prepared a methodology document for the analysis, titled *Coastal Virginia Offshore Wind Commercial Project Onshore Aboveground Historic Properties Survey Plan* that was reviewed and approved by BOEM and the VDHR.

ERM's analysis in the current study also will serve to partially fulfill the cultural resource review requirements stipulated in BOEM's *Guidelines for Providing Archaeological and Historic Property Information Pursuant to 30 CFR Part 585* (2020), which apply to the overall Project's offshore and onshore components. While the pre-application analysis on its own does not provide the level of identification and evaluation of historic properties necessary as part of BOEM's Section 106 and NEPA review and consultation process, a Phase I Historic Architectural Survey of Alternative Routes was prepared to satisfy BOEM guidelines with respect to historic resource impacts associated with onshore Project components and is included as part of this Appendix.

For the pre-application analysis of cultural resources, ERM conducted an analysis of potential cultural resource impacts for the alternative transmission line routes and other facilities discussed in this report in accordance with the VDHR's *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (Guidelines) (VDHR 2008). For each route, this analysis identified and considered the following previously recorded resources:

- National Historic Landmarks (NHL) within a 1.5-mile radius of the centerline;
- NRHP-listed properties, NHLs, battlefields, and historic landscapes within a 1.0-mile radius of the centerline;
- NRHP-eligible and NRHP-listed properties, NHLs, battlefields, and historic landscapes within a 0.5-mile radius of the centerline; and
- All of the above qualifying resources as well as archaeological sites within the ROW for each alternative route.[6]

Information on the considered resources in each study tier was collected from the Virginia Cultural Resource Information System (V-CRIS). ERM also collected information from the City of Virginia Beach City Council's Historic and Cultural Overlay Districts (City of Virginia Beach 2017a), the Virginia Beach Historical Register (City of Virginia Beach 2018), and the City of Chesapeake's Historic Preservation Commission (City of Chesapeake 2018) to find locally significant resources within a 1.0-mile radius of each centerline. In addition, ERM collected information on battlefields surveyed and assessed by the National Park Service's American Battlefield Protection Program (ABPP).

Along with the records review carried out for the four tiers as defined by VDHR, ERM also conducted field assessments of the considered aboveground resources for each Project alternative route in accordance with the VDHR guidelines. Digital photographs of each architectural resource and views to the proposed transmission line were taken. Photosimulations were prepared to assess visual impacts on the considered resources within the VDHR defined tiered study areas for considered resources. For previously recorded archaeological sites under consideration, aerial photographs were examined to

6 For terrestrial archaeological findings, see Phase I A Terrestrial Archaeological Resources Assessment, Appendix G

assess the current land condition and the spatial relationship between the sites and any existing or planned transmission lines.

H-2.2.2 Historic Resources

Each alternative under consideration has the potential to impact a number of historic and architectural resources. The following discussion summarizes known resources in the vicinity of each Project alternative according to VDHR's tiered study area model, including those resources that are significant on a local level. The locations of the considered architectural resources and the proposed route alternatives are shown in Figure H-2.2.3-1. Individual maps for each proposed alternative are located in Attachment 2.

The resources located within the ROW of a proposed route may be subject to both direct impacts from placement of the line across the property, as well as visual impacts from changes to the viewshed introduced by the new transmission line structures. Resources in the 0-0.5 mile tier would not be directly impacted, but are likely to be visually impacted, unless topography or vegetation obscures the view to the transmission line. At a distance over 0.5 mile, it becomes less likely that a resource would be within line-of-sight of the proposed transmission line. However, the full architectural survey mandated in the second stage of VDHR's transmission line review process would determine which resources actually would be visually impacted. Many of the same resources in the 0.50-mile tier also extend into the 1.0-mile tier. Beyond 1.0 mile, it becomes even less likely that a given resource would be within line-of-sight of the proposed Project.

Because of the overlap among several of the routes, many of the same cultural resources would be impacted, regardless of the alternative selected. The nature of those impacts, while estimated in this study with the assistance of photosimulations, would depend on the final Project design in which the exact placement and height of transmission line structures will be determined. As part of the forthcoming full architectural survey, actual Project impacts will be assessed, and additional (as of yet, unrecorded) historic properties will be identified in the study area. The study area will be defined based on the height of the proposed transmission line structures (including overhead versus underground), topography, tree cover, and other factors impacting the line-of-sight to the proposed Project.

H-2.2.2.1 Cable Landing to Harpers Route

CLH Route is a new, greenfield underground route that does not follow any existing ROW. It is the only alternative under consideration for the route segment between the Cable Landing Location the Harpers Switching Station north of Harpers Road in the City of Virginia Beach. From the nine transition joint bays within the Cable Landing Location, the route would head generally west for about 0.6 mile, mostly crossing parade and training grounds within the SMR. At a point just east of General Booth Boulevard, an HDD would extend to the northwest, leaving the SMR, crossing a City-owned parcel along the creek, and exiting onto U.S. Navy Land at NAS Oceana near Bells Road. The underground circuits would then continue west and south on USN land paralleling Bells Road and crossing Birdneck Road and Dominion's existing Lines TL-2118/78 corridor. The CLH Route would then turn south to parallel the east side of Oceana Boulevard, all on USN land. At the intersection of Oceana Boulevard and Harpers Road, the route for the underground circuits would head west to parallel the north side of Harpers Road for about 1.0 mile and terminate at the Harpers Switching Station site on the north side of Harpers Road.

The considered resources that lie within the VDHR tiers for the CLH Route are presented in Table H-2.2.2.1-1 and depicted in Attachment 2, Sheet 1. For the resources intersected by the transmission line ROW, the distance along the line is provided. Resources that extend from one tier into the next are only presented once in the tier nearest the proposed transmission line. There are four aboveground historic properties identified within the VDHR tiers for the CLH Route. The proposed route would intersect approximately 0.92 mile of the Camp Pendleton Historic District (134-0413). The four considered

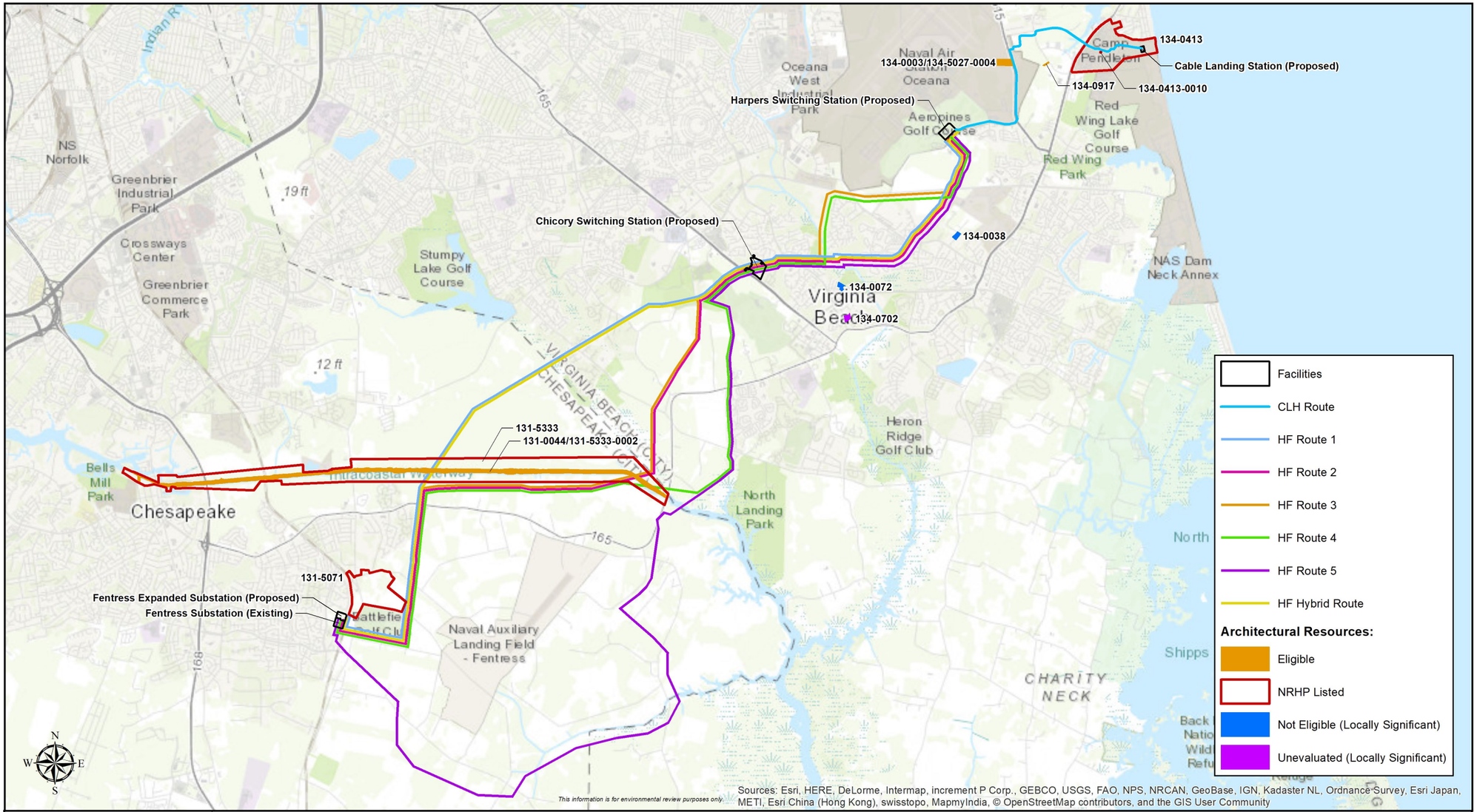

Figure H-2.2.1-1
Locations of Considered Historic Resources Associated with Proposed Project Alternatives
Coastal Virginia Offshore Wind Commercial Project
Dominion Virginia Power
Virginia Beach and Chesapeake, VA

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Figure H-2.2.1-1: Locations of Considered Historic Resources Associated with Proposed Project Alternatives

resources were subjected to field reconnaissance and a preliminary assessment of impacts, discussed in the next chapter.

Table H-2.2.2.1-1: Historic Resources in VDHR Tiers for CLH Route

Buffer (miles)	Resource Category	Resource Number	Description
1.0 to 1.5	National Historic Landmarks	–	-
0.5 to 1.0	National Register Properties (Listed)	-	-
0.0 to 0.5	National Register Properties (Listed)	134-0413-0110	Building 1
	National Register - eligible	134-0917	Winford White House
0.0 (within ROW)	National Register - eligible	134-0003	Bell House (ROW does not intersect resource, but is nearly adjacent)
	National Register Properties (Listed)	134-0413	Camp Pendleton/State Military Reservation Historic District (0.092-mile segment of ROW intersects resource)

H-2.2.2.2 Harpers to Fentress Route 1

After exiting the Harpers Switching Station, HF Route 1 would proceed generally southwest. The route would then intersect and parallel Dominion's existing Lines TL-2118/147 corridor. After leaving Dominion's existing transmission line corridor, HF Route 1 would continue in a southwesterly direction mostly crossing City-owned lands within the SEPG corridor. At the intersection with Line TL-271, HF Route 1 would follow existing transmission right-of-way to the Fentress Substation. The route would enter the City of Chesapeake southwest of Indian River Farms Park. The Chesapeake portion of the route initially would cross mostly forested lands, including private land, parcels owned by the City of Chesapeake, and a tract owned by TNC. This segment would also cross USACE-owned lands along the Intracoastal Waterway. South of the waterway, the route would mostly cross privately-owned agricultural lands. The route would then head west along the south side of the golf club before entering Fentress Substation.

HF Route 1 is an overhead route that would include the expansion of the ROW for the Landstown to Virginia Beach transmission line ROW (TL-2118/147) and the wreck-and-rebuild and expansion of portions of the rights of way for the existing Landstown-Pocaty transmission line (TL-271) and the Fentress-Pocaty Line TL-2240. HF Route 1 would utilize both greenfield and existing rights-of-way.

The considered resources that lie within the VDHR tiers for HF Route 1 are presented in Table H-2.2.2.2-1 and depicted in Attachment 2, Sheet 2. For the resources intersected by the transmission line ROW, the distance along the line is provided. Resources that extend from one tier into the next are only presented once in the tier nearest the proposed transmission line. There are six aboveground historic properties identified within the VDHR tiers for HF Route 1. Based on the findings from the records review, HF Route 1 intersects approximately 390 feet of the Albemarle & Chesapeake Canal (131-0044/131-5333-0022) and approximately 0.43 mile of the Albemarle & Chesapeake Canal Historic District (131-5333). The six

considered resources were subjected to field reconnaissance and a preliminary assessment of impacts, discussed in the next chapter.

Table H-2.2.2.2-1: Historic Resources in VDHR Tiers for HF Route 1

Buffer (miles)	Resource Category	Resource Number	Description
1.0 to 1.5	National Historic Landmarks	–	-
0.5 to 1.0	Locally Significant Resources	134-0702	St. John's Baptist Church
0.0 to 0.5	National Register Properties (Listed)	131-5071	Centreville-Fentress Historic District
	Locally Significant Resources	134-0038	Jonathan Woodhouse House/William Woodhouse House
		134-0072	Thomas Lovett House/Rollingswood Academy
0.0 (within ROW)	National Register Properties (Listed)	131-5333	Albemarle & Chesapeake Canal Historic District (0.43-mile segment of ROW intersects resource)
	National Register – eligible	131-0044	Albemarle & Chesapeake Canal (390-foot segment of ROW intersects resource)

H-2.2.2.3 Harpers to Fentress Route 2

HF Route 2 follows the same alignment as HF Route 1 until Landstown Road. At this point, HF Route 2 turns south until it reaches the Albemarle & Chesapeake Canal. HF Route 2 then turns west and rejoins HF Route 1 near its intersection with Mt. Pleasant Road and then continues south to the Fentress Substation. This route includes an expansion of the existing rights-of-way for the Landstown to Virginia Beach transmission line ROW (TL-2118/147) and the wreck-and-rebuild and expansion of portions of the rights of way for the existing Landstown-Pocaty transmission line (TL-271), and the Fentress-Pocaty Line TL-2240. HF Route 2 would utilize both greenfield and existing rights-of-way.

The considered resources that lie within the VDHR tiers for HF Route 2 are presented in Table H-2.2.2.3-1 and depicted in Attachment 1, Sheet 3. For the resources intersected by the transmission line ROW, the distance along the line is provided. Resources that extend from one tier into the next are only presented once in the tier nearest the proposed transmission line. There are six aboveground historic properties identified within the VDHR tiers for HF Route 2. The route runs parallel to the Albemarle & Chesapeake Canal (131-0044) on its south side and the Albemarle & Chesapeake Canal Historic District (131-5333), and intersects the eastern boundaries of both. The route traverses an approximately 0.61-mile portion of the district, as well as an approximately 420-foot segment of the canal itself. The six considered resources were subjected to field reconnaissance and a preliminary assessment of impacts, discussed in the next chapter.

Table H-2.2.2.3-1: Historic Resources in VDHR Tiers for HF Route 2

Buffer (miles)	Resource Category	Resource Number	Description
1.0 to 1.5	National Historic Landmarks	–	–
0.5 to 1.0	Locally Significant Resources	134-0702	St. John's Baptist Church
0.0 to 0.5	National Register Properties (Listed)	131-5071	Centreville-Fentress Historic District
	Locally Significant Resources	134-0038	Jonathan Woodhouse House/William Woodhouse House
		134-0072	Thomas Lovett House/Rollingswood Academy
0.0 (within ROW)	National Register Properties (Listed)	131-5333	Albemarle & Chesapeake Canal Historic District (0.61-mile segment of ROW intersects resource)
	National Register – eligible	131-0044	Albemarle & Chesapeake Canal (420-foot segment of ROW intersects resource)

H-2.2.2.4 Harpers to Fentress Route 3

HF Route 3 leaves the Harpers Switching Station and turns west at Dam Neck Road. The route next turns south near the intersection of Dam Neck Road and London Bridge Road. The route then joins the SEPG corridor along the same alignment as HF Routes 1 and 2 up to Landstown Road. From this point HF Route 3 follows the same alignment as HF Route 2 to the Fentress Substation. This route includes an expansion of the existing Landstown to Virginia Beach transmission line ROW (TL-2118/147) and a wreck-and-rebuild and expansion of portions of the rights of way for the existing Landstown-Pocaty transmission line (TL-271) and the Fentress-Pocaty Line TL-2240. HF Route 3 utilizes a combination of both greenfield and existing ROW.

The considered resources that lie within the VDHR tiers for HF Route 3 are presented in Table H-2.2.2.4-1 and depicted in Attachment 2, Sheet 4. For the resources intersected by the transmission line ROW, the distance along the line is provided. Resources that extend from one tier into the next are only presented once in the tier nearest the proposed transmission line. There are six aboveground historic properties identified within the VDHR tiers for HF Route 3. The route runs parallel to the Albemarle & Chesapeake Canal (131-0044) on its south side and the Albemarle & Chesapeake Canal Historic District (131-5333), and intersects the eastern boundaries of both. The route traverses an approximately 0.61-mile portion of the district, as well as an approximately 420-foot segment of the canal itself. The six considered resources were subjected to field reconnaissance and a preliminary assessment of impacts, discussed in the next chapter.

Table H-2.2.2.4-1: Historic Resources in VDHR Tiers for HF Route 3

Buffer (miles)	Resource Category	Resource Number	Description
1.0 to 1.5	National Historic Landmarks	–	–
0.5 to 1.0	Locally Significant Resources	134-0038	Jonathan Woodhouse House/William Woodhouse House
		134-0702	St. John's Baptist Church
0.0 to 0.5	National Register Properties (Listed)	131-5071	Centreville-Fentress Historic District
	Locally Significant Resources	134-0072	Thomas Lovett House/Rollingswood Academy
0.0 (within ROW)	National Register Properties (Listed)	131-5333	Albemarle & Chesapeake Canal Historic District (0.61-mile segment of ROW intersects resource)
	National Register – eligible	131-0044	Albemarle & Chesapeake Canal (420-foot segment of ROW intersects resource)

H-2.2.2.5 Harpers to Fentress Route 4

HF Route 4 follows the same alignment of HF Routes 1 and 2 until a point east of Landstown Road. HF Route 4 then continues south along the TL-2085 corridor. The route next turns west, crossing North Landing Road and the Albemarle & Chesapeake Canal then joins HF Routes 2 and 3. HF Route 4 then follows the same alignment as HF Routes 2 and 3 to the Fentress Substation. This route includes an expansion of the existing Landstown to Virginia Beach transmission line (TL-2118/147) and Landstown to West Landing transmission line (TL-2085) rights of way as well as a wreck-and-rebuild of portions of the rights of way for the existing Landstown-Pocaty transmission line (TL-271) and the Fentress-Pocaty Line TL-2240. HF Route 4 utilizes a combination of both greenfield and existing ROW.

The considered resources that lie within the VDHR tiers for HF Route 4 are presented in Table H-2.2.2.5-1 and depicted in Attachment 2, Sheet 5. For the resources intersected by the transmission line ROW, the distance along the line is provided. Resources that extend from one tier into the next are only presented once in the tier nearest the proposed transmission line. There are six aboveground historic properties identified within the VDHR tiers for HF Route 4. The route runs parallel to the Albemarle & Chesapeake Canal (131-0044) on its south side and the Albemarle & Chesapeake Canal Historic District (131-5333), and continues east, past the boundaries of these resources. The route traverses an approximately 0.75-mile portion of the district, as well as an approximately 715-foot segment of the canal itself. The six considered resources were subjected to field reconnaissance and a preliminary assessment of impacts, discussed in the next chapter.

Table H-2.2.2.5-1: Historic Resources in VDHR Tiers for HF Route 4

Buffer (miles)	Resource Category	Resource Number	Description
1.0 to 1.5	National Historic Landmarks	–	–
0.5 to 1.0	Locally Significant Resources	134-0702	St. John's Baptist Church
0.0 to 0.5	National Register Properties (Listed)	131-5071	Centreville-Fentress Historic District
	Locally Significant Resources	134-0038	Jonathan Woodhouse House/William Woodhouse House
		134-0072	Thomas Lovett House/Rollingswood Academy
0.0 (within ROW)	National Register Properties (Listed)	131-5333	Albemarle & Chesapeake Canal Historic District (0.75-mile segment of ROW intersects resource)
	National Register – eligible	131-0044	Albemarle & Chesapeake Canal (715-foot segment of ROW intersects resource)

H-2.2.2.6 Harpers to Fentress Route 5

HF Route 5 follows the same alignment as HF Route 4 to a point just east of the Albemarle & Chesapeake Canal. HF Route 5 deviates from HF Route. Instead of turning west at the canal like HF Route 4, HF Route 5 turns southwest, crosses the Albemarle & Chesapeake Canal and then follows an alignment south of Fentress Naval Air Station. The route then turns to the northwest to Fentress Substation. This route includes an expansion of the rights of way of the existing Landstown to Virginia Beach transmission line ROW (TL-2118/147) and Landstown to West Landing transmission line (TL-2085) and a wreck-and-rebuild of a small (0.16-mile) section of the existing ROW for the Fentress-Pocaty Line TL-2240. HF Route 5 utilizes a combination of greenfield and existing rights-of-way.

The considered resources that lie within the VDHR tiers for HF Route 5 are presented in Table H-2.2.2.6-1 and depicted in Attachment 2, Sheet 6. For the one resource intersected by the transmission line ROW, the distance along the line is provided. Resources that extend from one tier into the next are only presented once in the tier nearest the proposed transmission line. There are six aboveground historic properties identified within the VDHR tiers for HF Route 5. The route intersects approximately 60 feet of the southeast corner of the Albemarle & Chesapeake Canal Historic District (131-5333). The six considered resources were subjected to field reconnaissance and a preliminary assessment of impacts, discussed in the next chapter.

Table H-2.2.2.6-1: Historic Resources in VDHR Tiers for HF Route 5

Buffer (miles)	Resource Category	Resource Number	Description
1.0 to 1.5	National Historic Landmarks	–	–
0.5 to 1.0	Locally Significant Resources	134-0702	St. John's Baptist Church
0.0 to 0.5	National Register Properties (Listed)	131-5071	Centreville-Fentress Historic District
	National Register – eligible	131-0044	Albemarle & Chesapeake Canal
	Locally Significant Resources	134-0038	Jonathan Woodhouse House/William Woodhouse House
		134-0072	Thomas Lovett House/Rollingswood Academy
0.0 (within ROW)	National Register Properties (Listed)	131-5333	Albemarle & Chesapeake Canal Historic District (60-foot segment of ROW intersects resource)

H-2.2.2.7 Harpers to Fentress Hybrid Route

HF Hybrid Route follows the same alignment as HF Route 1, but consists of a partially underground and partially aboveground alternative solution. The HF Hybrid Route does not include the Harpers Switching Station (as used for HF Routes 1–5) and instead includes the Chicory Switching Station to the north of Princess Anne Road. A portion of the underground segment of the route would be constructed adjacent to the Landstown to Virginia Beach transmission line (TL-2118/147). A portion of the overhead segment of the route would include a wreck-and-rebuild of portions of the rights of way for the existing Landstown-Pocaty transmission line (TL-271) and the Fentress-Pocaty Line TL-2240. The HF Hybrid Route utilizes a combination of both greenfield and existing rights of way.

The considered resources that lie within the VDHR tiers for HF Hybrid Route are presented in Table H-2.2.2.7-1 and depicted in Attachment 2, Sheet 7. For the resources intersected by the transmission line ROW, the distance along the line is provided. Resources that extend from one tier into the next are only presented once in the tier nearest the proposed transmission line. There are six aboveground historic properties identified within the VDHR tiers for HF Hybrid Route. Based on the findings from the records review, HF Hybrid Route intersects approximately 390 feet of the Albemarle & Chesapeake Canal (131-0044/131-5333-0022) and approximately 0.43-mile of the Albemarle & Chesapeake Canal Historic District (131-5333). The six considered resources were subjected to field reconnaissance and a preliminary assessment of impacts, discussed in the next chapter.

Table H-2.2.2.7-1: Historic Resources in VDHR Tiers for HF Hybrid Route

Buffer (miles)	Resource Category	Resource Number	Description
1.0 to 1.5	National Historic Landmarks	–	–
0.5 to 1.0	Locally Significant Resources	134-0702	St. John's Baptist Church
0.0 to 0.5	National Register Properties (Listed)	131-5071	Centreville-Fentress Historic District
	Locally Significant Resources	134-0038	Jonathan Woodhouse House/William Woodhouse House
		134-0072	Thomas Lovett House/Rollingswood Academy
0.0 (within ROW)	National Register Properties (Listed)	131-5333	Albemarle & Chesapeake Canal Historic District (0.43-mile segment of ROW intersects resource)
	National Register – eligible	131-0044	Albemarle & Chesapeake Canal (390-foot segment of ROW intersects resource)

H-2.2.3 Previous Surveys

Much of the proposed Project alternatives have been subjected to previous cultural resource survey coverage. Thirty previous cultural resource surveys intersect at least one of the alternative routes under consideration. Among these, three surveys associated with the SEPG have been conducted that overlap all the routes, and together cover substantial portions of the proposed Project alternatives (Traver and Ralph 1989; Higgins et al 1994; Baicy et al. 2005).

Seventeen cultural surveys have been conducted in the vicinity of the CLH Route, with the majority associated with the Camp Pendleton Historic District (Robison and Seckinger 1987a, 1987b; Bussey and Traver 1992; Boyko and Boyko 2008; Markell et al. 2007; Monroe et al. 2017) or Naval Station Oceana (Hornum et al. 1994; Wittkofski 1980; Shmookler 1996; Madsen et al. 1996; Shmookler 1996; Jensen 2003; Clement. 2011). The remainder dealt with road improvements to Oceana Boulevard and Birdneck Road (Egghart and Boyd 1991; Busby and Bashman 1993; Hodges and Stephenson 1997).

An array of previous surveys on road improvements intersect a small portion of all of the HF Routes between Dam Neck Road and Princess Anne Road/North Landing Road (Clark and Bowden. 2000; Brady and Lautzenheiser 2000; Tippett 2002; Tyrer and Muir-Frost 2017a, 2017b). Two of these surveys extend farther, to Indian River Road to follow more of HF Routes 4 and 5 (Stuck et al. 1997; McDonald and Meyers. 2002). These two surveys are associated with and conform to the Landstown to West Landing transmission line's (TL-2085) existing ROW.

A small portion of HF Routes 1 through 4 and the Hybrid Route intersect a proposed solar project that is located in an existing ROW (Smith 2018). One previous survey on the canal intersects HF Route 1 and the HF Hybrid Route (Penner 2003). Another intersects HF Route 4 at Salem Road (Bott 1980). Finally, a small portion of a survey on the North Landing Bridge Replacement intersects HF Route 4 (Goode et al. 2019).

Additional information on these previous surveys is provided in Table H-2.2.3-1. The extent of the previous survey coverage is depicted in the maps provided in Attachment 3.

Table H-2.2.3-1: Cultural Resource Surveys Covering Portions of the Alternative Routes

VDHR Survey #	Title	Author	Date
CS-019	Phase I Cultural Resource Survey of the Proposed Build Alternatives for the Southeastern Expressway in the Cities of Chesapeake and Virginia Beach, Virginia	Traver, Jerome D., and Maryanna Ralph	1989
CS-034	Phase I Archaeological Survey of Approximately 2,000 Acres at Naval Air Station Oceana, Virginia Beach, Virginia and Naval Auxiliary Landing Field Fentress, Chesapeake City, Virginia	Hornum, Michael B, Patrick Giglio, and William T. Dod	1994
CS-044	Additional Phase I Cultural Resource Survey of Revised Alignments for Proposed Southeastern Expressway, Cities of Chesapeake and Virginia Beach, Virginia	Higgins, Thomas F. III, Anne S. Beckett, and Veronica Deitrick	1994
CS-078	Archaeological Survey, Proposed Southeastern Parkway and Greenbelt, Cities of Chesapeake and Virginia Beach, Virginia	Baicy, Daniel, Loretta Lautzenheiser, and Michael Scholl	2005
CS-137	Phase I Cultural Resource Survey of the ±233-Hectare (±576-Acre) Bedford Solar Project Area, City of Chesapeake, Virginia	Smith, Hope	2018
VB-015	An Archaeological Survey of the Virginia National Guard Camp Pendleton Training Camp Site, City of Virginia Beach, Virginia	Robison, Neil, and Ernie Seckinger	1987
VB-017	A Phase I Archaeological Reconnaissance Survey of the Proposed Improvements to the Entrance to Oceana Naval Air Station, Virginia Beach, Virginia	Wittkofski, J. Mark	1980
VB-025	Review and Compliance Phase I Reconnaissance Summary: North Landing River Bridge Replacement	Bott, Keith	1980
VB-035	An Archeological Survey of the Naval Amphibious Base Annex, Camp Pendleton, Virginia Beach, Virginia	Robison, Neil, and Ernie Seckinger	1987
VB-037	Phase I Cultural Resource Survey Along Proposed Improvements to Oceana Boulevard in Virginia Beach, Virginia	Egghart, Christopher, and Luke Boyd	1991
VB-038	Phase I Archaeological Survey of a Proposed U. S. Navy Construction Project at Owl Creek in Virginia Beach, Virginia	Bussey, Stanley B., and Jerome D. Traver	1992
VB-047	Phase I Cultural Resource Survey, Birdneck Road, City of Virginia Beach, Virginia	Busby, Virginia, and Leslie Bashman	1993
VB-064	Phase I Archaeological Identification Survey in Support of 1995 Base Realignment and Closure, Naval Air Station Oceana, Virginia Beach, Virginia	Shmookler, Leonid I.	1996

VDHR Survey #	Title	Author	Date
VB-066	An Addendum to Phase I Cultural Resource Study of Proposed Improvements to Oceana Boulevard and First Colonial Road in Virginia Beach, Virginia	Hodges, Mary Ellen N., and Margaret Long Stephenson	1997
VB-069	Phase I Archaeological Survey of Proposed Landstown-West Landing, 230 KV Transmission Line, Virginia Beach, Virginia	Stuck, Kenneth E., and Thomas F. Higgins III	1997
VB-079	Archaeological Survey along a Portion of Holland Road (Route 410), the City of Virginia Beach, Virginia	Clarke, Robert, and Bradley Bowden	2000
VB-082	Archaeological Identification Survey, Princess Anne Road and Ferrell Parkway, City of Virginia Beach, Virginia	Brady, Ellen M., and Loretta Lautzenheiser	2000
VB-087	Phase I Archeological Survey of Approximately 583 Acres at Naval Air Station Oceana, Virginia Beach, Virginia	Madsen, Andrew D., Michael B. Hornum, Steven A. Mallory, and W. Patrick Giglio	1996
VB-088	Archaeological Survey of Route 165 (Princess Anne Road) Between Dam Neck Road and Judicial Boulevard, Virginia Beach, Virginia: Management Summary	Tippett, Lee	2002
VB-091	Phase I Archaeological Identification Survey in Support of 1995 Base Closure and Realignment, Naval Air Station Oceana, Virginia Beach, Virginia	Shmookler, Leonid I.	1996
VB-095	Archaeological Identification Survey and Archaeological Evaluations of Nine Sites Along the Proposed Landstown-West Landing 230 KV Transmission Line, City of Virginia Beach, Virginia	McDonald, Bradley, and Maureen Meyers	2002
VB-097	Supplemental Archaeological Survey of Two Canals within the Proposed Realignment of Elbow Road, City of Virginia Beach, Virginia	Penner, Bruce R.	2003
VB-099	Phase I Archaeological Identification Survey of the Proposed Security Improvements (P-445/P-509), NAS Oceana, Virginia Beach, Virginia	Jensen, Todd L.	2003
VB-125	Phase I Archaeological Survey of the State Military Reservation, 83.81 ha (207 Acres) at Camp Pendleton, Virginia Beach, Virginia	Boyko, Wayne C. J., and Beverly A. Boyko	2008
VB-143	Phase I Archaeological Investigation of Approximately 170 Acres at Naval Air Station Oceana, Virginia Beach, Virginia	Clement, Christopher	2011
VB-145	Survey of the Architectural and Archaeological Cultural Resources at the Virginia Air National Guard Installations at the Richmond International Airport, Henrico County and the State Military Reservation, Camp Pendleton, City of Virginia Beach, Virginia	Markell, Ann, Katherine Kuranda, Katherine Grandine, and Nathan Workman	2007

VDHR Survey #	Title	Author	Date
VB-173	Phase I Cultural Resources Survey of Landstown Road Improvements, City of Virginia Beach, Virginia	Tyrer, Carol D., and Dawn M. Muir-Frost	2017
VB-174	Completion and Synthesis of Archaeological Survey, State Military Reservation Camp Pendleton, City of Virginia Beach, Virginia	Monroe, Elizabeth J., David W. Lewes, and Ellen L. Chapman	2017
VB-183	Addendum to Phase I Cultural Resources Survey of Landstown Road Improvements, City of Virginia Beach, Virginia	Tyrer, Carol D., and Dawn M. Muir-Frost	2017
VB-193	Phase I Archaeological and Architectural Reconnaissance Surveys for the North Landing Bridge Replacement, Albemarle and Chesapeake Canal/State Route 165; Cities of Chesapeake and Virginia Beach, Virginia	Goode, Charles E., Sarah G. Traum, and Cynthia V. Goode	2019

H-2.3 STAGE I PRE-APPLICATION ANALYSIS FINDINGS

H-2.3.1 Methods for Analysis

Fieldwork for the pre-application analysis was conducted by Secretary of the Interior Qualified architectural historian Mary Beth Derrick and photographer Vincent Macek between March 30 and April 7, 2021, and again on August 26, 2021. The fieldwork involved photographing 11 resources requiring visual assessment according to VDHR Guidelines and examining the potential line-of-sight views from each resource towards the proposed transmission lines. For resources where property owner approval was granted for historic resource documentation, photographs were taken towards the proposed transmission line(s) on the property at the most prominent view of the landscape. When permission was not available, the photographs were taken from public ROW.

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

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

The following camera and tripod configuration was used:

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

The following camera settings were used for all photography:

- Camera mode: Manual Priority
- ISO: 100
- Aperture: f13
- Image format: RAW

After the photos were complete, they were uploaded to a server to begin the simulation/visualization process. The single-frame photographs were opened in Adobe Photoshop CC 2021 where they were checked and any camera sensor dust spots were removed before being saved as high resolution JPEG images. If required, discrete color and tonal adjustments were made to each frame before they were saved. The single-frame photographs were stitched together in PTGui Pro version 10.0.12 professional photographic stitching software using cylindrical projection settings. These were saved at 90-degree fields of view as high resolution JPEG images. The camera locations were plotted in Resoft Windfarm version 5 and models of the proposed transmission line structures were then built using the supplied dimensions. The positions of each structure for each proposed route were then plotted in the software for use in the computer model. 2D wireline imagery was produced at the 90-degree fields of view using a cylindrical projection. Wirelines for each route and each tower combination were then exported for use as an overlay.

Detailed, correctly dimensioned 3D computer models of the proposed Project routes were generated using Autodesk 3DS Max 2021. The virtual 3D model of the structures was created using the real-world measurements and elevation drawings provided by the Company. These were textured using photorealistic image maps of the required Corten steel texture. The detailed, textured models were rendered to a digital image using a simulated physical camera and sun and sky simulation lighting model in the computer software consistent with conditions within the original viewpoint photography.

Photomontages were produced by overlaying the rendered image on the photograph, using known control points and the wireline imagery showing the tower columns at the correct height and distance. Final adjustments were then made to brightness and contrast of the rendered images to match them to the photograph. Final photomontages were prepared from each viewpoint for each route. These were then opened in Adobe Photoshop CC 2021 where minor changes were made such as placing relevant tree/building/hedge screening or telegraph wires over the proposed development renders where necessary. Finally, the final images were cropped to the proportions required for the visual simulation figures and the visualization figures were prepared in Adobe Indesign CC2021 and exported out in a PDF format.

H-2.3.2 Structure Types and Right-of-Way Widths

The photosimulations prepared according to the methods discussed above utilized specifications for the types of transmission line structures to be used along different portions of the proposed routes, the spacing and locations of those structures, and the width of new ROW that would be required in different locations. This section summarizes the ROW and transmission line structure specifications for the different types of settings along each proposed overhead route. In most settings, Dominion Energy Virginia will use three single-circuit monopole structures for the proposed CVOW Project. The new structures will be constructed of weathering steel (COR-TEN®), with average heights ranging from 115 to 120 feet depending on the particular route.[7] For each overhead route segment, tower heights would be highest at the ICW/North Landing River crossing, where the heights for structures closest to the

[7] Tower heights range from 75 feet to 170 feet for HF Routes 1 and 4 and the Hybrid Route; 75 feet to 155 feet for Routes 2 and 3; and 75 feet to 150 feet for Route 5.

waterbody would be 145 feet for HF Routes 2 and 3, 150 feet for Route 5, and 170 feet for Routes 1 and 4 and the Hybrid Route.

H-2.3.2.1 Greenfield Areas

The typical construction and operational ROW in greenfield segments of the overhead routes will measure 140 feet wide (Attachment 4, Figure 1).

H-2.3.2.2 Collocation with TL-2118/147

Where route segments are collocated with the existing TL-2118/147 transmission line, the existing ROW will be expanded from 120 feet to 225 feet in width (i.e., by an additional 105 feet) to accommodate the three single-circuit structures required for the Project (Attachment 4, Figure 2). The CVOW construction corridor will measure 140 feet wide, including 35 feet of overlap with the existing ROW.

H-2.3.2.3 Collocation with TL-2085

Where route segments are collocated with the existing TL-2085 transmission line, the existing ROW will be expanded from 120 feet to 210 feet in width (i.e., by an additional 90 feet) to accommodate the three single-circuit structures required for the Project (Attachment 4, Figure 3). The CVOW construction corridor will measure 140 feet wide, including 50 feet of overlap with the existing ROW.

H-2.3.2.4 Wreck and Rebuild TL-271

Route segments adjacent to TL-271 will require a wreck-and-rebuild of the existing TL-271 double-circuit structures and construction of two additional single-circuit structures for a total of three structures. One structure will be double-circuit to carry TL-271 and one of the new CVOW circuits. The other two structures will each carry one CVOW circuit. The existing TL-271 corridor is 120 feet wide. In most places an additional 40 feet of new right-of-way will be needed for a total right-of-way width of 160 feet (Attachment 4, Figure 4). The additional 40 feet will generally be on the west side of the existing right-of-way where two new single circuit monopole structures will be utilized in addition to the rebuilt double circuit monopole structures for Line TL-271. There are exceptions to this configuration:

i. In Virginia Beach where the existing right-of-way crosses: (1) the Highland Acres and Highland Meadows subdivisions, and (2) the Dewberry Farms, Indian River Woods, and Indian River Farms subdivisions. In these two places, the right-of-way will be limited to the existing 120-foot width due to adjacent residential development that precludes expansion of the Line TL-271 right-of-way. The existing double circuit lattice structures will be wrecked and replaced with double circuit monopole structures to carry Line TL-271 and one Overhead Transmission Circuit, and new double circuit monopole structures will be installed to carry two Overhead Transmission Circuits (Attachment 4, Figure 5).

ii. In Chesapeake where the existing right-of-way crosses: (1) Mount Pleasant Road, a non-typical structure configuration will be used along a 0.3-mile-long segment within the existing 120-foot right-of-way to avoid impacts on a home; and (2) Bedford Solar Center, the additional 40 feet of new right-of-way will be on the east side of the existing right-of-way for an approximately 0.4-mile-long segment in the area immediately north of the existing Pocaty Substation (from the existing 120-foot-wide right-of-way to an expanded 160-foot right-of-way).

During construction, CVOW will use the entire width of the existing ROW (120 feet) plus the additional 40 feet of new ROW.

H-2.3.2.5 Wreck and Rebuild TL-2240

Route segments adjacent to TL-2240 will require a wreck-and-rebuild of the existing TL-2240 double-circuit structures and construction of two additional single-circuit structures for a total of three structures. One structure will be double-circuit to carry TL-2240 and one of the new CVOW circuits. The other two structures will each carry one CVOW circuit. The existing TL-2240 corridor is 120 feet wide. An additional 40 feet will be needed for the Project, for a total ROW width of 160 feet (see Attachment 4, Figure 4 TL 271 for example). During construction, CVOW will use the entire width of the existing ROW (120 feet) plus the additional 40 feet of new ROW.

H-2.3.3 Assessment of Potential Impacts

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

None - Project is not visible from the resource. No impact corresponds to no effect under the Section 106 review process.

Minimal - Viewsheds have existing transmission lines, there would be only a minor change in height, and/or other views are partially obscured by topography or vegetation. A minimal impact corresponds to no adverse effect under the Section 106 review process.

Moderate - Viewsheds have more expansive views of the transmission line, more dramatic changes in height are proposed, and/or the overall visibility of the Project would be greater. A moderate impact corresponds to an adverse effect under the Section 106 review process.

Severe - Existing viewshed contains no transmission line, the view to the Project would be relatively unobstructed, the new transmission line would introduce a significant change to the setting of historic properties, and/or a dramatic change in the height of an existing transmission line would take place in close proximity to historic properties. A severe impact corresponds to an adverse effect under the Section 106 review process.

H-2.3.4 Historic Resource Descriptions

H-2.3.4.1 131-0044/131-5333-0002, Albemarle & Chesapeake Canal

The Albemarle & Chesapeake Canal is a contributing resource to the NRHP-listed Albemarle & Chesapeake Canal Historic District (Attachment 5, Figure 1). In addition, the VDHR determined the canal to be individually eligible for listing in the NRHP in 1990. The portion recorded as 131-0044 is the 9-mile-long Virginia cut, which links the North Landing River on its eastern end with the Southern Branch of the Elizabeth River on its western end. The only lock in the system is located at Great Bridge on the western end of the cut, along with associated maintenance facilities. The water route connects Albemarle Sound with Norfolk, Virginia and the Chesapeake Bay. It was constructed in the 1850s and widened from 80 feet to 90 feet in the 1910s by the U.S. Army Corps of Engineers. It has been dredged several times since then and is still in use. The setting of the canal varies from urban at the western end to rural at the eastern end.

The boundaries of the resource are defined on the east by Bridge #1826 (131-5333-0020) over North Landing River on Mt. Pleasant Road, on the west by Great Bridge Locks (131-5333-0001), and on the north and south by the banks of the existing canal, which does not have a towpath. In addition to the bridge on Mt. Pleasant Road, the canal is crossed by two other historic bridges: Bridge #8003 on Centerville Turnpike (131-5333-0017), and the Norfolk Southern Railroad Bridge (131-5333-0016). The

portion of the canal that could be impacted by proposed Project alternatives is the eastern approximate 5.3 miles, which includes the Mt. Pleasant Road and Centerville Turnpike bridges.

The Albemarle & Chesapeake Canal is a well-preserved example of a nineteenth-century coastal canal. It has been determined eligible for the NRHP at the state level in the areas of Technology/Engineering and Transportation/Communication under Criterion A for its association with events that contribute to the broad patterns of history. It lies within the study area for HF Routes 1 through 5 and the Hybrid Route.

H-2.3.4.2 131-5071, Centreville-Fentress Historic District

The Centreville-Fentress Historic District encompasses 257 acres around the village of Centreville, which developed in the 1880s around a stop on the Norfolk and Elizabeth City Railroad (later the Norfolk Southern Railroad). The town also had a connection to the nearby Albemarle & Chesapeake Canal, constructed in the 1850s. The district includes 24 contributing and 33 non-contributing properties (Attachment 5, Figure 2). The village declined as the railroad faded in importance in the second quarter of the twentieth century. The Centreville-Fentress Historic District is a well-preserved example of a rural farming community with a small commercial core that developed in the nineteenth century due to transportation improvements and declined as railroads and agriculture became less prominent elements of the economy of the eastern seaboard.

The district is bounded roughly on the north by Blue Ridge Road, on the east by farmland, on the south by Whittamore Road, and on the west by the Norfolk and Southern Railroad. The contributing residences in the district are primarily late nineteenth century farmhouses that exhibit Colonial Revival, Queen Anne, and Craftsman influences within their vernacular forms. The brick New Burfoot House, built in 1925, is the only brick residence from the period of significance. The Centerville Baptist Church, also constructed in 1925, is a prominent brick structure that is a focal point of the district. A frame store is the only contributing commercial building in the district. The Centreville-Fentress Historic District meets Criterion C for its association with community planning and development and Criterion A for its association with transportation during the period of significance from 1871 to 1940. The district was listed in the NRHP and Virginia Landmarks Register (VLR) in 2003. The Centreville-Fentress Historic District lies within the study area for HF Routes 1 through 5 and the Hybrid Route.

H-2.3.4.3 131-5333, Albemarle & Chesapeake Canal Historic District

The Albemarle & Chesapeake Canal Historic District encompasses 1,704 acres along the 9-mile-long, 90-foot-wide canal between Great Bridge on the west and North Landing Bridge on the east (Attachment 5, Figure 3). The district is comprised of three contributing structures, eight contributing buildings, and a previously NRHP-listed contributing site. The contributing structures include the Virginia Cut of the canal, completed in 1859 and widened in the 1910s; the Great Bridge Canal Lock, which replaced the old lock in 1932; and the North Landing Bridge. The eight contributing buildings are all part of the Great Bridge Corps of Engineers Reservation constructed in the 1930s and 1940s as maintenance facilities for the canal. The Battle of Great Bridge site is a previously-listed NRHP property that is also a contributing resource to the Albemarle & Chesapeake Canal Historic District. The setting of the canal varies from the heavily developed Great Bridge community at the western end to large areas of swampland and undeveloped deciduous forests along the eastern half of the canal. The canal has been dredged several times since it was widened to 90 feet and it is still in use.

The boundaries of the district are defined by the Great Bridge Locks on the west, the North Landing River Bridge on the east, and an approximately 100-foot border on either side of the canal on the north and south, which represents the property acquired by the Albemarle and Chesapeake Canal Company in 1855 to construct the canal. The portion of the canal within the study area is the eastern approximately

5.3 miles of the canal, which includes the contributing North Landing River Bridge. The other contributing resources are outside of the study area to the west.

The Albemarle & Chesapeake Canal Historic District is a well-preserved example of a nineteenth-century coastal canal and its associated features. It was listed in the VLR in 2002 and the NRHP in 2004. It is significant at a state level under Criterion A as a property that is associated with events that have contributed to the broad patterns of history in the areas of Transportation, Engineering, and Military for the period of 1775–1953. It lies within the study area for HF Routes 1 through 5 and the Hybrid Route.

H-2.3.4.4 134-0003/134-5027-0004, James Bell House

The James Bell House, also known as Cedar Grove, is located at 805 Oceana Boulevard in the City of Virginia Beach (Attachment 5, Figure 4). It is part of the Oceana Naval Air Station Historic District and is accessed via an approximately 950-foot driveway flanked by cedar trees that lead to a manicured lot.

134-0003/134-5027-0004 includes a dwelling and garage. The dwelling is a circa 1810, two-story, Federal style structure clad in common bond brick and featuring a side-gabled metal roof with side parapets. The five-bay dwelling has paired interior-end brick chimneys on the north and south elevations and features six-over-six double-hung wood sash windows. The windows are flanked by wooden shutters. The entrance is located on the east elevation through a six-panel wooden door and a vinyl storm door with four-paned sidelights and a three-paned transom. The entrance is accessed via a flat-roofed portico with a brick foundation, and concrete floor. The portico features a pair of Doric pilasters and Doric columns. The dwelling features three additions, including two on the west elevation, and one on the south elevation.

In addition to the dwelling, the James Bell House also includes a circa 1940 garage with a front-gabled, rolled asphalt roof, vinyl siding, and a concrete foundation. It features six-over-six windows and is accessed via a vinyl personnel door on its east elevation. A two-door garage door is located on its north elevation. Both the dwelling and garage are in good condition. The James Bell House was determined eligible for listing on the NRHP in 2011 and is a contributing property to the Oceana Naval Air Station Historic District, which was determined ineligible for listing on the NRHP in 2017. It lies within the study area for the CLH Route.

H-2.3.4.5 134-0038, Jonathan Woodhouse House/William Woodhouse House

The Jonathan Woodhouse House, also known as the William Woodhouse House, is located at 2380 London Bridge Road in the City of Virginia Beach (Attachment 5, Figure 5). The dwelling is located at the end of a private road, approximately 680 feet from the public ROW. The resource is surrounded by modern residential dwellings and a commercial complex. Due to lack of access, ERM architectural historians took photos from the public ROW.

According to aerial views, 134-0038 includes a dwelling and two outbuildings (GoogleEarthPro 2021). According to the V-CRIS form, the Georgian dwelling was built in circa 1760 and was heavily altered in 1981 after a fire destroyed the roof and interior. The dwelling has a rolled asphalt gambrel roof, and Flemish bond brick cladding. The dwelling features two interior-end brick chimneys and shed roof dormers on the upper level with six-over-six windows. According to aerial views, the dwelling also includes a shed-roof addition on its southeast elevation, and a side-gabled addition on its northeast elevation. No other details could be seen from the public ROW.

The two outbuildings seen on aerial views include a gabled structure, and a shed-roofed structure with a lean-to addition. All the structures associated with 134-0038 appear to be in good condition. Although it has been determined not eligible for the NRHP by VDHR staff, Jonathan Woodhouse House is listed in

the Virginia Beach Historical Register, and is thus deemed locally significant for purposes of this report. It lies within the study area for HF Routes 1 through 5 and the Hybrid Route.

H-2.3.4.6 134-0072, Thomas Lovett House/Rollingswood Academy

The Thomas Lovett House, also known as the Lancaster Lovett House, is located at 1752 Prodan Lane in the City of Virginia Beach and currently operates as the Rollingwood Academy, a daycare facility (Attachment 5, Figure 6). [Note that Rollingwood Academy is the correct spelling; Rollingswood is retained in the resource name to match what currently appears in V-CRIS.] A modern residential development surrounds the Thomas Lovett House, and a thick group of trees border the northern, eastern, and western edges of the parcel.

The former dwelling is a circa 1772 Georgian structure with a gambrel roof sheathed in square-butt wood shingles, replacement vinyl siding, and a continuous brick foundation. The Thomas Lovett House features five shed-roofed dormers on its southwest elevation with nine-over-six replacement vinyl windows. The remainder of the windows in the former dwelling feature the same configuration as the dormer windows. The northwest and southeast elevations feature exterior-end brick chimneys. The primary entrance is centered on the southwest elevation through a replacement vinyl door with two lower panels and one upper light with a nine-paned applied muntin. The entrance is accessed via a set of semi-circular brick steps that lead to a small brick stoop. The Thomas Lovett House also features a modern gambrel-roofed addition on the northeast elevation built in 1999, and a modern shed-roof addition on the southeast elevation (City of Virginia Beach Real Estate Assessor's Office 2021).

Aerial views also show a circa 1990 shed to the north of the dwelling. Both the dwelling and shed appear to be in good condition. Although it has been determined not eligible for the NRHP by VDHR staff, it is listed on the City of Virginia Beach Historic and Cultural Overlay Districts, and is thus deemed locally significant for purposes of this report. It lies within the study area for HF Routes 1 through 5 and the Hybrid Route.

H-2.3.4.7 134-0413, Camp Pendleton/State Military Reservation Historic District

The Camp Pendleton/SMR Historic District occupies 343 acres on the Atlantic Ocean in the City of Virginia Beach (Attachment 5, Figure 7). The facility was established in 1911 as the State Rifle Range, and has served as a training facility for the Virginia National Guard, as well as for the U.S. Navy during World War I, and the U.S. Army during World War II and at other times since then. The historic district includes 130 contributing resources, consisting of 113 buildings, eight structures, eight sites, and one object. The buildings are primarily utilitarian-type military buildings, including barracks, mess halls, classroom buildings, administration buildings, and maintenance and storage facilities, but they also include residential cottages, a firehouse, a chapel, an officers' club, an armory, and a service station. Contributing structures include building foundations, loading docks, an observation deck, a water tower, and the road network. Six of the eight contributing sites are historic landscapes that include the parade ground, camp area, drill field, two rifle ranges, and the beachfront. The district is surrounded by modern development, but within the boundaries of the camp, the setting is mostly open grassy lawns and training areas, with areas of park-like woods, a lake, and ordered, modest buildings arranged by function. The Camp Pendleton SMR Historic District represents a well-preserved example of a twentieth century military training facility that includes a large number of historical buildings, structures, and landscapes.

The boundaries of the district consist of the Croatan residential neighborhood to the north, the Atlantic Ocean to the east, Birdneck Avenue to the south, and General Booth Boulevard to the west. The majority of the buildings in the district date to the period of expansion during World War II. They were constructed in the style of temporary military structures, but have continued to serve the needs of the Virginia National Guard and its tenants. A handful of buildings from the original State Rifle Range remain, along with those

from the period between the world wars. The majority of the buildings in the district are of frame construction and reflect function over form.

The Camp Pendleton/SMR Historic District meets Criterion A of the NRHP as a well-preserved twentieth century military training facility that adapted to the needs of state and federal defense needs. It is also meets Criterion C for its representative examples of twentieth century military architectural styles from different periods of the early twentieth century. The district was originally listed in the VLR in 2004 and the NRHP in 2005. Additional documentation was conducted in 2013. The updated registration form added a number of contributing resources and defined six contributing historical landscapes. The historic district lies within the study area for the CLH Route.

H-2.3.4.8 134-0413-0110, Building 1 - Camp Pendleton/State Military Reservation Historic District

Building 1 is located on the Camp Pendleton State Military Reservation at Warehouse Road (Attachment 5, Figure 8). It is a non-contributing resource to the NRHP-listed Camp Pendleton/State Military Historic District. However, the structure itself was individually listed on the NRHP in 2012.

134-0413-0110 is a one-story storage structure with a front-gabled metal roof, ribbed metal siding, and a poured concrete foundation built in 1988. The south elevation features a metal garage door and a metal personnel door. A light is centered above the metal garage door and a chain-link fence is located on the east and west elevations.

The VDHR form presents Building 1 as a NRHP-listed property (Malvasi 2012). However, the building is not of age, and does not appear to be individually listed on the NRHP website's associated update to the district's nomination form (Malvasi 2013). Because it is recorded in V-CRIS as NRHP listed and appeared in the background research, ERM has included the building as a considered resource for the purposes of this report. 134-0413-0110 lies within the study area for the CLH Route.

H-2.3.4.9 134-0702, St. John's Baptist Church

St. John's Baptist Church is located at 2300 Holland Road in Virginia Beach (Attachment 5, Figure 9). The church complex is situated between two residential developments to the east and west. A thick tree line borders the northern and eastern edges of the parcel.

134-0702 includes a circa 1880 church and multiple interconnecting structures, including an additional chapel, built to the west of the original chapel. The original chapel is a front-gabled structure with a rolled asphalt roof, clapboard siding, and a continuous brick foundation. Its northern elevation features a central entry tower with a steeple. The windows on the original block's north elevation are four-over-four lancet windows, while the east and west elevations feature four-over-four lancet windows that are arranged in a series of three-unit groupings, separated by mullions. The primary entrance is located on the entry tower's east elevation through a set of wooden double doors with four lower panels and two upper lights. A triangular broken pediment is located above the door. The original church features two pre-1960 wings and a rear addition. According to aerial views, the original church was moved from its original location by the road, to its current location between 2009 and 2011, when the new church was built in its place (NETROnline 2021). Prior to its move, a circa 1970, secondary structure was built, which features a front-gabled roof and brick siding. As of now, a covered walkway connects the original church's west elevation to the secondary structure. Another covered walkway connects the secondary structure's northern elevation to the new church. The church is in good condition.

Although it has not been evaluated for the NRHP by VDHR staff, the site is listed in the Virginia Beach Historical Register (City of Virginia Beach 2017c), and is thus deemed locally significant for purposes of this report. It lies within the study area for HF Routes 1 through 5 and the Hybrid Route.

H-2.3.4.10 134-0917, Winford White House

The Winford White House is located at 829 South Birdneck Road in the City of Virginia Beach (Attachment 5, Figure 10). It is situated in a densely forested area with other mid-twentieth century dwellings. Two public elementary schools are located to the east.

134-0917 includes a dwelling and a garage. The dwelling is a circa 1950 vernacular structure with a modern gabled-ell addition. The dwelling's original block has a front-gabled, ribbed metal roof. The foundation has been covered in wood skirting. The northeast elevation has replacement vinyl siding, while the rest of the dwelling features wavy-edge asbestos siding. The dwelling features one-over-one vinyl windows arranged in single and twin configurations, as well as a one-paned picture window. The entrance does not appear to be original, but is currently located on the southeast elevation through a vinyl door with two lower panels and one upper light, as well as a vinyl storm door. It is accessed via a modern wooden deck. According to historic aerial imagery, the side-gabled addition was built between 1970 and 1982 (NETROnline 2021). The addition has a ribbed metal roof, wavy-edge asbestos siding, and a concrete masonry unit foundation. It also features a brick chimney.

134-0917 also includes a circa 1950 garage with a front-gabled roof and replacement channel rustic siding. It is accessed via a pair of hinged, wooden garage doors on the northeast elevation. The dwelling and garage are in good condition. The Winford White House was determined eligible for the NRHP in 2011. It lies within the study area for the CLH Route.

H-2.3.5 Historic Resource Findings for Cable Landing to Harpers Route

The impacts to each resource in the CLH Route study area are discussed and illustrated below.

H-2.3.5.1 134-0003/134-5027-0004, James Bell House

The underground transmission line associated with CLH Route would run north to south across the street from the James Bell House boundary (Attachment 6, Figure 1). Because it is so close to the ROW, ERM has included it in the ROW tier to account for any potential mapping errors. The proposed route does not intersect the property boundary, but would be located directly east, across a divided highway. CLH Route is underground, therefore the only impact on the resource would be a minor change to its viewshed from a slight tree cut across the street from the property (Attachment 6, Figures 2 through 5). Because the route would create only a minor change to the setting of the resource as a result of the tree cut, there would be a **Minimal Impact (no adverse effect)** to the property from the proposed route.

H-2.3.5.2 134-0413, Camp Pendleton/State Military Reservation Historic District

The underground transmission line associated with CLH Route would run east to west, through the entire district, for 0.92 miles (Attachment 6, Figure 6). 134-0413's eastern portion would not be impacted by the underground route because the circuits in this area would be installed by horizontal directional drill (HDD), a trenchless installation method, and the HDD operation would not require the removal of any existing vegetation. The area around Lake Christine would be bored and no tree cut would occur, as shown through SP 5 and SP10 (Attachment 6, Figures 7 through 10). However, the proposed route would remove trees and vegetation near the western edge of the district, to the north of the main entrance. In addition to the tree cut, this route would also result in the demolition of two contributing structures to the

district, Building 410 and Building 59, as shown in SP25 and SP26 (Attachment 6, Figures 11 through 14).[8]

Building 410 is a fire house constructed between 1940 and 1942. Building 59 is a mess hall constructed in 1934, during the period in which the State Rifle Range was expanded between the world wars; it is one of nine nearly identical buildings. Building 410 is a unique structure, constructed for a specific purpose during the World War II expansion of the base. The loss of this building would have a greater impact on the overall integrity of the district, since it represents a specific activity that took place at the facility. While the vegetation is part of the district's historic landscape, it is not as integral to the resource's historic setting and feeling as the built environment. In addition to effects to those buildings, the Project will entail use of workspace near the ruins of the YMCA that once was on the base of Headquarters Road. The ruins, recorded as archaeological site 44VB0388, are of interest to SMR resource managers as a potential historic resource. Project plans call for avoidance of the ruins with a buffer of at least 10 feet, and while tree clearing within the workspace will alter the current viewshed of the YMC ruins, those woodlands are not integral to the site's historical significance. Furthermore the HDD or direct pipe work in the proposed workspace at the Rifle Range will be restored to pre-construction activities. However, because the destruction of the two contributing structures, Buildings 410 and 59, would be permanent, ERM recommends that CLH Route would have a **Severe Impact (adverse effect)** on the historic district.

H-2.3.5.3 134-0413-0110, Building 1 - Camp Pendleton/State Military Reservation Historic District

As stated previously, the underground transmission line for the CLH Route would run east to west, through the entire Camp Pendleton SMR Historic District. Building 1 within the district is located approximately 0.28 mile to the northwest of the proposed route (Attachment 6, Figure 15). The structure would have no view to CLH Route and would not have a view of any vegetation removal along the ROW because of intervening buildings and vegetation (Attachment 6, Figures 16 and 17). Because the view of the Project from Building 1 is entirely screened, there would be **No Impact (no effect)** from the CLH Route.

H-2.3.5.4 134-0917, Winford White House

The underground transmission line for the CLH Route is located 0.44 mile to the north of 134-0917 (Attachment 6, Figure 18). There would be no view to CLH Route from any vantage point at the Winford White House, nor would any tree or vegetative cut be visible because of intervening buildings and vegetation (Attachment 6, Figures 19 and 20). Because the view would be entirely screened, there would be **No Impact (no effect)** from CLH Route on 134-0917.

8 The Company worked closely with staff from SMR through regular meetings and weekly calls to identify a route that minimizes impacts on military training/readiness, natural and cultural resources, and future development plans at the base. SMR staff prefer a route requiring the demolition of Buildings 410 and 59 to preserve other elements of the historic district, including trees considered as contributing elements to the property. Additionally, the route in the vicinity of Buildings 410 and 59 was designed to overlap with portions of two potential future developments at the base which would be compatible with an underground transmission line.

H-2.3.6 Historic Resource Findings for Harpers to Fentress Route 1

The impacts to each resource in the HF Route 1 study area are discussed and illustrated below.

H-2.3.6.1 131-0044/131-5333-0002, Albemarle & Chesapeake Canal

A 390-foot segment of HF Route 1 intersects the Albemarle & Chesapeake Canal. This overhead route segment is located along a section of the existing Landstown-Pocaty transmission line (TL-271), near where it intersects Mt. Pleasant Road (Attachment 6, Figure 21). The recorded boundary for the resource consists of the 9-mile-long Virginia cut, which links the North Landing River on its eastern end with the Southern Branch of the Elizabeth River on its western end; the Project would affect only a small portion of the overall resource.

HF Route 1 would include a wreck-and-rebuild of the existing double-circuit line structures as well as the construction of two additional single circuit structures, for a total of three new structures. The existing structures adjacent to the canal have heights ranging from 180 to 185 feet; the replacement and new structures immediately adjacent to the canal would have heights of 170 feet. While the Landstown-Pocaty transmission line ROW is currently 120 feet, construction of the new structures required for the HF Route 1 route would expand the ROW in most places by 40 more feet, for a total ROW width of 160 feet. This expansion would include an additional tree cut on either side of the existing line.

Although the proposed structures are shorter than the existing structures, the addition of two more structures would add more modern elements to the historic canal in this area. The photo simulation (SP19) was taken from the closest public ROW on the canal towards HF Route 1 (Attachment 6, Figures 22 and 23). Because the resource is a canal, no other public access points were available at the time of survey. The proposed route is not visible from this viewpoint (SP19), but would be visible from boats within the canal, near the proposed route's intersection with the canal, north of Mt. Pleasant Road. However, views from the canal are not widely accessible, and only visitors traveling the canal near the intersection of the canal and HF Route 1 would be able to see the Project. The proposed structures would be set back from the canal, and would only be seen when in close proximity due to dense tree coverage on either side of the route. The lines that travel between the structures would be visible from farther down the canal, but given the existing lines, the Project would not constitute a change in this aspect of the viewshed.

In summary, the views of the Project in the vicinity of the Albemarle & Chesapeake Canal would be noticeable from the canal due to the vegetation cut and the construction of additional structures, which would make the Project more visible than the existing transmission line that already intersects the resource. But, because of the presence of the existing transmission line and how the majority of views are obscured by vegetation, ERM recommends that there would be a **Minimal Impact (no adverse effect)** to this resource from HF Route 1.

H-2.3.6.2 131-5071, Centreville-Fentress Historic District

The Centreville-Fentress Historic District is located approximately 174 feet to the west of HF Route 1 at its closest point. The overhead route is located along a section of the existing Landstown-Pocaty transmission line (TL-271) and the Fentress-Pocaty line (TL-2240) (Attachment 6, Figure 24). Here, HF Route 1 would include a wreck-and-rebuild of the existing line structures, as well as the construction of two additional structures, for a total of three new structures. The existing ROW for the Landstown-Pocaty and Fentress to Pocaty transmission lines is currently 120 feet, and HF Route 1 would expand the existing ROW 40 feet in most places, for a total ROW of 160 feet. A one-mile segment of the route to the north of the Battlefield Golf Course would expand the ROW on the east side of the existing route, while

the area to the east of the golf course would expand to the west, and the area to the south of the golf course would expand to the north.

The views of the proposed Project from the historic district are relatively minor, and would scarcely change if HF Route 1 were constructed. Specifically, the views from SP15 are minimal because the existing transmission line heights are between 120 and 145 feet and the proposed structures would be between 130 and 135 feet. The difference between the two lines is negligible (Attachment 6, Figures 25 through 28). At SP17 (the viewpoint closest to HF Route 1), the proposed route would minimally change the view because the construction of the two additional structures moves the ROW closer to the historic district (Attachment 6, Figures 29 and 30). SP18, like SP15 shows no significant change in view (Attachment 6, Figures 31 and 32). Also visible from the historic district are the proposed upgrades to the existing Fentress Substation. The View from SP35 was selected because it is the closest public access point from which the district will have a view of the substation (Attachment 6, Figures 33 and 34). The existing infrastructure is already visible from this point, and while the proposed Project is more visible in terms of height, the existing tree-line masks the structures to a degree, and will continue to grow, thereby minimizing the effects over time.

For these reasons although the proposed Project can be seen from multiple points within the historic district, few views would be significantly altered because of the presence of the existing line and substation. Therefore, ERM recommends that there would be a **Minimal Impact (no adverse effect)** to the Centreville-Fentress Historic District from HF Route 1.

H-2.3.6.3 131-5333, Albemarle & Chesapeake Canal Historic District

HF Route 1 intersects a 0.43-mile segment of the Albemarle & Chesapeake Canal Historic District. This overhead route segment is located along a section of the existing Landstown-Pocaty transmission line (TL-271) (Attachment 6, Figure 35). Here, HF Route 1 would include a wreck-and-rebuild of the existing double circuit structures as well as the construction of two additional structures. The existing structures closest to the canal have heights of 180 to 185 feet; the new structures closest to the canal would have heights of 170 feet. While the Landstown-Pocaty transmission line ROW is currently 120 feet, the construction of the replacement and additional structures for HF Route 1 would expand the ROW 40 more feet in most areas, for a total ROW width of 160 feet. This expansion would include an additional tree cut on the west side of the existing line.

Although the proposed structures are shorter than the existing structures, the addition of two more structures would add more modern elements to the historic canal district in this area. In addition, whereas there are only two existing transmission line structures currently in the district, the proposed route would have four groupings of three structures. The photo simulation (SP19) was taken from the closest public ROW on the canal towards HF Route 1 (Attachment 6, Figures 36 and 37). Because the resource is a canal, no other public access points were available at the time of survey. The proposed route is not visible from this viewpoint (SP19), but would be visible from boats within the canal, near the proposed route's intersection of the canal, north of Mt. Pleasant Road. However, views from the canal are not widely accessible, and only visitors traveling the canal near the intersection of the canal and HF Route 1 would be able to see the proposed route. The proposed structures are located on either side of the canal in the district, but would only be seen when in close proximity due to dense tree coverage on either side of the route. The lines that travel between the structures would be visible from farther down the canal, but given the existing lines, the Project would constitute a minor change in the view.

In summary, the views of the Project in the vicinity of the Albemarle & Chesapeake Canal Historic District would be noticeable from the canal due to the vegetation cut and the construction of additional structures, which would make the Project more visible than the existing transmission line that already intersects the resource. But, because of the existing transmission line and how the majority of views are obscured by

vegetation, ERM recommends that there would be a **Minimal Impact (no adverse effect)** to this resource from HF Route 1.

H-2.3.6.4 134-0038, Jonathan Woodhouse House/William Woodhouse House

The Jonathan Woodhouse House is located approximately 0.45 mile to the southeast of the proposed HF Route 1, an overhead route (Attachment 6, Figure 38). The segment of the proposed route closest to the resource would be greenfield and require new ROW. However, due to intervening vegetation and residential subdivisions, 134-0038 would have no view to the proposed route (Attachment 6, Figures 39 through 42). Because the view from the Jonathan Woodhouse House is entirely screened, there would be **No Impact (no effect)** from HF Route 1.

H-2.3.6.5 134-0072, Thomas Lovett House/Rollingswood Academy

The Thomas Lovett House/Rollingswood Academy is located 0.34 mile to the south of the proposed HF Route 1, an overhead route that is located along a section of the existing Landstown to VA Beach transmission line (TL-2118/147) ROW (Attachment 6, Figure 43). This section of the route would be expanded 105 feet for the proposed Project. However, the resource currently has no view to the existing transmission line, which lies beyond a large forested tract (Attachment 6, Figures 44 and 45). Because the view from the resource is entirely screened, there would be **No Impact (no effect)** from HF Route 1.

H-2.3.6.6 134-0702, St. John's Baptist Church

St. John's Baptist Church is located 0.84 mile to the south of the proposed HF Route 1, an overhead route that is located along a section of the existing Landstown to Virginia Beach transmission line (TL-2118/147) ROW (Attachment 6, Figure 46). The existing ROW in this area would be expanded by 105 feet for the proposed Project. However, the resource currently has no view to the existing transmission line, which lies beyond a large forested tract and has intervening vegetation and modern subdivisions (Attachment 6, Figures 47 and 48). Because the view from the resource is entirely screened, there would be **No Impact (no effect)** from HF Route 1.

H-2.3.7 Historic Resource Findings for Harpers to Fentress Route 2

The impacts to each resource in the HF Route 2 study area are discussed and illustrated below.

H-2.3.7.1 131-0044/131-5333-0002, Albemarle & Chesapeake Canal

HF Route 2, an overhead route, runs parallel to the Albemarle & Chesapeake Canal, about 0.18 mile to the south of the canal. In addition, the route traverses an approximately 423-foot segment of the canal itself, on the eastern portion of the canal (Attachment 6, Figure 49). At the crossing, the new Project structures closest to the canal would be 145 feet tall and include three structures per group. The proposed structures would be located on either side of the canal, supporting lines that would be seen when traveling the canal. This segment of the proposed route would be greenfield and require new ROW, which would include vegetation removal. The removal of the trees and construction of the new Project structures would introduce modern elements to the portion of the canal that currently contains only the canal itself surrounded by dense vegetation.

As seen with SP19, the view of the proposed route would be scarcely visible from the bridge on Mt. Pleasant Road/North Landing Road (Attachment 6, Figures 50 and 51). But views of the canal are not widely accessible, and the only other view of the Project where it intersects the resource would be from boats traveling the canal itself. The area in which this proposed Project alternative would be visible is small in relation to extent of the resource as a whole. Also, the proposed structures are set back from the canal, and would only be seen when in close proximity due to dense tree coverings on either side of the

route. Because HF Route 2 does not follow an existing line, however, the addition of this modern element constitutes more than a minor change to the viewshed.

Although the intersected section of the canal would be small in comparison to the canal as a whole, given the visibility of the Project from the heavily used public bridge, and the fact that this Project alternative would introduce significant new elements into the viewshed, ERM recommends that HF Route 2 would have a **Moderate Impact (adverse effect)** on the Albemarle & Chesapeake Canal.

H-2.3.7.2 131-5071, Centreville-Fentress Historic District

HF Route 2 follows the same route as HF Route 1 for the section closest to the Centreville-Fentress Historic District. The Centreville-Fentress Historic District is located approximately 202 feet to the west of HF Route 2 at its closest point (Attachment 6, Figure 52). The overhead route is located along a section of the existing Landstown-Pocaty transmission line (TL-271) and the Fentress-Pocaty transmission line (TL-2240). Here, HF Route 2 would include a wreck-and-rebuild of the existing line structures, as well as the construction of two additional structures, for a total of three new structures per grouping. The existing Landstown-Pocaty and Fentress-Pocaty transmission line ROW is currently 120 feet, and HF Route 2 would expand the existing ROW 40 feet, for a total ROW of 160 feet. A one-mile segment of the route to the north of the Battlefield Golf Course would expand the ROW on the east side of the existing route, while the area to the east of the golf course would expand to the west, and the area to the south of the golf course would expand to the north.

The views from the historic district towards the proposed Project are relatively minor and would scarcely change if HF Route 2 were constructed. Specifically, the views from SP15 are minimal because the existing transmission line heights are between 120 and 145 feet and the proposed structures are between about 130 and 135 feet. The difference between the two lines is negligible (Attachment 6, Figures 53 through 56). At SP17 (the viewpoint closest to HF Route 1), the proposed route would minimally change the view because the construction of the two additional structures would move the ROW closer to the historic district (Attachment 6, Figures 57 and 58). SP18, like SP15 shows no significant change in view (Attachment 6, Figures 59 and 60). Also visible from the historic district are the proposed upgrades to the existing Fentress Substation. The View from SP35 was selected because it is the closest public access point from which the district will have a view of the substation (Attachment 6, Figures 61 and 62). The existing infrastructure is already visible from this point, and while the proposed Project is more visible in terms of height, the existing tree-line masks the structures to a degree, and will continue to grow, thereby minimizing the effects over time.

For these reasons, although the proposed Project can be seen from multiple points of the historic district, few views would be significantly altered because of the presence of the existing line. Therefore, ERM recommends that there would be a **Minimal Impact (no adverse effect)** to the Centreville-Fentress Historic District from HF Route 2.

H-2.3.7.3 131-5333, Albemarle & Chesapeake Canal Historic District

The overhead route, HF Route 2, runs parallel to the Albemarle & Chesapeake Canal Historic District, about 0.18 mile to the south of the canal. In addition, the route intersects an approximately 0.65-mile portion of the eastern side of the district (Attachment 6, Figure 63). The new structures for the Project in this area would be between about 110 and 145 feet tall (with the tallest structures nearest to the canal) and include three structures per group. The proposed structures would be located on either side of the canal and connected by lines that would be seen when traveling by boat within the canal. This section of the proposed route would be greenfield and required new ROW, which would necessitate vegetation removal. The removal of the trees and construction of the new Project structures would introduce modern

elements to a portion of the canal that currently contains only the canal itself surrounded by dense vegetation.

As seen with SP19, the view of the proposed route would be scarcely visible from the bridge on Mt. Pleasant Road/North Landing Road (Attachment 6, Figures 64 and 65). As views of the historic district are not widely accessible, the only other view of this Project alternative in relation to the district would be from boats traveling the canal, and this view would encompass a small area in relation to the overall resource. Although the proposed transmission line structures would be located in the historic district on either side of the canal, they would only be seen when in close proximity due to dense tree covering on either side of the route. However, as HF Route 2 does not follow an existing transmission line, the addition of this modern element constitutes more than a minor change to the viewshed.

In summary, although the intersected section of the historic district is small in comparison to the district as a whole, given the visibility of new infrastructure associated with the Project from the heavily used public bridge, ERM recommends that HF Route 2 would have a **Moderate Impact (adverse effect)** on the Albemarle & Chesapeake Canal Historic District.

H-2.3.7.4 134-0038, Jonathan Woodhouse House/William Woodhouse House

The Jonathan Woodhouse House is located approximately 0.45 mile to the southeast of the proposed HF Route 2, an overhead route (Attachment 6, Figure 66). The area of the proposed route closest to the resource would be greenfield and require new ROW. However, due to intervening vegetation and residential subdivisions, 134-0038 would have no view to the proposed route (Attachment 6, Figures 67 through 70). Because the view from the Jonathan Woodhouse House is entirely screened, there would be **No Impact (no effect)** from HF Route 2.

H-2.3.7.5 134-0072, Thomas Lovett House/Rollingswood Academy

The Thomas Lovett House/Rollingswood Academy is located 0.34 mile to the south of the proposed HF Route 2, an overhead route that is located along a section of the existing Landstown to Virginia Beach transmission line ROW (TL-2118/147) (Attachment 6, Figure 71). In this section of the route, the existing ROW would be expanded 105 feet for the proposed Project. However, the resource currently has no view to the existing transmission line, which lies beyond a large forested tract (Attachment 6, Figures 72 and 73). Because the view from the resource is entirely screened, there would be **No Impact (no effect)** from HF Route 2.

H-2.3.7.6 134-0702, St. John's Baptist Church

St. John's Baptist Church is located approximately 0.84 mile to the south of the proposed HF Route 2, an overhead route that is located along a section of the existing Landstown to Virginia Beach transmission line ROW (TL-2118/147) (Attachment 6, Figure 74). In this section of the route, the existing ROW would be expanded 105 feet for the proposed Project. However, the resource currently has no view to the existing transmission line, which lies beyond a large forested tract and has intervening vegetation and modern subdivisions (Attachment 6, Figures 75 and 76). Because the view from the resource is entirely screened, there would be **No Impact (no effect)** from HF Route 2.

H-2.3.8 Historic Resource Findings for Harpers to Fentress Route 3

The impacts to each resource in the HF Route 3 study area are discussed and illustrated below.

H-2.3.8.1 131-0044/131-5333-0002, Albemarle & Chesapeake Canal

HF Route 3, an overhead route, runs parallel to the Albemarle & Chesapeake Canal, about 0.18 mile to the south of the canal, following the same portion of the canal as HF Route 2. In addition, the route traverses an approximately 423-foot segment of the canal's eastern section (Attachment 6, Figure 77). The new Project structures adjacent to the canal would be 145 feet tall with three structures per group. The proposed structures would be located on either side of the canal, supporting lines that would be seen when traversing the canal. This segment of the proposed route would be greenfield and require new ROW, which would necessitate vegetation removal. The removal of the trees and construction of the new Project structures would introduce modern elements to a portion of the canal that currently contains only the canal itself surrounded by dense vegetation.

As seen with SP19, the view of the proposed route would be scarcely visible from the bridge on Mt. Pleasant Road/North Landing Road (Attachment 6, Figures 78 and 79). Views of the canal are not widely accessible, and the only other view of HF Route 3 in relation to the resource would be from boats traveling the canal. The portion of the resource that would be affected by the proposed alternative is small in relation to the resource as a whole. Also, the proposed structures are set back from the canal, and would only be seen when in close proximity due to dense tree coverings on either side of the route. However, as HF Route 3 does not follow an existing transmission line, the addition of this modern element into the resource's viewshed would constitute more than a minor change to the viewshed.

In summary, although the intersected section of the canal is small in comparison to the district as a whole, given the visibility of new infrastructure associated with the Project from the heavily used public bridge, ERM recommends that HF Route 3 would have a **Moderate Impact (adverse effect)** on the Albemarle & Chesapeake Canal.

H-2.3.8.2 131-5071, Centreville-Fentress Historic District

HF Route 3 follows the same route as HF Routes 1 and 2 for the section closest to the Centreville-Fentress Historic District. The Centreville-Fentress Historic District is located approximately 202 feet to the west of HF Route 3, at its closest point (Attachment 6, Figure 80). The overhead route is located along a section of the existing Landstown-Pocaty transmission line (TL-271) and the Fentress-Pocaty transmission line (TL-2240). Here, HF Route 3 would include a wreck-and-rebuild of the existing structures, as well as the construction of two additional structures, for a total of three new structures. The existing Landstown-Pocaty and Fentress-Pocaty transmission line's ROW is currently 120 feet, and HF Route 3 would expand the existing ROW 40 feet, for a total ROW of 160 feet. A one-mile segment of the route to the north of the Battlefield Golf Course would expand the ROW on the east side of the existing route, while the area to the east of the golf course would expand to the west, and the area to the south of the golf course would expand to the north.

The views from the historic district towards the proposed Project are relatively minor, and would scarcely change. Specifically, the views from SP15 are minimal because the existing transmission line heights are between 120 and 145 feet and the proposed structures are between about 130 and 135 feet. The difference between the two lines is negligible (Attachment 6, Figures 81 through 84). At SP17 (the viewpoint closest to HF Route 3), the proposed route would minimally change the view because the construction of the two additional structures moves the ROW closer to the historic district (Attachment 6, Figures 85 and 86). SP18, like SP15 shows no significant change in view (Attachment 6, Figures 87 and 88). Also visible from the historic district are the proposed upgrades to the existing Fentress Substation.

The View from SP35 was selected because it is the closest public access point from which the district will have a view of the substation (Attachment 6, Figures 89 and 90). The existing infrastructure is already visible from this point, and while the proposed Project is more visible in terms of height, the existing tree-line masks the structures to a degree, and will continue to grow, thereby minimizing the effects over time.

For these reasons, although the proposed Project can be seen from multiple vantage points within the historic district, few views would be significantly altered because of the existing line. Therefore, ERM recommends that there would be a **Minimal Impact (no adverse effect)** to the Centreville-Fentress Historic District from HF Route 3.

H-2.3.8.3 131-5333, Albemarle & Chesapeake Canal Historic District

HF Route 3 follows the same alignment as HF Route 2 in vicinity of 131-5333. HF Route 3 runs parallel to the Albemarle & Chesapeake Canal Historic District, about 0.18 mile to the south of the canal. In addition, the route intersects an approximately 0.61-mile portion of the eastern side of the district (Attachment 6, Figure 91). The new Project structures in this area would be between about 110 to 145 feet tall (with the tallest structures nearest to the canal) and include three structures per group. The proposed structures would be located on either side of the canal to support lines that would be seen when traveling by boat along the canal. This area of the proposed route would be greenfield and require new ROW, which would necessitate vegetation removal. The removal of the trees and construction of the new Project structures would introduce modern elements to a portion of the canal that currently contains only the canal itself surrounded by dense vegetation.

As seen in SP19, the proposed route would be scarcely visible from the bridge on Mt. Pleasant Road/North Landing Road (Attachment 6, Figures 92 and 93). As views of the historic district are not widely accessible, the only other view of 131-5333 in relation to HF Route 3 would be for visitors traveling the canal. The portion of the district subject to viewshed effects from the proposed alternative is small in relation to the resource as a whole. Although the proposed structures would be located in the historic district on either side of the canal, they would only be seen when in close proximity due to dense tree coverings on either side of the route. However, as HF Route 3 does not follow an existing transmission line, the addition of this modern element constitutes more than a minor change to the viewshed of the resource.

In summary, although the intersected section of the canal is small in comparison to the district as a whole, given the visibility of new infrastructure associated with the Project from the heavily used public bridge, ERM recommends that HF Route 3 would have a **Moderate Impact (adverse effect)** on the Albemarle & Chesapeake Canal Historic District.

H-2.3.8.4 134-0038, Jonathan Woodhouse House/William Woodhouse House

The Jonathan Woodhouse House is located approximately 0.45 mile to the southeast of the proposed HF Route 3, an overhead route (Attachment 6, Figure 94). The area of the proposed route closest to the resource would be greenfield and require new ROW. However, due to intervening vegetation and residential subdivisions, 134-0038 would have no view to the proposed route (Attachment 6, Figure 95 through 98). Because the view from The Jonathan Woodhouse House is entirely screened, there would be **No Impact (no effect)** from HF Route 3.

H-2.3.8.5 134-0072, Thomas Lovett House/Rollingswood Academy

The Thomas Lovett House/Rollingswood Academy is located 0.45 mile to the south-southeast of the proposed HF Route 3, an overhead route that is located along a section of the existing Landstown to Virginia Beach transmission line ROW (TL-2118/147) (Attachment 6, Figure 99). This section of the route

would be expanded 105 feet for the proposed Project. However, the resource currently has no view to the existing transmission line, which lies beyond a large forested tract with intervening vegetation and modern subdivisions (Attachment 6, Figure 100 and 101). Because the view from the resource is entirely screened, there would be **No Impact (no effect)** from HF Route 3.

H-2.3.8.6 134-0702, St. John's Baptist Church

St. John's Baptist Church is located approximately 0.94 mile to the south-southeast of the proposed HF Route 3 along a section of the existing Landstown to Virginia Beach transmission line ROW (TL-2118/147) (Attachment 6, Figure 102). This section of the route would be expanded 105 feet for the proposed Project. However, the resource currently has no view to the existing transmission line, which lies beyond a large forested tract and has intervening vegetation and modern subdivisions (Attachment 6, Figures 103 and 104). Because the view from the resource is entirely screened, there would be **No Impact (no effect)** from HF Route 3.

H-2.3.9 Historic Resource Findings for Harpers to Fentress Route 4

The impacts to each resource in the HF Route 4 study area are discussed and illustrated below.

H-2.3.9.1 131-0044/131-5333-0002, Albemarle & Chesapeake Canal

HF Route 4, an overhead route, runs parallel to the Albemarle & Chesapeake Canal, about 0.18 mile to the south of the canal, as it does with HF Routes 2 and 3. In addition, the route traverses an approximately 714-foot segment of the canal itself, on the eastern portion of the canal (Attachment 6, Figure 105). This area of the proposed route would be greenfield and require new ROW, which would necessitate vegetation removal and the installation of three 170 foot tall structures on either side of the canal. The removal of the trees and construction of the new Project structures would introduce modern elements to a portion of the canal that currently contains only the canal itself surrounded by dense vegetation.

This route would impact the canal more than the other proposed routes due to the route's extension to the north of the canal, which would be seen on either side of the bridge. This extension would result in the removal of more trees and vegetation than the other routes, as illustrated in SP19 (Attachment 6, Figures 106 and 107). The view towards the Project from SP19 shows that those driving north across the bridge would see HF Route 4. Drivers would also see it to the east. The proposed route is also slightly visible in the view from SP31, but not as visible as it is from SP19 (Attachment 6, Figures 108 and 109). As the existing viewshed does not contain a transmission line and the view to the Project would be relatively unobstructed, the new transmission line would introduce a significant change to the setting of the canal.

In summary, views of the Project in the vicinity of the Albemarle & Chesapeake Canal would be expansive with noticeable changes. Therefore, ERM recommends that HF Route 4 would have a **Severe Impact (adverse effect)** on the Albemarle & Chesapeake Canal.

H-2.3.9.2 131-5071, Centreville-Fentress Historic District

HF Route 4 follows the same route as HF Routes 1, 2, and 3 for the section closest to the Centreville-Fentress Historic District. The Centreville-Fentress Historic District is located approximately 202 feet to the west of HF Route 4 at its closest point (Attachment 6, Figure 110). The overhead route is located along a section of the existing Landstown-Pocaty transmission line (TL-271) and the Fentress-Pocaty transmission line (TL-2240). Here, HF Route 4 would include a wreck-and-rebuild of the existing transmission line structures, as well as the construction of two additional structures, for a total of three new structures. The existing Landstown-Pocaty and Fentress-Pocaty transmission line ROW is currently

120 feet, and HF Route 4 generally would expand the existing ROW 40 feet, for a total ROW of 160 feet. A one-mile segment of the route to the north of the Battlefield Golf Course would expand the ROW on the east side of the existing route, while the area to the east of the golf course would expand to the west, and the area to the south of the golf course would expand to the north.

The views from the historic district towards the proposed Project are relatively minor and would scarcely change. Specifically, the views from SP15 are minimal because the existing transmission line heights are between 120 and 145 feet and the proposed structures are between about 130 and 135 feet. The difference between the two lines is negligible (Attachment 6, Figures 111 through 114). The view at SP17 (the viewpoint closest to HF Route 4) would minimally change because the construction of the two additional structures moves the ROW closer to the historic district (Attachment 6, Figures 115 and 116). SP18, like SP15 shows no significant change in view (Attachment 6, Figures 117 and 118). Also visible from the historic district are the proposed upgrades to the existing Fentress Substation. The View from SP35 was selected because it is the closest public access point from which the district will have a view of the substation (Attachment 6, Figures 119 and 120). The existing infrastructure is already visible from this point, and while the proposed Project is more visible in terms of height, the existing tree-line masks the structures to a degree, and will continue to grow, thereby minimizing the effects over time.

For these reasons, although the proposed Project could be seen from multiple vantage points within the historic district, few views would be significantly altered because of the existing line. Therefore, ERM recommends that there would be a **Minimal Impact (no adverse effect)** to the Centreville-Fentress Historic District from HF Route 4.

H-2.3.9.3 131-5333, Albemarle & Chesapeake Canal Historic District

HF Route 4 runs parallel to the Albemarle & Chesapeake Canal Historic District, about 0.18 mile to the south of the canal, as it does for HF Routes 2 and 3. However, HF Route 4 intersects an approximately 0.75-mile portion of the eastern side of the district (Attachment 6, Figure 121). The new Project structures in this area would be between about 110 and 170 feet tall (with the tallest structures nearest to the canal) and include three structures per group. Although the proposed structures would be set back from the canal, the lines they would support would be seen when traveling along the canal. This area of the proposed route would be greenfield and require new ROW, which would necessitate vegetation removal. The removal of the trees and construction of the new Project structures would introduce modern elements to a portion of the district that currently contains only the canal itself surrounded by dense vegetation.

Like the canal, the historic district would be impacted more from HF Route 4 than the other routes due to the portion of the route that extends to the north of the canal, which can be seen on both sides of the bridge in SP19 and SP31 (Attachment 6, Figures 122 through 125). The view towards the Project from SP19 shows that those driving north across the bridge would see HF Route 4. Drivers would also see it to the east. The proposed route is also slightly visible in the view from SP31, but not as visible as it is from SP19. As the existing viewshed does not contain a transmission line and the view to the Project would be relatively unobstructed, the new transmission line would introduce a significant change to the setting of the historic district.

In summary, views of the Project in the vicinity of the Albemarle & Chesapeake Canal Historic District would be expansive with noticeable changes. Therefore, ERM recommends that HF Route 4 would have a **Severe Impact (adverse effect)** on the Albemarle & Chesapeake Canal Historic District.

H-2.3.9.4 134-0038, Jonathan Woodhouse House/William Woodhouse House

The Jonathan Woodhouse House is located approximately 0.45 mile to the southeast of the proposed HF Route 4 (Attachment 6, Figure 126). The area of the proposed route closest to the resource would be

greenfield and require new ROW. However, due to intervening vegetation and residential subdivisions, 134-0038 would have no view to HF Route 4 (Attachment 6, Figures 127 through 130). Because the view from the Jonathan Woodhouse House is entirely screened, there would be **No Impact (no effect)** from HF Route 4.

H-2.3.9.5 134-0072, Thomas Lovett House/Rollingswood Academy

The Thomas Lovett House/Rollingswood Academy is located 0.34 mile to the south of the proposed HF Route 4, which is located along a section of the existing Landstown to Virginia Beach transmission line ROW (TL-2118/147) (Attachment 6, Figure 131). This section of the route would be expanded 105 feet for the proposed Project. However, the resource currently has no view to the existing transmission line, which lies beyond a large forested tract (Attachment 6, Figures 132 and 133). Because the view from the resource is entirely screened, there would be **No Impact (no effect)** from HF Route 4.

H-2.3.9.6 134-0702, St. John's Baptist Church

St. John's Baptist Church is located approximately 0.84 mile to the south of the proposed HF Route 4, which is located along a section of the existing Landstown to Virginia Beach transmission line ROW (TL-2118/147) (Attachment 6, Figure 134). This section of the route would be expanded 105 feet for the proposed Project. However, the resource currently has no view to the existing transmission line, which lies beyond a large forested tract and has intervening vegetation and modern subdivisions (Attachment 6, Figures 135 and 136). Because the view from the resource is entirely screened, there would be **No Impact (no effect)** from HF Route 4.

H-2.3.10 Historic Resource Findings for Harpers to Fentress Route 5

The impacts to each resource in the HF Route 5 study area are discussed and illustrated below.

H-2.3.10.1 131-0044/131-5333-0002, Albemarle & Chesapeake Canal

HF Route 5, an overhead route, is located approximately 0.10 mile to the southeast of the Albemarle & Chesapeake Canal (Attachment 6, Figure 137). This area of the proposed route would be greenfield and require new ROW, which would necessitate vegetation removal and the installation of three 150 foot tall structures on either side of the canal. Although only the eastern views from the canal would be impacted and the proposed route does not intersect the canal, the removal of the trees and construction of the new Project structures would introduce modern elements to a portion of the canal that currently contains only the canal itself surrounded by dense vegetation. Views to the proposed route would only be seen when driving over the bridge, looking east (Attachment 6, Figures 138 through 141), or traveling by boat along the canal itself.

From the vantage point of the canal, the proposed structures would be visible, but not obtrusive, given that they would be set back from the canal and partially screened by dense tree coverings on either side of the route, which would obscure the view except in close proximity. The portion of the canal that would be subject to viewshed effects from HF Route 5 is only a tiny portion of the resource as a whole. Although the new structures would be prominently visible from the bridge, the setting of most of the resource would remain unchanged. There also is a view of the proposed route to the south, but only the lines between the proposed structures would be visible.

In summary, although the intersected section of the canal is small in comparison to the resource as a whole, given the visibility of new infrastructure associated with the Project from the heavily used public bridge, ERM recommends that HF Route would have a **Moderate Impact (adverse effect)** on the Albemarle & Chesapeake Canal.

H-2.3.10.2 131-5071, Centreville-Fentress Historic District

HF Route 5, an overhead route, differs from the other proposed routes in its southern portion, which is relevant in relation to the Centreville-Fentress Historic District. Unlike the other proposed routes, HF Route 5 turns south at its intersection near the Albemarle & Chesapeake Canal until it turns and runs generally west on the south side of the Pocaty River. It then turns to the northwest at Centerville Farms and crosses Land of Promise Road, and again to the north after crossing the Centerville Turnpike South, on the south side of the Centreville-Fentress District. This area by the district is located to the west and southwest of the Battlefield Golf Course, terminating about 0.06 miles south of the district boundary (Attachment 6, Figure 142). This section of HF Route 5 is greenfield and runs southeast to northwest, until it meets up with a very small (0.16-mile-long) portion of the existing Fentress-Pocaty transmission line (TL-2240), which runs east to west.

The small section that meets up with the existing line would include a wreck-and-rebuild of the existing line structure, as well as the construction of two additional structures, for a total of three new structures in a single group. The existing Fentress-Pocaty transmission line ROW is currently 120 feet, and HF Route 5 would expand the existing ROW 40 feet, for a total ROW of 160 feet. The existing structure is 110 feet, and the proposed replacement structures would be about 102 feet.

Since the proposed route goes through greenfield as it approaches Fentress Substation, additional structures, running southeast to northwest, would be required. These structures would be between about 110 and 125 feet tall. This would drastically change the viewshed from the historic district, to the south, because it is not an existing line. There currently is a view of the existing transmission line that runs east to west, to the Fentress Substation, but the proposed route extends farther north towards the historic district.

Although there are not as many views of HF Route 5 from multiple portions of the district as there are from the other proposed routes, the addition of the structures to the south of the district are more noticeable and would create a bigger change in view than that of the other proposed routes, especially for SP15 (Attachment 6, Figures 143 and 144). However, some areas, like SP17, would actually have less of a view of the Project than the existing line due to the greater distance (Attachment 6, Figures 145 and 146). Also visible from the historic district are the proposed upgrades to the existing Fentress Substation. The View from SP35 was selected because it is the closest public access point from which the district will have a view of the substation (Attachment 6, Figures 147 and 148). The existing infrastructure is already visible from this point, and while the proposed Project is more visible in terms of height, the existing tree-line masks the structures to a degree, and will continue to grow, thereby minimizing the effects over time.

Because only one portion of the historic district would be impacted, ERM recommends that there would be a **Moderate Impact (adverse effect)** to the Centreville-Fentress Historic District from HF Route 5. The viewshed, to the south would have more expansive views of the transmission line and the overall visibility of the Project would be greater in this area because of the construction of the additional structures south of the historic district within greenfield and the removal of vegetation, which would alter the view.

H-2.3.10.3 131-5333, Albemarle & Chesapeake Canal Historic District

The overhead route, HF Route 5, intersects approximately 61 feet of the southeast corner of the Albemarle & Chesapeake Canal Historic District (Attachment 6, Figure 149). This segment of the route would be greenfield and require new ROW. The construction of the proposed line would necessitate vegetation removal as well as the construction of new Project structures (measuring between about 120 to 150 feet tall in the vicinity of the crossing), which would introduce modern elements to a portion of the canal that currently contains only the canal itself surrounded by dense vegetation. The views to the east

of SP31 and SP32 are more prominent, but can only be viewed when crossing the Mt. Pleasant Road/North Landing Road Bridge (Attachment 6, Figures 150 through 153).

As only the eastern views from the canal would be impacted, ERM recommends that HF Route 5 would have a **Moderate Impact (adverse effect)** on the Albemarle & Chesapeake Canal Historic District, since it would change the setting of only a small part of the resource as a whole. ERM does not consider the impact to be as severe as that posed by HF Route 4.

H-2.3.10.4 134-0038, Jonathan Woodhouse House/William Woodhouse House

The Jonathan Woodhouse House is located approximately 0.45 mile to the southeast of the proposed HF Route 5, an overhead route (Attachment 6, Figure 154). The area of the proposed route closest to the resource would be greenfield and require new ROW. However, due to intervening vegetation and residential development, 134-0038 would have no view to the proposed route (Attachment 6, Figures 155 through 158). Because the view from The Jonathan Woodhouse House is entirely screened, there would be **No Impact (no effect)** from HF Route 5.

H-2.3.10.5 134-0072, Thomas Lovett House/Rollingswood Academy

The Thomas Lovett House/Rollingswood Academy is located 0.34 mile to the south of the proposed HF Route 5, an overhead route that is located along a section of the existing Landstown to VA Beach transmission line ROW (TL-2118/147) (Attachment 6, Figure 159). This section of the route would be expanded 105 feet for the proposed Project. However, the resource currently has no view to the existing transmission line, which lies beyond a large forested tract (Attachment 6, Figures 160 and 161). Because the view from the resource is entirely screened, there would be **No Impact (no effect)** from HF Route 5.

H-2.3.10.6 134-0702, St. John's Baptist Church

St. John's Baptist Church is located approximately 0.84 mile to the south of the proposed HF Route 5, an overhead route that is located along a section of the existing Landstown to Virginia Beach transmission line ROW (TL-2118/147) (Attachment 6, Figure 162). This section of the route would be expanded 105 feet for the proposed Project. However, the resource currently has no view to the existing transmission line, which lies beyond a large forested tract and has intervening vegetation and modern subdivisions (Attachment 6, Figures 163 and 164). Because the view from the resource is entirely screened, there would be **No Impact (no effect)** from HF Route 5.

H-2.3.11 Historic Resource Findings for Harpers to Fentress Hybrid Route

The impacts to each resource in the HF Hybrid Route study area are discussed and illustrated below.

H-2.3.11.1 131-0044/131-5333-0002, Albemarle & Chesapeake Canal

A 390-foot segment of the HF Hybrid Route intersects the Albemarle & Chesapeake Canal. The overhead route segment near the canal is located along section of the existing Landstown-Pocaty transmission line (TL-271), and follows the same alignment as HF Route 1; thus it has the same impacts (Attachment 6, Figure 165). Here, the HF Hybrid Route would include a wreck-and-rebuild of the existing double-circuit line structures as well as the construction of two additional single circuit structures, for a total of three new structures. The existing structures adjacent to the canal have heights ranging from 180 to 185 feet; the replacement and new structures immediately adjacent to the canal would have heights of 170 feet. While the Landstown-Pocaty transmission line ROW is currently 120 feet, the construction of the new structures required for the HF Hybrid Route would expand the ROW 40 more feet, for a total ROW width of 160 feet. This expansion would include additional tree cut on either side of the existing line.

Although the proposed structures are shorter than the existing structures, the addition of two more structures would add more modern elements to the historic canal in this area. The photo simulation (SP19) was taken from the closest public ROW on the canal towards the HF Hybrid Route (Attachment 6, Figures 166 and 167). Because the resource is a canal, no other public access points were available at the time of survey. The proposed route is not visible from this viewpoint (SP19), but would be visible from boats within the canal itself near the proposed route's intersection of the canal, to north of Mt. Pleasant Road. However, views from the canal are not widely accessible, and only visitors traveling the canal near the intersection of the canal and the HF Hybrid Route would be able to see it. The proposed structures would be set back from the canal, and would only be seen when in close proximity due to dense tree coverage on either side of the route. The lines carried by the structures would be visible from vantage points farther down the canal, but there are already existing lines and the Project would not change this aspect of the viewshed.

In summary, the views of the Project in the vicinity of the Albemarle & Chesapeake Canal would be noticeable from the canal due to the vegetation cut and the construction of additional structures, which would make the Project more visible than the existing transmission line that already intersects the resource. But, because of the presence of the existing transmission line and how the majority of views are obscured by vegetation, ERM recommends that there would be a **Minimal Impact (no adverse effect)** to this resource from the HF Hybrid Route.

H-2.3.11.2 131-5071, Centreville-Fentress Historic District

The Centreville-Fentress Historic District is located approximately 202 feet to the west of the HF Hybrid Route, at its closest point. The route follows HF Route 1 and thus, has the same impacts to this district, where the line would consist of an overhead segment following a section of the existing Landstown-Pocaty transmission line (TL-271) (Attachment 6, Figure 168). Here, the HF Hybrid Route would include a wreck-and-rebuild of the existing line structures, as well as the construction of two additional structures, for a total of three structures. The existing Landstown-Pocaty and Fentress-Pocaty transmission line ROW is currently 120 feet, and the HF Hybrid Route would expand the existing ROW 40 feet, for a total ROW of 160 feet. A one-mile segment of the route to the north of the Battlefield Golf Course would expand the ROW on the east side of the existing route, while the area to the east of the golf course would expand to the west, and the area to the south of the golf course would expand to the north.

The views from the historic district towards the proposed Project are relatively minor, and would scarcely change if HF Hybrid Route was constructed. Specifically, the views from SP15 are minimal because the existing transmission line heights are between 120 and 145 feet and the proposed structures would be between 130 and 135 feet. The difference between the two lines is negligible (Attachment 6, Figures 169 through 172). At SP17 (the viewpoint closest to the HF Hybrid Route) the proposed route would minimally change the view because the construction of the two additional structures would move the ROW closer to the historic district (Attachment 6, Figures 173 and 174). SP18, like SP15 shows no significant view change in view (Attachment 6, Figures 175 and 176). Also visible from the historic district are the proposed upgrades to the existing Fentress Substation. The View from SP35 was selected because it is the closest public access point from which the district will have a view of the substation (Attachment 6, Figures 177 and 178). The existing infrastructure is already visible from this point, and while the proposed Project is more visible in terms of height, the existing tree-line masks the structures to a degree, and will continue to grow, thereby minimizing the effects over time.

For these reasons, although the proposed Project can be seen from multiple points of the historic district, few of the views would be significantly altered because of the existing line. Therefore, ERM recommends that there would be a **Minimal Impact (no adverse effect)** to the Centreville-Fentress Historic District from the HF Hybrid Route.

H-2.3.11.3 131-5333, Albemarle & Chesapeake Canal Historic District

Like HF Route 1, the HF Hybrid Route intersects a 0.43-mile segment of the Albemarle & Chesapeake Canal Historic District. This overhead route segment is located along a section of the existing Landstown-Pocaty transmission line (TL-271) (Attachment 6, Figure 179). Here, the HF Hybrid Route would include a wreck-and-rebuild of the existing line double circuit structures, as well as the construction of two additional structures, for a total of three structures. The existing structures closest to the canal have heights of 180 to 185 feet; all three new structures would have heights of 170 feet. While the Landstown-Pocaty transmission line ROW is currently 120 feet, the construction of the additional structures for the HF Hybrid Route would expand the ROW 40 more feet, for a total ROW width of 160 feet.

Although the proposed structures are shorter than the existing structures, the addition of two more structures would add more modern elements to the historic canal in this area. In addition, whereas only two existing structures are in the district, the proposed route would have four groupings of three structures. The photo simulation (SP19) was taken from the closest public ROW on the canal towards the HF Hybrid Route (Attachment 6, Figures 180 and 181). The proposed route is not visible from SP19, but would be visible from boats within the canal and near the proposed route's intersection of the canal to north of Mt. Pleasant Road. However, views from the canal are not widely accessible, and only visitors traveling the canal near the intersection of the canal and the HF Hybrid Route would be able to see the proposed route. The proposed structures would be located on either side of the canal in the district, but would only be seen when in close proximity due to dense tree coverage on either side of the route. The lines supported by the structures would be visible from vantage points farther down the canal, but given the existing lines here, the HF Hybrid Route would not constitute a significant change in this aspect of the viewshed.

In summary, the views of the Project in the vicinity of the Albemarle & Chesapeake Canal Historic District would be noticeable from the canal due to the vegetation cut and the construction of additional structures, which would make the Project more visible than the existing transmission line that already intersects the resource. But, because of the existing transmission line and how the majority of views are obscured by vegetation, ERM recommends that there would be a **Minimal Impact (no adverse effect)** to this resource from HF Hybrid Route.

H-2.3.11.4 134-0038, Jonathan Woodhouse House

The Jonathan Woodhouse House is located approximately 0.45 mile to the southeast of the proposed underground section of the HF Hybrid Route (Attachment 6, Figure 182). The area of the proposed route closest to the resource would be greenfield and require new ROW. However, due to intervening vegetation and residential development, 134-0038 would have no view to the proposed route (Attachment 6, Figure 183 through 186). Because the view from the Jonathan Woodhouse House is entirely screened, there would be **No Impact (no effect)** from HF Hybrid Route.

H-2.3.11.5 134-0072, Thomas Lovett House/Rollingswood Academy

The Thomas Lovett House/Rollingswood Academy is located 0.35 mile to the south of the proposed HF Hybrid Route, an underground section of the route that is located along a section of the existing Landstown to VA Beach transmission line ROW (TL-2118/147) (Attachment 6, Figure 187). This section of the route would be expanded 105 feet for the proposed Project. However, the resource currently has no view to the existing transmission line, which lies beyond a large forested tract (Attachment 6, Figure 188 and 189). Because the view from the resource is entirely screened, there would be **No Impact (no effect)** from HF Hybrid Route.

H-2.3.11.6 134-0702, St. John's Baptist Church

St. John's Baptist Church is located 0.84 mile to the south of the proposed HF Hybrid Route, an underground section of the route that is located along a section of the existing Landstown to Virginia Beach transmission line ROW (TL-2118/174) (Attachment 6, Figure 190). This section of the route would be expanded 105 feet for the proposed Project. However, the resource currently has no view to the existing transmission line, which lies beyond a large forested tract and has intervening vegetation and modern subdivisions (Attachment 6, Figure 191 and 192). Because the view from the resource is entirely screened, there would be **No Impact (no effect)** from HF Hybrid Route.

H-2.4 CONCLUSIONS AND RECOMMENDATIONS

The pre-application analysis gathered information on historic resources that qualify for consideration according to VDHR guidelines for transmission line projects.[9]

Ten aboveground resources fall within the VDHR tiers for the seven route segments under consideration. Since many of the routes substantially overlap, several resources would have the same impact regardless of the selected option. A comparison of the number of resources impacted to different degrees in each Project alternative is presented in Table H-2.4-1.

Table H-2.4-1: Comparison of Project Impacts on Historic Resources in the Study Area of the Proposed Routes

Route Alternative	Number of Considered Resources in Each Impact Category				
	None[a]	Minimal[b]	Moderate[c]	Severe[c]	Total
CLH Route[d]	2	1		1	4
HF Route 1	3	3			6
HF Route 2	3	1	2		6
HF Route 3	3	1	2		6
HF Route 4	3	1		2	6
HF Route 5	3		3		6
HF Hybrid Route	3	3			6

[a] No impact (none) corresponds to no effect under the Section 106 review process.
[b] A minimal impact corresponds to no adverse effect under the Section 106 review process.
[c] A severe or moderate impact corresponds to an adverse effect under the Section 106 review process.
[d] The CLH Route is the only option under consideration for the route segment between the Cable Landing Location and south of Harpers Road.

Based on the above discussion, the Project is likely to result in adverse effects on historic properties regardless of the final route selected. Final assessments of Project effects will be dependent on the completion of identification-phase archaeological and historic structure surveys and review of survey results by BOEM, VDHR, and other consulting parties. For those resources where the agencies concur in a finding of adverse effect, the Company will propose treatments to avoid, minimize, or mitigate those impacts. Treatment options for archaeological sites could include selective tower placement to avoid direct impacts on sites, minor route adjustments to avoid crossing sites, or archaeological data recovery. Treatment options for aboveground historic resources could include detailed site documentation, historic research, and historic preservation studies; preparation of digital media or museum-type exhibits on various sites for public interpretation; installation of historic markers or signs; installation of vegetative screening; or contributions to historical preservation organizations or specific preservation projects. Additional mitigations could be identified through consultation with BOEM, the SCC, VDHR, SMR, and other consulting parties. Site-specific plans would be prepared for agency review and approval. The treatments would be formalized in a Memorandum of Agreement (MOA) between the consulting parties.

9 For terrestrial archaeological findings, see Phase I A Terrestrial Archaeological Resources Assessment, Appendix G

H-2.4.1 Cable Landing to Harpers Route Summary of Historic Resource Impacts

There are four aboveground historic resources identified within the VDHR tiers for the CLH Route (Table H-2.4.1-1), although the Project would have no impact (no effect) on two of these resources. Of the remaining resources, the CLH Route would have a minimal impact (no adverse effect) on one resource, and a severe impact (adverse effect) on the other.

Table H-2.4.1-1: Impacts to Historic Resources in VDHR Tiers for CLH Route

Buffer (miles)	Resource Category	Resource Number	Description	Impact
1.0 to 1.5	National Historic Landmarks	–	-	-
0.5 to 1.0	National Register Properties (Listed)	-	-	-
0.0 to 0.5	National Register Properties (Listed)	134-0413-0110	Building 1	None (no effect)
	National Register – eligible	134-0917	Winford White House	None (no effect)
0.0 (within ROW)	National Register - eligible	134-0003	Bell House	Minimal (no adverse effect)
	National Register Properties (Listed)	134-0413	Camp Pendleton/State Military Reservation Historic District	Severe (adverse effect)

H-2.4.2 Harpers to Fentress Route 1 Summary of Historic Resource Impacts

There are six aboveground resources identified within the VDHR tiers for HF Route 1 (Table H-2.4.2-1). The Project would have no impact (no effect) on three of these resources, and a minimal impact on three resources (no adverse effect), the Albemarle & Chesapeake Canal and Historic District and the Centreville-Fentress Historic District.

Table H-2.4.2-1: Impacts to Historic Resources in VDHR Tiers for HF Route 1

Buffer (miles)	Resource Category	Resource Number	Description	Impact
1.0 to 1.5	National Historic Landmarks	–	-	-
0.5 to 1.0	Locally Significant Resources	134-0702	St. John’s Baptist Church	None (no effect)
0.0 to 0.5	National Register Properties (Listed)	131-5071	Centreville-Fentress Historic District	Minimal (no adverse effect)
	Locally Significant Resources	134-0038	Jonathan Woodhouse House/William Woodhouse House	None (no effect)
		134-0072	Thomas Lovett House/ Rollingswood Academy	None (no effect)

Buffer (miles)	Resource Category	Resource Number	Description	Impact
0.0 (within ROW)	National Register Properties (Listed)	131-5333	Albemarle & Chesapeake Canal Historic District	Minimal (no adverse effect)
	National Register – eligible	131-0044	Albemarle & Chesapeake Canal	Minimal (no adverse effect)

H-2.4.3 Harpers to Fentress Route 2 Summary of Historic Resource Impacts

There are six aboveground historic resources identified within the VDHR tiers for HF Route 2 (Table H-2.4.3-1), although the Project would have no impact (no effect) on three of these resources. Of the remaining resources, HF Route 2 would have a minimal impact (no adverse effect) on one resource, and a moderate impact (adverse effect) on the two resources associated with the Albemarle & Chesapeake Canal.

Table H-2.4.3-1: Historic Resources in VDHR Tiers for HF Route 2

Buffer (miles)	Resource Category	Resource Number	Description	Impact
1.0 to 1.5	National Historic Landmarks	–	–	-
0.5 to 1.0	Locally Significant Resources	134-0702	St. John's Baptist Church	None (no effect)
0.0 to 0.5	National Register Properties (Listed)	131-5071	Centreville-Fentress Historic District	Minimal (no adverse effect)
	Locally Significant Resources	134-0038	Jonathan Woodhouse House/ William Woodhouse House	None (no effect)
		134-0072	Thomas Lovett House/ Rollingswood Academy	None (no effect)
0.0 (within ROW)	National Register Properties (Listed)	131-5333	Albemarle & Chesapeake Canal Historic District	Moderate (adverse effect)
	National Register – eligible	131-0044	Albemarle & Chesapeake Canal	Moderate (adverse effect)

H-2.4.4 Harpers to Fentress Route 3 Summary of Historic Resource Impacts

There are six aboveground historic resources identified within the VDHR tiers for HF Route 3 (Table H-2.4.4-1), although the Project would have no impact (no effect) on three of these resources. Of the remaining resources, HF Route 3 would have a minimal impact (no adverse effect) on one resource, and a moderate impact (adverse effect) on the two resources associated with the Albemarle & Chesapeake Canal.

Table H-2.4.4-1: Historic Resources in VDHR Tiers for HF Route 3

Buffer (miles)	Resource Category	Resource Number	Description	Impact
1.0 to 1.5	National Historic Landmarks	–	–	-
0.5 to 1.0	Locally Significant Resources	134-0038	Jonathan Woodhouse House/ William Woodhouse House	None (no effect)
		134-0702	St. John's Baptist Church	None (no effect)
0.0 to 0.5	National Register Properties (Listed)	131-5071	Centreville-Fentress Historic District	Minimal (no adverse effect)
	Locally Significant Resources	134-0072	Thomas Lovett House/ Rollingswood Academy	None (no effect)
0.0 (within ROW)	National Register Properties (Listed)	131-5333	Albemarle & Chesapeake Canal Historic District	Moderate (adverse effect)
	National Register – eligible	131-0044	Albemarle & Chesapeake Canal	Moderate (adverse effect)

H-2.4.5 Harpers to Fentress Route 4 Summary of Historic Resource Impacts

There are six aboveground historic resources identified within the VDHR tiers for HF Route 4 (Table H-2.4.5-1), although the Project would have no impact (no effect) on three of these resources. Of the remaining resources, HF Route 4 would have a minimal impact (no adverse effect) on one resource, and a severe impact (adverse effect) on the two resources associated with the Albemarle & Chesapeake Canal.

Table H-2.4.5-1: Impacts to Historic Resources in VDHR Tiers for HF Route 4

Buffer (miles)	Resource Category	Resource Number	Description	Impact
1.0 to 1.5	National Historic Landmarks	–	–	-
0.5 to 1.0	Locally Significant Resources	134-0702	St. John's Baptist Church	None (no effect)
0.0 to 0.5	National Register Properties (Listed)	131-5071	Centreville-Fentress Historic District	Minimal (no adverse effect)
	Locally Significant Resources	134-0038	Jonathan Woodhouse House/ William Woodhouse House	None (no effect)
		134-0072	Thomas Lovett House/ Rollingswood Academy	None (no effect)
	National Register Properties (Listed)	131-5333	Albemarle & Chesapeake Canal Historic District	Severe (adverse effect)

0.0 (within ROW)	National Register – eligible	131-0044	Albemarle & Chesapeake Canal	Severe (adverse effect)

H-2.4.6 Harpers to Fentress Route 5 Summary of Historic Resource Impacts

There are six aboveground historic resources identified within the VDHR tiers for HF Route 5 (Table H-2.4.6-1), although the Project would have no impact (no effect) on three of these resources. Of the remaining resources, HF Route 5 would have a moderate impact (adverse effect) on the two resources associated with the Albemarle & Chesapeake Canal and a moderate Impact (adverse effect) on the Centreville-Fentress Historic District.

Table H-2.4.6-1: Impacts to Historic Resources in VDHR Tiers for HF Route 5

Buffer (miles)	Resource Category	Resource Number	Description	Impact
1.0 to 1.5	National Historic Landmarks	–	–	-
0.5 to 1.0	Locally Significant Resources	134-0702	St. John's Baptist Church	None (no effect)
0.0 to 0.5	National Register Properties (Listed)	131-5071	Centreville-Fentress Historic District	Moderate (adverse effect)
	National Register – eligible	131-0044	Albemarle & Chesapeake Canal	Moderate (adverse effect)
	Locally Significant Resources	134-0038	Jonathan Woodhouse House/ William Woodhouse House	None (no effect)
		134-0072	Thomas Lovett House/ Rollingswood Academy	None (no effect)
0.0 (within ROW)	National Register Properties (Listed)	131-5333	Albemarle & Chesapeake Canal Historic District	Moderate (adverse effect)

H-2.4.7 Harpers to Fentress Hybrid Route Summary of Historic Resource Impacts

There are six aboveground resources identified within the VDHR tiers for HF Hybrid Route (Table H-2.4.7-1). The Project would have no impact (no effect) on three of these resources, a minimal impact on the Centreville-Fentress Historic District (no adverse effect), and a minimal impact (no adverse effect) on the two resources associated with the Albemarle & Chesapeake Canal.

Table H-2.4.7-1: Impacts to Historic Resources in VDHR Tiers for HF Hybrid Route

Buffer (miles)	Resource Category	Resource Number	Description	Impact
1.0 to 1.5	National Historic Landmarks	–	–	-
0.5 to 1.0	Locally Significant Resources	134-0702	St. John's Baptist Church	None (no effect)
0.0 to 0.5	National Register Properties (Listed)	131-5071	Centreville-Fentress Historic District	Minimal (no adverse effect)
	Locally Significant Resources	134-0038	Jonathan Woodhouse House/ William Woodhouse House	None (no effect)
		134-0072	Thomas Lovett House/ Rollingswood Academy	None (no effect)
0.0 (within ROW)	National Register Properties (Listed)	131-5333	Albemarle & Chesapeake Canal Historic District	Minimal (no adverse effect)
	National Register – eligible	131-0044	Albemarle & Chesapeake Canal	Minimal (no adverse effect)

The next stage of assessing impacts on historic resources will be to conduct a survey of resources that could be impacted by the Project. Survey will be conducted in accordance with a number of guidelines per below:

- Guidelines for Assessing Impacts of Proposed Electrical Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia (see Attachment 1);
- the approved Coastal Virginia Offshore Wind Commercial Project Onshore Aboveground Historic Properties Survey Plan prepared for the Project;
- OCS Study BOEM 2021-032, Assessment of Seascape, Landscape, and Visual Impacts of Offshore Wind Energy Developments on the Outer Continental Shelf of the United States (BOEM, 2021);
- National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation (National Park Service, 1995);
- NHPA Section 106 from 16 USC 470f to 54USC 306108; and
- NHPA Section 110(f).

The survey teams will be led by individuals meeting the Secretary of the Interior's professional qualifications standards for architectural history. Teams will traverse the length of the Project corridor(s), revisiting previously recorded historic architectural resources and documenting additional as-yet unrecorded historic resources in the survey area. During the course of the survey, all structures determined to be of age will be photographed and marked on the applicable USGS quadrangle map. While the NPS Bulletin 15 (NPS 1995) defines a historic property as a resource that is 50 years or older, for the purposes of this Project, survey will include those 45 years or older to accommodate the length of time needed to complete the permitting phase for the Project. Furthermore, survey will also record those resources that may have reached significance prior to the 50 (45) year age in accordance with the NPS if they are integral parts of districts, or have merit to be considered eligible for the NRHP on their own.

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

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ATTACHMENT 1 VDHR GUIDELINES

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

This guidance has been developed by the Department of Historic Resources (DHR) to assist the State Corporation Commission (SCC) and their applicants in developing transmission line projects that minimize impacts to historic resources. The goals of this analysis are to (1) develop project alternatives that are sensitive to historic resources, (2) generate meaningful data on the potential effects of proposed alternatives on known historic resources, (3) determine the impact of selected alternatives on all resources eligible for listing in the Virginia Landmarks Register and National Register of Historic Places (National Register), and (4) develop recommendations on ways to minimize effects to historic resources.

This guidance is intended as technical assistance to the SCC and their applicants. Completion of these studies may not fully satisfy the requirements set forth by any Federal agency with responsibilities under Section 106 of the National Historic Preservation Act (NHPA) or other Federal law or regulation. It is critical that the project proponent consult directly with all relevant Federal agencies as necessary in the completion of these studies.

I. Pre-Application Analysis

Analysis conducted by the project proponent during the preparation of an application to the SCC is intended to guide the design of the project and aid in the selection of a preferred alternative. By determining the potential impact of the project on recorded historic resources during the application process, the applicant and the SCC may make informed decisions regarding the relative impacts of project alternatives. This pre-application analysis is not intended as a substitute for comprehensive historic resources survey. Full archaeological and architectural surveys are recommended for all approved alternatives. See Section II of this document for more information on recommended comprehensive surveys.

A. Establish a study area for each alternative under consideration. Study areas are tiered to ensure consideration of the Commonwealth's most important resources. The table below shows the four tiers of the study area and the resources that should be considered in each tier.

Radial Buffer (in miles)	Considered Resources
1.5	*National Historic Landmarks*
1.0	Above resources, and: *National Register Properties* (listed) *Battlefields* *Historic Landscapes* (e.g. Rural HD)
0.5	Above resources, and: *National Register-eligible* (as determined by DHR)
0.0 (within ROW)	Above resources, and: *Archaeological Sites*

If the proposed new right-of-way (ROW) exceeds 500 feet in width, the radial buffer should be drawn from the edges of the ROW and not the center line. The study area may be refined through the use of GIS-based spatial analysis of topography and vegetation to exclude areas that would not have a line-of-sight to proposed facilities. Any areas excluded from analysis need to be fully documented and justified in the resulting report. Since vegetative cover is dynamic, meta-data to include date of origin should be provided as part of a discussion of methodology. Areas containing National Historic Landmarks cannot be excluded from analysis.

B. Gather information on known resources. Once appropriate study areas have been established, data on recorded historic resources should be obtained from DHR. Data must be current to within six months of analysis. Affected cities, counties, and localities should be consulted during this stage of the process to ensure consideration of those resources significant at a local level. DHR also recommends gathering information and comments from other agencies and organizations, such as the National Park Service and local historical societies.

C. Assess impacts on known resources. A qualified cultural resources consultant in the appropriate discipline should perform an assessment of impact for each historic resource present within the appropriate tier of the study area provided it is not otherwise excluded from analysis. The analysis and report should include the following:

1. Executive Summary of impacts assessment. Narrative should be accompanied by a data table showing the resource number, name, and potential impact.

2. Statement of scope, methodology, fieldwork (dates, staff).

3. Project maps showing all center lines, radial buffers, and recorded resources subject to analysis. Any spatial analysis conducted that results in excluded areas should be shown on separate project maps. All submitted mapping should be at a legible scale.

4. Discussion of any recorded archaeological sites located within the proposed right of way, to include statements on previous investigations, National Register-eligibility determinations, and potential impacts.

5. Ground photography for each property including, at a minimum, photographs of the main elevation of the primary resource and from the resource towards the project. Be sure to consider the views from the entire property, including secondary resources and historic landscape features, not just the primary resource. The National Register nomination and/or other archival material should be consulted to determine if specific viewsheds are noted as significant. All efforts should be made to accurately represent the viewshed. Panoramic photos are most useful in this analysis.

6. Aerial photograph for each property showing the boundaries of the property, location of primary and secondary resources, a key to the ground photography, and depiction of the proposed line and distance from the resource. The date of the aerial photograph should be included.

7. Photosimulation of the proposed transmission line and towers from significant points on the property. If there are existing towers in or adjacent to the proposed ROW and the proposed towers are the same or lesser height than the existing, no photosimulation is necessary. If new towers will be substantially taller than the existing towers (>10% or 20' increase, whichever is greater), photosimulation is warranted. The means of producing accurate photosimulations is left to the discretion of the consultant, but should be thoroughly discussed as part of the methodology. If a property is not excluded from analysis, but after field assessment, is determined not to have a view of the proposed project, the estimated location and height of the proposed towers should be represented on ground photography.

8. Elevation drawing of proposed and existing (if applicable) tower designs and ROW configuration corresponding to the viewshed of each property.

9. Narrative description of the resource, environmental conditions, and any potential effects from the proposed line. This analysis should consider whether the historic setting is a character defining feature of the resource. The qualified professional conducting the analysis of impact should develop a meaningful hierarchy to characterize the effects to each property.

II. Survey of Approved Alternatives

Once an alternative is approved by the SCC, DHR recommends that full archaeological and architectural surveys be performed to determine the effect of the project on all historic resources listed in or eligible for listing in the National Register. This process involves the recordation of all archaeological sites and structures greater than 50 years of age, the evaluation of those resources for listing in the National Register, determining the degree of impact of the project on eligible resources, and developing a plan to avoid, minimize, or mitigate any negative impacts. Comments received from the public or other stakeholder regarding impacts to specific historic resources should be addressed as part of this survey and assessment process.

A. Defining the survey area and scope of the survey. The survey area for any approved alternative should take into consideration the types of resources that may be affected and the nature of expected impacts. Of special concern are effects to the historic setting and viewshed of significant historic resources. A difference can be drawn between the potential impact of a new line built on raw land and a new line constructed within existing ROW. This guidance takes into consideration these differences. For approved projects, the survey area and scope are defined as following:

1. Archaeological survey should be performed on all areas that will be directly impacted by construction, including proposed ROW, tower and associated facility locations, staging areas, and access roads. If the ROW can be cleared without ground disturbance, such as stump grubbing, comprehensive archaeological survey of the entire ROW will not be necessary. A ROW clearing plan must be submitted for review prior to DHR approval of this methodology. Survey of tower locations would still need to be performed.

2. For all portions of the proposed line to be constructed within existing ROW, where no new areas of vegetation will be cleared outside of the existing maintained ROW and

there will be no substantial increase in tower height (<10% or 20' increase, whichever is greater), the architectural survey will consist of all resources that are adjacent to the existing ROW.

3. For all portions of the proposed line to be constructed within existing ROW and where new areas of vegetation will be cleared outside the existing maintained ROW, the architectural survey will consist of all resources that are within 0.5 miles on either side of the existing ROW.

4. For all portions of the proposed line to be constructed within new ROW, the architectural survey will consist of all resources that are within 0.5 miles on either side of the existing ROW.

B. Evaluating resources. Following the survey, certain resources may be found to be potentially eligible for listing in the National Register. These resources should be evaluated through Phase II archaeological investigations or intensive level architectural inventory. These evaluations should conform to DHR's *Survey Guidelines* (rev. 2003) and result in a recommendation on eligibility of the resources.

C. Assessing impacts to eligible resources. For those resources identified in the survey that are found to be eligible for listing in the National Register, the impact of the proposed project should be assessed using the procedure presented in Section I.C of this document.

D. Minimizing and mitigating negative impacts. If is it determined by the project proponent in consultation with DHR that the proposed project will significantly and negatively impact a historic resource listed in or eligible for listing in the National Register, the project proponent should propose a means for avoiding or minimizing the effect. If the impact can not be reduced to such a degree as to not cause a significant impact to historic resources, a means to otherwise mitigate the effect must be developed. Minimization and mitigation plans should be developed in consultation with DHR, the affected property owner, and any other interested party. If the project is subject to Section 106 of the NHPA, a Memorandum of Agreement must be executed between the Federal agency, DHR, the project proponent, and any consulting parties to address the adverse effects of the project.

E. Survey personnel and reporting. All survey, evaluation, and assessment must be conducted by or under the direct supervision of a qualified professional in the appropriate field meeting the Secretary of the Interiors *Professional Qualification Standards* (36 CFR 61) in accordance with the Secretary of the Interior's *Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines* (48 FR 44716-42) and DHR's *Survey Guidelines* (rev. 2003). Two copies any report should be submitted to DHR for review and approval prior to any ground disturbance.

ATTACHMENT 2 LOCATIONS OF CONSIDERED HISTORIC RESOURCES ASSOCIATED WITH PROPOSED PROJECT ALTERNATIVES

134-0413

134-0413-0010

Cable Landing Station (Proposed)

134-0003

134-0917

Harpers Switching Station (Proposed)

CLH_Route

Facilities

0.5-Mile Buffer

1-Mile Buffer

1.5-Mile Buffer

Architectural Resources:

NRHP Listed

Eligible

Unevaluated (Locally Significant)

N

W E

S

0 0.5 1 Miles

1:48,000

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

Attachment 2
Locations of Considered Historic Resources Associated with Proposed Project Alternatives - CLH Route
Coastal Virginia Offshore Wind Commercial Project
Dominion Virginia Power
Virginia Beach and Chesapeake, VA

SHEET 1

Dominion Energy

ERM

FILE: C:\Users\vincent.macek\Documents\OneDrive - The ERM Group, Inc\DOM CVOW Rte 11 2-2021\CVOW Report Graphics 10-2021\Attachments 2-3\Attachment 2\Attachment 2 CLH\DOM CVOW A2 CLH 10-21.mxd | REVISED: 10/21/2021 | SCALE: 1:48,000 when printed at 11x17

DRAWN BY: GIS

Harpers Switching Station (Proposed)

Chicory Switching Station (Proposed)

134-0038

134-0072

134-0702

131-5333

131-0044

131-5071

Fentress Expanded Substation (Proposed)

Fentress Substation (Existing)

HF Route 1

Facilities

0.5-Mile Buffer

1-Mile Buffer

1.5-Mile Buffer

Architectural Resources:

NRHP Listed

Eligible

Not Eligible (Locally Significant)

Unevaluated (Locally Significant)

This information is for environmental review purposes only.

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

0 1 2 Miles

1:100,000

Attachment 2
Locations of Considered Historic Resources Associated with Proposed Project Alternatives - HF Route 1
Coastal Virginia Offshore Wind Commercial Project
Dominion Virginia Power
Virginia Beach and Chesapeake, VA

SHEET 2

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DRAWN BY: GIS

Harpers Switching Station (Proposed)
Chicory Switching Station (Proposed)
134-0038
134-0072
134-0702
131-5333
131-0044
131-5071
Fentress Expanded Substation (Proposed)
Fentress Substation (Existing)

HF Route 2
Facilities
0.5-Mile Buffer
1-Mile Buffer
1.5-Mile Buffer
Architectural Resources:
NRHP Listed
Eligible
Not Eligible (Locally Significant)
Unevaluated (Locally Significant)

N
W
E
S

This information is for environmental review purposes only.

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

0 1 2 Miles

1:100,000

Attachment 2
Locations of Considered Historic Resources Associated with Proposed Project Alternatives - HF Route 2
Coastal Virginia Offshore Wind Commercial Project
Dominion Virginia Power
Virginia Beach and Chesapeake, VA

SHEET 3

FILE: C:\Users\vincent.macek\Documents\OneDrive - The ERM Group, Inc\DOM CVOW Rte 11 2-2021\CVOW Report Graphics 10-2021\Attachments 2-3\Attachment 2\Attachment 2 HF2\DOM CVOW A2 HF2 10-21-2021.mxd | REVISED: 10/21/2021 | SCALE: 1:100,000 when printed at 11x17

DRAWN BY: GIS

Harpers Switching Station (Proposed)
Chicory Switching Station (Proposed)
134-0038
134-0072
134-0702
131-5333
131-0044
131-5071
Fentress Expanded Substation (Proposed)
Fentress Substation (Existing)
Hampton Roads Bltwy
Princess Anne Rd
Indian River Rd
Providence Rd
Dam Neck Rd
Virginia Beach
Chesapeake
Mt Pleasant Rd
North Landing Rd
Battlefield Golf Club
Naval Auxiliary Landing Field Fentress
Fentress Airfield Rd
Stumpy Lake Natural Area
Stumpy Lake Golf Course
Princess Anne Athletic Complex
Virginia Beach National Golf Course
Oceana West Industrial
Naval Air Station Oceana
Corporate Landing Business Park
Red Wing Park
Red Wing Lake Golf Course
NAS Dam Neck Annex
Lake Tecumseh
Three Oaks Park
West Neck Creek Natural Area
Floyd E Kellam High School
Heron Ridge Golf Club
North Landing Park
New Bridge Park
Chesapeake Municipal Center
Bells Mill Park
Great Bridge High School
Oak Grove Lake Park
Battlefield Corporate Center
Greenbrier Mall
Greenbrier Industrial Park
Greenbrier Business Park
Indian River High School
Regent University
Salem Middle School
Lake Christopher
Lake Tharber
Lake Smith
Norfolk Dredging
Yacht Basin
Clearfield Ave Oakbrooke Business & Technology Park
Great Bridge Blvd
Battlefield Blvd N
Centerville Turnpike
Kempsville Rd
Lynnhaven Pkwy
Indian Lakes Blvd
Pleasant Valley Rd
Ferrell Pkwy
Revere Dr
Buckner Blvd
Holland Rd
Dahlia Dr
Bow Creek Blvd
S Independence Blvd
Lynnhaven Rd
Dam Neck
Regulus Ave
Upton Dr
Elson Green Ave
Seaboard Rd
Nimmo Pkwy
London Bridge Rd
Culver Ln
Tomcat Blvd
Prosperity Rd
General Booth Blvd
Camp Pendleton
Harpers Rd
Horner Dr
Alpha Tau
Oceana Blvd
Virginia Beach Blvd
Rock Lake Loop
Honey Bee Cir
Belspring Dr
Albright Dr
Round Hill Dr
Glen View Dr
Crossways Blvd
Volvo Pkwy
Executive Blvd
Greenbrier Pkwy
Copper Stone Cir
Lake Tharber Pkwy
Elbow Rd
Butts Station Rd
Centerville Turnpike N
Clearfield Ave
Fernwood Farms Rd
Bainbridge Blvd
Campostella Rd
Military Hwy S
S Military Hwy
Martin Luther King Jr Memorial Hwy
Rokeby Ave
Sparrow Rd
Chesapeake Blvd
Park Blvd
Lake Green Blvd
Laurel Ave
Atlantic Ave
Poindexter St
Chesapeake Ave
Rodgers St
Providence Rd
Indian River
Paramount Ave
Woodlake Dr
Kohl's
Wal Mart
Sam's Club
Crossways Center
Towne Place
Copper Stone Cir
Kempsville Rd
Lynnhaven Pkwy
Indian River Rd
Salem Rd
Dam Neck Rd
Landstown Rd
Princess Anne Athletic Complex
Virginia Beach National Golf Course
Seaboard Rd
Nimmo Pkwy
London Bridge Rd
Culver Ln
Upton Dr
Elson Green Ave
Three Oaks Park
Lake Tecumseh
Dam Neck
Regulus Ave
Prosperity Rd
Red Wing Park
Red Wing Lake Golf Course
NAS Dam Neck Annex
Camp Pendleton
Harpers Rd
Horner Dr
Alpha Tau
Oceana Blvd
Virginia Beach Blvd
Tomcat Blvd
General Booth Blvd
Naval Air Station Oceana
Oceana West Industrial
Corporate Landing Business Park
Dam Neck Rd
Buckner Blvd
Holland Rd
Princess Anne Rd
Dahlia Dr
Bow Creek Blvd
S Independence Blvd
Lynnhaven Rd
Ferrell Pkwy
Revere Dr
Pleasant Valley Rd
Indian Lakes Blvd
Kempsville Rd
Indian River Rd
Providence Rd
Regent University
Indian River High School
Greenbrier Business Park
Greenbrier Industrial Park
Greenbrier Mall
Salem Middle School
Lake Christopher
Albright Dr
Round Hill Dr
Honey Bee Cir
Belspring Dr
Rock Lake Loop
Glen View Dr
Crossways Blvd
Volvo Pkwy
Executive Blvd
Greenbrier Pkwy
Copper Stone Cir
Lake Tharber Pkwy
Elbow Rd
Butts Station Rd
Centerville Turnpike N
Clearfield Ave
Fernwood Farms Rd
Bainbridge Blvd
Campostella Rd
Military Hwy S
S Military Hwy
Martin Luther King Jr Memorial Hwy
Rokeby Ave
Sparrow Rd
Chesapeake Blvd
Park Blvd
Lake Green Blvd
Laurel Ave
Atlantic Ave
Poindexter St
Chesapeake Ave
Rodgers St
Providence Rd
Indian River
Paramount Ave
Woodlake Dr
Kohl's
Wal Mart
Sam's Club
Crossways Center
Towne Place
Stumpy Lake
Stumpy Lake Natural Area
Stumpy Lake Golf Course
Princess Anne Athletic Complex
Virginia Beach National Golf Course
Oceana West Industrial
Naval Air Station Oceana
Corporate Landing Business Park
Red Wing Park
Red Wing Lake Golf Course
NAS Dam Neck Annex
Lake Tecumseh
Three Oaks Park
West Neck Creek Natural Area
Floyd E Kellam High School
Heron Ridge Golf Club
North Landing Park
New Bridge Park
Chesapeake Municipal Center
Bells Mill Park
Great Bridge High School
Oak Grove Lake Park
Battlefield Corporate Center
Greenbrier Mall
Greenbrier Industrial Park
Greenbrier Business Park
Indian River High School
Regent University
Salem Middle School
Lake Christopher
Lake Tharber
Lake Smith
Norfolk Dredging
Yacht Basin
Clearfield Ave Oakbrooke Business & Technology Park
Great Bridge Blvd
Battlefield Blvd N
Centerville Turnpike
Kempsville Rd
Lynnhaven Pkwy
Indian Lakes Blvd
Pleasant Valley Rd
Ferrell Pkwy
Revere Dr
Buckner Blvd
Holland Rd
Dahlia Dr
Bow Creek Blvd
S Independence Blvd
Lynnhaven Rd
Dam Neck
Regulus Ave
Upton Dr
Elson Green Ave
Seaboard Rd
Nimmo Pkwy
London Bridge Rd
Culver Ln
Tomcat Blvd
Prosperity Rd
General Booth Blvd
Camp Pendleton
Harpers Rd
Horner Dr
Alpha Tau
Oceana Blvd
Virginia Beach Blvd
Rock Lake Loop
Honey Bee Cir
Belspring Dr
Albright Dr
Round Hill Dr

Harpers Switching Station (Proposed)
Chicory Switching Station (Proposed)
134-0038
134-0072
134-0702
131-5333
131-0044
131-5071
Fentress Expanded Substation (Proposed)
Fentress Substation (Existing)

HF Route 4
Facilities
0.5-Mile Buffer
1-Mile Buffer
1.5-Mile Buffer
Architectural Resources:
NRHP Listed
Eligible
Not Eligible (Locally Significant)
Unevaluated (Locally Significant)

This information is for environmental review purposes only.

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

0 1 2 Miles

1:100,000

Attachment 2
Locations of Considered Historic Resources Associated with Proposed Project Alternatives - HF Route 4
Coastal Virginia Offshore Wind Commercial Project
Dominion Virginia Power
Virginia Beach and Chesapeake, VA

SHEET 5

FILE: C:\Users\vincent.macek\Documents\OneDrive - The ERM Group, Inc\DOM CVOW Rte 11 2-2021\CVOW Report Graphics 10-2021\Attachments 2-3\Attachment 2\Attachment 2 HF4\DOM CVOW A2 HF4 10-21-2021.mxd | REVISED: 10/21/2021 | SCALE: 1:100,000 when printed at 11x17

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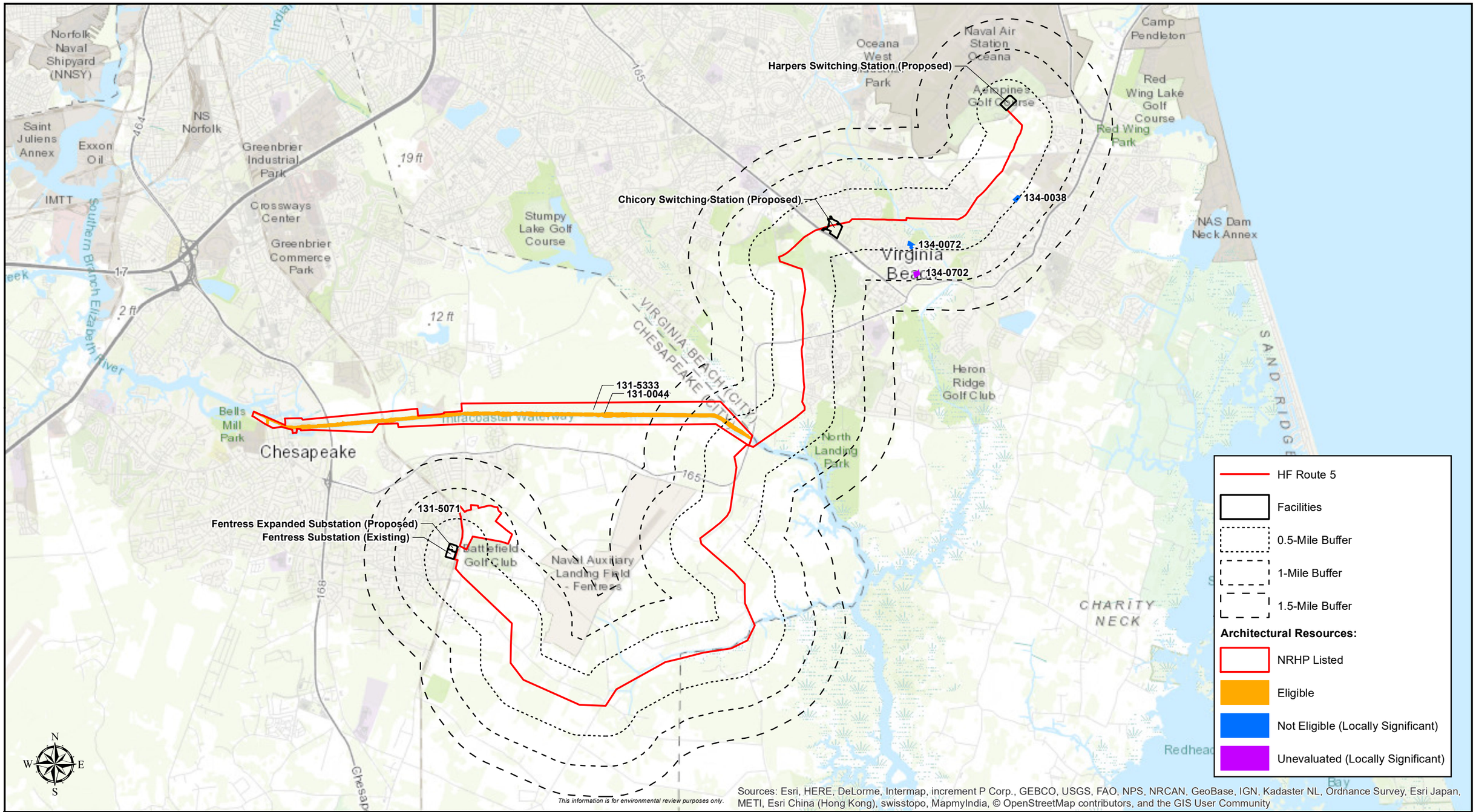

Attachment 2
Locations of Considered Historic Resources Associated with Proposed Project Alternatives - HF Route 5
Coastal Virginia Offshore Wind Commercial Project
Dominion Virginia Power
Virginia Beach and Chesapeake, VA

SHEET 6

Dominion Energy

ERM

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Harpers Switching Station (Proposed)
Chicory Switching Station (Proposed)
134-0038
134-0072
134-0702
131-5333
131-0044
131-5071
Fentress Expanded Substation (Proposed)
Fentress Substation (Existing)

HF Hybrid Route
Facilities
0.5-Mile Buffer
1-Mile Buffer
1.5-Mile Buffer
Architectural Resources:
NRHP Listed
Eligible
Not Eligible (Locally Significant)
Unevaluated (Locally Significant)

N
W
E
S

0 1 2 Miles

1:100,000

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

Attachment 2
Locations of Considered Historic Resources Associated with Proposed Project Alternatives - HF Hybrid Route
Coastal Virginia Offshore Wind Commercial Project
Dominion Virginia Power
Virginia Beach and Chesapeake, VA

SHEET 7

Dominion Energy

ERM

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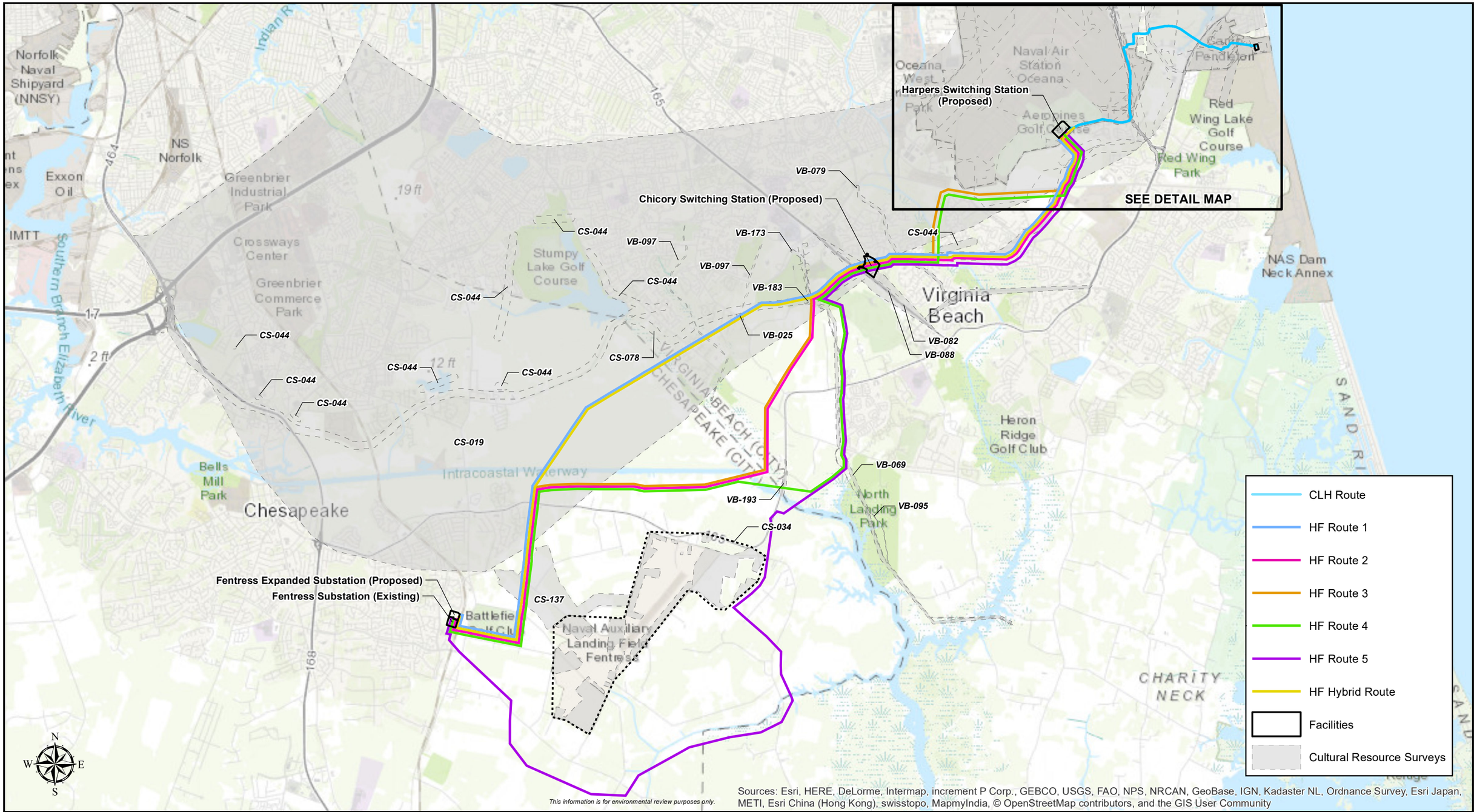
ATTACHMENT 3 CULTURAL RESOURCE SURVEYS COVERING PORTIONS OF ALTERNATIVE ROUTES



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

Attachment 3
Cultural Resource Surveys Covering Portions of Alternative Routes
Coastal Virginia Offshore Wind Project
Dominion Virginia Power
Virginia Beach and Chesapeake, VA

Dominion Energy

ERM

FILE: C:\Users\vincent.macek\Documents\OneDrive - The ERM Group, Inc\DOM CVOW Rte 11 2-2021\CVOW Report Graphics 10-2021\Attachments 2-3\Attachment 3\DOM CVOW A3 Main Map 10-21-2021.mxd | REVISED: 10/21/2021 | SCALE: 1:110,000 when printed at 11x17

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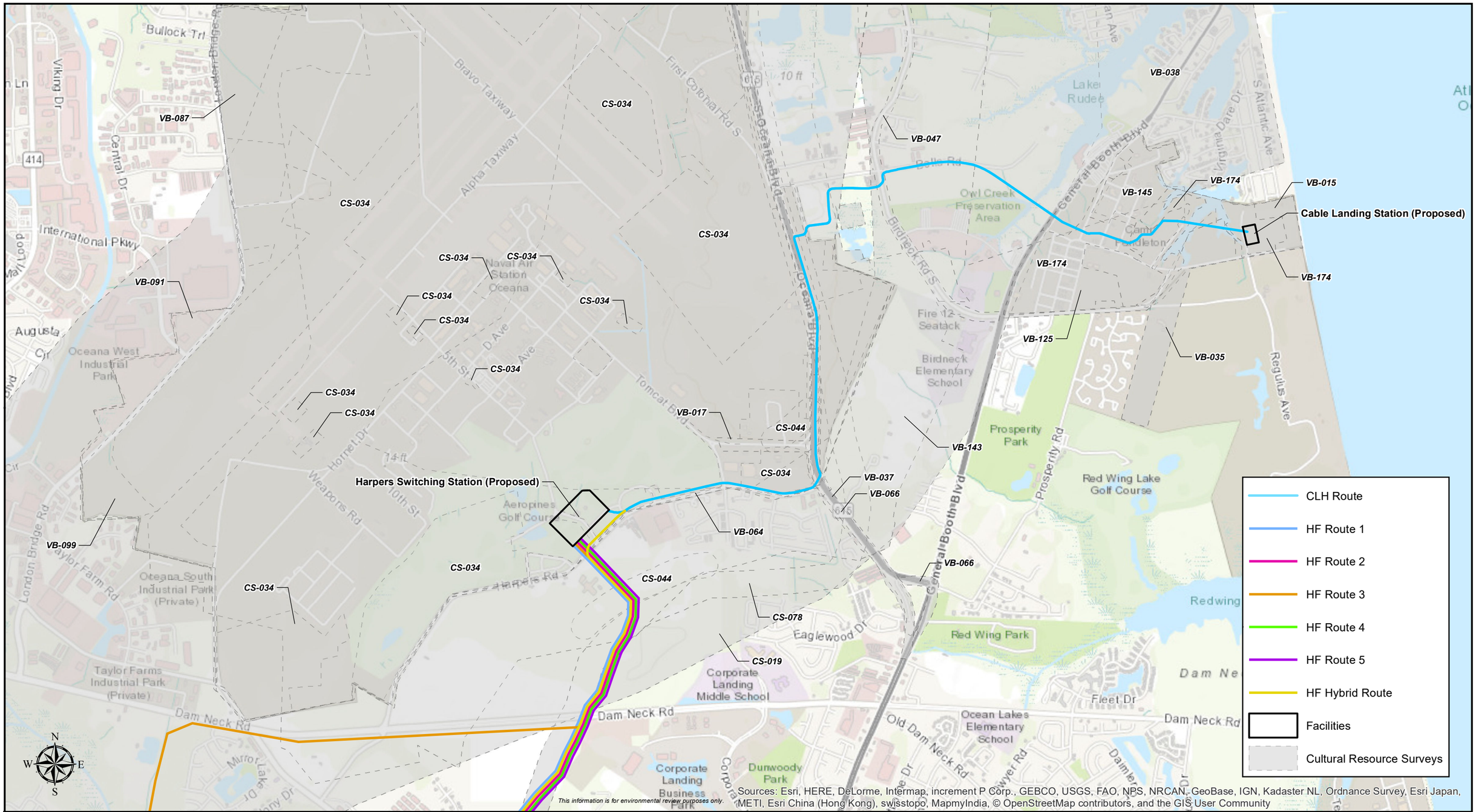

0 0.3 0.6 Miles

1:32,000

Attachment 3
Cultural resource Surveys Covering Portions of Alternate Routes - Detail Map
Coastal Virginia Offshore Wind Commercial Project
Dominion Virginia Power
Virginia Beach and Chesapeake, VA

Dominion Energy

ERM

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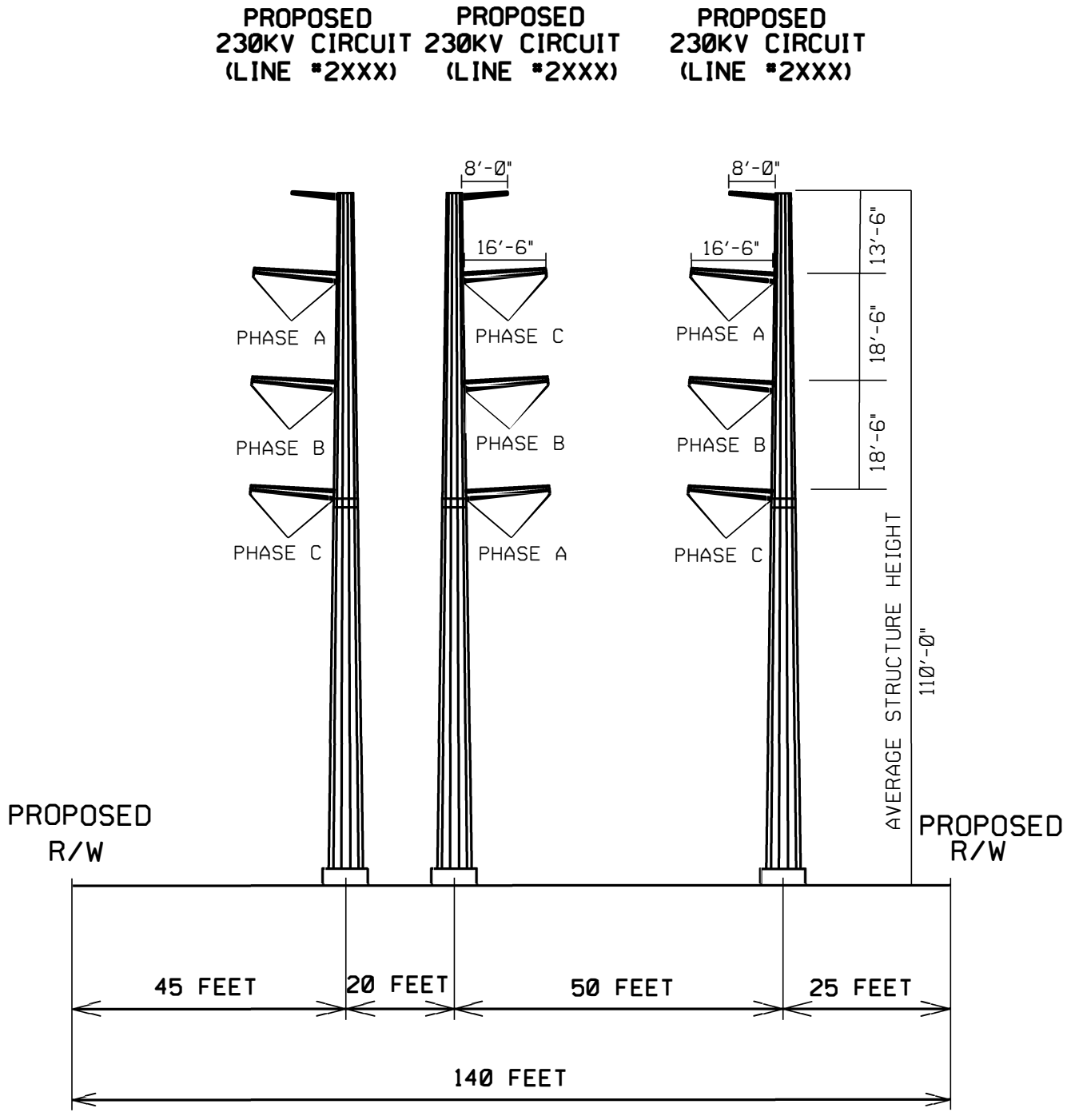
ATTACHMENT 4 TYPICAL DESIGN AND LAYOUT

TYPICAL TRANSMISSION RIGHT OF WAY



NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

Figure 1: Typical Design and Layout for Greenfield

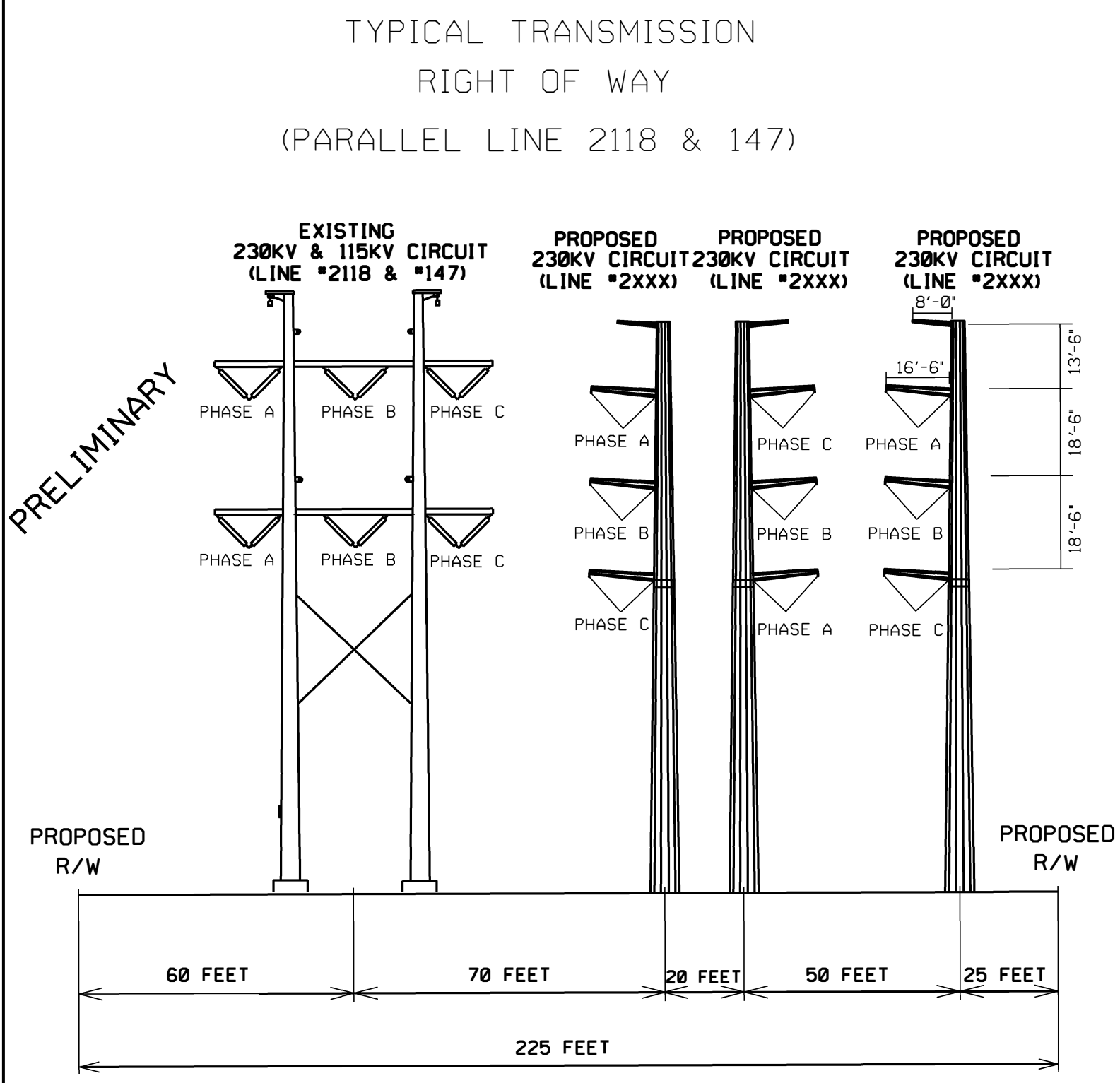


Figure 2: Typical Design and Layout for Collocation with TL-2118/147

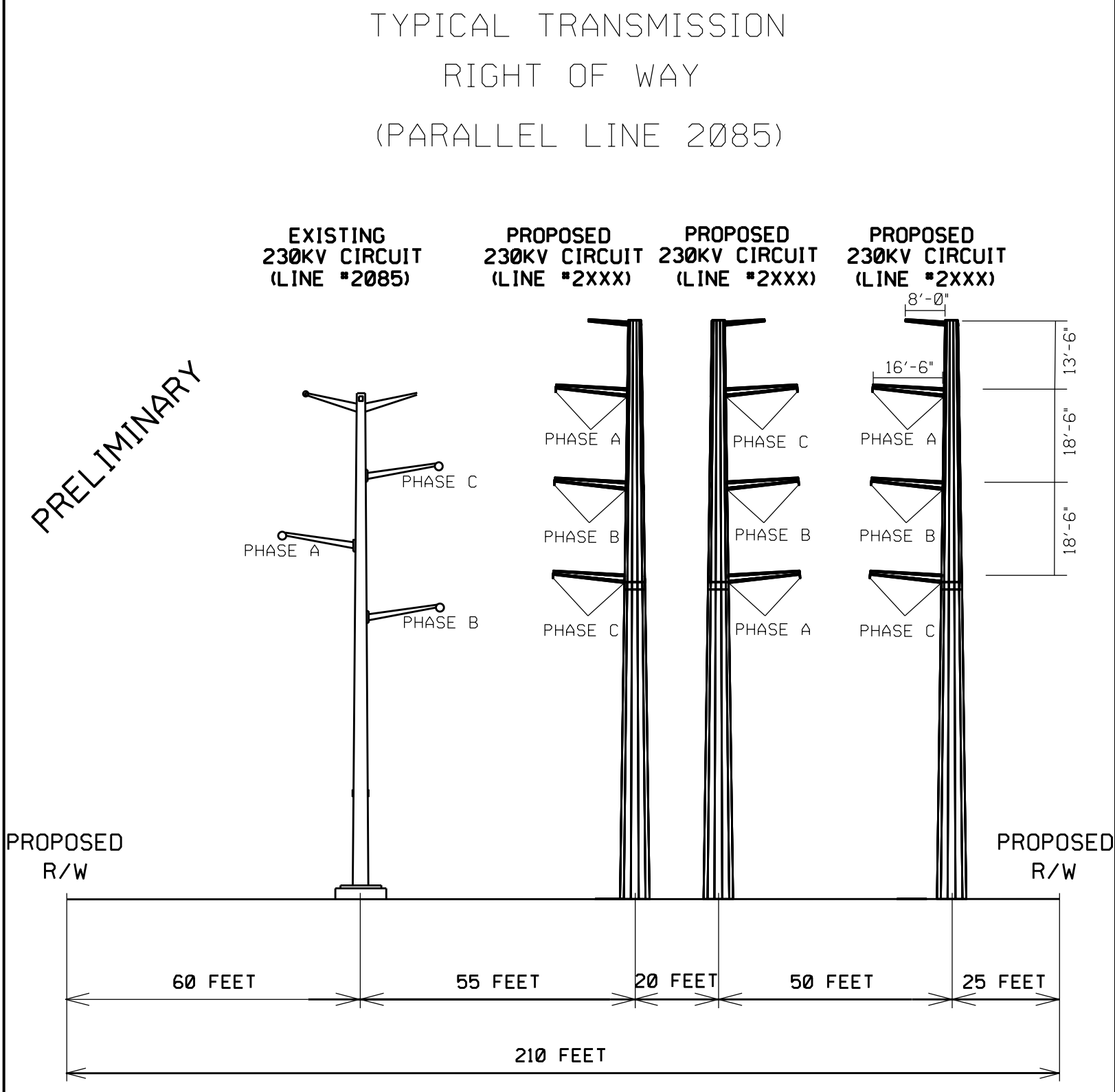
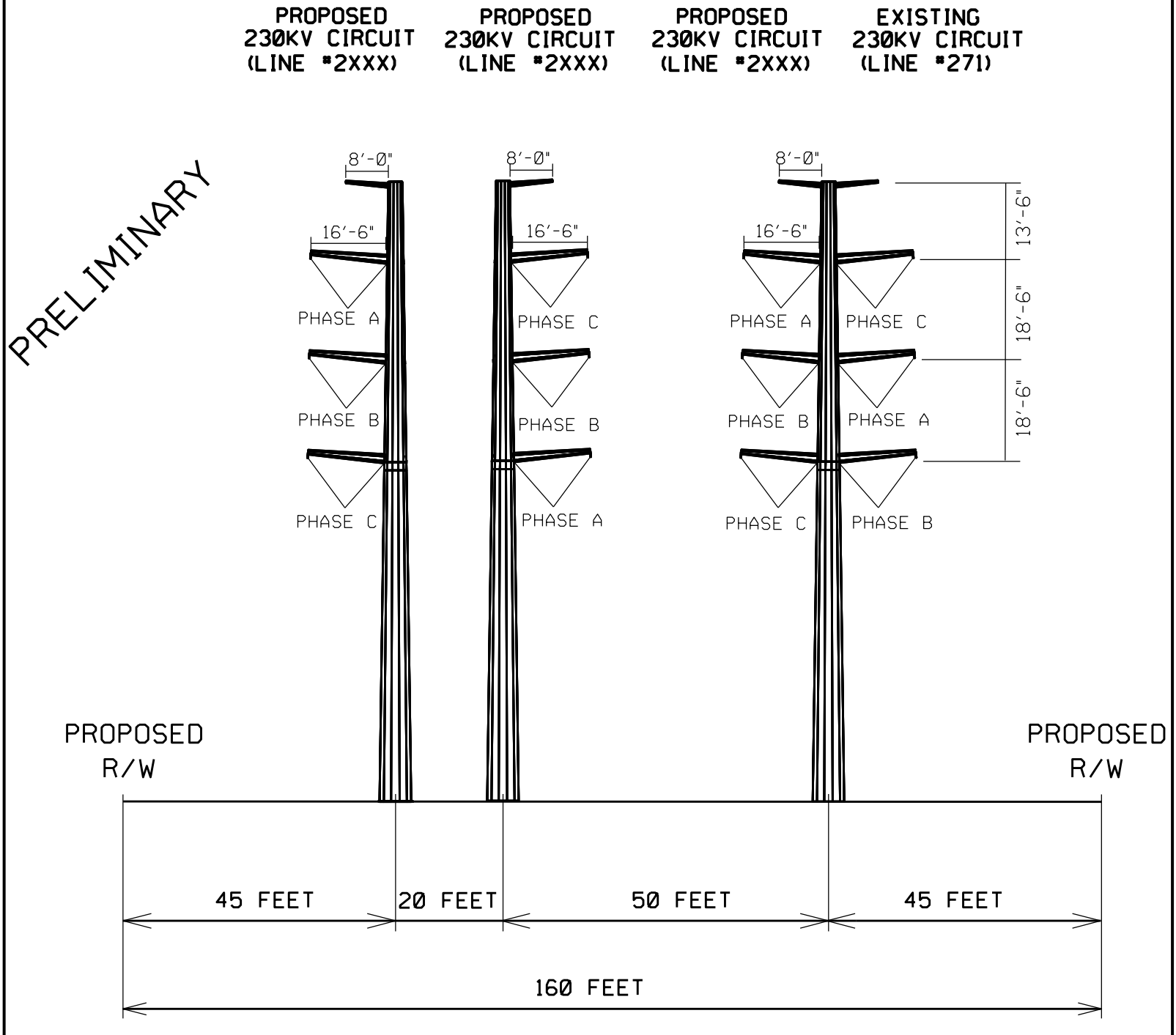


Figure 3: Typical Design and Layout for Collocation with TL-2085

TYPICAL TRANSMISSION

RIGHT OF WAY

(TL 271 CORRIDOR - WRECK & REBUILD - WEST)



NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

Figure 4: Typical Design and Layout for Wreck and Rebuild TL-271

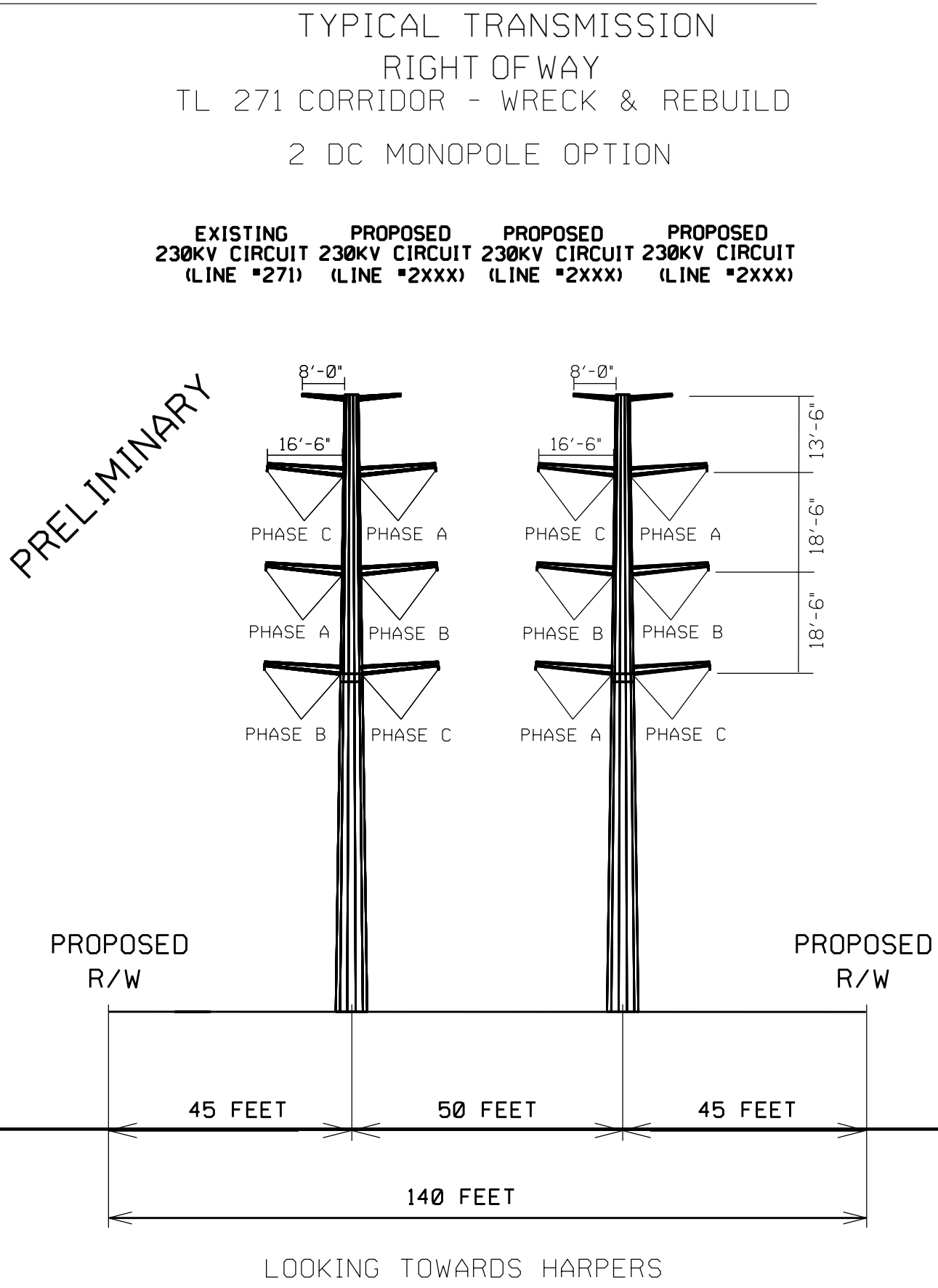


Figure 3.3-6: Typical Transmission Right of Way (Line #271 Corridor–Wreck and Rebuild–West)

NOTE: Information contained on drawing is to be considered preliminary in nature and subject to change based on final design.

Figure 5. Typical Design and Layout for Wreck and Rebuild TL-271

ATTACHMENT 5 HISTORIC RESOURCE PHOTOS

Figure 1: 131-0044/131-5333-0002, Albemarle & Chesapeake Canal, view to the southeast.

Figure 2: 131-5071, Centreville-Fentress Historic District, view to the northwest.

Figure 3: 131-5333, Albemarle & Chesapeake Canal Historic District, view to the northwest.

Figure 4: 134-0003/134-5027-0004, James Bell House, east elevation, view to the west.

Figure 5: 134-0038, Jonathan Woodhouse House, view to the north-northeast.

Figure 6: 134-0072, Thomas Lovett House/Rollingwood Academy, southwest elevation,

Figure 7: 134-0413, Camp Pendleton/State Military Reservation Historic District, view to the northeast.

Figure 8: 134-0413-0110, Building 1, south elevation, view to the north.

Figure 9: 134-0702, St. John's Baptist Church, north and east elevations, view to the southwest

Figure 10: 134-0917, Winford White House, northeast and southeast elevations, view to the west.

ATTACHMENT 6 PHOTOSIMULATIONS

PHOTOSIMULATIONS – CLH

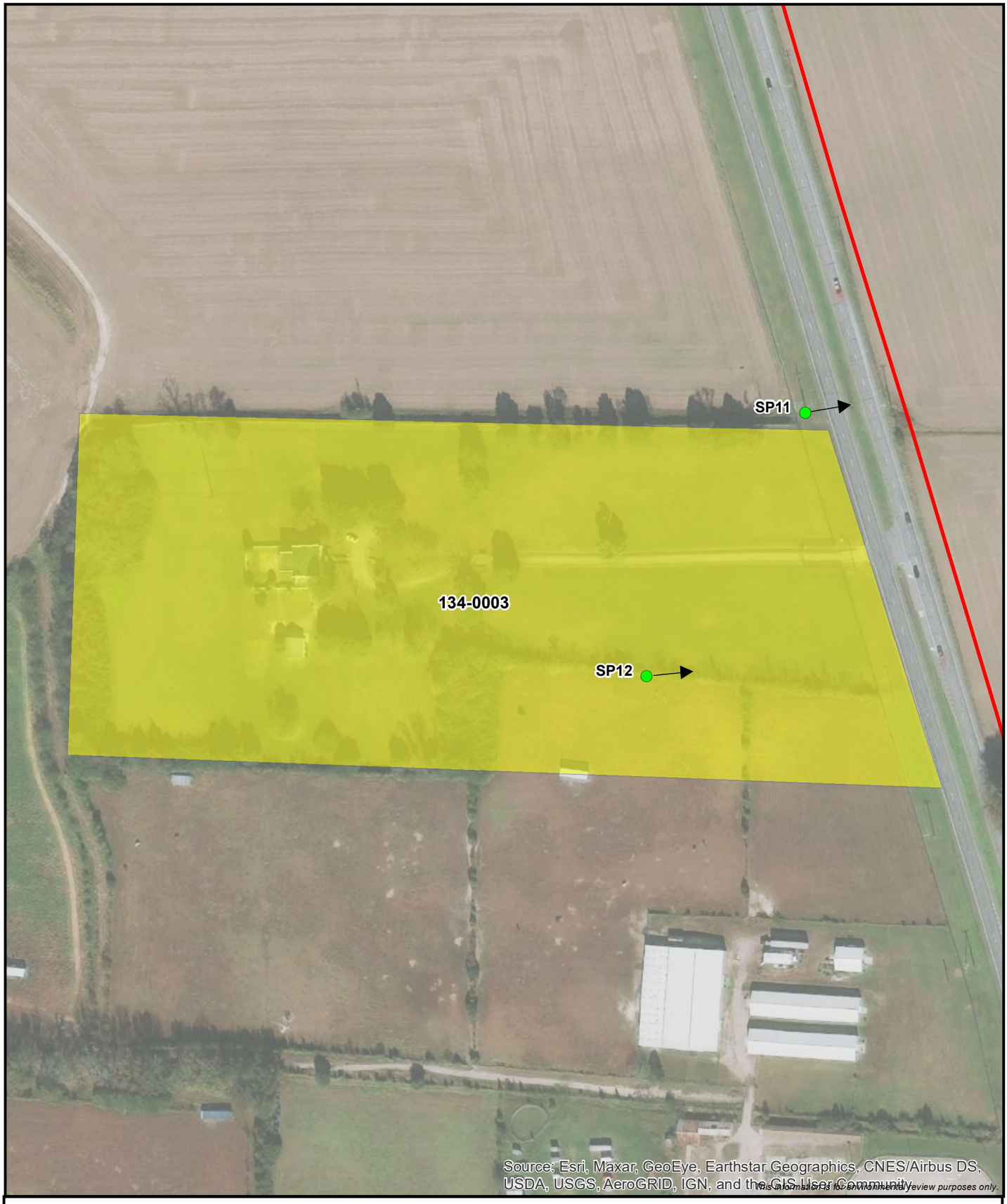


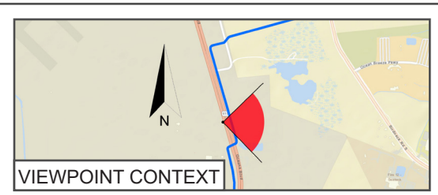
Figure 1: Aerial photograph depicting land use and photo view for 134-0003.

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	413278E 4074652N
View Direction:	90 degrees
Viewpoint Elevation:	29 feet
Distance to Route:	155 feet
Horizontal Field of View:	

Date of Photography:	5th April 2021 10:52
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 2:
Viewpoint SP11 - CLH Route
On grass next to Oceana Boulevard by sign 134-0003

Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Yellow line shows approximate position of proposed underground cable route (a dashed line means its location is behind foreground features)

Viewpoint Location UTM Zone 18N:	413278E 4074652N
View Direction:	90 degrees
Viewpoint Elevation:	29 feet
Distance to Route:	155 feet
Horizontal Field of View:	

Date of Photography:	5th April 2021 10:52
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet

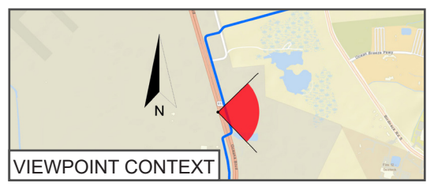


Figure 3:
Viewpoint SP11 - CLH Route
On grass next to Oceana Boulevard by sign 134-0003

Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	410163E 4074606N
View Direction:	70 degrees
Viewpoint Elevation:	26 feet
Distance to Route:	541 feet
Horizontal Field of View:	

Date of Photography:	5th April 2021 10:52
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet

VIEWPOINT CONTEXT

Figure 4:
Viewpoint SP12 - CLH Route

On grass to southeast of 134-0003

Pre-Application Analysis
Coastal Virginia Offshore Wind

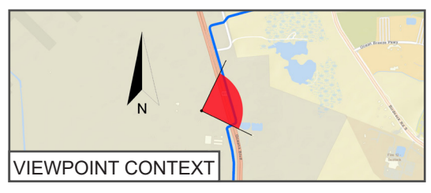
Attachment 6: Photosimulations

Yellow line shows approximate position of proposed underground cable route (a dashed line means its location is behind foreground features)

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	410163E 4074606N
View Direction:	70 degrees
Viewpoint Elevation:	26 feet
Distance to Route:	541 feet
Horizontal Field of View:	

Date of Photography:	5th April 2021 10:52
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 5:
Viewpoint SP12 - CLH Route

On grass to southeast of 134-0003

Pre-Application Analysis
Coastal Virginia Offshore Wind

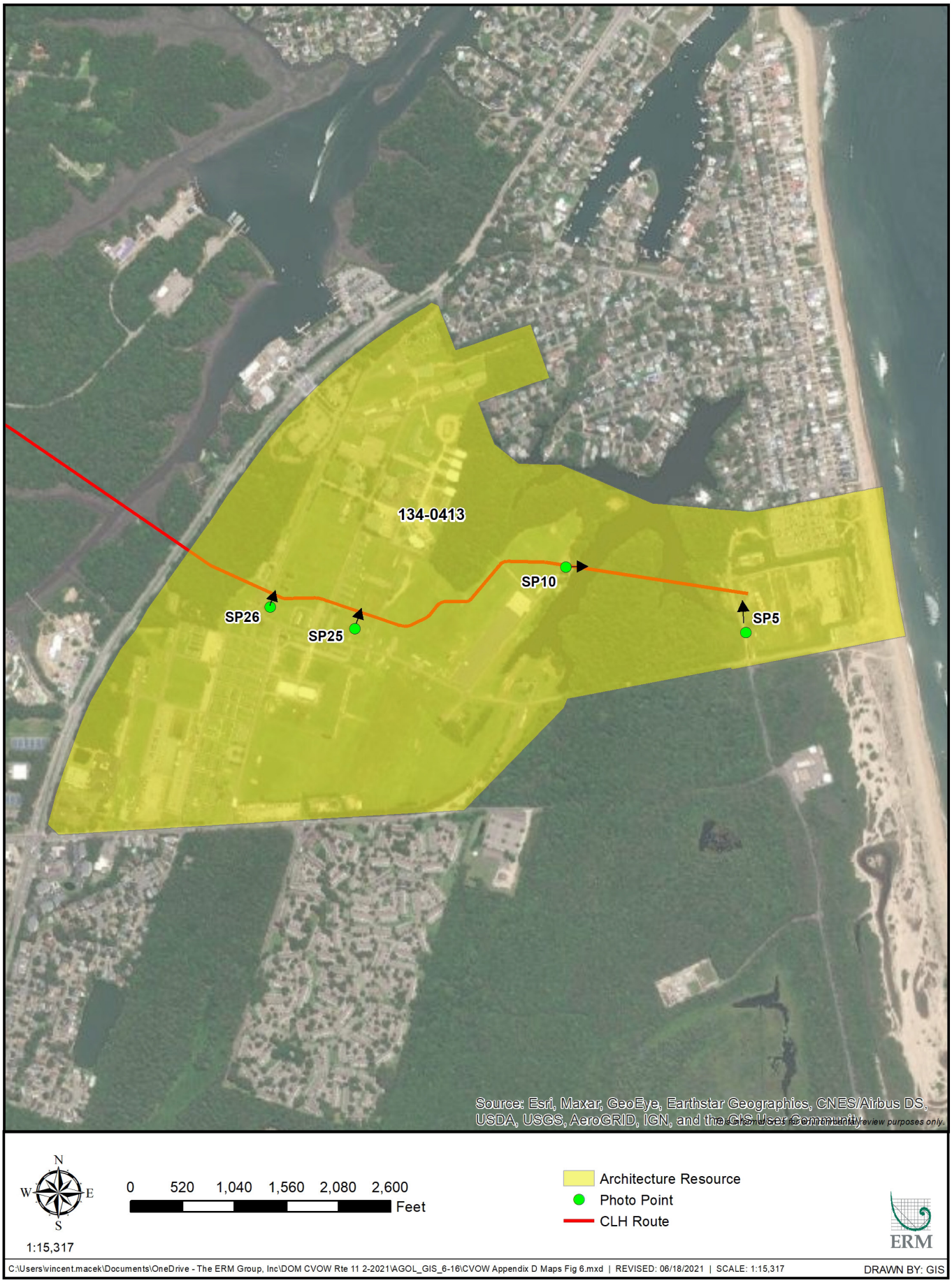


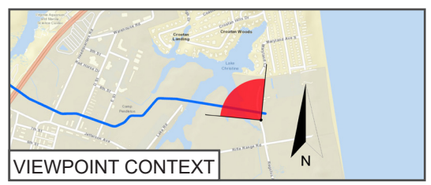
Figure 6: Aerial photograph depicting land use and photo view for 134-0413.

Attachment 6: Photosimulations

Existing view

Viewpoint Location UTM Zone 18N:	413436E 4074902N
View Direction:	318 degrees
Viewpoint Elevation:	13 feet
Distance to Route:	136 feet
Horizontal Field of View:	90 degrees

Date of Photography:	31st March 2021 11:56
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 7:
Viewpoint SP5 - CLH Route

On Regulus Road northwest of 134-0413

Pre-Application Analysis
Coastal Virginia Offshore Wind

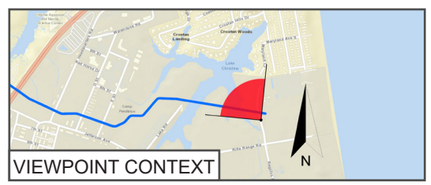
Attachment 6: Photosimulations

Yellow line shows approximate position of proposed underground cable route (a dashed line means its location is behind foreground features)

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	413436E 4074902N
View Direction:	318 degrees
Viewpoint Elevation:	13 feet
Distance to Route:	136 feet
Horizontal Field of View:	90 degrees

Date of Photography:	31st March 2021 11:56
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 8:
Viewpoint SP5 - CLH Route

On Regulus Road northwest of 134-0413

Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	413028E 4075014N
View Direction:	110 degrees
Viewpoint Elevation:	10 feet
Distance to Route:	35 feet
Horizontal Field of View:	

Date of Photography:	30th March 2021 10:59
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet

VIEWPOINT CONTEXT

Figure 9:
Viewpoint SP10 - CLH Route

Parking lot on end of Lake Road 134-0413

Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Yellow line shows approximate position of proposed underground cable route (a dashed line means its location is behind foreground features)

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	413028E 4075014N
View Direction:	110 degrees
Viewpoint Elevation:	10 feet
Distance to Route:	35 feet
Horizontal Field of View:	

Date of Photography:	30th March 2021 10:59
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet

VIEWPOINT CONTEXT

Figure 10:
Viewpoint SP10 - CLH Route

Parking lot on end of Lake Road 134-0413

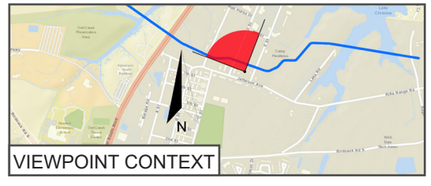
Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Existing view

Viewpoint Location UTM Zone 18N:	412495E 4074861N
View Direction:	335 degrees
Viewpoint Elevation:	16 feet
Distance to Route:	140 feet
Horizontal Field of View:	

Date of Photography:	31st March 2021 14:25
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 11:
Viewpoint SP25 - CLH Route
Jefferson Avenue between buildings 57 and 83
134-0413

Pre-Application Analysis
Coastal Virginia Offshore Wind

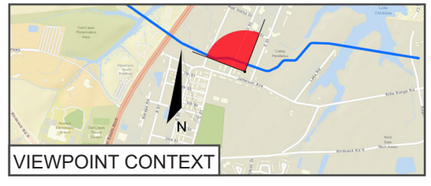
Attachment 6: Photosimulations

Yellow line shows approximate position of proposed underground cable route (a dashed line means its location is behind foreground features)

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	412495E 4074861N
View Direction:	335 degrees
Viewpoint Elevation:	16 feet
Distance to Route:	140 feet
Horizontal Field of View:	

Date of Photography:	31st March 2021 14:25
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 12:
Viewpoint SP25 - CLH Route
Jefferson Avenue between buildings 57 and 83
134-0413

Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

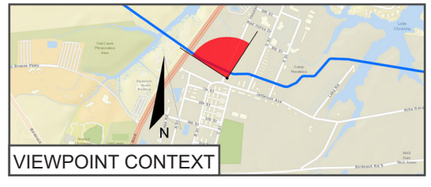
Existing View

Dominion Energy®

ERM

Viewpoint Location UTM Zone 18N:	412495E 4074861N
View Direction:	347 degrees
Viewpoint Elevation:	13 feet
Distance to Route:	116 feet
Horizontal Field of View:	

Date of Photography:	31st March 2021 15:03
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 13:
Viewpoint SP26 - CLH Route

In field to west of church 134-0413

Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Yellow line shows approximate position of proposed underground cable route (a dashed line means its location is behind foreground features)

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	412495E 4074861N
View Direction:	347 degrees
Viewpoint Elevation:	13 feet
Distance to Route:	116 feet
Horizontal Field of View:	

Date of Photography:	31st March 2021 15:03
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet

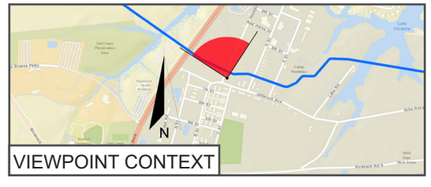


Figure 14:
Viewpoint SP26 - CLH Route

In field to west of church 134-0413

Pre-Application Analysis
Coastal Virginia Offshore Wind

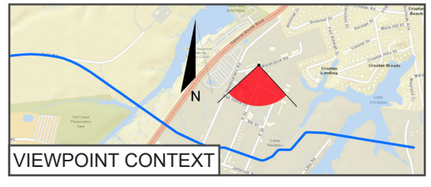
Figure 15: Aerial photograph depicting land use and photo view for 134-0413-0110.

Attachment 6: Photosimulations

Existing view

Viewpoint Location UTM Zone 18N:	412602E 4075392N
View Direction:	180 degrees
Viewpoint Elevation:	16 feet
Distance to Route:	1509 feet
Horizontal Field of View:	90 degrees

Date of Photography:	31st March 2021 08:02
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 16:
Viewpoint SP1 - CLH Route

On Warehouse Road south of 134-0413-0110

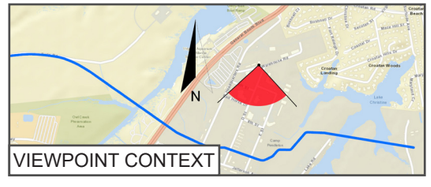
Pre-Application Analysis
Coastal Virginia Offshore Wind

Yellow line shows approximate position of proposed underground cable route (a dashed line means its location is behind foreground features)

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	412602E 4075392N
View Direction:	180 degrees
Viewpoint Elevation:	16 feet
Distance to Route:	1509 feet
Horizontal Field of View:	90 degrees

Date of Photography:	31st March 2021 08:02
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 17:
Viewpoint SP1 - CLH Route

On Warehouse Road south of 134-0413-0110

Pre-Application Analysis
Coastal Virginia Offshore Wind

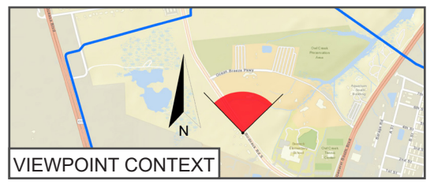
Figure 18: Aerial photograph depicting land use and photo view for 134-0917.

Attachment 6: Photosimulations

Existing view

Viewpoint Location UTM Zone 18N:	411190E 4074638N
View Direction:	360 degrees
Viewpoint Elevation:	16 feet
Distance to Route:	2341 feet
Horizontal Field of View:	

Date of Photography:	2nd April 2021 09:10
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 19:
Viewpoint SP13 - CLH Route

On Birdneck Road northwest of 134-0917

Pre-Application Analysis
Coastal Virginia Offshore Wind

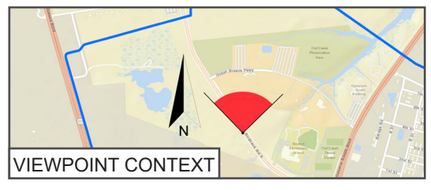
Attachment 6: Photosimulations

Yellow line shows approximate position of proposed underground cable route (a dashed line means its location is behind foreground features)

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	411190E 4074638N
View Direction:	360 degrees
Viewpoint Elevation:	16 feet
Distance to Route:	2341 feet
Horizontal Field of View:	

Date of Photography:	2nd April 2021 09:10
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 20
Viewpoint SP13 - CLH Route

On Birdneck Road northwest of 134-0917

Pre-Application Analysis
Coastal Virginia Offshore Wind

PHOTOSIMULATIONS – HF ROUTE 1

Figure 21: Aerial photograph depicting land use and photo view for 131-0044.

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	401735E 4064096N
View Direction:	336 degrees
Viewpoint Elevation:	10 feet
Distance to Route:	2915 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 13:42
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet

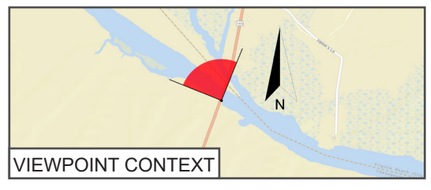


Figure 22:
Viewpoint SP19 - HF Route 1
On Mt. Pleasant Road/North Landing Road bridge- 131-0044 and 131-5333

Pre-Application Analysis Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Transmission Line-over-Photo Image - No elements of the proposed Route will be visible from this location due to foreground screening

Viewpoint Location UTM Zone 18N:	401735E 4064096N
View Direction:	336 degrees
Viewpoint Elevation:	10 feet
Distance to Route:	2915 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 13:42
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet

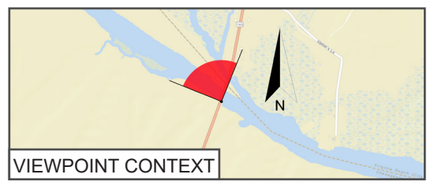


Figure 23:
Viewpoint SP19 - HF Route 1
On Mt. Pleasant Road/North Landing Road bridge- 131-0044 and 131-5333

Pre-Application Analysis Coastal Virginia Offshore Wind

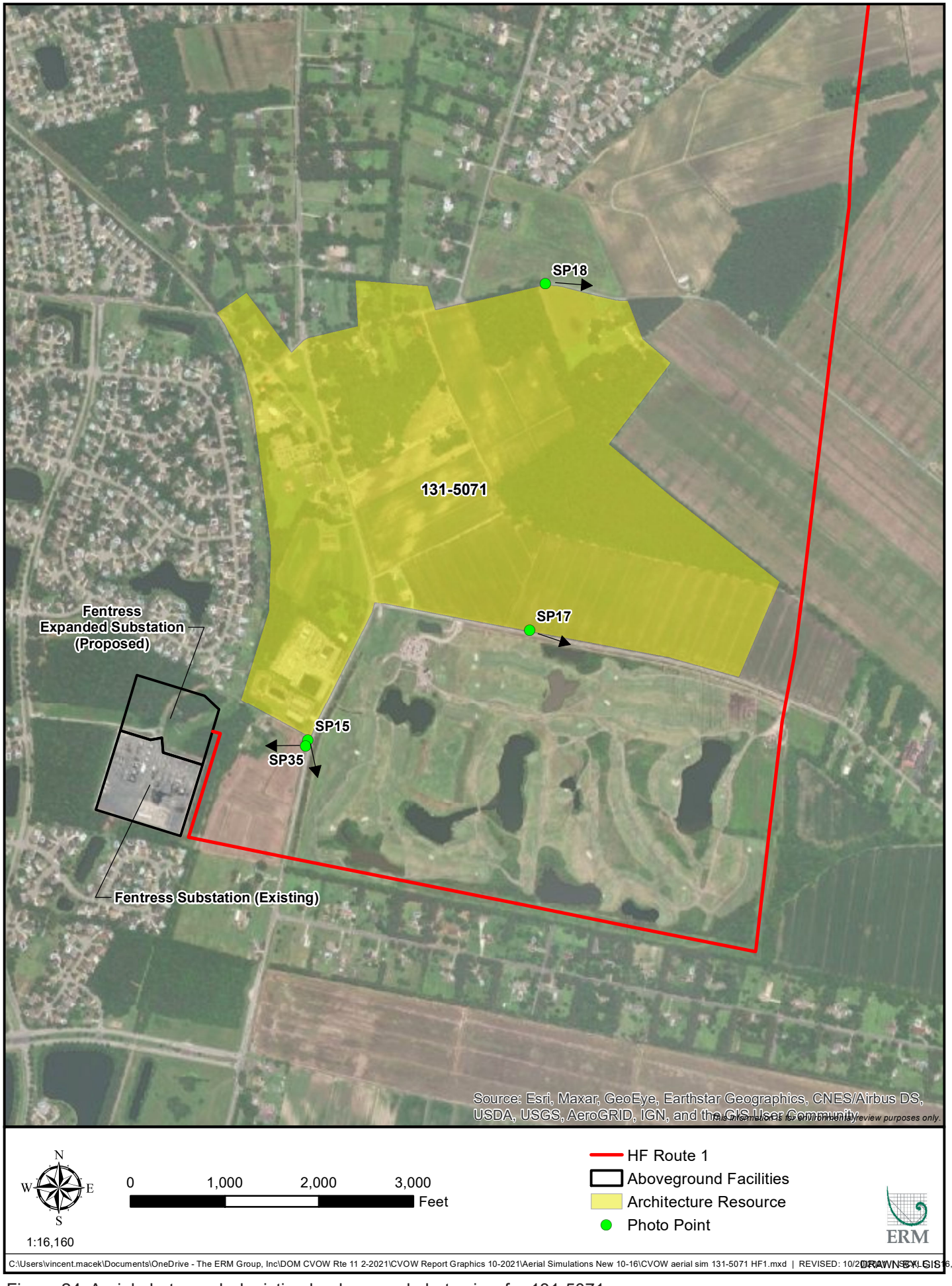


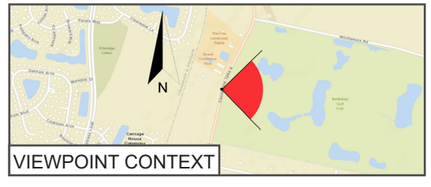
Figure 24: Aerial photograph depicting land use and photo view for 131-5071.

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	394102E 4061222N
View Direction:	90 degrees
Viewpoint Elevation:	20 feet
Distance to Route:	3962 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 10:53
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 25:
Viewpoint SP15a - HF Route 1

On Centerville Turnpike east of 131-5071

Pre-Application Analysis Coastal Virginia Offshore Wind

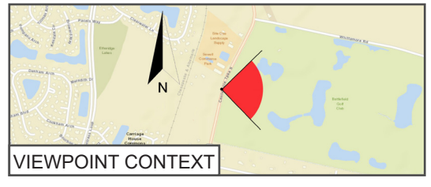
Attachment 6: Photosimulations

Photomontage showing proposed Route - HF Route 1

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	394102E 4061222N
View Direction:	90 degrees
Viewpoint Elevation:	20 feet
Distance to Route:	3962 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 10:53
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 26:
Viewpoint SP15a - HF Route 1

On Centerville Turnpike east of 131-5071

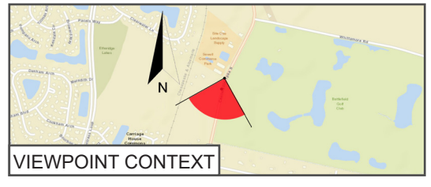
Pre-Application Analysis Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	394102E 4061222N
View Direction:	195 degrees
Viewpoint Elevation:	20 feet
Distance to Route:	856 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 10:53
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 27:
Viewpoint SP15b - HF Route 1

On Centerville Turnpike south of 131-5071

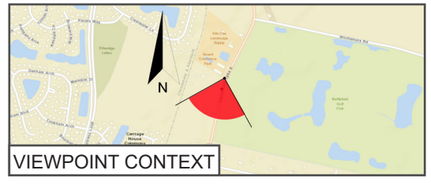
Pre-Application Analysis Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Photomontage showing proposed Route - HF Route 1

Viewpoint Location UTM Zone 18N:	394102E 4061222N
View Direction:	195 degrees
Viewpoint Elevation:	20 feet
Distance to Route:	856 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 10:53
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 28:
Viewpoint SP15b - HF Route 1

On Centerville Turnpike south of 131-5071

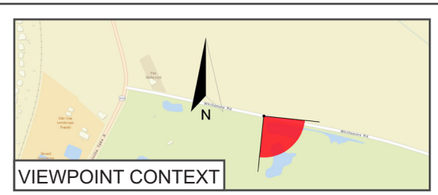
Pre-Application Analysis Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	394378E 4061514N
View Direction:	140 degrees
Viewpoint Elevation:	13 feet
Distance to Route:	2255 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 11:44
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 29:
Viewpoint SP17 - HF Route 1

On Whittamore Road south of 131-5071

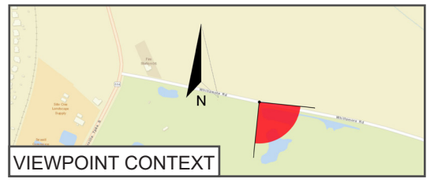
Pre-Application Analysis Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Photomontage showing proposed Route - HF Route 1

Viewpoint Location UTM Zone 18N:	394378E 4061514N
View Direction:	140 degrees
Viewpoint Elevation:	13 feet
Distance to Route:	2255 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 11:44
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 30:
Viewpoint SP17 - HF Route 1

On Whittamore Road south of 131-5071

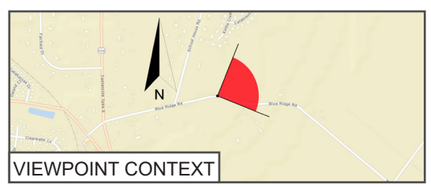
Pre-Application Analysis Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	394749E 4062435N
View Direction:	66 degrees
Viewpoint Elevation:	23 feet
Distance to Route:	2409 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 14:08
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 31:
Viewpoint SP18 - HF Route 1

On Blue Ridge Road east of 131-5071

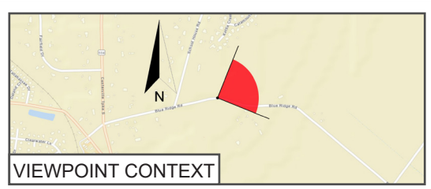
Pre-Application Analysis Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Photomontage showing proposed Route - HF Route 1

Viewpoint Location UTM Zone 18N:	394749E 4062435N
View Direction:	66 degrees
Viewpoint Elevation:	23 feet
Distance to Route:	2409 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 14:08
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 32:
Viewpoint SP18 - HF Route 1

On Blue Ridge Road east of 131-5071

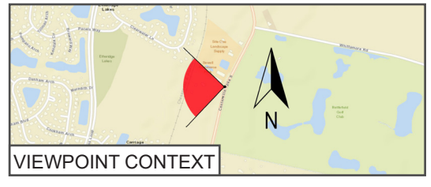
Pre-Application Analysis Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	394107E 4061242N
View Direction:	266 degrees
Viewpoint Elevation:	19 feet
Distance to Route:	685 feet
Horizontal Field of View:	90 degrees

Date of Photography:	27th August 2021 2:30pm
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 33:
Viewpoint SP35 - HF Route 1

On Centerville Turnpike south of 131-5071

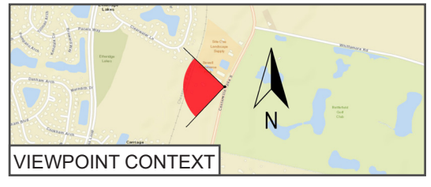
Pre-Application Analysis Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Photomontage showing proposed Route - HF Route 1

Viewpoint Location UTM Zone 18N:	394107E 4061242N
View Direction:	266 degrees
Viewpoint Elevation:	19 feet
Distance to Route:	685 feet
Horizontal Field of View:	90 degrees

Date of Photography:	27th August 2021 2:30pm
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 34:
Viewpoint SP35 - HF Route 1

On Centerville Turnpike south of 131-5071

Pre-Application Analysis Coastal Virginia Offshore Wind

Figure 35: Aerial photograph depicting land use and photo view for 131-5333.

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	401735E 4064096N
View Direction:	336 degrees
Viewpoint Elevation:	10 feet
Distance to Route:	2915 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 13:42
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet

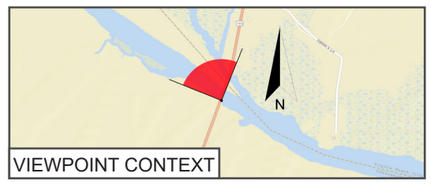


Figure 36:
Viewpoint SP19 - HF Route 1
On Mt. Pleasant Road/North Landing Road bridge- 131-0044 and 131-5333

Pre-Application Analysis Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Transmission Line-over-Photo Image - No elements of the proposed Route will be visible from this location due to foreground screening

Viewpoint Location UTM Zone 18N:	401735E 4064096N
View Direction:	336 degrees
Viewpoint Elevation:	10 feet
Distance to Route:	2915 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 13:42
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet

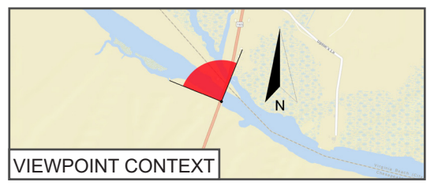


Figure 37:
Viewpoint SP19 - HF Route 1
On Mt. Pleasant Road/North Landing Road bridge- 131-0044 and 131-5333

Pre-Application Analysis Coastal Virginia Offshore Wind

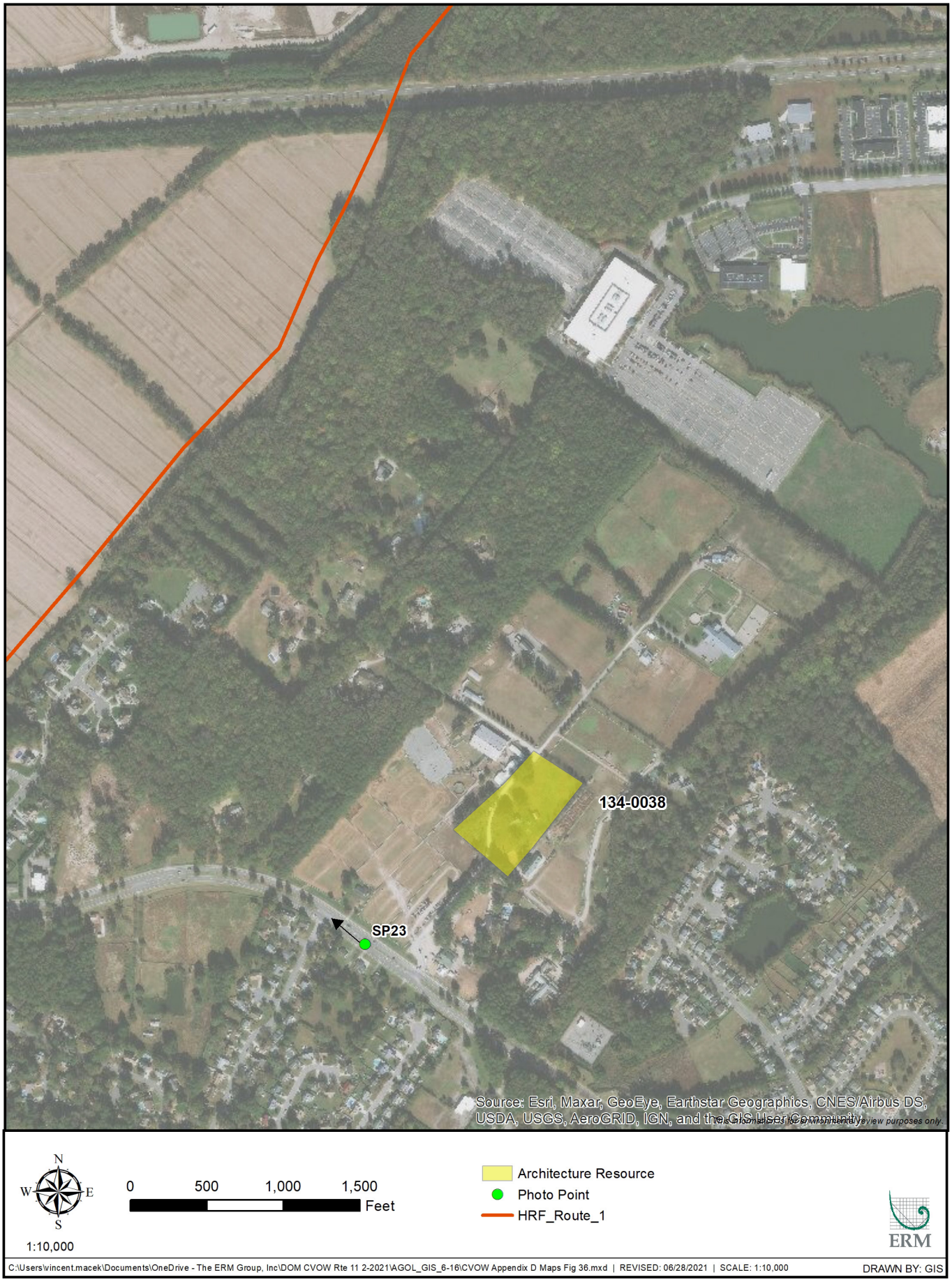


Figure 38: Aerial photograph depicting land use and photo view for 134-0038.

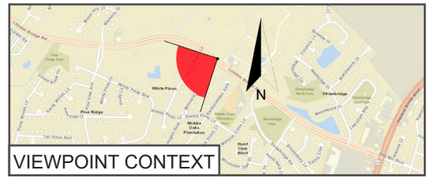
Attachment 6: Photosimulations

Existing View

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	408678E 4070209N
View Direction:	242 degrees
Viewpoint Elevation:	16 feet
Distance to Route:	3490 feet
Horizontal Field of View:	90 degrees

Date of Photography:	2nd April 2021 10:03
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 39:
Viewpoint SP23a - HF Route 1

On London Bridge Road southwest of 134-0038

Pre-Application Analysis Coastal Virginia Offshore Wind

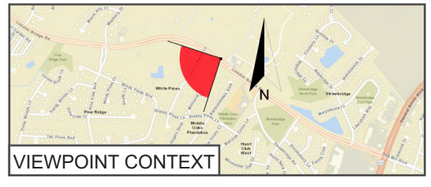
Attachment 6: Photosimulations

Transmission Line-over-Photo Image - No elements of the proposed Route will be visible from this location due to foreground screening

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	408678E 4070209N
View Direction:	242 degrees
Viewpoint Elevation:	16 feet
Distance to Route:	3490 feet
Horizontal Field of View:	90 degrees

Date of Photography:	2nd April 2021 10:03
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 40:
Viewpoint SP23a - HF Route 1

On London Bridge Road southwest of 134-0038

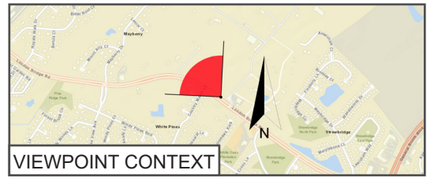
Pre-Application Analysis Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	408678E 4070209N
View Direction:	317 degrees
Viewpoint Elevation:	16 feet
Distance to Route:	3490 feet
Horizontal Field of View:	90 degrees

Date of Photography:	2nd April 2021 10:03
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 41:
Viewpoint SP23b - HF Route 1

On London Bridge Road southwest of 134-0038

Pre-Application Analysis Coastal Virginia Offshore Wind

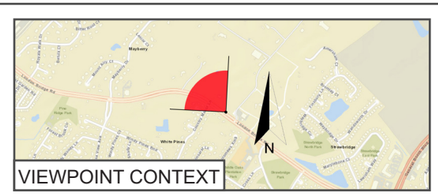
Attachment 6: Photosimulations

Transmission Line-over-Photo Image - No elements of the proposed Route will be visible from this location due to foreground screening

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	408678E 4070209N
View Direction:	317 degrees
Viewpoint Elevation:	16 feet
Distance to Route:	3490 feet
Horizontal Field of View:	90 degrees

Date of Photography:	2nd April 2021 10:03
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 42:
Viewpoint SP23b - HF Route 1

On London Bridge Road southwest of 134-0038

Pre-Application Analysis Coastal Virginia Offshore Wind

Figure 43: Aerial photograph depicting land use and photo view for 134-0072.

Attachment 6: Photosimulations

Existing View

Dominion Energy®

ERM

Viewpoint Location UTM Zone 18N:	405960E 4069349N
View Direction:	5 degrees
Viewpoint Elevation:	16 feet
Distance to Route:	1587 feet
Horizontal Field of View:	90 degrees

Date of Photography:	2nd April 2021 11:17am
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet

VIEWPOINT CONTEXT

Figure 44:
Viewpoint SP24 - HF Route 1

On Hammer Stone Court north of 134-0072

Pre-Application Analysis Coastal Virginia Offshore Wind

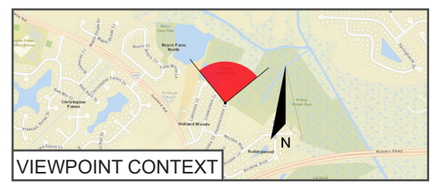
Attachment 6: Photosimulations

Transmission Line-over-Photo Image - No elements of the proposed Route will be visible from this location due to foreground screening

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	405960E 4069349N
View Direction:	5 degrees
Viewpoint Elevation:	16 feet
Distance to Route:	1587 feet
Horizontal Field of View:	90 degrees

Date of Photography:	2nd April 2021 11:17am
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 45:
Viewpoint SP24 - HF Route 1

On Hammer Stone Court north of 134-0072

Pre-Application Analysis Coastal Virginia Offshore Wind

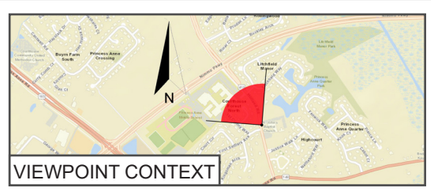
Figure 46: Aerial photograph depicting land use and photo view for 134-0702.

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	406130E 4068784N
View Direction:	317 degrees
Viewpoint Elevation:	13 feet
Distance to Route:	4690 feet
Horizontal Field of View:	90 degrees

Date of Photography:	2nd April 2021 2:16pm
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 47:
Viewpoint SP22 - HF Route 1

On Holland Road west of 134-0702

Pre-Application Analysis Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

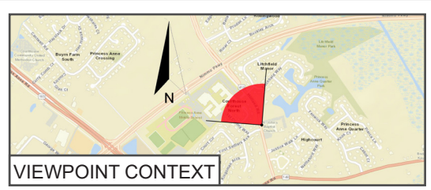
Transmission Line-over-Photo Image - No elements of the proposed Route will be visible from this location due to foreground screening

Dominion Energy®

ERM

Viewpoint Location UTM Zone 18N:	406130E 4068784N
View Direction:	317 degrees
Viewpoint Elevation:	13 feet
Distance to Route:	4690 feet
Horizontal Field of View:	90 degrees

Date of Photography:	2nd April 2021 2:16pm
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 48:
Viewpoint SP22 - HF Route 1

On Holland Road west of 134-0702

Pre-Application Analysis Coastal Virginia Offshore Wind

PHOTOSIMULATIONS – HF ROUTE 2

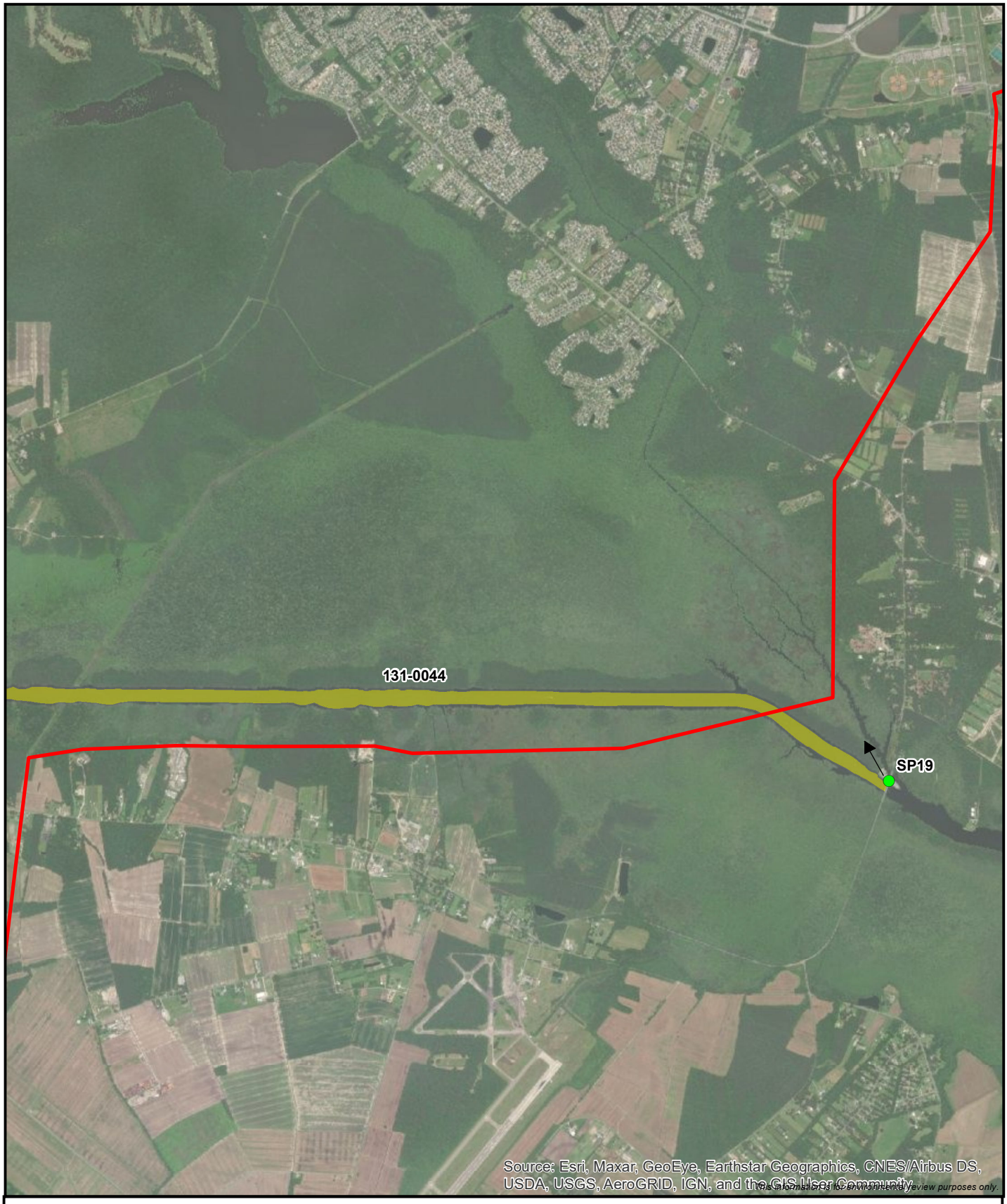


Figure 49: Aerial photograph depicting land use and photo view for 131-0044.

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	401735E 4064096N
View Direction:	336 degrees
Viewpoint Elevation:	10 feet
Distance to Route:	2915 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 13:42
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet

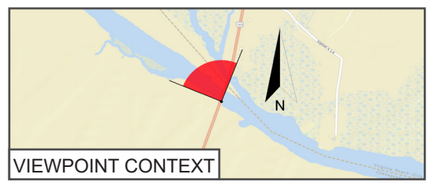


Figure 50:
Viewpoint SP19 - HF Route 2
On Mt. Pleasant Road/North Landing Road bridge- 131-0044 and 131-5333

Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Photomontage showing proposed Route - HF Route 2

Viewpoint Location UTM Zone 18N:	401735E 4064096N
View Direction:	336 degrees
Viewpoint Elevation:	10 feet
Distance to Route:	2915 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 13:42
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet

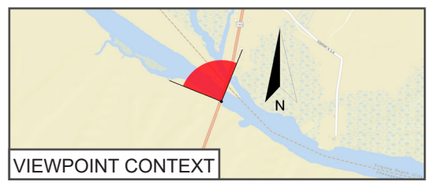


Figure 51:
Viewpoint SP19 - HF Route 2
On Mt. Pleasant Road/North Landing Road bridge- 131-0044 and 131-5333

Pre-Application Analysis
Coastal Virginia Offshore Wind

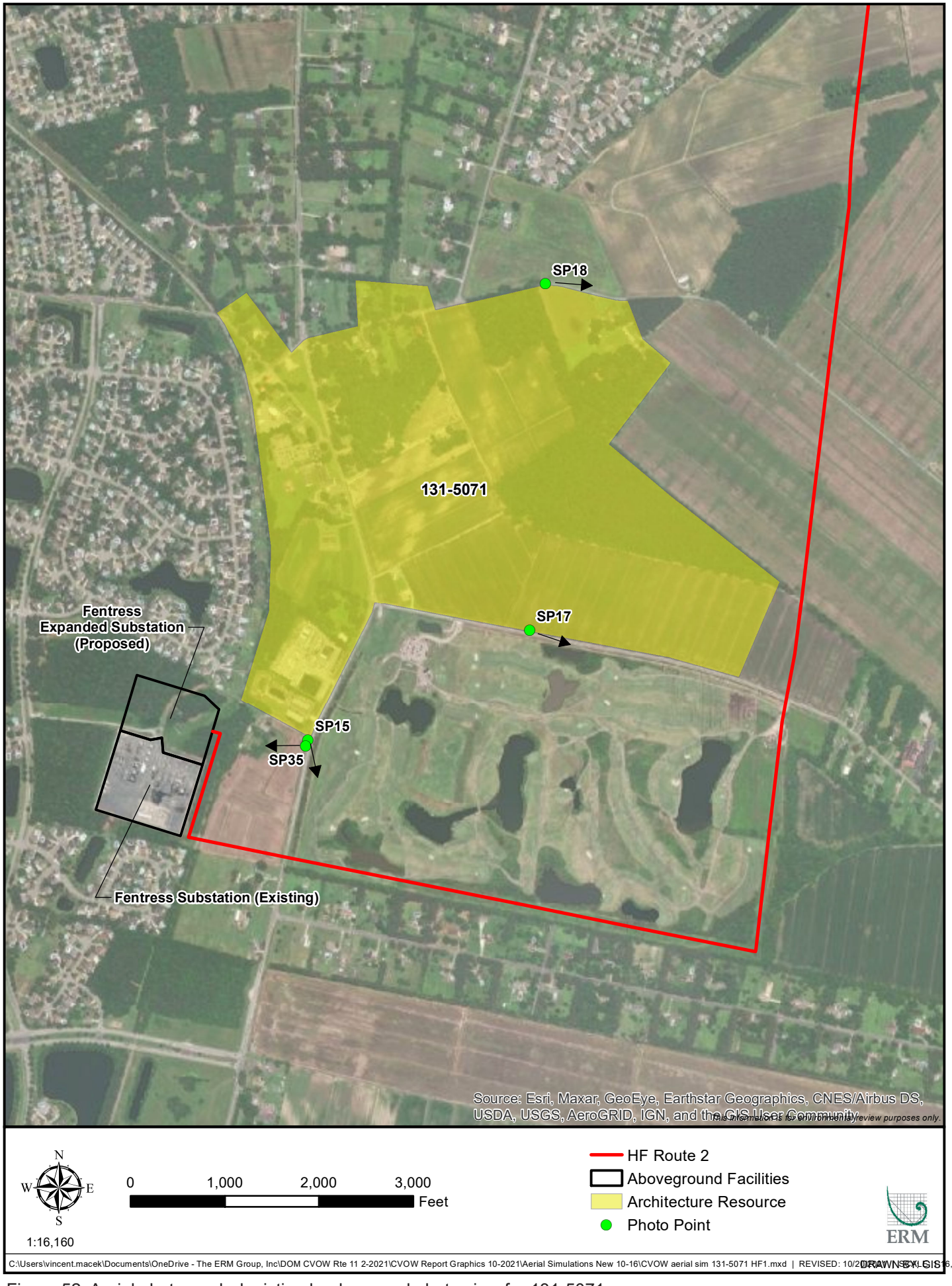


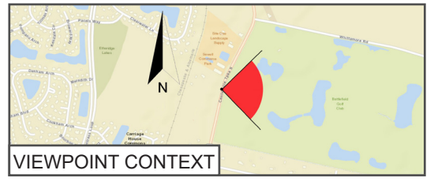
Figure 52: Aerial photograph depicting land use and photo view for 131-5071.

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	394102E 4061222N
View Direction:	90 degrees
Viewpoint Elevation:	20 feet
Distance to Route:	3962 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 10:53
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 53:
Viewpoint SP15a - HF Route 2

On Centerville Turnpike east of 131-5071

Pre-Application Analysis
Coastal Virginia Offshore Wind

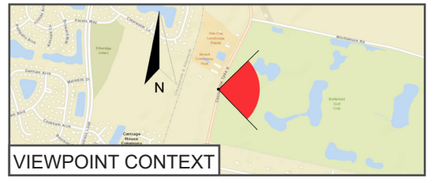
Attachment 6: Photosimulations

Photomontage showing proposed Route - HF Route 2

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	394102E 4061222N
View Direction:	90 degrees
Viewpoint Elevation:	20 feet
Distance to Route:	3962 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 10:53
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 54:
Viewpoint SP15a - HF Route 2

On Centerville Turnpike east of 131-5071

Pre-Application Analysis
Coastal Virginia Offshore Wind

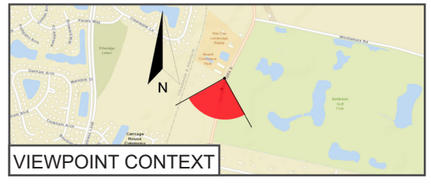
Attachment 6: Photosimulations

Existing View

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	394102E 4061222N
View Direction:	195 degrees
Viewpoint Elevation:	20 feet
Distance to Route:	856 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 10:53
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 55:
Viewpoint SP15b - HF Route 2

On Centerville Turnpike south of 131-5071

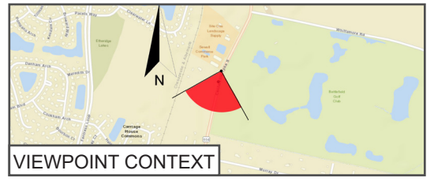
Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Photomontage showing proposed Route - HF Route 2

Viewpoint Location UTM Zone 18N:	394102E 4061222N
View Direction:	195 degrees
Viewpoint Elevation:	20 feet
Distance to Route:	856 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 10:53
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 56:
Viewpoint SP15b - HF Route 2

On Centerville Turnpike south of 131-5071

Pre-Application Analysis
Coastal Virginia Offshore Wind

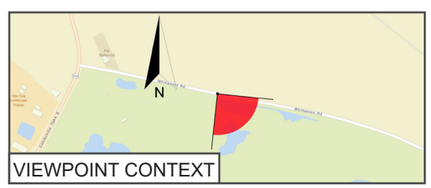
Attachment 6: Photosimulations

Existing View

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	394378E 4061514N
View Direction:	140 degrees
Viewpoint Elevation:	13 feet
Distance to Route:	2255 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 11:44
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 57:
Viewpoint SP17 - HF Route 2

On Whittamore Road south of 131-5071

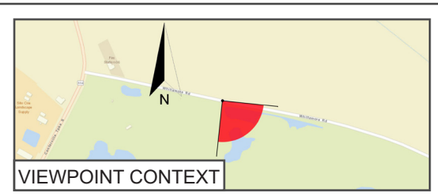
Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Photomontage showing proposed Route - HF Route 2

Viewpoint Location UTM Zone 18N:	394378E 4061514N
View Direction:	140 degrees
Viewpoint Elevation:	13 feet
Distance to Route:	2255 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 11:44
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 58:
Viewpoint SP17 - HF Route 2

On Whittamore Road south of 131-5071

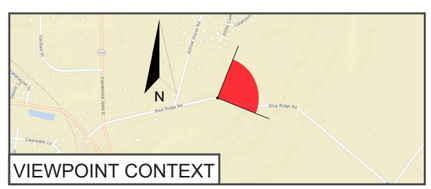
Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	394749E 4062435N
View Direction:	66 degrees
Viewpoint Elevation:	23 feet
Distance to Route:	2409 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 14:08
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 59:
Viewpoint SP18 - HF Route 2

On Blue Ridge Road east of 131-5071

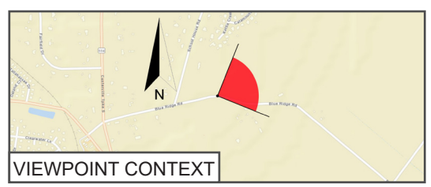
Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Photomontage showing proposed Route - HF Route 2

Viewpoint Location UTM Zone 18N:	394749E 4062435N
View Direction:	66 degrees
Viewpoint Elevation:	23 feet
Distance to Route:	2409 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 14:08
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 60:
Viewpoint SP18 - HF Route 2

On Blue Ridge Road east of 131-5071

Pre-Application Analysis
Coastal Virginia Offshore Wind

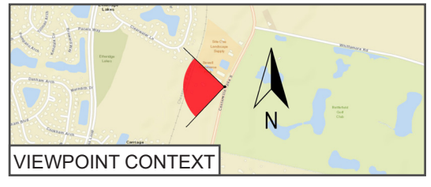
Attachment 6: Photosimulations

Existing View

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	394107E 4061242N
View Direction:	266 degrees
Viewpoint Elevation:	19 feet
Distance to Route:	685 feet
Horizontal Field of View:	90 degrees

Date of Photography:	27th August 2021 2:30pm
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 61:
Viewpoint SP35 - HF Route 2

On Centerville Turnpike south of 131-5071

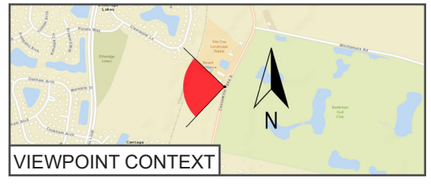
Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Photomontage showing proposed Route - HF Route 2

Viewpoint Location UTM Zone 18N:	394107E 4061242N
View Direction:	266 degrees
Viewpoint Elevation:	19 feet
Distance to Route:	685 feet
Horizontal Field of View:	90 degrees

Date of Photography:	27th August 2021 2:30pm
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 62:
Viewpoint SP35 - HF Route 2

On Centerville Turnpike south of 131-5071

Pre-Application Analysis
Coastal Virginia Offshore Wind

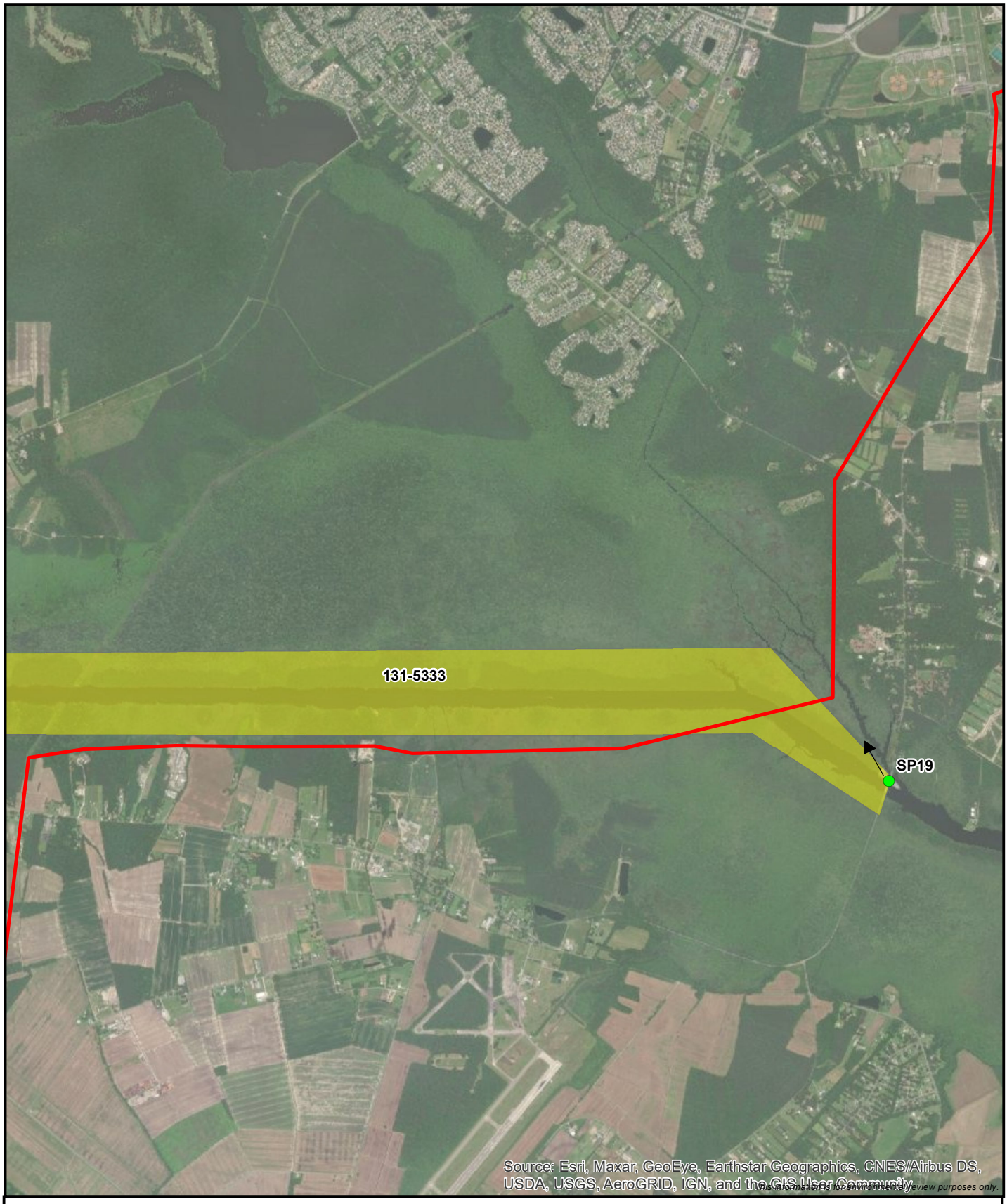


Figure 63: Aerial photograph depicting land use and photo view for 131-5333.

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	401735E 4064096N
View Direction:	336 degrees
Viewpoint Elevation:	10 feet
Distance to Route:	2915 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 13:42
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet

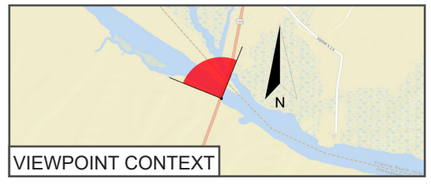


Figure 64:
Viewpoint SP19 - HF Route 2
On Mt. Pleasant Road/North Landing Road bridge- 131-0044 and 131-5333

Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Photomontage showing proposed Route - HF Route 2

Viewpoint Location UTM Zone 18N:	401735E 4064096N
View Direction:	336 degrees
Viewpoint Elevation:	10 feet
Distance to Route:	2915 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 13:42
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet

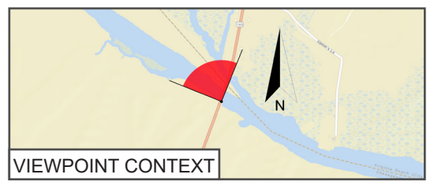


Figure 65:
Viewpoint SP19 - HF Route 2
On Mt. Pleasant Road/North Landing Road bridge- 131-0044 and 131-5333

Pre-Application Analysis
Coastal Virginia Offshore Wind

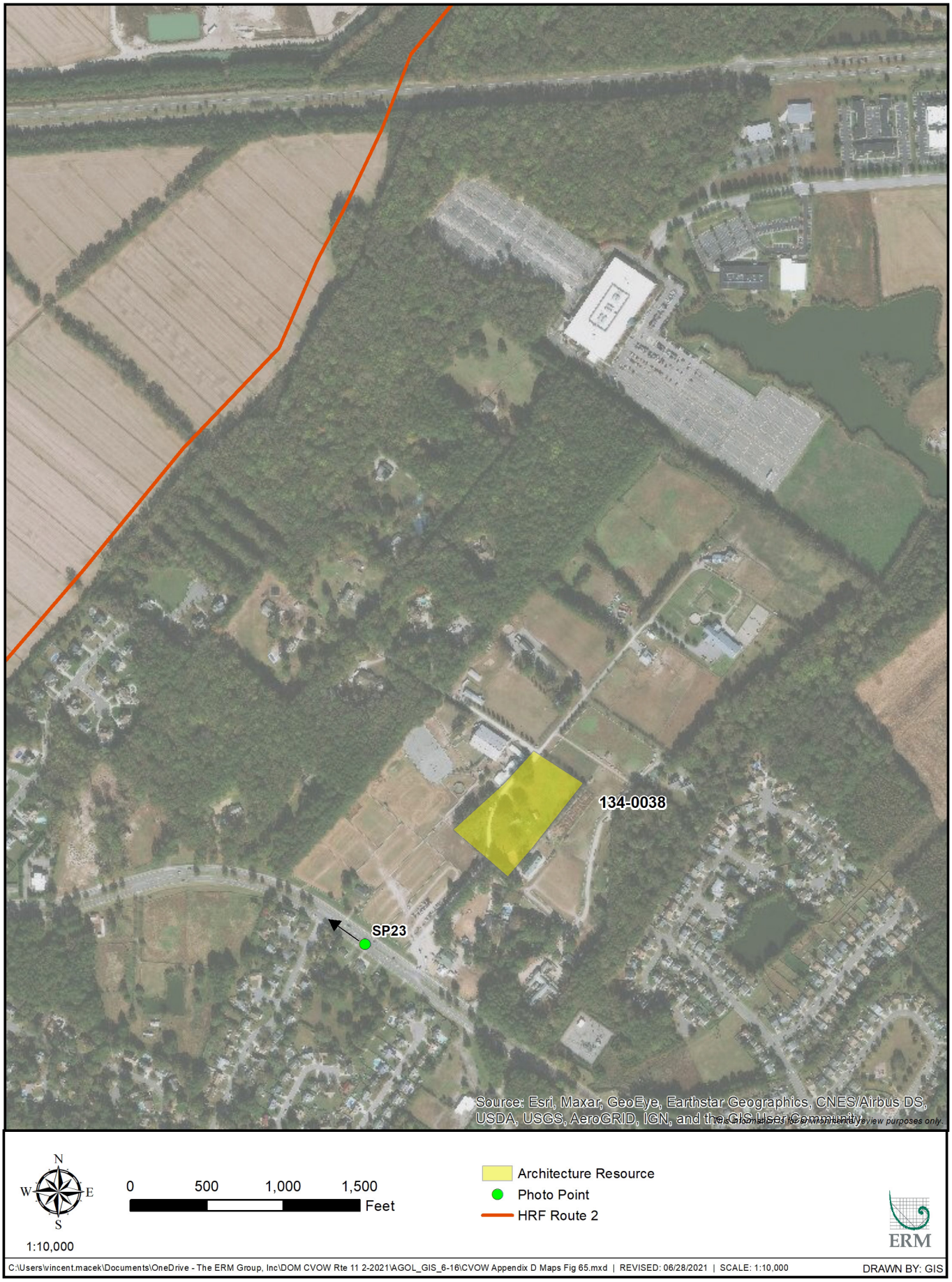


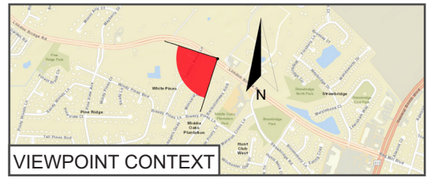
Figure 66: Aerial photograph depicting land use and photo view for 134-0038.

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	408678E 4070209N
View Direction:	242 degrees
Viewpoint Elevation:	16 feet
Distance to Route:	3490 feet
Horizontal Field of View:	90 degrees

Date of Photography:	2nd April 2021 10:03
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 67:
Viewpoint SP23a - HF Route 2

On London Bridge Road southwest of 134-0038

Pre-Application Analysis
Coastal Virginia Offshore Wind

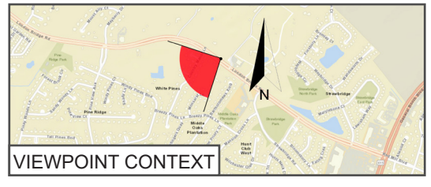
Attachment 6: Photosimulations

Transmission Line-over-Photo Image - No elements of the proposed Route will be visible from this location due to foreground screening

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	408678E 4070209N
View Direction:	242 degrees
Viewpoint Elevation:	16 feet
Distance to Route:	3490 feet
Horizontal Field of View:	90 degrees

Date of Photography:	2nd April 2021 10:03
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 68:
Viewpoint SP23a - HF Route 2

On London Bridge Road southwest of 134-0038

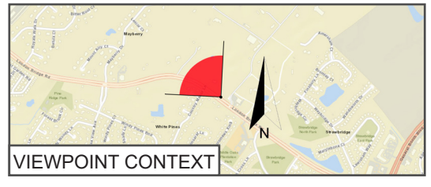
Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	408678E 4070209N
View Direction:	317 degrees
Viewpoint Elevation:	16 feet
Distance to Route:	3490 feet
Horizontal Field of View:	90 degrees

Date of Photography:	2nd April 2021 10:03
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 69:
Viewpoint SP23b - HF Route 2

On London Bridge Road southwest of 134-0038

Pre-Application Analysis
Coastal Virginia Offshore Wind

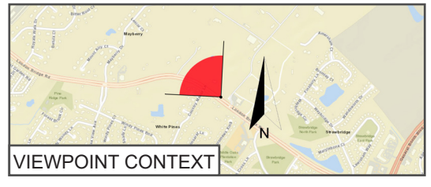
Attachment 6: Photosimulations

Transmission Line-over-Photo Image - No elements of the proposed Route will be visible from this location due to foreground screening

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	408678E 4070209N
View Direction:	317 degrees
Viewpoint Elevation:	16 feet
Distance to Route:	3490 feet
Horizontal Field of View:	90 degrees

Date of Photography:	2nd April 2021 10:03
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 70:
Viewpoint SP23b - HF Route 2

On London Bridge Road southwest of 134-0038

Pre-Application Analysis
Coastal Virginia Offshore Wind

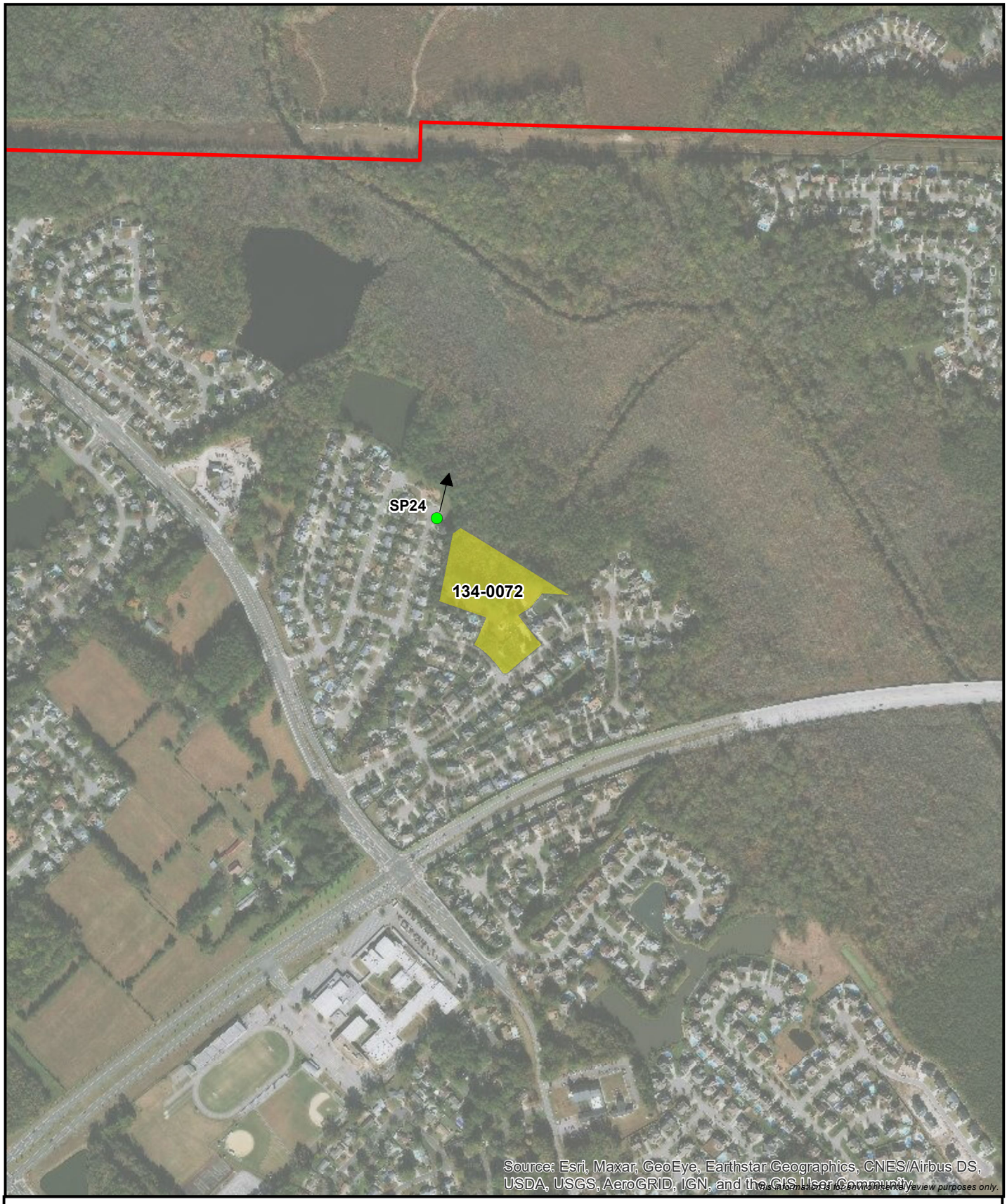


Figure 71: Aerial photograph depicting land use and photo view for 134-0072.

Attachment 6: Photosimulations

Existing View

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	405960E 4069349N
View Direction:	5 degrees
Viewpoint Elevation:	16 feet
Distance to Route:	1587 feet
Horizontal Field of View:	90 degrees

Date of Photography:	2nd April 2021 11:17am
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet

VIEWPOINT CONTEXT

Figure 72:
Viewpoint SP24 - HF Route 2

On Hammer Stone Court north of 134-0072

Pre-Application Analysis
Coastal Virginia Offshore Wind

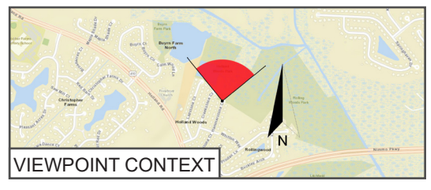
Attachment 6: Photosimulations

Transmission Line-over-Photo Image - No elements of the proposed Route will be visible from this location due to foreground screening

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	405960E 4069349N
View Direction:	5 degrees
Viewpoint Elevation:	16 feet
Distance to Route:	1587 feet
Horizontal Field of View:	90 degrees

Date of Photography:	2nd April 2021 11:17am
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 73:
Viewpoint SP24 - HF Route 2

On Hammer Stone Court north of 134-0072

Pre-Application Analysis
Coastal Virginia Offshore Wind

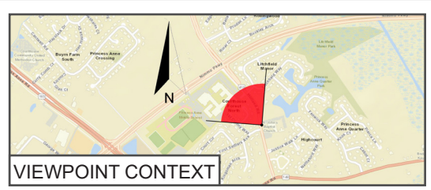
Figure 74: Aerial photograph depicting land use and photo view for 134-0702.

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	406130E 4068784N
View Direction:	317 degrees
Viewpoint Elevation:	13 feet
Distance to Route:	4690 feet
Horizontal Field of View:	90 degrees

Date of Photography:	2nd April 2021 2:16pm
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 75:
Viewpoint SP22 - HF Route 2

On Holland Road west of 134-0702

Pre-Application Analysis
Coastal Virginia Offshore Wind

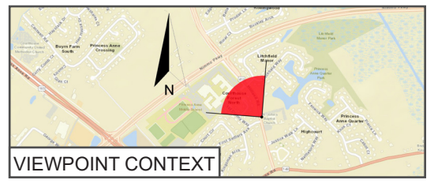
Attachment 6: Photosimulations

Transmission Line-over-Photo Image - No elements of the proposed Route will be visible from this location due to foreground screening

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	406130E 4068784N
View Direction:	317 degrees
Viewpoint Elevation:	13 feet
Distance to Route:	4690 feet
Horizontal Field of View:	90 degrees

Date of Photography:	2nd April 2021 2:16pm
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 76:
Viewpoint SP22 - HF Route 2

On Holland Road west of 134-0702

Pre-Application Analysis
Coastal Virginia Offshore Wind

PHOTOSIMULATIONS – HF ROUTE 3

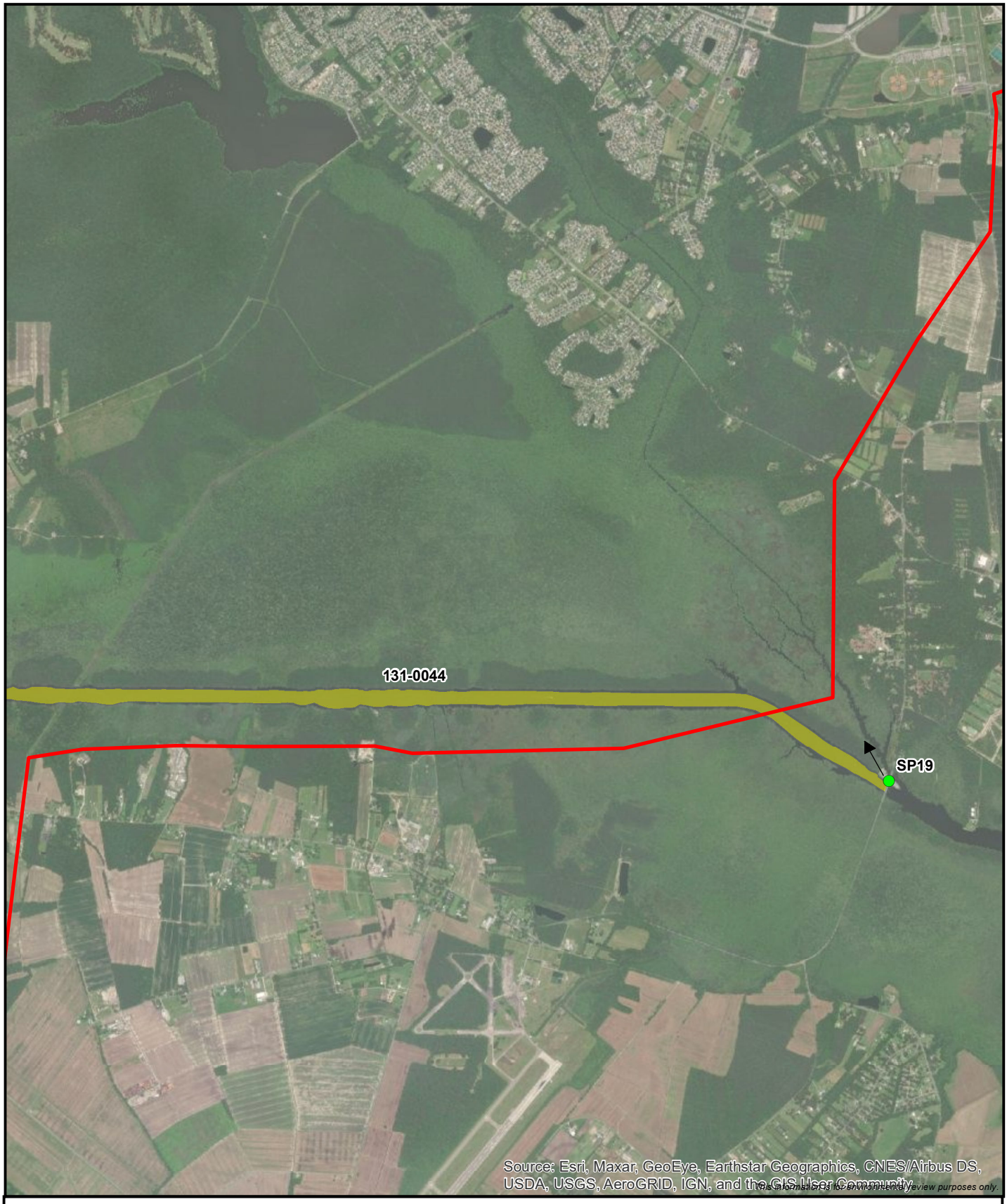


Figure 77: Aerial photograph depicting land use and photo view for 131-0044.

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	401735E 4064096N
View Direction:	336 degrees
Viewpoint Elevation:	10 feet
Distance to Route:	2915 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 13:42
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet

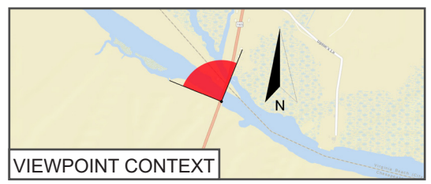


Figure 78:
Viewpoint SP19 - HF Route 3
On Mt. Pleasant Road/North Landing Road bridge- 131-0044 and 131-5333

Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Photomontage showing proposed Route - HRF Route 3

Viewpoint Location UTM Zone 18N:	401735E 4064096N
View Direction:	336 degrees
Viewpoint Elevation:	10 feet
Distance to Route:	2915 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 13:42
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet

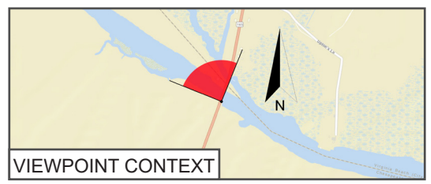


Figure 79:
Viewpoint SP19 - HRF Route 3
On Mt. Pleasant Road/North Landing Road bridge- 131-0044 and 131-5333

Pre-Application Analysis
Coastal Virginia Offshore Wind

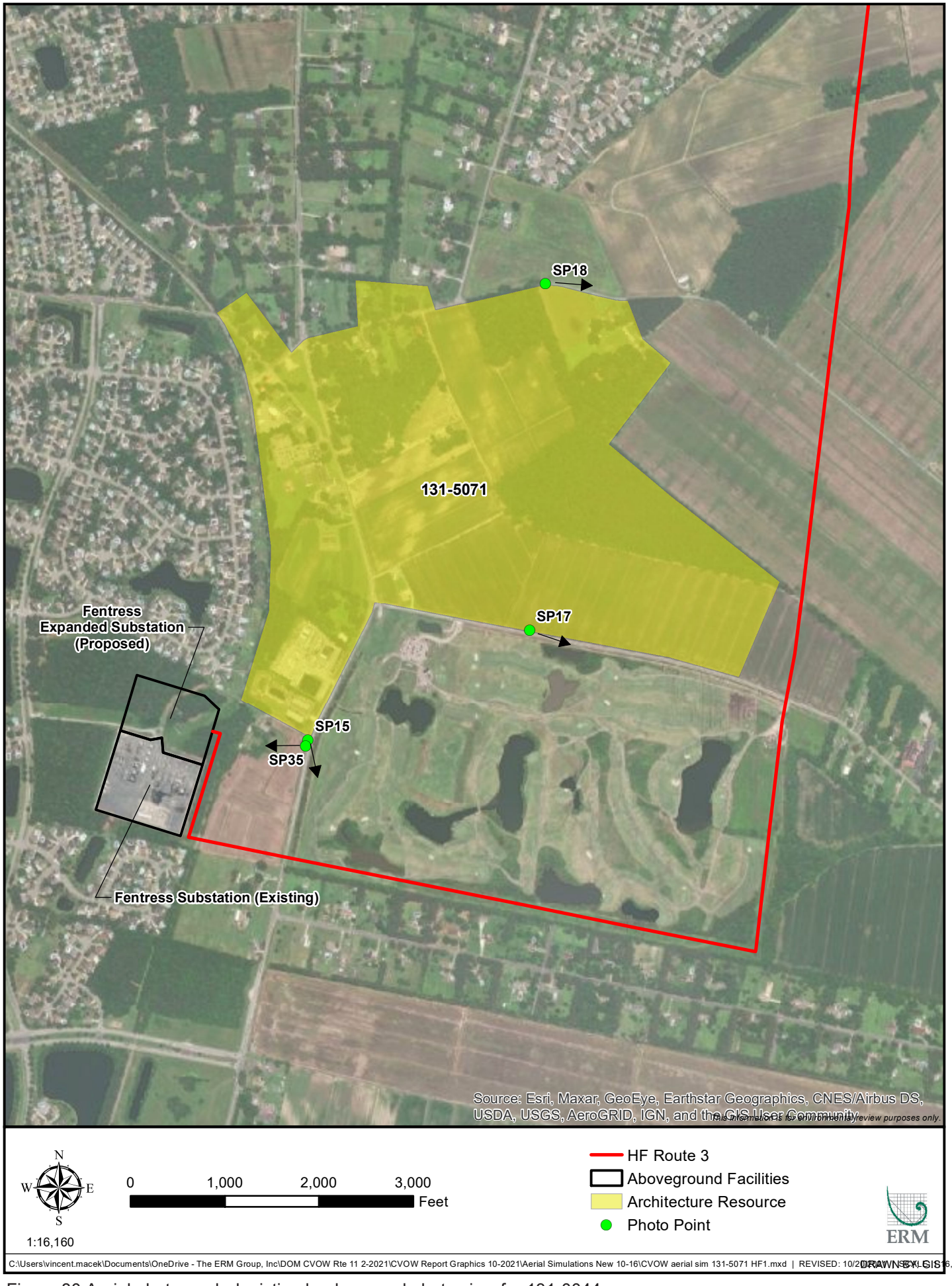


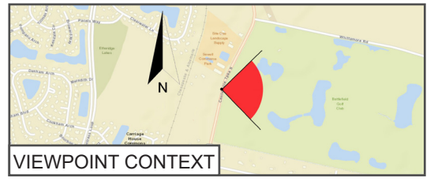
Figure 80 Aerial photograph depicting land use and photo view for 131-0044.

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	394102E 4061222N
View Direction:	90 degrees
Viewpoint Elevation:	20 feet
Distance to Route:	3962 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 10:53
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 81:
Viewpoint SP15a - HF Route 3

On Centerville Turnpike east of 131-5071

Pre-Application Analysis
Coastal Virginia Offshore Wind

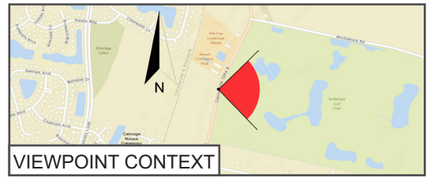
Attachment 6: Photosimulations

Photomontage showing proposed Route - HF Route 3

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	394102E 4061222N
View Direction:	90 degrees
Viewpoint Elevation:	20 feet
Distance to Route:	3962 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 10:53
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 82:
Viewpoint SP15a - HF Route 3

On Centerville Turnpike east of 131-5071

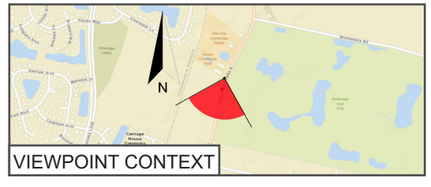
Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	394102E 4061222N
View Direction:	195 degrees
Viewpoint Elevation:	20 feet
Distance to Route:	856 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 10:53
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 83:
Viewpoint SP15b - HF Route 3

On Centerville Turnpike south of 131-5071

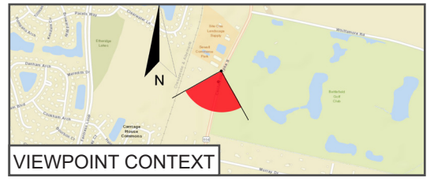
Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Photomontage showing proposed Route - HF Route 3

Viewpoint Location UTM Zone 18N:	394102E 4061222N
View Direction:	195 degrees
Viewpoint Elevation:	20 feet
Distance to Route:	856 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 10:53
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 84:
Viewpoint SP15b - HF Route 3

On Centerville Turnpike south of 131-5071

Pre-Application Analysis
Coastal Virginia Offshore Wind

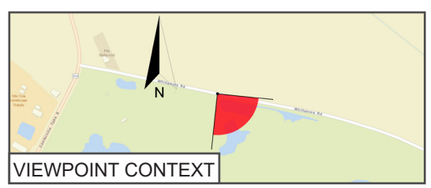
Attachment 6: Photosimulations

Existing View

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	394378E 4061514N
View Direction:	140 degrees
Viewpoint Elevation:	13 feet
Distance to Route:	2255 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 11:44
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 85:
Viewpoint SP17 - HF Route 3

On Whittamore Road south of 131-5071

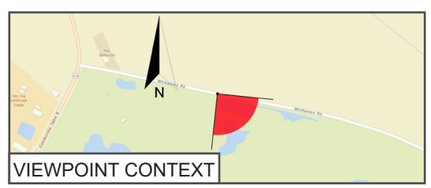
Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Photomontage showing proposed Route - HF Route 3

Viewpoint Location UTM Zone 18N:	394378E 4061514N
View Direction:	140 degrees
Viewpoint Elevation:	13 feet
Distance to Route:	2255 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 11:44
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 86:
Viewpoint SP17 - HF Route 3

On Whittamore Road south of 131-5071

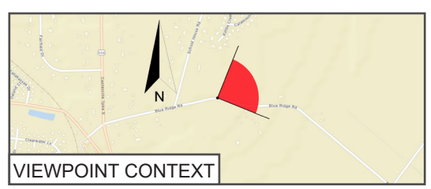
Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	394749E 4062435N
View Direction:	66 degrees
Viewpoint Elevation:	23 feet
Distance to Route:	2409 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 14:08
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 87:
Viewpoint SP18 - HF Route 3

On Blue Ridge Road east of 131-5071

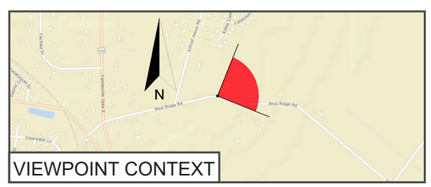
Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Photomontage showing proposed Route - HF Route 3

Viewpoint Location UTM Zone 18N:	394749E 4062435N
View Direction:	66 degrees
Viewpoint Elevation:	23 feet
Distance to Route:	2409 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 14:08
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 88:
Viewpoint SP18 - HF Route 3

On Blue Ridge Road east of 131-5071

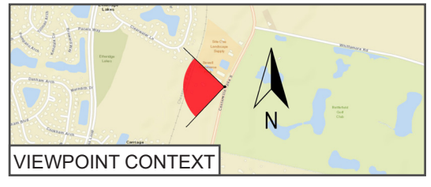
Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	394107E 4061242N
View Direction:	266 degrees
Viewpoint Elevation:	19 feet
Distance to Route:	685 feet
Horizontal Field of View:	90 degrees

Date of Photography:	27th August 2021 2:30pm
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 89:
Viewpoint SP35 - HF Route 3

On Centerville Turnpike south of 131-5071

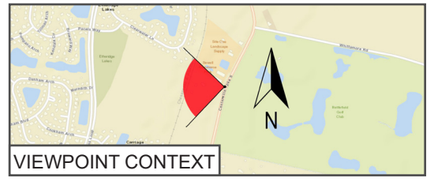
Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Photomontage showing proposed Route - HF Route 3

Viewpoint Location UTM Zone 18N:	394107E 4061242N
View Direction:	266 degrees
Viewpoint Elevation:	19 feet
Distance to Route:	685 feet
Horizontal Field of View:	90 degrees

Date of Photography:	27th August 2021 2:30pm
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 90:
Viewpoint SP35 - HF Route 3

On Centerville Turnpike south of 131-5071

Pre-Application Analysis
Coastal Virginia Offshore Wind

Figure 91: Aerial photograph depicting land use and photo view for 131-5333.

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	401735E 4064096N
View Direction:	336 degrees
Viewpoint Elevation:	10 feet
Distance to Route:	2915 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 13:42
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet

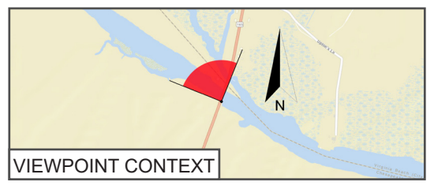


Figure 92:
Viewpoint SP19 - HF Route 3
On Mt. Pleasant Road/North Landing Road bridge- 131-0044 and 131-5333

Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Photomontage showing proposed Route - HF Route 3

Viewpoint Location UTM Zone 18N:	401735E 4064096N
View Direction:	336 degrees
Viewpoint Elevation:	10 feet
Distance to Route:	2915 feet
Horizontal Field of View:	90 degrees

Date of Photography:	6th April 2021 13:42
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet

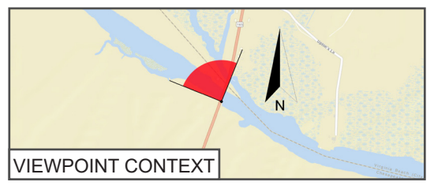


Figure 93:
Viewpoint SP19 - HF Route 3
On Mt. Pleasant Road/North Landing Road bridge- 131-0044 and 131-5333

Pre-Application Analysis
Coastal Virginia Offshore Wind

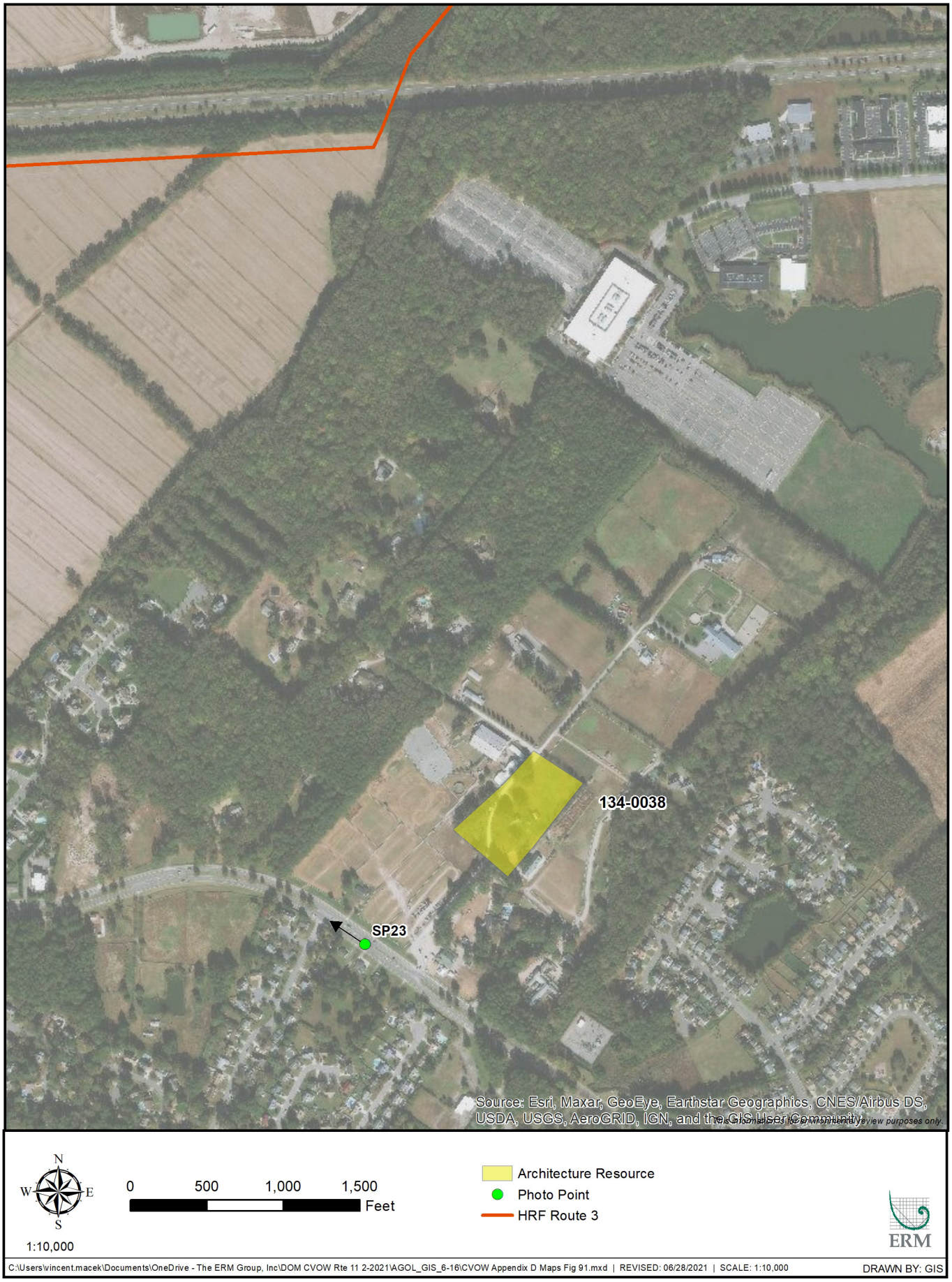


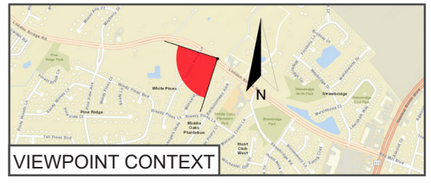
Figure 94: Aerial photograph depicting land use and photo view for 134-0038.

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	408678E 4070209N
View Direction:	242°
Viewpoint Elevation:	16 feet
Distance to Route:	3490 feet
Horizontal Field of View:	90 degrees

Date of Photography:	2nd April 2021 10:03
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 95:
Viewpoint SP23a - HF Route 3

On London Bridge Road southwest of 134-0038

Pre-Application Analysis
Coastal Virginia Offshore Wind

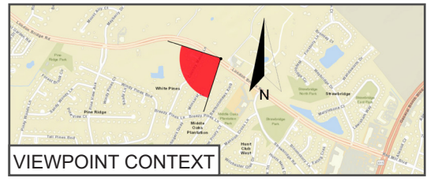
Attachment 6: Photosimulations

Transmission Line over Photo Image - No elements of the proposed Route will be visible from this location due to foreground screening

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	408678E 4070209N
View Direction:	242°
Viewpoint Elevation:	16 feet
Distance to Route:	3490 feet
Horizontal Field of View:	90 degrees

Date of Photography:	2nd April 2021 10:03
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 96:
Viewpoint SP23a - HF Route 3

On London Bridge Road southwest of 134-0038

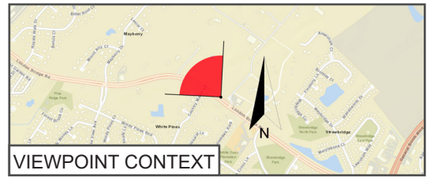
Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	408678E 4070209N
View Direction:	317°
Viewpoint Elevation:	16 feet
Distance to Route:	3490 feet
Horizontal Field of View:	90 degrees

Date of Photography:	2nd April 2021 10:03
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 97:
Viewpoint SP23b - HF Route 3

On London Bridge Road southwest of 134-0038

Pre-Application Analysis
Coastal Virginia Offshore Wind

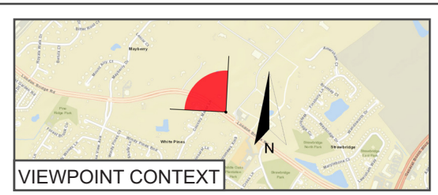
Attachment 6: Photosimulations

Transmission Line over Photo Image - No elements of the proposed Route will be visible from this location due to foreground screening

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	408678E 4070209N
View Direction:	317°
Viewpoint Elevation:	16 feet
Distance to Route:	3490 feet
Horizontal Field of View:	90 degrees

Date of Photography:	2nd April 2021 10:03
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 98:
Viewpoint SP23b - HF Route 3

On London Bridge Road southwest of 134-0038

Pre-Application Analysis
Coastal Virginia Offshore Wind

Figure 99: Aerial photograph depicting land use and photo view for 134-0072.

Attachment 6: Photosimulations

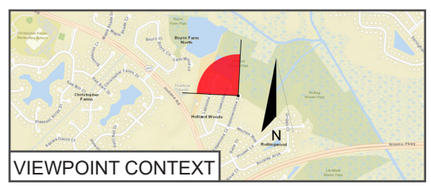
Existing View

Dominion Energy®

ERM

Viewpoint Location UTM Zone 18N:	405960E 4069349N
View Direction:	317°
Viewpoint Elevation:	16 feet
Distance to Route:	2530 feet
Horizontal Field of View:	90 degrees

Date of Photography:	2nd April 2021 11:17
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 100:
Viewpoint SP24 - HF Route 3

On Hammer Stone Court north of 134-0072

Pre-Application Analysis
Coastal Virginia Offshore Wind

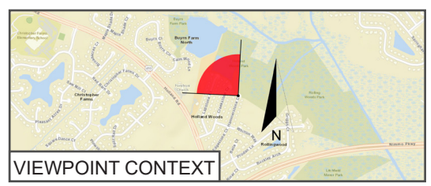
Attachment 6: Photosimulations

Transmission Line over Photo Image - No elements of the proposed Route will be visible from this location due to foreground screening

Dominion Energy® ERM

Viewpoint Location UTM Zone 18N:	405960E 4069349N
View Direction:	317°
Viewpoint Elevation:	16 feet
Distance to Route:	2530 feet
Horizontal Field of View:	90 degrees

Date of Photography:	2nd April 2021 11:17
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 101:
Viewpoint SP24 - HF Route 3

On Hammer Stone Court north of 134-0072

Pre-Application Analysis
Coastal Virginia Offshore Wind

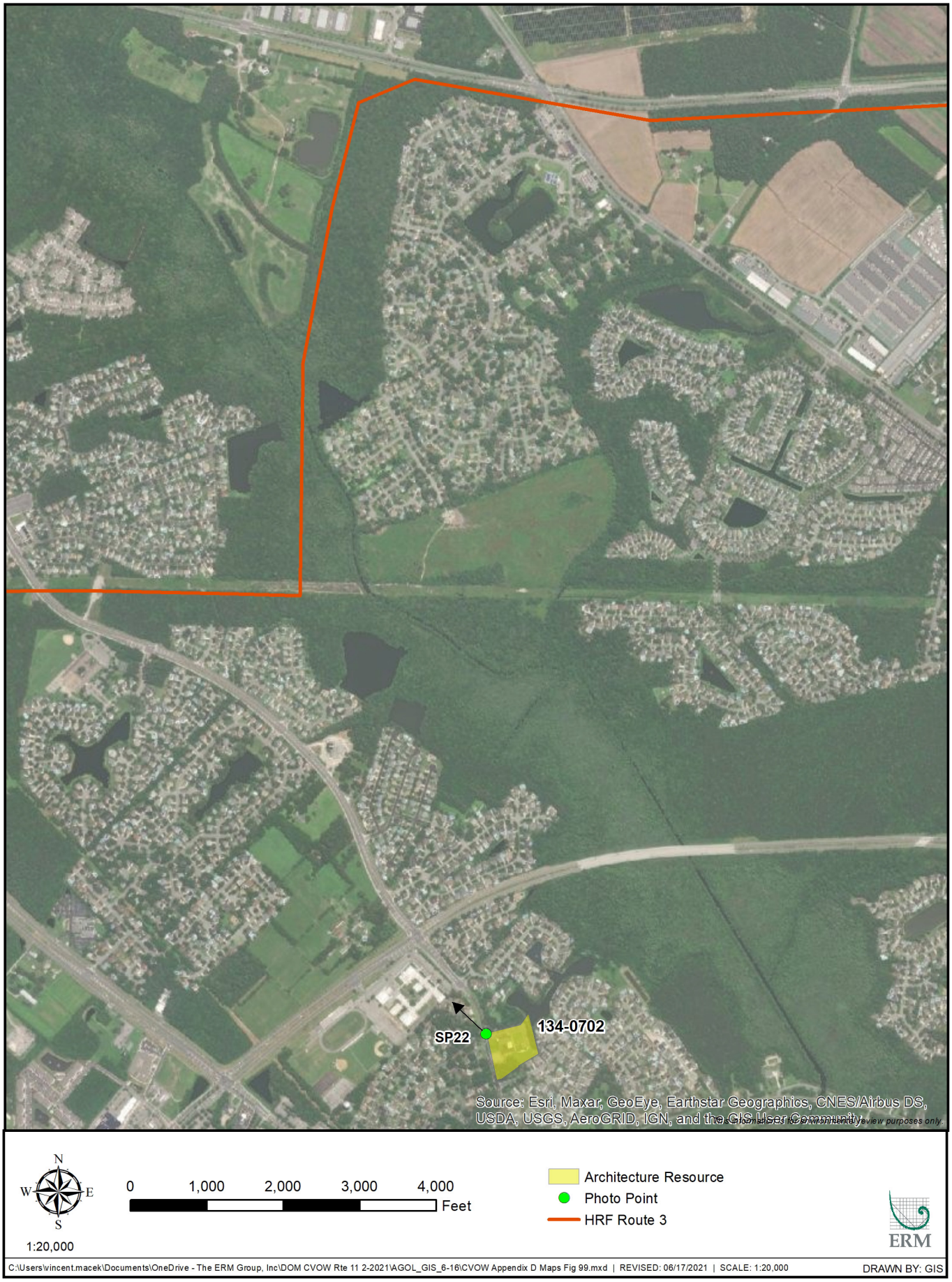


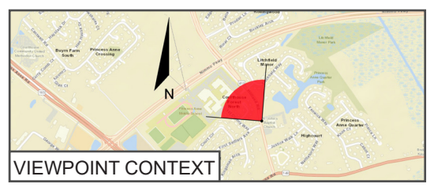
Figure 102: Aerial photograph depicting land use and photo view for 134-0702.

Attachment 6: Photosimulations

Existing View

Viewpoint Location UTM Zone 18N:	406130E 4068784N
View Direction:	317°
Viewpoint Elevation:	13 feet
Distance to Route:	4690 feet
Horizontal Field of View:	90 degrees

Date of Photography:	2nd April 2021 2:16pm
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet



VIEWPOINT CONTEXT

Figure 103:
Viewpoint SP22 - HF Route 3

On Holland Road west of 134-0702

Pre-Application Analysis
Coastal Virginia Offshore Wind

Attachment 6: Photosimulations

Transmission Line over Photo Image - No elements of the proposed Route will be visible from this location due to foreground screening

Dominion Energy®

ERM

Viewpoint Location UTM Zone 18N:	406130E 4068784N
View Direction:	317°
Viewpoint Elevation:	13 feet
Distance to Route:	4690 feet
Horizontal Field of View:	90 degrees

Date of Photography:	2nd April 2021 2:16pm
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	5 feet

VIEWPOINT CONTEXT

Figure 104:
Viewpoint SP22 - HF Route 3

On Holland Road west of 134-0702

Pre-Application Analysis
Coastal Virginia Offshore Wind