



Figure 4.1-6
Cemeteries, Schools, and Places of Worship
within 0.25 mile of the Routes
Cloud-Nebula-Raines 230 kV Transmission Line Project
Dominion Energy Virginia
Mecklenburg County, Virginia

0 375 750
Feet
1:9,000

ERM

Page 5 of 17

Parcel Boundary

500-Foot Buffer

0.25-Mile Buffer

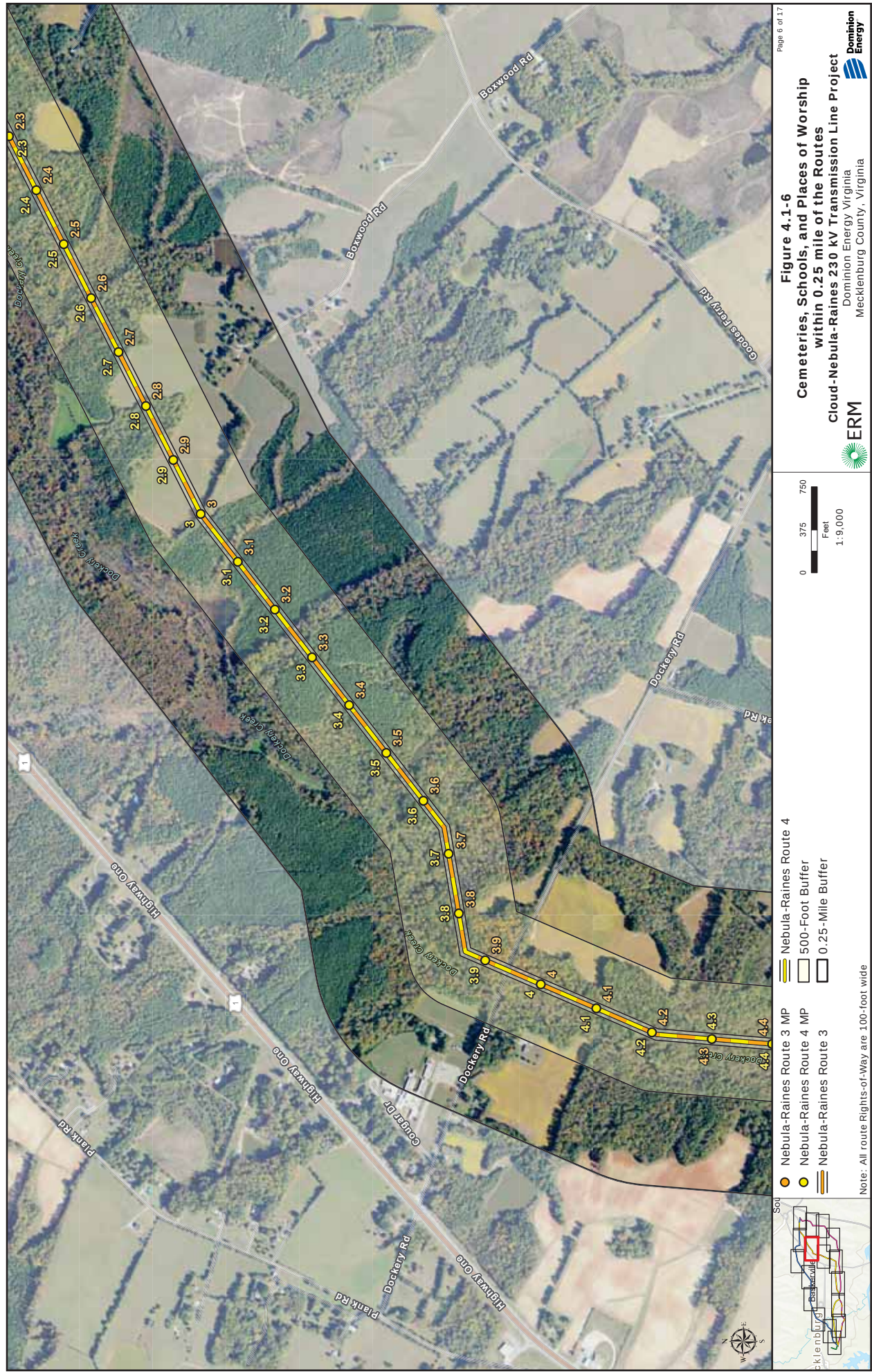
Nebula-Raines Route 4

Nebula-Raines Route 5

Cemetery

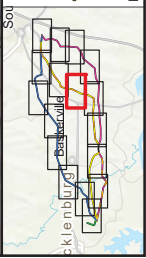
Place of Worship

Note: All route Rights-of-Way are 100-foot wide





- Nebula-Raines Route 3 MP
- Nebula-Raines Route 4 MP
- 500-Foot Buffer
- 0.25-Mile Buffer



Note: All route Rights-of-Way are 100-foot wide

Figure 4.1-6

**Cemeteries, Schools, and Places of Worship
within 0.25 mile of the Routes**

Cloud-Nebula-Raines 230 kV Transmission Line Project

Dominion Energy Virginia
Mecklenburg County, Virginia



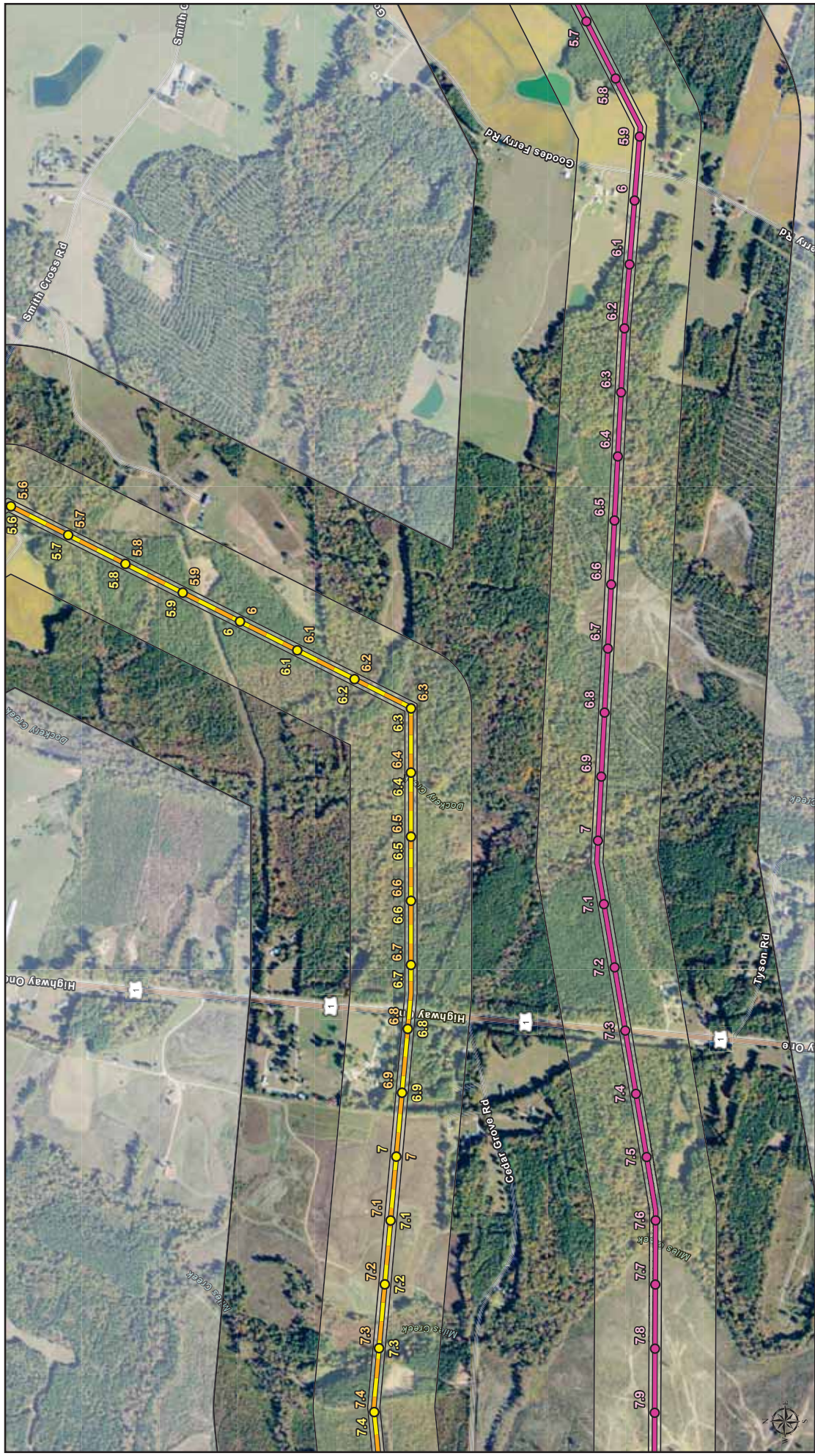


Figure 4.1-6

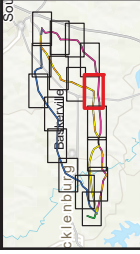
**Cemeteries, Schools, and Places of Worship
within 0.25 mile of the Routes**

Cloud-Nebula-Raines 230 kV Transmission Line Project

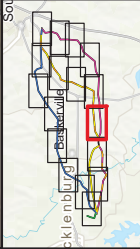
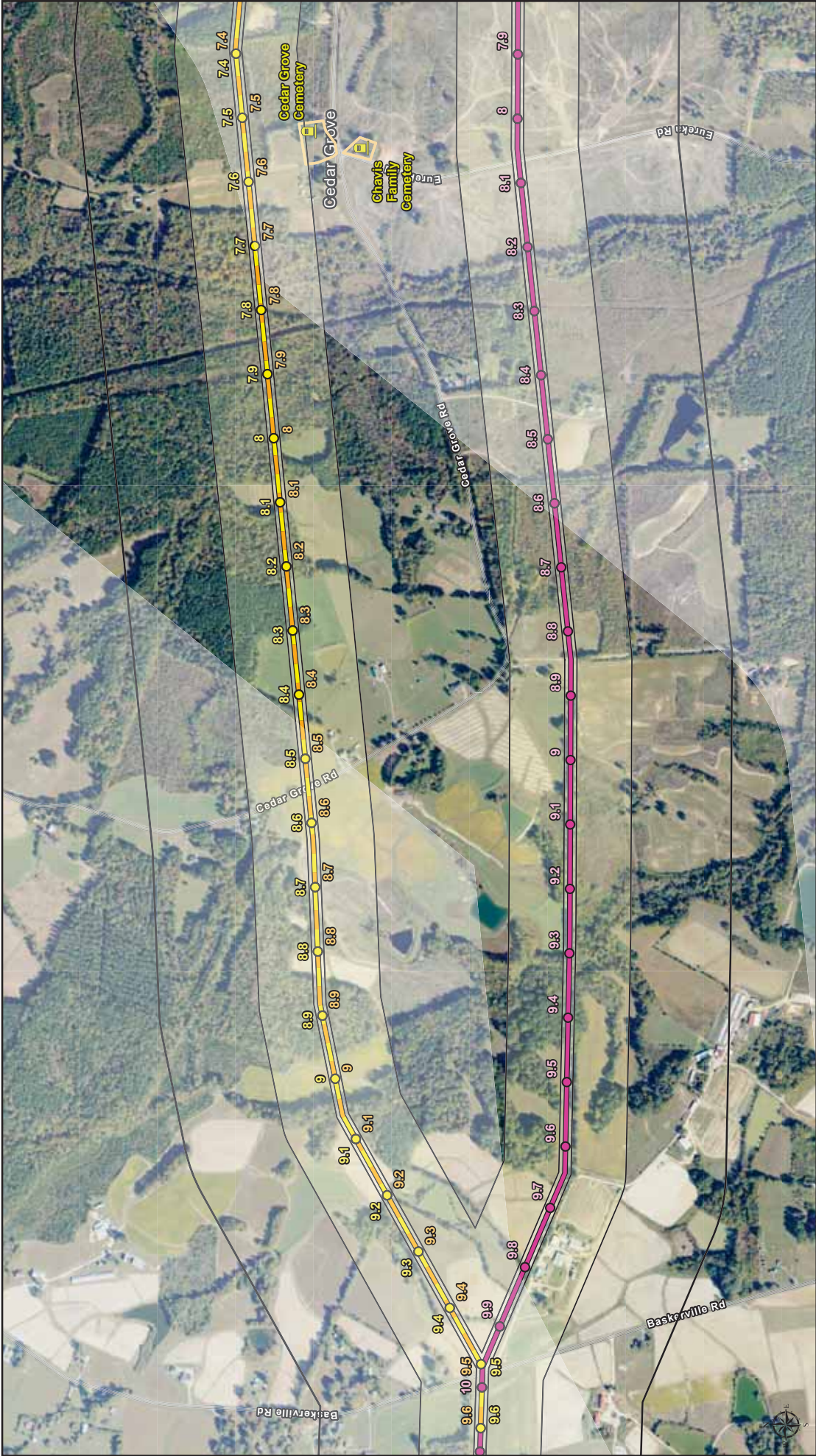
Dominion Energy Virginia
Mecklenburg County, Virginia



- Nebula-Raines Route 1
- Nebula-Raines Route 3
- Nebula-Raines Route 4
- 500-Foot Buffer
- 0.25-Mile Buffer



Note: All route Rights-of-Way are 100-foot wide



- Nebula-Raines Route 1 MP
- Nebula-Raines Route 3 MP
- Nebula-Raines Route 4 MP
- Nebula-Raines Route 1
- 500-Foot Buffer
- 0.25-Mile Buffer
- Cemetery
- Parcel Boundary

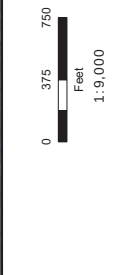
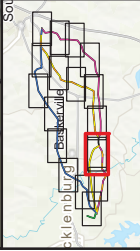
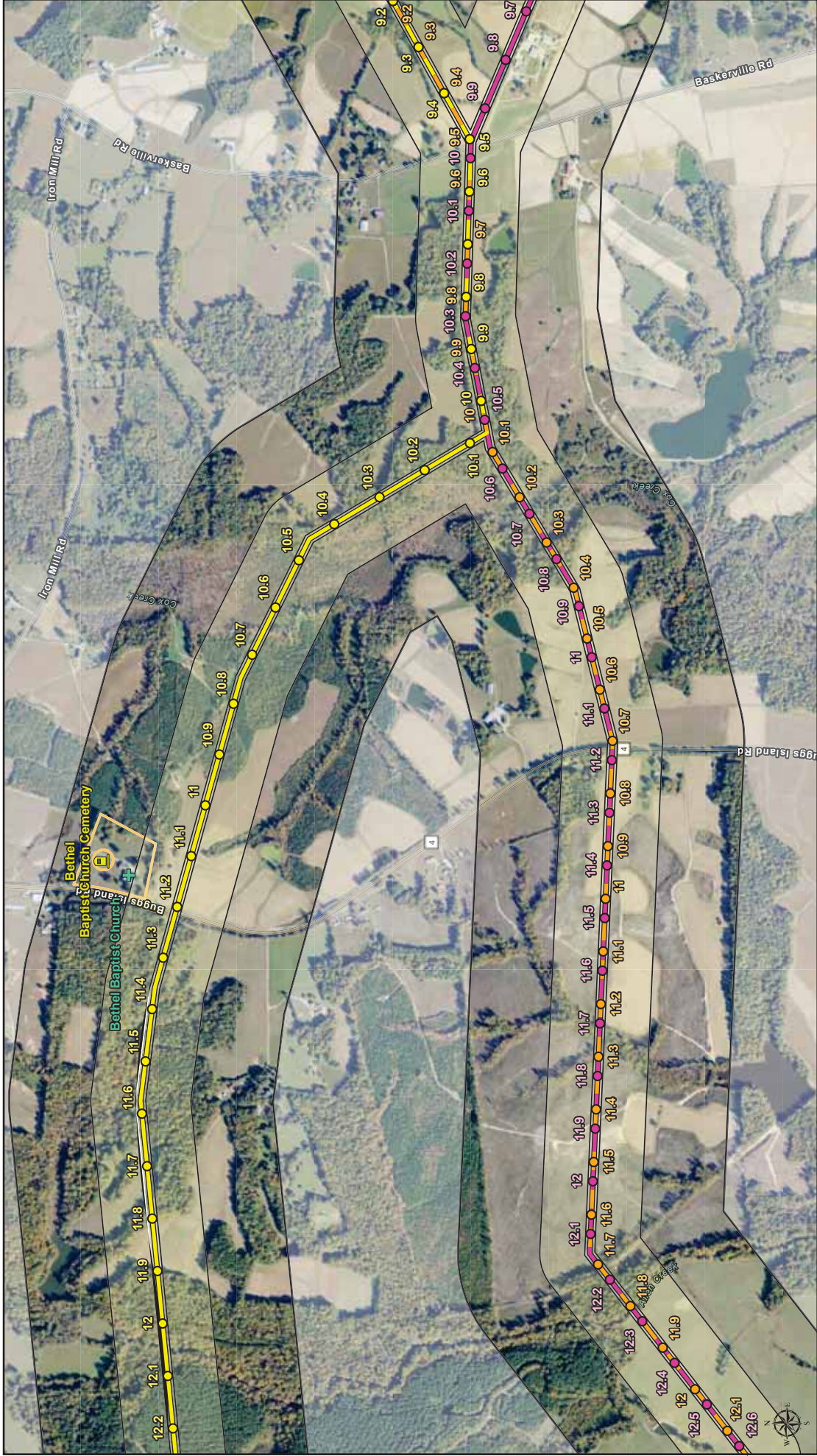


Figure 4.1-6
Cemeteries, Schools, and Places of Worship
within 0.25 mile of the Routes
Cloud-Nebula-Raines 230 kV Transmission Line Project
 Dominion Energy Virginia
 Mecklenburg County, Virginia

Note: All route Rights-of-Way are 100-foot wide



- Nebula-Raines Route 1 MP
- Nebula-Raines Route 3 MP
- Nebula-Raines Route 4 MP
- Nebula-Raines Route 1
- Parcel Boundary
- 500-Foot Buffer
- 0.25-Mile Buffer
- + Cemetery
- + Place of Worship

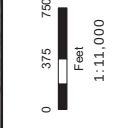


Figure 4.1-6

**Cemeteries, Schools, and Places of Worship
within 0.25 mile of the Routes**

Cloud-Nebula-Raines 230 kV Transmission Line Project
Dominion Energy Virginia
Mecklenburg County, Virginia



Note: All route Rights-of-Way are 100-foot wide

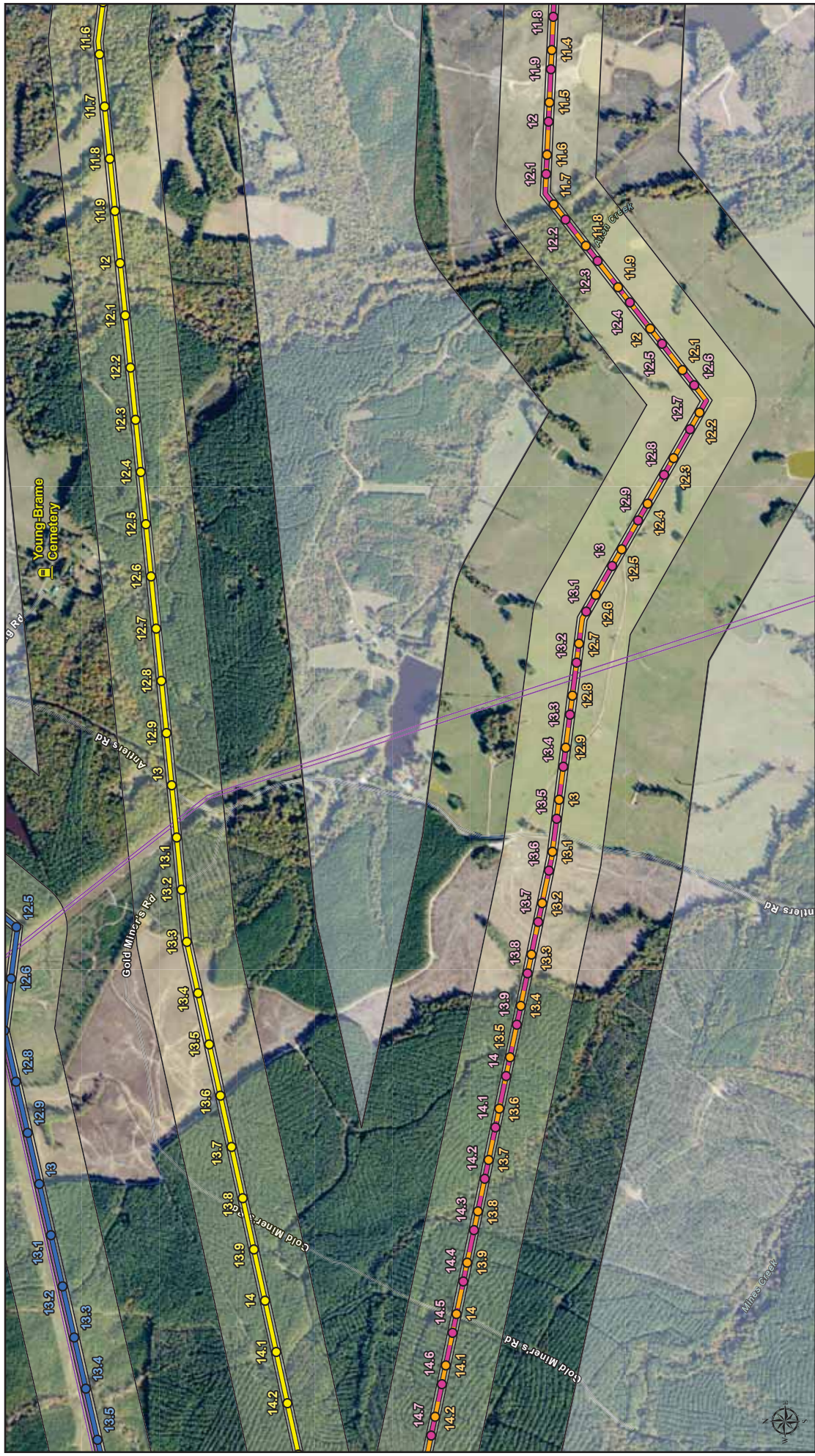
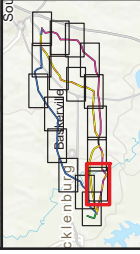


Figure 4.1-6
Cemeteries, Schools, and Places of Worship
within 0.25 mile of the Routes
Cloud-Nebula-Raines 230 kV Transmission Line Project
 Dominion Energy Virginia
 Mecklenburg County, Virginia



- Parcel Boundary
- 500-Foot Buffer
- 0.25-Mile Buffer
- Nebula-Raines Route 1
- Nebula-Raines Route 3
- Nebula-Raines Route 4
- Nebula-Raines Route 5
- Cemetery
- Existing Dominion Transmission Lines
- Nebula-Raines Route 1 MP
- Nebula-Raines Route 3 MP
- Nebula-Raines Route 4 MP
- Nebula-Raines Route 5 MP



Note: All route Rights-of-Way are 100-foot wide





Figure 4.1-6
Cemeteries, Schools, and Places of Worship
within 0.25 mile of the Routes
Cloud-Nebula-Raines 230 kV Transmission Line Project
 Dominion Energy Virginia
 Mecklenburg County, Virginia

ERM

Nebula-Raines Route 5 MP
 Nebula-Raines Route 5
 Cemetery
 Place of Worship

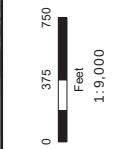
Parcel Boundary
 500-Foot Buffer
 0.25-Mile Buffer

Note: All route Rights-of-Way are 100-foot wide





Figure 4.1-6
Cemeteries, Schools, and Places of Worship
within 0.25 mile of the Routes
Cloud-Nebula-Raines 230 kV Transmission Line Project
 Dominion Energy Virginia
 Mecklenburg County, Virginia



- Nebula-Raines Route 5 MP
 - Nebula-Raines Route 5
 - Cemetery
 - Place of Worship
 - Parcel Boundary
 - 500-Foot Buffer
 - 0.25-Mile Buffer
- Note: All route Rights-of-Way are 100-foot wide

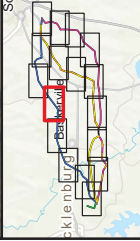
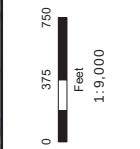


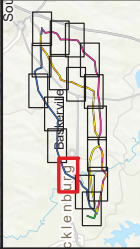


Figure 4.1-6
Cemeteries, Schools, and Places of Worship
within 0.25 mile of the Routes
Cloud-Nebula-Raines 230 kV Transmission Line Project
 Dominion Energy Virginia
 Mecklenburg County, Virginia



ERM

Dominion Energy



- Parcel Boundary
- 500-Foot Buffer
- 0.25-Mile Buffer
- Nebula-Raines Route 5 MP
- Nebula-Raines Route 5
- Cemetery

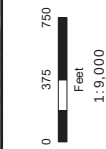




Figure 4.1-6

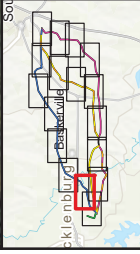
Cemeteries, Schools, and Places of Worship within 0.25 mile of the Routes

Cloud-Nebula-Raines 230 kV Transmission Line Project
Dominion Energy Virginia
Mecklenburg County, Virginia



- Existing Dominion Transmission Lines
 - Nebula-Raines Route 4 MP
 - Nebula-Raines Route 5 MP
 - Nebula-Raines Route 4
 - Nebula-Raines Route 5
- Cemetery
- Parcel Boundary
- 500-Foot Buffer
- 0.25-Mile Buffer

Note: All route Rights-of-Way are 100-foot wide



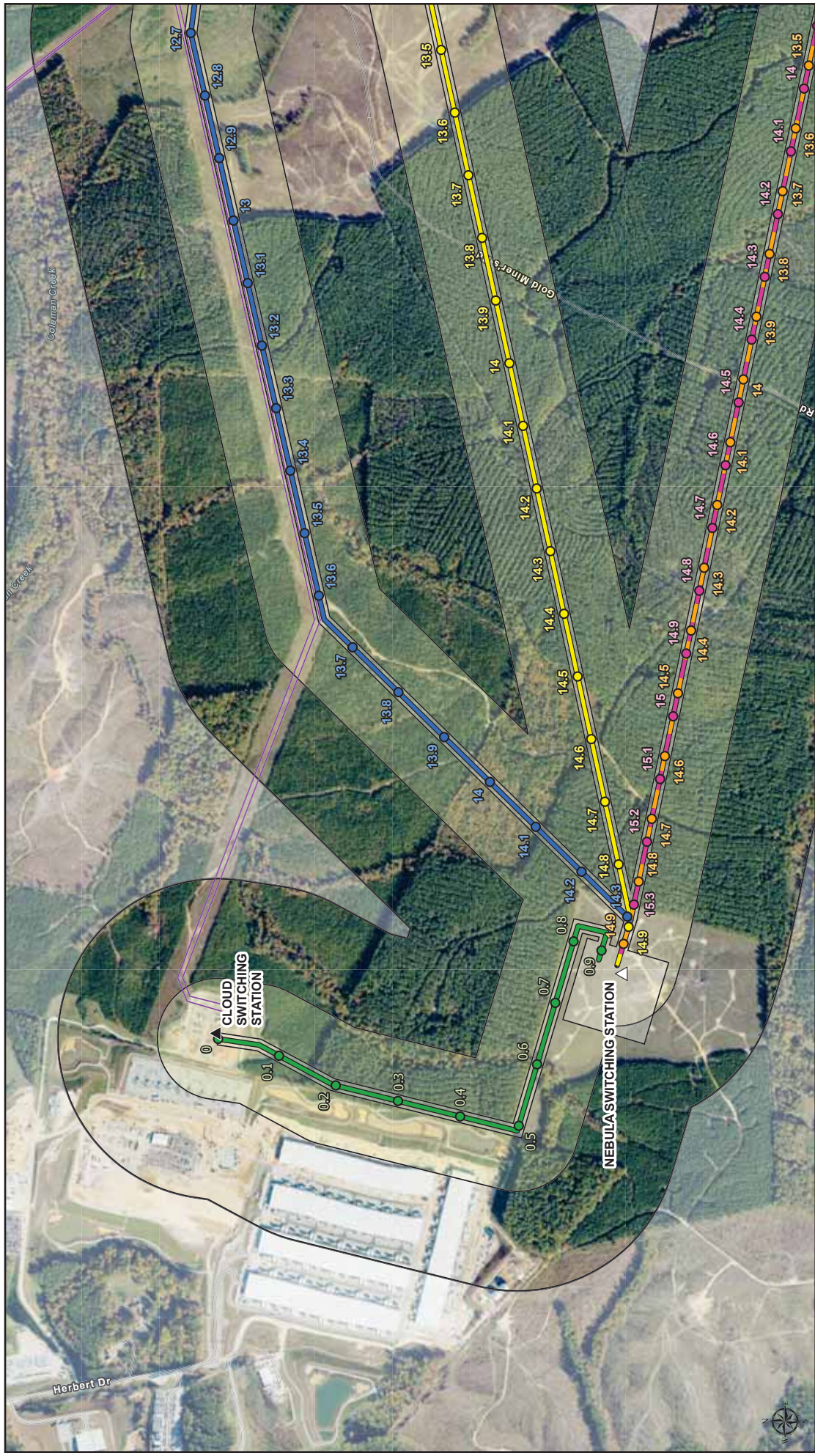


Figure 4.1-6

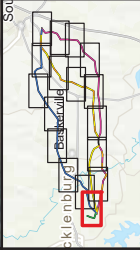
**Cemeteries, Schools, and Places of Worship
within 0.25 mile of the Routes**

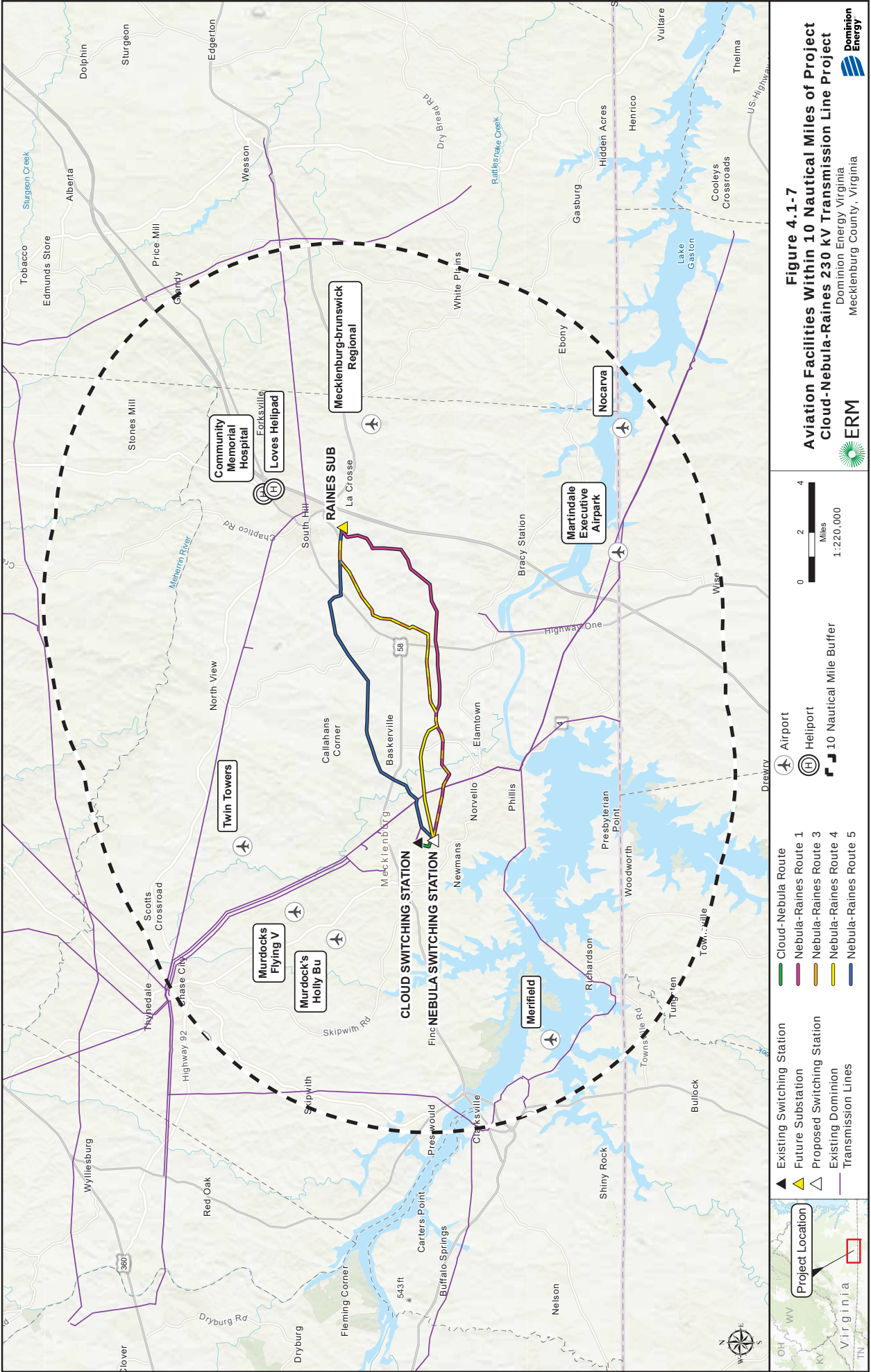
Cloud-Nebula-Raines 230 kV Transmission Line Project
Dominion Energy Virginia
Mecklenburg County, Virginia



- Nebula-Raines Route 3
- Nebula-Raines Route 4
- Nebula-Raines Route 5
- Cloud-Nebula Route
- Existing Dominion Transmission Lines
- 500-Foot Buffer
- 0.25-Mile Buffer
- ▲ Existing Switching Station
- ▲ Proposed Switching Station
- Cloud-Nebula Route MP
- Nebula-Raines Route 1 MP

Note: All route Rights-of-Way are 100-foot wide





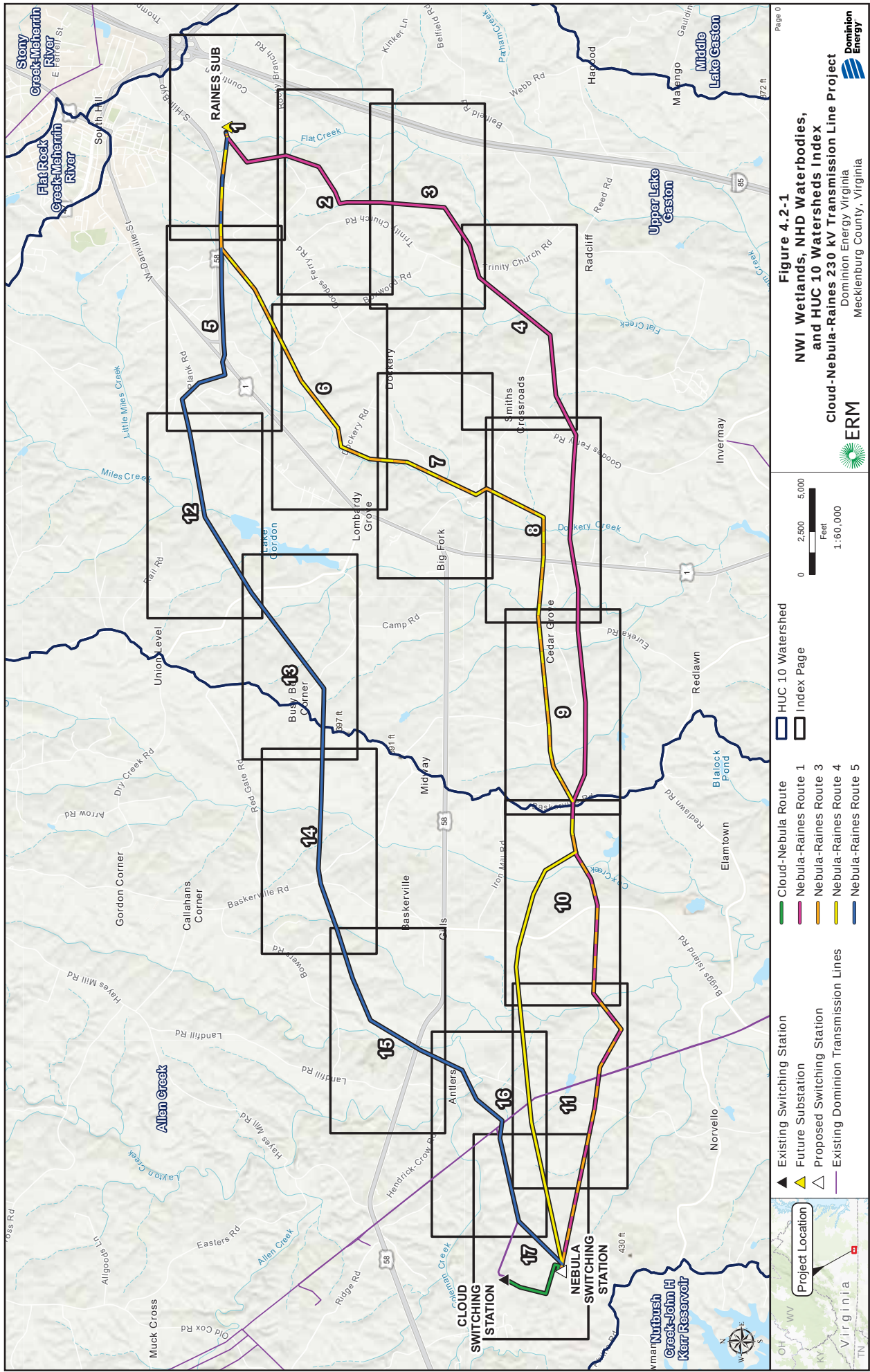
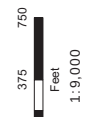




Figure 4.2-1

NW1 Wetlands, NHD Watersheds, and HUC 10 Watersheds
Cloud-Nebula-Raines 230 kV Transmission Line Project
 Dominion Energy Virginia
 Mecklenburg County, Virginia



- HUC 10 Watershed
- NW1 Wetland
 - Freshwater Emergent Wetland
 - Freshwater Forested/Shrub Wetland
 - Freshwater Pond
- Future Substation
- Nebula-Raines Route 1
- Nebula-Raines Route 3
- Nebula-Raines Route 4
- Nebula-Raines Route 5
- NHD Flowline
- Note: All route Rights-of-Way are 100-foot wide

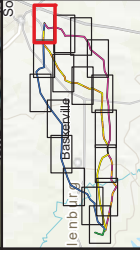




Figure 4.2-1
 NWI Wetlands, NHD Waterbodies,
 and HUC 10 Watersheds
 Cloud-Nebula-Raines 230 kV Transmission Line Project
 Dominion Energy Virginia
 Mecklenburg County, Virginia

NWI Wetland

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

Legend

- Nebula-Raines Route 1 MP
- Nebula-Raines Route 1
- NHD Flowline
- HUC 10 Watershed

Note: All route Rights-of-Way are 100-foot wide

Scale: 0 375 750 Feet
 1:9,000

Page 2 of 17



Figure 4.2-1

**NWI Wetlands, NHD Watersheds,
and HUC 10 Watersheds**

Cloud-Nebula-Raines 230 kV Transmission Line Project
Dominion Energy Virginia
Mecklenburg County, Virginia



- NWI Wetland**
- Nebula-Raines Route 1 MP
 - Nebula-Raines Route 1
 - NHD Flowline
 - HUC 10 Watershed
 - Freshwater Emergent Wetland
 - Freshwater Forested/Shrub Wetland
 - Freshwater Pond

Note: All route Rights-of-Way are 100-foot wide

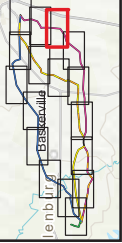




Figure 4.2-1
NWI Wetlands, NHD Watersheds,
and HUC 10 Watersheds
Cloud-Nebula-Raines 230 kV Transmission Line Project
 Dominion Energy Virginia
 Mecklenburg County, Virginia

0 375 750
 Feet
 1:9,000

NWI Wetland

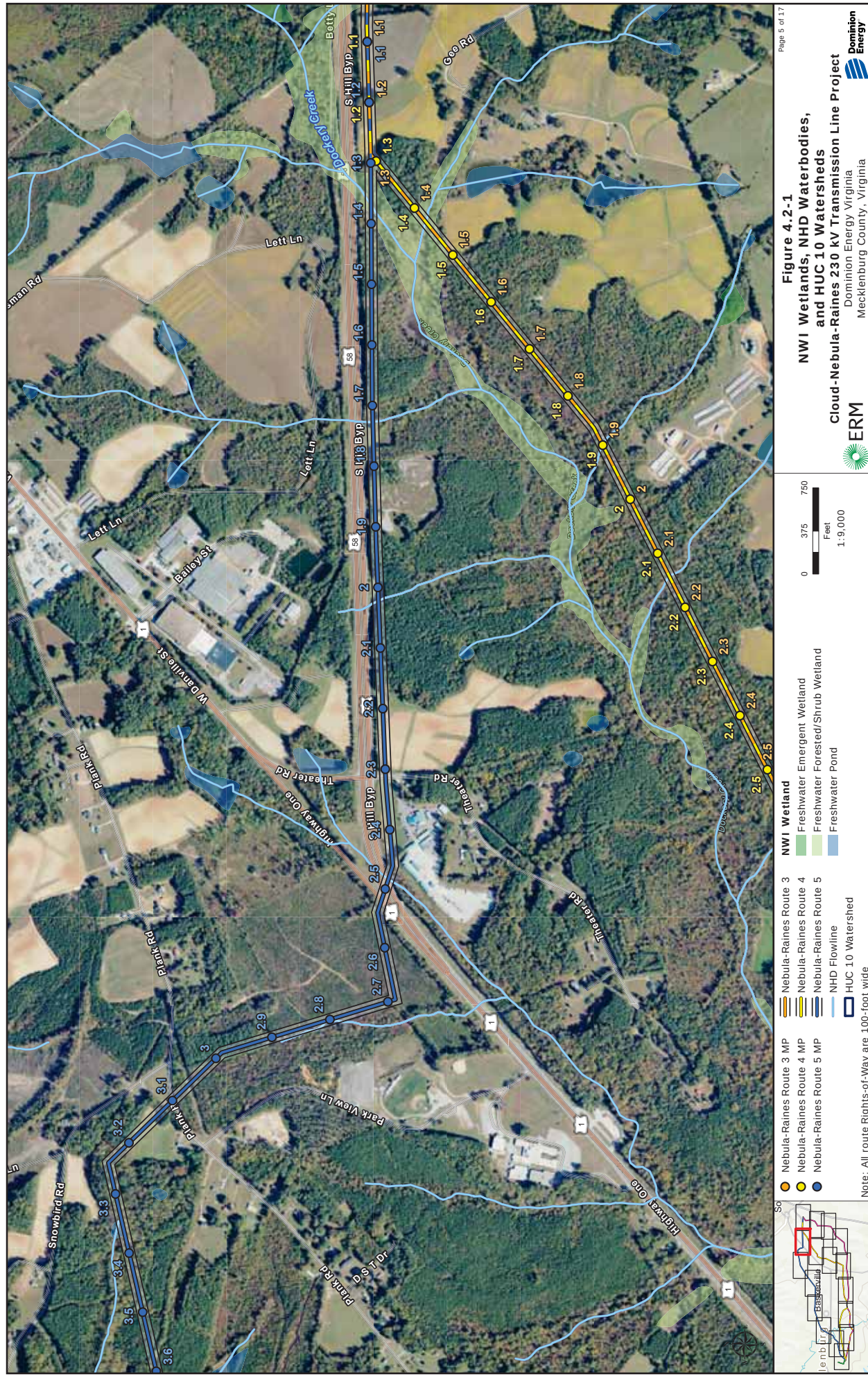
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

Nebula-Raines Route 1 MP

- Nebula-Raines Route 1
- NHD Flowline
- HUC 10 Watershed

Note: All route Rights-of-Way are 100-foot wide





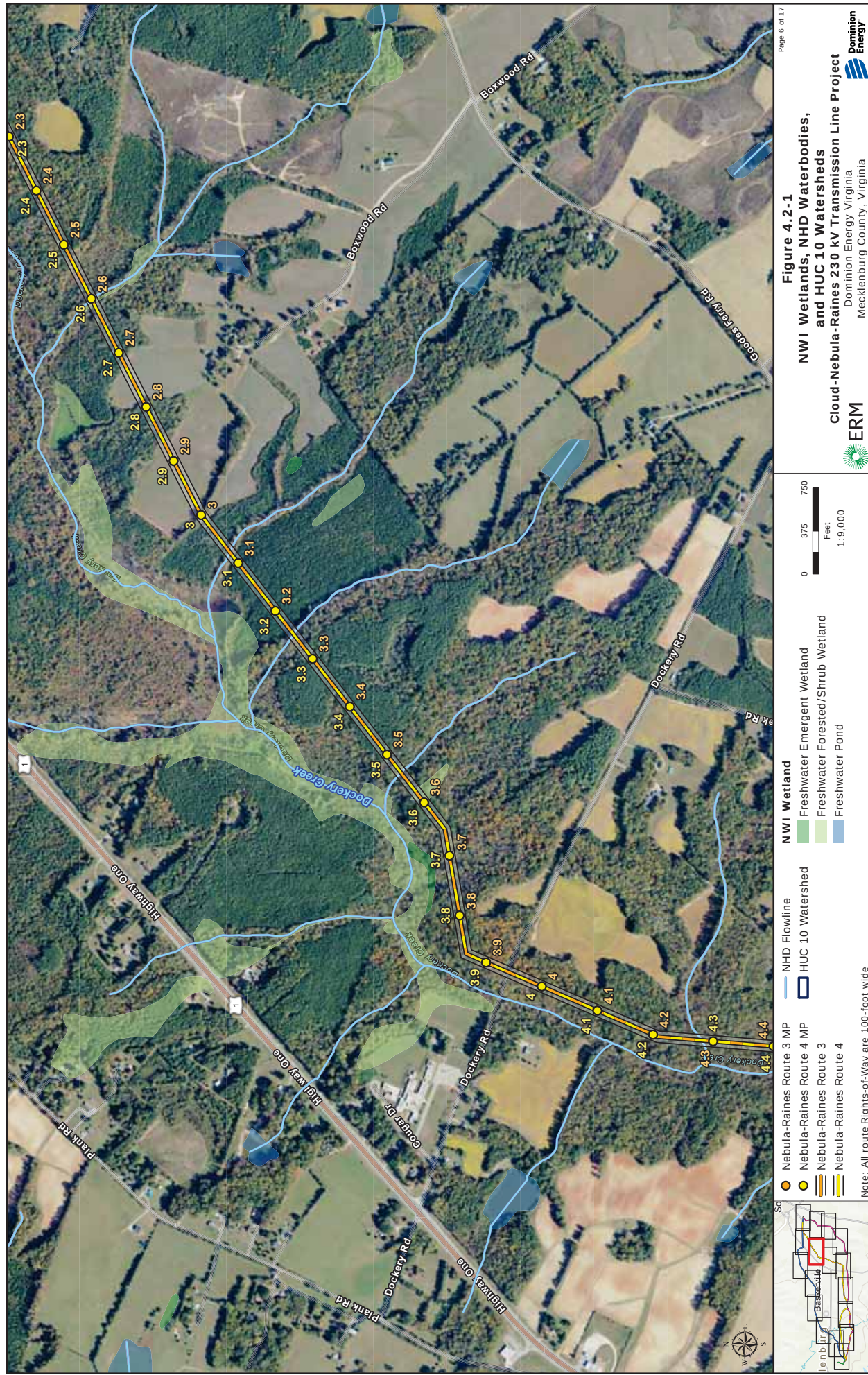
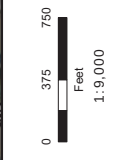




Figure 4.2-1

**NWI Wetlands, NHD Waterbodies,
and HUC 10 Watersheds**

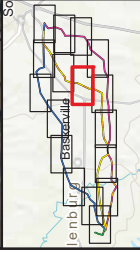
Cloud-Nebula-Raines 230 kV Transmission Line Project
Dominion Energy Virginia
Mecklenburg County, Virginia

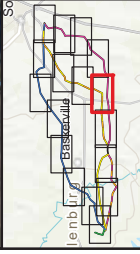
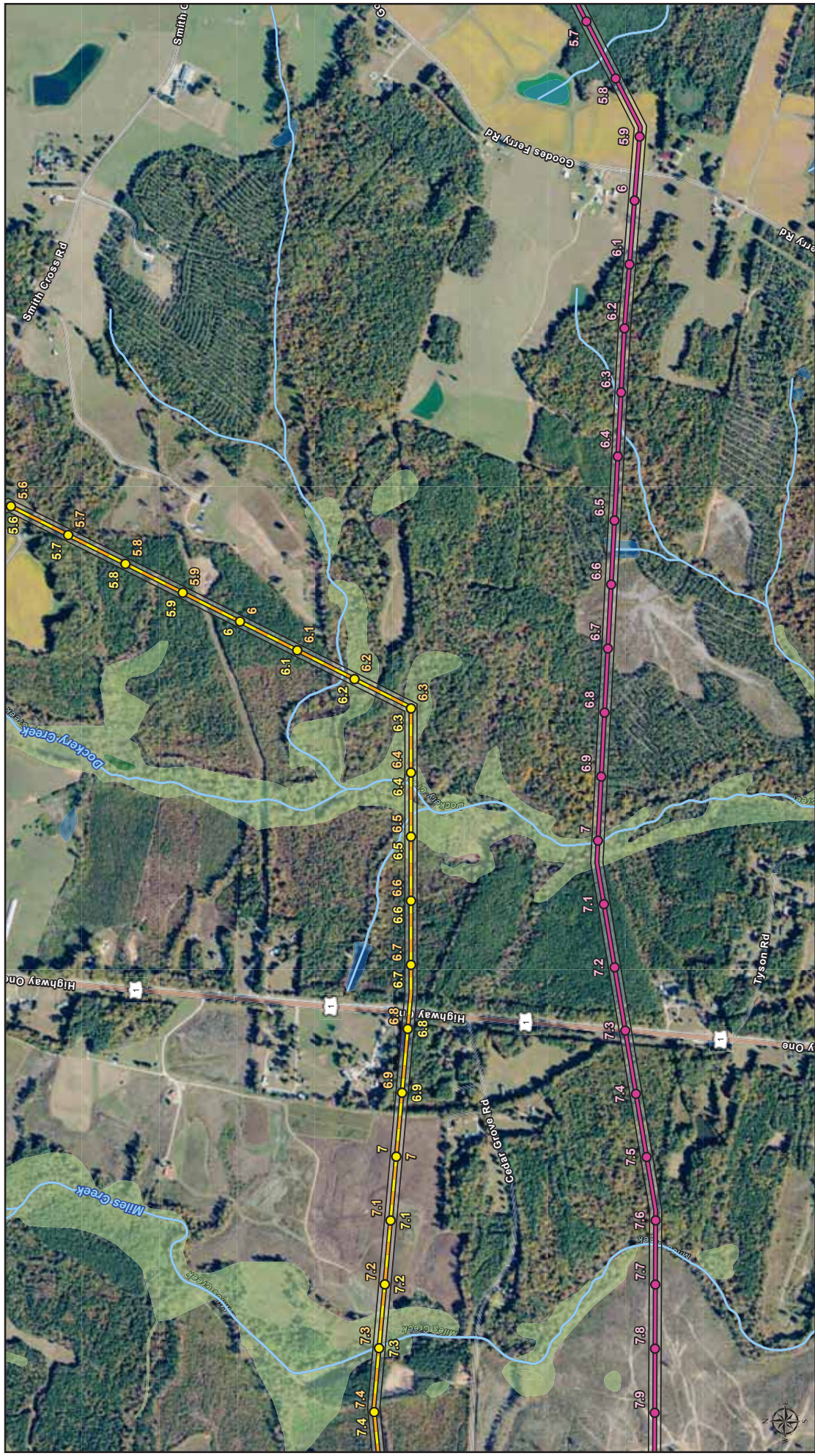


- NWI Wetland**
- Freshwater Emergent Wetland
 - Freshwater Forested/Shrub Wetland
 - Freshwater Pond

- NHD Flowline
- HUC 10 Watershed
- Nebula-Raines Route 3 MP
- Nebula-Raines Route 4 MP
- Nebula-Raines Route 3
- Nebula-Raines Route 4

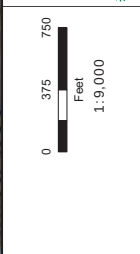
Note: All route Rights-of-Way are 100-foot wide





- NWI Wetland**
- Nebula-Raines Route 1 MP
 - Nebula-Raines Route 3 MP
 - Nebula-Raines Route 4 MP
 - NHD Flowline
 - HUC 10 Watershed
- Note: All route Rights-of-Way are 100-foot wide

- NWI Wetland**
- Freshwater Emergent Wetland
 - Freshwater Forested/Shrub Wetland
 - Freshwater Pond



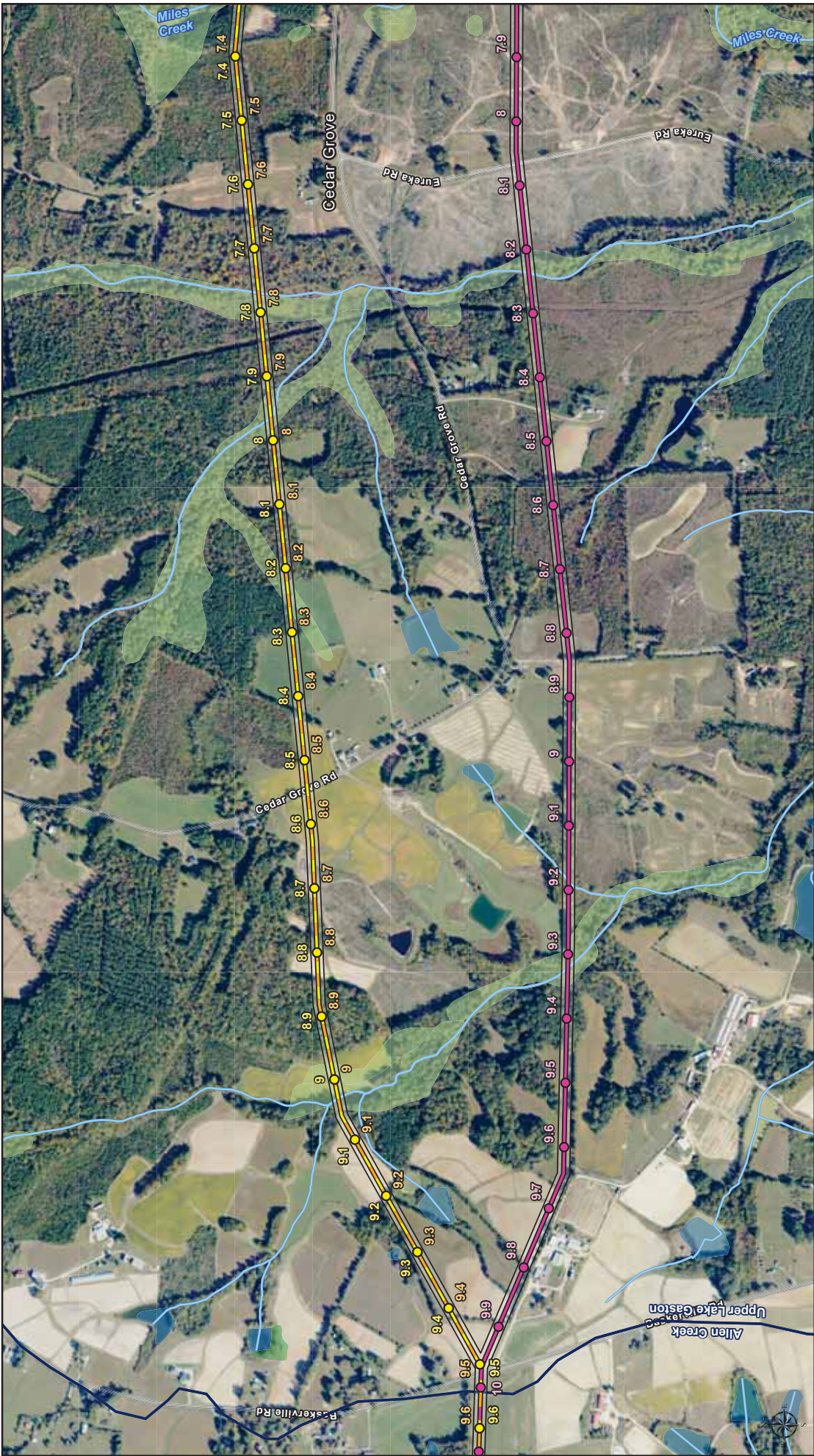
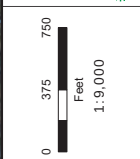


Figure 4.2-1

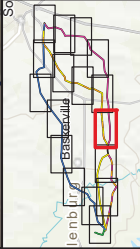
**NW1 Wetlands, NHD Watersheds,
and HUC 10 Watersheds**

Cloud-Nebula-Raines 230 kV Transmission Line Project
Dominion Energy Virginia
Mecklenburg County, Virginia



- NW1 Wetland**
- Freshwater Emergent Wetland
 - Freshwater Forested/Shrub Wetland
 - Freshwater Pond

- Nebula-Raines Route 1 MP
- Nebula-Raines Route 3 MP
- Nebula-Raines Route 4 MP
- NHD Flowline
- HUC 10 Watershed



Note: All route Rights-of-Way are 100-foot wide

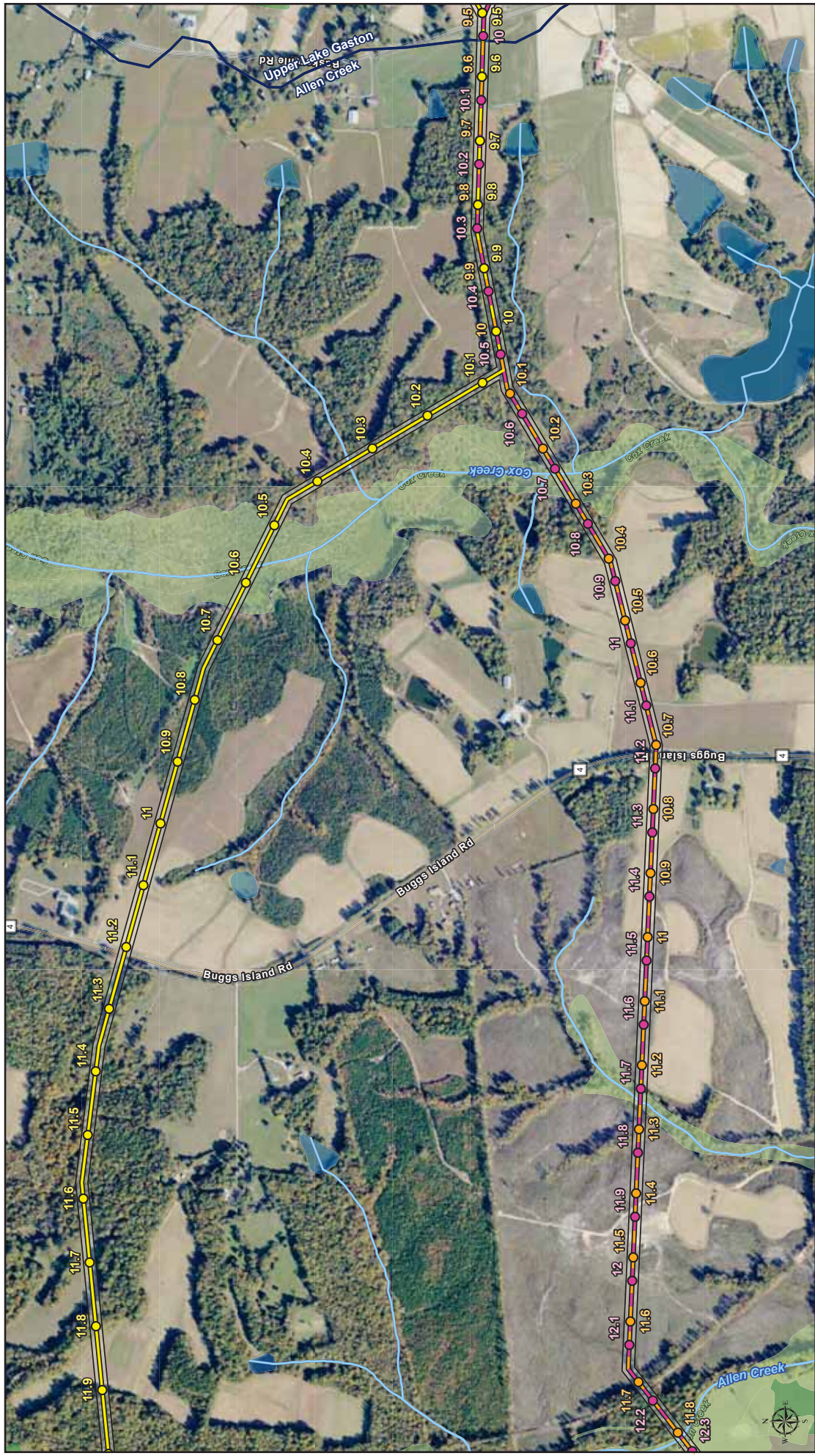


Figure 4.2-1

**NW1 Wetlands, NHD Watersheds,
and HUC 10 Watersheds**

Cloud-Nebula-Raines 230 kV Transmission Line Project
Dominion Energy Virginia
Mecklenburg County, Virginia



- NW1 Wetland**
- Freshwater Emergent Wetland
 - Freshwater Forested/Shrub Wetland
 - Freshwater Pond

- Nebula-Raines Route 1 MP
- Nebula-Raines Route 3 MP
- Nebula-Raines Route 4 MP
- NHD Flowline
- HUC 10 Watershed

Note: All route Rights-of-Way are 100-foot wide

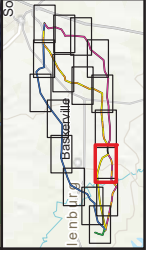




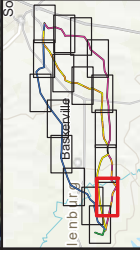
Figure 4.2-1

**NW1 Wetlands, NHD Watersheds,
and HUC 10 Watersheds**
Cloud-Nebula-Raines 230 kV Transmission Line Project
Dominion Energy Virginia
Mecklenburg County, Virginia



- NW1 Wetland**
- Freshwater Emergent Wetland
 - Freshwater Forested/Shrub Wetland
 - Freshwater Pond

- Nebula-Raines Route 1
- Nebula-Raines Route 3
- Nebula-Raines Route 4
- NHD Flowline
- HUC 10 Watershed



Note: All route Rights-of-Way are 100-foot wide



Figure 4.2-1

NWI Wetlands, NHD Watersheds, and HUC 10 Watersheds
Cloud-Nebula-Raines 230 kV Transmission Line Project
 Dominion Energy Virginia
 Mecklenburg County, Virginia



- NWI Wetland**
- Freshwater Emergent Wetland
 - Freshwater Forested/Shrub Wetland
 - Freshwater Pond
 - Lake
- Legend:**
- Nebula-Raines Route 5 MP
 - Nebula-Raines Route 5
 - NHD Flowline
 - HUC 10 Watershed
- Note: All route Rights-of-Way are 100-foot wide

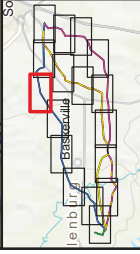


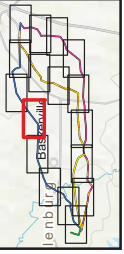


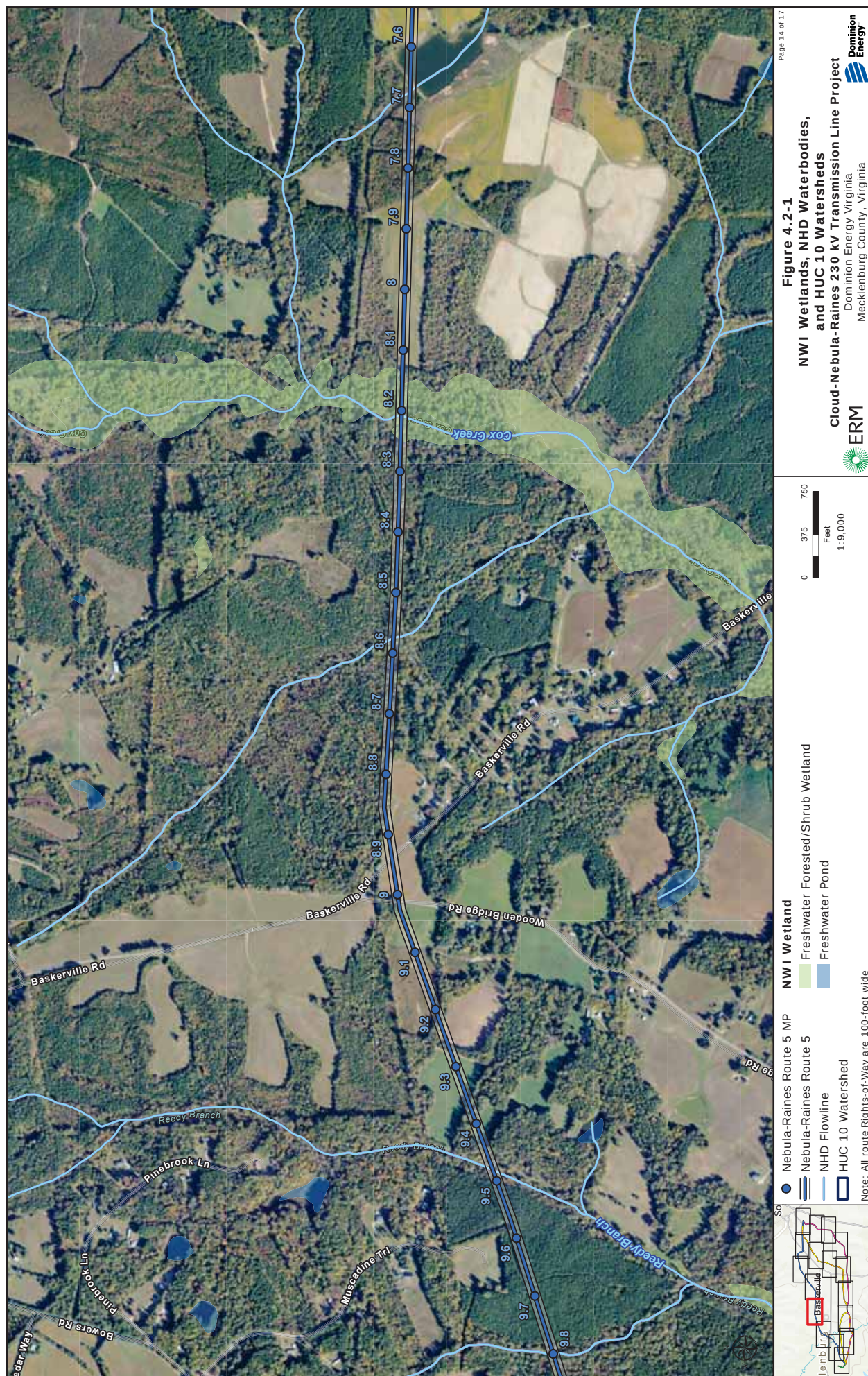
Figure 4.2-1

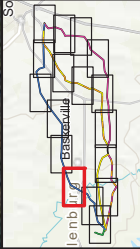
NW1 Wetlands, NHD Watersheds, and HUC 10 Watersheds
Cloud-Nebula-Raines 230 kV Transmission Line Project
 Dominion Energy Virginia
 Mecklenburg County, Virginia



- NW1 Wetland**
- Freshwater Emergent Wetland
 - Freshwater Forested/Shrub Wetland
 - Freshwater Pond
 - Lake
- Legend**
- Nebula-Raines Route 5 MP
 - Nebula-Raines Route 5
 - NHD Flowline
 - HUC 10 Watershed
- Note: All route Rights-of-Way are 100-foot wide







- Nebula-Raines Route 5 MP
 - ▬ Nebula-Raines Route 5
 - ▬ NHD Flowline
 - ▭ HUC 10 Watershed
- Note: All route Rights-of-Way are 100-foot wide

- NW1 Wetland**
- Freshwater Emergent Wetland
 - Freshwater Forested/Shrub Wetland
 - Freshwater Pond



Figure 4.2-1

**NW1 Wetlands, NHD Watersheds,
and HUC 10 Watersheds**

Cloud-Nebula-Raines 230 kV Transmission Line Project
Dominion Energy Virginia
Mecklenburg County, Virginia

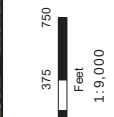




Figure 4.2-1

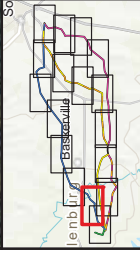
NWI Wetlands, NHD Watersheds, and HUC 10 Watersheds

Cloud-Nebula-Raines 230 kV Transmission Line Project
 Dominion Energy Virginia
 Mecklenburg County, Virginia

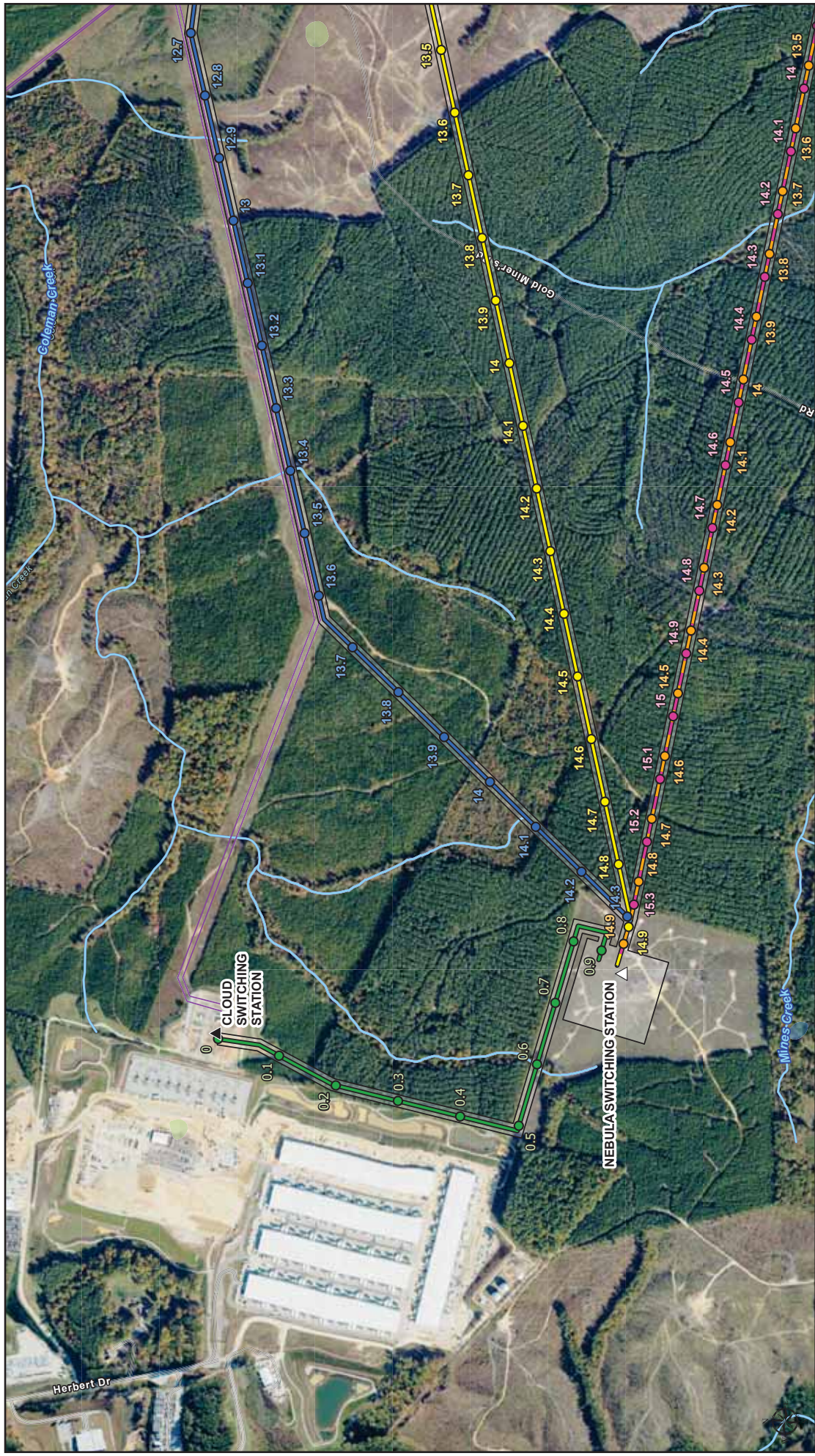


- NWI Wetland**
- Freshwater Forested/Shrub Wetland
 - Freshwater Pond
- Legend**
- Nebula-Raines Route 4
 - Nebula-Raines Route 5
 - NHD Flowline
 - HUC 10 Watershed

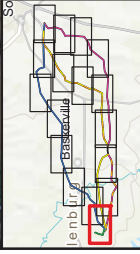
- Existing Dominion**
- Transmission Lines
 - Nebula-Raines Route 4 MP
 - Nebula-Raines Route 5 MP



Note: All route Rights-of-Way are 100-foot wide



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Note: All route Rights-of-Way are 100-foot wide

- Existing Switching Station
- Proposed Switching Station
- Existing Dominion Transmission Lines
- Cloud-Nebula Route MP
- Nebula-Raines Route 1 MP
- Nebula-Raines Route 3 MP
- Nebula-Raines Route 4 MP
- Nebula-Raines Route 5 MP
- Cloud-Nebula Route
- Nebula-Raines Route 1
- Nebula-Raines Route 3
- Nebula-Raines Route 4
- Nebula-Raines Route 5
- NHD Flowline
- HUC 10 Watershed
- NWI Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

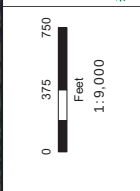
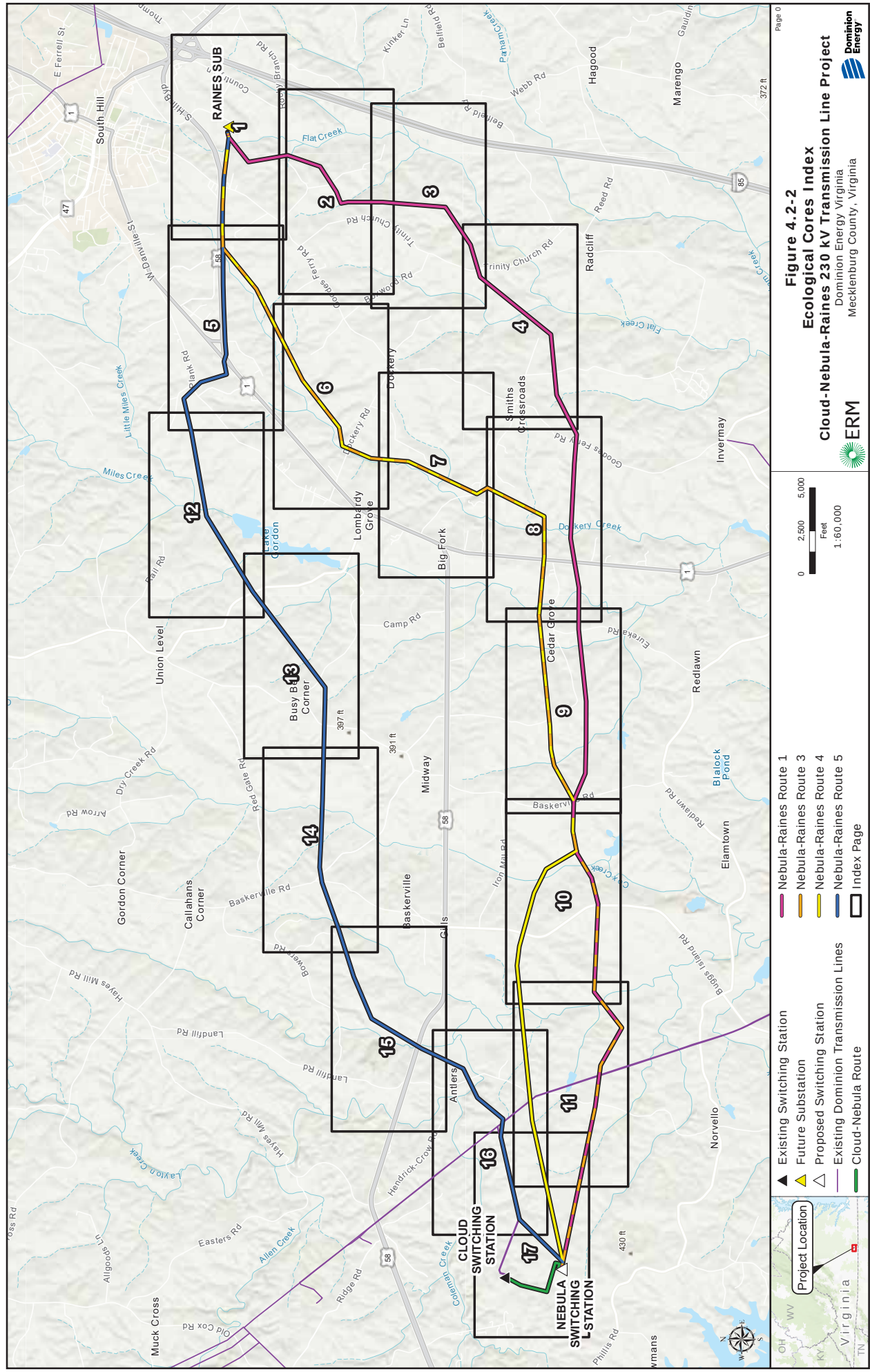


Figure 4.2-1
NWI Wetlands, NHD Waterbodies, and HUC 10 Watersheds
Cloud-Nebula-Raines 230 kV Transmission Line Project
 Dominion Energy Virginia
 Mecklenburg County, Virginia





Eco Core Rank
 4: Moderate
 5: General

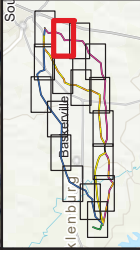


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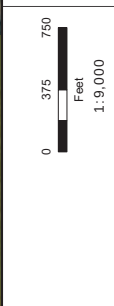
Legend
 Future Substation
 Nebula-Raines Route 1 MP
 Nebula-Raines Route 3 MP
 Nebula-Raines Route 4 MP
 Nebula-Raines Route 5 MP



Note: All route Rights-of-Way are 100-foot wide



Note: All route Rights-of-Way are 100-foot wide



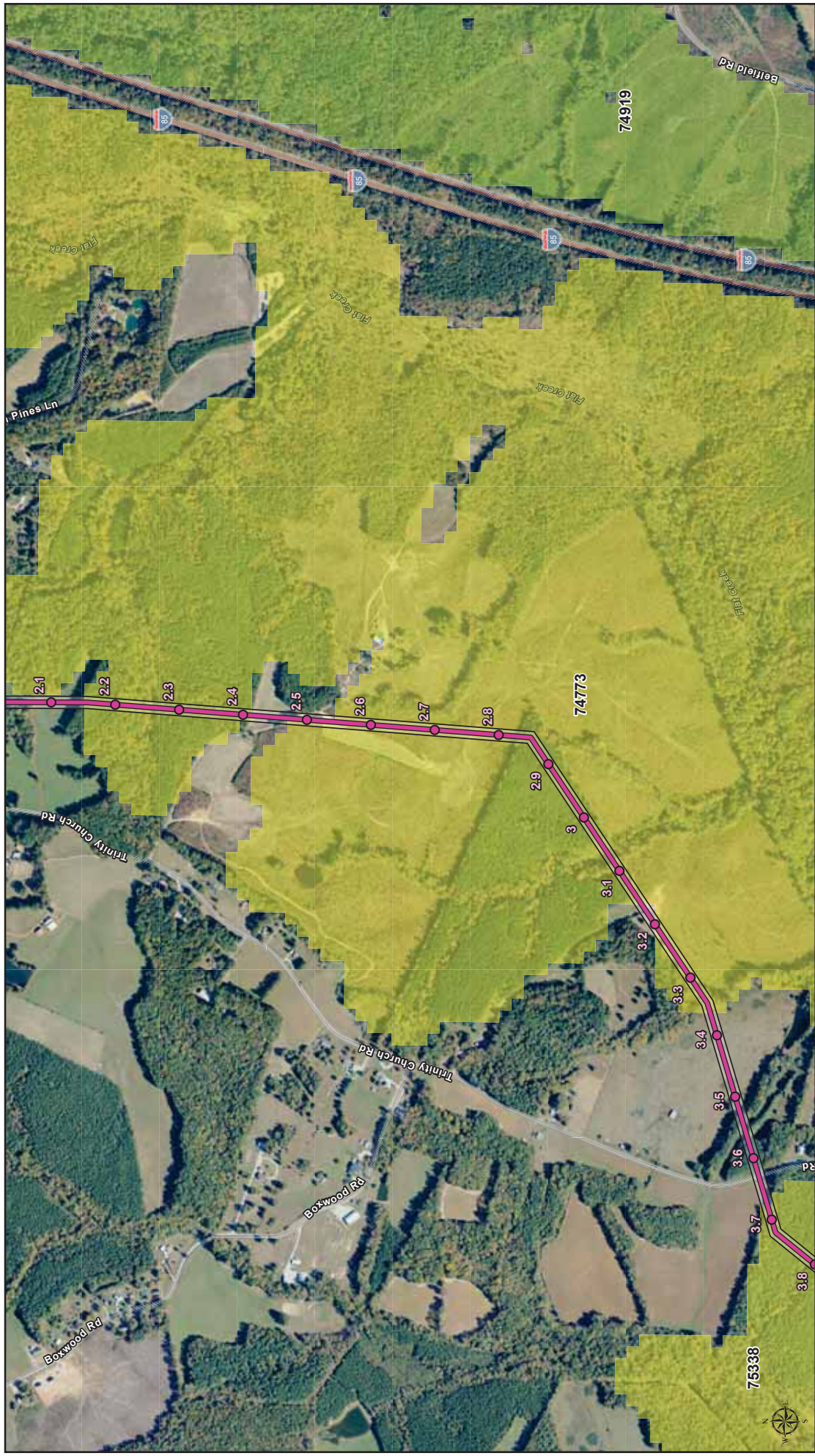


Figure 4.2-2
Ecological Cores
Cloud-Nebula-Raines 230 kV Transmission Line Project
 Dominion Energy Virginia
 Mecklenburg County, Virginia

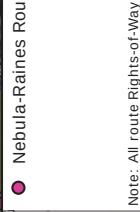
ERM

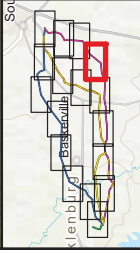
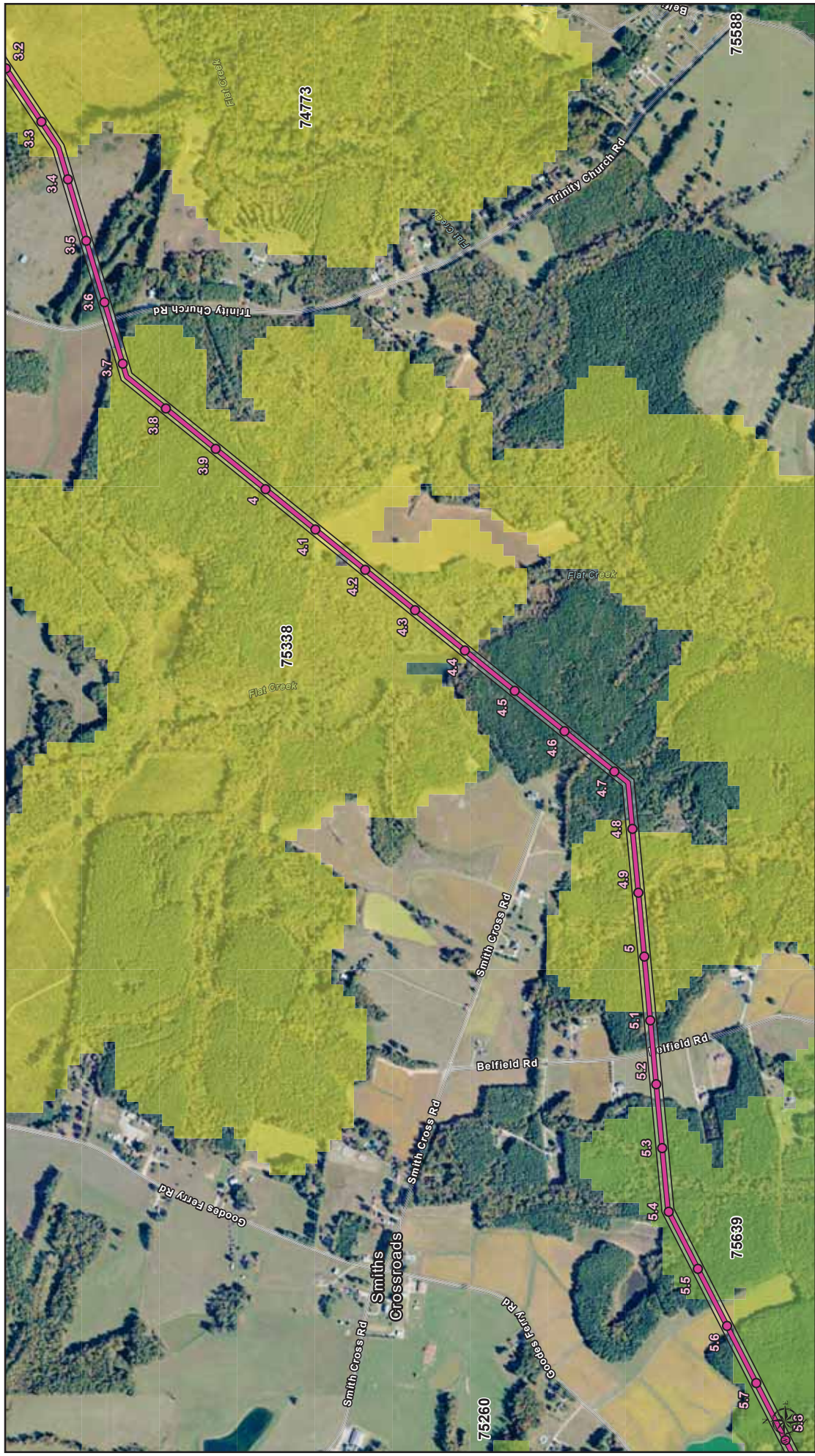
0 375 750
 Feet
 1:9,000

Eco Core Rank
 3: High
 4: Moderate

● Nebula-Raines Route 1 MP
 ▬ Nebula-Raines Route 1

Note: All route Rights-of-Way are 100-foot wide





● Nebula-Raines Route 1 MP

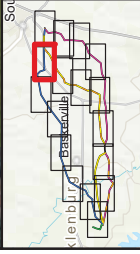
▬ Nebula-Raines Route 1

Eco Core Rank

- 3: High
- 4: Moderate
- 5: General



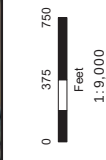
Note: All route Rights-of-Way are 100-foot wide



Note: All route Rights-of-Way are 100-foot wide

- Nebula-Raines Route 3 MP
- Nebula-Raines Route 4 MP
- Nebula-Raines Route 5 MP

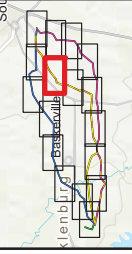
- Eco Core Rank
- 4: Moderate
- 5: General



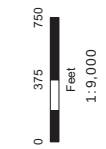
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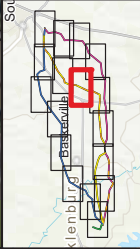
Figure 4.2-2
Ecological Cores
Cloud-Nebula-Raines 230 kV Transmission Line Project
 Dominion Energy Virginia
 Mecklenburg County, Virginia





- Note: All route Rights-of-Way are 100-foot wide
- Nebula-Raines Route 3 MP
 - Nebula-Raines Route 4 MP
- Eco Core Rank**
- 4: Moderate
 - 5: General

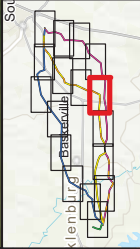
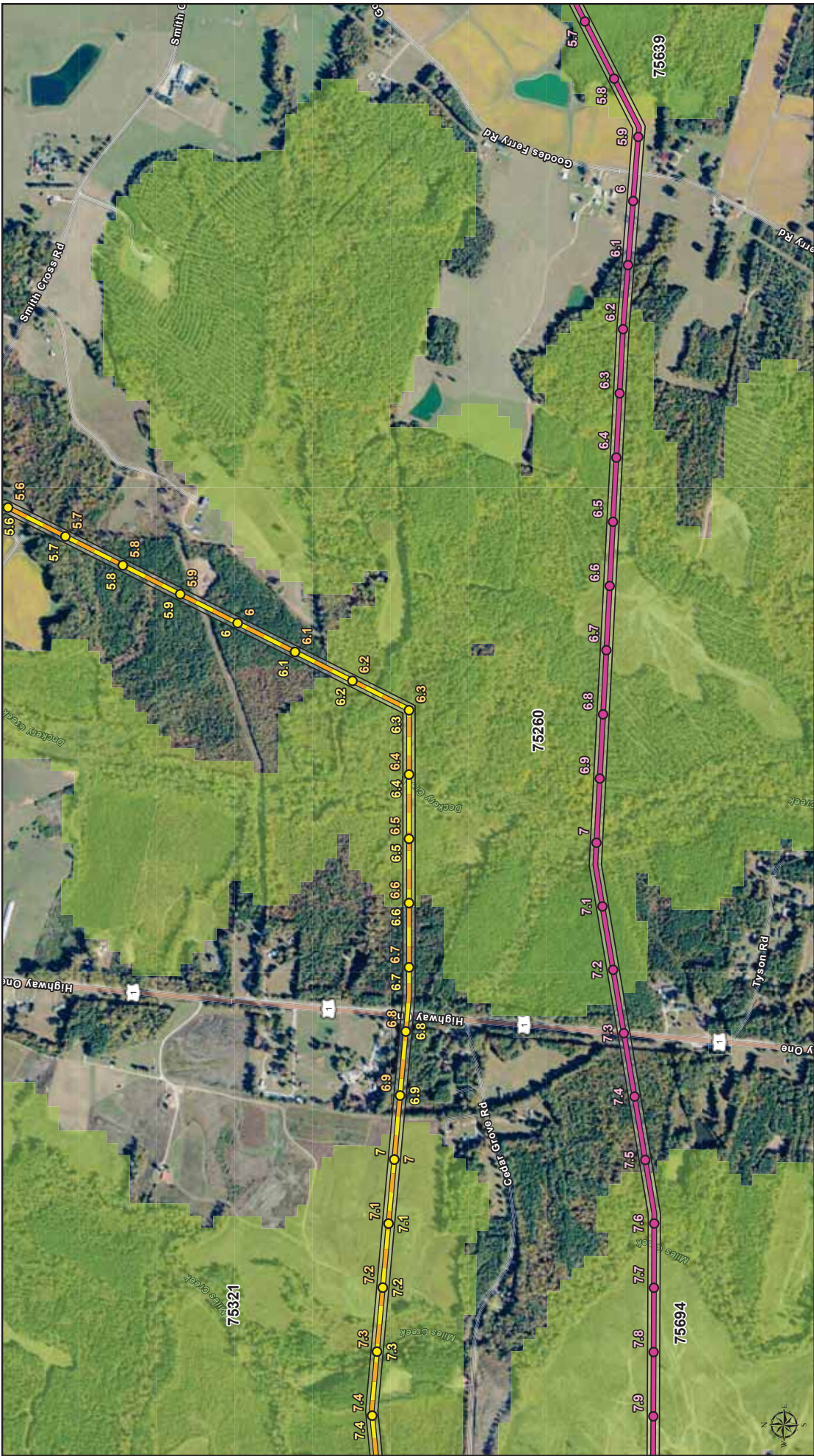




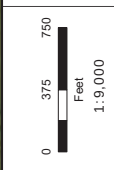
Note: All route Rights-of-Way are 100-foot wide

- Nebula-Raines Route 3 MP
- Nebula-Raines Route 4 MP
- Eco Core Rank
- 3: High
- 4: Moderate





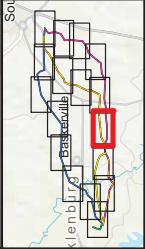
- Eco Core Rank**
- Nebula-Raines Route 1 MP
 - Nebula-Raines Route 3 MP
 - Nebula-Raines Route 4 MP
 - Nebula-Raines Route 1
 - Nebula-Raines Route 3
 - Nebula-Raines Route 4



**Figure 4.2-2
Ecological Cores**
Cloud-Nebula-Raines 230 kV Transmission Line Project
Dominion Energy Virginia
Mecklenburg County, Virginia



Note: All route Rights-of-Way are 100-foot wide



- Eco Core Rank**
- Nebula-Raines Route 1 MP
 - Nebula-Raines Route 3 MP
 - Nebula-Raines Route 4 MP
- Eco Core Rank**
- 4: Moderate
 - 5: General

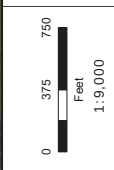
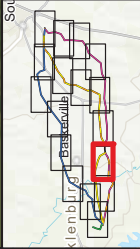
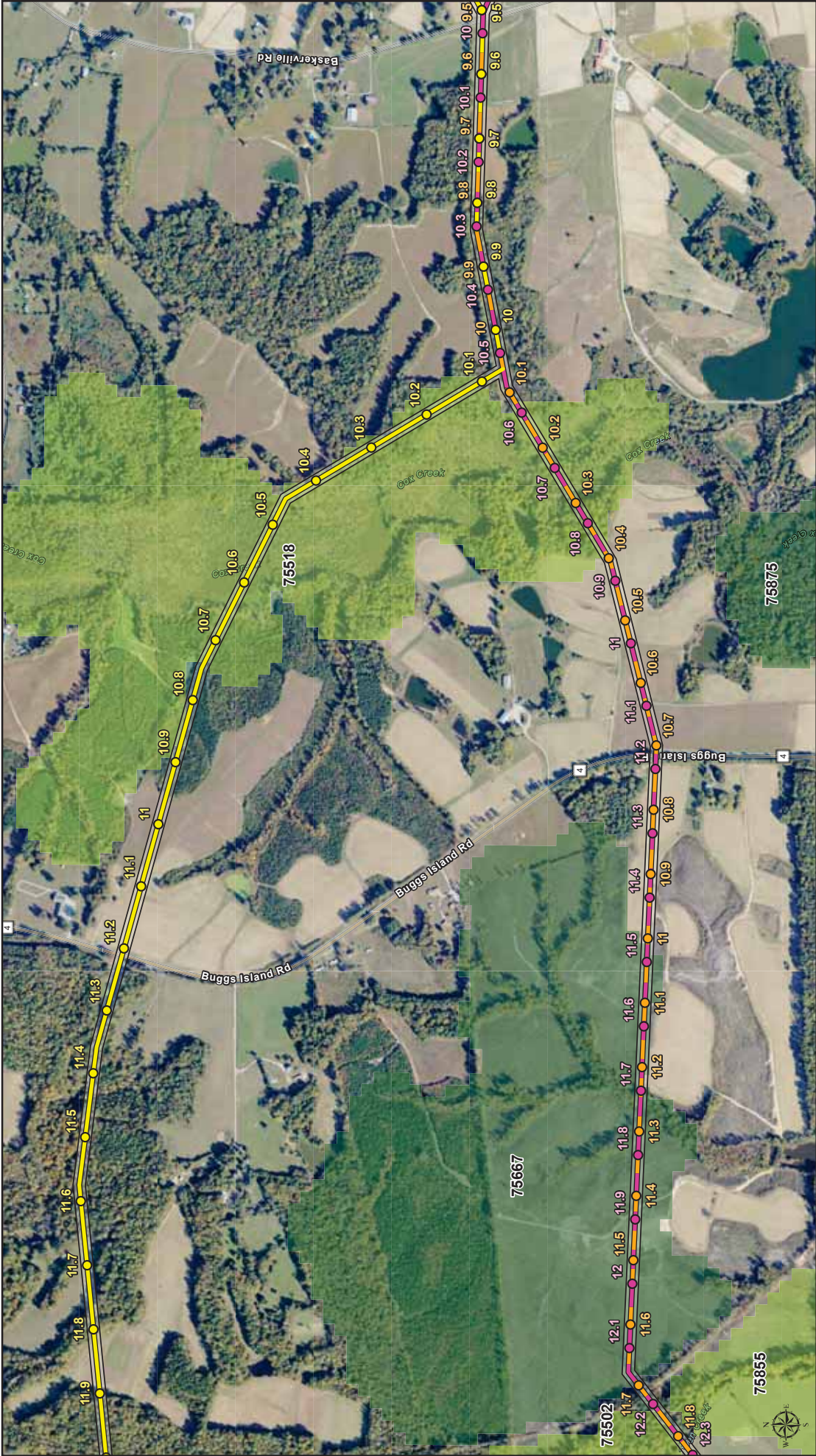


Figure 4.2-2
Ecological Cores
Cloud-Nebula-Raines 230 kV Transmission Line Project
 Dominion Energy Virginia
 Mecklenburg County, Virginia



Note: All route Rights-of-Way are 100-foot wide



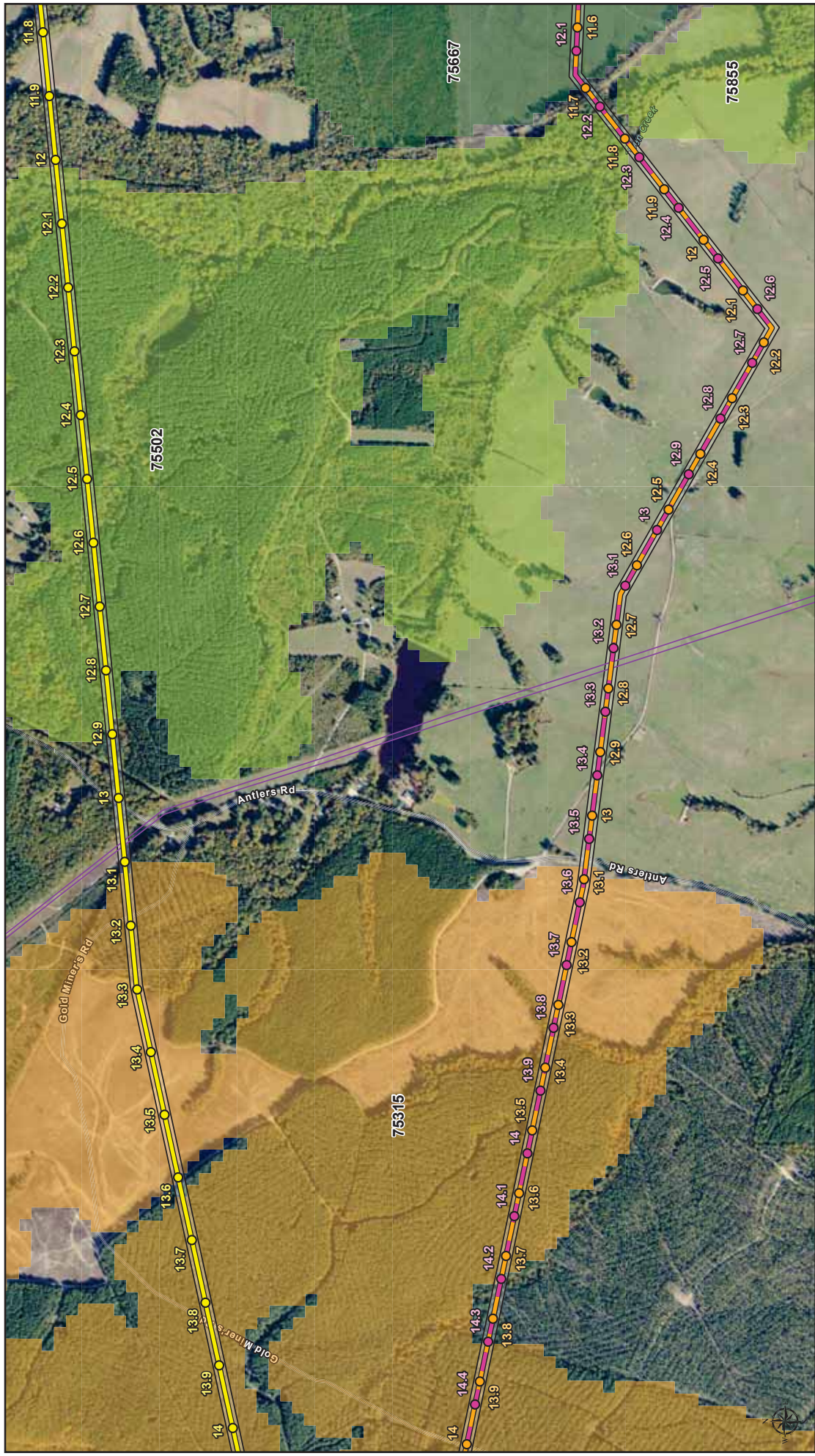
- Nebula-Raines Route 1 MP
- Nebula-Raines Route 3 MP
- Nebula-Raines Route 4 MP

Eco Core Rank

- 4: Moderate
- 5: General



Note: All route Rights-of-Way are 100-foot wide



Legend

- Existing Dominion Transmission Lines
- Nebula-Raines Route 1 MP
- Nebula-Raines Route 3 MP
- Nebula-Raines Route 4 MP

Eco Core Rank

- 1: Very High
- 2: High
- 3: Moderate
- 4: General
- 5: General

Scale

0 375 750 Feet

1:9,000

Note: All route Rights-of-Way are 100-foot wide

Soil

75315 75502 75667 75855

Antlers Rd

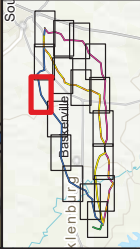
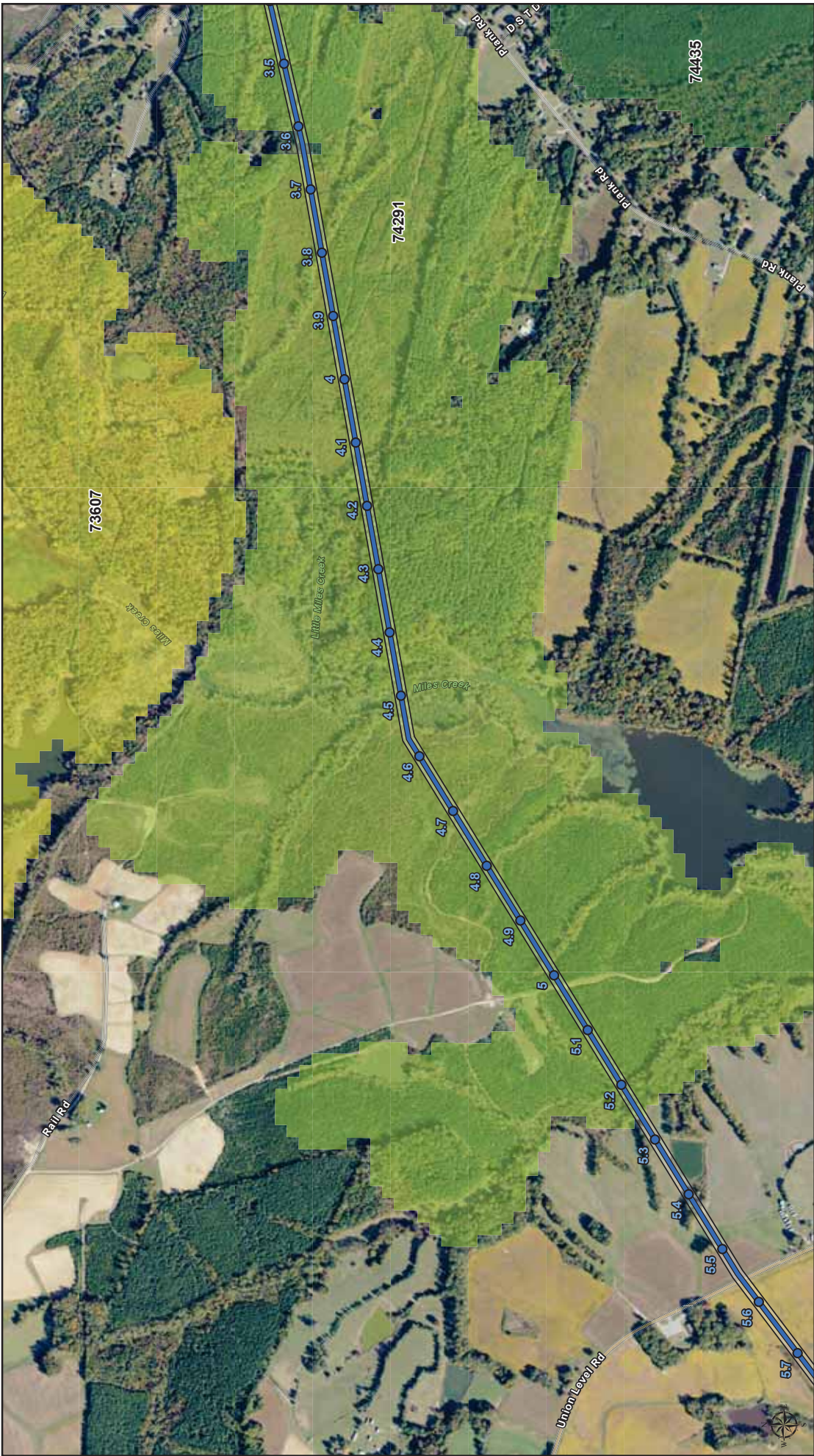
Gold Miners Rd

Mecklenburg County, Virginia

Cloud-Nebula-Raines 230 kV Transmission Line Project

Dominion Energy

ERM

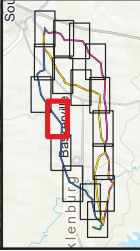


Note: All route Rights-of-Way are 100-foot wide

Eco Core Rank

- 3: High
- 4: Moderate
- 5: General

Figure 4.2-2
Ecological Cores
Cloud-Nebula-Raines 230 kV Transmission Line Project
 Dominion Energy Virginia
 Mecklenburg County, Virginia



Note: All route Rights-of-Way are 100-foot wide

Eco Core Rank

- 4: Moderate
- 5: General

Legend

- Nebula-Raines Route 5 MP
- ▬ Nebula-Raines Route 5



Figure 4.2-2
Ecological Cores

Cloud-Nebula-Raines 230 kV Transmission Line Project
Dominion Energy Virginia
Mecklenburg County, Virginia



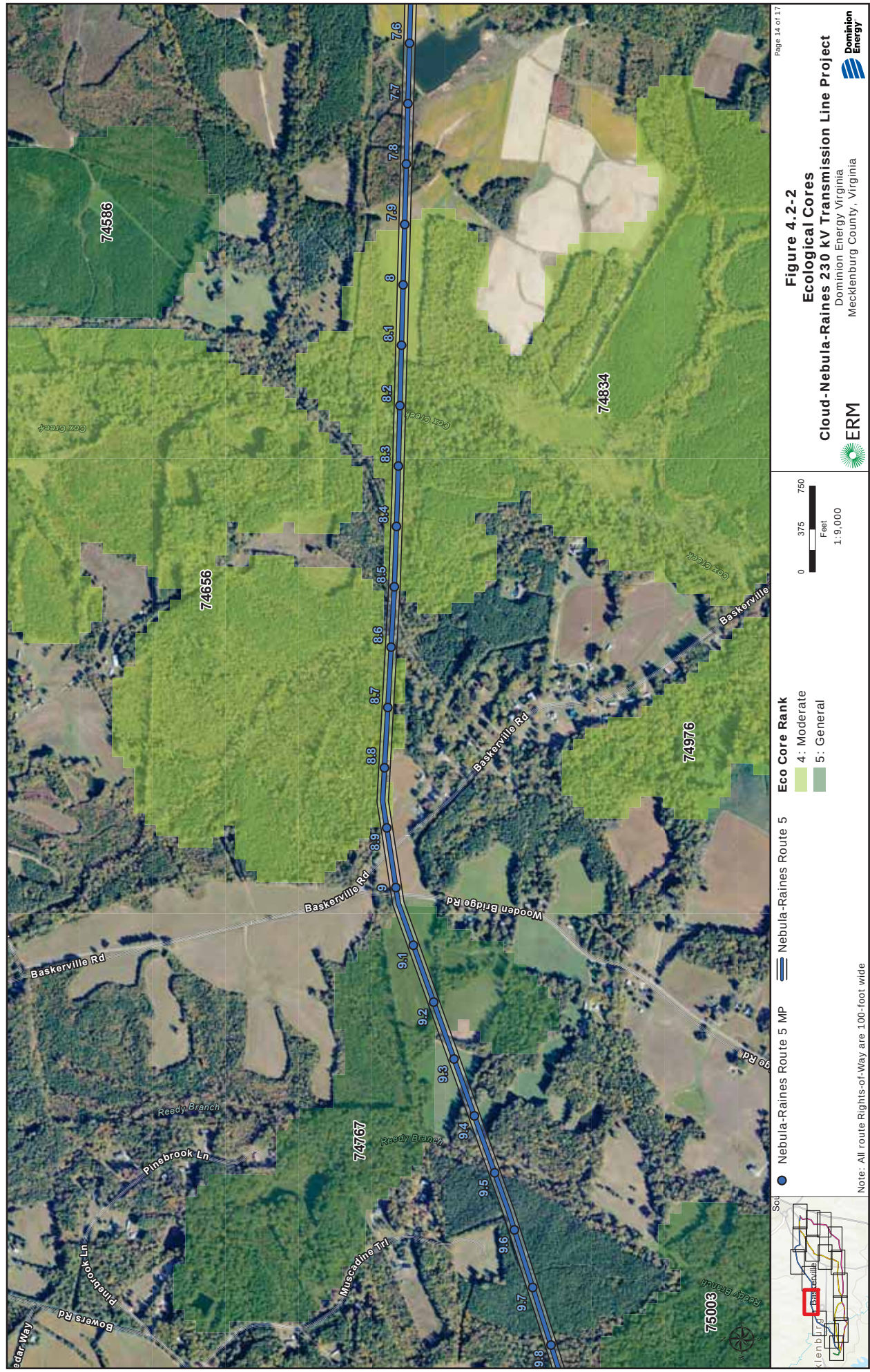




Figure 4.2-2
Ecological Cores
Cloud-Nebula-Raines 230 kV Transmission Line Project
Dominion Energy Virginia
Mecklenburg County, Virginia

ERM

Eco Core Rank

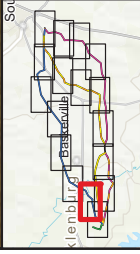
4: Moderate
5: General

Legend

● Nebula-Raines Route 5 MP
▬ Nebula-Raines Route 5

0 375 750
Feet
1:9,000

Note: All route Rights-of-Way are 100-foot wide



Note: All route Rights-of-Way are 100-foot wide

- Existing Dominion Transmission Lines
- Nebula-Raines Route 4 MP
- Nebula-Raines Route 5 MP
- Nebula-Raines Route 4
- Nebula-Raines Route 5

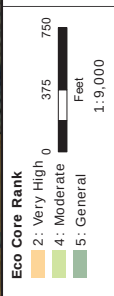
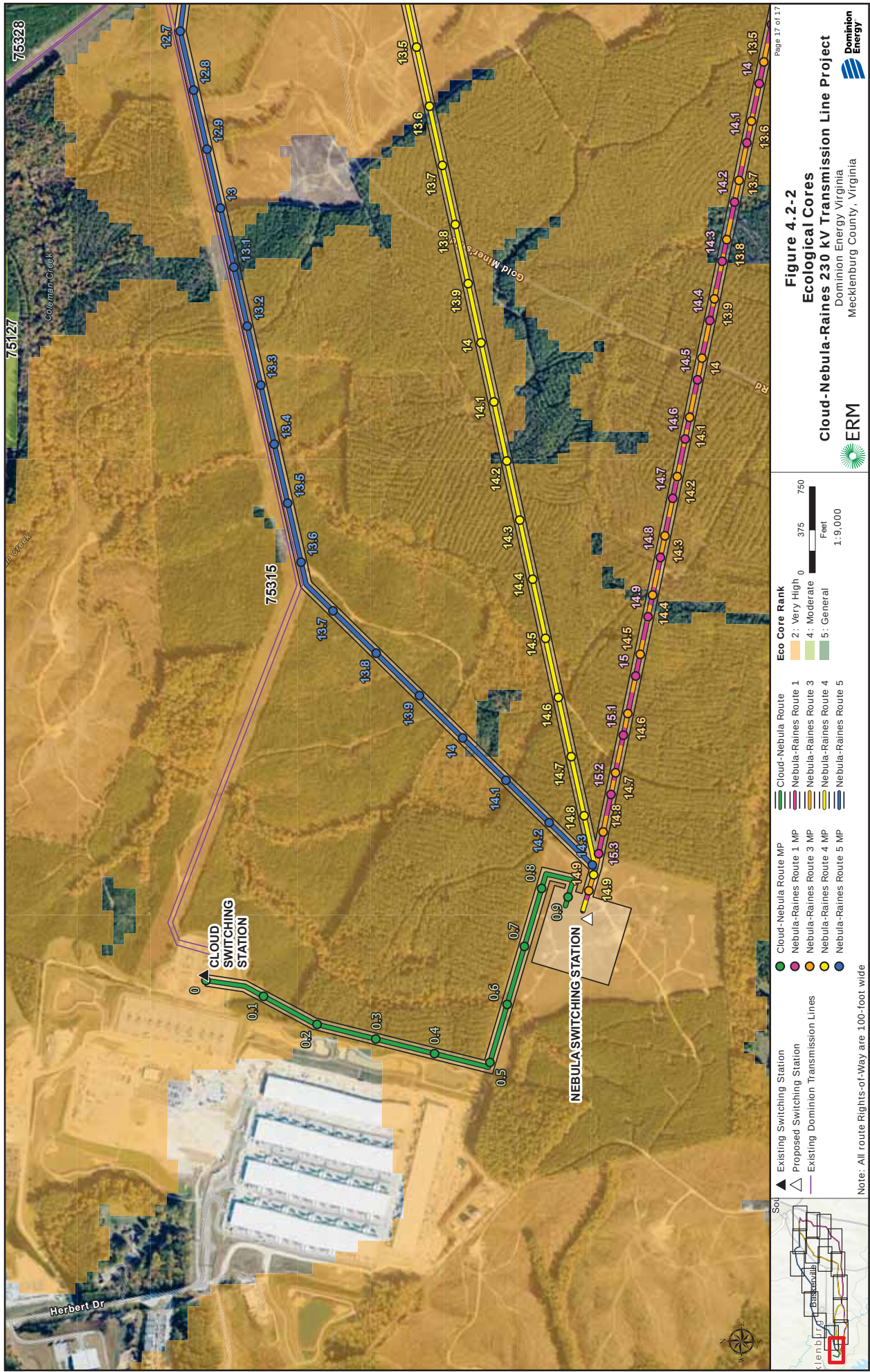
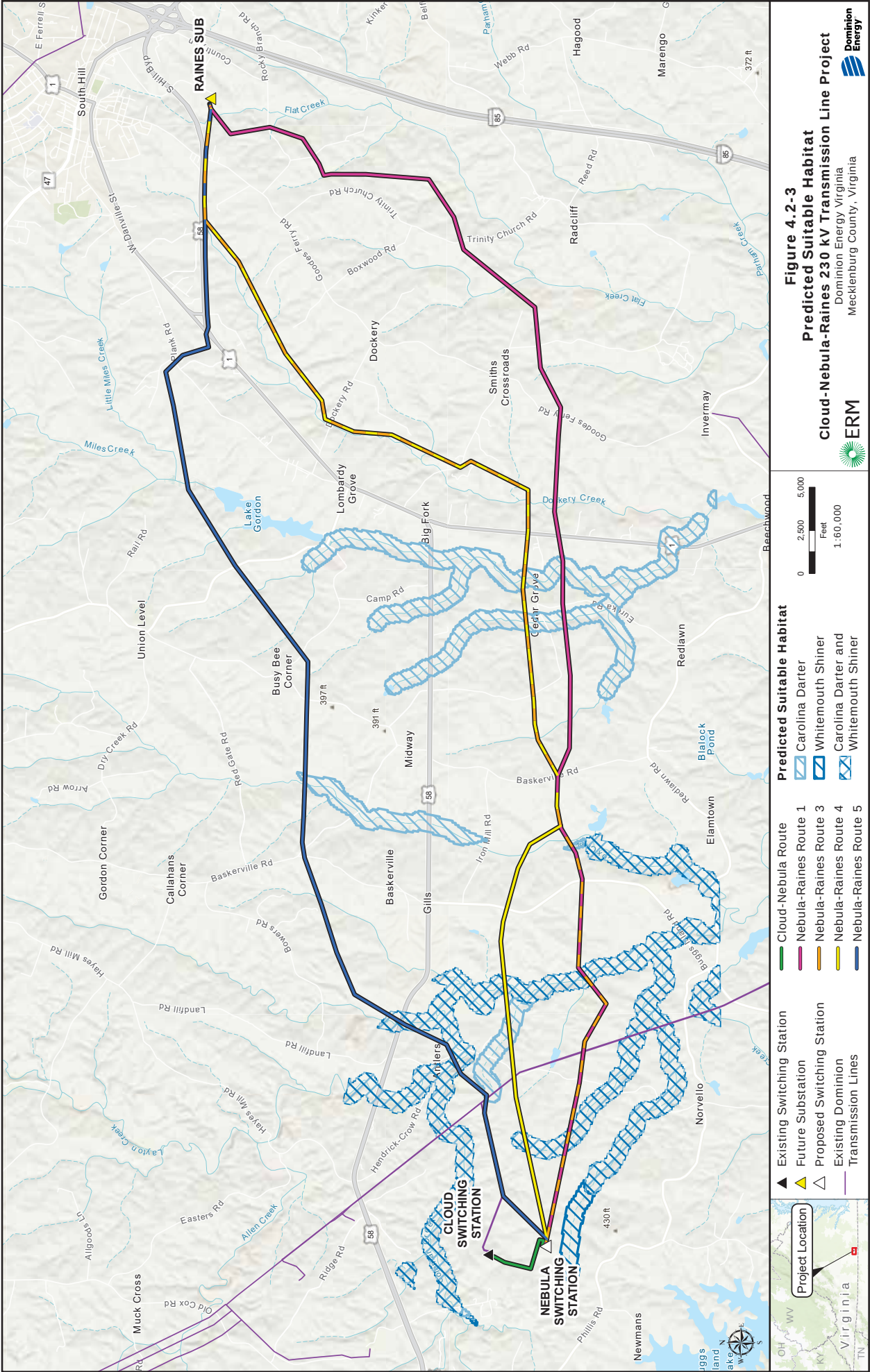
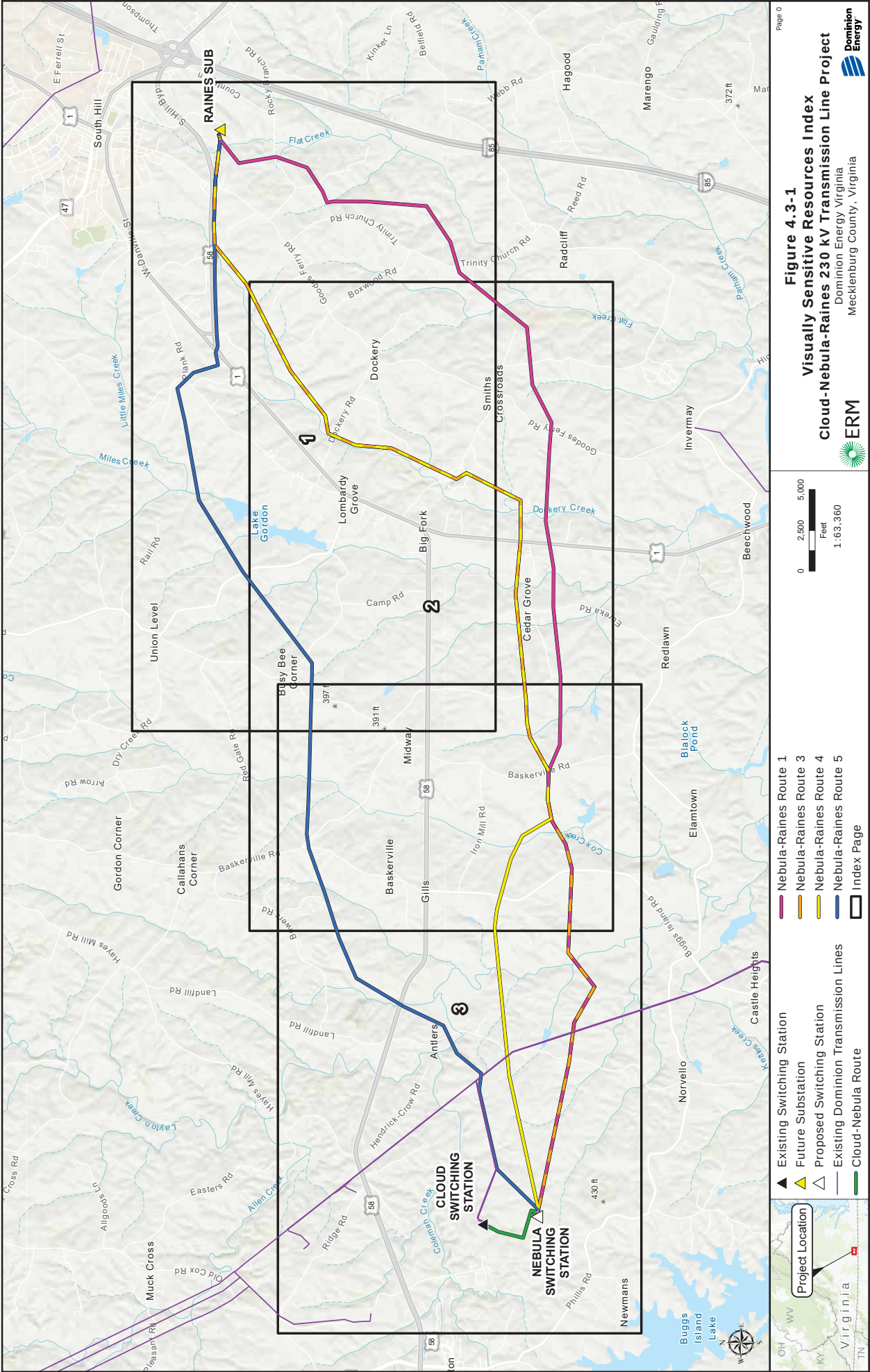


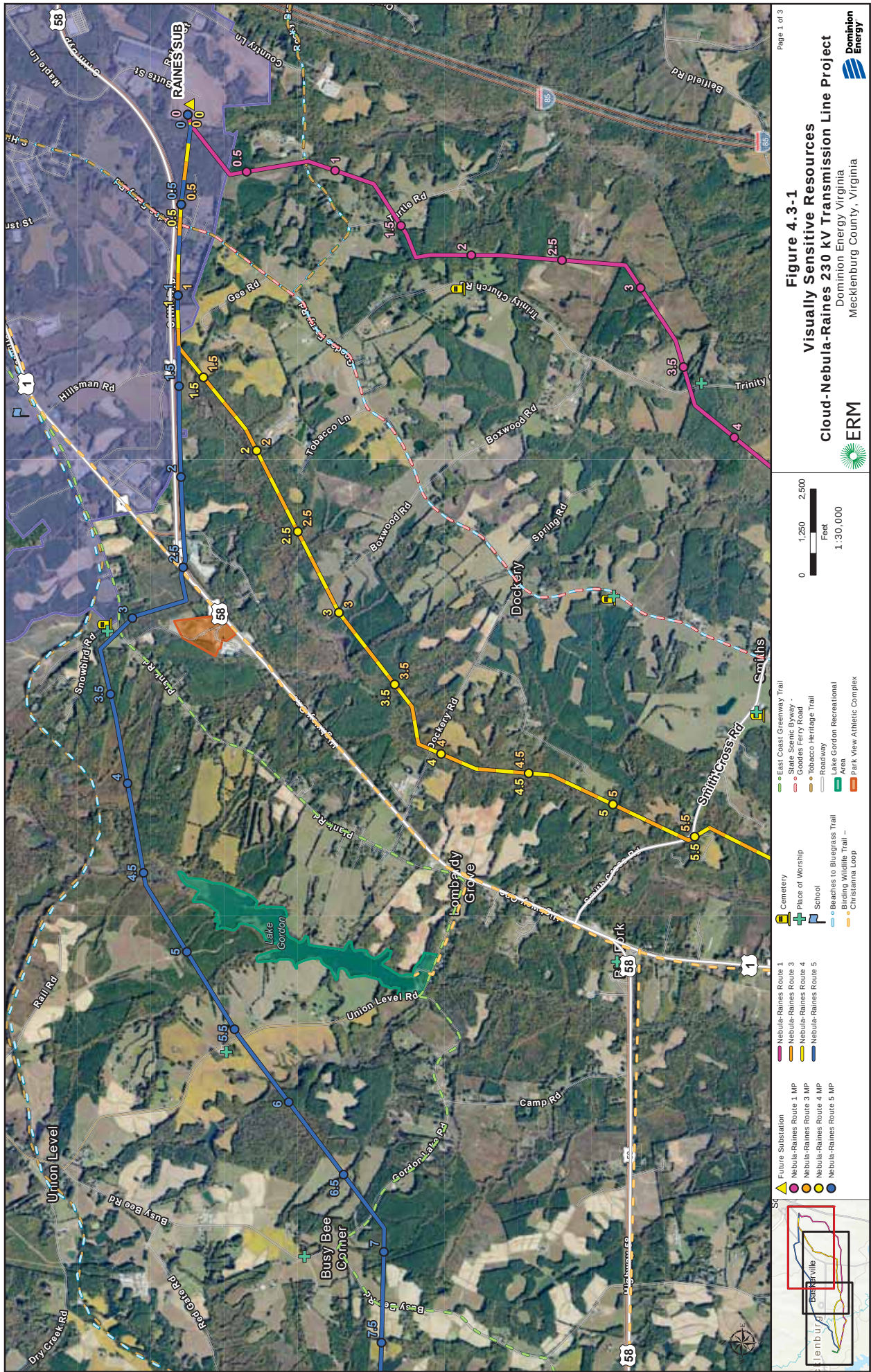
Figure 4.2-2
Ecological Cores
Cloud-Nebula-Raines 230 kV Transmission Line Project
 Dominion Energy Virginia
 Mecklenburg County, Virginia













Page 2 of 3

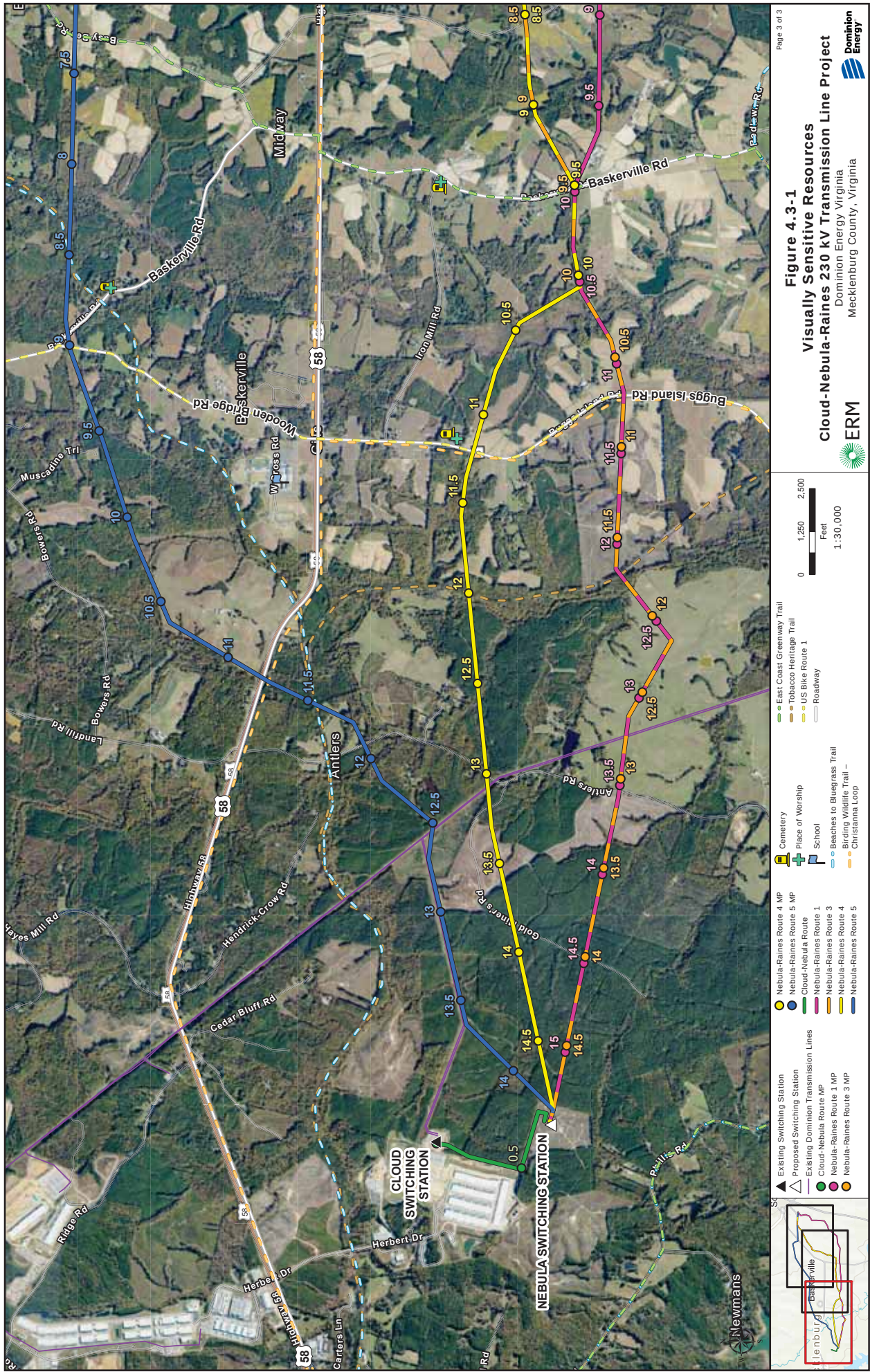
Figure 4.3-1
Visually Sensitive Resources
Cloud-Nebula-Raines 230 kV Transmission Line Project
Dominion Energy Virginia
Mecklenburg County, Virginia

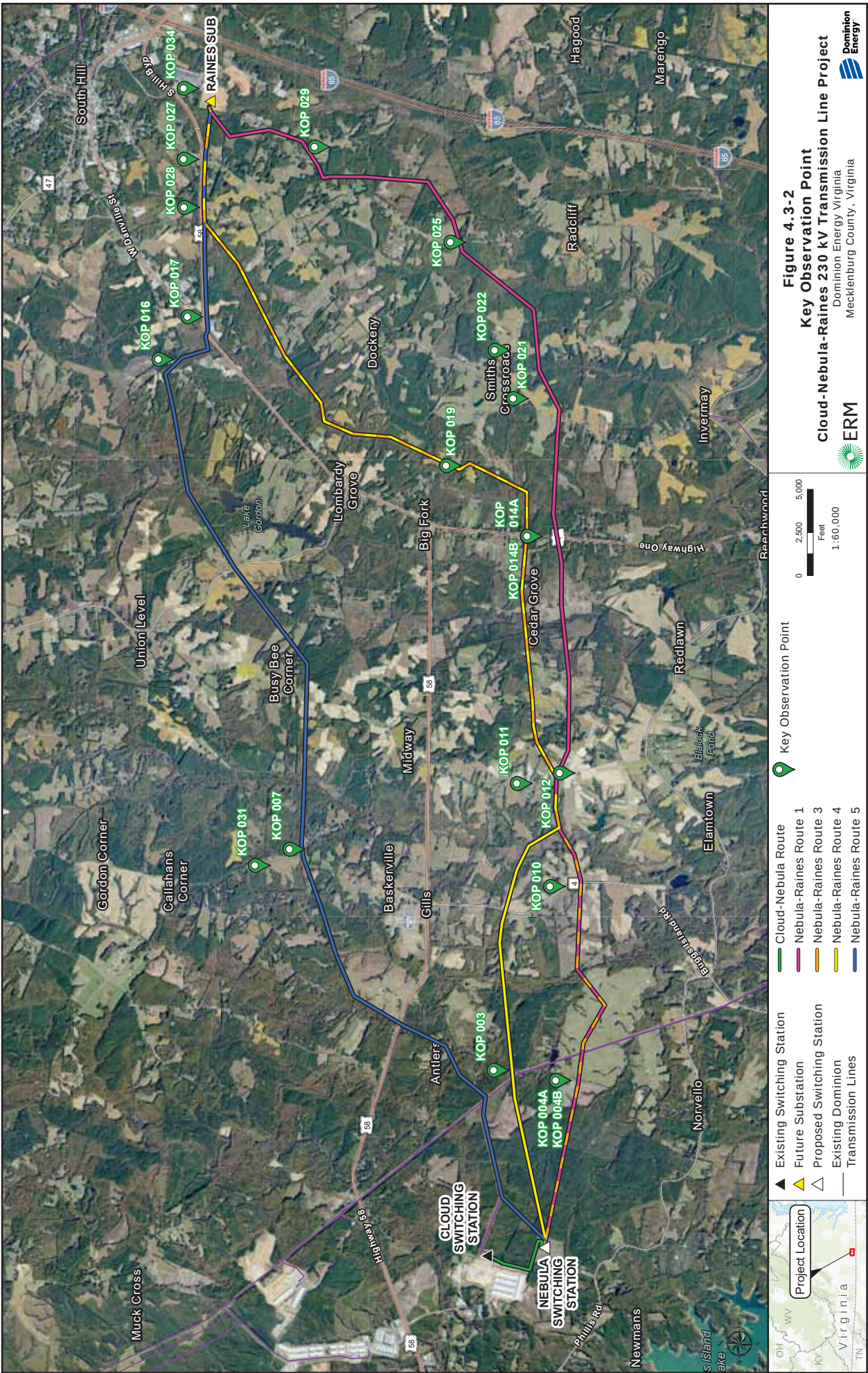
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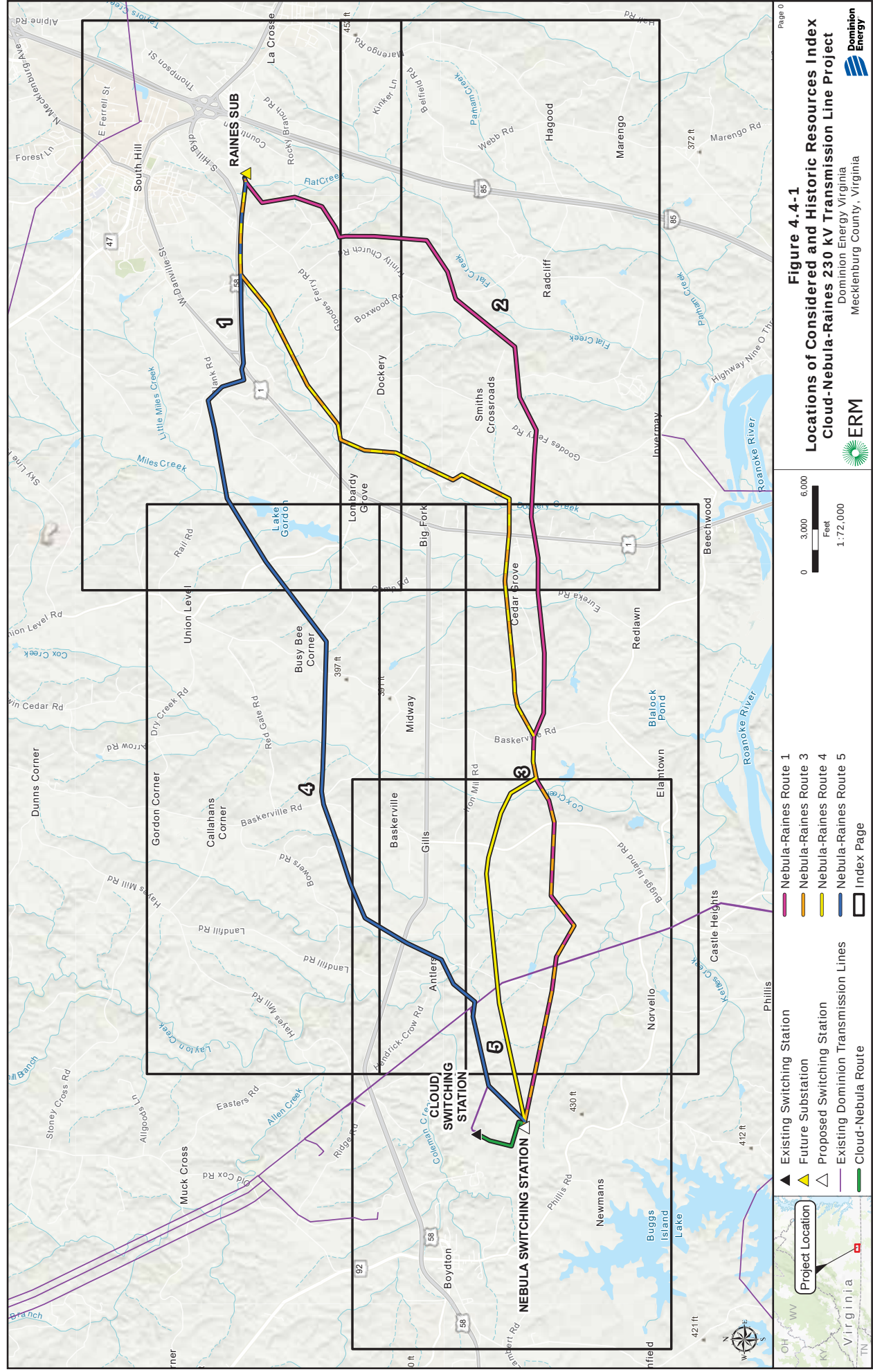
0 1,250 2,500
Feet
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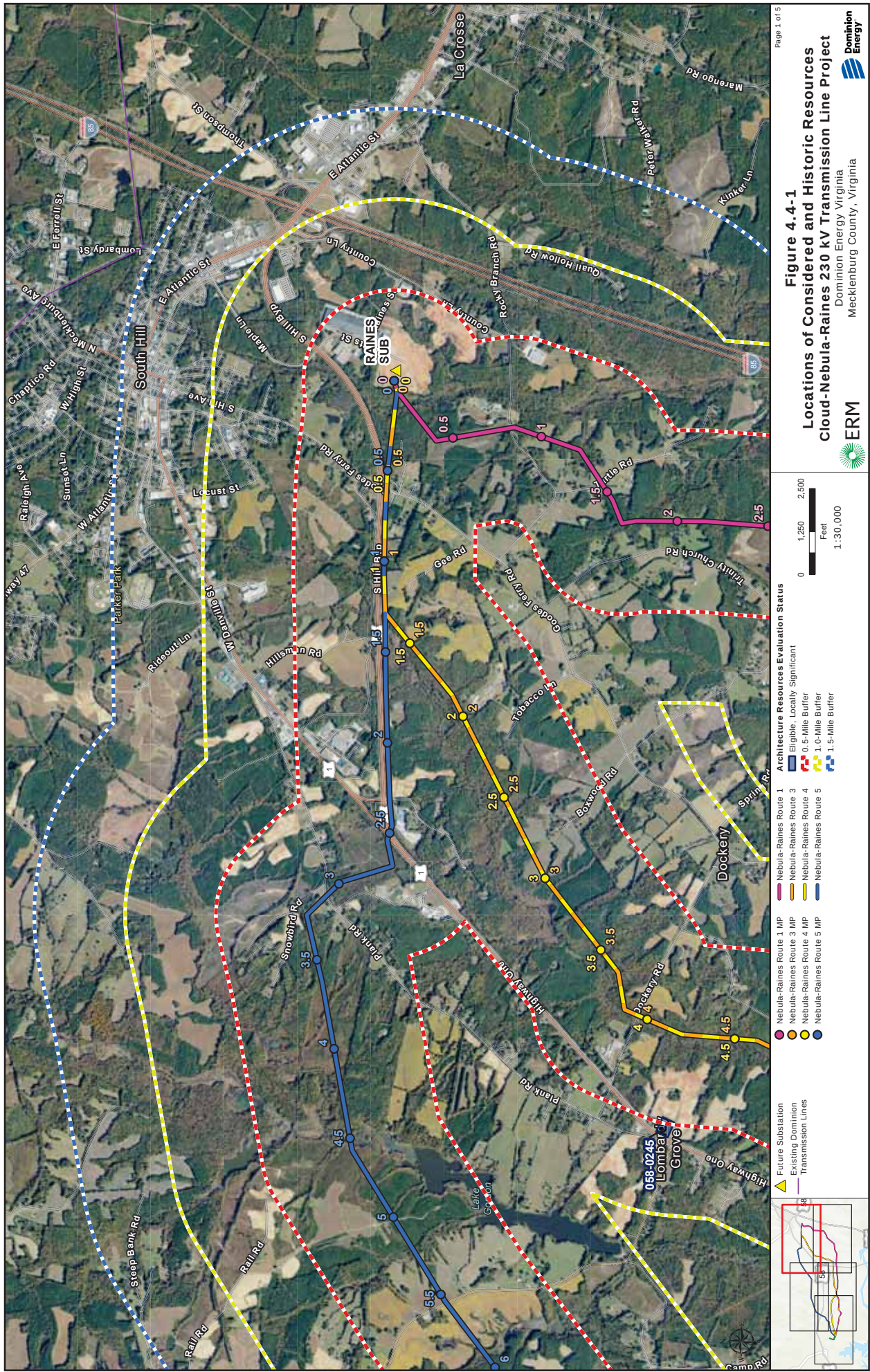
Legend

- Nebula-Raines Route 1 MP
- Nebula-Raines Route 3 MP
- Nebula-Raines Route 4 MP
- Nebula-Raines Route 5 MP
- Cemetery
- Place of Worship
- School
- Beaches to Bluegrass Trail
- Birding Wildlife Trail - Christanna Loop
- East Coast Greenway Trail
- State Scenic Byway - Goodies Ferry Road
- Tobacco Heritage Trail
- US Bike Route 1
- Roadway
- Lake Gordon Recreational Area









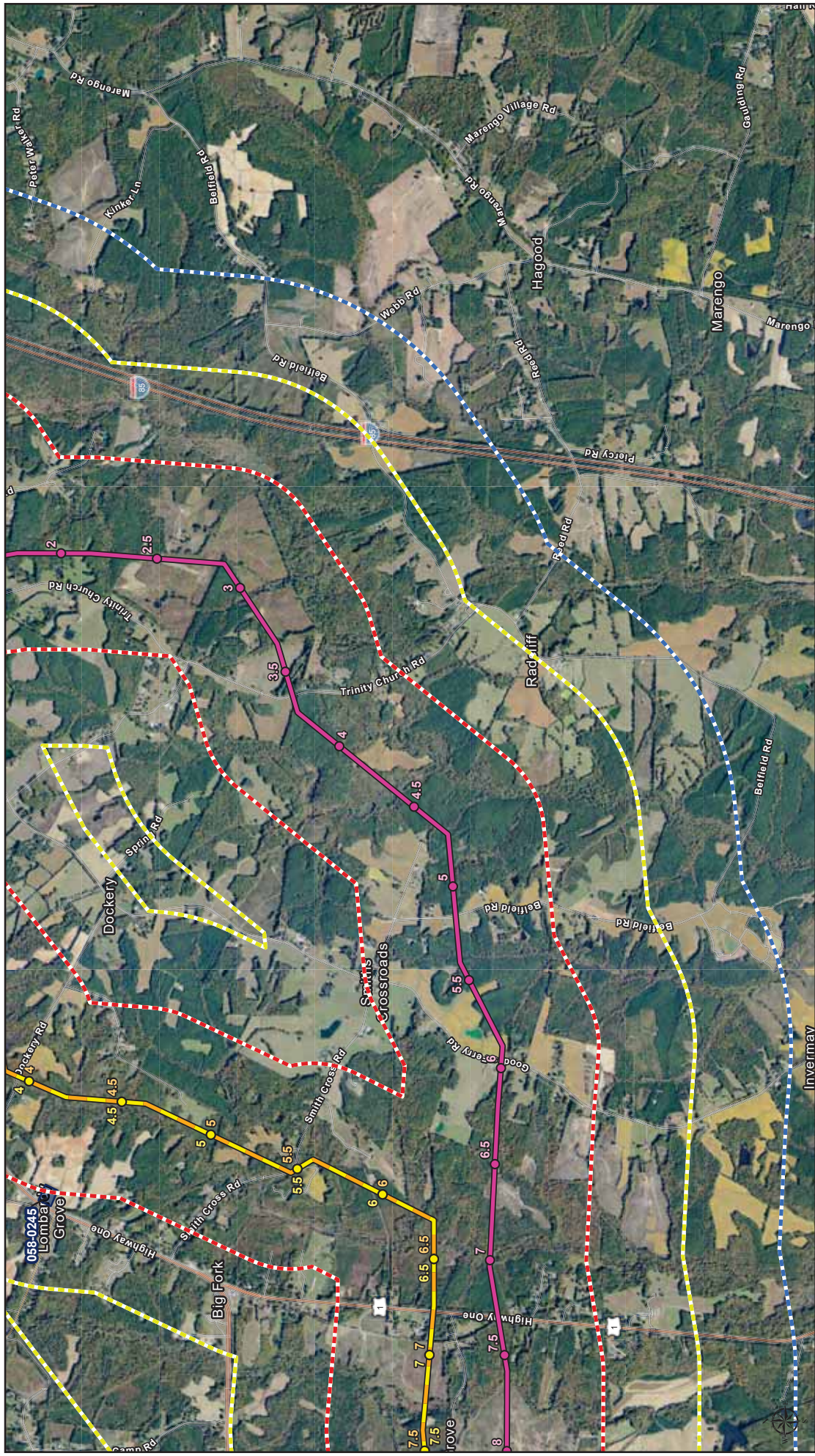
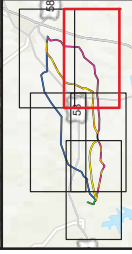
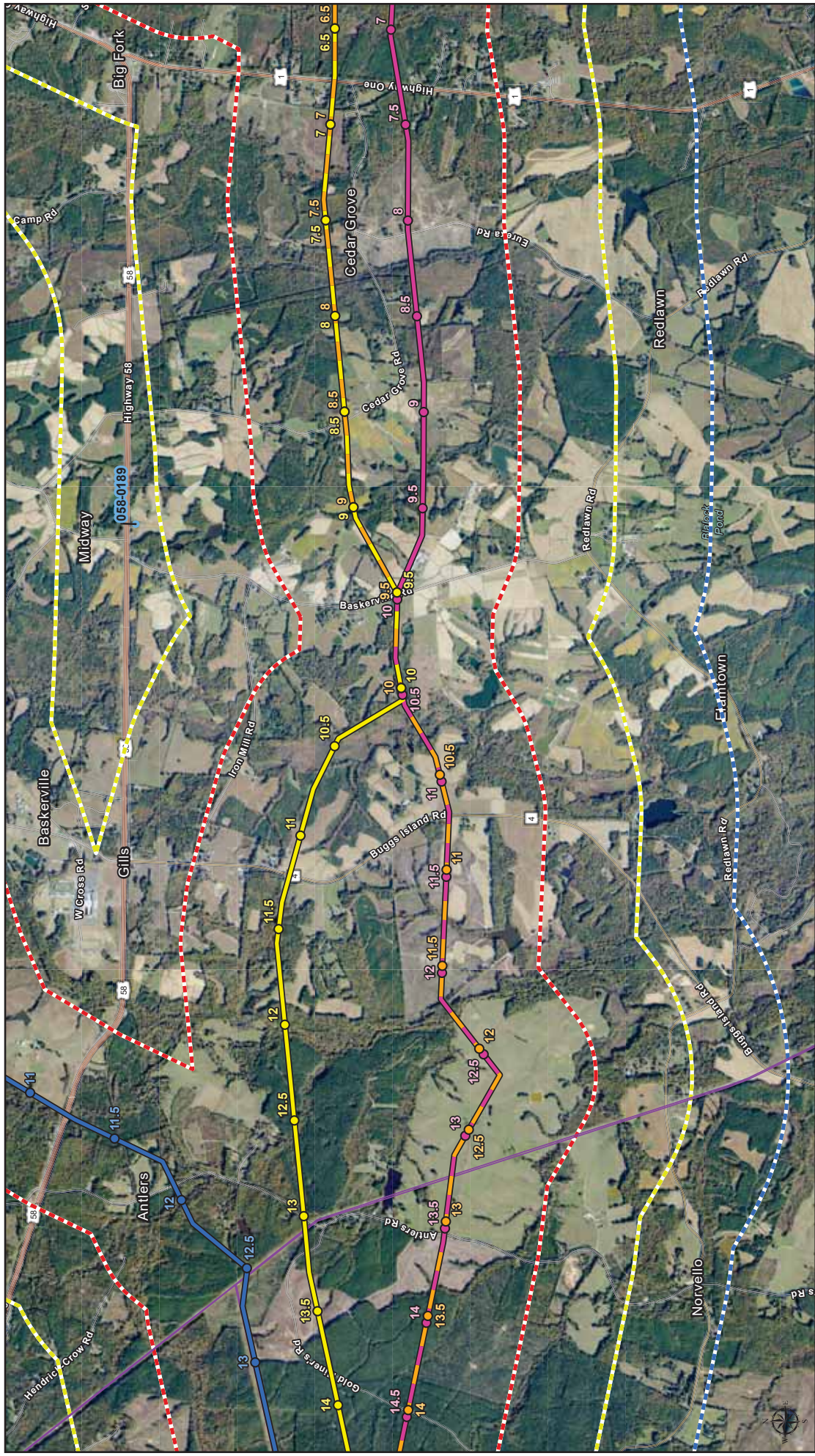


Figure 4.4-1

Locations of Considered and Historic Resources
Cloud-Nebula-Raines 230 kV Transmission Line Project

Dominion Energy Virginia
 Mecklenburg County, Virginia





Page 3 of 5

Figure 4.4-1
Locations of Considered and Historic Resources
Cloud-Nebula-Raines 230 kV Transmission Line Project

Dominion Energy
Mecklenburg County, Virginia

ERM

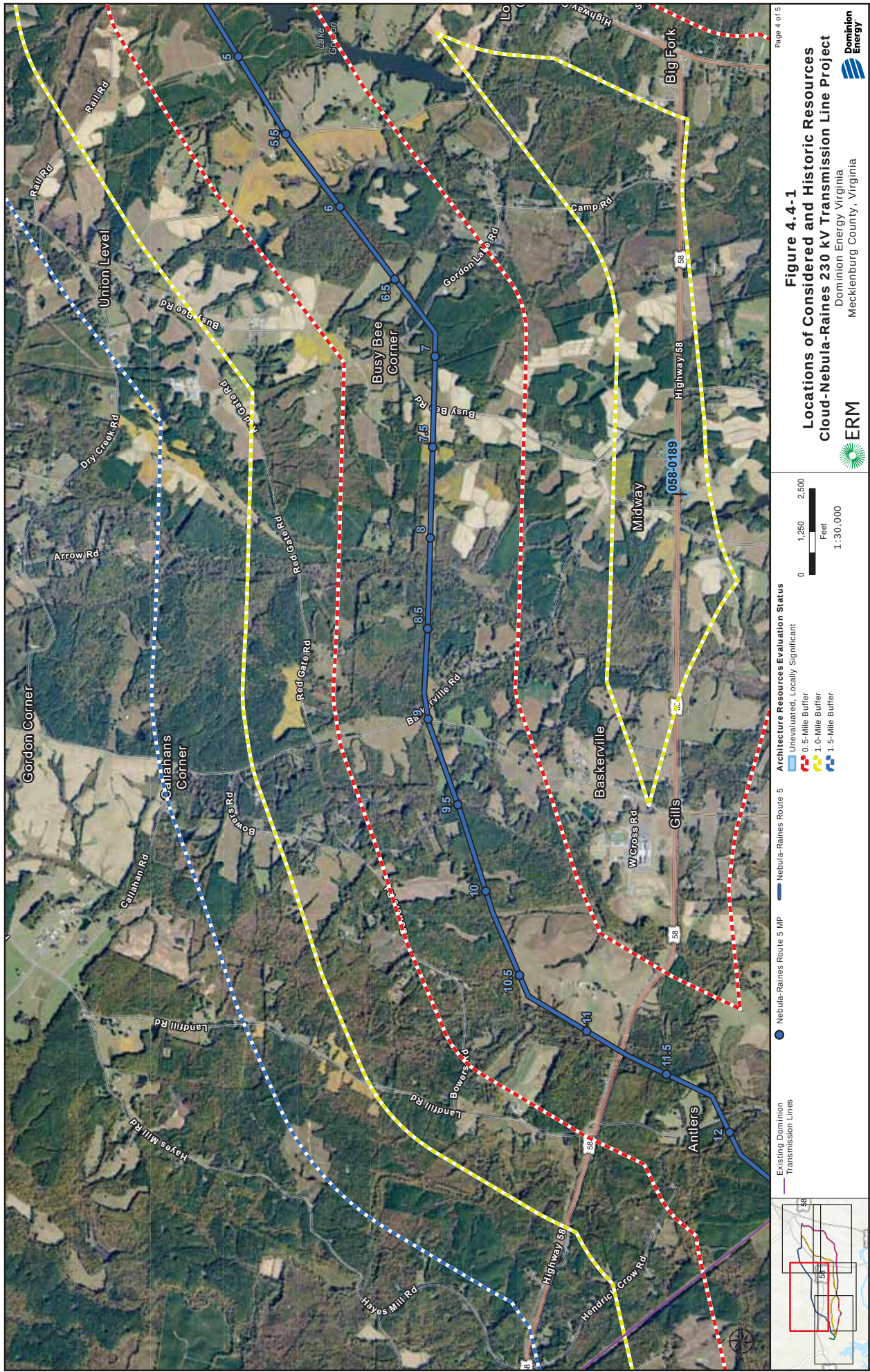
Architecture Resources Evaluation Status

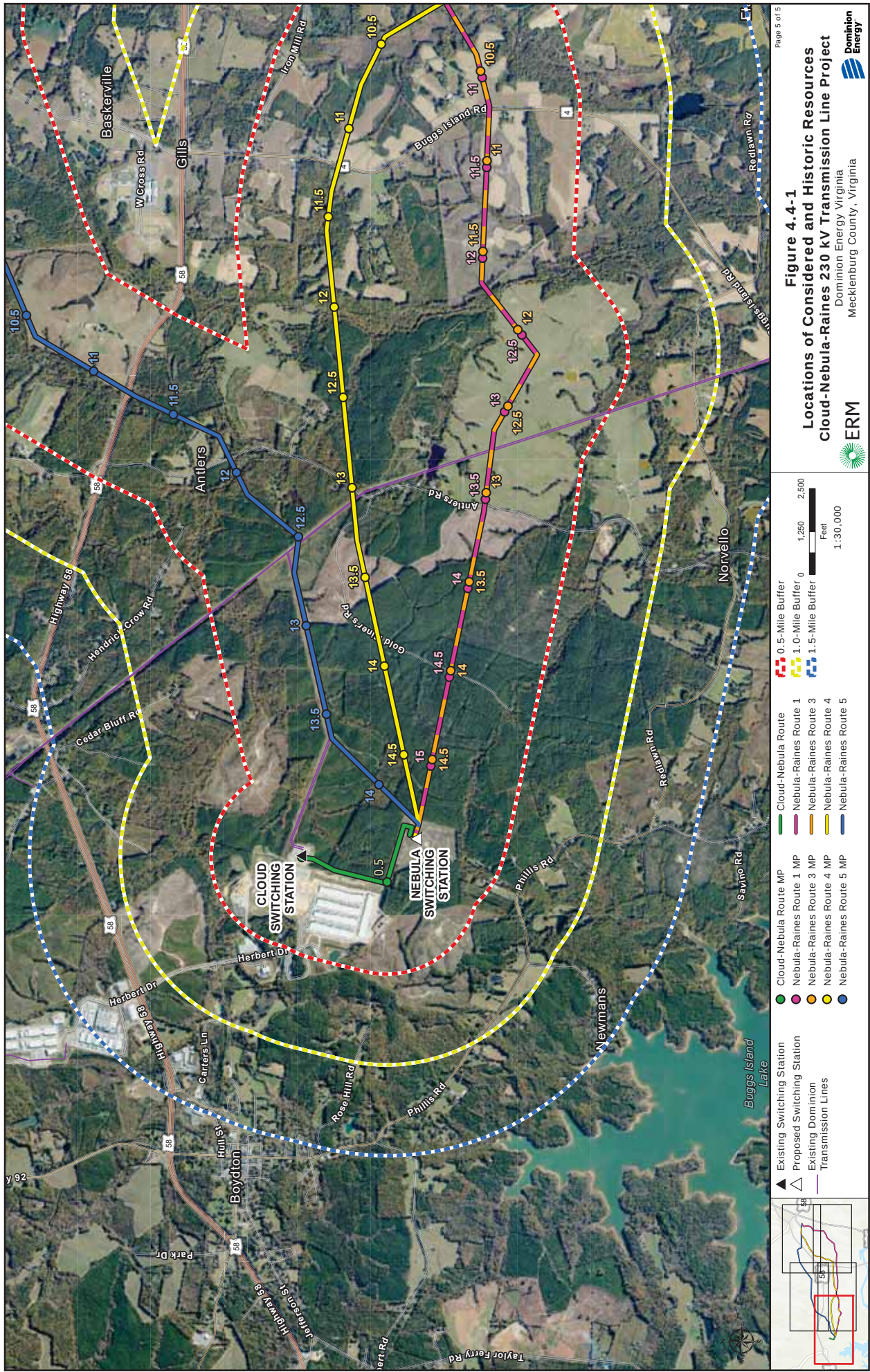
- Unevaluated, Locally Significant
- 0.5-Mile Buffer
- 1.0-Mile Buffer
- 1.5-Mile Buffer

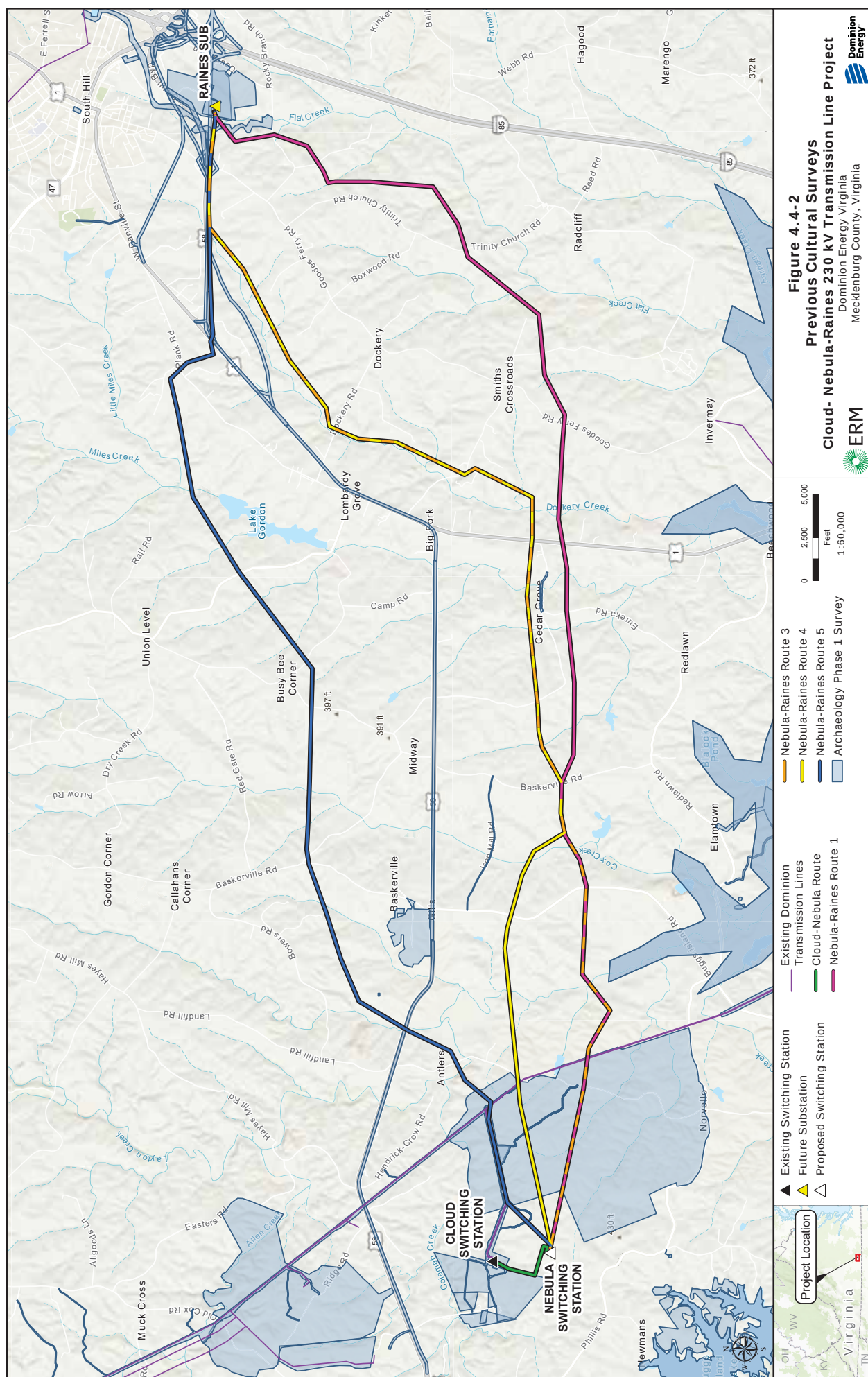
Existing Dominion Transmission Lines

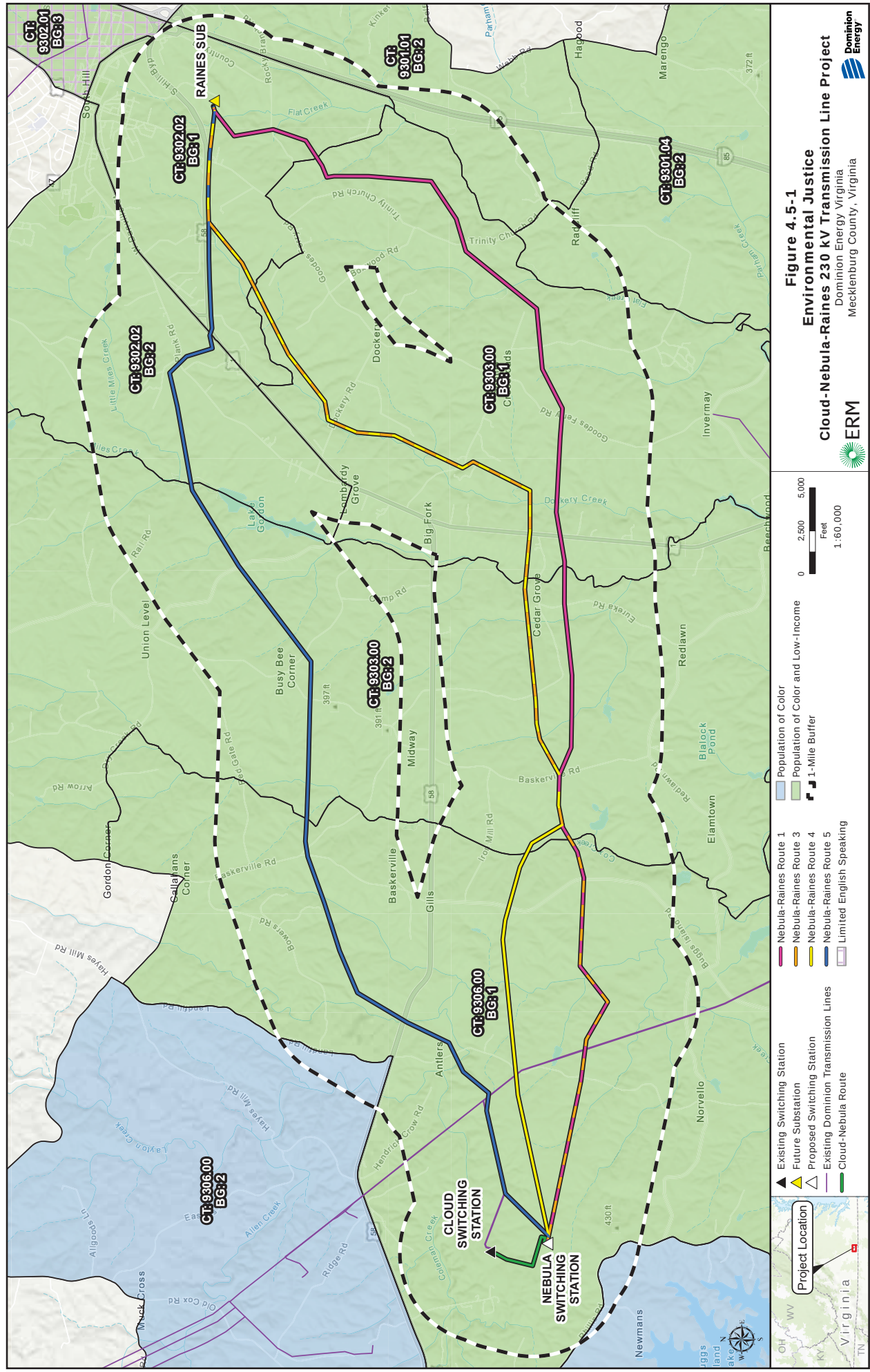
- Nebula-Raines Route 1 MP
- Nebula-Raines Route 3 MP
- Nebula-Raines Route 4 MP
- Nebula-Raines Route 5 MP

0 1,250 2,500 Feet
1:30,000





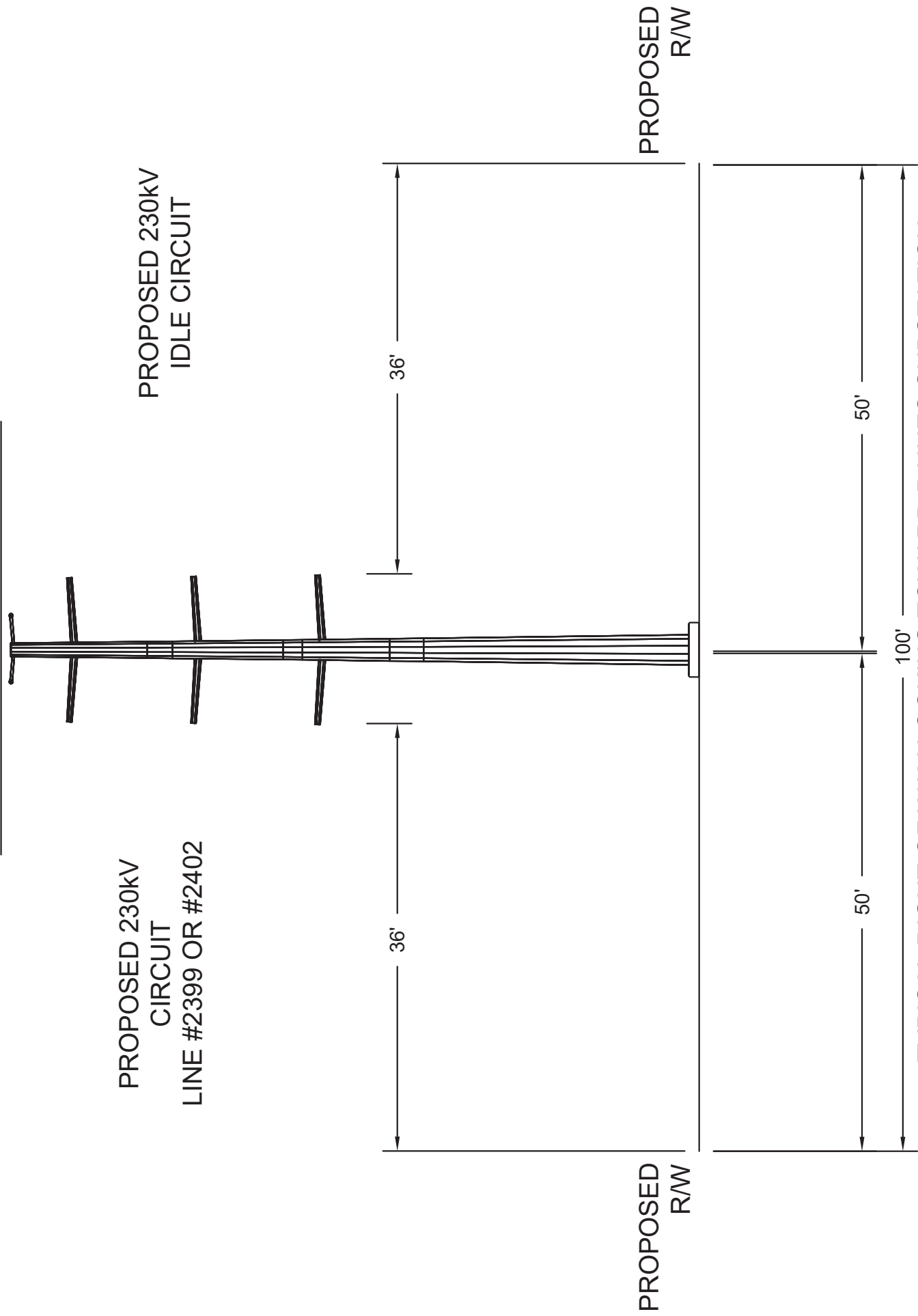






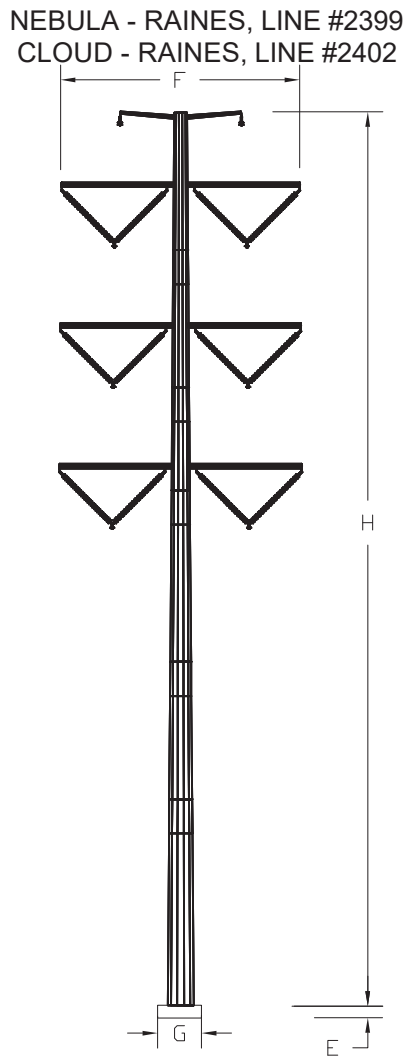
APPENDIX B STRUCTURAL DRAWINGS

NEBULA - RAINES, LINE #2399
CLOUD - NEBULA, LINE #2402
PROPOSED CONFIGURATION



TYPICAL RIGHT OF WAY LOOKING TOWARD RAINES SUBSTATION

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



230kV DC ENGINEERED MONOPOLE SUSPENSION STRUCTURE

- | | |
|-----------------------------------|--|
| A. MAPPING OF THE ROUTE: | SEE ATTACHMENT II.B.3.iv |
| B. RATIONALE FOR STRUCTURE TYPE: | TO MINIMIZE RIGHT OF WAY |
| C. LENGTH OF R/W (STRUCTURE QTY): | 15.2 MILES (81 STRUCTURES) |
| D. STRUCTURE MATERIAL: | WEATHERING STEEL |
| RATIONALE FOR MATERIAL: | WEATHERING STEEL WAS SELECTED TO MATCH OTHER LINES IN THE AREA |
| E. FOUNDATION MATERIAL: | CONCRETE |
| AVERAGE FOUNDATION REVEAL: | SEE NOTE 2 |
| F. AVERAGE WIDTH AT CROSS ARM: | 33' |
| G. AVERAGE WIDTH AT BASE: | SEE NOTE 2 |
| H. MINIMUM STRUCTURE HEIGHT: | 110' |
| MAXIMUM STRUCTURE HEIGHT: | 150' |
| AVERAGE STRUCTURE HEIGHT: | 124' |
| I. AVERAGE SPAN LENGTH (RANGE): | 740' (739'-1255') (SEE NOTE 4) |
| J. MINIMUM CONDUCTOR-TO-GROUND: | 22.5' (AT MAXIMUM OPERATING TEMPERATURE) |

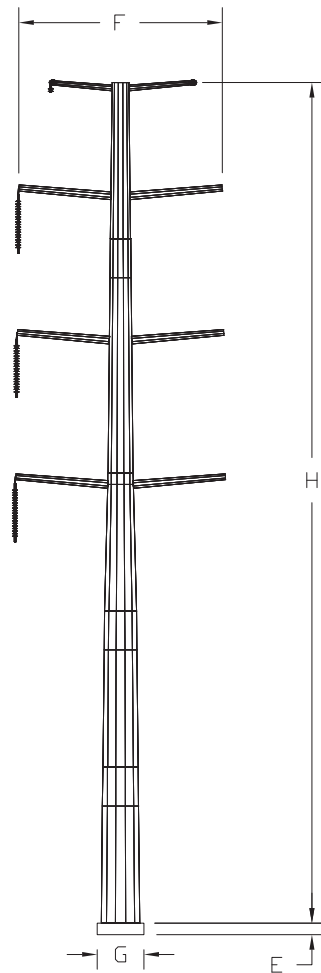
NOTES: 1. INFORMATION CONTAINED ON DRAWING IS PRELIMINARY IN NATURE AND SUBJECT TO CHANGE DURING FINAL DESIGN.

2. A MINIMUM FOUNDATION REVEAL SHALL BE 1.5 FEET. FOUNDATION DIAMETER SHALL BE BASED ON FINAL ENGINEERING.

3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE AND DO NOT INCLUDE FOUNDATION REVEAL.

4. THE SPAN ASSOCIATED WITH EACH STRUCTURE IS THE AHEAD SPAN.

NEBULA - RAINES, LINE #2399
CLOUD - RAINES, LINE #2402



230kV DC ENGINEERED MONOPOLE SUSPENSION STRUCTURE

- | | |
|-----------------------------------|--|
| A. MAPPING OF THE ROUTE: | SEE ATTACHMENT II.B.3.iv |
| B. RATIONALE FOR STRUCTURE TYPE: | TO MINIMIZE RIGHT OF WAY |
| C. LENGTH OF R/W (STRUCTURE QTY): | 15.2 MILES (27 STRUCTURES) |
| D. STRUCTURE MATERIAL: | WEATHERING STEEL |
| RATIONALE FOR MATERIAL: | WEATHERING STEEL WAS SELECTED TO MATCH OTHER LINES IN THE AREA |
| E. FOUNDATION MATERIAL: | CONCRETE |
| AVERAGE FOUNDATION REVEAL: | SEE NOTE 2 |
| F. AVERAGE WIDTH AT CROSS ARM: | 25' |
| G. AVERAGE WIDTH AT BASE: | SEE NOTE 2 |
| H. MINIMUM STRUCTURE HEIGHT: | 105' |
| MAXIMUM STRUCTURE HEIGHT: | 135' |
| AVERAGE STRUCTURE HEIGHT: | 119' |
| I. AVERAGE SPAN LENGTH (RANGE): | 712' (342'-1030') (SEE NOTE 4) |
| J. MINIMUM CONDUCTOR-TO-GROUND: | 22.5' (AT MAXIMUM OPERATING TEMPERATURE) |

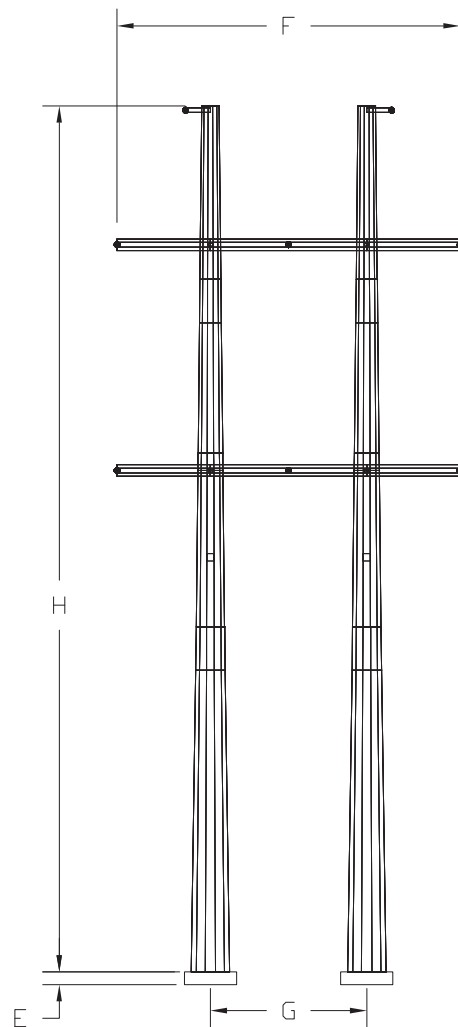
NOTES: 1. INFORMATION CONTAINED ON DRAWING IS PRELIMINARY IN NATURE AND SUBJECT TO CHANGE DURING FINAL DESIGN.

2. A MINIMUM FOUNDATION REVEAL SHALL BE 1.5 FEET. FOUNDATION DIAMETER SHALL BE BASED ON FINAL ENGINEERING.

3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE AND DO NOT INCLUDE FOUNDATION REVEAL.

4. THE SPAN ASSOCIATED WITH EACH STRUCTURE IS THE AHEAD SPAN.

NEBULA - RAINES, LINE #2399

**230kV DC ENGINEERED H-FRAME DDE STRUCTURE**

- A. MAPPING OF THE ROUTE: SEE ATTACHMENT II.B.3.iv
- B. RATIONALE FOR STRUCTURE TYPE: TO FACILITATE TRANSMISSION CROSSING
- C. LENGTH OF R/W (STRUCTURE QTY): 14.2 MILES (2 STRUCTURE)
- D. STRUCTURE MATERIAL: WEATHERING STEEL
 RATIONALE FOR MATERIAL: WEATHERING STEEL WAS SELECTED TO MATCH OTHER LINES IN THE AREA
- E. FOUNDATION MATERIAL: CONCRETE
 AVERAGE FOUNDATION REVEAL: SEE NOTE 2
- F. AVERAGE WIDTH AT CROSS ARM: 50'
- G. AVERAGE WIDTH AT BASE: SEE NOTE 2
- H. MINIMUM STRUCTURE HEIGHT: 165'
 MAXIMUM STRUCTURE HEIGHT: 175'
 AVERAGE STRUCTURE HEIGHT: 170'
- I. AVERAGE SPAN LENGTH (RANGE): 522' (503'-540') (SEE NOTE 4)
- J. MINIMUM CONDUCTOR-TO-GROUND: 22.5' (AT MAXIMUM OPERATING TEMPERATURE)

- NOTES: 1. INFORMATION CONTAINED ON DRAWING IS PRELIMINARY IN NATURE AND SUBJECT TO CHANGE DURING FINAL DESIGN.
2. A MINIMUM FOUNDATION REVEAL SHALL BE 1.5 FEET. FOUNDATION DIAMETER SHALL BE BASED ON FINAL ENGINEERING.
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE AND DO NOT INCLUDE FOUNDATION REVEAL.
4. THE SPAN ASSOCIATED WITH EACH STRUCTURE IS THE AHEAD SPAN.



APPENDIX C

ENVIRONMENTAL FEATURE CROSSING TABLE

APPENDIX C: FEATURE CROSSINGS TABLE FOR THE NEBULA TO RAINES PROJECT

Environmental Feature	Unit	Nebula-Raines Route Alternatives ^{a b}				Cloud-Nebula ^{a b}
		Route Alternative 1	Route Alternative 3	Route Alternative 4	Route Alternative 5	
ROUTE LENGTH AND CONSTRUCTION FOOTPRINT						
Route length	miles	15.4	14.9	15.0	14.4	0.9
Construction footprint Total—Nebula-Raines Routes Include Nebula Switching Station	acres	197.6	192.0	192.3	185.2	10.8
Proposed New ROW	acres	185.9	180.3	180.6	162.0	8.5
Existing ROW	acres	0.4	0.4	0.4	12.0	0.0
Nebula Switching Station	acres	11.3	11.3	11.3	11.3	0.0
LAND USE						
Land Ownership						
Total parcels crossed by right-of-way	number	50	60	68	56	3
Private	number	51	61	66	56	3
County	number	0	0	0	0	0
Total landowners crossed by right-of-way	number	40	45	54	38	3
Land Use / Land Cover						
Forested	acres	103.1	109.6	132.8	99.5	4.6
Agricultural	acres	48.7	50.0	33.0	34.4	0.0
Developed	acres	0.7	0.7	0.7	1.4	0.4
Open space	acres	44.7	30.9	25.0	46.7	5.7
Open water	acres	0.3	0.7	0.7	3.3	0.0
Recreation Areas						
Total	Number	10	9	9	14	0

		Nebula-Raines Route Alternatives ^{a b}					Cloud-Nebula ^{a b}
		2	1	1	3		
Beaches to Bluegrass Trail	number	2					0
Birding Wildlife Trail—Christanna Loop	number	2	2	2		2	0
East Coast Greenway	number	2	2	2		4	0
State Scenic Highway—Goodes Ferry Road	number	1	1	1		1	0
Tobacco Heritage Trail	number	2	2	2		3	0
US Bike Route 1	acres	1	1	1		1	0
Residences and Other Structures							
Dwellings within right-of-way	number	0	0	0		0	0
Dwellings within 60 feet of right-of-way	number	0	0	0		0	0
Dwellings within 100 feet of centerline	number	0	0	0		0	0
Dwellings within 250 feet of centerline	number	3	0	1		0	0
Dwellings within 500 feet of centerline	number	15	16	17		11	0
Non-residential Buildings within right-of-way	number	0	0	0		0	0
Non-residential Buildings within 500 feet of centerline	number	28	29	34		19	0
Cemeteries, Schools, and Places of Worship							
Cemeteries within 500 feet of centerline	number	1	2	2		2	0
Schools within 500 feet of centerline	number	0	0	0		0	0
Places of worship within 500 feet of centerline	number	1	0	1		2	0
Planned Developments							
Planned developments—total	number acres	1.3 12.3	1.3 12.3	0 0.0		0 0.0	0 0.0
Easements							

		Nebula-Raines Route Alternatives ^{a b}						Cloud-Nebula ^{a b}
VOF Easement	acres	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transportation								
Roads	number	10	9	9	13			0
Railroads	number	0	0	0	0			0
NATURAL RESOURCES								
Wetlands^c								
Wetlands affected—Total	miles acres	1.5 17.9	1.6 19.5	1.6 19.8	1.8 22.5			0.1 0.7
Palustrine Forested	acres	16.1	16.9	17.3	15.8			0.4
Palustrine Scrub-Shrub	acres	NA	0.3	0.3	0.6			NA
Palustrine Emergent	acres	0.4	0.5	0.5	2.6			0.2
Palustrine Unconsolidated Bottom	acres	0.2	0.8	0.8	2.2			NA
Riverine	acres	1.3	1.1	1.0	1.3			0.0
Waterbodies^d								
Waterbody—Total	number	26	25	25	32			1
Perennial Streams	number	10	8	8	8			0
Intermittent Streams	number	15	15	15	21			1
Perennial Lake/Pond	number	1	2	2	3			0
Natural Heritage Resources								
SCS or Conservation Sites	acres	0.0	0.0	0.0	0.0			0.0
Ecological Cores—Total	acres	113.7	97.2	109.7	92.5			10.8
Outstanding (C1)	acres	0.0	0.0	0.0	0.0			0.0
Very High (C2)	acres	31.6	31.6	32.5	31.1			10.8
High (C3)	acres	29.8	0.0	0.0	0.0			0.0

		Nebula-Raines Route Alternatives ^{a b}					Cloud-Nebula ^{a b}
Moderate (C4)	acres	31.7	50.6	65.1	42.4		0.0
General (C5)	acres	20.5	15.0	12.1	19.0		0.0
Predicted Suitable Habitat							
Carolina Darter	acres	5.4	5.6	9.9	2.0		0.0
Carolina Darter & Whitemouth Shiner	acres	6.0	6.0	5.3	8.4		0.0
Forest Conservation Value							
Average (1)	acres	30.0	34.7	30.2	31.7		0.0
Moderate (2)	acres	37.2	35.6	40.6	39.5		0.0
High (3)	acres	42.5	48.5	55.4	37.4		2.1
Very High (4)	acres	33.0	22.8	21.8	29.5		8.7
Outstanding (5)	acres	9.4	3.8	4.6	0.0		0.0
Protected Species							
Bald Eagle nests within 330 feet	number	0	0	0	0		0
Bald Eagle nests within 660 feet	number	0	0	0	0		0
CULTURAL RESOURCES							
Archaeological sites within right-of-way	number	1	5	6	5		0
NRHP-eligible and NRHP-listed properties, NHLs, battlefields, and historic landscapes within right-of-way	number	0	0	0	0		0
NRHP-eligible and NRHP-listed properties, NHLs, battlefields, and historic landscapes within 0.5 mile	number	0	0	0	0		0
NRHP-listed properties, NHLs, battlefields, historic landscapes, and NHLs between 0.5 and 1.0 mile	number	0	1	1	0		0