



Reply to  
Attention of

DEPARTMENT OF THE ARMY  
US ARMY CORPS OF ENGINEERS  
NORFOLK DISTRICT  
FORT NORFOLK  
803 FRONT STREET  
NORFOLK VA 23510-1011

May 29, 2015

Southern Virginia Regulatory Section  
NAO-2012-00080, 13-V0408 (James River)

Mr. Jonathan B. Jarvis, Director  
National Park Service  
1849 C Street NW  
Washington, DC 20240

Dear Mr. Jarvis:

This is in reference to a request by Dominion Virginia Power for Department of the Army authorization to construct a new 7.4-mile 500kV aerial transmission line from Surry to a proposed Skiffes Creek 500kV-230kV-115kV switching station in James City County, followed by upgrades to 20.2 miles of existing 230kV overhead transmission line that connects with the existing Whealton substation in Hampton, VA. A permit is required from the Norfolk District Corps of Engineers under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899, and constitutes a Federal undertaking, subject to Section 106 of the National Historic Preservation Act (NHPA).

The project, as proposed, will have an adverse effect on Carters Grove Plantation, a National Historic Landmark (NHL), located along the James River in James City County, Virginia. The aerial transmission line crossing of the James River will be visible to portions of Carters Grove. Enclosed is an excerpt from a report titled, "Visual Effects Assessment for the Proposed Dominion Virginia Power Surry to Skiffes Creek 500kV Transmission Line Project and Skiffes Creek 500-230-115 kV Switching Station James City, Isle of Wight, and Surry Counties", prepared by Stantec, the consultant for Dominion Virginia Power, which provides information about Carters Grove, including ground photos and viewshed analyses. Additional project information can be found at <http://www.nao.usace.army.mil/Missions/Regulatory/SkiffesCreekPowerLine.aspx>. Our website also contains links to the applicant's and consulting party websites, which contain additional information and viewshed documentation.

This information is provided in accordance with 36 CFR 800.6 and 800.10 as outlined in the Advisory Council on Historic Preservation regulations pursuant to Section 106 of the National Historic Preservation Act. This letter is to formally invite you, on behalf of the Secretary of Interior, to provide comments and participate in the consultation as we continue to review effects and resolve adverse effects to the NHL in accordance with 36 CFR 800.10(c) and 36 CFR 65.1 (a)(c). In addition, the Advisory

Council on Historic Preservation has been notified and is currently participating in this consultation.

Thank you for your attention to this matter. We respectfully request a response regarding your participation in the resolution of adverse effects within 30 days of receipt of this letter, or we will assume you do not wish to participate.

If you have any questions, please contact Randy Steffey at (757) 201-7579 or by e-mail at [randy.l.steffey@usace.army.mil](mailto:randy.l.steffey@usace.army.mil) .

Sincerely,

A handwritten signature in black ink that reads "K Prisco-Baggett". The signature is written in a cursive, flowing style.

Kimberly A. Prisco-Baggett  
Acting Chief, Regulatory Branch

cc:  
Consulting Parties

*Carter's Grove (VDHR #047-0001)*

The visual effects analysis for Carter's Grove was conducted in 2012 during the Pre-Application Analysis for the project. The following assessment has been summarized to include only those portions relevant to the current project and the effects of Variation 1. Carter's Grove is a well preserved example of a two-story, seven-bay, mid-eighteenth century Georgian dwelling (Figures 9-12) located on an elevated landform on an approximately 400-acre parcel. The landform is terraced as it approaches the large open field located between the mansion and the James River. Flanking the main block are one-story brick dependencies thought to have been constructed prior to the main dwelling, although at an unknown date. The main block features a hipped roof, two large interior chimneys and hipped-roof dormers. Other features include rubbed brick quoins, a modillioned cornice, nine-over-nine wood double-hung sash windows, hipped-roof dormers and a rubbed brick belt course.

Carter's Grove was listed on the NRHP in 1969 and as a NHL in 1970 (VDHR Site Files). According to the site form and NRHP nomination, it is "one of the best documented of Virginia's colonial mansions." The construction of Carter's Grove was begun circa 1750 for Carter Burwell, grandson of Robert "King" Carter and son of Nathaniel Burwell. According to the plantation's account book of 1751-1753, the house was constructed by David Minitree of Williamsburg" (NRHP Nomination 1969). After Burwell's death, Carter's Grove was inherited by Burwell's son, Carter Burwell II who sold the plantation circa 1790. Carter's Grove changed hands several times between 1790 and 1927 but remained as a well-preserved example of a colonial mansion and plantation. According to the site file information, the exterior of the house was radically altered and enlarged in 1927-1928 to appear larger and more grandiose, however the interior woodwork was still largely intact (NRHP Nomination 1969).

The last resident of Carter's Grove passed away in 1964 and the mansion and 400-acre property associated with it were acquired by the Colonial Williamsburg Foundation through a gift from the Rockefeller Foundation in 1969. Carter's Grove was open to tourists for many years and included reconstructed slave cabins and an archaeology museum, but closed its doors to the public in 2003. The foundation announced in late 2006 that it would be offered for sale, under specific restrictive conditions and it was purchased in 2007.

The Carter's Grove property measures approximately 400 acres and is characterized by broad open agricultural fields and large stands of mature trees. There are several drainages/ravines located across the property which are densely wooded with mature oak, poplar, pine, and other varieties of trees and vegetation. The eastern and western boundaries of the parcel are wooded as are sections of the James River water front. In some places the trees reach heights of nearly 150 feet. The property includes reconstructed slave cabins, the closed archaeology museum, several reconstructed dependencies, and the grave site of Susanna Burwell, the wife of Nathaniel Burwell dated 1788. Adjacent to her marked grave are two smaller graves, presumably her children.





**Figure 9. Carters Grove (VDHR #047-0001), Facing Southwest.**



**Figure 10. Carters Grove (VDHR #047-0001), view to the North from the James River.**





**Figure 11. Approach to Carter's Grove, Facing South.**



**Figure 12. View of Open Agricultural Fields Banked by Trees in the Northwestern portion of the Carters Grove Property, Facing North.**

### Visual Effects Analysis, Carter's Grove

A site visit was made to Carter's Grove on May 11, 2012 and all photographs were taken on that day. Also included in this discussion of visual effects are photo simulations prepared by TrueScape on behalf of Dominion as well as a line of sight analyses from the main dwelling prepared by NRG, for each alternative. Additional photo simulations and view points are also utilized for the visual effects analysis however line of sight graphics were not prepared for all; just for the view from the main house. The line of sight exhibits and photo simulations are located in Appendices B and C in order to facilitate viewing at full size.

The Carter's Grove plantation house, as noted above sits on an elevated landform, at an elevation of approximately 50 feet above mean sea level (amsl) and approximately 2000 feet from the James River shoreline. The house is located approximately two miles to the northeast of the center point of the proposed transmission line as it crosses the James River. At its closest point to the transmission line as it crosses the river, the edge of the property is approximately 4300 feet to the north. This portion of the property is heavily wooded and would provide buffering between the proposed transmission line and the plantation house. However, visibility will increase as the towers get larger at the center of the river crossing.

To assess potential visibility of the transmission line structures that would be used for the river crossing from the main Carter's Grove house, a combination of ground photography, photo simulations, and line of sight analysis was utilized. Photographs were taken from seven locations within the bounds of the Carter's Grove property to assess the potential visual effects the proposed transmission line may have on the property as a whole. Line of sight analysis was based on Viewpoint 15 (P4), the front stoop of the main house as it faces the river, however photo simulations were prepared for Viewpoints 16, and 17 (P5 and P7) (Figure 13). These three viewpoints will be discussed in detail as they are generally representative of the property where the views are the greatest.

Additionally, NRG used a combination of both a TrueScape photo simulation and Line of Sight Profiles constructed using LIDAR digital elevation data (5-foot cell size resolution) obtained from the College of William and Mary that represented both the ground and vegetation (tree) surface elevations. These elevation data were used in combination with ArcGIS 3D Analyst to prepare cross-sectional Line of Sight (LOS) profiles to each tower location from a point 6 feet off the ground (eye level) from directly in front of the main house (VP 15) facing the river and from a location between the main house and Route 60 (Pocohontas Trail) facing southeast to northeast for the onshore portion of the route. The same tower heights and locations across the river used for this visual assessment, while estimated, were also used by Dominion for modeling span lengths for channel and pipeline crossings in the river and to conduct an FAA and DOD non-precision approach obstruction analysis associated with Felker Airfield at Fort Eustis.





Figure 13. Key to Photograph Locations on Carter's Grove Property.



### Variation 1 – Land Based Route

The northeastern corner of the property as it intersects Route 60 is approximately 2,900 feet west of the extant transmission line ROW corridor and the Skiffes Creek Substation. The southeastern portion of the property at the dead end of Endeavor Drive is approximately 1950 feet from the proposed power line transmission corridor and adjacent to an industrial complex. Between the northeastern property boundary on the east and the proposed transmission line corridor from the Skiffes Creek Switching Station to the point at which the corridor spans the James River in James City County is characterized by modern residential development as well as industrial development and several stands of mature trees.

A series of photographs taken from the public ROW and along the edges of the property in the vicinity of the industrial development to the east indicate that visibility will be nil (Figures 14-17). Additionally, the plantation house itself is set back on the property nearer to the river and is buffered from the modern development, transmission line ROW corridor and Skiffes Creek Switching Station. While the land-based route for the James River Crossing Variations is closer to the Carter's Grove property, the dense stands of trees and the natural topography effectively shield this portion of the power line from view. Immediately adjacent to the property boundary on the east are areas of industrial development; no components of which are currently visible from the Carter's Grove property.

Photographs taken from photo locations 18, 20 and 21 within the Carter's Grove Property all indicated that the power line will not be visible from the northern, agricultural portion of the property (see Figure 14; Figures 18-21). The distance to the river coupled with the natural terrain and the large, dense stands of mature trees effectively shield this portion of the property from any view of the power line; either land based or crossing the river. The only potential visibility from this section of the property is that described above; where the property intersects Route 60 at the end of the drive to the resource.

A Line of Sight profile was also prepared and evaluated from a location between the main house and Route 60 (Pocahontas Trail) facing southeast to northeast for the onshore portion of the route (Figure 22). It was determined that no towers associated with Variation 1 would be visible between the river and Skiffes Creek Switching Station from this side of Carters Grove Main House. This is due primarily to heavily forested areas between the house and the transmission line route. ***Existing transmission line ROW corridors and associated structures near the northern terminus of the alternative and as it approaches the James River, under current landscape conditions, were only visible from Location 19 (the end of the driveway of this resource) and were invisible from the interior of the property. It is recommended therefore, that Carters Grove (VDHR #047-0001) will not be impacted by the land-based of Variation 1.***

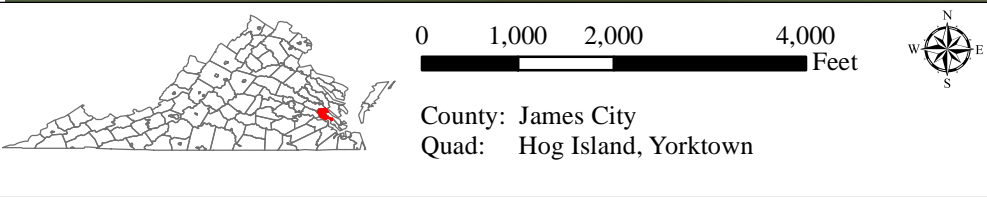


Figure 14. Map Showing Photograph Locations within the Carter's Grove Property.





**Figure 15. Carters Grove (VDHR #047-0001), view from Location 17 looking southwest towards resource (Photograph taken from public ROW).**





**Figure 16. Carters Grove (VDHR #047-0001), view from Location 19 looking northwest towards Skiffes Creek Switching Station and existing development (Photograph taken from public ROW).**



**Figure 17. Carters Grove (VDHR #047-0001), view from Location 27, near eastern boundary of resource looking northwest towards proposed power line corridor (Photograph taken from public ROW).**





**Figure 18. View from Photo Location 18, Facing South Toward Carter's Grove Mansion and Proposed Transmission Line. There will be no visibility from this location.**





**Figure 19. View from Photo Location 21, Facing Southeast Toward Carter's Grove Mansion and Proposed Transmission Line. There will be no visibility from this location.**



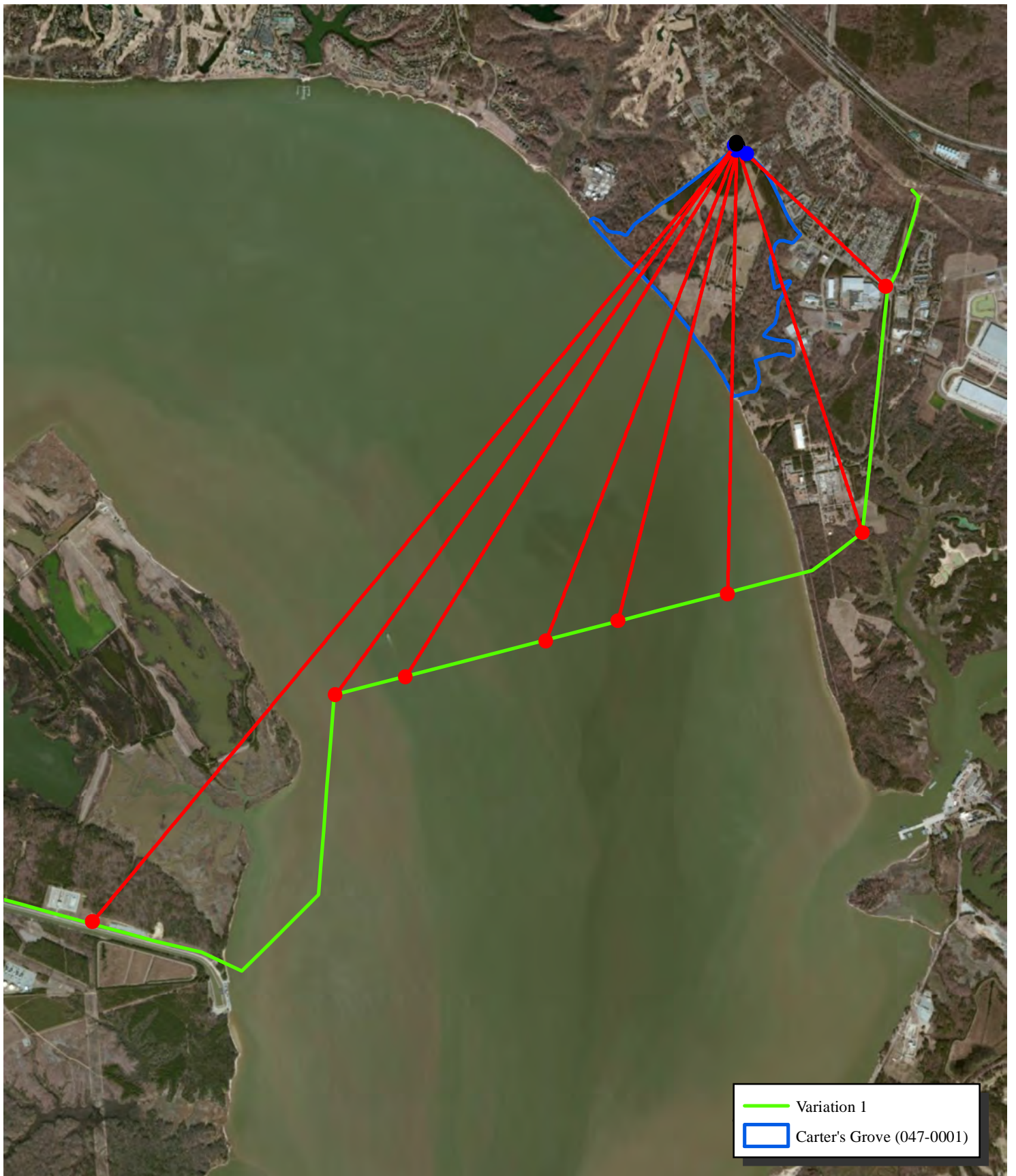
**Figure 20. View of Carter's Grove from Photo Location 20. Facing South towards proposed transmission line corridor. There will be no visibility from this location.**





**Figure 21. View Facing Southeast from Photo Location 20 toward the Land-Based portion of the Proposed transmission line. The distance, dense tree cover and natural terrain will shield this location from view.**





— Variation 1  
 Carter's Grove (047-0001)



County: James City, Surry, Newport News  
 Quad: Hog Island, Yorktown



Figure 22: Line of Sight for Western Side (Photo Location 16) of Carter's Grove and Land Based Portion of Variation 1.

### *Variation 1 – River Crossing Route*

Photographs taken from locations within the Carter’s Grove property all indicated that the power line as it crosses the James River will be visible at varying degrees (Figure 14; Figures 23-26) However, only a portion of the towers are visible there is no direct view of all structures within the river crossing. Representative views from three locations P4 (VP15), P7 (VP17), and P5 (VP16) were simulated for this resource.



**Figure 23. View from Photo Location 4, the Front Stoop of the Main House, Facing South toward Proposed Power line Crossing. This view will be discussed in greater detail below.**





**Figure 24. View from Photo Location 5, Facing Southeast toward the Proposed River Crossing. Power line will be slightly visible from this location and is shielded by tree cover. The view will also be minimized by distance.**



**Figure 25. View from Photo Location 6, the Bank of the James River, Facing Southeast toward proposed transmission line crossing. Transmission towers will be visible from this location. However, view will be minimized by distance and tower style.**





**Figure 26. View from Photo Location 7, the Bank of the James River, South of the Main House, Facing Southeast toward proposed transmission line crossing. Transmission towers will be visible from this location. However, view will be minimized by distance and tower style.**

## Line of Sight and Photo Simulations

NRG used a combination of both a TrueScape photo simulation and Line of Sight Profiles constructed using LIDAR digital elevation data (5-foot cell size resolution) obtained from the College of William and Mary that represented both the ground and vegetation (tree) surface elevations. These elevation data were used in combination with ArcGIS 3D Analyst to prepare cross-sectional Line of Sight (LOS) profiles to each tower location from a point 6 feet off the ground (eye level) from directly in front of the main house (VP 15, P4) facing the river (Figures 31-33).

### Viewpoint 15 (Location 23)

The same process was used to determine visibility of towers along the Variation 1 river crossing. The LOS elevation profiles from Carter's Grove show that because of the dense tree line on the southeast side of the house and along portions of the shoreline, only a small number of the towers crossing the river would be visible from VP15, depending on which crossing variation is being viewed. For Variation 1, 3 of the 16 towers in the river would be all or partially visible. While all of tower 25 would be visible at a distance of about 2.0 miles, the top 246 feet of tower 26 would be visible at about 1.7 miles, and only the top 40 feet of tower 18 would be visible at 3.5 miles. Consequently, views from the main house would be limited to two towers, and the very top of a third tower, through breaks in the trees or over the top of trees. The photo simulation from VP15 to the James River Crossing Variation 1 indicates that only tower 25 and about the upper half of Tower 26 would be seen from this location (Figures 132-134). Because the towers are located between 1.75 and 2.0 miles from the Main House at Carter's Grove, the views on a clear day would be distant and limited to one and one half towers, but apparent.

### Viewpoint 16 (Location 24)

Line of sight analyses were not prepared for this view from the open field west of the main house looking southeast toward the proposed river crossings. This photo location is located on an elevated hill within the open agricultural fields west of the main house. This location is also in proximity to the gravesite of Susanna Burwell, wife of Nathaniel Burwell who passed away in 1788. This location is at an elevation of approximately 40 feet amsl, providing a "worst case scenario" view for this portion of the property.

The photo simulation prepared for the view from VP16 (P5) indicates that three full towers associated with this alternative will be visible from the open, agricultural fields located in this vicinity. These towers appear to be Towers 22-24 located at the northernmost point in this variation before it turns south to tie in to the route to the Power Station. These towers range in height from 160 feet to 295 feet tall as the line spans the shipping channel. Additional towers may also be visible as the route turns to the south, but in only minor capacity. Towers 16-20 along the line as it turns south are 160 feet in height and would be only minimally visible on the horizon from this location. The top of Towers 26 and 27 may also be partially visible from this viewpoint with Towers 26 and 27 measuring 275 feet in height as they span the shipping channel. The proposed transmission line as it approaches James City County from Towers 28 to 30 will not be visible from this viewpoint due to stands of mature trees along the James River shoreline.. A large portion of this alternative is visually similar to that of the Surry Alternative except where it turns sharply to the north toward Hog Island. It is in this northernmost point that



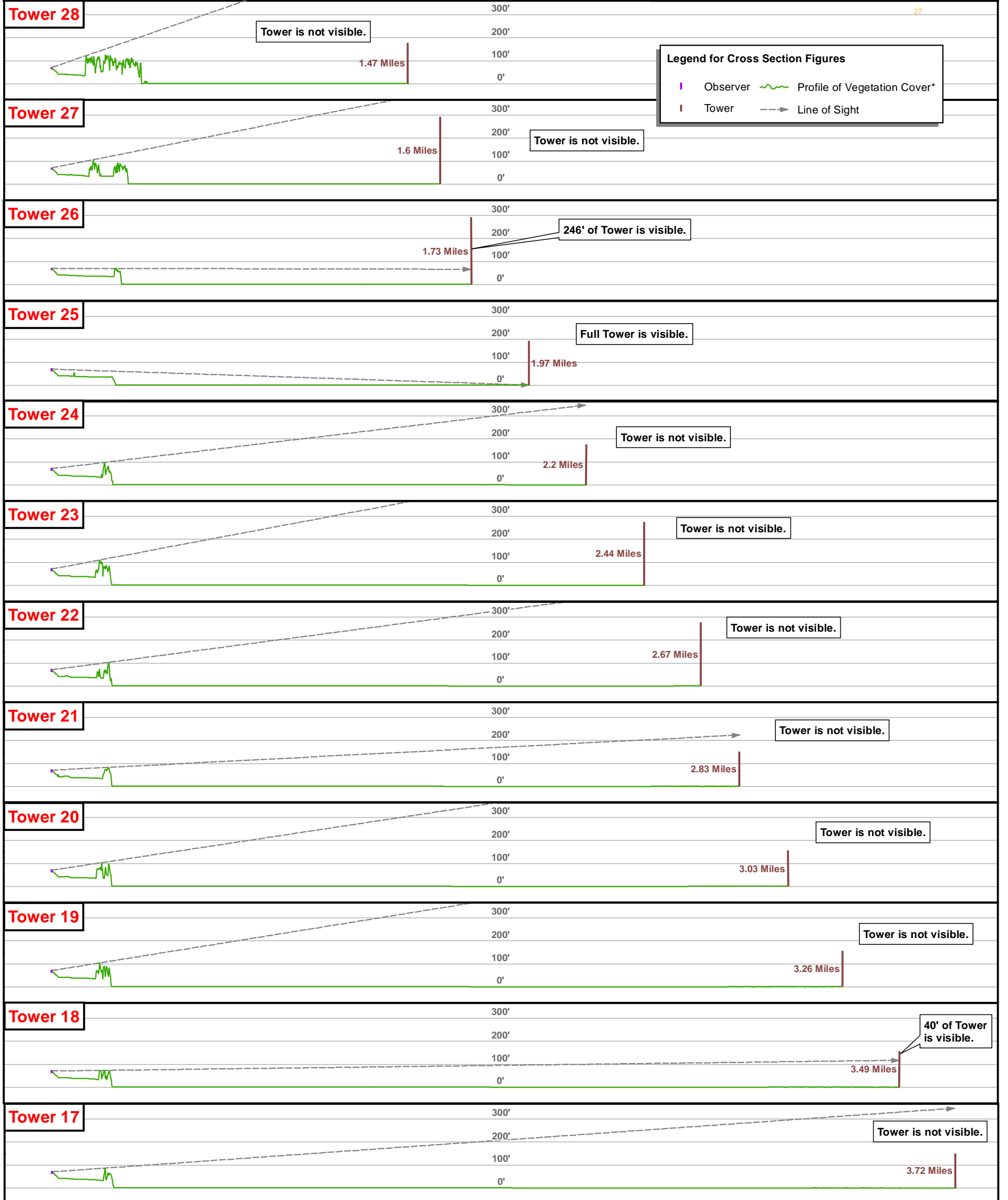
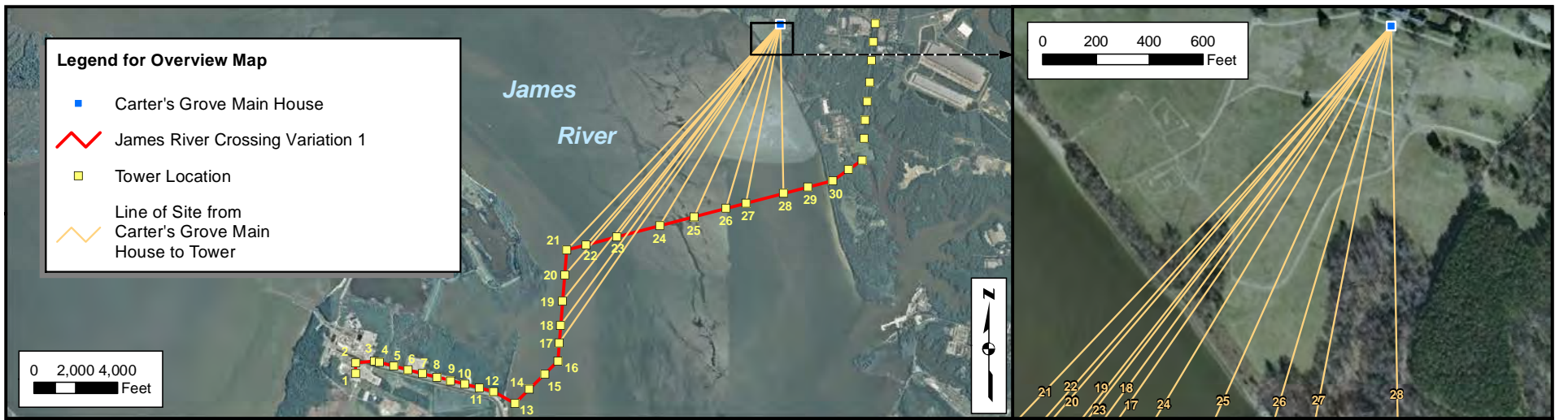
the towers would be visible. Three towers would be fully visible from this location while the remainder would be shielded from view.

Viewpoint 17 (Location 26)

The view from this location is an unobstructed view of the power line structures as they cross the river between Surry and James City County. Therefore, nearly all of the structures will be visible from this location. This location along the shoreline is nearly 2000 feet south of the main house and is comprised of open agricultural fields surrounded by stands of mature trees. The trees marking the eastern property boundary measure nearly 150 feet tall in some places. While all of the alternatives will have views, the significance of the impact will vary due to the placement of towers and distance away from the shoreline.

The photo simulation for this alternative from VP 17 indicate that nearly all of the towers will be visible for this alternative by virtue of the unobstructed view of the River. This alternative turns to the north as it leaves the shoreline in James City County and turns sharply across the James River to a point just offshore of Hog Island. This angle affords a greater, closer view of the towers associated with this alternative from VP 17. The tower structures as they approach the Surry side of the River will fade from view due to distance the wooded shoreline as a backdrop, but will still likely be visible. The transmission line along this alternative would be visually distinct.

The results of the visual effects analysis, including both ground photography, photo simulations, and line of sight analysis indicates that Variation 1 towers will be visible from both the Main House and points south and west of the house. The northern portion of the property will not have visibility of the river crossings due to the presence of large stands of mature trees, measuring nearly 150 feet tall in some places. The views from the shoreline (VP17) pose the most significant visual effect to the property at the edge of the James River. Variation 1 is largely located between 1.5 miles and 3.5 miles from the main house. The view of this line from the shoreline would be generally unobstructed although the majority of the towers would be located approximately 1.5 miles away. The portion of the line that may be more significantly visible is that section that trends to the north as it approaches the Surry side of the transmission line corridor. Tower views from the main house on a clear day would be distant and limited, but views from the open agricultural field significant to the Carter's Grove property would be greater. ***Therefore it is recommended the James River Crossing Variation 1 will have an adverse visual impact to Carter's Grove.***








**Viewpoint 15 - View from Main House at Carter's Grove - Looking Southwest - Existing View**



**Viewpoint 15 - View from Main House at Carter's Grove - Looking Southwest - James River Crossing Variation 1 - Proposed View**

**Figure 28. Photo Simulation, VP 15, Variation 1.**




**Dominion**  
 Surry-Skiffes Creek 500 kV Transmission Line  
 Skiffes Creek-Wheaton 230 kV Transmission Line  
 Skiffes Creek 500-230-115 kV Switching Station

**Viewpoint 15**

View from Main House at Carter's Grove  
 Looking Southwest  
 James River Crossing Variation 1  
 Existing and Proposed

● Viewpoint Location  
● Tower Position  
 James River Crossing Variation 1



Easting position (Virginia South Zone NAD83) **12028981.5**  
 Northing position (Virginia South Zone NAD83) **3604320.9**  
 Elevation of viewpoint position (NAD 83 / ft): **68.0**  
 Height of camera above ground (ft): **5.4**  
 Date of photography: **11-May-12 at 1:22 p.m.**  
 Orientation of view: **SW**  
 Horizontal field of view: **124°**  
 Vertical field of view: **55°**  
 Distance to Closest Visible Tower (miles) **1.75**

NOTES:

Viewpoint locations have been precision surveyed by  
**Dominion Virginia Power**  
 Coordinator - Survey Services  
 Larry Hedblom, L.S.  
 701 East Cary Street  
 Richmond, Va. 23219

No part of this photosimulation shall be altered in any way.

Visual Assessments should be made from the full size TrueView™ only.

Photosimulation Created Using  
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**TRUESCAPE**  
 VISUAL COMMUNICATION   
 www.truescape.com

DATE **December 19, 2012**

Tower placement in simulations is preliminary - final tower locations may change upon final design and survey





**Viewpoint 15** - View from Main House at Carter's Grove - Looking Southwest – **James River Crossing Variation 1 - Proposed View**  
*Enlargement Area of previous page - enlarged to a representative view when printed on a 11 x 17 " page and viewed from approx. 20" distance.*

**Figure 29. Zoomed in View of Proposed View, VP 15, Variation 1.**






**Viewpoint 16 - View from field west of Main House at Carter's Grove - Looking Southwest - Existing View**



**Viewpoint 16 - View from field west of Main House at Carter's Grove - Looking Southwest - James River Crossing Variation 1 - Proposed View**



**Dominion**  
 Surry-Skiffes Creek 500 kV Transmission Line  
 Skiffes Creek-Wheaton 230 kV Transmission Line  
 Skiffes Creek 500-230-115 kV Switching Station

**Viewpoint 16**  
 View from field west of Main House at Carter's Grove  
 Looking Southwest  
 James River Crossing Variation 1  
 Existing and Proposed

- Viewpoint Location
- Tower Position
- James River Crossing Variation 1



Easting position (Virginia South Zone NAD83) 12028059.2  
 Northing position (Virginia South Zone NAD83) 3604351.7  
 Elevation of viewpoint position (NAD 83 / ft): 57.7  
 Height of camera above ground (ft): 5.4  
 Date of photography: 11-May-12 at 2:08 p.m.  
 Orientation of view: SW  
 Horizontal field of view: 124°  
 Vertical field of view: 55°  
 Distance to Closest Visible Tower (miles) 1.65

**NOTES:**  
 Viewpoint locations have been precision surveyed by  
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 Coordinator - Survey Services  
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 Richmond, Va. 23219  
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 www.truescape.com

DATE **January 15, 2013**

Tower placement in simulations is preliminary - final tower locations may change upon final design and survey

**Figure 30. Photo Simulation, VP 16, Variation 1.**





**Viewpoint 16** - View from field west of Main House at Carter's Grove - Looking Southwest - **James River Crossing Variation 1 - Proposed View**  
*Enlargement Area of previous page - enlarged to a representative view when printed on a 11 x 17 " page and viewed from approx. 20" distance.*

**Figure 31. Zoomed In View of Proposed View, VP 16, Variation 1.**






**Viewpoint 17 - View from James River Shoreline at Carter's Grove – Looking South - Existing View**



**Viewpoint 17 - View from James River Shoreline at Carter's Grove – Looking South - James River Crossing Variation 1 - Proposed View**

**Figure 32. Photo Simulation, VP 17, James River Crossing Variation 1.**



Surry-Skiffes Creek 500 kV Transmission Line  
 Skiffes Creek-Wheaton 230 kV Transmission Line  
 Skiffes Creek 500-230-115 kV Switching Station

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**Viewpoint 17**


View from James River Shoreline at Carter's Grove  
Looking South

James River Crossing Variation 1  
Existing and Proposed

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● Viewpoint Location  
● Tower Position  
 James River Crossing Variation 1

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Easting position (Virginia South Zone NAD83) 12028351.1  
 Northing position (Virginia South Zone NAD83) 3603163.3  
 Elevation of viewpoint position (NAD 83 / ft): 37.4  
 Height of camera above ground (ft): 5.4  
 Date of photography: 11-May-12 at 2:56 p.m.  
 Orientation of view: 5  
 Horizontal field of view: 124°  
 Vertical field of view: 55°  
 Distance to Closest Visible Tower (miles) 1.33

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NOTES:

Viewpoint locations have been precision surveyed by  
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DATE January 15, 2013

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Tower placement in simulations is preliminary - final tower locations may change upon final design and survey





**Viewpoint 17** - View from James River Shoreline at Carter's Grove – Looking South - **James River Crossing Variation 1 - Proposed View**  
*Enlargement Area of previous page - enlarged to a representative view when printed on a 11 x 17 " page and viewed from approx. 20" distance.*

**Figure 33. Zoomed in View of Proposed View, VP 17, James River Crossing Variation 1.**