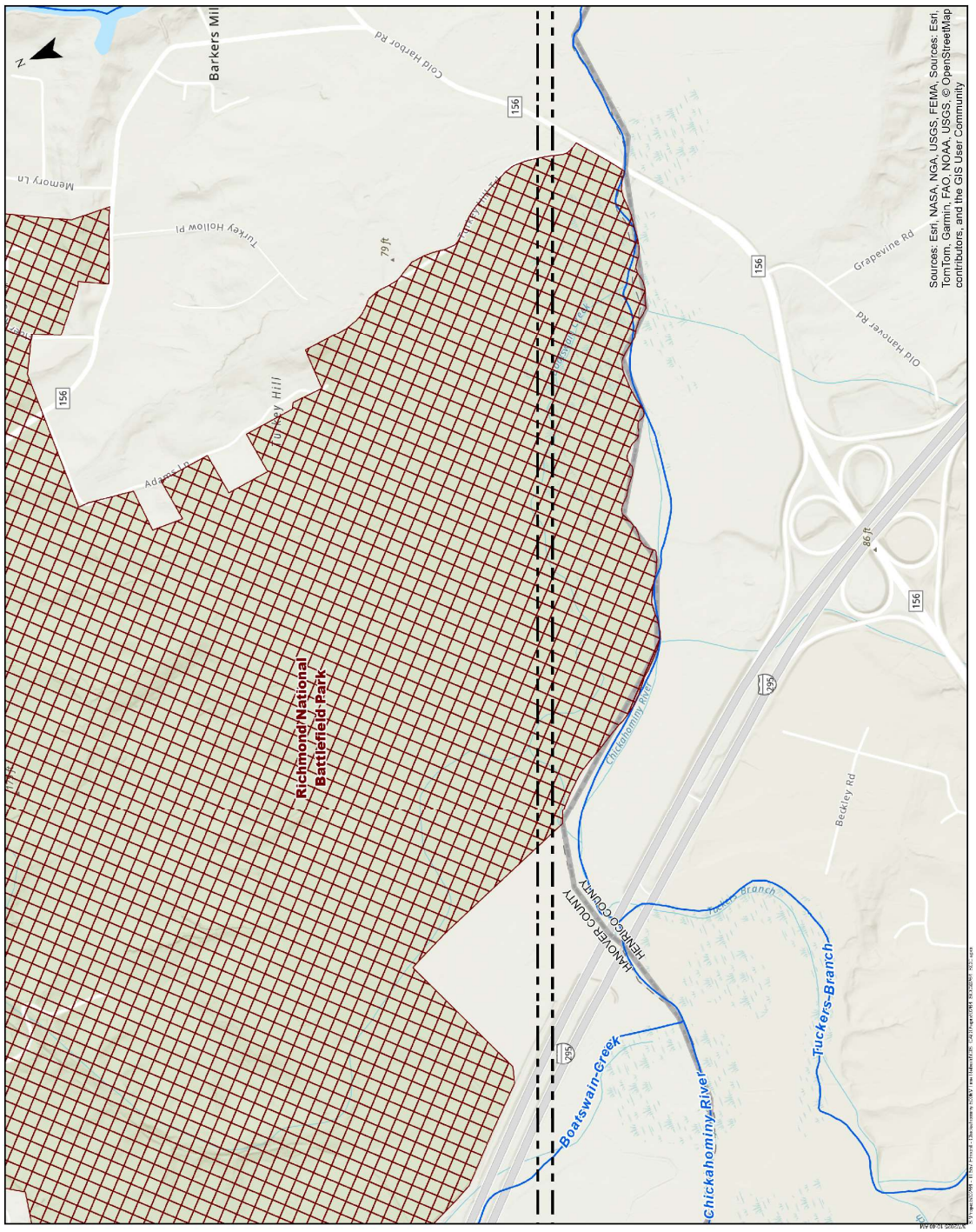


ATTACHMENT II.A.9
CONSERVATION EASEMENTS MAP

Chickahominy-Elmort Line #557 Rebuild and New Future 230 kV Lines

Hanover, Henrico, and Charles City Counties, Virginia

Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0264	KAS	03/10/25

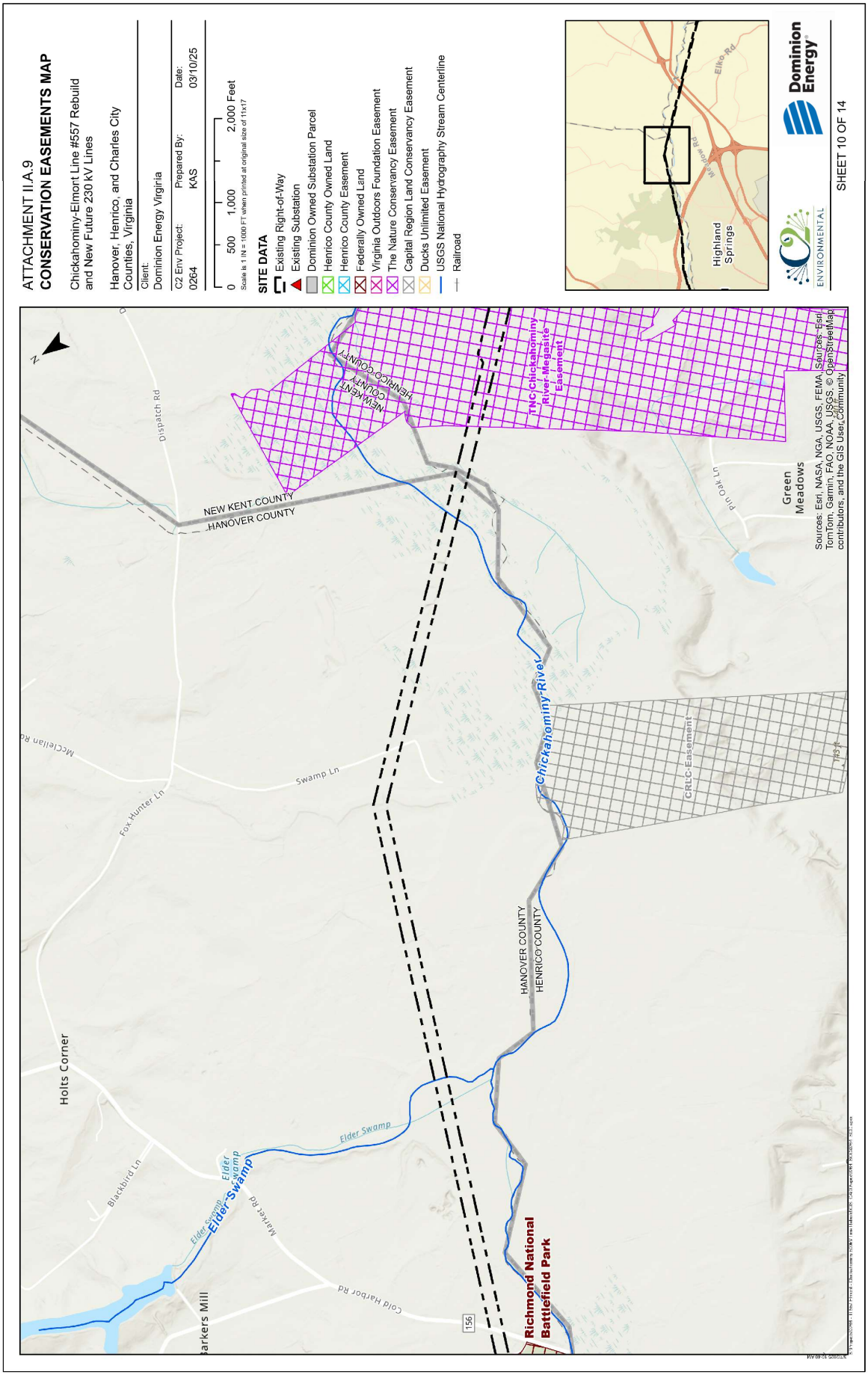
0 500 1,000 2,000 Feet
Scale is 1 IN = 1000 FT when printed at original size of 11x17

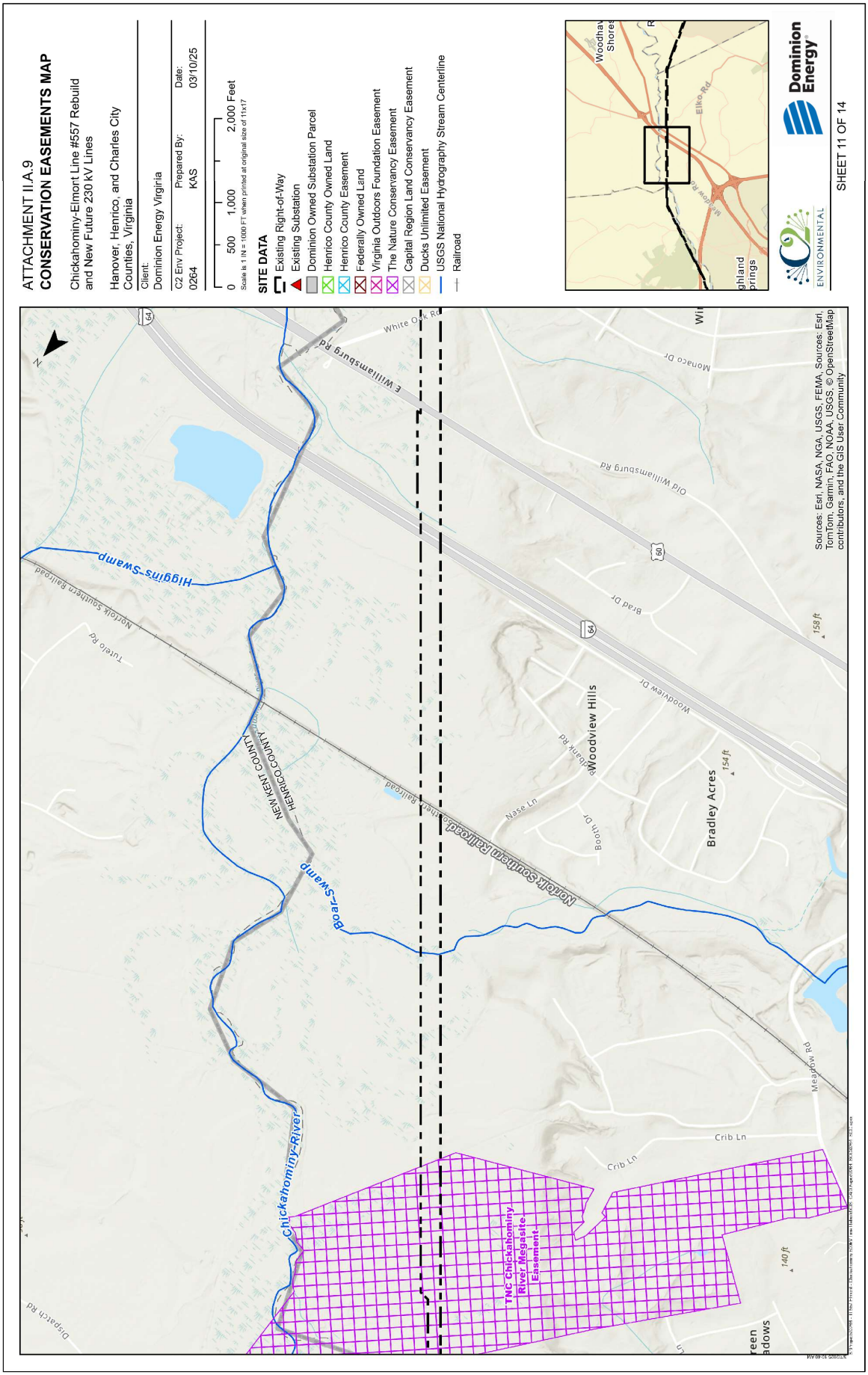
SITE DATA
- Existing Right-of-Way
- Existing Substation
- Dominion Owned Substation Parcel
- Henrico County Owned Land
- Henrico County Easement
- Federally Owned Land
- Virginia Outdoors Foundation Easement
- The Nature Conservancy Easement
- Capital Region Land Conservancy Easement
- Ducks Unlimited Easement
- USGS National Hydrography Stream Centerline
- Railroad

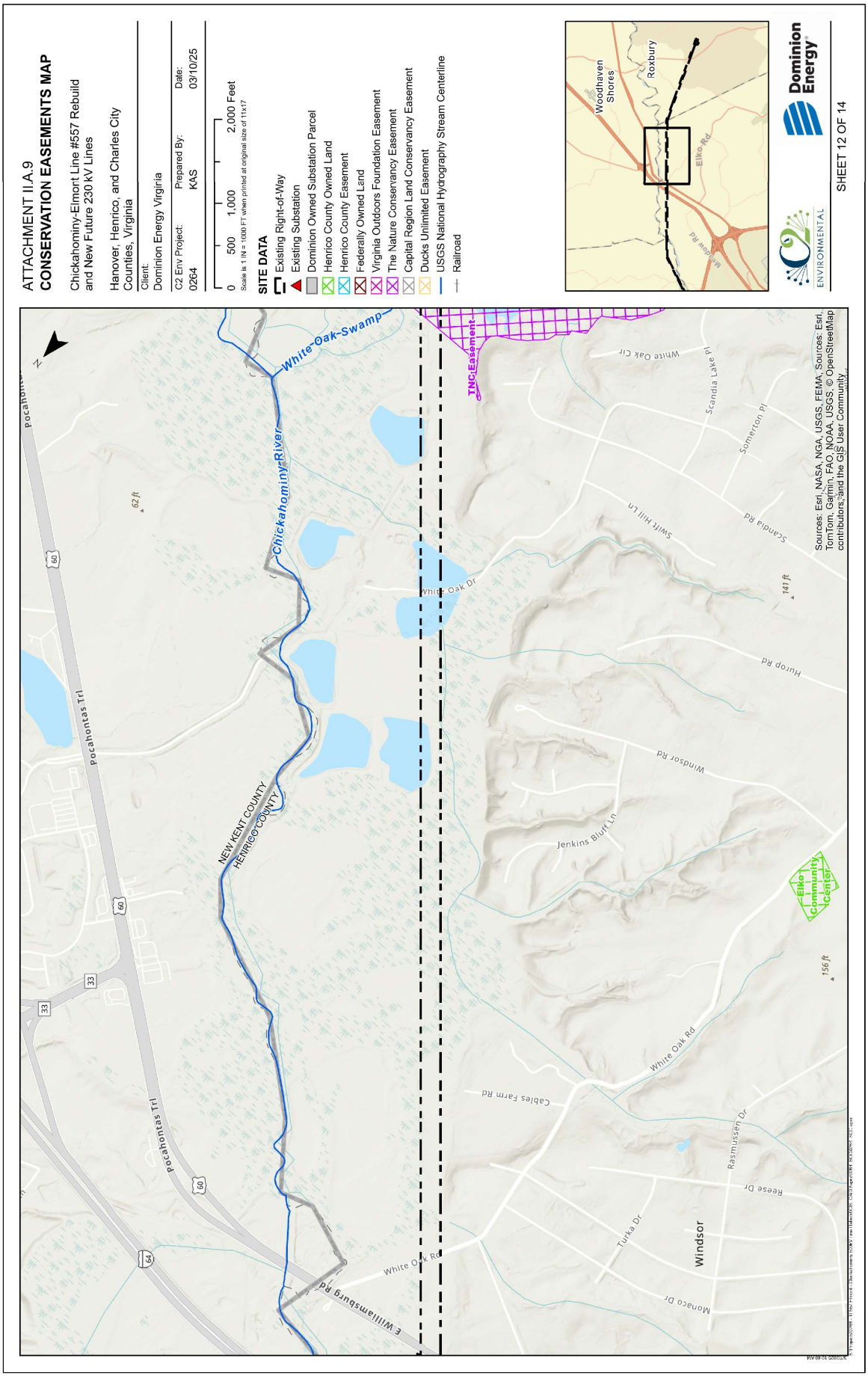
ENVIRONMENTAL

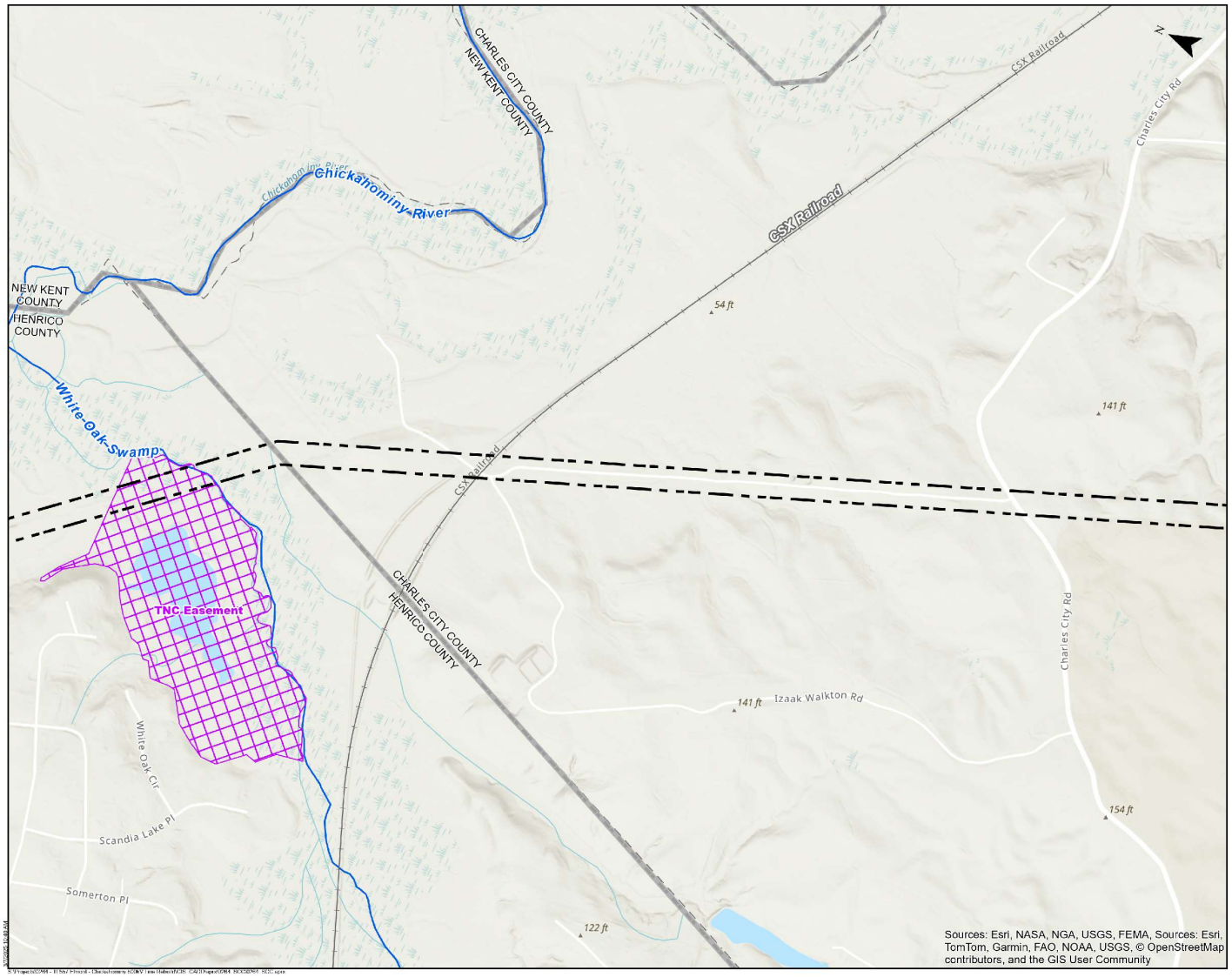
Dominion Energy

SHEET 9 OF 14


ATTACHMENT II.A.9
CONSERVATION EASEMENTS MAP
Chickahominy-Elmort Line #557 Rebuild and New Future 230 kV Lines
Hanover, Henrico, and Charles City Counties, Virginia
Client:
Dominion Energy Virginia
C2 Env Project: 0264
Prepared By: KAS
Date: 03/10/25
0 500 1,000 2,000 Feet
Scale is 1 IN = 1000 FT when printed at original size of 11x17
SITE DATA
Existing Right-of-Way
Existing Substation
Dominion Owned Substation Parcel
Henrico County Owned Land
Henrico County Easement
Federally Owned Land
Virginia Outdoors Foundation Easement
The Nature Conservancy Easement
Capital Region Land Conservancy Easement
Ducks Unlimited Easement
USGS National Hydrography Stream Centerline
Railroad
Highland Springs
Elko Rd
Mechanicsville Rd
Dominion Energy
ENVIRONMENTAL
SHEET 10 OF 14
N
Dispatch Rd
NEW KENT COUNTY
HANOVER COUNTY
NEW KENT COUNTY
HENRICO COUNTY
TNC-Chickahominy River-Megasite Easement
Pin Oak Ln
Green Meadows
McClellan Rd
Swamp Ln
Fox Hunter Ln
Chickahominy River
CRLC-Easement
HANOVER COUNTY
HENRICO COUNTY
Holts Corner
Blackbird Ln
Elder Swamp
Elder Swamp
Elder Swamp
Market Rd
Cold Harbor Rd
156
Richmond National Battlefield Park
Sources: Esri, NASA, NGA, USGS, FEMA, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community


ATTACHMENT II.A.9
CONSERVATION EASEMENTS MAP
Chickahominy-Elmort Line #557 Rebuild and New Future 230 kV Lines
Hanover, Henrico, and Charles City Counties, Virginia
Client:
Dominion Energy Virginia
C2 Env Project: 0264
Prepared By: KAS
Date: 03/10/25
0 500 1,000 2,000 Feet
Scale is 1 IN = 1,000 FT when printed at original size of 11x17
SITE DATA
Existing Right-of-Way
Existing Substation
Dominion Owned Substation Parcel
Henrico County Owned Land
Henrico County Easement
Federally Owned Land
Virginia Outdoors Foundation Easement
The Nature Conservancy Easement
Capital Region Land Conservancy Easement
Ducks Unlimited Easement
USGS National Hydrography Stream Centerline
Railroad
Dominion Energy
ENVIRONMENTAL
SHEET 11 OF 14
Higgins Swamp
Boatz Swamp
Chickahominy River
Norfolk Southern Railroad
NEW KENT COUNTY
HENRICO COUNTY
TNC Chickahominy River Megasite Easement
Woodview Hills
Bradley Acres
Old Williamsburg Rd
E Williamsburg Rd
Crib Ln
Meadow Rd
Elko Rd
Sources: Esri, NASA, NGA, USGS, FEMA, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community


ATTACHMENT II.A.9
CONSERVATION EASEMENTS MAP
Chickahominy-Elmort Line #557 Rebuild and New Future 230 kV Lines
Hanover, Henrico, and Charles City Counties, Virginia
Client:
Dominion Energy Virginia
C2 Env Project: 0264
Prepared By: KAS
Date: 03/10/25
0 500 1,000 2,000 Feet
Scale is 1 IN = 1,000 FT when printed at original size of 11x17
SITE DATA
Existing Right-of-Way
Existing Substation
Dominion Owned Substation Parcel
Henrico County Owned Land
Henrico County Easement
Federally Owned Land
Virginia Outdoors Foundation Easement
The Nature Conservancy Easement
Capital Region Land Conservancy Easement
Ducks Unlimited Easement
USGS National Hydrography Stream Centerline
Railroad
Woodhaven Shores
Roxbury
Elko Rd
Meadow Rd
Dominion Energy
ENVIRONMENTAL
SHEET 12 OF 14
Pocahontas Trl
Chickahominy River
White Oak Swamp
NEW KENT COUNTY
HENRICO COUNTY
TNC Easement
E Williamsburg Rd
White Oak Rd
White Oak Dr
White Oak Cir
Scandia Lake Pl
Somerton Pl
Swift Hill Ln
Scandia Rd
Huiop Rd
Windsor Rd
Jenkins Bluff Ln
Cables Farm Rd
Rasmussen Dr
Reese Dr
Turka Dr
Monaco Dr
Windsor
Elko Community Center
62 ft
141 ft
156 ft
Sources: Esri, NASA, NGA, USGS, FEMA; Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community



ATTACHMENT II.A.9
CONSERVATION EASEMENTS MAP

Chickahominy-Elmort Line #557 Rebuild
and New Future 230 kV Lines

Hanover, Henrico, and Charles City
Counties, Virginia

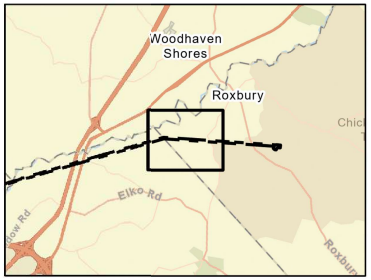
Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0264	KAS	03/10/25

0 500 1,000 2,000 Feet
Scale is 1 IN = 1000 FT when printed at original size of 11x17

SITE DATA

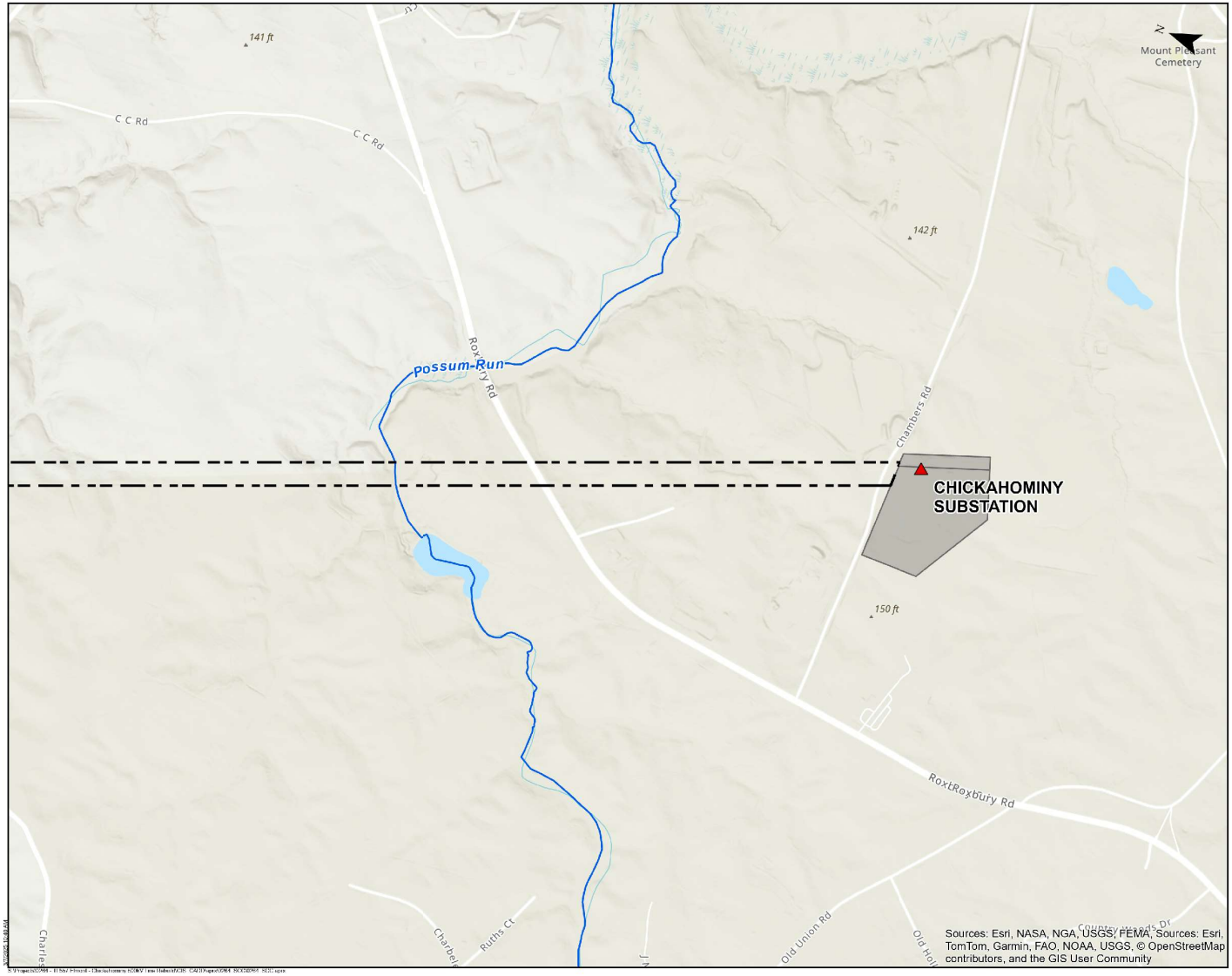
- Existing Right-of-Way
- Existing Substation
- Dominion Owned Substation Parcel
- Henrico County Owned Land
- Henrico County Easement
- Federally Owned Land
- Virginia Outdoors Foundation Easement
- The Nature Conservancy Easement
- Capital Region Land Conservancy Easement
- Ducks Unlimited Easement
- USGS National Hydrography Stream Centerline
- Railroad



ENVIRONMENTAL

Dominion Energy

SHEET 13 OF 14



ATTACHMENT II.A.9
CONSERVATION EASEMENTS MAP

Chickahominy-Elmort Line #557 Rebuild
and New Future 230 kV Lines

Hanover, Henrico, and Charles City
Counties, Virginia

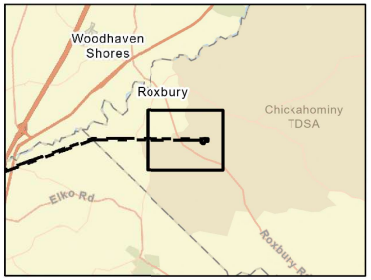
Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0264	KAS	03/10/25

0 500 1,000 2,000 Feet
Scale is 1 IN = 1000 FT when printed at original size of 11x17

SITE DATA

- Existing Right-of-Way
- Existing Substation
- Dominion Owned Substation Parcel
- Henrico County Owned Land
- Henrico County Easement
- Federally Owned Land
- Virginia Outdoors Foundation Easement
- The Nature Conservancy Easement
- Capital Region Land Conservancy Easement
- Ducks Unlimited Easement
- USGS National Hydrography Stream Centerline
- Railroad



ENVIRONMENTAL

Dominion Energy

SHEET 14 OF 14

II. DESCRIPTION OF THE PROPOSED PROJECT

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

10. Describe the Applicant's construction plans for the project, including how the Applicant will minimize service disruption to the affected load area. Include requested and approved line outage schedules for affected lines as appropriate.

Response: The Company plans to construct the Rebuild Project in a manner that minimizes outage time, as described below. Assuming a final order from the Commission by January 31, 2026, as requested in Section I.H of this Appendix, the Company estimates that the proposed Rebuild Project construction will commence in September 2026 and be completed by December 2028, which will require 3 separate outages on Line #557 (beginning in Fall 2026), and 2 separate outages on Line #2075 (beginning in Fall 2026).

Season	Work to Be Completed
Fall 2026	• Wreck and rebuild Line #557 from Elmont Substation to Structure #557/319 (7.8 miles), replacing existing lattice towers with 500/230 kV H-Frame monopoles. Install new future 230 kV circuit underbuilt beneath Line #557 and install conductor on Line #2075's vacant arms between Structures #2075/1 to #2075/21.
Spring 2027	• Wreck and rebuild Line #557 from Structures #557/319 to #557/262 (8.6 miles), replacing existing lattice towers with 500/230 kV H-Frame monopoles. Install new future 230 kV circuit underbuilt beneath Line #557.
Fall 2027	• Wreck and rebuild Line #557 from Structures #557/262 to #557/227 (7.7 miles), replacing existing lattice towers with 500/230 kV H-Frame monopoles. Install the new future 230 kV circuit underbuilt beneath Line #557.
Spring 2028	• Install conductor on Line #2075's vacant arms between Structures #2075/148 to #2075/187. Complete any outstanding work on Line #557 from Elmont Substation to Chickahominy Substation.

The Company intends to complete this work during requested outage windows. However, as with all outage scheduling, these outages may change depending on whether PJM approves the outages and whether other relevant considerations allow for it. It is customary for PJM to hold requests for outages and approve only shortly before the outages are expected to occur and, therefore, the requested outages are subject to change. Therefore, the Company will not have clarity on whether this work will be done as requested until very close in time to the requested outages. If PJM approves different outage dates, the Company will continue to diligently pursue timely completion of this work.

II. DESCRIPTION OF THE PROPOSED PROJECT

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

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

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

The Company utilized Guideline #1 by siting the Rebuild Project entirely within existing transmission line corridors (To the extent permitted by the property interest involved, rights-of-way should be selected with the purpose of minimizing conflict between the rights-of-way and present and prospective uses of the land on which they are to be located. To this end, existing rights-of-way should be given the priority as the locations for additions to existing transmission facilities, and the joint use of existing rights-of-way by different kinds of utility services should be considered).

By utilizing the existing transmission corridor, the proposed Rebuild Project will minimize impact to any site listed on the National Register of Historic Places ("NRHP"). Thus, the Rebuild Project is consistent with Guideline #2 (where practical, rights-of-way should avoid sites listed on the NRHP). See Section III.A for a description of the resources identified in the Stage I Pre-Application Analysis prepared by Dutton + Associates ("Dutton") on behalf of the Company, which is included with the DEQ Supplement as Attachment 2.I.1. The Stage I Pre-Application Analysis was submitted to the Virginia Department of Historic Resources ("VDHR") on May 8, 2025.

The Company has communicated with a number of local, state, and federal agencies prior to filing this Application consistent with Guideline #4 (where government land is involved the applicant should contact the agencies early in the planning process). In particular, the Company consulted with Charles City, Henrico, and Hanover Counties regarding the Rebuild Project. See Sections III and V of this Appendix.

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

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

II. DESCRIPTION OF THE PROPOSED PROJECT

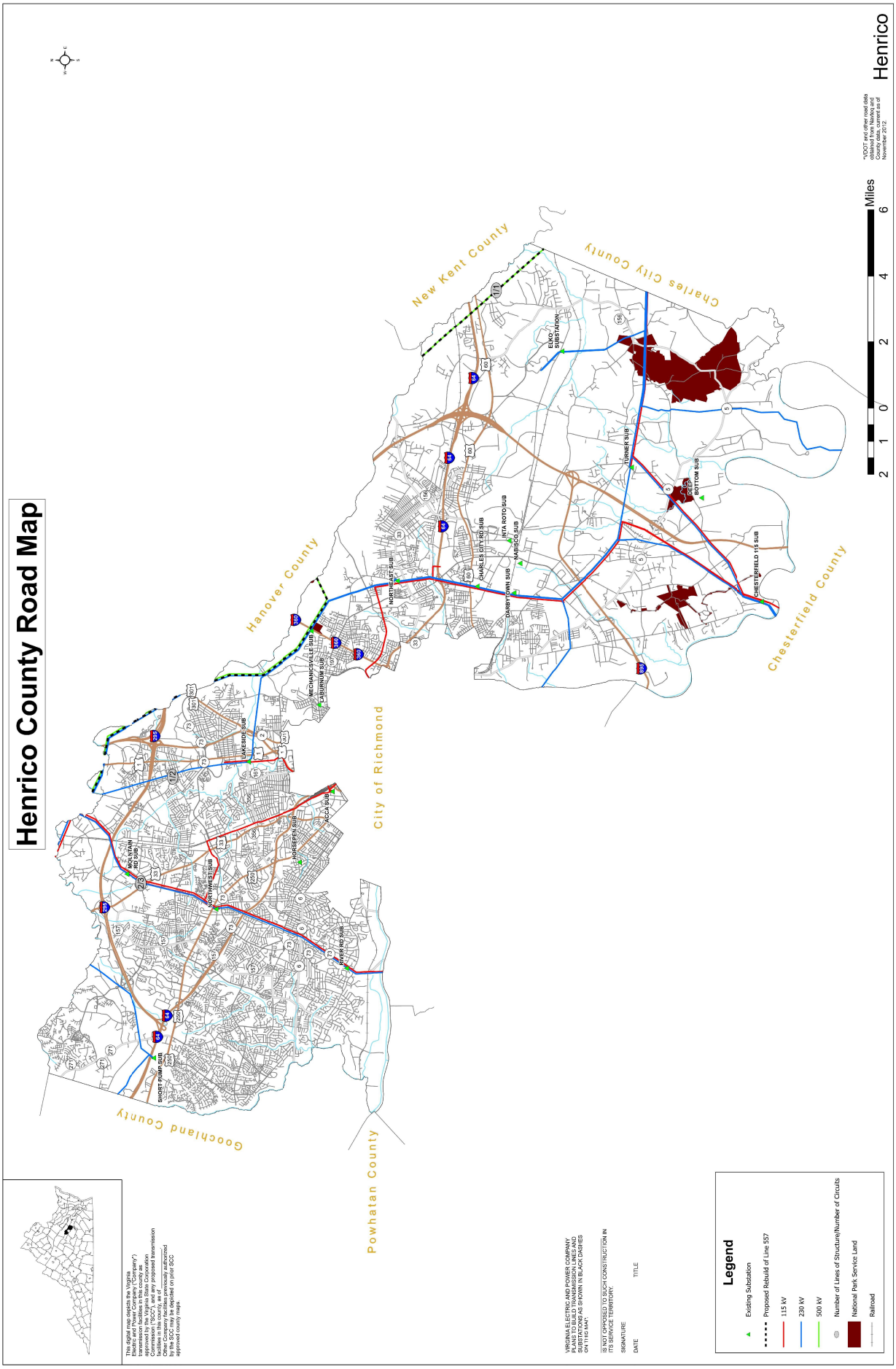
A. Right-of-way ("ROW")

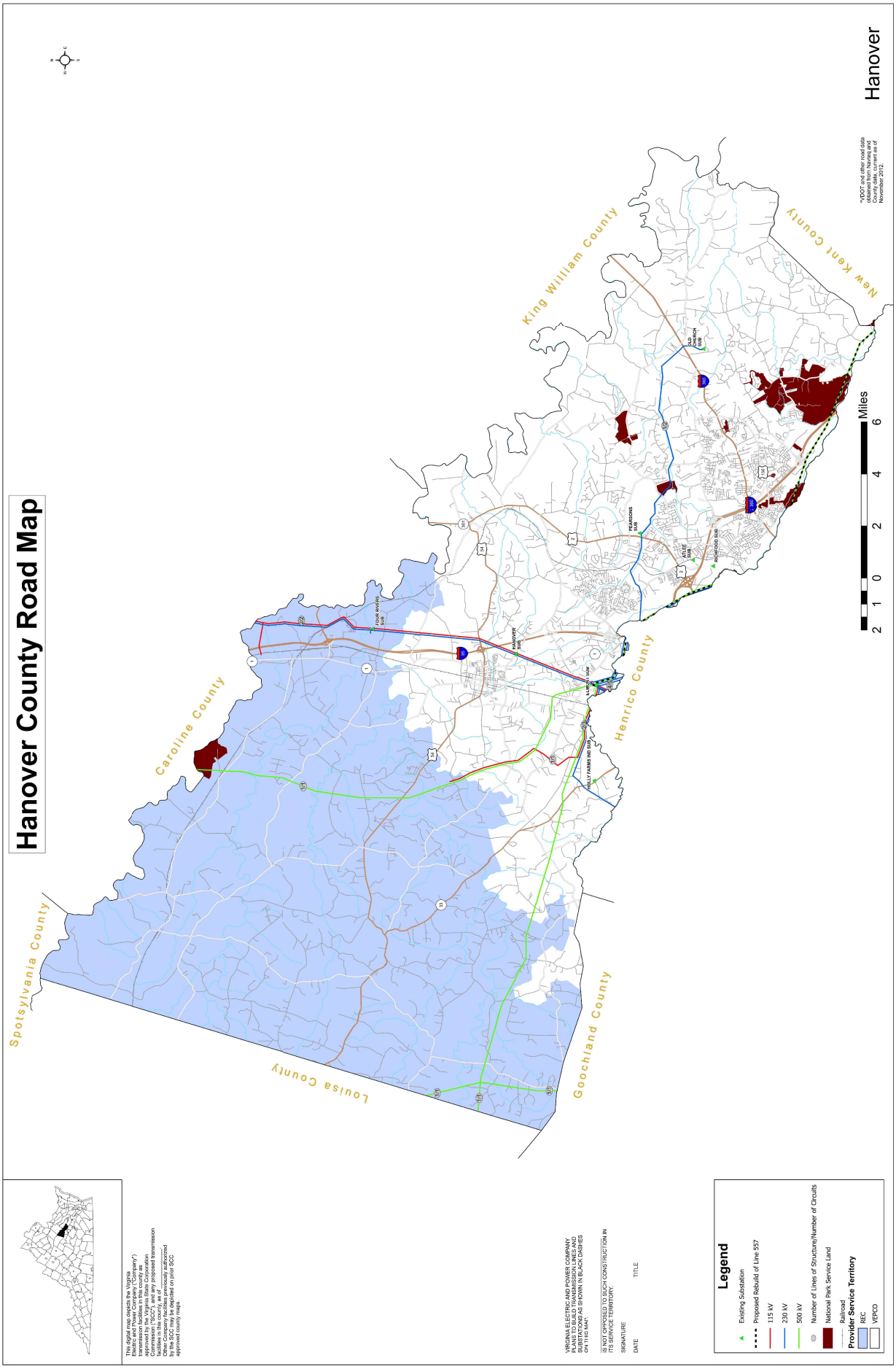
12. a. Detail counties and localities through which the line will pass. If any portion of the line will be located outside of the Applicant's certificated service area: (1) identify each electric utility affected; (2) state whether any affected electric utility objects to such construction; and (3) identify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

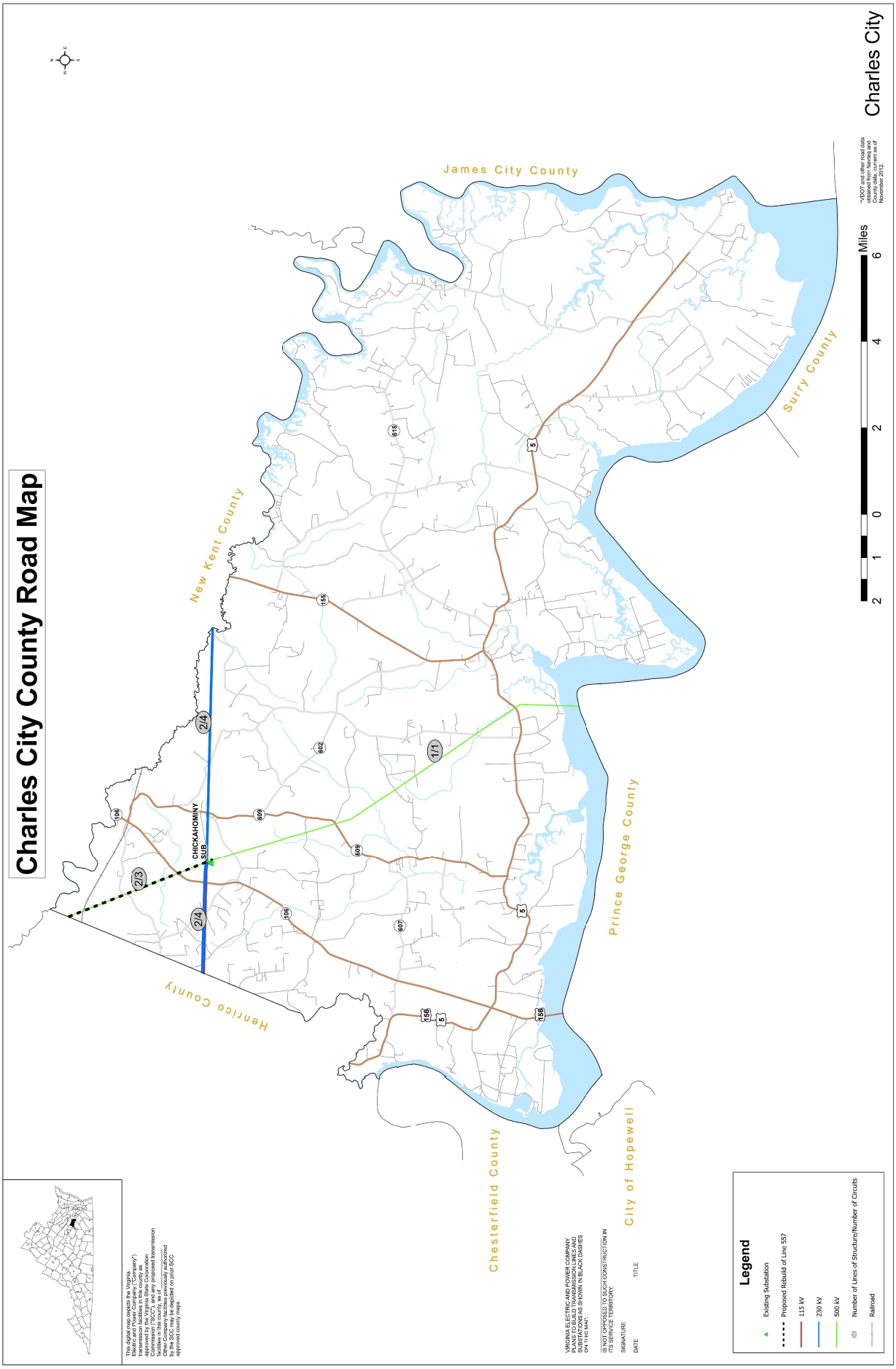
b. Provide three (3) color copies of the Virginia Department of Transportation "General Highway Map" for each county and city through which the line will pass. On the maps show the proposed line and all previously approved and certificated facilities of the Applicant. Also, where the line will be located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

Response: a. The proposed Rebuild Project traverses Charles City County for a total of approximately 3.5 miles, Henrico County for a total of approximately 13.0 miles, and Hanover County for a total of approximately 11.2 miles. The Rebuild Project is located entirely within the Company's service territory.

b. Copies of the Virginia Department of Transportation ("VDOT") "General Highway Map" for Charles City, Henrico, and Hanover Counties are marked as required and filed with the Application. A reduced copy of each map is provided as Attachments II.A.12.b.1 - 3.


Henrico County Road Map
Hanover County
New Kent County
Charles City County
Chesterfield County
City of Richmond
Powhatan County
Goochland County
SHORT PUMP SUB
WOODMAN ROAD SUB
NORTHWEST SUB
HORSEPEN SUB
ACCA SUB
RIVER RD SUB
LAKESIDE SUB
MECHANICSVILLE SUB
LABURNUM SUB
NORTHEAST SUB
CHARLES CITY RD SUB
INTA ROTO SUB
DARBYTOWN SUB
MARSEC SUB
ELKO SUBSTATION
TURNER SUB
BOTTOM SUB
CHESTERFIELD 115 SUB
Miles
2 1 0 2 4 6
*VDOT and other road data obtained from Virginia GIS Clearinghouse. County data, current as of November 2012.
Henrico
This digital map depicts the Virginia Electric and Power Company ("Company") transmission facilities in this county as approved by the Virginia State Corporation Commission ("SCC"), and any proposed transmission facilities in this county, and any proposed Other Company facilities previously authorized by the SCC may be depicted on prior SCC approved county maps.
VIRGINIA ELECTRIC AND POWER COMPANY PLANS TO BUILD TRANSMISSION LINES AND SUBSTATIONS AS SHOWN IN BLACK DASHES ON THIS MAP.
IS NOT OPPOSED TO SUCH CONSTRUCTION IN ITS SERVICE TERRITORY.
SIGNATURE
DATE
TITLE
Legend
Existing Substation
Proposed Rebuild of Line 557
115 kV
230 kV
500 kV
Number of Lines of Structure/Number of Circuits
National Park Service Land
Railroad


Hanover County Road Map
Caroline County
Spotsylvania County
Louisa County
Goochland County
Henrico County
King William County
New Kent County
Hanover
FOUR RIVERS SUB
HANOVER SUB
HOLLY FARMS RD SUB
PEARSONS SUB
ATLEE SUB
NICHOLSON SUB
OLD CHURCH SUB
Miles
2 1 0 2 4 6
*VDOT and other road data obtained from Navteq and County data, current as of November, 2012.
This digital map depicts the Virginia Electric and Power Company ("Company") transmission facilities in this county as approved by the Virginia State Corporation Commission ("SCC"), and any proposed transmission facilities in this county as of the date shown. Other Company facilities previously authorized by the SCC may be depicted on prior SCC approved county maps.
VIRGINIA ELECTRIC AND POWER COMPANY PLANS TO BUILD TRANSMISSION LINES AND SUBSTATIONS AS SHOWN IN BLACK DASHES ON THIS MAP.
IS NOT OPPOSED TO SUCH CONSTRUCTION IN ITS SERVICE TERRITORY.
SIGNATURE
TITLE
DATE
Legend
Existing Substation
Proposed Rebuild of Line 557
115 kV
230 kV
500 kV
Number of Lines of Structure/Number of Circuits
National Park Service Land
Railroad
Provider Service Territory
REC
VEPCO


Charles City County Road Map
Charles City
James City County
New Kent County
Henrico County
Chesterfield County
City of Hopewell
Prince George County
Surry County
CHICKAHOMINY SUB
2/3
2/4
1/1
106
156
5
615
602
609
607
Miles
2 1 0 2 4 6
*VDOT and other road data obtained from Navteq and County data, current as of November, 2012.
This digital map depicts the Virginia Electric and Power Company ("Company") transmission facilities in this county as approved by the Virginia State Corporation Commission ("SCC"), and any proposed transmission facilities in this county as of November 1, 2012. Other Company facilities previously authorized by the SCC may be depicted on prior SCC approved county maps.
VIRGINIA ELECTRIC AND POWER COMPANY PLANS TO BUILD TRANSMISSION LINES AND SUBSTATIONS AS SHOWN IN BLACK DASHES ON THIS MAP.
IS NOT OPPOSED TO SUCH CONSTRUCTION IN ITS SERVICE TERRITORY.
SIGNATURE
TITLE
DATE
Legend
Existing Substation
Proposed Rebuild of Line 557
115 kV
230 kV
500 kV
Number of Lines of Structure/Number of Circuits
Railroad

II. DESCRIPTION OF THE PROPOSED PROJECT

B. Line Design and Operational Features

1. Detail the number of circuits and their design voltage, initial operational voltage, any anticipated voltage upgrade, and transfer capabilities.

Response: Line #557 will be designed and operated at 500 kV with no anticipated voltage upgrades. The triple-bundled 1,351.5 ACSR conductors will have a transfer capability of 4,357 MVA.

The new future 230 kV lines will be designed and operated at 230kV with no anticipated voltage upgrades. Both 230kV lines will utilize twin-bundled 768.2 ACSS/TW/HS or HS-285 conductors with a transfer capability of 1,573 MVA.[18]

[18] HS-285 (UHS) conductor is needed on Line #2075 structures in order to pull the wire at higher tensions to maintain ground clearances.

II. DESCRIPTION OF THE PROPOSED PROJECT

B. Line Design and Operational Features

2. Detail the number, size(s), type(s), coating and typical configurations of conductors. Provide the rationale for the type(s) of conductor(s) to be used.

Response: Line #557 will utilize three-phase triple-bundled 1,351.5 ACSR conductors arranged as shown in Attachments II.B.3.i – iii.[19]

The new future 230 kV line underbuilt beneath Line #557 will utilize twin-bundled 768.2 ACSS/TW/HS conductors arranged as shown in Attachments II.B.3.i – iii. The new future 230kV line on shared structures with Line #2075 will utilize twin-bundled 768.2 ACSS/TW/HS-285 conductors arranged as shown in Attachment II.A.5.b. The twin-bundled 768.2 ACSS/TW/HS conductors are the Company's standard for new 230 kV construction.

[19] Note that the Company currently is evaluating its standard conductor for new 500 kV construction.

II. DESCRIPTION OF THE PROPOSED PROJECT

B. Line Design and Operational Features

3. With regard to the proposed supporting structures over each portion of the ROW for the preferred route, provide diagrams (including foundation reveal) and descriptions of all the structure types, to include:

a. mapping that identifies each portion of the preferred route;

b. the rationale for the selection of the structure type;

c. the number of each type of structure and the length of each portion of the ROW;

d. the structure material and rationale for the selection of such material;

e. the foundation material;

f. the average width at cross arms;

g. the average width at the base;

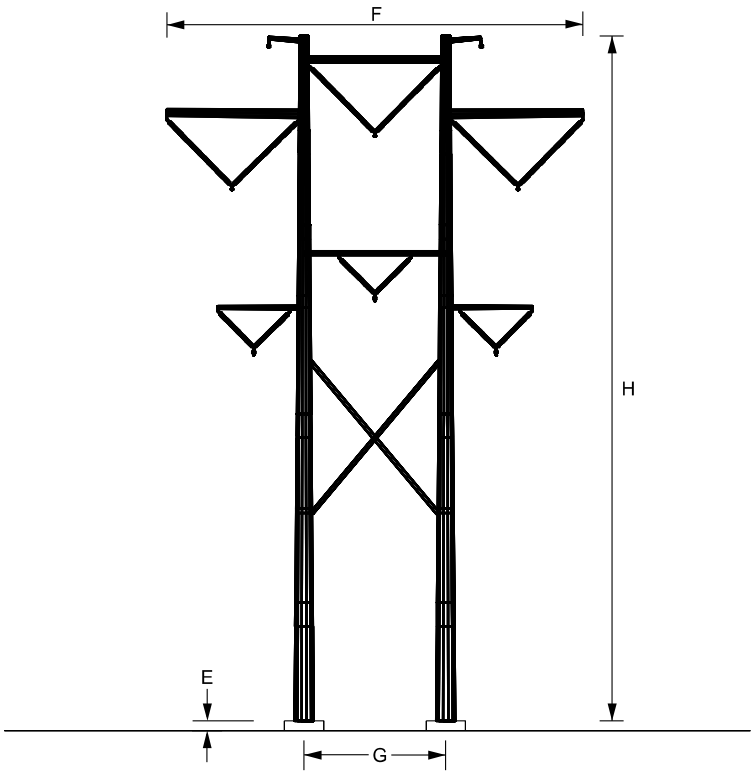
h. the maximum, minimum and average structure heights;

i. the average span length; and

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

Response: For subparts (b)-(j), see Attachments II.B.3.i – iii.

For subpart (a), see Attachment II.B.5, which provides approximate mapping of the proposed structures along Line #557, which are subject to change during final engineering.



TYPICAL DC 500KV/230KV ENGINEERED H-FRAME - SUSPENSION

B. RATIONALE FOR STRUCTURE TYPE:	BEST MATCHES EXISTING STRUCTURE GEOMETRY AND CONDUCTOR FOOTPRINT - TUBULAR STEEL STR. CHOOSEN OVER TOWERS FOR CONSTRUCTABILITY IN SWAMPY TERRAIN
C. LENGTH OF R/W (STRUCTURE QTY):	27.6 MILES (115) - SEE NOTE 1
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONALE FOR STRUCTURE MATERIAL:	MATCHES EXISTING STRUCTURE FINISHES IN THE CORRIDOR
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 2
F. AVERAGE WIDTH AT CROSSARM:	88'
G. AVERAGE WIDTH AT BASE:	30' LEG SPACING - SEE NOTE 3
H. MINIMUM STRUCTURE HEIGHT (SEE NOTE 4): MAXIMUM STRUCTURE HEIGHT (SEE NOTE 4): AVERAGE STRUCTURE HEIGHT (SEE NOTE 4):	122' 165' 146'
I. AVERAGE SPAN LENGTH:	1114' - SEE NOTE 5
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5'/27.5' (230KV/500KV) AT MAXIMUM OPERATING TEMPERATURE PER 2023 NESC CODE

NOTES:
1. ROW LENGTH & STRUCTURE QUANTITY ARE EXCLUSIVE OF COMPANY SUBSTATION PROPERTIES
2. MINIMUM FOUNDATION REVEAL SHALL BE 1.5'
3. FOUNDATION DIAMETER SHALL BE BASED ON GEOTECHNICAL FINDINGS DURING FINAL ENGINEERING
4. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE AND INCLUDE FOUNDATION REVEAL
5. THE SPAN LENGTHS ASSOCIATED WITH THIS STRUCTURE TYPE ARE THE AHEAD SPANS

THE INFORMATION CONTAINED ON THIS DRAWING IS CONSIDERED PRELIMINARY IN NATURE AND IS SUBJECT TO CHANGE BASED ON FINAL DESIGN

Dominion Energy
Dominion Energy
5000 Dominion Blvd.
Glen Allen, VA 23060

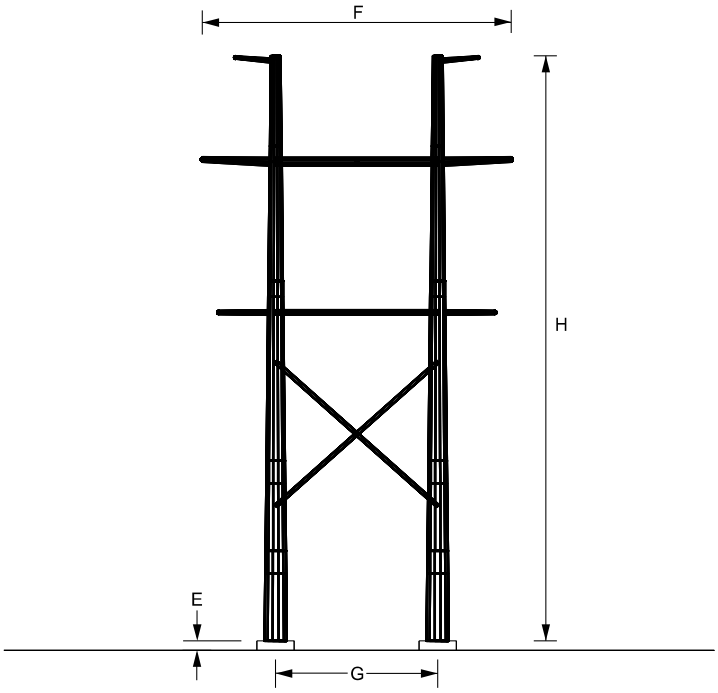
LINE 557 & FUTURE 230KV

TYPICAL DC 500KV/230KV ENGINEERED H-FRAME - SUSPENSION

ATTACHMENT NO.

II.B.3.i

DRAWN BY: TMR



TYPICAL DC 500KV/230KV ENGINEERED H-FRAME - DOUBLE DEADEND

B. RATIONALE FOR STRUCTURE TYPE:	BEST MATCHES EXISTING STRUCTURE GEOMETRY AND CONDUCTOR FOOTPRINT - TUBULAR STEEL STR. CHOOSEN OVER TOWERS FOR CONSTRUCTABILITY IN SWAMPY TERRAIN
C. LENGTH OF R/W (STRUCTURE QTY):	27.6 MILES (10) - SEE NOTE 1
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONALE FOR STRUCTURE MATERIAL:	MATCHES EXISTING STRUCTURE FINISHES IN THE CORRIDOR
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 2
F. AVERAGE WIDTH AT CROSSARM:	72'
G. AVERAGE WIDTH AT BASE:	36' LEG SPACING - SEE NOTE 3
H. MINIMUM STRUCTURE HEIGHT (SEE NOTE 4): MAXIMUM STRUCTURE HEIGHT (SEE NOTE 4): AVERAGE STRUCTURE HEIGHT (SEE NOTE 4):	120' 147' 131'
I. AVERAGE SPAN LENGTH:	1083' - SEE NOTE 5
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5'/27.5' (230KV/500KV) AT MAXIMUM OPERATING TEMPERATURE PER 2023 NESC CODE

NOTES:
1. ROW LENGTH & STRUCTURE QUANTITY ARE EXCLUSIVE OF COMPANY SUBSTATION PROPERTIES
2. MINIMUM FOUNDATION REVEAL SHALL BE 1.5'
3. FOUNDATION DIAMETER SHALL BE BASED ON GEOTECHNICAL FINDINGS DURING FINAL ENGINEERING
4. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE AND INCLUDE FOUNDATION REVEAL
5. THE SPAN LENGTHS ASSOCIATED WITH THIS STRUCTURE TYPE ARE THE AHEAD SPANS

THE INFORMATION CONTAINED ON THIS DRAWING IS CONSIDERED PRELIMINARY IN NATURE AND IS SUBJECT TO CHANGE BASED ON FINAL DESIGN

Dominion Energy
Dominion Energy
5000 Dominion Blvd.
Glen Allen, VA 23060

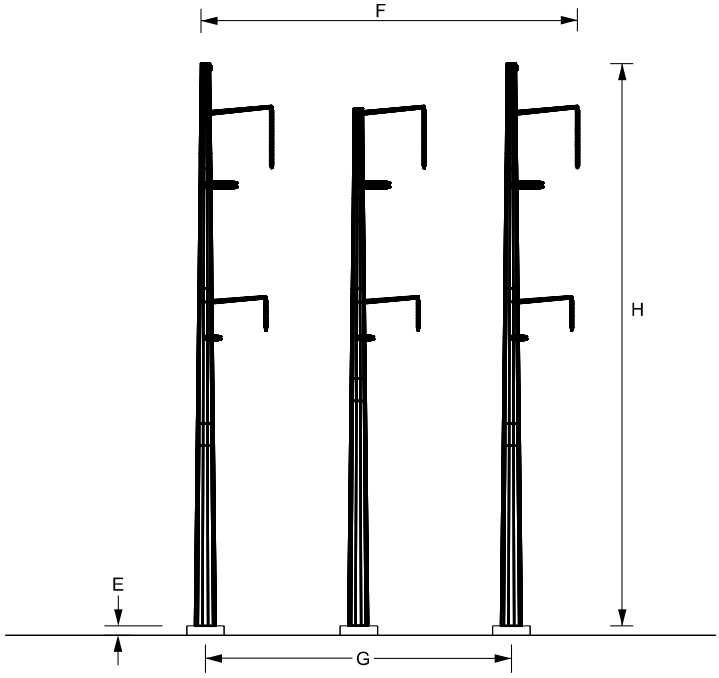
LINE 557 & FUTURE 230KV

TYPICAL DC 500KV/230KV ENGINEERED H-FRAME - DOUBLE DEADEND

ATTACHMENT NO.

II.B.3.ii

DRAWN BY: TMR



TYPICAL DC 500KV/230KV ENGINEERED 3-POLE - DOUBLE DEADEND

B. RATIONALE FOR STRUCTURE TYPE:	BEST MATCHES EXISTING STRUCTURE GEOMETRY AND CONDUCTOR FOOTPRINT - TUBULAR STEEL STR. CHOOSEN OVER TOWERS FOR CONSTRUCTABILITY IN SWAMPY TERRAIN
C. LENGTH OF R/W (STRUCTURE QTY):	27.6 MILES (6) - SEE NOTE 1
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONALE FOR STRUCTURE MATERIAL:	MATCHES EXISTING STRUCTURE FINISHES IN THE CORRIDOR
E. FOUNDATION MATERIAL:	CONCRETE
AVERAGE FOUNDATION REVEAL:	SEE NOTE 2
F. AVERAGE WIDTH AT CROSSARM:	86' - LEG SPACING VARIES BASED ON LINE ANGLE
G. AVERAGE WIDTH AT BASE:	71' - LEG SPACING VARIES BASED ON LINE ANGLE - SEE NOTE 3
H. MINIMUM STRUCTURE HEIGHT (SEE NOTE 4):	119'
MAXIMUM STRUCTURE HEIGHT (SEE NOTE 4):	164'
AVERAGE STRUCTURE HEIGHT (SEE NOTE 4):	134'
I. AVERAGE SPAN LENGTH:	902' - SEE NOTE 5
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5'/27.5' (230KV/500KV) AT MAXIMUM OPERATING TEMPERATURE PER 2023 NESC CODE

NOTES:
1. ROW LENGTH & STRUCTURE QUANTITY ARE EXCLUSIVE OF COMPANY SUBSTATION PROPERTIES
2. MINIMUM FOUNDATION REVEAL SHALL BE 1.5'
3. FOUNDATION DIAMETER SHALL BE BASED ON GEOTECHNICAL FINDINGS DURING FINAL ENGINEERING
4. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE AND INCLUDE FOUNDATION REVEAL
5. THE SPAN LENGTHS ASSOCIATED WITH THIS STRUCTURE TYPE ARE THE AHEAD SPANS

THE INFORMATION CONTAINED ON THIS DRAWING IS CONSIDERED PRELIMINARY IN NATURE AND IS SUBJECT TO CHANGE BASED ON FINAL DESIGN

Dominion Energy
Dominion Energy
5000 Dominion Blvd.
Glen Allen, VA 23060

LINE 557 & FUTURE 230KV

TYPICAL DC 500KV/230KV ENGINEERED 3-POLE - DOUBLE DEADEND

ATTACHMENT NO.

II.B.3.iii

DRAWN BY: TMR

II. DESCRIPTION OF THE PROPOSED PROJECT

B. Line Design and Operational Features

4. With regard to the proposed supporting structures for all feasible alternate routes, provide the maximum, minimum and average structure heights with respect to the whole route.

Response: Not applicable.

II. DESCRIPTION OF THE PROPOSED PROJECT

B. Line Design and Operational Features

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

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

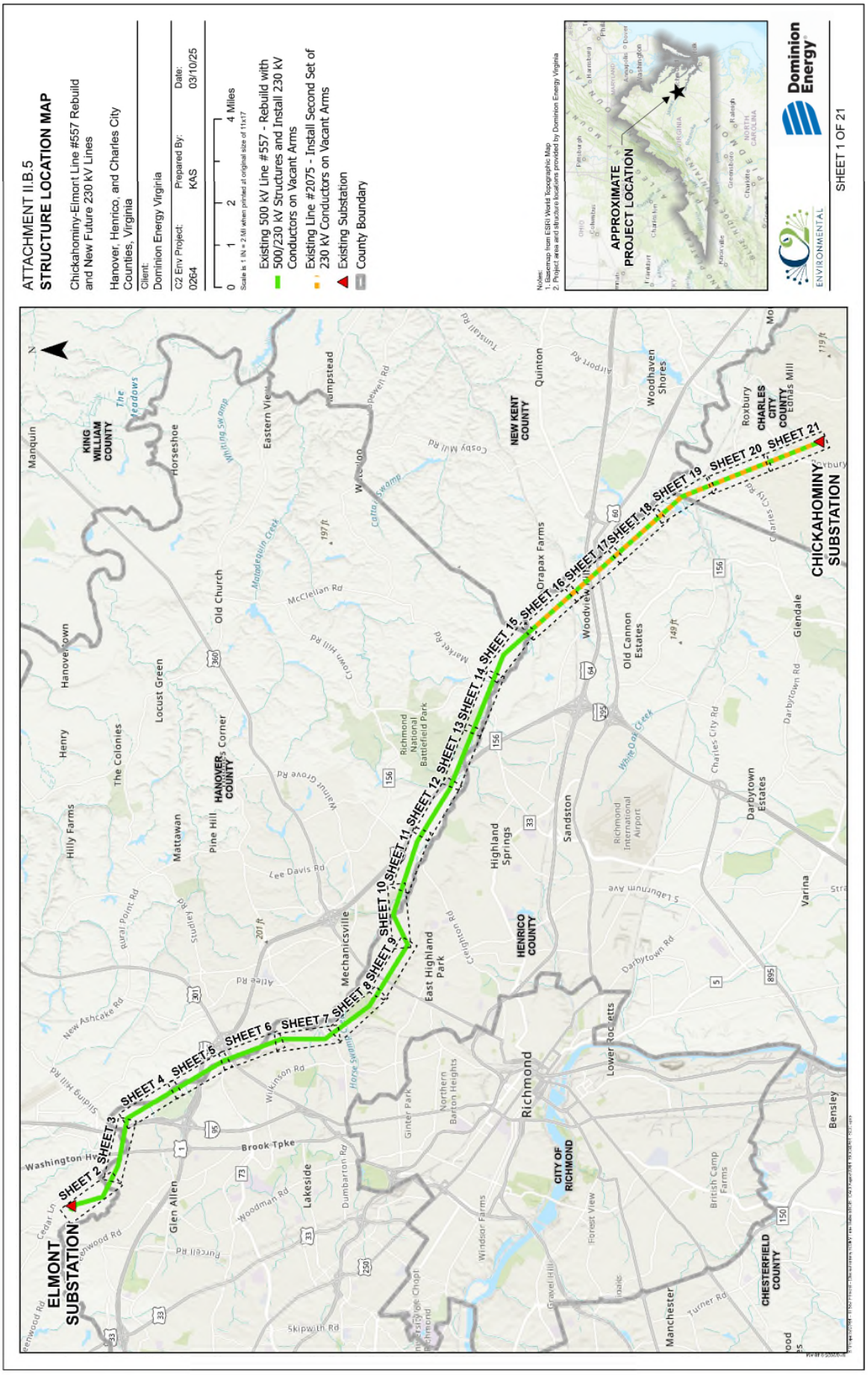
The proposed approximate structure heights are from the conceptual design created to estimate the cost of the proposed Rebuild Project and are subject to change based on final engineering design. The approximate structure heights include estimated foundation reveal.

Structure Number	Existing Structure Height (ft.)	Proposed Structure Height (ft)	Attachment II.B.3 Structure Type
557/228	113	147	II.B.3.ii
557/229	128	148	II.B.3.i
557/230	124	150	II.B.3.i
557/231	124	153	II.B.3.i
557/232	130	154	II.B.3.i
557/233	128	147	II.B.3.i
557/234	124	154	II.B.3.i
557/235	119	142	II.B.3.i
557/236	108	137	II.B.3.i
557/237	118	143	II.B.3.i
557/238	114	153	II.B.3.i
557/239	128	147	II.B.3.i
557/240	128	153	II.B.3.i
557/241	123	147	II.B.3.i
557/242	108	137	II.B.3.i
557/243	94	122	II.B.3.ii
557/244	126	152	II.B.3.i
557/245	129	158	II.B.3.i
557/246	129	157	II.B.3.i
557/247	127	152	II.B.3.i
557/248	123	152	II.B.3.i
557/249	122	152	II.B.3.i
557/250	108	137	II.B.3.i
557/251	103	137	II.B.3.i

Structure Number	Existing Structure Height (ft.)	Proposed Structure Height (ft)	Attachment II.B.3 Structure Type
557/252	98	132	II.B.3.i
557/253	113	147	II.B.3.i
557/254	123	147	II.B.3.i
557/255	128	152	II.B.3.i
557/256	128	152	II.B.3.i
557/257	128	157	II.B.3.i
557/258	119	143	II.B.3.i
557/259	124	153	II.B.3.i
557/260	128	153	II.B.3.i
557/261	113	142	II.B.3.i
557/262	114	138	II.B.3.ii
557/263	127	147	II.B.3.i
557/264	127	147	II.B.3.i
557/265	114	148	II.B.3.i
557/266	123	147	II.B.3.i
557/267	122	152	II.B.3.i
557/268	118	142	II.B.3.i
557/269	107	132	II.B.3.ii
557/270	108	138	II.B.3.i
557/271	113	137	II.B.3.i
557/272	128	147	II.B.3.i
557/273	125	154	II.B.3.i
557/274	122	147	II.B.3.i
557/275	124	153	II.B.3.i
557/276	124	148	II.B.3.i
557/277	126	155	II.B.3.i
557/278	130	154	II.B.3.i
557/279	132	156	II.B.3.i
557/280	130	154	II.B.3.i
557/281	127	156	II.B.3.i
557/282	146	165	II.B.3.i
557/283	146	165	II.B.3.i
557/284	126	140	II.B.3.ii
557/285	109	142	II.B.3.i
557/286	133	152	II.B.3.i
557/287	126	149	II.B.3.i
557/288	122	147	II.B.3.i
557/289	118	147	II.B.3.i

Structure Number	Existing Structure Height (ft.)	Proposed Structure Height (ft)	Attachment II.B.3 Structure Type
557/290	108	137	II.B.3.i
557/291	105	129	II.B.3.ii
557/292	102	127	II.B.3.i
557/293	102	127	II.B.3.i
557/294	120	149	II.B.3.i
557/295	126	150	II.B.3.i
557/296	128	151	II.B.3.i
557/297	123	152	II.B.3.i
557/298	114	148	II.B.3.i
557/299	110	134	II.B.3.i
557/300	99	119	II.B.3.iii
557/301	106	141	II.B.3.i
557/302	128	146	II.B.3.i
557/303	117	142	II.B.3.i
557/304	90	124	II.B.3.iii
557/305	100	129	II.B.3.i
557/306	97	132	II.B.3.i
557/307	118	137	II.B.3.i
557/308	117	142	II.B.3.i
557/309	122	146	II.B.3.i
557/310	122	146	II.B.3.i
557/311	123	146	II.B.3.i
557/312	107	136	II.B.3.i
557/313	103	122	II.B.3.ii
557/314	131	145	II.B.3.i
557/315	131	155	II.B.3.i
557/316	132	151	II.B.3.i
557/317	134	157	II.B.3.i
557/318	135	155	II.B.3.i
557/319	103	127	II.B.3.iii
557/320	108	132	II.B.3.i
557/321	125	154	II.B.3.i
557/322	129	153	II.B.3.i
557/323	124	143	II.B.3.i
557/324	114	128	II.B.3.ii
557/325	135	155	II.B.3.i
557/326	134	158	II.B.3.i
557/327	134	157	II.B.3.i

Structure Number	Existing Structure Height (ft.)	Proposed Structure Height (ft)	Attachment II.B.3 Structure Type
557/328	123	157	II.B.3.i
557/329	115	144	II.B.3.i
557/330	109	143	II.B.3.i
557/331	106	120	II.B.3.ii
557/332	106	140	II.B.3.i
557/333	110	140	II.B.3.i
557/334	105	144	II.B.3.i
557/335	118	143	II.B.3.i
557/336	123	147	II.B.3.i
557/337	125	153	II.B.3.i
557/338	128	157	II.B.3.i
557/339	128	147	II.B.3.i
557/340	119	148	II.B.3.i
557/341	119	142	II.B.3.i
557/342	107	133	II.B.3.i
557/343	104	143	II.B.3.i
557/344	91	119	II.B.3.iii
557/345	108	137	II.B.3.i
557/346	114	143	II.B.3.i
557/347	110	144	II.B.3.i
557/348	92	122	II.B.3.i
557/349	112	142	II.B.3.i
557/350	108	133	II.B.3.i
557/351	103	132	II.B.3.ii
557/352	123	152	II.B.3.i
557/353	117	142	II.B.3.i
557/354	132	162	II.B.3.i
557/355	117	164	II.B.3.iii
557/356	127	147	II.B.3.i
557/357	122	147	II.B.3.i
557/358	123	152	II.B.3.iii
557/359	129	153	II.B.3.iii
Minimum	90	119	
Maximum	146	165	
Average	118.8	145	


ATTACHMENT II.B.5
STRUCTURE LOCATION MAP
Chickahominy-Elmont Line #557 Rebuild and New Future 230 kV Lines
Hanover, Henrico, and Charles City Counties, Virginia
Client:
Dominion Energy Virginia
C2 Env Project: 0264
Prepared By: KAS
Date: 03/10/25
0 1 2 4 Miles
Scale is 1 IN = 2 MI when printed at original size of 11x17
Existing 500 kV Line #557 - Rebuild with 500/230 kV Structures and Install 230 kV Conductors on Vacant Arms
Existing Line #2075 - Install Second Set of 230 kV Conductors on Vacant Arms
Existing Substation
County Boundary
Notes:
1. Basemap: from ESRI World Topographic Map
2. Project area and structure locations provided by Dominion Energy Virginia
APPROXIMATE PROJECT LOCATION
ENVIRONMENTAL
Dominion Energy
SHEET 1 OF 21
ELMONT SUBSTATION
CHICKAHOMINY SUBSTATION
SHEET 2
SHEET 3
SHEET 4
SHEET 5
SHEET 6
SHEET 7
SHEET 8
SHEET 9
SHEET 10
SHEET 11
SHEET 12
SHEET 13
SHEET 14
SHEET 15
SHEET 16
SHEET 17
SHEET 18
SHEET 19
SHEET 20
SHEET 21
KING WILLIAM COUNTY
HANOVER COUNTY
HENRICO COUNTY
NEW KENT COUNTY
CHARLES CITY COUNTY
CITY OF RICHMOND
CHESTERFIELD COUNTY
Richmond
Mechanicsville
Glen Allen
Lakeside
Highland Springs
Sandston
Quinton
Orapax Farms
Woodhaven Shores
Roxbury
Glendale
Varina
Bensley
Manchester
Richmond National Battlefield Park
Richmond International Airport
Darbytown Estates
Old Cannon Estates
Lower Rocketts
Forest View
British Camp Farms
Windsor Farms
Gravel Hill
East Highland Park
Northern Barton Heights
Ginter Park
Hanover Town
Old Church
Pine Hill
Mattawan
Hilly Farms
Henry
The Colonies
Locust Green
Horseshoe
Eastern View
Manquin
Washington Hwy
Brook Tpke
Charles City Rd
Darbytown Rd
McClellan Rd
Walnut Grove Rd
Lee Davis Rd
Wilkinson Rd
Skipwith Rd
Turner Rd
Cedar Ln
Sliding Hill Rd
New Ashcake Rd
Rural Point Rd
Matadequin Creek
Cattail Swamp
White Oak Creek
Horse Swamp
Walking Swamp
The Meadows
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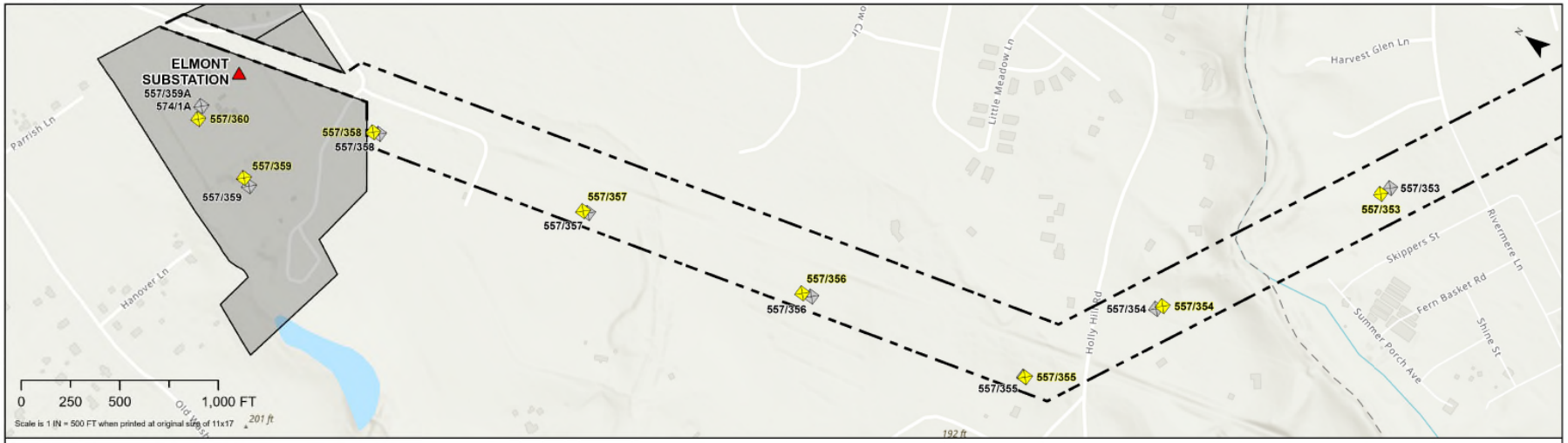


TABLE II.B.5

Proposed Line #557 Structure Number	557/360	557/359	557/358	557/357	557/356	557/355	557/354	557/353
Proposed Height (FT)	123	153	152	147	147	164	162	142
Existing Height (FT)	123	129	123	122	127	117	132	117

Notes:
1. The proposed structure heights are above ground level and include foundation reveal.
2. Structure locations and heights provided by Dominion Energy Virginia.
3. Project and structures are subject to change based on final engineering design.
4. Basemap from ESRI Topographic and World Street Map.
5. Conductors will be added to Line #2075 between Chickahominy Substation and Structure 2075/148. Existing structures will remain and as such are not depicted on these figures.

- Existing Right-of-Way
- Existing Substation
- Proposed Structure
- Existing Structure
- Dominion Owned Substation Parcel

ENVIRONMENTAL

Dominion Energy

ATTACHMENT II.B.5
STRUCTURE LOCATION MAP

Chickahominy-Elmont Line #557 Rebuild
and New Future 230 kV Lines

Hanover, Henrico and Charles City Counties

Owner/ Applicant:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0264	KAS	03/10/25

SHEET 2 OF 21

TABLE II.B.5

Proposed Line #557 Structure Number	557/352	557/351	557/350	557/349	557/348	557/347	557/346	557/345
Proposed Height (FT)	152	132	133	142	122	144	143	137
Existing Height (FT)	123	103	108	112	92	110	114	108

Notes:
1. The proposed structure heights are above ground level and include foundation reveal.
2. Structure locations and heights provided by Dominion Energy Virginia.
3. Project and structures are subject to change based on final engineering design.
4. Basemap from ESRI Topographic and World Street Map.
5. Conductors will be added to Line #2075 between Chickahominy Substation and Structure 2075/148. Existing structures will remain and as such are not depicted on these figures.

- Existing Right-of-Way
- Existing Substation
- Proposed Structure
- Existing Structure
- Dominion Owned Substation Parcel

ENVIRONMENTAL

Dominion Energy

ATTACHMENT II.B.5
STRUCTURE LOCATION MAP

Chickahominy-Elmont Line #557 Rebuild and New Future 230 kV Lines

Hanover, Henrico and Charles City Counties

Owner/ Applicant:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0264	KAS	03/10/25

SHEET 3 OF 21

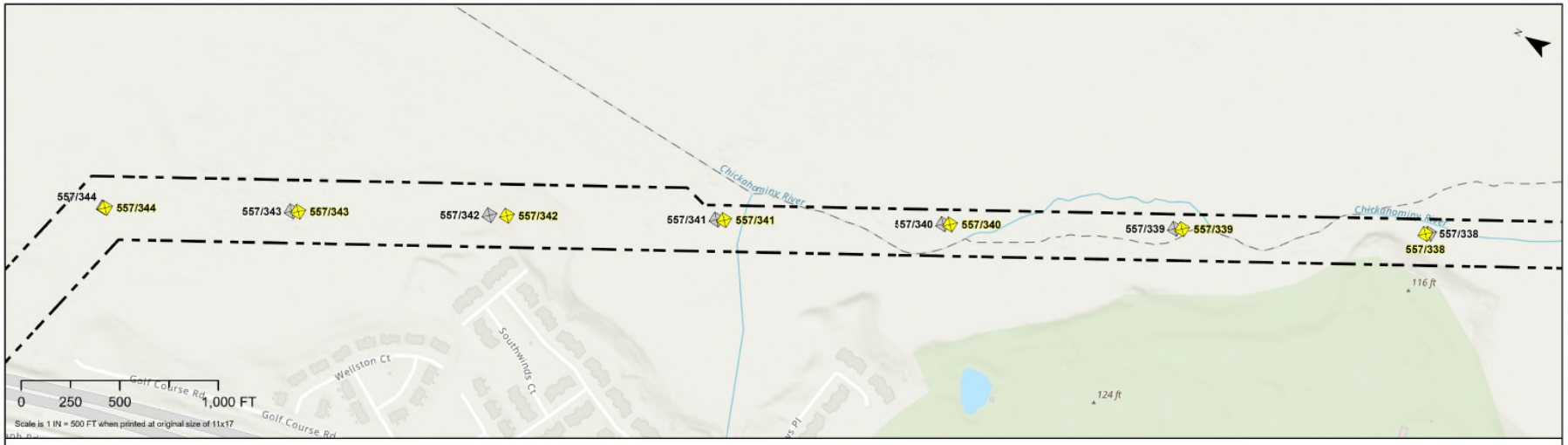


TABLE II.B.5

Proposed Line #557 Structure Number	557/344	557/343	557/342	557/341	557/340	557/339	557/338
Proposed Height (FT)	119	143	133	142	148	147	157
Existing Height (FT)	91	104	107	119	119	128	128

Notes:
1. The proposed structure heights are above ground level and include foundation reveal.
2. Structure locations and heights provided by Dominion Energy Virginia.
3. Project and structures are subject to change based on final engineering design.
4. Basemap from ESRI Topographic and World Street Map.
5. Conductors will be added to Line #2075 between Chickahominy Substation and Structure 2075/148. Existing structures will remain and as such are not depicted on these figures.

- Existing Right-of-Way
- Existing Substation
- Proposed Structure
- Existing Structure
- Dominion Owned Substation Parcel

ENVIRONMENTAL

Dominion Energy

ATTACHMENT II.B.5
STRUCTURE LOCATION MAP

Chickahominy-Elmont Line #557 Rebuild and New Future 230 kV Lines

Hanover, Henrico and Charles City Counties

Owner/ Applicant:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0264	KAS	03/10/25

SHEET 4 OF 21

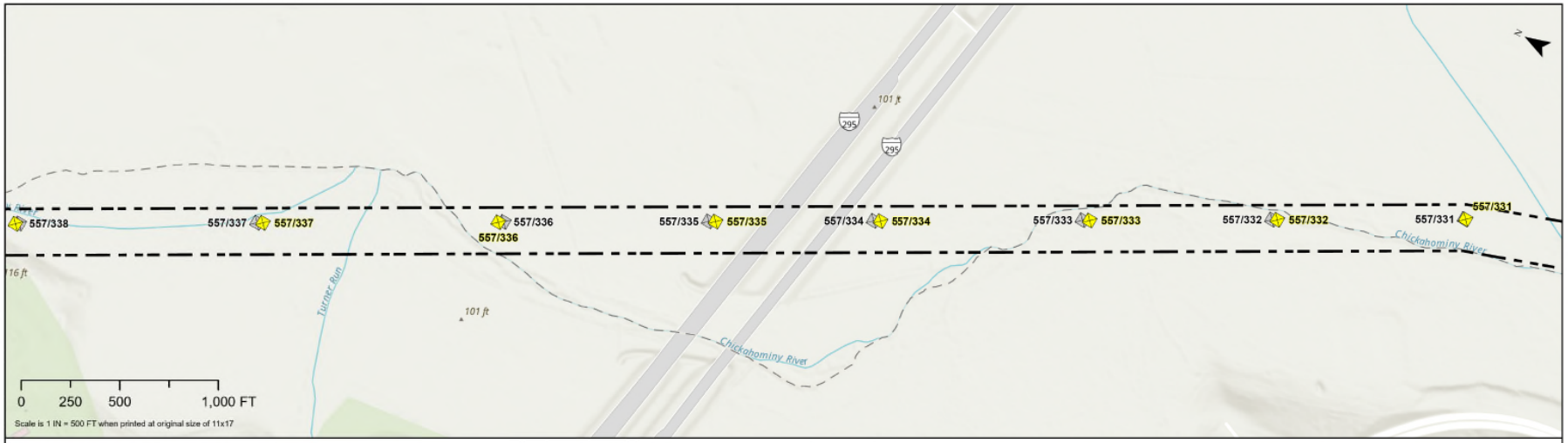
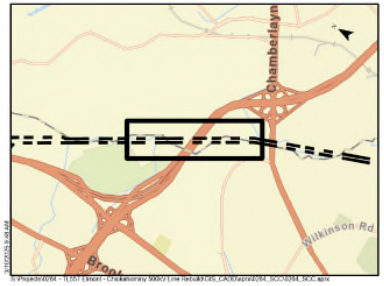


TABLE II.B.5

Proposed Line #557 Structure Number	557/338	557/337	557/336	557/335	557/334	557/333	557/332	557/331
Proposed Height (FT)	157	153	147	143	144	140	140	120
Existing Height (FT)	128	125	123	118	105	110	106	106

Notes:
1. The proposed structure heights are above ground level and include foundation reveal.
2. Structure locations and heights provided by Dominion Energy Virginia.
3. Project and structures are subject to change based on final engineering design.
4. Basemap from ESRI Topographic and World Street Map.
5. Conductors will be added to Line #2075 between Chickahominy Substation and Structure 2075/148. Existing structures will remain and as such are not depicted on these figures.



- Existing Right-of-Way
- Existing Substation
- Proposed Structure
- Existing Structure
- Dominion Owned Substation Parcel

ENVIRONMENTAL

Dominion Energy

ATTACHMENT II.B.5
STRUCTURE LOCATION MAP

Chickahominy-Elmont Line #557 Rebuild
and New Future 230 kV Lines

Hanover, Henrico and Charles City Counties

Owner/ Applicant:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0264	KAS	03/10/25

SHEET 5 OF 21

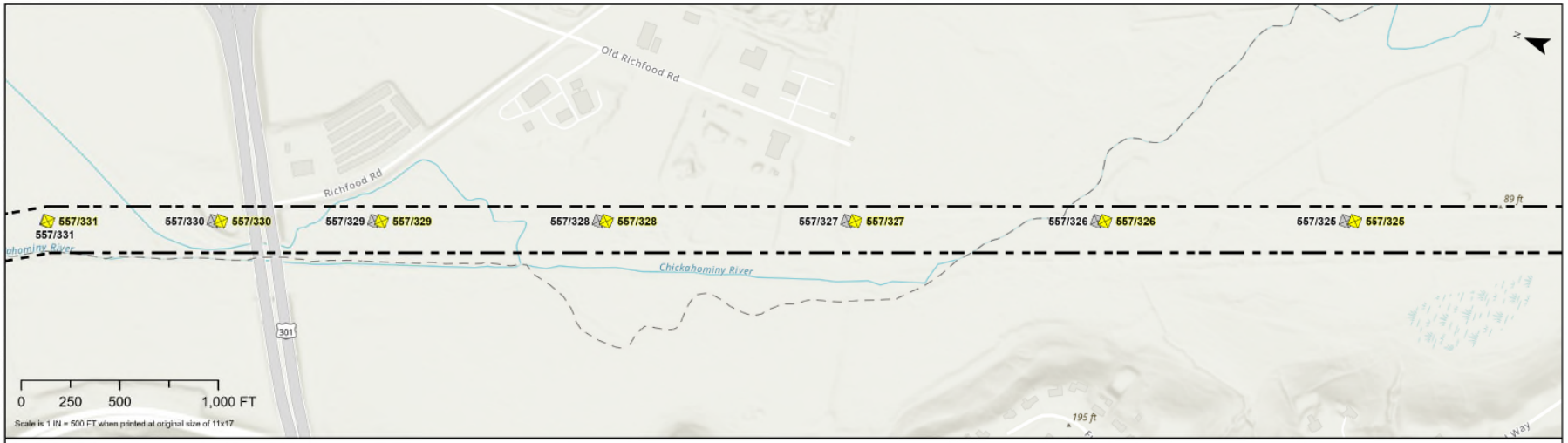
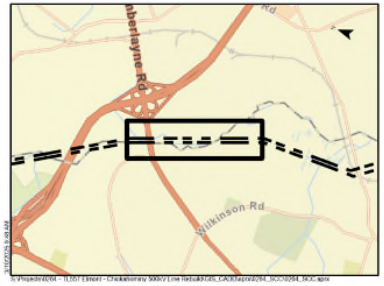


TABLE II.B.5

Proposed Line #557 Structure Number	557/331	557/330	557/329	557/328	557/327	557/326	557/325
Proposed Height (FT)	120	143	144	157	157	158	155
Existing Height (FT)	106	109	115	123	134	134	135

Notes:
1. The proposed structure heights are above ground level and include foundation reveal.
2. Structure locations and heights provided by Dominion Energy Virginia.
3. Project and structures are subject to change based on final engineering design.
4. Basemap from ESRI Topographic and World Street Map.
5. Conductors will be added to Line #2075 between Chickahominy Substation and Structure 2075/148. Existing structures will remain and as such are not depicted on these figures.



- Existing Right-of-Way
- Existing Substation
- Proposed Structure
- Existing Structure
- Dominion Owned Substation Parcel

ENVIRONMENTAL

Dominion Energy

ATTACHMENT II.B.5
STRUCTURE LOCATION MAP

Chickahominy-Elmont Line #557 Rebuild and New Future 230 kV Lines

Hanover, Henrico and Charles City Counties

Owner/ Applicant:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0264	KAS	03/10/25

SHEET 6 OF 21

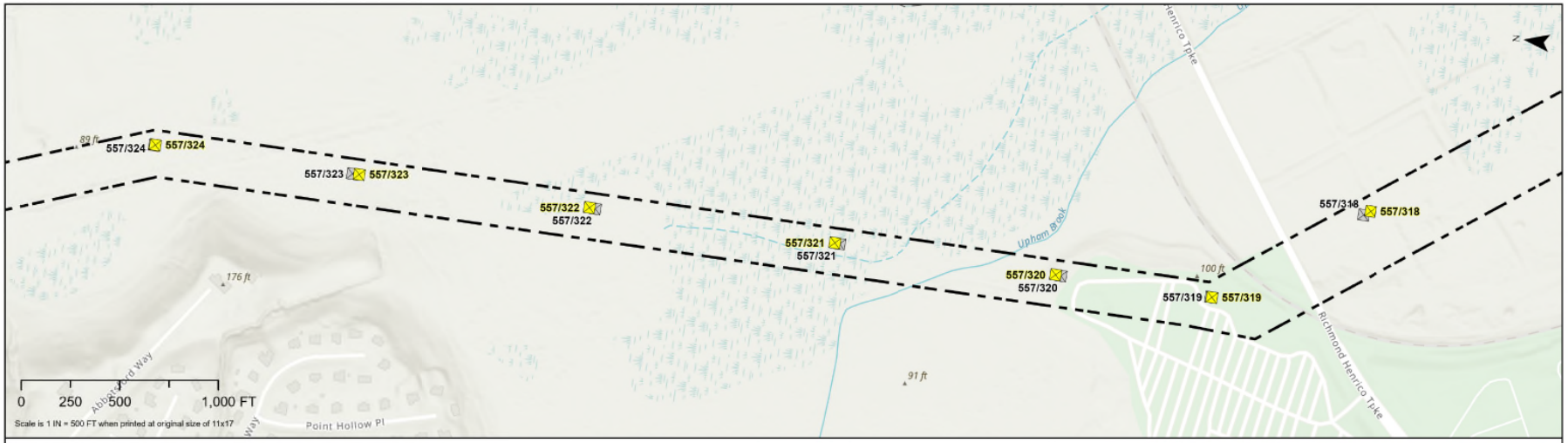


TABLE II.B.5

Proposed Line #557 Structure Number	557/324	557/323	557/322	557/321	557/320	557/319	557/318
Proposed Height (FT)	128	143	153	154	132	127	155
Existing Height (FT)	114	124	129	125	108	103	135

Notes:
1. The proposed structure heights are above ground level and include foundation reveal.
2. Structure locations and heights provided by Dominion Energy Virginia.
3. Project and structures are subject to change based on final engineering design.
4. Basemap from ESRI Topographic and World Street Map.
5. Conductors will be added to Line #2075 between Chickahominy Substation and Structure 2075/148. Existing structures will remain and as such are not depicted on these figures.

- Existing Right-of-Way
- Existing Substation
- Proposed Structure
- Existing Structure
- Dominion Owned Substation Parcel

ENVIRONMENTAL

Dominion Energy

ATTACHMENT II.B.5
STRUCTURE LOCATION MAP

Chickahominy-Elmont Line #557 Rebuild and New Future 230 kV Lines

Hanover, Henrico and Charles City Counties

Owner/ Applicant:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0264	KAS	03/10/25

SHEET 7 OF 21

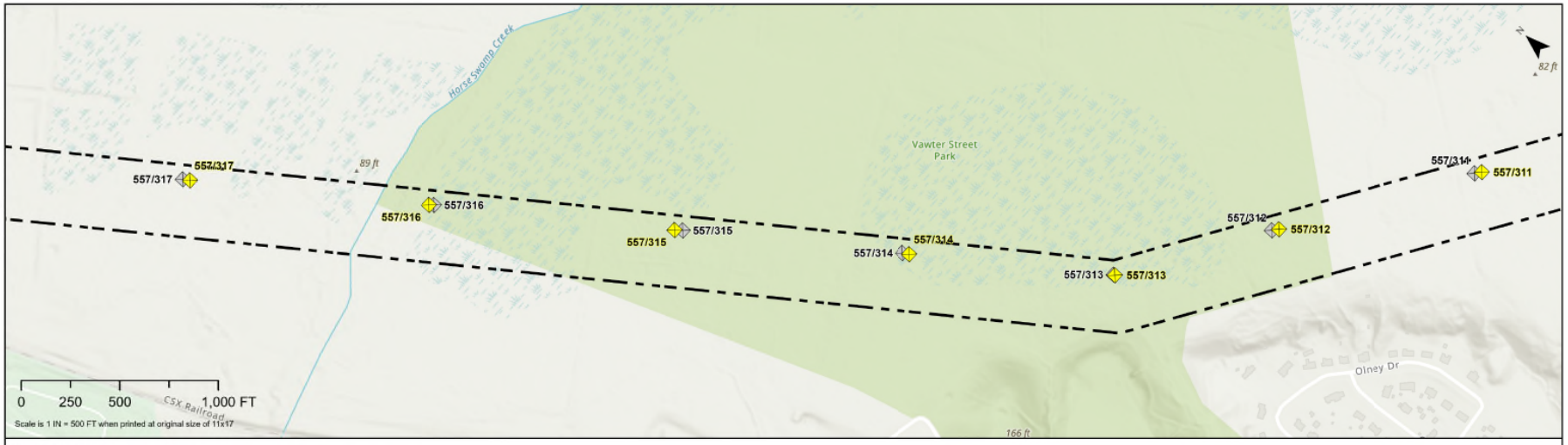
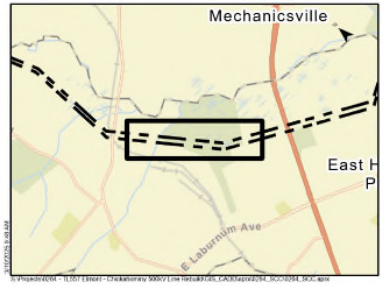


TABLE II.B.5

Proposed Line #557 Structure Number	557/317	557/316	557/315	557/314	557/313	557/312	557/311
Proposed Height (FT)	157	151	155	145	122	136	146
Existing Height (FT)	134	132	131	131	103	107	123

Notes:
1. The proposed structure heights are above ground level and include foundation reveal.
2. Structure locations and heights provided by Dominion Energy Virginia.
3. Project and structures are subject to change based on final engineering design.
4. Basemap from ESRI Topographic and World Street Map.
5. Conductors will be added to Line #2075 between Chickahominy Substation and Structure 2075/148. Existing structures will remain and as such are not depicted on these figures.



- Existing Right-of-Way
- Existing Substation
- Proposed Structure
- Existing Structure
- Dominion Owned Substation Parcel

ENVIRONMENTAL

Dominion Energy

ATTACHMENT II.B.5
STRUCTURE LOCATION MAP

Chickahominy-Elmont Line #557 Rebuild and New Future 230 kV Lines

Hanover, Henrico and Charles City Counties

Owner/ Applicant:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0264	KAS	03/10/25

SHEET 8 OF 21

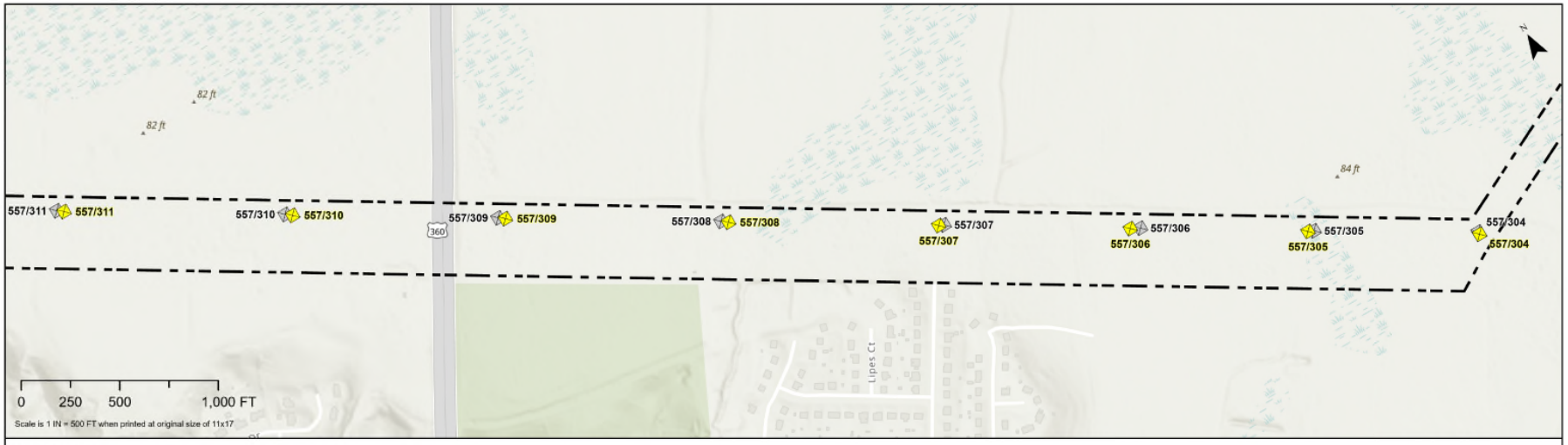


TABLE II.B.5

Proposed Line #557 Structure Number	557/311	557/310	557/309	557/308	557/307	557/306	557/305	557/304
Proposed Height (FT)	146	146	146	142	137	132	129	124
Existing Height (FT)	123	122	122	117	118	97	100	90

Notes:
1. The proposed structure heights are above ground level and include foundation reveal.
2. Structure locations and heights provided by Dominion Energy Virginia.
3. Project and structures are subject to change based on final engineering design.
4. Basemap from ESRI Topographic and World Street Map.
5. Conductors will be added to Line #2075 between Chickahominy Substation and Structure 2075/148. Existing structures will remain and as such are not depicted on these figures.

- Existing Right-of-Way
- Existing Substation
- Proposed Structure
- Existing Structure
- Dominion Owned Substation Parcel

ENVIRONMENTAL

Dominion Energy

ATTACHMENT II.B.5
STRUCTURE LOCATION MAP

Chickahominy-Elmont Line #557 Rebuild and New Future 230 kV Lines

Hanover, Henrico and Charles City Counties

Owner/ Applicant:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0264	KAS	03/10/25

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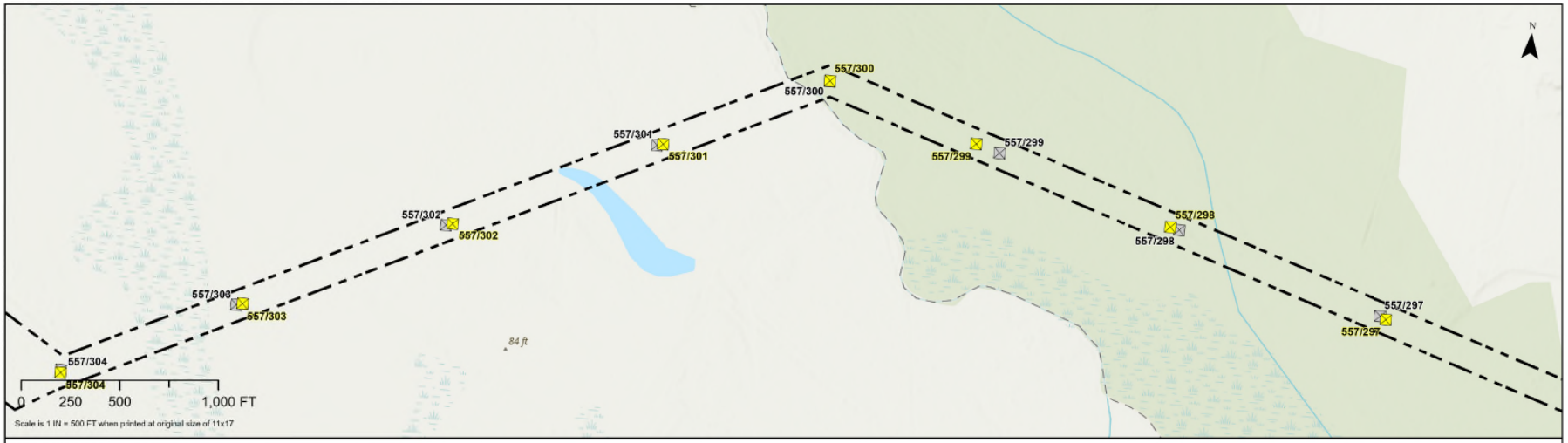

TABLE II.B.5

Proposed Line #557 Structure Number	557/304	557/303	557/302	557/301	557/300	557/299	557/298	557/297
Proposed Height (FT)	124	142	146	141	119	134	148	152
Existing Height (FT)	90	117	128	106	99	110	114	123

Notes:
1. The proposed structure heights are above ground level and include foundation reveal.
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- Existing Right-of-Way
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ENVIRONMENTAL

Dominion Energy

ATTACHMENT II.B.5
STRUCTURE LOCATION MAP

Chickahominy-Elmont Line #557 Rebuild and New Future 230 kV Lines

Hanover, Henrico and Charles City Counties

Owner/ Applicant:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0264	KAS	03/10/25

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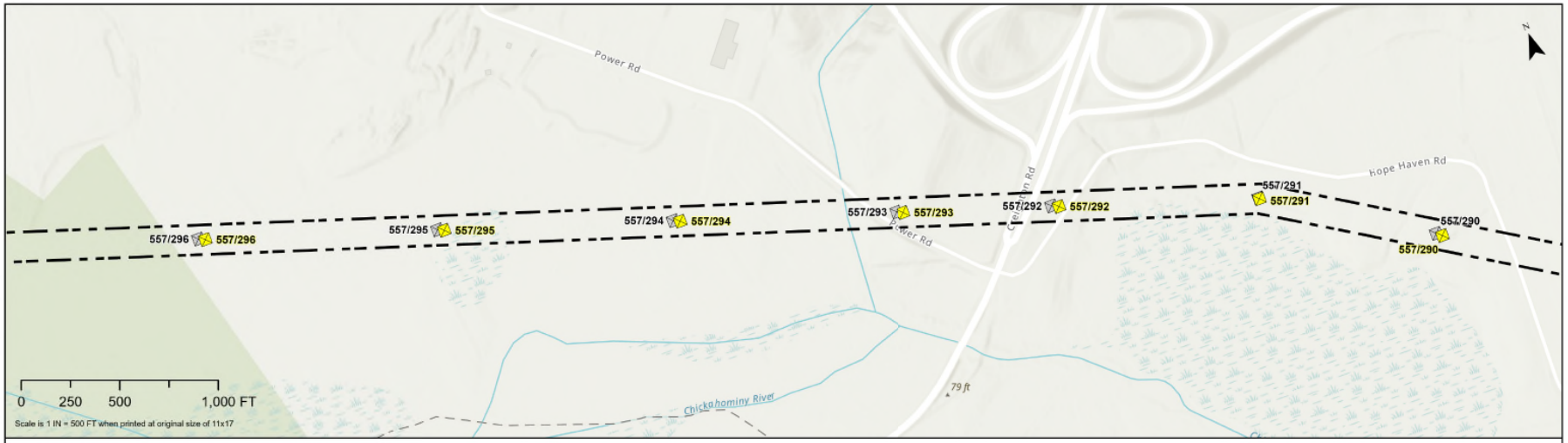

TABLE II.B.5

Proposed Line #557 Structure Number	557/296	557/295	557/294	557/293	557/292	557/291	557/290
Proposed Height (FT)	151	150	149	127	127	129	137
Existing Height (FT)	128	126	120	102	102	105	108

Notes:
1. The proposed structure heights are above ground level and include foundation reveal.
2. Structure locations and heights provided by Dominion Energy Virginia.
3. Project and structures are subject to change based on final engineering design.
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- Existing Right-of-Way
- Existing Substation
- Proposed Structure
- Existing Structure
- Dominion Owned Substation Parcel

ENVIRONMENTAL

Dominion Energy

ATTACHMENT II.B.5
STRUCTURE LOCATION MAP

Chickahominy-Elmont Line #557 Rebuild and New Future 230 kV Lines

Hanover, Henrico and Charles City Counties

Owner/ Applicant:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0264	KAS	03/10/25

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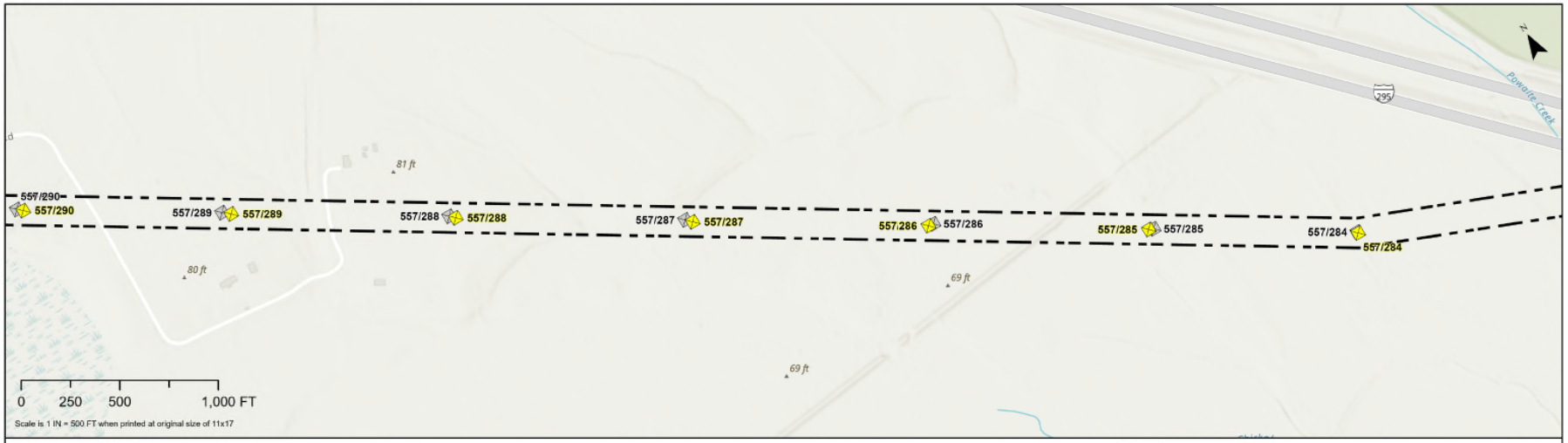

TABLE II.B.5

Proposed Line #557 Structure Number	557/290	557/289	557/288	557/287	557/286	557/285	557/284
Proposed Height (FT)	137	147	147	149	152	142	140
Existing Height (FT)	108	118	122	126	133	109	126

Notes:
1. The proposed structure heights are above ground level and include foundation reveal.
2. Structure locations and heights provided by Dominion Energy Virginia.
3. Project and structures are subject to change based on final engineering design.
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- Existing Right-of-Way
- Existing Substation
- Proposed Structure
- Existing Structure
- Dominion Owned Substation Parcel

ENVIRONMENTAL

Dominion Energy

ATTACHMENT II.B.5
STRUCTURE LOCATION MAP

Chickahominy-Elmont Line #557 Rebuild and New Future 230 kV Lines

Hanover, Henrico and Charles City Counties

Owner/ Applicant:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0264	KAS	03/10/25

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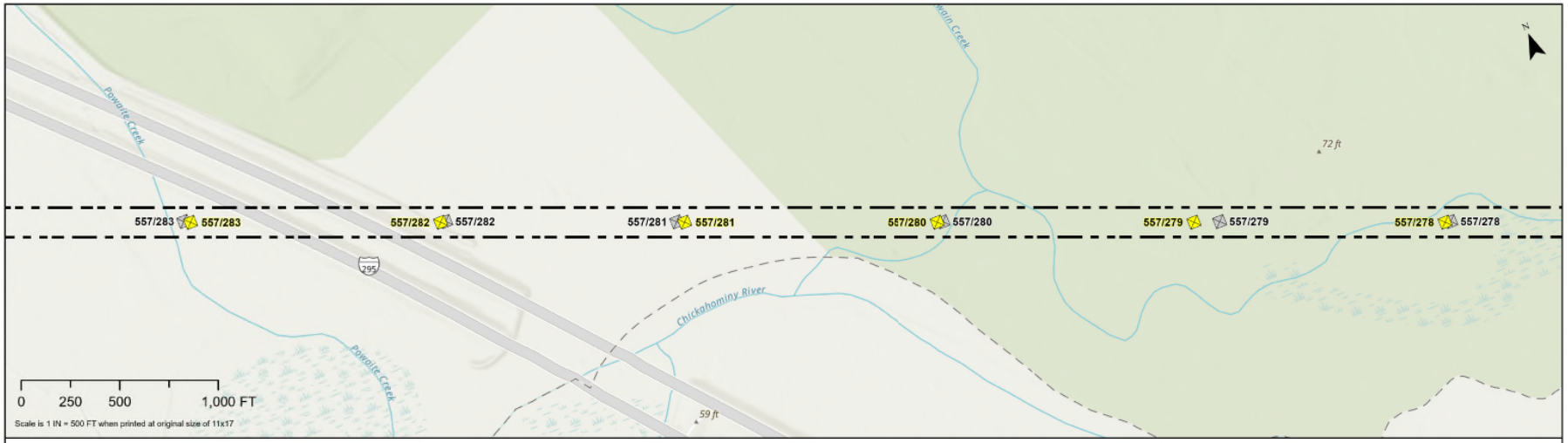

TABLE II.B.5

Proposed Line #557 Structure Number	557/283	557/282	557/281	557/280	557/279	557/278
Proposed Height (FT)	165	165	156	154	156	154
Existing Height (FT)	146	146	127	130	132	130

Notes:
1. The proposed structure heights are above ground level and include foundation reveal.
2. Structure locations and heights provided by Dominion Energy Virginia.
3. Project and structures are subject to change based on final engineering design.
4. Basemap from ESRI Topographic and World Street Map.
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- Existing Substation
- Proposed Structure
- Existing Structure
- Dominion Owned Substation Parcel

ENVIRONMENTAL

Dominion Energy

ATTACHMENT II.B.5
STRUCTURE LOCATION MAP

Chickahominy-Elmont Line #557 Rebuild and New Future 230 kV Lines

Hanover, Henrico and Charles City Counties

Owner/ Applicant:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0264	KAS	03/10/25

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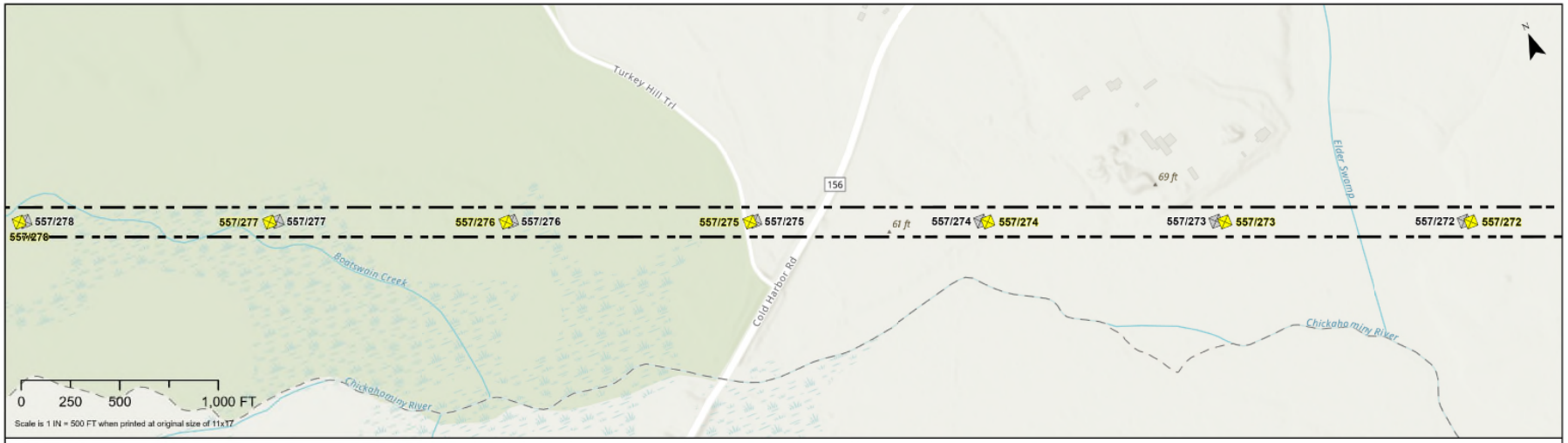

TABLE II.B.5

Proposed Line #557 Structure Number	557/278	557/277	557/276	557/275	557/274	557/273	557/272
Proposed Height (FT)	154	155	148	153	147	154	147
Existing Height (FT)	130	126	124	124	122	125	128

Notes:
1. The proposed structure heights are above ground level and include foundation reveal.
2. Structure locations and heights provided by Dominion Energy Virginia.
3. Project and structures are subject to change based on final engineering design.
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- Existing Substation
- Proposed Structure
- Existing Structure
- Dominion Owned Substation Parcel

ENVIRONMENTAL

Dominion Energy

ATTACHMENT II.B.5
STRUCTURE LOCATION MAP

Chickahominy-Elmont Line #557 Rebuild and New Future 230 kV Lines

Hanover, Henrico and Charles City Counties

Owner/ Applicant:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0264	KAS	03/10/25

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TABLE II.B.5

Proposed Line #557 Structure Number	557/272	557/271	557/270	557/269	557/268	557/267	557/266	557/265
Proposed Height (FT)	147	137	138	132	142	152	147	148
Existing Height (FT)	128	113	108	107	118	122	123	114

Notes:
1. The proposed structure heights are above ground level and include foundation reveal.
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3. Project and structures are subject to change based on final engineering design.
4. Basemap from ESRI Topographic and World Street Map.
5. Conductors will be added to Line #2075 between Chickahominy Substation and Structure 2075/148. Existing structures will remain and as such are not depicted on these figures.

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- Existing Substation
- Proposed Structure
- Existing Structure
- Dominion Owned Substation Parcel

ENVIRONMENTAL

Dominion Energy

ATTACHMENT II.B.5
STRUCTURE LOCATION MAP

Chickahominy-Elmont Line #557 Rebuild and New Future 230 kV Lines

Hanover, Henrico and Charles City Counties

Owner/ Applicant:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0264	KAS	03/10/25

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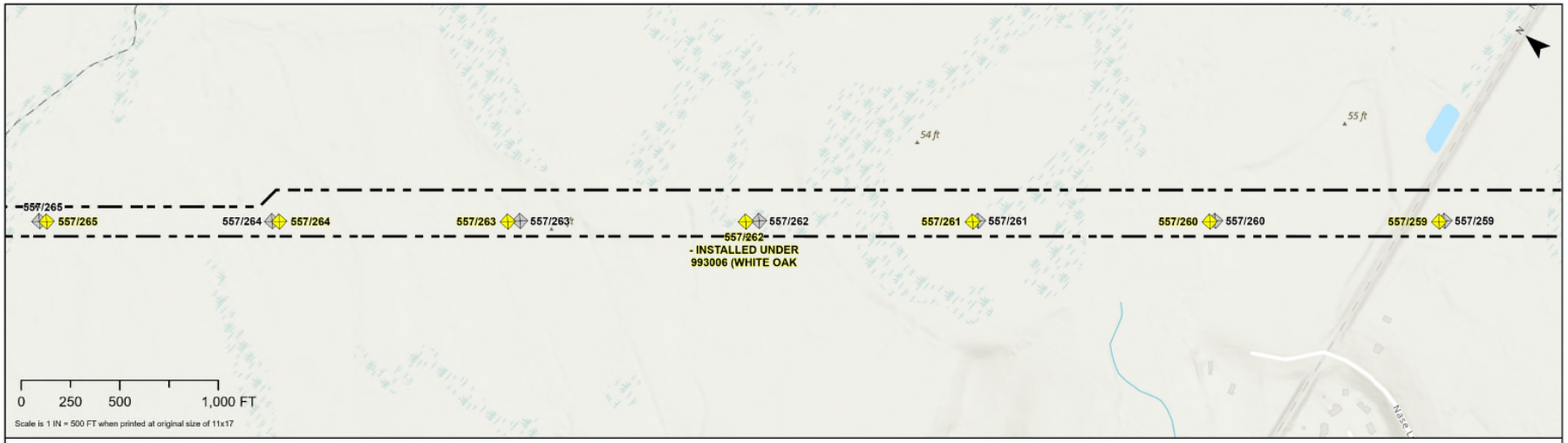

TABLE II.B.5

Proposed Line #557 Structure Number	557/265	557/264	557/263	557/262	557/261	557/260	557/259
Proposed Height (FT)	148	147	147	138	142	153	153
Existing Height (FT)	114	127	127	114	113	128	124

Notes:
1. The proposed structure heights are above ground level and include foundation reveal.
2. Structure locations and heights provided by Dominion Energy Virginia.
3. Project and structures are subject to change based on final engineering design.
4. Basemap from ESRI Topographic and World Street Map.
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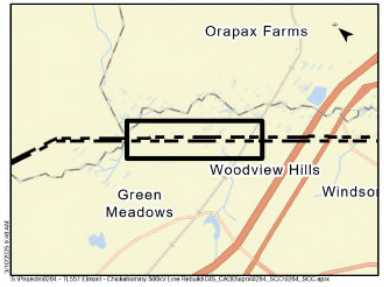

- Existing Right-of-Way
- Existing Substation
- Proposed Structure
- Existing Structure
- Dominion Owned Substation Parcel

ENVIRONMENTAL

Dominion Energy

ATTACHMENT II.B.5
STRUCTURE LOCATION MAP

Chickahominy-Elmont Line #557 Rebuild
and New Future 230 kV Lines

Hanover, Henrico and Charles City Counties

Owner/ Applicant:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0264	KAS	03/10/25

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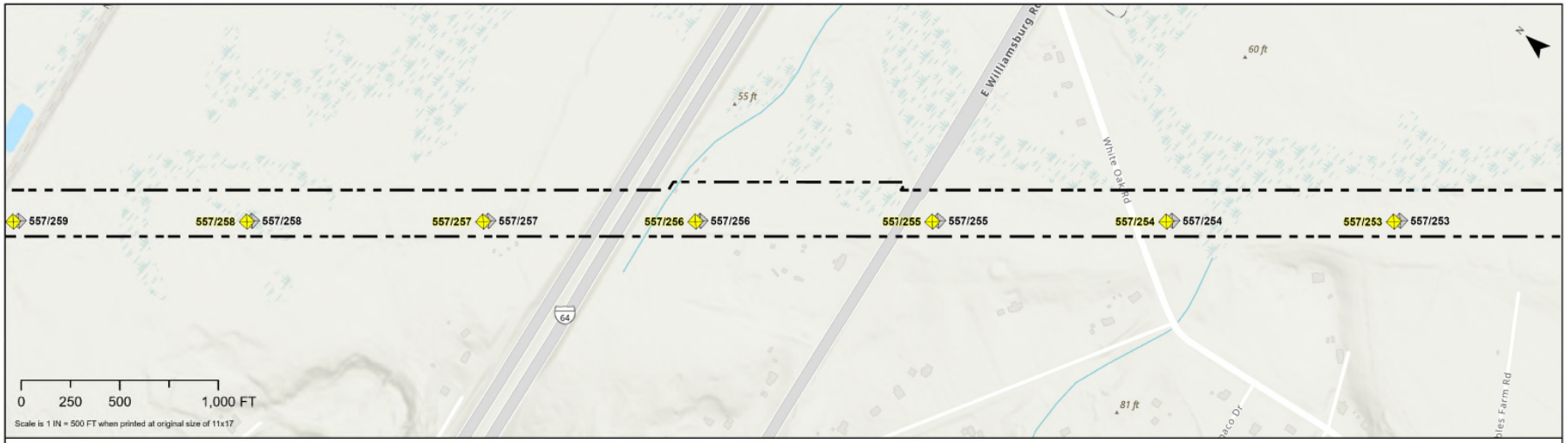
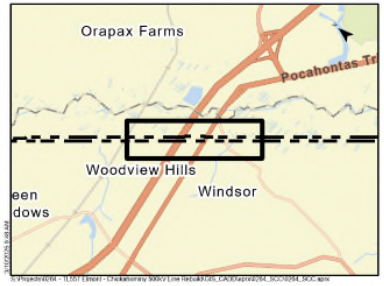


TABLE II.B.5

Proposed Line #557 Structure Number	557/259	557/258	557/257	557/256	557/255	557/254	557/253
Proposed Height (FT)	153	143	157	152	152	147	147
Existing Height (FT)	124	119	128	128	128	123	113

Notes:
1. The proposed structure heights are above ground level and include foundation reveal.
2. Structure locations and heights provided by Dominion Energy Virginia.
3. Project and structures are subject to change based on final engineering design.
4. Basemap from ESRI Topographic and World Street Map.
5. Conductors will be added to Line #2075 between Chickahominy Substation and Structure 2075/148. Existing structures will remain and as such are not depicted on these figures.



- Existing Right-of-Way
- Existing Substation
- Proposed Structure
- Existing Structure
- Dominion Owned Substation Parcel

ENVIRONMENTAL

Dominion Energy

ATTACHMENT II.B.5
STRUCTURE LOCATION MAP

Chickahominy-Elmont Line #557 Rebuild
and New Future 230 kV Lines

Hanover, Henrico and Charles City Counties

Owner/ Applicant:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0264	KAS	03/10/25

SHEET 17 OF 21

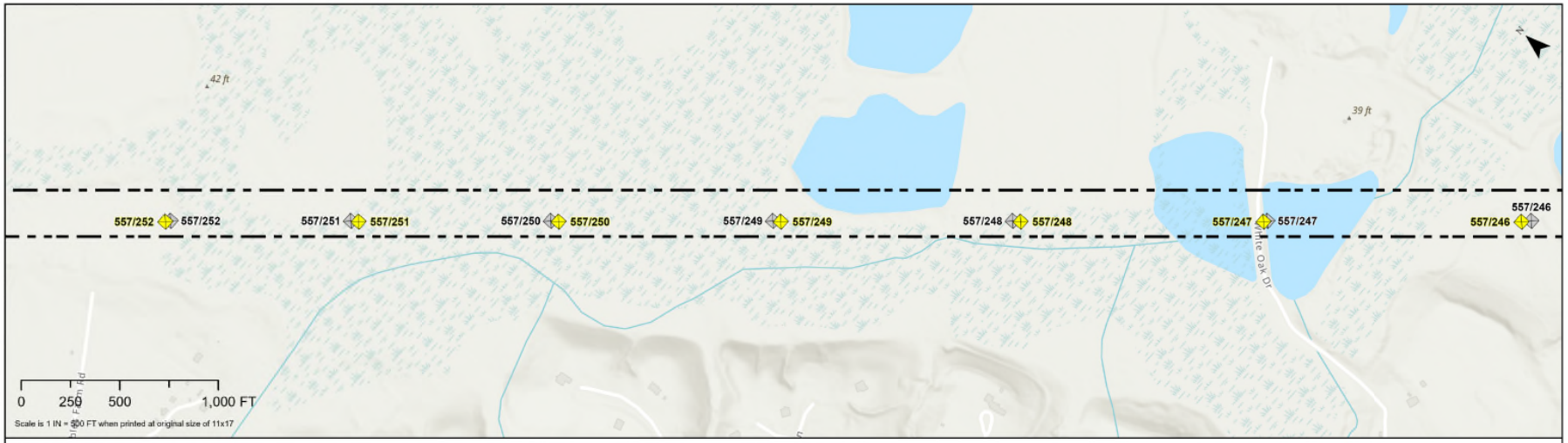


TABLE II.B.5

Proposed Line #557 Structure Number	557/252	557/251	557/250	557/249	557/248	557/247	557/246
Proposed Height (FT)	132	137	137	152	152	152	157
Existing Height (FT)	98	103	108	122	123	127	129

Notes:
1. The proposed structure heights are above ground level and include foundation reveal.
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4. Basemap from ESRI Topographic and World Street Map.
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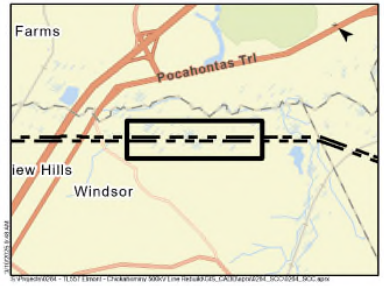

- Existing Right-of-Way
- Existing Substation
- Proposed Structure
- Existing Structure
- Dominion Owned Substation Parcel

ENVIRONMENTAL

Dominion Energy

ATTACHMENT II.B.5
STRUCTURE LOCATION MAP

Chickahominy-Elmont Line #557 Rebuild
and New Future 230 kV Lines

Hanover, Henrico and Charles City Counties

Owner/ Applicant:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0264	KAS	03/10/25

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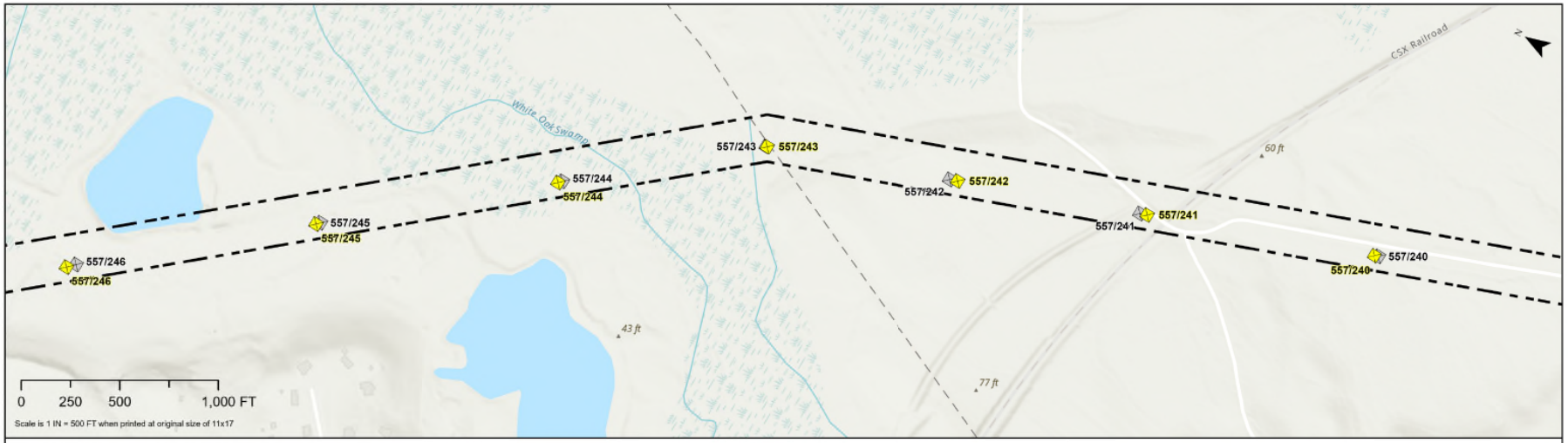

TABLE II.B.5

Proposed Line #557 Structure Number	557/246	557/245	557/244	557/243	557/242	557/241	557/240
Proposed Height (FT)	157	158	152	122	137	147	153
Existing Height (FT)	129	129	126	94	108	123	128

Notes:
1. The proposed structure heights are above ground level and include foundation reveal.
2. Structure locations and heights provided by Dominion Energy Virginia.
3. Project and structures are subject to change based on final engineering design.
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ENVIRONMENTAL

Dominion Energy

ATTACHMENT II.B.5
STRUCTURE LOCATION MAP

Chickahominy-Elmont Line #557 Rebuild and New Future 230 kV Lines

Hanover, Henrico and Charles City Counties

Owner/ Applicant:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0264	KAS	03/10/25

SHEET 19 OF 21

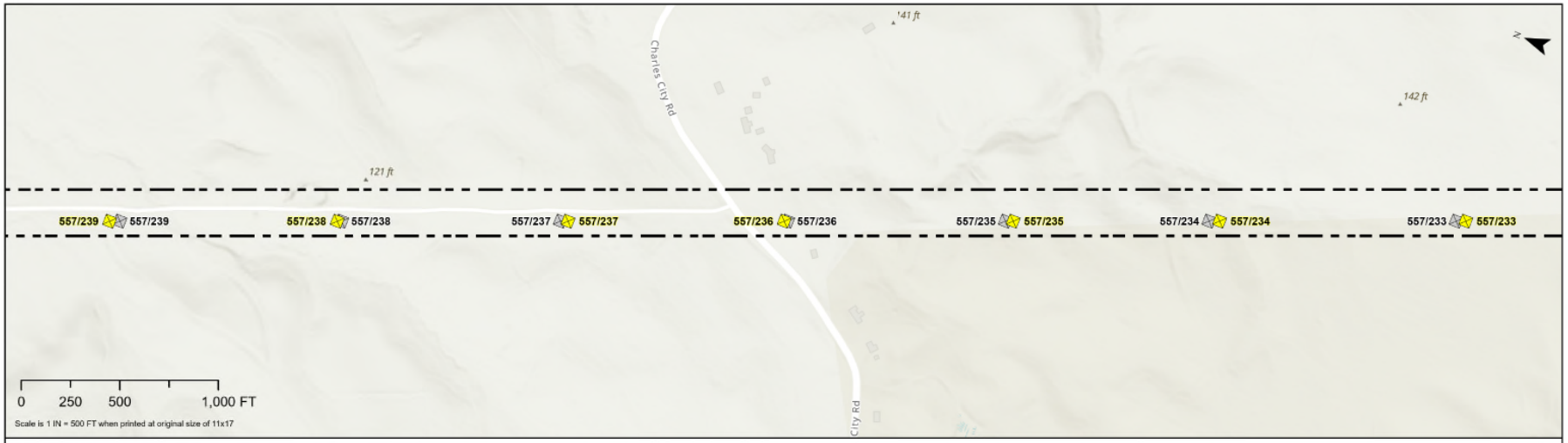

TABLE II.B.5

Proposed Line #557 Structure Number	557/239	557/238	557/237	557/236	557/235	557/234	557/233
Proposed Height (FT)	147	153	143	137	142	154	147
Existing Height (FT)	128	114	118	108	119	124	128

Notes:
1. The proposed structure heights are above ground level and include foundation reveal.
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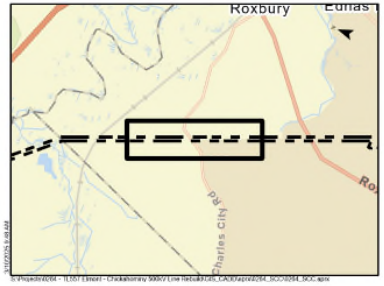

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ENVIRONMENTAL

Dominion Energy

ATTACHMENT II.B.5
STRUCTURE LOCATION MAP

Chickahominy-Elmont Line #557 Rebuild
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Hanover, Henrico and Charles City Counties

Owner/ Applicant:
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C2 Env Project:	Prepared By:	Date:
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SHEET 20 OF 21

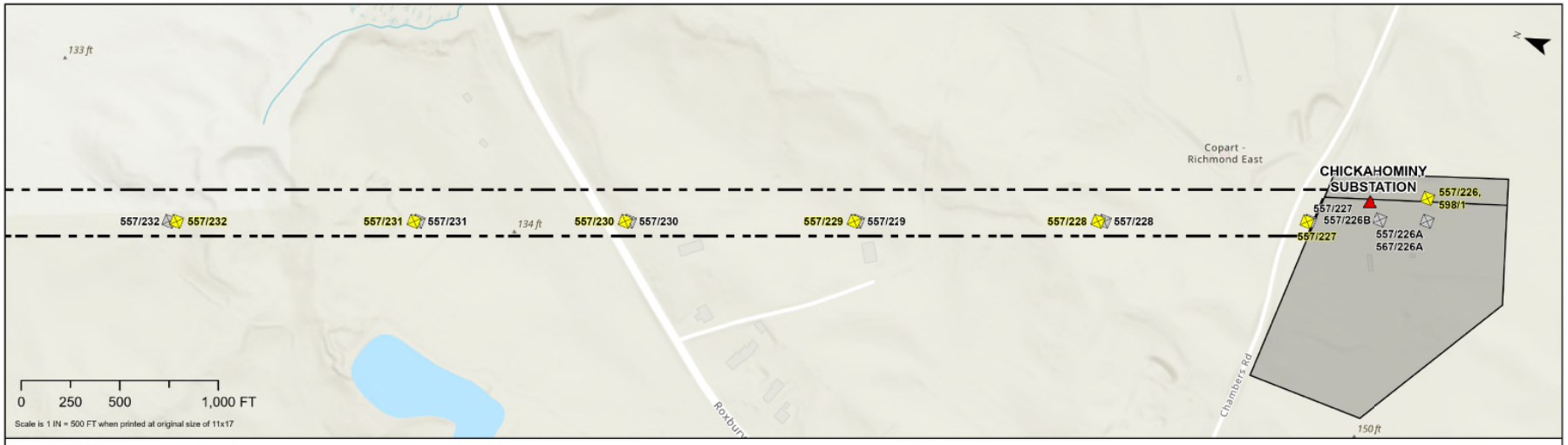

TABLE II.B.5

Proposed Line #557 Structure Number	557/232	557/231	557/230	557/229	557/228	557/227	557/226
Proposed Height (FT)	154	153	150	148	147	141	115
Existing Height (FT)	130	124	124	128	113	141	116

Notes:
1. The proposed structure heights are above ground level and include foundation reveal.
2. Structure locations and heights provided by Dominion Energy Virginia.
3. Project and structures are subject to change based on final engineering design.
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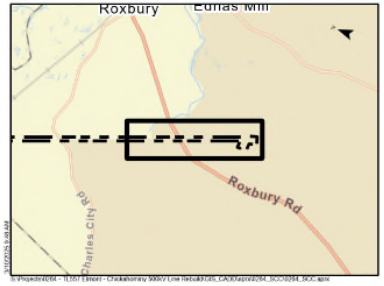

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ENVIRONMENTAL

Dominion Energy

ATTACHMENT II.B.5
STRUCTURE LOCATION MAP

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SHEET 21 OF 21

II. DESCRIPTION OF THE PROPOSED PROJECT

B. Line Design and Operational Features

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

Response: [a] *Photographs for typical existing facilities to be removed.*

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

[b] *Comparable photographs or representations for proposed structures.*

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

[c] *Visual simulations showing the appearance of all planned transmission structures at identified historic locations within one mile of the proposed centerline and in key locations.*

Visual simulations showing the appearance of the proposed transmission structures at identified historic locations within 1.0 mile of the Rebuild Project where the Rebuild Project will be visible are provided. See Attachment II.B.6.c for a map of the simulation locations and the existing views at the historic properties. These simulations were created using GIS modeling to depict whether the proposed structures will be visible from the identified historic property. The historic properties evaluated are described below. See also the Stage I Pre-Application Analysis Report provided as Attachment 2.I.1 of the DEQ Supplement.

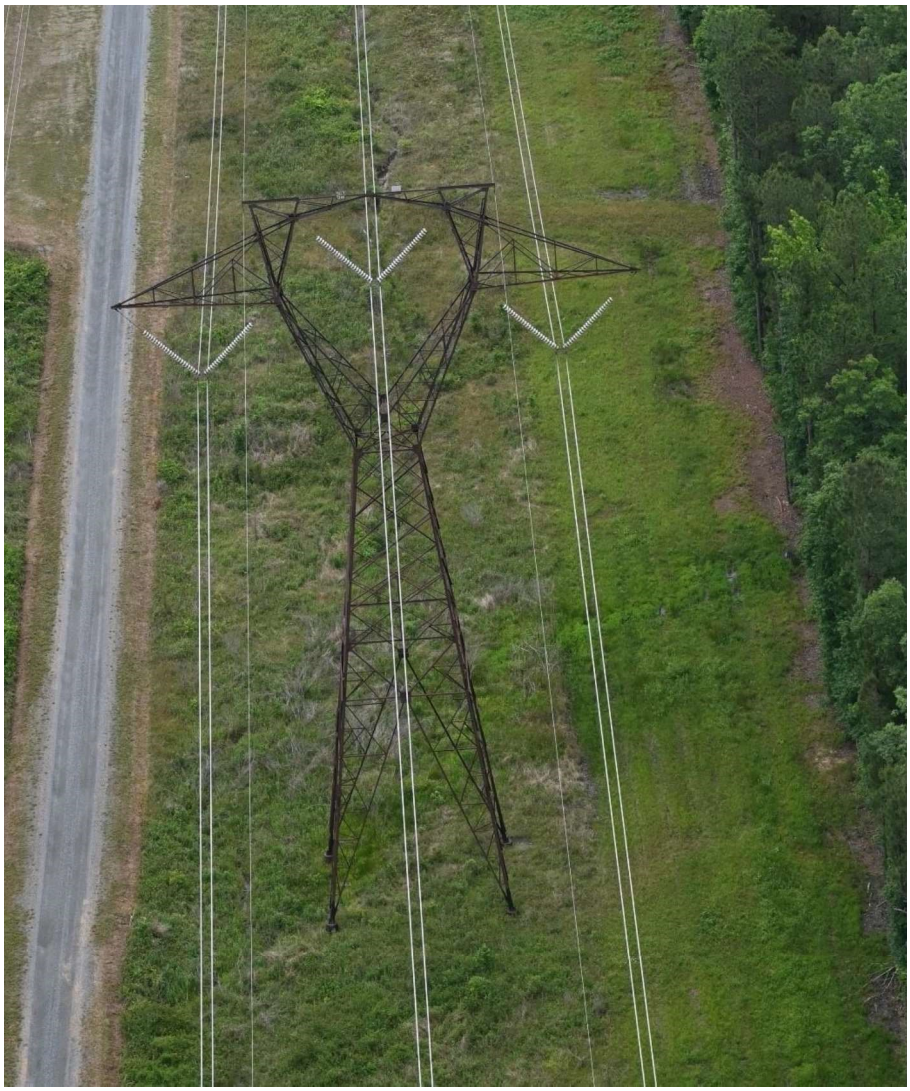
VDHR #	Resource Name	OP	Comments
007-5513	Chesapeake and Ohio Railroad (Historic), Louisa Railroad (Historic), Virginia Central Railroad (Historic)	N/A	Unobstructed visibility already exists where the alignment crosses the resource.
018-5004	Nance's Shop (Historic), Saint Mary's Church Battlefield (Current Name), Samaria Church (Historic)	OP 10	No visibility
042-0120	Hogan House (Current), Selwyn (Historic/Current)	OP 5	No visibility

VDHR #	Resource Name	OP	Comments
042-0137	Oakley Hill (NRHP Listing)	OP 4	No visibility
042-5017	Cold Harbor Battlefield (Current Name), Second Cold Harbor (Historic)	OP 3, OP 4, OP 6, OP 7, OP 8, OP 9	Limited visibility above treeline at Photo Simulation OP 6. No visibility from any other photo simulation points
042-5018	First Cold Harbor Battlefield (Historic), Gaines' Mill Battlefield (Current Name)	OP 3, OP 4, OP 5, OP 6, OP 7, OP 8, OP 9	Limited visibility above treeline at Photo Simulation OP 6. No visibility from any other photo simulation points
042-5022	Battle of Bethesda Church (Historic), Battle of Crumps Creek (Historic), Battle of Hanovertown (Historic), Battle of Shady Grove Road (Historic), Totopotomoy Creek Battlefield (Current Name)	N/A	No expected visibility due to distance and intervening vegetation and development.
042-5479	Beaver Dam Creek Battlefield (Current Name)	OP 2, OP 3, OP 4, OP 5	No visibility from any photo simulation points
042-5509	Ashland UDC Jefferson Davis Highway Marker (NRHP Listing), Lee Chapter UDC Jefferson Davis Highway Commemorative Marker (Current Name)	N/A	No expected visibility due to distance and intervening vegetation and development.
043-0033	Richmond National Battlefield Park (NRHP Listing)	OP 2, OP 3, OP 6, OP 7, OP 8	Limited visibility above treeline at Photo Simulation OP 6. No visibility from any other photo simulation points
043-0175	Ravenswood (Current)	OP 2	No visibility
043-0307	Battle of Chaffin's Farm, New Market Road (Historic/Location), New Market Heights Battlefield (Historic/Current)	N/A	No expected visibility due to distance and intervening vegetation and development.
043-0308	Savage Station Battlefield (Historic/Current)	OP 5, OP 9	No visibility

VDHR #	Resource Name	OP	Comments
043-0800	Antique Carousel, Virginia Center Commons	N/A	Resource demolished
043-5077	Frazier's Farm (Historic), Glendale Battlefield (Current Name), Glendale Battlefield (Historic), Nelson's Farm (Historic)	N/A	No expected visibility due to distance and intervening vegetation and development.
043-5081	Fair Oaks (Historic), Seven Pines Battlefield (Historic)	N/A	Visibility already exists where the alignment crosses the resource.
043-5108	Yellow Tavern Battlefield (Historic)	OP 1	No visibility
043-5273	Battle of Garnett's and Golding's Farm (Historic/Location)	N/A	No expected visibility due to distance and intervening vegetation and development.
043-5347	Richmond-Ashland Trolley Line (Historic)	N/A	Unobstructed visibility already exists where the alignment crosses the resource.
043-6408	Indian Springs Farm Site 44HE1065 (NRHP Listing), Wilson Site (Historic)	N/A	Archaeological site
121-5134	Chesapeake and Ohio Railroad (Historic), CSX Railroad (Current Name)	N/A	Inaccessible. Unobstructed visibility likely already exists where the alignment crosses the resource.

See Attachment III.B.4 for visual simulations and renderings of key locations evaluated.[20]

[20] The Company notes that the Attachment III.B.4 key location simulations and renderings, which were provided to the public during community meetings (*see* Section III.B), were prepared separately from the simulations showing the appearance of the proposed transmission structures on identified historic resources provided in Attachment II.B.6.c, which were prepared and submitted to VDHR in the Stage I Pre-Application Analysis Report contained in Attachment 2.I.1 of the DEQ Supplement.



Attachment II.B.6.a.i – Existing Typical SC 500kV Tower – Suspension (Weathering Steel)

Attachment II.B.6.a.ii – Existing Typical SC 500kV Tower – Running Angle (Weathering Steel)

Attachment II.B.6.a.iii – Existing Typical SC 500kV Tower - Double Deadend (Weathering Steel)

Attachment II.B.6.b.i – Proposed Typical DC 500kV/230kV Engineered H-Frame – Suspension (Weathering Steel)

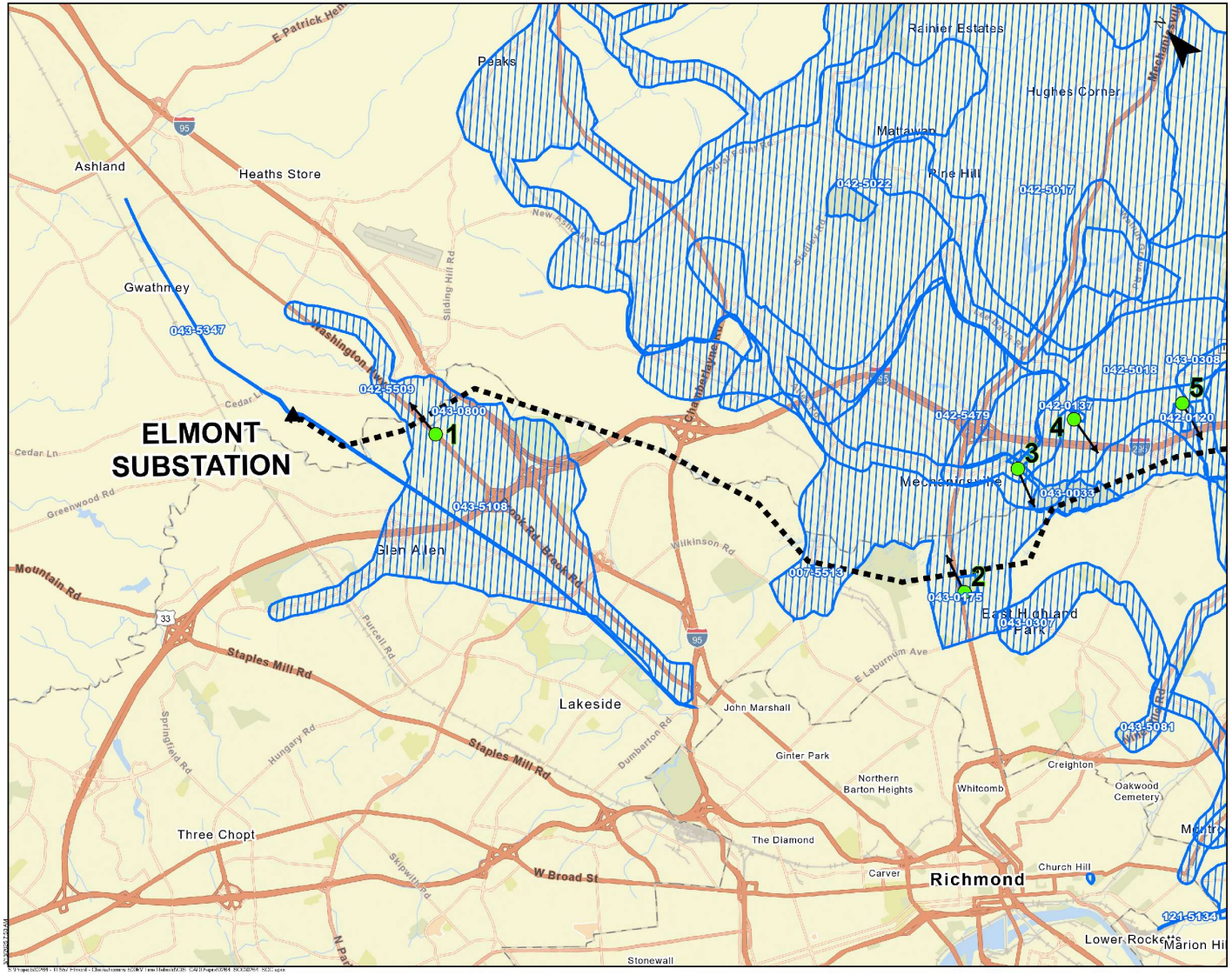
Note: Photo shown is a project-specific simulation

Attachment II.B.6.b.ii – Proposed Typical DC 500kV/230kV Engineered H-Frame – Double Deadend (Weathering Steel)

Note: Photo shown is a project-specific simulation

Attachment II.B.6.b.iii – Proposed Typical DC 500kV/230kV Engineered 3-Pole – Double Deadend (Weathering Steel)

Note: Photo shown is a project-specific simulation



ATTACHMENT II.B.6.C

HISTORIC PHOTO LOCATION MAP

Chickahominy-Elmont Line #557 Rebuild and New Future 230 kV Lines

Hanover, Henrico, and Charles City Counties, Virginia

Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0264	KAS	03/12/25

0 3,500 7,000 14,000 Feet

Scale is 1 IN = 7000 FT when printed at original size of 11x17

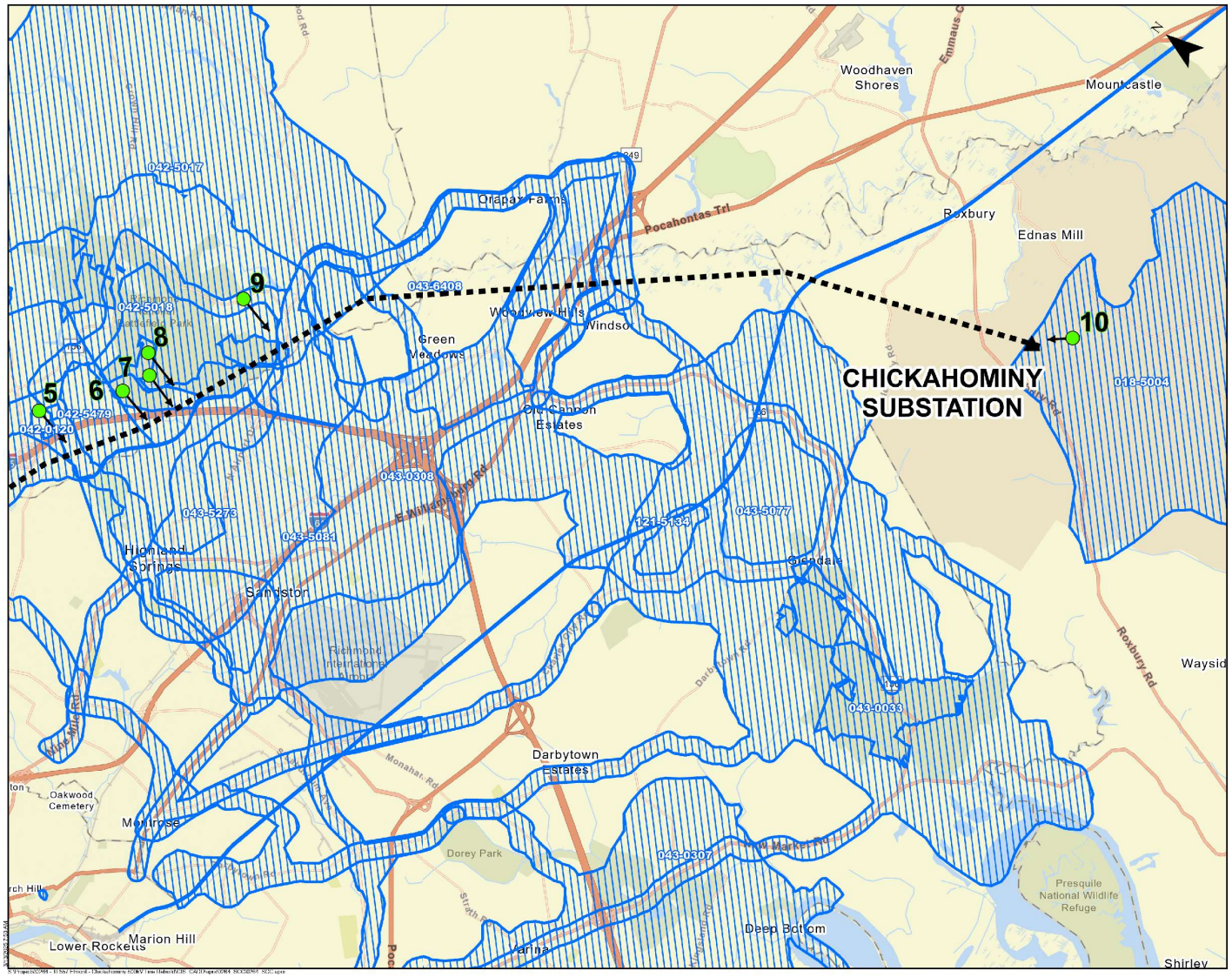
- Proposed Route
- Existing Substation
- Viewpoint Location
- Approximate Simulation Direction
- Considered Historic Property

Notes:
1. Basemap from ESRI World Street View
2. Substation locations provided by Dominion Energy
3. Simulation locations and historic properties provided by Dutton + Associates

ENVIRONMENTAL

Dominion Energy

SHEET 1 OF 2



ATTACHMENT II.B.6.C

HISTORIC PHOTO LOCATION MAP

Chickahominy-Elmort Line #557 Rebuild and New Future 230 kV Lines

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- Proposed Route
- Existing Substation
- Viewpoint Location
- Approximate Simulation Direction
- Considered Historic Property

Notes:
1. Basemap from ESRI World Street View
2. Substation locations provided by Dominion Energy
3. Simulation locations and historic properties provided by Dutton + Associates

C2 ENVIRONMENTAL

Dominion Energy

SHEET 2 OF 2

Dominion Energy®

Chickahominy Elmont | **OP1**

YELLOW TAVERN

EXISTING CONDITIONS

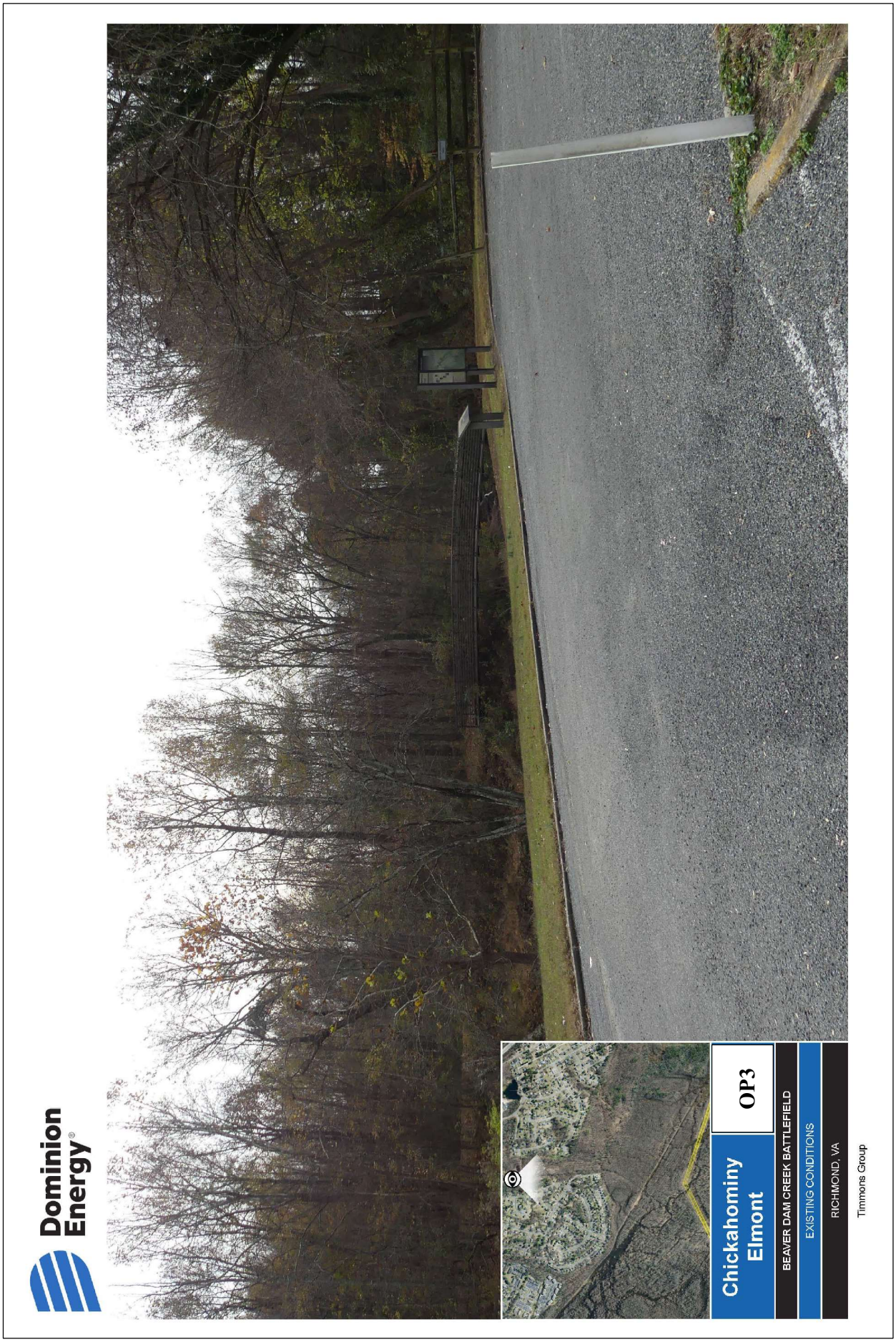
RICHMOND, VA

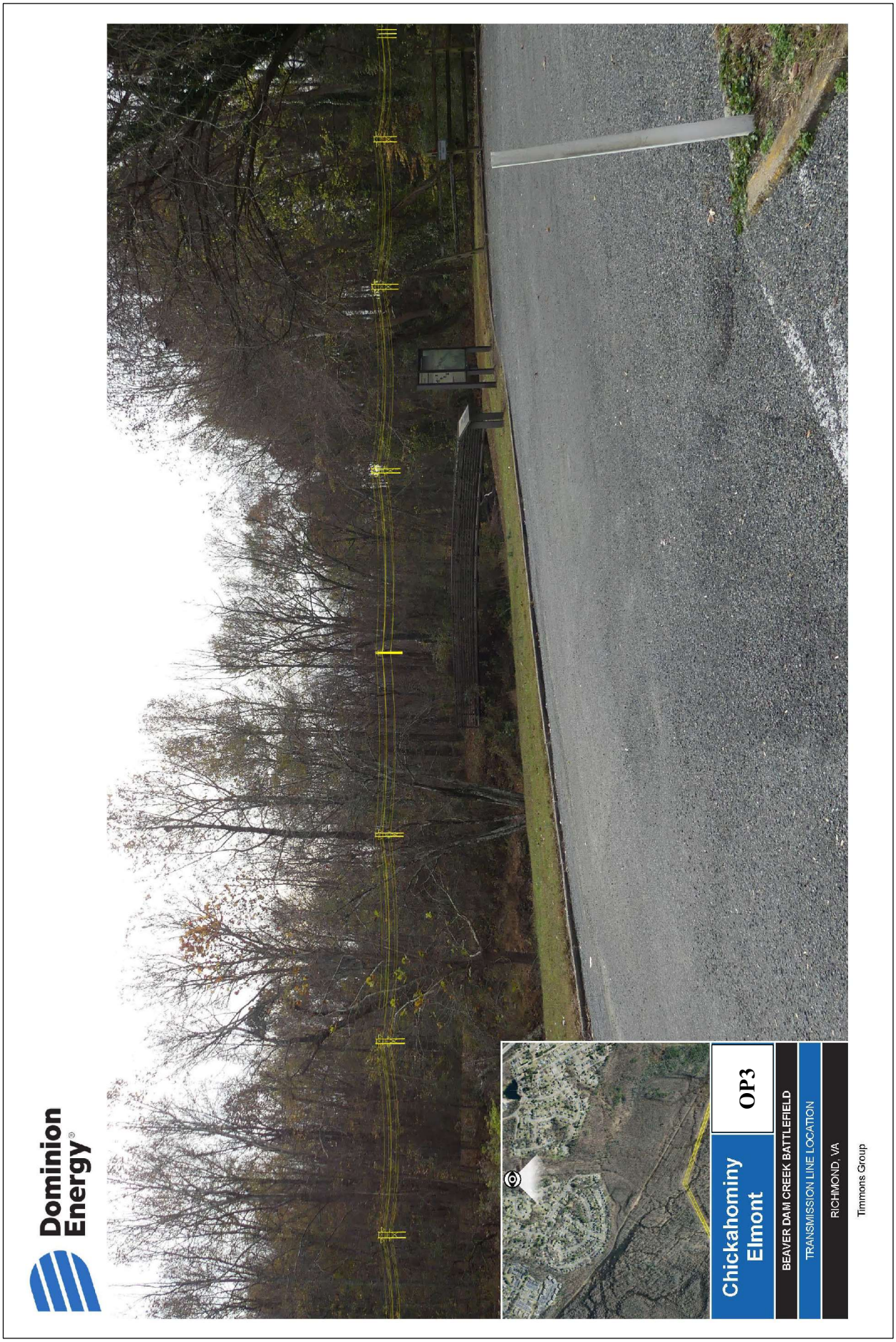
Timmons Group


Dominion Energy
Chickahominy Elmont
OP1
YELLOW TAVERN
TRANSMISSION LINE LOCATION
RICHMOND, VA
Timmons Group

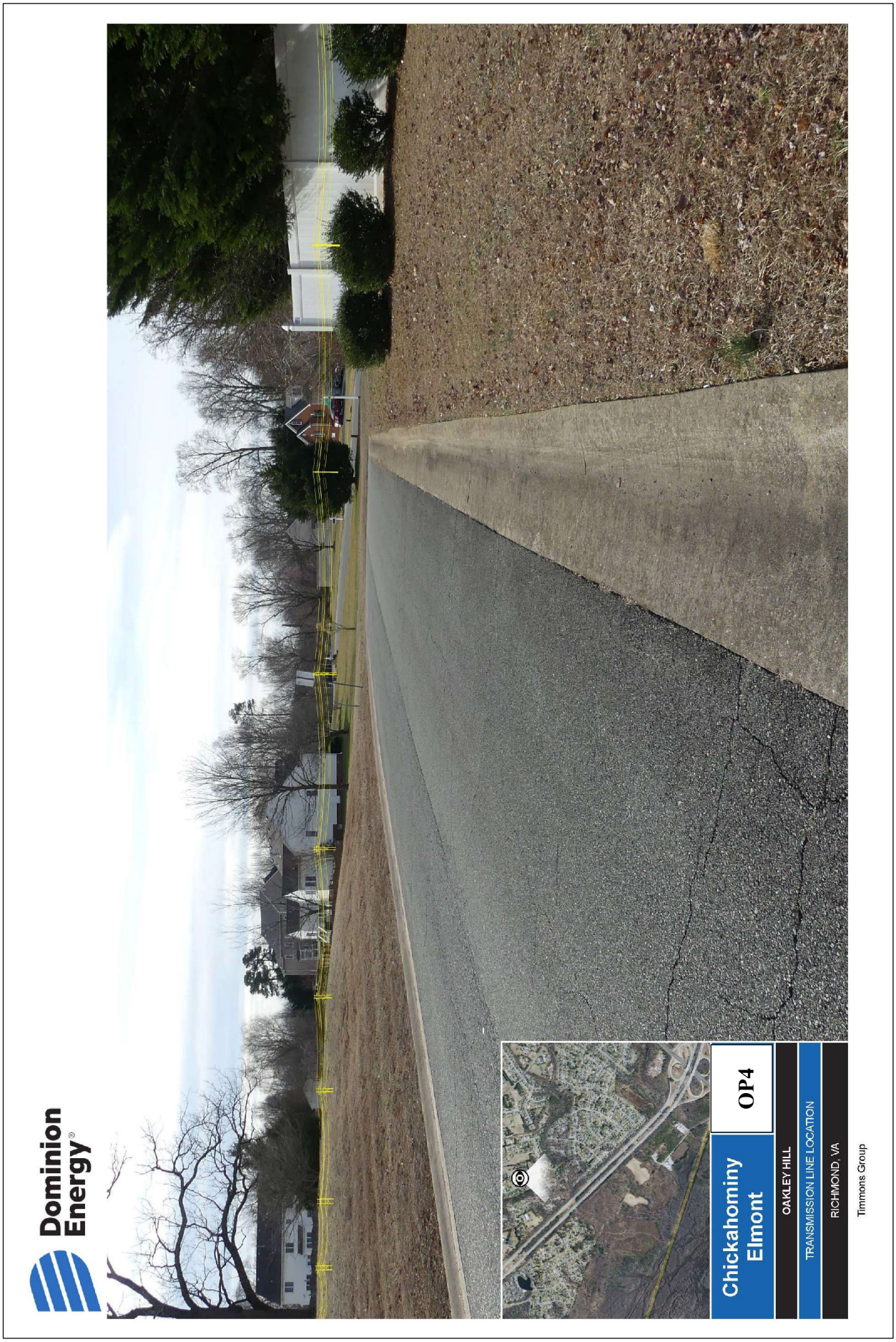

Dominion Energy
Chickahominy Elmont
OP2
CHICKAHOMINY BLUFF PARKING AREA
EXISTING CONDITIONS
RICHMOND, VA
Timmons Group


Dominion Energy
Chickahominy Elmont
OP2
CHICKAHOMINY BLUFF PARKING AREA
TRANSMISSION LINE LOCATION
RICHMOND, VA
Timmons Group


Dominion Energy
Chickahominy Elmont
OP3
BEAVER DAM CREEK BATTLEFIELD
EXISTING CONDITIONS
RICHMOND, VA
Timmons Group


Dominion Energy
Chickahominy Elmont
OP3
BEAVER DAM CREEK BATTLEFIELD
TRANSMISSION LINE LOCATION
RICHMOND, VA
Timmons Group


Dominion Energy
Chickahominy Elmont
OP4
OAKLEY HILL
EXISTING CONDITIONS
RICHMOND, VA
Timmons Group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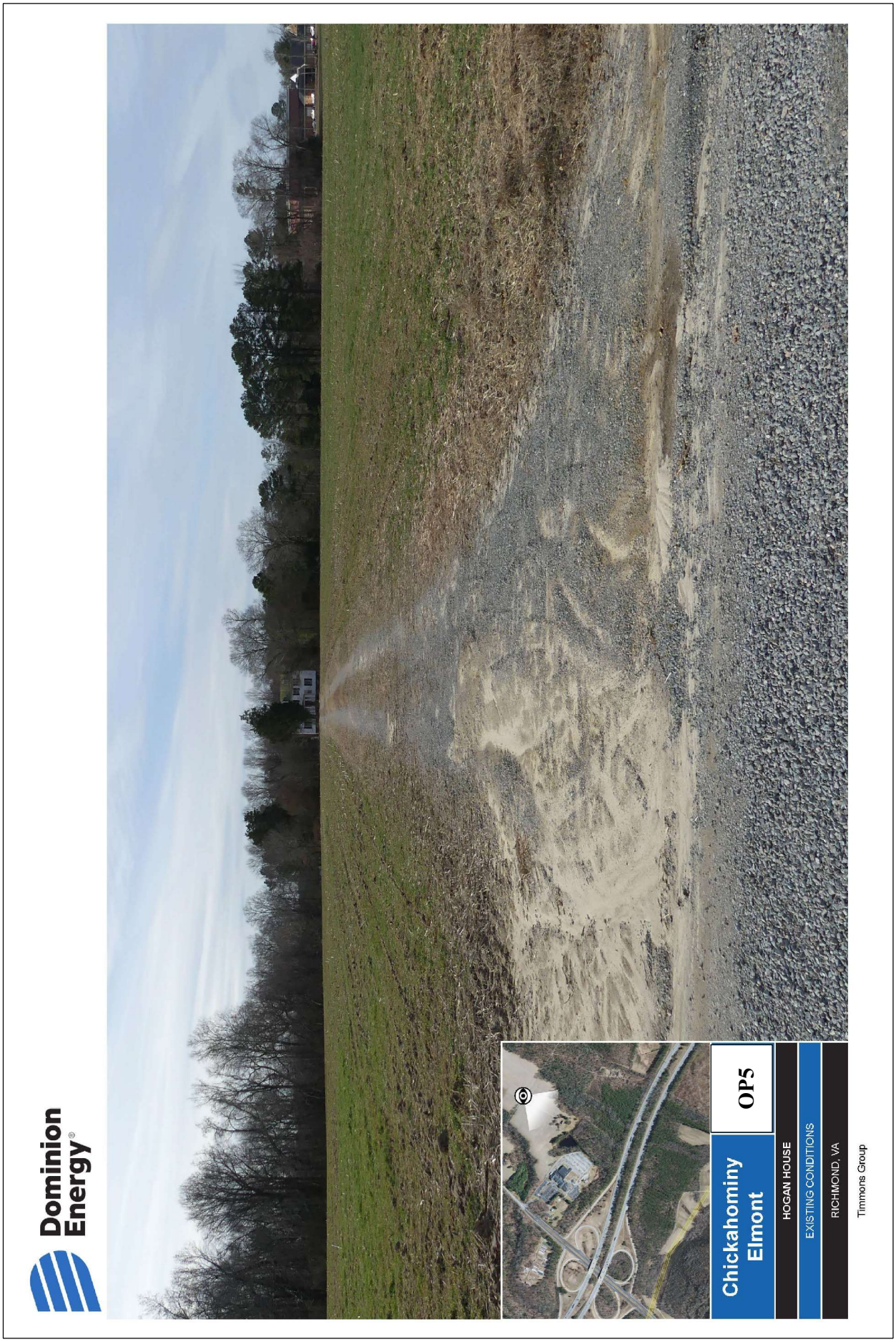
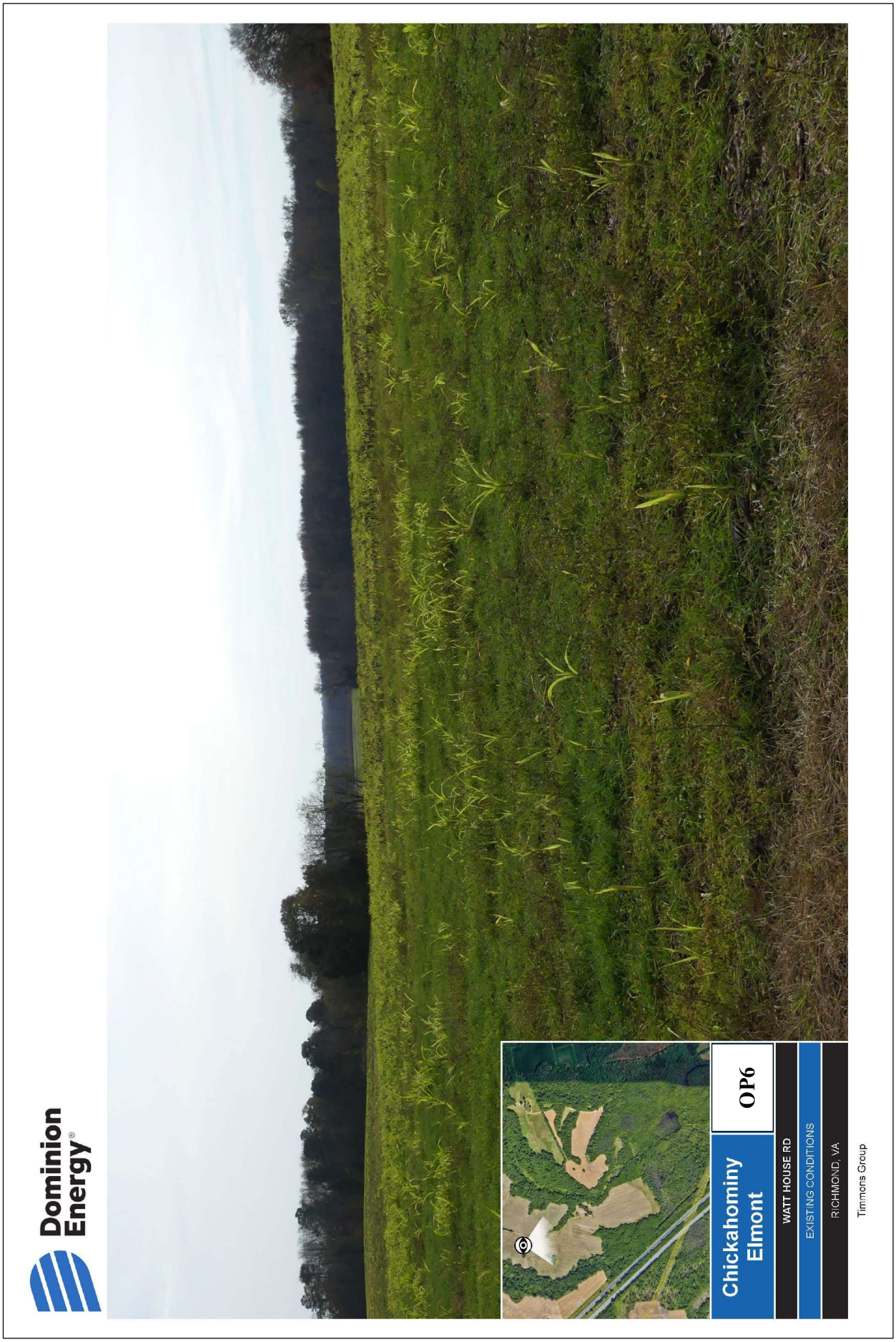
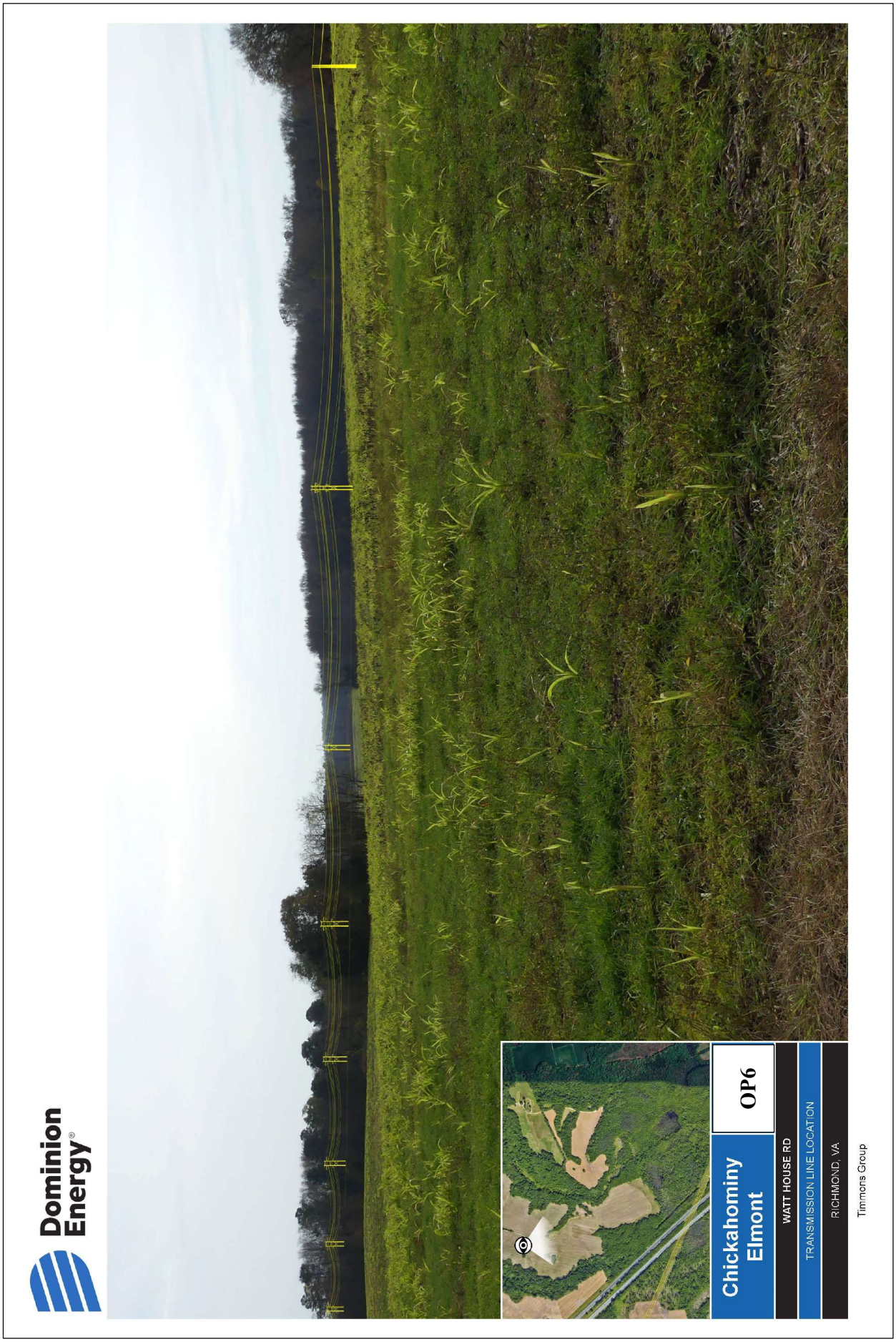
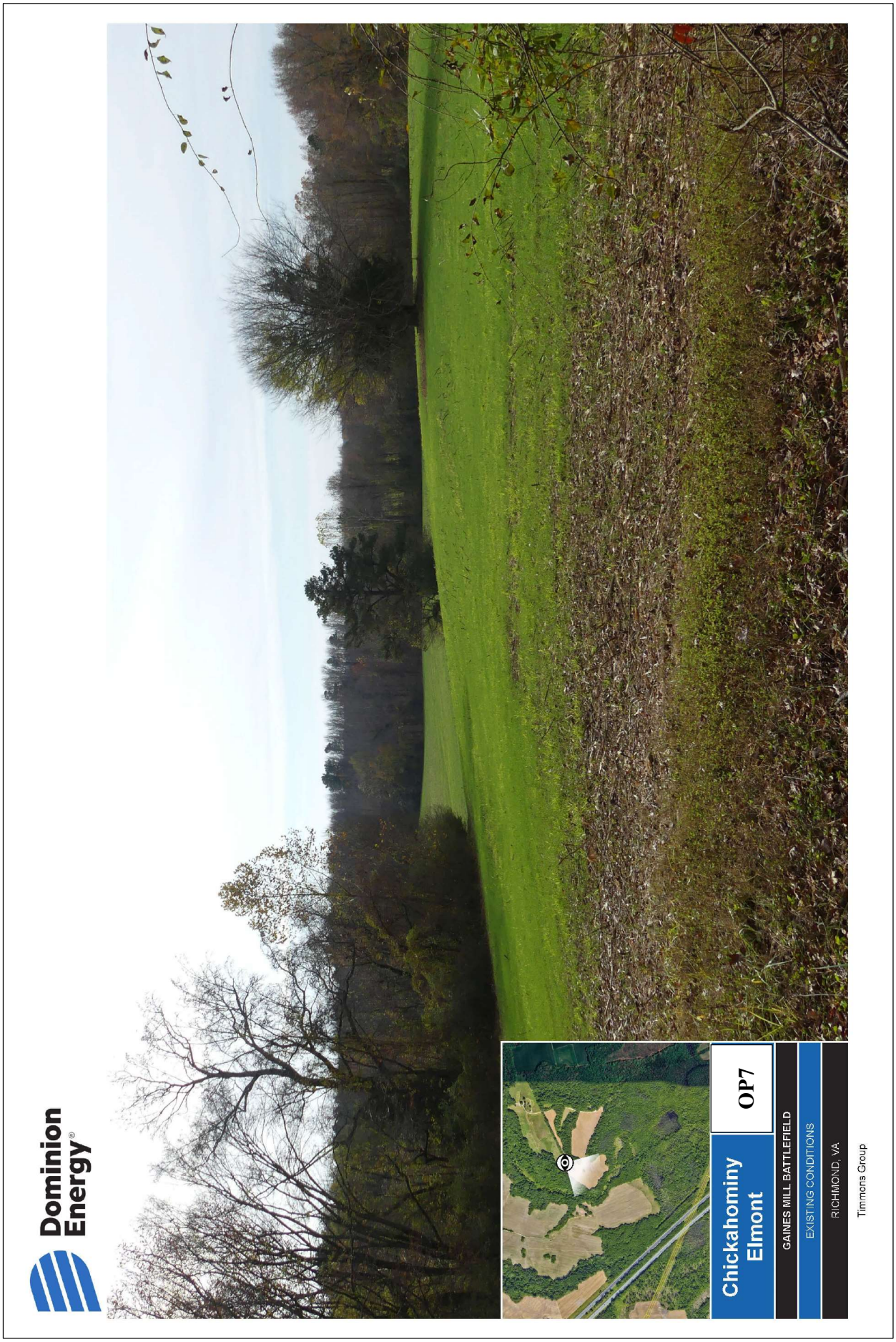
Chickahominy Elmont
OP4
OAKLEY HILL
TRANSMISSION LINE LOCATION
RICHMOND, VA
Timmons Group

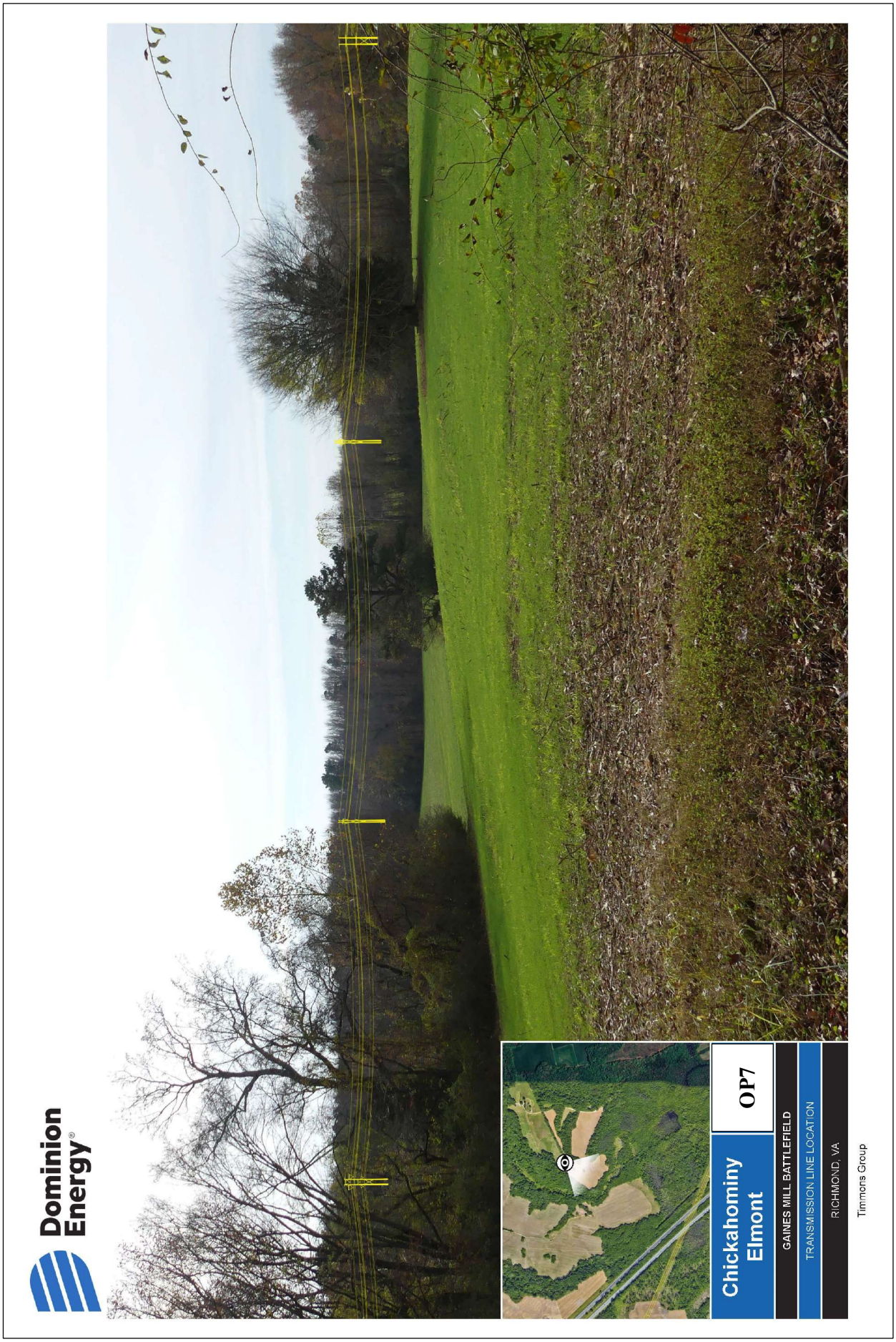

Dominion Energy
Chickahominy Elmont
OP5
HOGAN HOUSE
EXISTING CONDITIONS
RICHMOND, VA
Timmons Group


Dominion Energy
Chickahominy Elmont
OP5
HOGAN HOUSE
TRANSMISSION LINE LOCATION
RICHMOND, VA
Timmons Group


Dominion Energy
Chickahominy Elmont
OP6
WATT HOUSE RD
EXISTING CONDITIONS
RICHMOND, VA
Timmons Group


Dominion Energy
Chickahominy Elmont
OP6
WATT HOUSE RD
TRANSMISSION LINE LOCATION
RICHMOND, VA
Timmons Group


Dominion Energy®
Chickahominy Elmont
OP7
GAINES MILL BATTLEFIELD
EXISTING CONDITIONS
RICHMOND, VA
Timmons Group


Dominion Energy®
Chickahominy Elmont
OP7
GAINES MILL BATTLEFIELD
TRANSMISSION LINE LOCATION
RICHMOND, VA
Timmons Group