

APPALACHIAN POWER COMPANY
BEFORE THE
VIRGINIA STATE CORPORATION COMMISSION
CASE NO. PUR-2023-00024

APPLICATION FOR APPROVAL AND CERTIFICATION OF
ELECTRICAL TRANSMISSION LINE

Stuart Area 138-kV Transmission Improvements Project

VOLUME 1 OF 4
PART 2 of 2

Exhibits 8 through 38

July 2023

LIST OF EXHIBITS, MAPS AND ATTACHMENTS

VOLUME 1, PART 1 OF 2 - Application, Testimony, Response to Guidelines, and Exhibits 1 through 7

LIST OF EXHIBITS, MAPS AND ATTACHMENTS

GLOSSARY OF TERMS AND ABBREVIATIONS

EXECUTIVE SUMMARY

APPLICATION

TESTIMONY

Direct Testimony of Nicolas C. Koehler, P.E. (Project Need)

Direct Testimony of Mary Jane L. McMillen, P.E. (Transmission Line Engineering)

Direct Testimony of James K. Bledsoe, P.E. (Substation Engineering)

Direct Testimony of Xin Liu, P.E. (Electromagnetic Fields)

Direct Testimony of Anastacia Santos (Environmental Analysis and Route
Review)

RESPONSE TO GUIDELINES

Section I: Necessity for the Proposed Project

Section II: Description of the Proposed Project

Section III: Impact of Line on Scenic, Environmental, and Historic Features

Section IV: Health Aspects of Electromagnetic Fields (“EMF”)

Section V: Notice

EXHIBITS 1 THROUGH 7

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EXHIBITS 8 THROUGH 38

VOLUME 1, PART 1 OF 2

LIST OF EXHIBITS, MAPS AND ATTACHMENTS

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- 2 PUBLIC NOTICE MAP
- 3 PROJECT OVERVIEW MAP
- 4 AEP TRANSMISSION PLANNING CRITERIA AND GUIDELINES FOR END-OF-LIFE AND OTHER ASSET MANAGEMENT NEEDS
- 5 CONSTRUCTION SEQUENCE DRAWINGS
- 6 TRANSMISSION LINE CIRCUIT CONFIGURATION DRAWINGS
- 7 COMPONENT 1 GIS CONSTRAINTS MAP

VOLUME 1, PART 2 OF 2

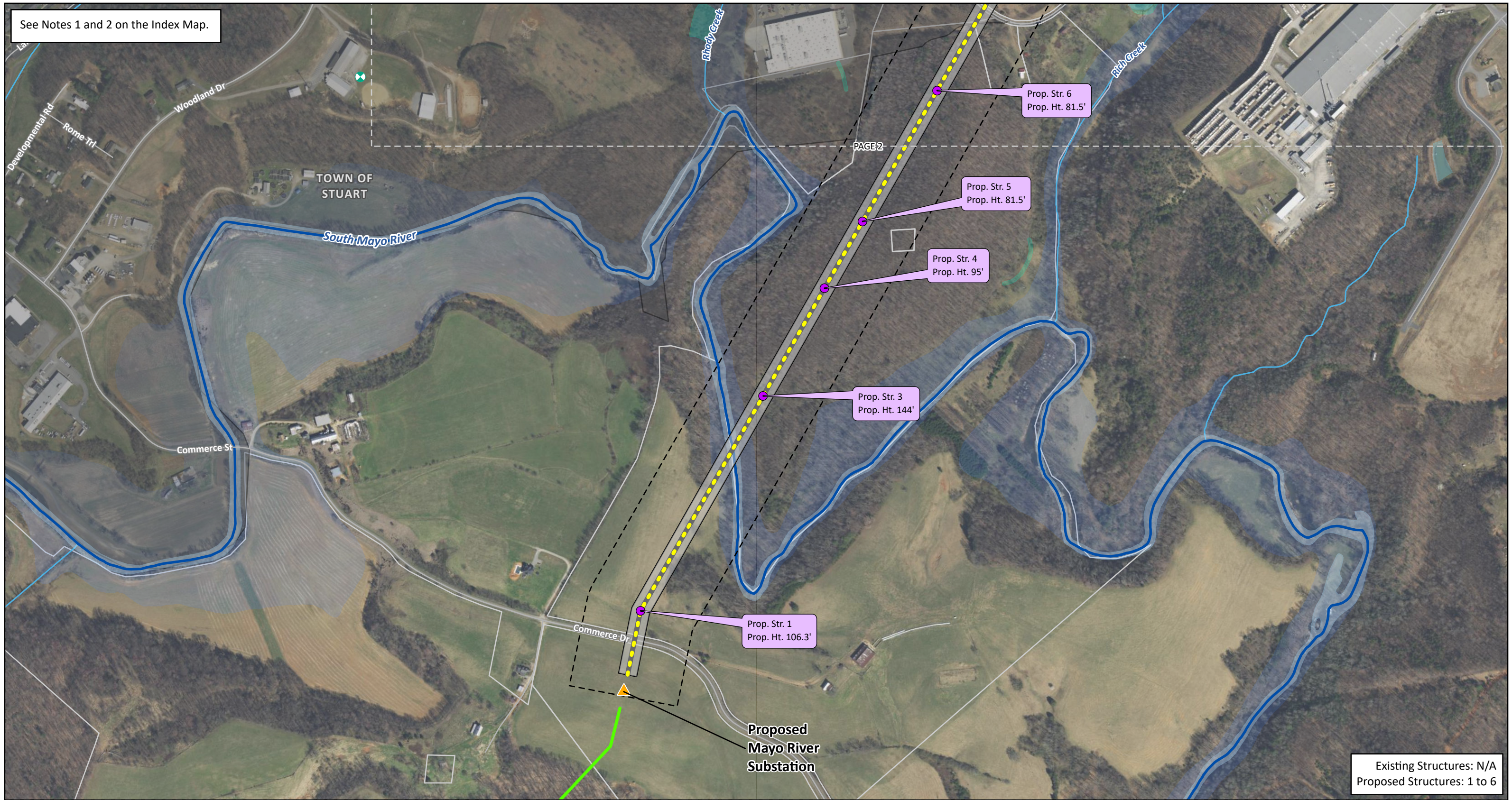
- 8 COMPONENT 2 GIS CONSTRAINTS MAP
- 9 COMPONENT 3 GIS CONSTRAINTS MAP
- 10 PROPOSED 138-KV STEEL H-FRAME (SINGLE CIRCUIT)
- 11 PROPOSED 138-KV STEEL THREE-POLE RUNNING ANGLE (SINGLE CIRCUIT)
- 12 PROPOSED 138-KV STEEL THREE-POLE DEAD-END (SINGLE CIRCUIT)
- 13 PROPOSED 138-KV STEEL MONOPOLE WITH BRACED POSTS (SINGLE CIRCUIT)
- 14 PROPOSED 138-KV STEEL MONOPOLE RUNNING ANGLE (SINGLE CIRCUIT)
- 15 PROPOSED 138-KV GUYED STEEL MONOPOLE DEAD-END (SINGLE CIRCUIT)
- 16 PROPOSED 138-KV STEEL MONOPOLE DEAD-END (SINGLE CIRCUIT)
- 17 PROPOSED 138-KV STEEL MONOPOLE TANGENT WITH DAVIT ARMS (DOUBLE CIRCUIT)
- 18 PROPOSED 138-KV STEEL MONOPOLE DEAD-END WITH DAVIT ARMS (DOUBLE CIRCUIT)

LIST OF EXHIBITS, MAPS AND ATTACHMENTS

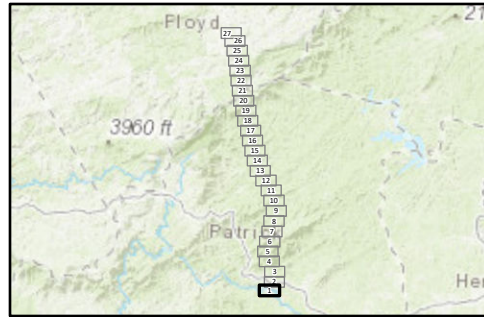
- 19 PROPOSED 138-KV SELF-SUPPORTING STEEL LATTICE TOWER (SINGLE CIRCUIT)
- 20 EXISTING STRUCTURE PHOTOGRAPHS
- 21 IMPROVEMENTS AT 138-KV HUFFMAN SUBSTATION
- 22 IMPROVEMENTS AT 138-KV WILLIS GAP SUBSTATION
- 23 PROPOSED 138-KV CLAUDVILLE SUBSTATION
- 24 PROPOSED 138-KV MAYO RIVER SUBSTATION
- 25 EXISTING 69-KV STUART SUBSTATION (TO BE RETIRED)
- 26 IMPROVEMENTS AT 138-KV WOOLWINE SUBSTATION
- 27 IMPROVEMENTS AT 138-KV FLOYD SUBSTATION
- 28 IMPROVEMENTS AT 138-KV PATRICK HENRY SUBSTATION
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- 30 PROPOSED 138-KV STONELEIGH SUBSTATION
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Exhibit 8: Component 2 GIS Constraints Map

See Notes 1 and 2 on the Index Map.



Existing Structures: N/A
Proposed Structures: 1 to 6



Proposed APCo Substation	Filing Corridor (See Note 1)	Waterbody (NHD)
Proposed Structure	Cell Tower (FCC)	Wetland (NWI)
Component 2 Proposed Route (Double Circuit)	Road	Floodplain
Component 1 Proposed Route	South Mayo River (Scenic River)	Town Boundary
Proposed Right-of-Way (100')	Stream (NHD)	Map Tile
	River (NHD)	Parcel Boundary (See Note 2)

Patrick & Floyd Counties, Virginia

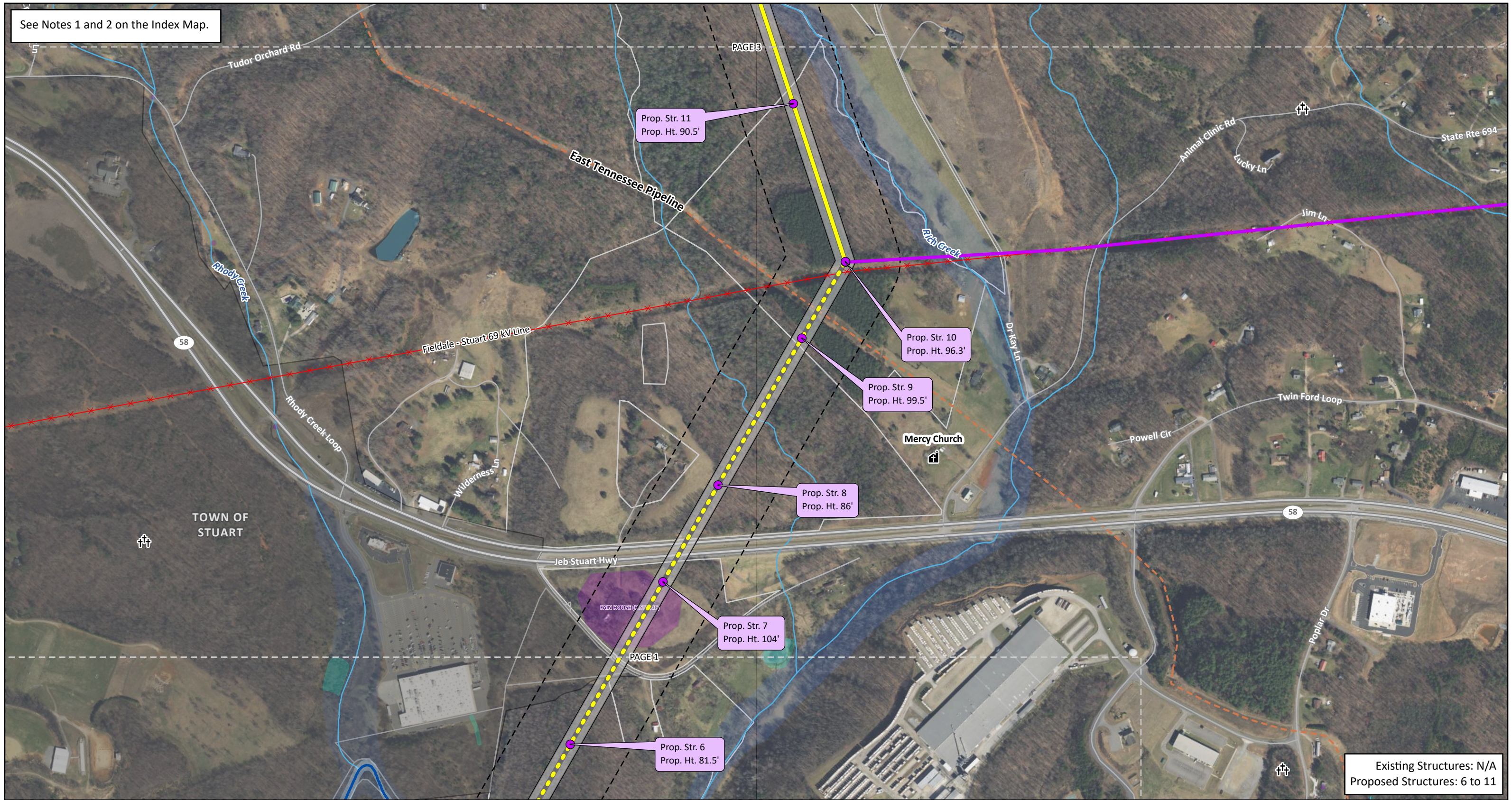
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Map 1 of 27

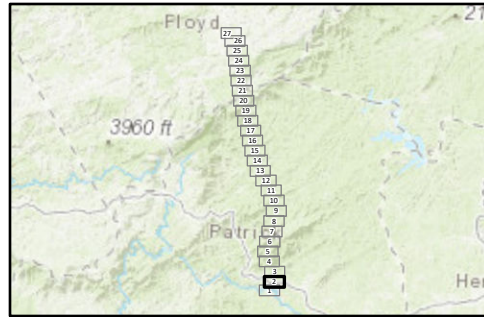
**Exhibit 8:
Component 2
GIS Constraints Map**

Stuart Area Transmission Improvements Project
Component 2:
Mayo River (Stuart) to Floyd Transmission Improvements

See Notes 1 and 2 on the Index Map.



Existing Structures: N/A
Proposed Structures: 6 to 11



Proposed Structure	Proposed Right-of-Way (100')	Natural Gas Pipeline	Floodplain
Component 2 Proposed Route (Single Circuit)	Filing Corridor (See Note 1)	South Mayo River (Scenic River)	Architectural Resource (VDHR)
Component 2 Proposed Route (Double Circuit)	Place of Worship	Stream (NHD)	Town Boundary
Component 3 Proposed Route	Cemetery	River (NHD)	Map Tile
Existing Transmission Line to be Retired	Highway	Waterbody (NHD)	Parcel Boundary (See Note 2)
	Road	Wetland (NWI)	

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Map 2 of 27

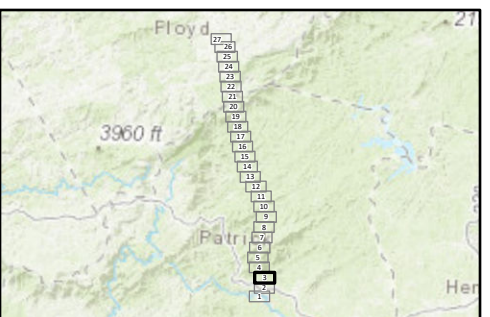
Exhibit 8: Component 2 GIS Constraints Map

Stuart Area Transmission Improvements Project
Component 2:
Mayo River (Stuart) to Floyd Transmission Improvements

See Notes 1 and 2 on the Index Map.



Existing Structures: N/A
Proposed Structures: 12 to 15



Proposed Structure	Filing Corridor (See Note 1)	Floodplain
Component 2 Proposed Route (Single Circuit)	Road	Map Tile
Proposed Right-of-Way (100')	Natural Gas Pipeline	Parcel Boundary (See Note 2)
	Stream (NHD)	

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0 500 1,000 Feet

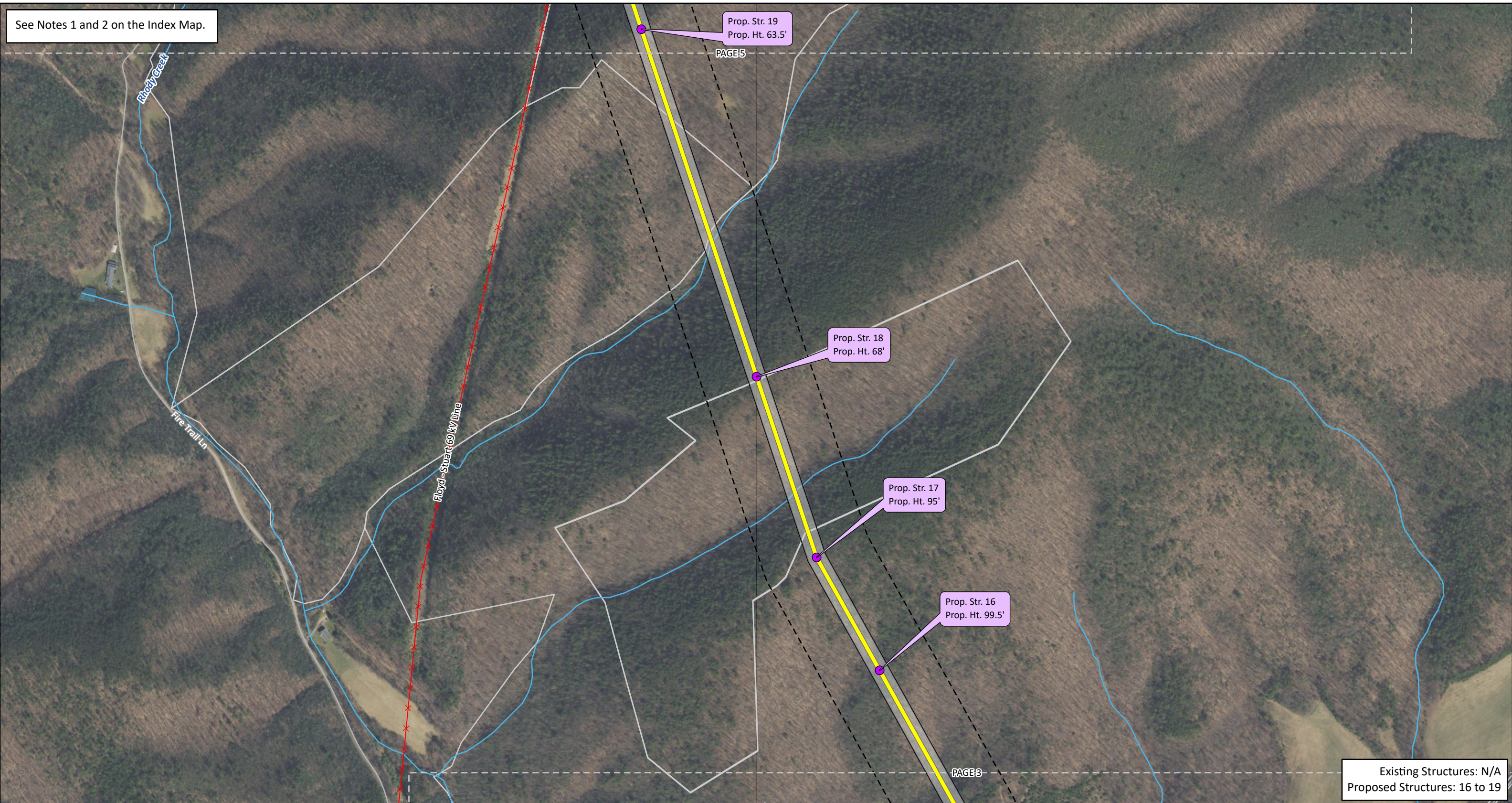
Map 3 of 27

**Exhibit 8:
Component 2
GIS Constraints Map**

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Stuart Area Transmission Improvements Project
Component 2:
Mayo River (Stuart) to Floyd Transmission Improvements

See Notes 1 and 2 on the Index Map.



Existing Structures: N/A
Proposed Structures: 16 to 19



Proposed Structure	Proposed Right-of-Way (100')	Waterbody (NHD)
Component 2 Proposed Route (Single Circuit)	Filing Corridor (See Note 1)	Map Tile
Existing Transmission Line to be Retired	Road	Parcel Boundary (See Note 2)
	Stream (NHD)	

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0 500 1,000 Feet

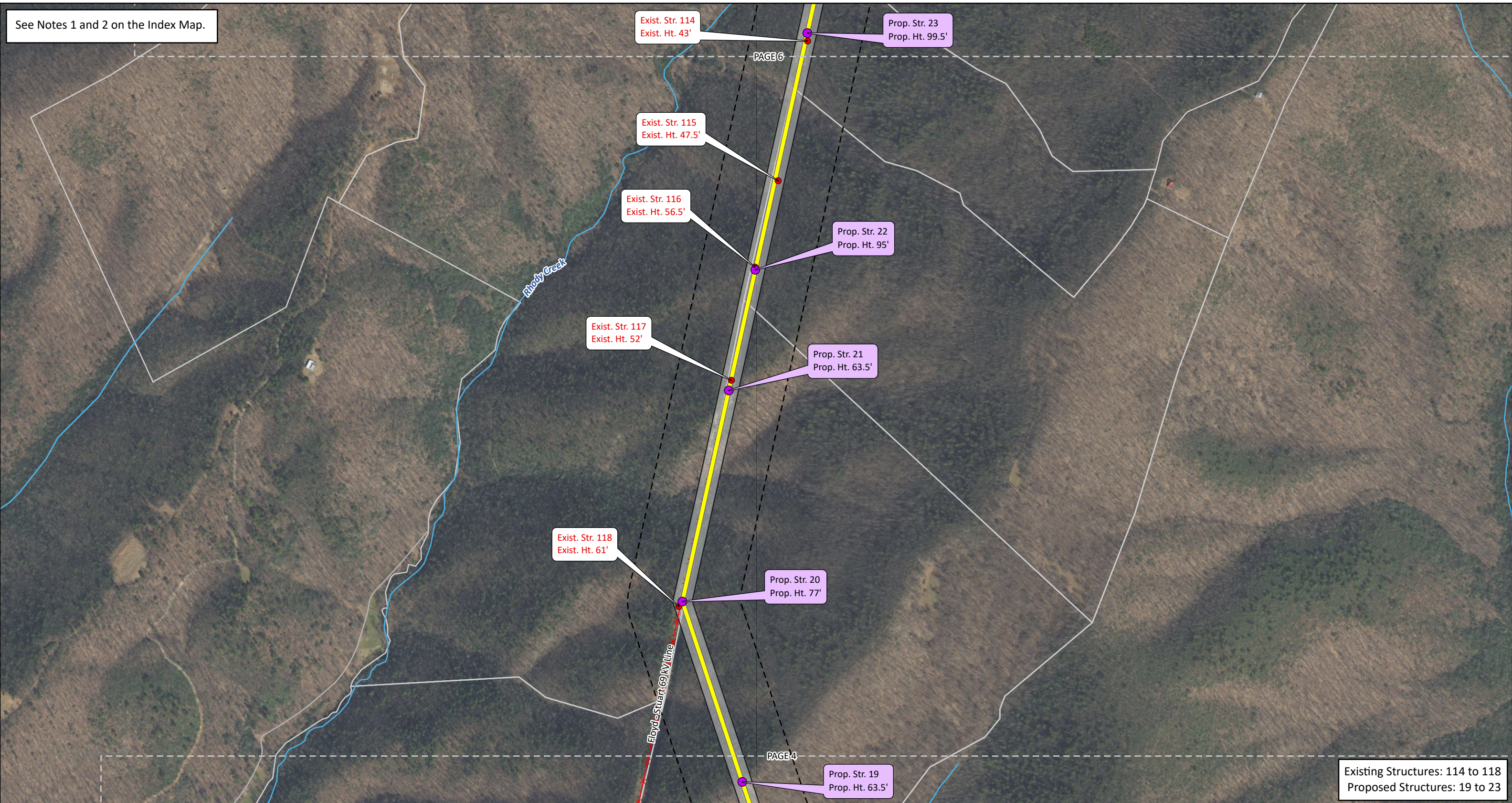
Map 4 of 27

**Exhibit 8:
Component 2
GIS Constraints Map**

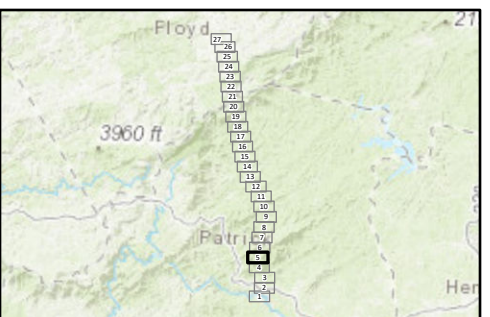
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Component 2:
Mayo River (Stuart) to Floyd Transmission Improvements

See Notes 1 and 2 on the Index Map.



Existing Structures: 114 to 118
Proposed Structures: 19 to 23



- Proposed Structure
- Existing APCo Structure to be Removed
- Component 2 Proposed Route (Single Circuit)
- x—x— Existing Transmission Line to be Retired
- Proposed Right-of-Way (100')
- Filing Corridor (See Note 1)
- Road
- Stream (NHD)
- Map Tile
- Parcel Boundary (See Note 2)

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0 500 1,000
Feet

Map 5 of 27

Exhibit 8: Component 2 GIS Constraints Map

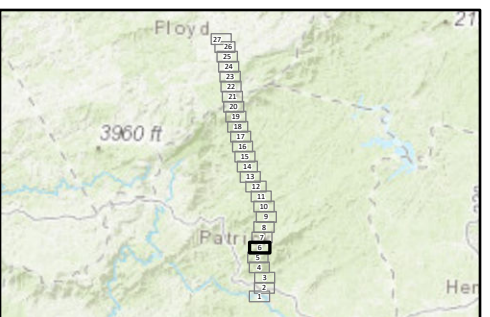
Stuart Area Transmission
Improvements Project
Component 2:
Mayo River (Stuart) to Floyd
Transmission Improvements

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See Notes 1 and 2 on the Index Map.



Existing Structures: 110 to 114
Proposed Structures: 23 to 26



Proposed Structure	Existing Transmission Line to be Retired	Stream (NHD)
Existing APCo Structure to be Removed	Proposed Right-of-Way (100')	Map Tile
Component 2 Proposed Route (Single Circuit)	Filing Corridor (See Note 1)	Parcel Boundary (See Note 2)

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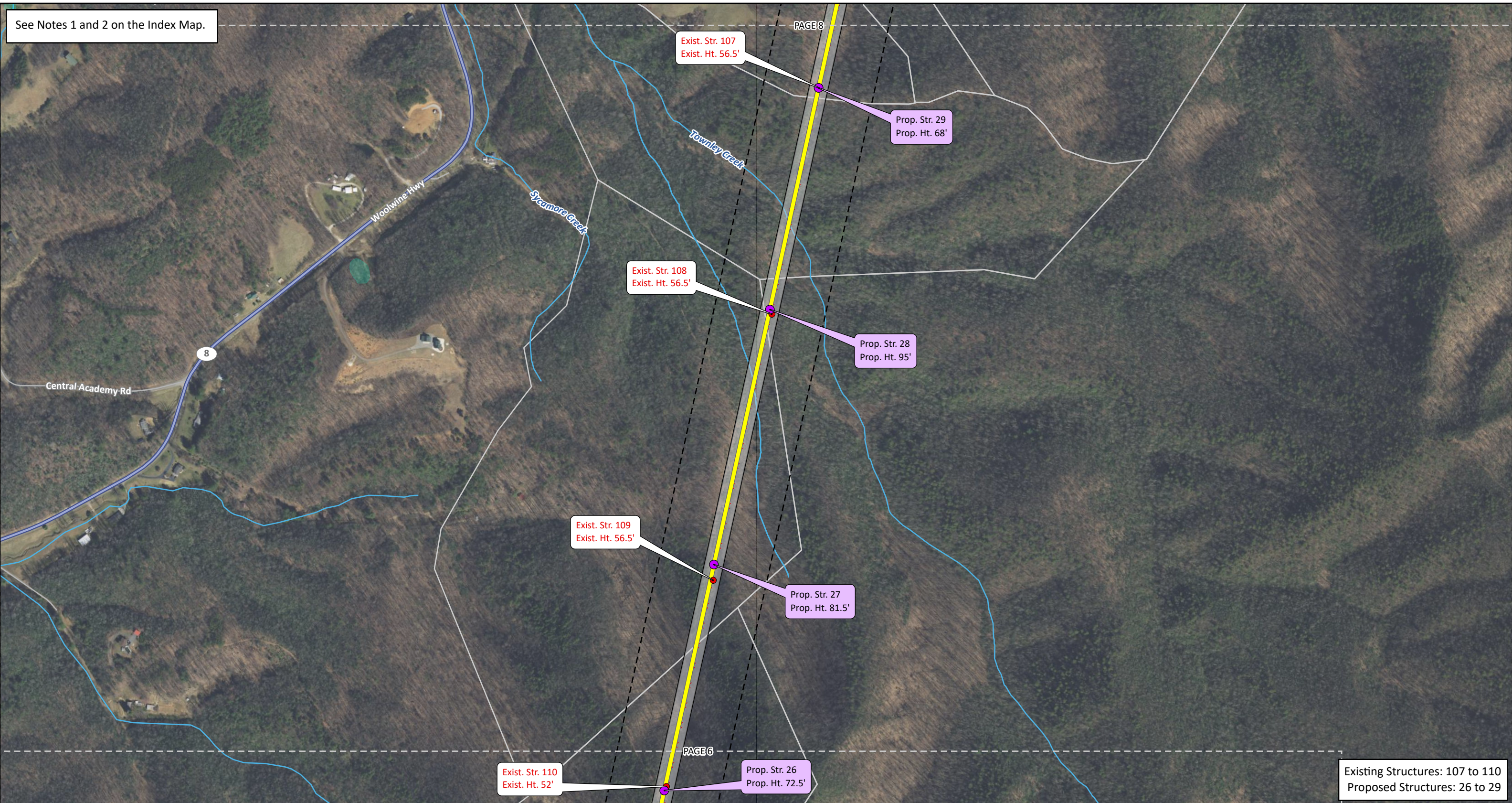
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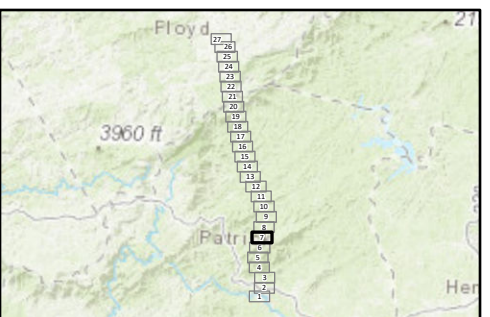
**Exhibit 8:
Component 2
GIS Constraints Map**

Stuart Area Transmission Improvements Project
Component 2:
Mayo River (Stuart) to Floyd Transmission Improvements

See Notes 1 and 2 on the Index Map.



Existing Structures: 107 to 110
Proposed Structures: 26 to 29



● Proposed Structure	▭ Proposed Right-of-Way (100')	— Stream (NHD)
● Existing APCo Structure to be Removed	- - - Filing Corridor (See Note 1)	▭ Wetland (NWI)
— Component 2 Proposed Route (Single Circuit)	▭ Highway	- - - Map Tile
— Existing Transmission Line to be Retired	▭ Scenic Route 8	▭ Parcel Boundary (See Note 2)
	▭ Road	

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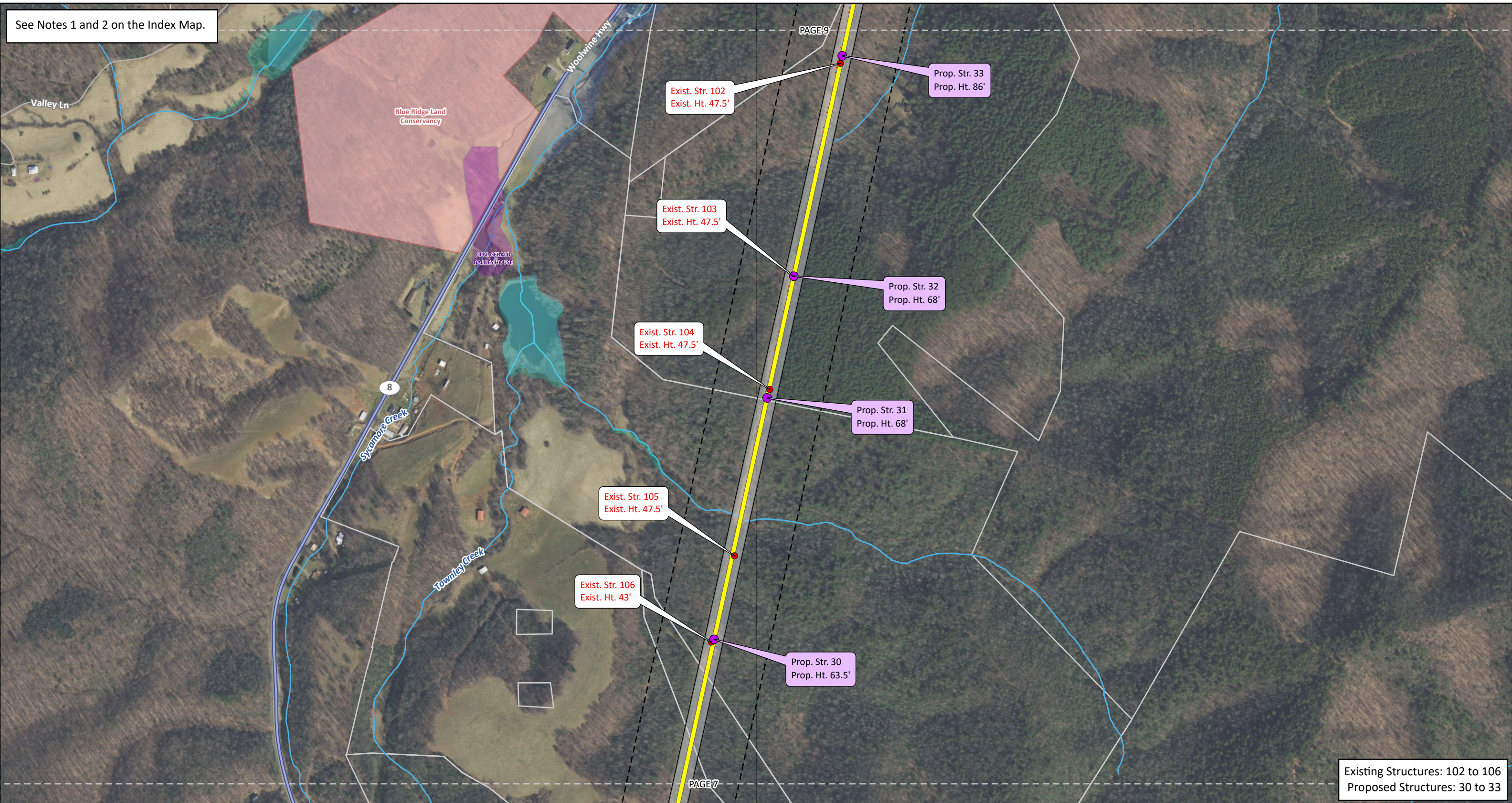
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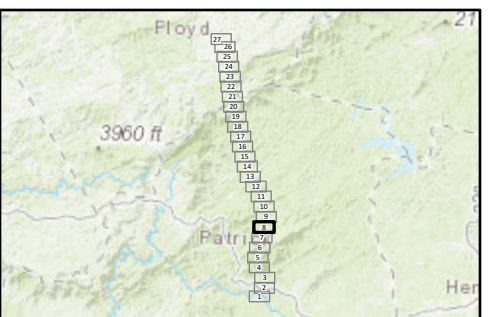
**Exhibit 8:
Component 2
GIS Constraints Map**

Stuart Area Transmission Improvements Project
Component 2:
Mayo River (Stuart) to Floyd Transmission Improvements

See Notes 1 and 2 on the Index Map.



Existing Structures: 102 to 106
Proposed Structures: 30 to 33



	Proposed Structure		Filing Corridor (See Note 1)		Wetland (NWI)
	Existing APCo Structure to be Removed		Highway		Floodplain
	Component 2 Proposed Route (Single Circuit)		Scenic Route 8		Local Conservation Land
	Existing Transmission Line to be Retired		Road		Architectural Resource (VDHR)
	Proposed Right-of-Way (100')		Stream (NHD)		Map Tile
			Waterbody (NHD)		Parcel Boundary (See Note 2)

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0 500 1,000
Feet

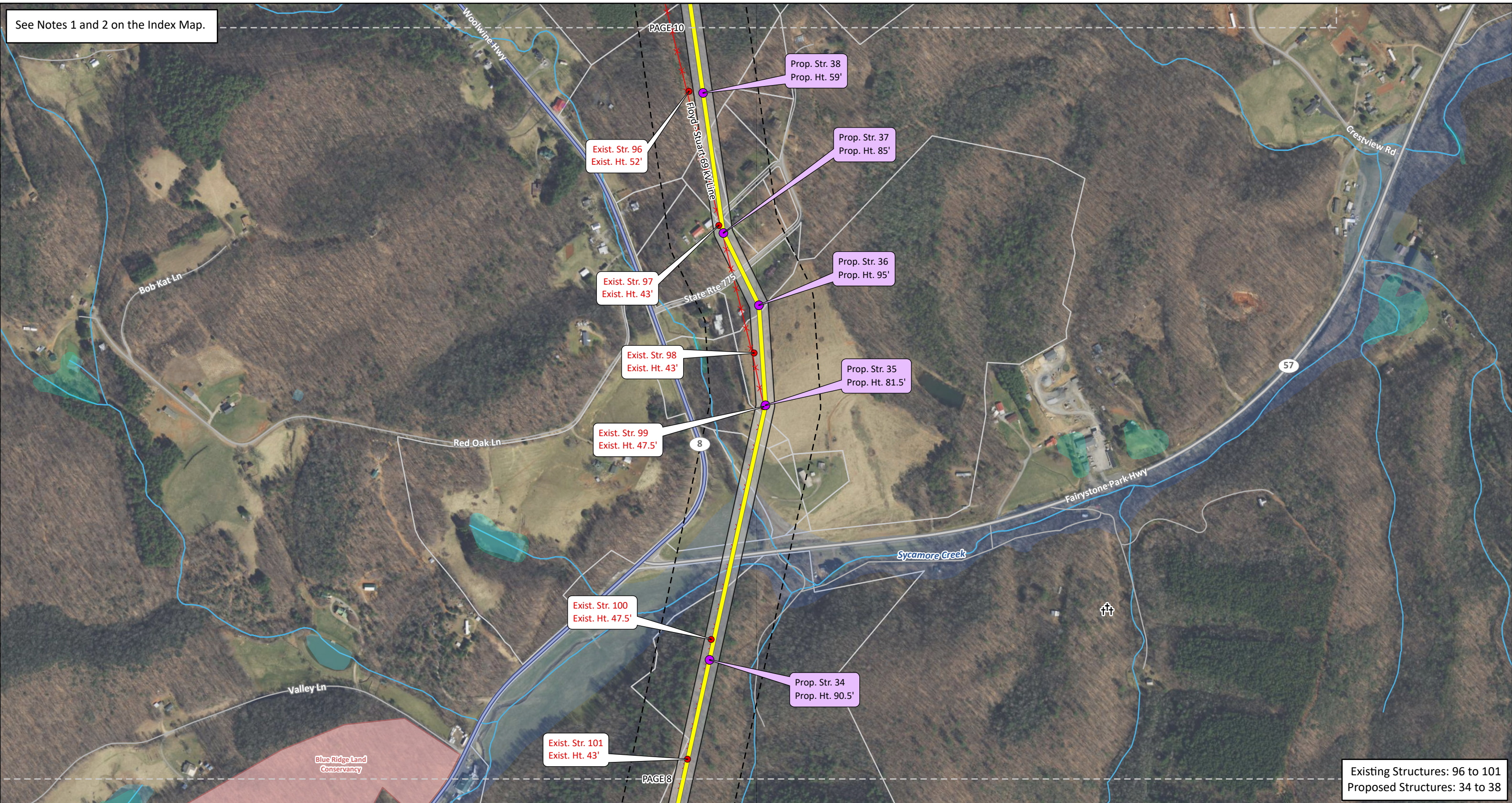
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Exhibit 8: Component 2 GIS Constraints Map

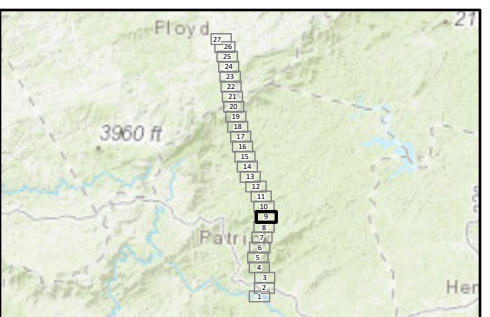
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Component 2:
Mayo River (Stuart) to Floyd
Transmission Improvements

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See Notes 1 and 2 on the Index Map.



Existing Structures: 96 to 101
Proposed Structures: 34 to 38



- | | | |
|--|---|---|
| <ul style="list-style-type: none"> ● Proposed Structure ● Existing APCo Structure to be Removed — Component 2 Proposed Route (Single Circuit) ✕ Existing Transmission Line to be Retired Proposed Right-of-Way (100') | <ul style="list-style-type: none"> Filing Corridor (See Note 1) †† Cemetery Highway Scenic Route 8 Road Stream (NHD) Waterbody (NHD) | <ul style="list-style-type: none"> Wetland (NWI) Floodplain Local Conservation Land Architectural Resource (VDHR) Map Tile Parcel Boundary (See Note 2) |
|--|---|---|

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Feet

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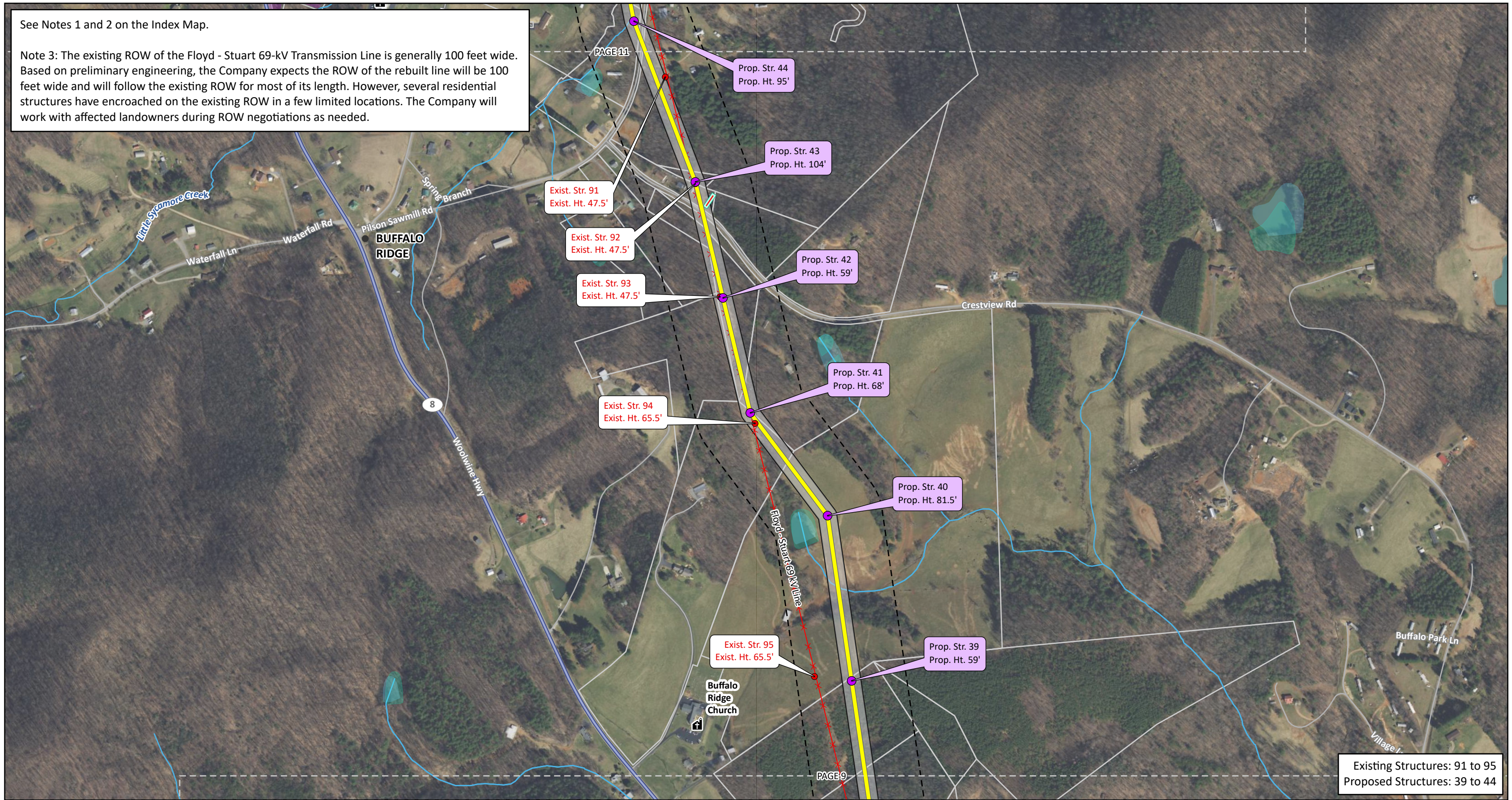
Exhibit 8: Component 2 GIS Constraints Map

Stuart Area Transmission
Improvements Project
Component 2:
Mayo River (Stuart) to Floyd
Transmission Improvements

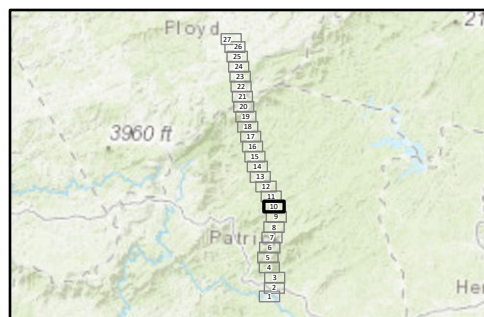
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See Notes 1 and 2 on the Index Map.

Note 3: The existing ROW of the Floyd - Stuart 69-kV Transmission Line is generally 100 feet wide. Based on preliminary engineering, the Company expects the ROW of the rebuilt line will be 100 feet wide and will follow the existing ROW for most of its length. However, several residential structures have encroached on the existing ROW in a few limited locations. The Company will work with affected landowners during ROW negotiations as needed.



Existing Structures: 91 to 95
Proposed Structures: 39 to 44



Proposed Structure	Proposed Right-of-Way (100')	Highway	Wetland (NWI)
Existing APCo Structure to be Removed	Filing Corridor (See Note 1)	Scenic Route 8	Architectural Resource (VDHR)
Component 2 Proposed Route (Single Circuit)	Residential Structure (within proposed 100' ROW) (See Note 3)	Road	Map Tile
Existing Transmission Line to be Retired	Place of Worship	Stream (NHD)	Parcel Boundary (See Note 2)
	Populated Place	Waterbody (NHD)	

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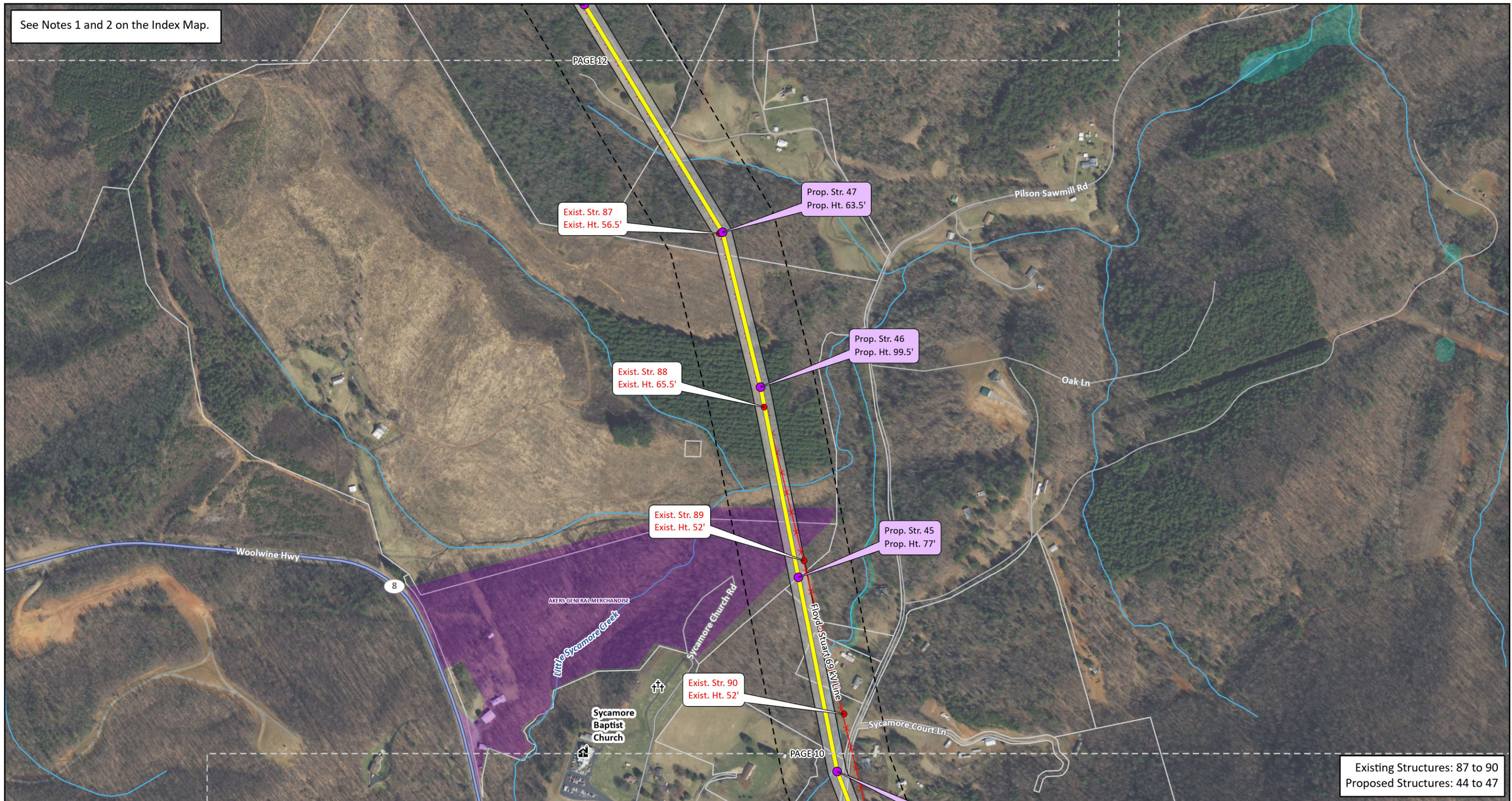
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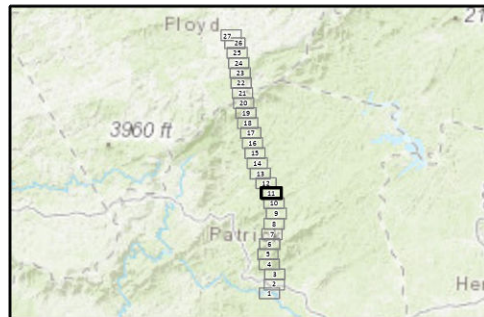
Exhibit 8: Component 2 GIS Constraints Map

Stuart Area Transmission Improvements Project
Component 2:
Mayo River (Stuart) to Floyd Transmission Improvements

See Notes 1 and 2 on the Index Map.



Existing Structures: 87 to 90
Proposed Structures: 44 to 47



	Proposed Structure		Filing Corridor (See Note 1)		Stream (NHD)
	Existing APCo Structure to be Removed		Place of Worship		Waterbody (NHD)
	Component 2 Proposed Route (Single Circuit)		Cemetery		Wetland (NWI)
	Existing Transmission Line to be Retired		Highway		Architectural Resource (VDHR)
	Proposed Right-of-Way (100')		Scenic Route 8		Map Tile
			Road		Parcel Boundary (See Note 2)

Patrick & Floyd Counties, Virginia

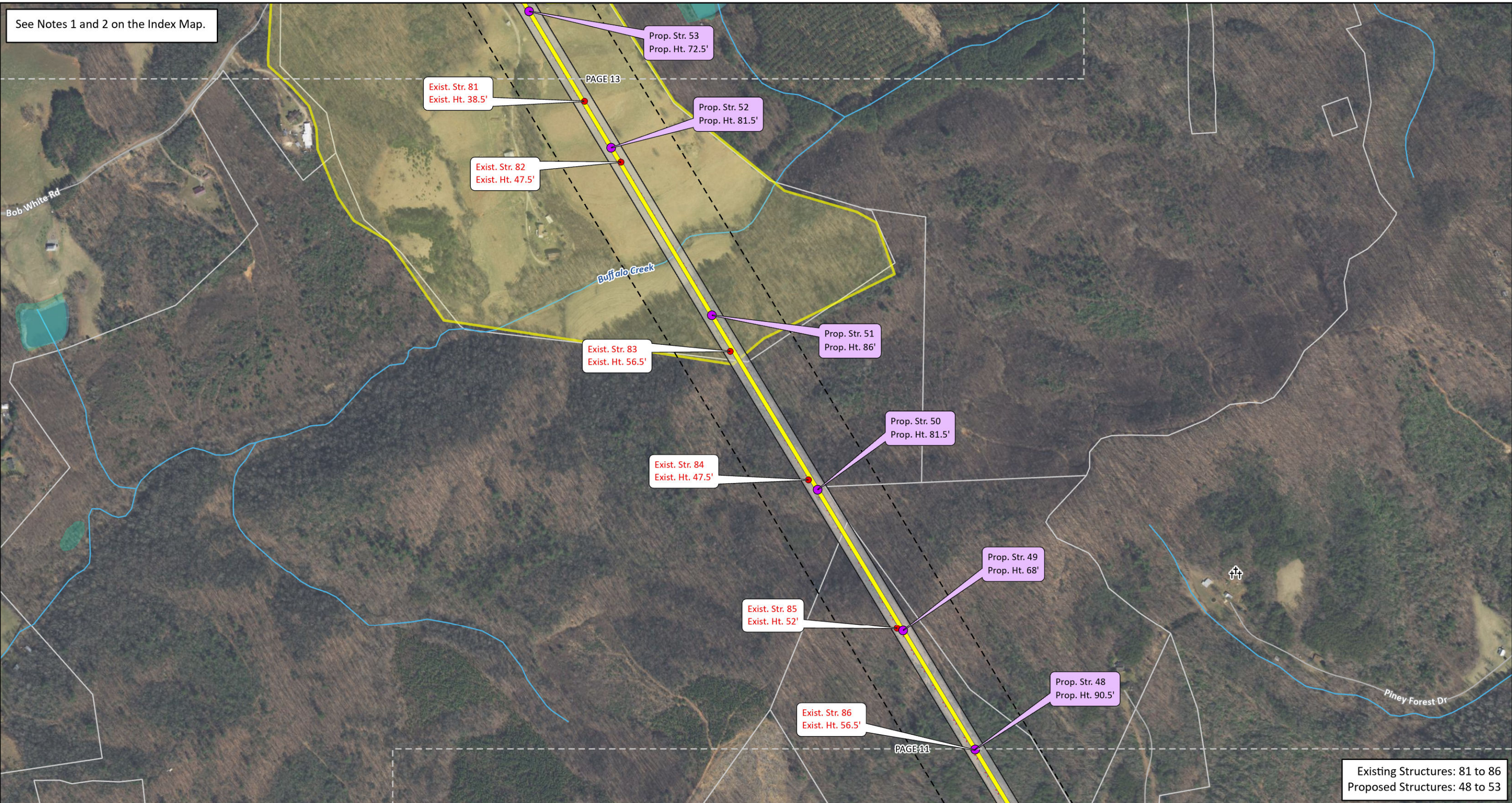
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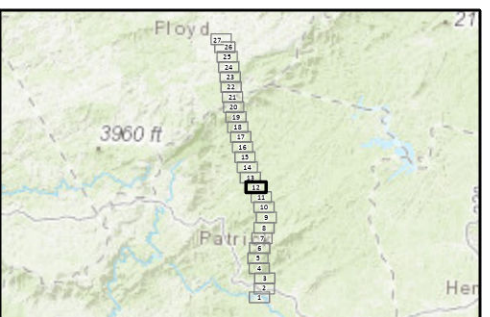
Exhibit 8:
Component 2
GIS Constraints Map

Stuart Area Transmission Improvements Project
Component 2:
Mayo River (Stuart) to Floyd Transmission Improvements

See Notes 1 and 2 on the Index Map.



Existing Structures: 81 to 86
Proposed Structures: 48 to 53



● Proposed Structure	▭ Proposed Right-of-Way (100')	▭ Wetland (NWI)
● Existing APCo Structure to be Removed	▭ Filing Corridor (See Note 1)	▭ VOF Easement
▬ Component 2 Proposed Route (Single Circuit)	⚰ Cemetery	▭ Map Tile
⚡ Existing Transmission Line to be Retired	▬ Road	▭ Parcel Boundary (See Note 2)
	▬ Stream (NHD)	
	▬ Waterbody (NHD)	

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0 500 1,000
Feet

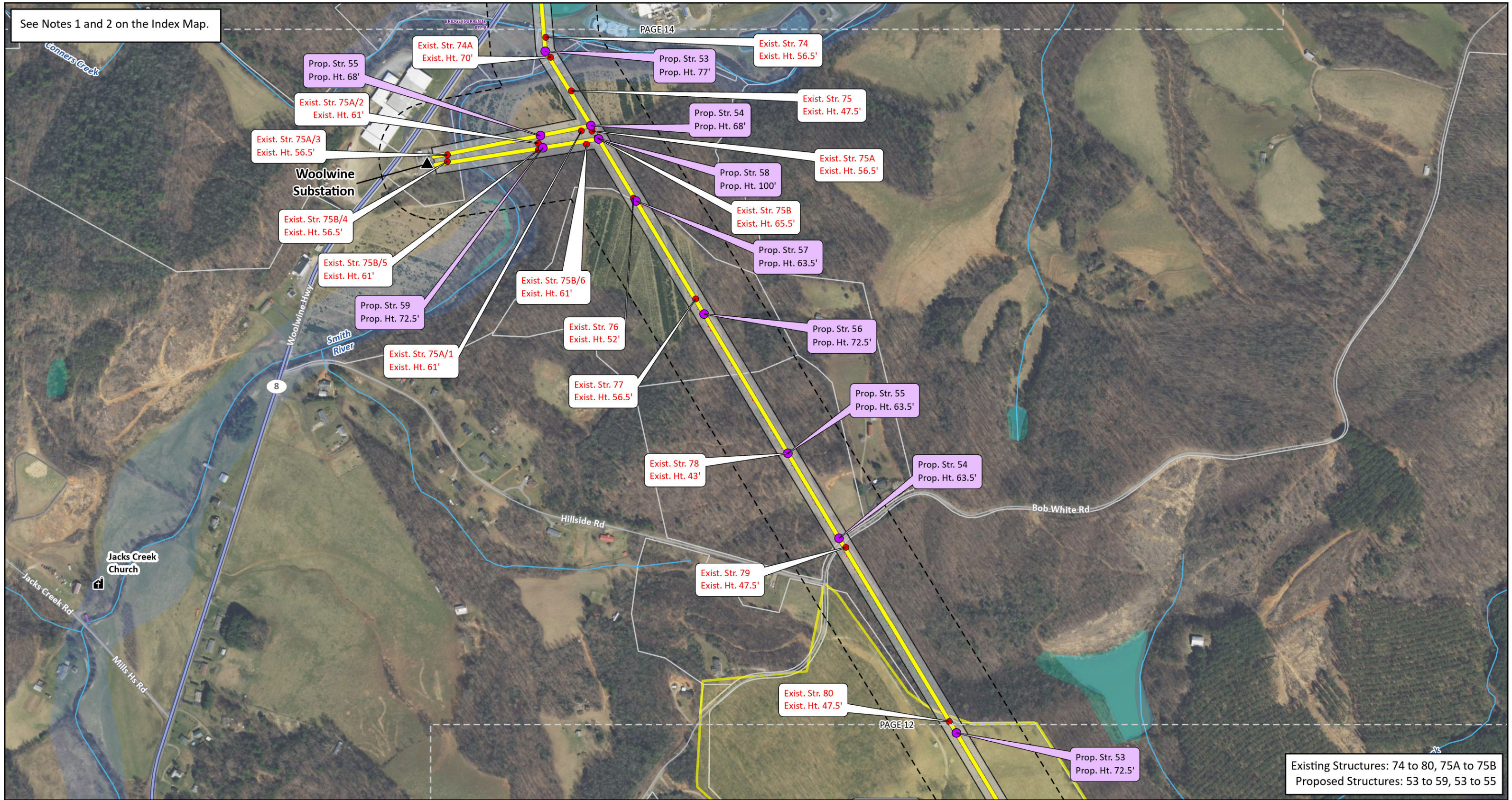
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**Exhibit 8:
Component 2
GIS Constraints Map**

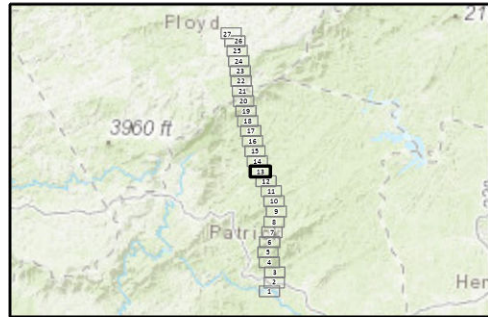
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Component 2:
Mayo River (Stuart) to Floyd Transmission Improvements

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See Notes 1 and 2 on the Index Map.



Existing Structures: 74 to 80, 75A to 75B
Proposed Structures: 53 to 59, 53 to 55



▲ Existing APCo Substation	✂ Existing Transmission Line to be Retired	— Scenic Route 8	■ Floodplain
● Proposed Structure	▭ Proposed Right-of-Way (100')	— Road	■ VOF Easement
● Existing APCo Structure to be Removed	- - - Filling Corridor (See Note 1)	— Stream (NHD)	■ Architectural Resource (VDHR)
— Component 2 Proposed Route (Single Circuit)	🏠 Place of Worship	■ Waterbody (NHD)	- - - Map Tile
	— Highway	■ Wetland (NWI)	▭ Parcel Boundary (See Note 2)

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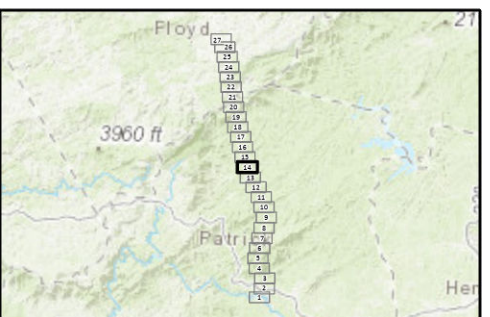
Exhibit 8: Component 2 GIS Constraints Map

Stuart Area Transmission Improvements Project
Component 2:
Mayo River (Stuart) to Floyd Transmission Improvements

See Notes 1 and 2 on the Index Map.



Existing Structures: 69 to 73
Proposed Structures: 49 to 52



Proposed Structure	Filing Corridor (See Note 1)	Waterbody (NHD)
Existing APCo Structure to be Removed	Cemetery	Wetland (NWI)
Component 2 Proposed Route (Single Circuit)	Highway	Floodplain
Existing Transmission Line to be Retired	Scenic Route 8	Architectural Resource (VDHR)
Proposed Right-of-Way (100')	Road	Map Tile
	Stream (NHD)	Parcel Boundary (See Note 2)
	River (NHD)	

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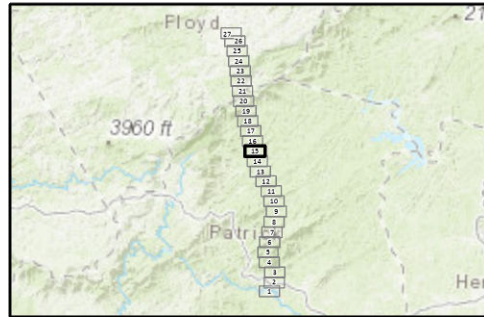
Exhibit 8: Component 2 GIS Constraints Map

Stuart Area Transmission Improvements Project
Component 2:
Mayo River (Stuart) to Floyd Transmission Improvements

See Notes 1 and 2 on the Index Map.



Existing Structures: 63 to 68
Proposed Structures: 45 to 48



Proposed Structure	Proposed Right-of-Way (100')	Populated Place	Wetland (NWI)
Existing APCo Structure to be Removed	Filing Corridor (See Note 1)	Highway	Floodplain
Component 2 Proposed Route (Single Circuit)	Place of Worship	Scenic Route 8	VOF Easement
Existing Transmission Line to be Retired	School	Road	Architectural Resource (VDHR)
	Cemetery	Stream (NHD)	Map Tile
		Waterbody (NHD)	Parcel Boundary (See Note 2)

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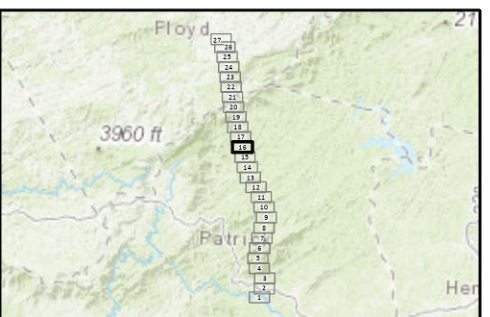
Exhibit 8: Component 2 GIS Constraints Map

Stuart Area Transmission Improvements Project
Component 2:
Mayo River (Stuart) to Floyd Transmission Improvements

See Notes 1 and 2 on the Index Map.



Existing Structures: 58 to 63
Proposed Structures: 41 to 45



	Proposed Structure		Filing Corridor (See Note 1)		Waterbody (NHD)
	Existing APCo Structure to be Removed		Cemetery		Wetland (NWI)
	Component 2 Proposed Route (Single Circuit)		Birding and Wildlife Trail Sites		Floodplain
	Existing Transmission Line to be Retired		Highway		Architectural Resource (VDHR)
	Proposed Right-of-Way (100')		Road		Map Tile
			Stream (NHD)		Parcel Boundary (See Note 2)

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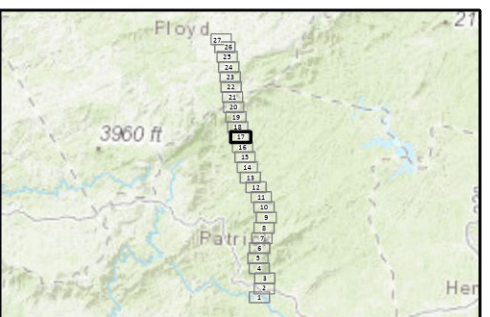
Exhibit 8: Component 2 GIS Constraints Map

Stuart Area Transmission Improvements Project
Component 2:
Mayo River (Stuart) to Floyd Transmission Improvements

See Notes 1 and 2 on the Index Map.



Existing Structures: 52 to 58
Proposed Structures: 37 to 41



Proposed Structure	Proposed Right-of-Way (100')	Waterbody (NHD)
Existing APCo Structure to be Removed	Filing Corridor (See Note 1)	Wetland (NWI)
Component 2 Proposed Route (Single Circuit)	Cemetery	Floodplain
Existing Transmission Line to be Retired	Highway	Local Conservation Land
	Road	Map Tile
	Stream (NHD)	Parcel Boundary (See Note 2)

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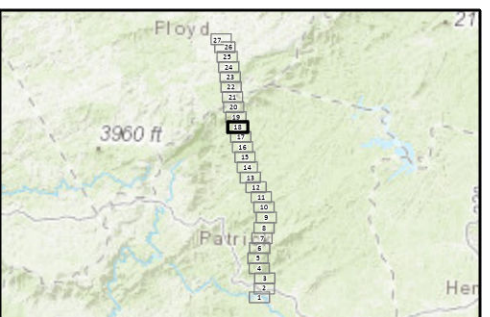
Exhibit 8: Component 2 GIS Constraints Map

Stuart Area Transmission Improvements Project
Component 2:
Mayo River (Stuart) to Floyd Transmission Improvements

See Notes 1 and 2 on the Index Map.



Existing Structures: 46 to 51
Proposed Structures: 33 to 37



Proposed Structure	Existing Transmission Line to be Retired	Stream (NHD)
Existing APCo Structure to be Removed	Proposed Right-of-Way (100')	Waterbody (NHD)
Component 2 Proposed Route (Single Circuit)	Filing Corridor (See Note 1)	Map Tile
	Road	Parcel Boundary (See Note 2)

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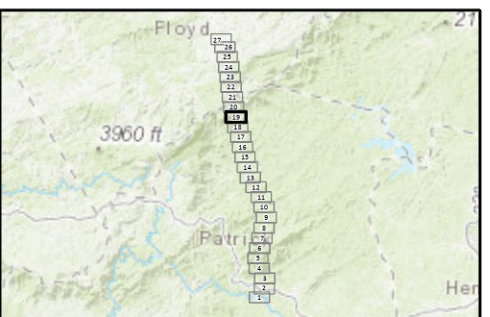
Exhibit 8: Component 2 GIS Constraints Map

Stuart Area Transmission Improvements Project
Component 2:
Mayo River (Stuart) to Floyd Transmission Improvements

See Notes 1 and 2 on the Index Map.



Existing Structures: 42 to 45
Proposed Structures: 31 to 32



Proposed Structure	Proposed Right-of-Way (100')	Wetland (NWI)
Existing APCo Structure to be Removed	Filing Corridor (See Note 1)	Architectural Resource (VDHR)
Component 2 Proposed Route (Single Circuit)	Cemetery	Map Tile
Existing Transmission Line to be Retired	Road	Parcel Boundary (See Note 2)
	Stream (NHD)	
	Waterbody (NHD)	

Patrick & Floyd Counties, Virginia

Date: 5/4/2023; Author: elundy; Project: 158529

0 500 1,000 Feet

Map 19 of 27

**Exhibit 8:
Component 2
GIS Constraints Map**

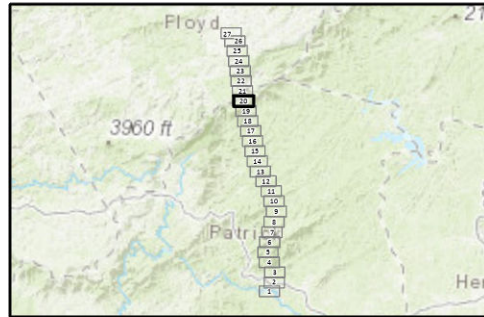
APPALACHIAN POWER
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Stuart Area Transmission Improvements Project
Component 2:
Mayo River (Stuart) to Floyd Transmission Improvements

See Notes 1 and 2 on the Index Map.



Existing Structures: 38 to 41
Proposed Structures: 29 to 30



	Proposed Structure		Filing Corridor (See Note 1)		Wetland (NWI)
	Existing APCo Structure to be Removed		Highway		Federal Easement
	Component 2 Proposed Route (Single Circuit)		Road		Blue Ridge Parkway National Parkway
	Existing Transmission Line to be Retired		Stream (NHD)		Federal Conservation Land
	Proposed Right-of-Way (100')		County Boundary		Map Tile
			Waterbody (NHD)		Parcel Boundary (See Note 2)

Patrick & Floyd Counties,
Virginia

Date: 5/4/2023; Author: elundy; Project: 158529

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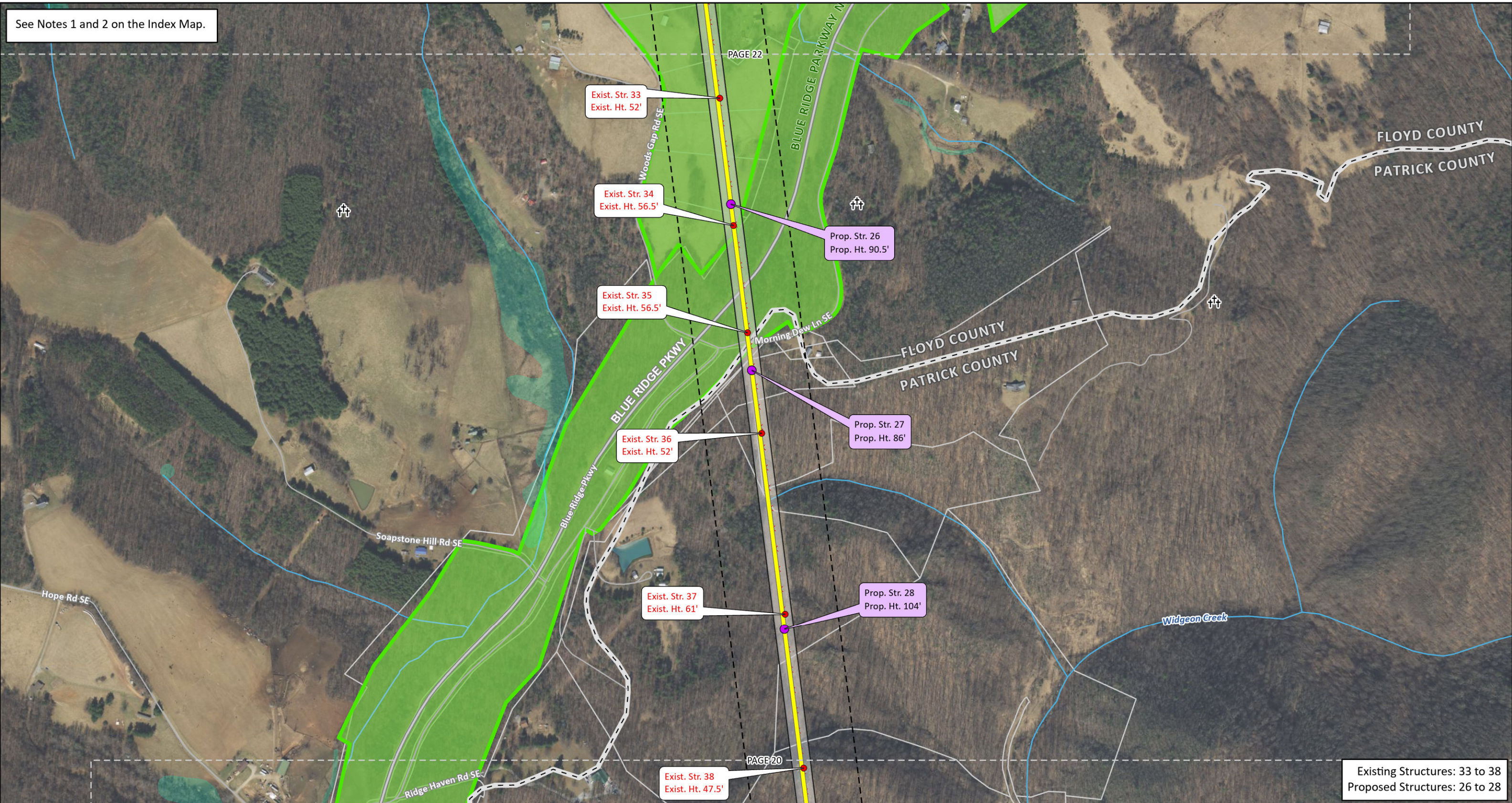
Map 20 of 27

Exhibit 8: Component 2 GIS Constraints Map

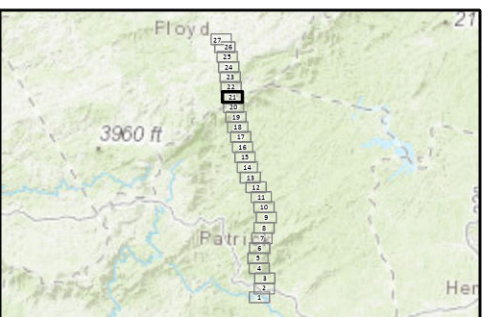
Stuart Area Transmission
Improvements Project
Component 2:
Mayo River (Stuart) to Floyd
Transmission Improvements

An AEP Company

See Notes 1 and 2 on the Index Map.



Existing Structures: 33 to 38
Proposed Structures: 26 to 28



	Proposed Structure		Filing Corridor (See Note 1)		Waterbody (NHD)
	Existing APCo Structure to be Removed		Cemetery		Wetland (NWI)
	Component 2 Proposed Route (Single Circuit)		Highway		Blue Ridge Parkway National Parkway
	Existing Transmission Line to be Retired		Road		Federal Conservation Land
	Proposed Right-of-Way (100')		Stream (NHD)		Map Tile
			County Boundary		Parcel Boundary (See Note 2)

Patrick & Floyd Counties, Virginia

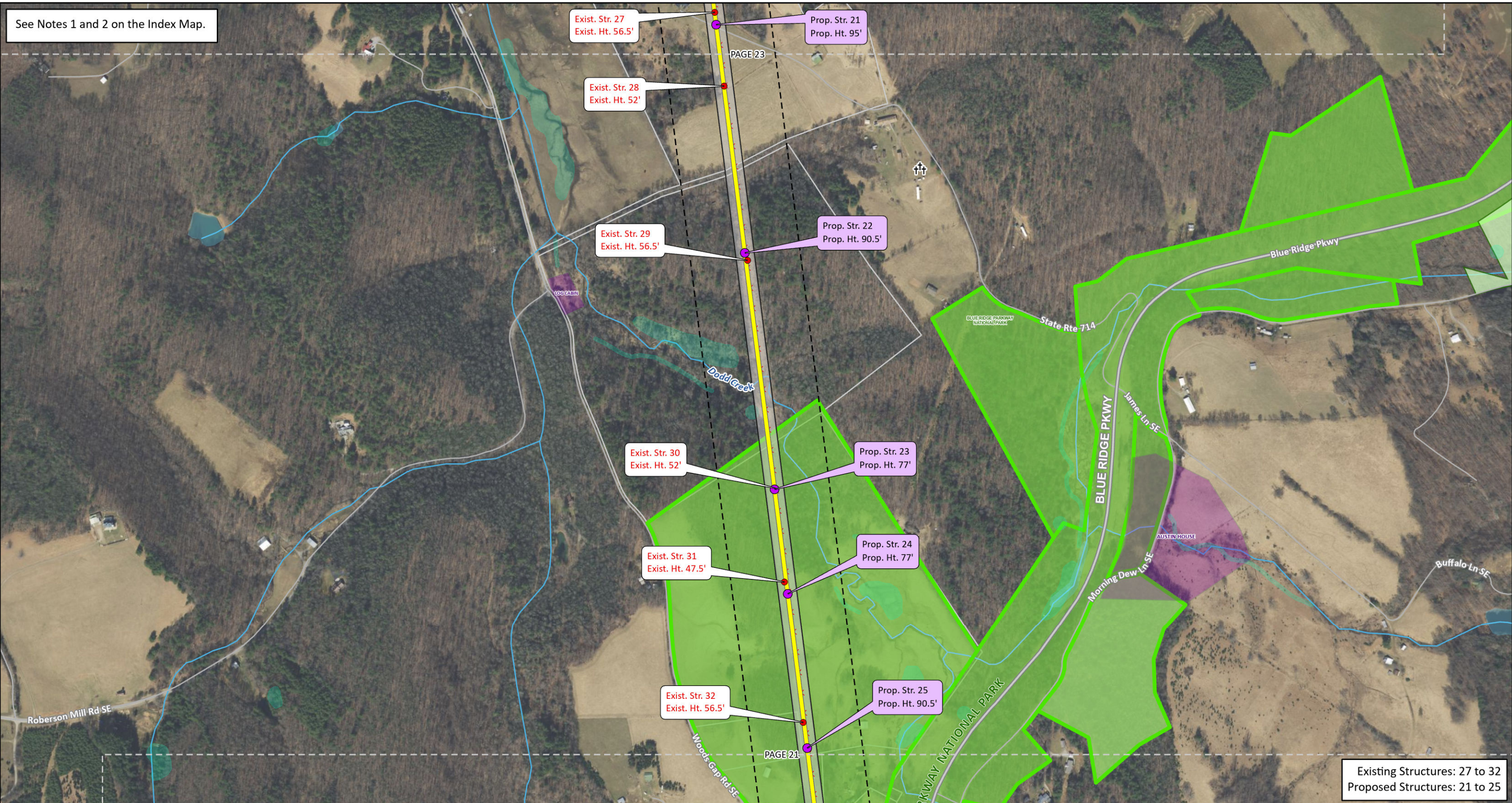
Date: 5/4/2023; Author: elundy; Project: 158529

Map 21 of 27

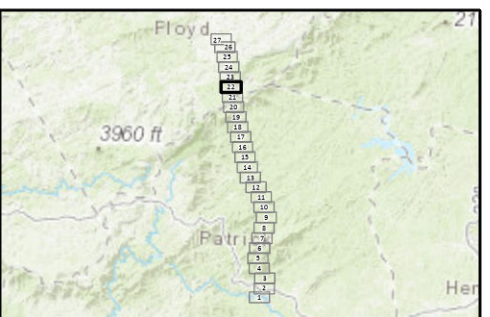
**Exhibit 8:
Component 2
GIS Constraints Map**

Stuart Area Transmission Improvements Project
Component 2:
Mayo River (Stuart) to Floyd Transmission Improvements

See Notes 1 and 2 on the Index Map.



Existing Structures: 27 to 32
Proposed Structures: 21 to 25



<ul style="list-style-type: none"> ● Proposed Structure ● Existing APCo Structure to be Removed Component 2 Proposed Route (Single Circuit) 	<ul style="list-style-type: none"> ✂ Existing Transmission Line to be Retired Proposed Right-of-Way (100') Filing Corridor (See Note 1) †† Cemetery Highway 	<ul style="list-style-type: none"> Road Stream (NHD) Waterbody (NHD) Wetland (NWI) Federal Easement 	<ul style="list-style-type: none"> Blue Ridge Parkway National Parkway Federal Conservation Land Architectural Resource (VDHR) Map Tile Parcel Boundary (See Note 2)
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Patrick & Floyd Counties,
Virginia

Date: 5/4/2023; Author: elundy; Project: 158529

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Map 22 of 27

Exhibit 8: Component 2 GIS Constraints Map

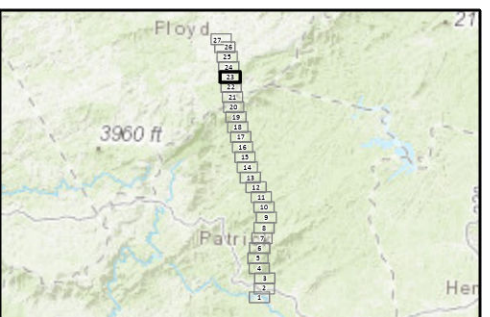
Stuart Area Transmission
Improvements Project
Component 2:
Mayo River (Stuart) to Floyd
Transmission Improvements

An AEP Company

See Notes 1 and 2 on the Index Map.



Existing Structures: 23 to 27
Proposed Structures: 18 to 21



<ul style="list-style-type: none"> ● Proposed Structure ● Existing APCo Structure to be Removed Component 2 Proposed Route (Single Circuit) 	<ul style="list-style-type: none"> ✂ Existing Transmission Line to be Retired Proposed Right-of-Way (100') Filing Corridor (See Note 1) Road 	<ul style="list-style-type: none"> Stream (NHD) Waterbody (NHD) Wetland (NWI) Map Tile Parcel Boundary (See Note 2)
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Patrick & Floyd Counties,
Virginia

Date: 5/4/2023; Author: elundy; Project: 158529

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Map 23 of 27

Exhibit 8: Component 2 GIS Constraints Map

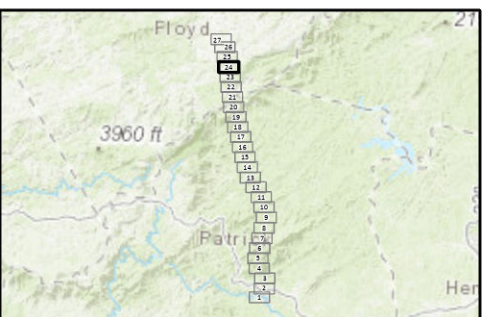
An AEP Company

Stuart Area Transmission
Improvements Project
Component 2:
Mayo River (Stuart) to Floyd
Transmission Improvements

See Notes 1 and 2 on the Index Map.



Existing Structures: 18 to 22
Proposed Structures: 14 to 18



<ul style="list-style-type: none"> ● Proposed Structure ● Existing APCo Structure to be Removed Component 2 Proposed Route (Single Circuit) Existing APCo Transmission Line (345 kV +) 	<ul style="list-style-type: none"> ✂ Existing Transmission Line to be Retired Proposed Right-of-Way (100') Filing Corridor (See Note 1) Road Stream (NHD) 	<ul style="list-style-type: none"> Waterbody (NHD) Wetland (NWI) Map Tile Parcel Boundary (See Note 2)
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Patrick & Floyd Counties,
Virginia

Date: 5/4/2023; Author: elundy; Project: 158529

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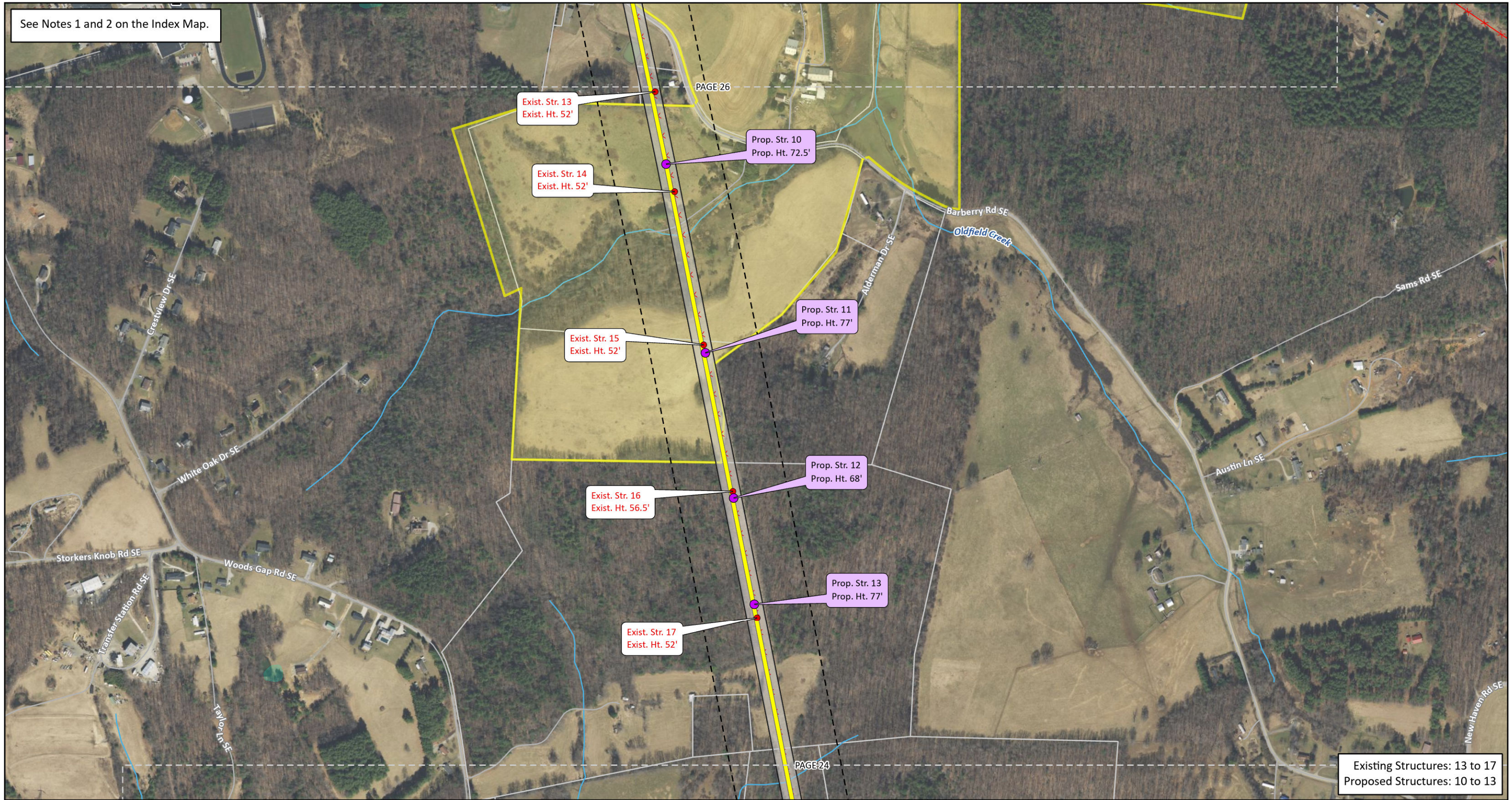
Map 24 of 27

Exhibit 8: Component 2 GIS Constraints Map

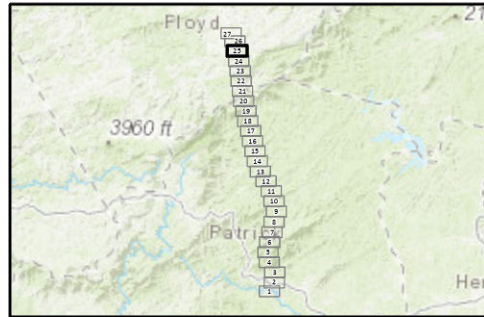
An AEP Company

Stuart Area Transmission
Improvements Project
Component 2:
Mayo River (Stuart) to Floyd
Transmission Improvements

See Notes 1 and 2 on the Index Map.



Existing Structures: 13 to 17
Proposed Structures: 10 to 13



<ul style="list-style-type: none"> Proposed Structure Existing APCo Structure to be Removed Component 2 Proposed Route (Single Circuit) Existing Transmission Line to be Retired 	<ul style="list-style-type: none"> Proposed Right-of-Way (100') Filing Corridor (See Note 1) School Road Stream (NHD) 	<ul style="list-style-type: none"> Wetland (NWI) VOF Easement Map Tile Parcel Boundary (See Note 2)
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Patrick & Floyd Counties, Virginia

Date: 5/4/2023; Author: elundy; Project: 158529

0 500 1,000 Feet

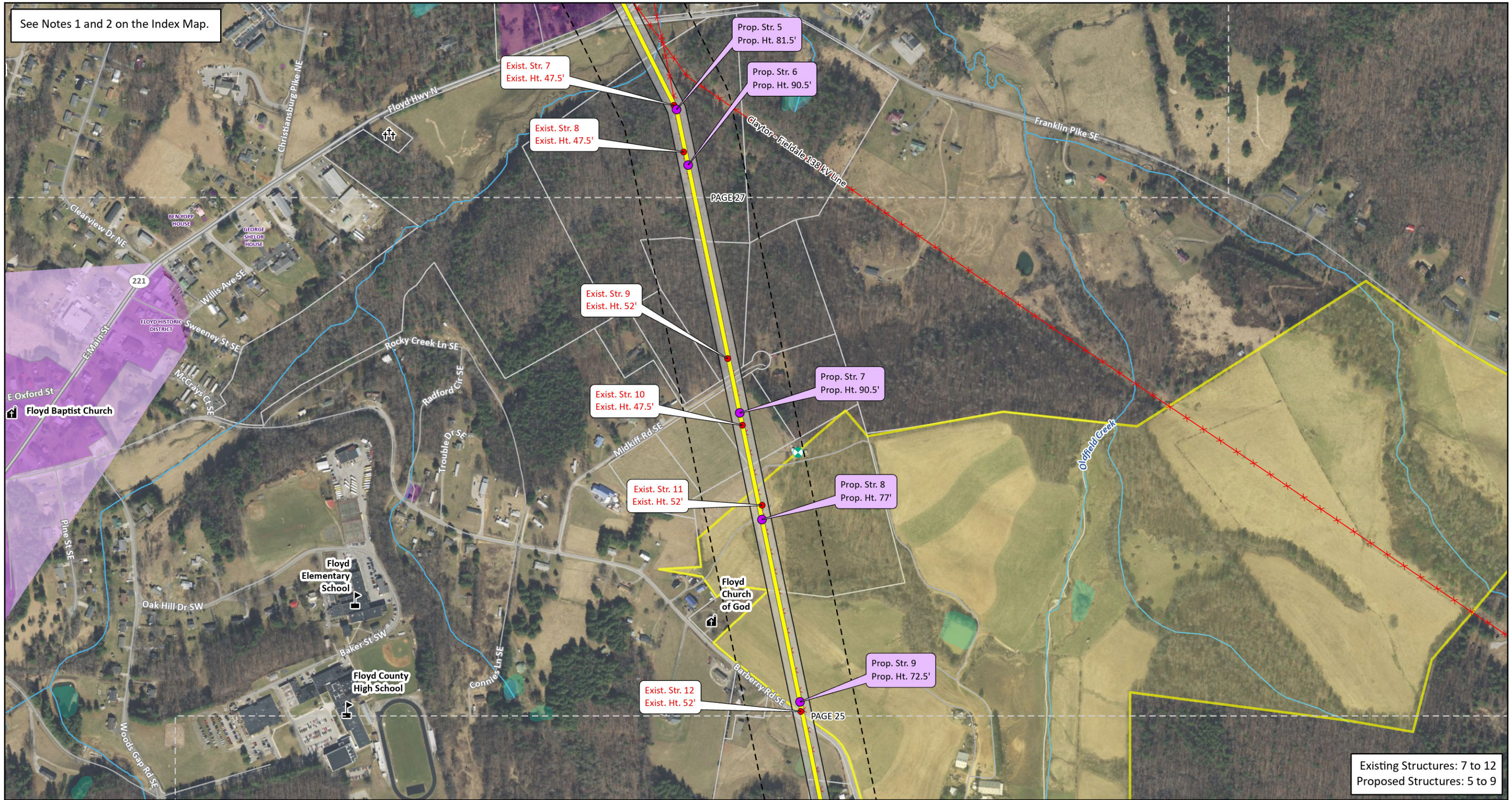
Map 25 of 27

Exhibit 8:
Component 2
GIS Constraints Map

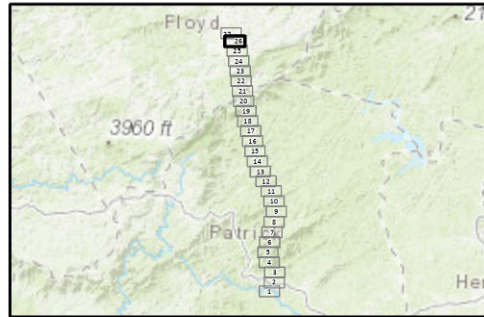
Stuart Area Transmission Improvements Project
Component 2:
Mayo River (Stuart) to Floyd Transmission Improvements

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See Notes 1 and 2 on the Index Map.



Existing Structures: 7 to 12
Proposed Structures: 5 to 9



Proposed Structure	Proposed Right-of-Way (100')	Cell Tower (FCC)	VOF Easement
Existing APCo Structure to be Removed	Filing Corridor (See Note 1)	Highway	Architectural Resource (VDHR)
Component 2 Proposed Route (Single Circuit)	Place of Worship	Road	Historic District (NHRP)
Existing Transmission Line to be Retired	School	Stream (NHD)	Map Tile
	Cemetery	Waterbody (NHD)	Parcel Boundary (See Note 2)
		Wetland (NWI)	

Patrick & Floyd Counties, Virginia

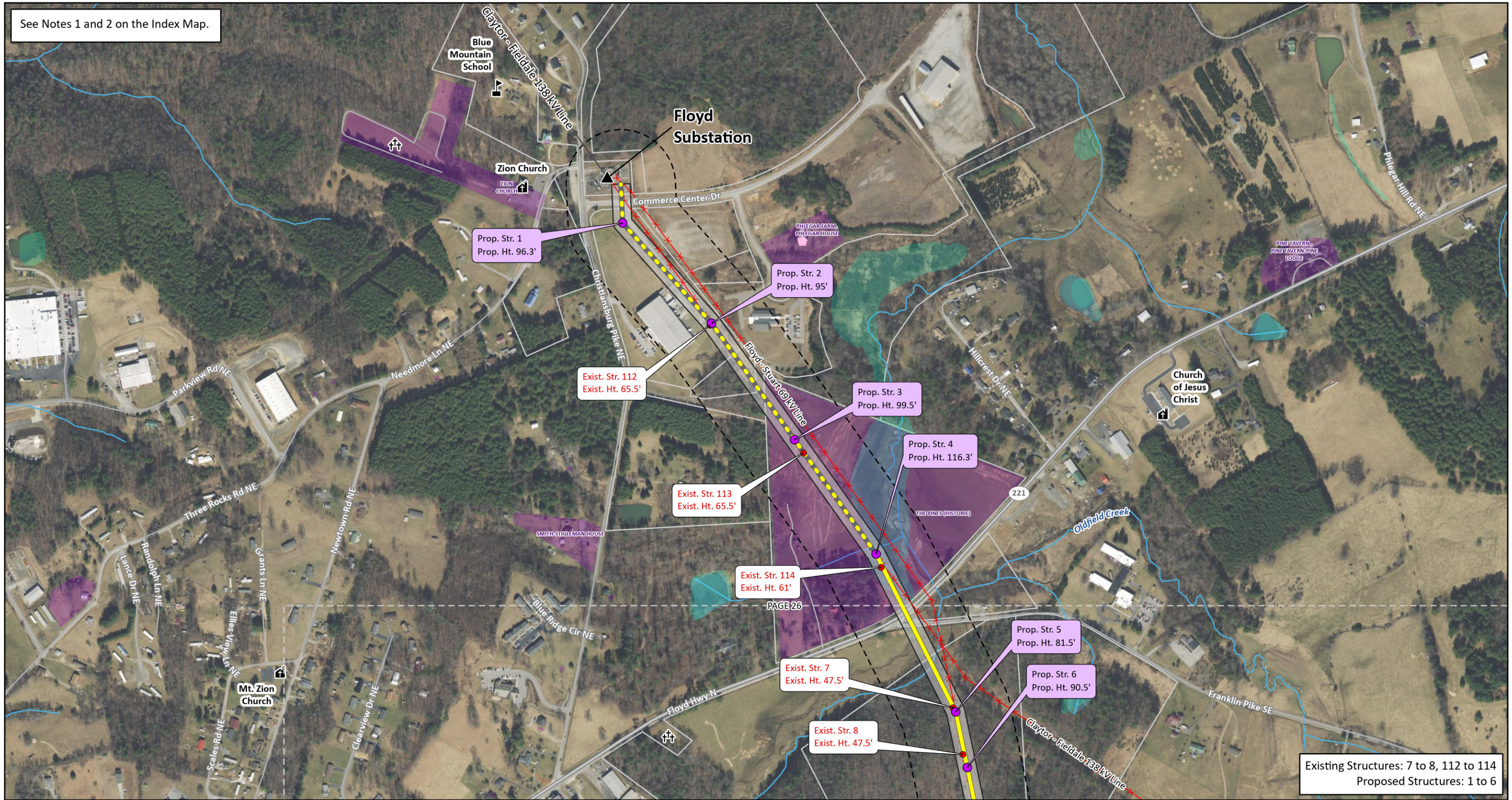
Date: 5/4/2023; Author: elundy; Project: 158529

Map 26 of 27

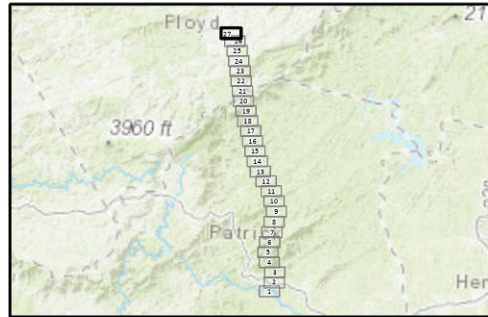
**Exhibit 8:
Component 2
GIS Constraints Map**

Stuart Area Transmission Improvements Project
Component 2:
Mayo River (Stuart) to Floyd Transmission Improvements

See Notes 1 and 2 on the Index Map.



Existing Structures: 7 to 8, 112 to 114
Proposed Structures: 1 to 6



▲ Existing APCo Substation	● Existing APCo Transmission Line (115 kV - 230 kV)	🏫 School	💧 Waterbody (NHD)
● Proposed Structure	✂ Existing Transmission Line to be Retired	⛔ Cemetery	🌿 Wetland (NWI)
● Existing APCo Structure to be Removed	▭ Proposed Right-of-Way (100')	🏡 NRHP Building	🏠 Architectural Resource (VDHR)
🟡 Component 2 Proposed Route (Single Circuit)	▭ Filing Corridor (See Note 1)	🛣 Highway	🗺 Map Tile
🟠 Component 2 Proposed Route (Double Circuit)	⛪ Place of Worship	🛣 Road	▭ Parcel Boundary (See Note 2)
		🌊 Stream (NHD)	

Patrick & Floyd Counties, Virginia

Date: 5/4/2023; Author: elundy; Project: 158529

0 500 1,000
Feet

Map 27 of 27

**Exhibit 8:
Component 2
GIS Constraints Map**

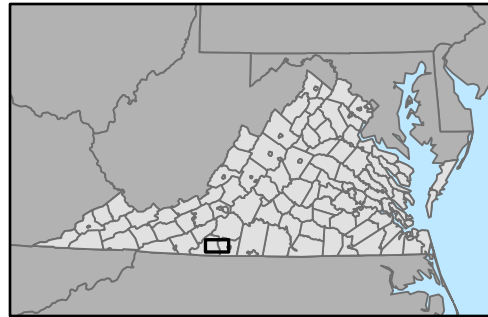
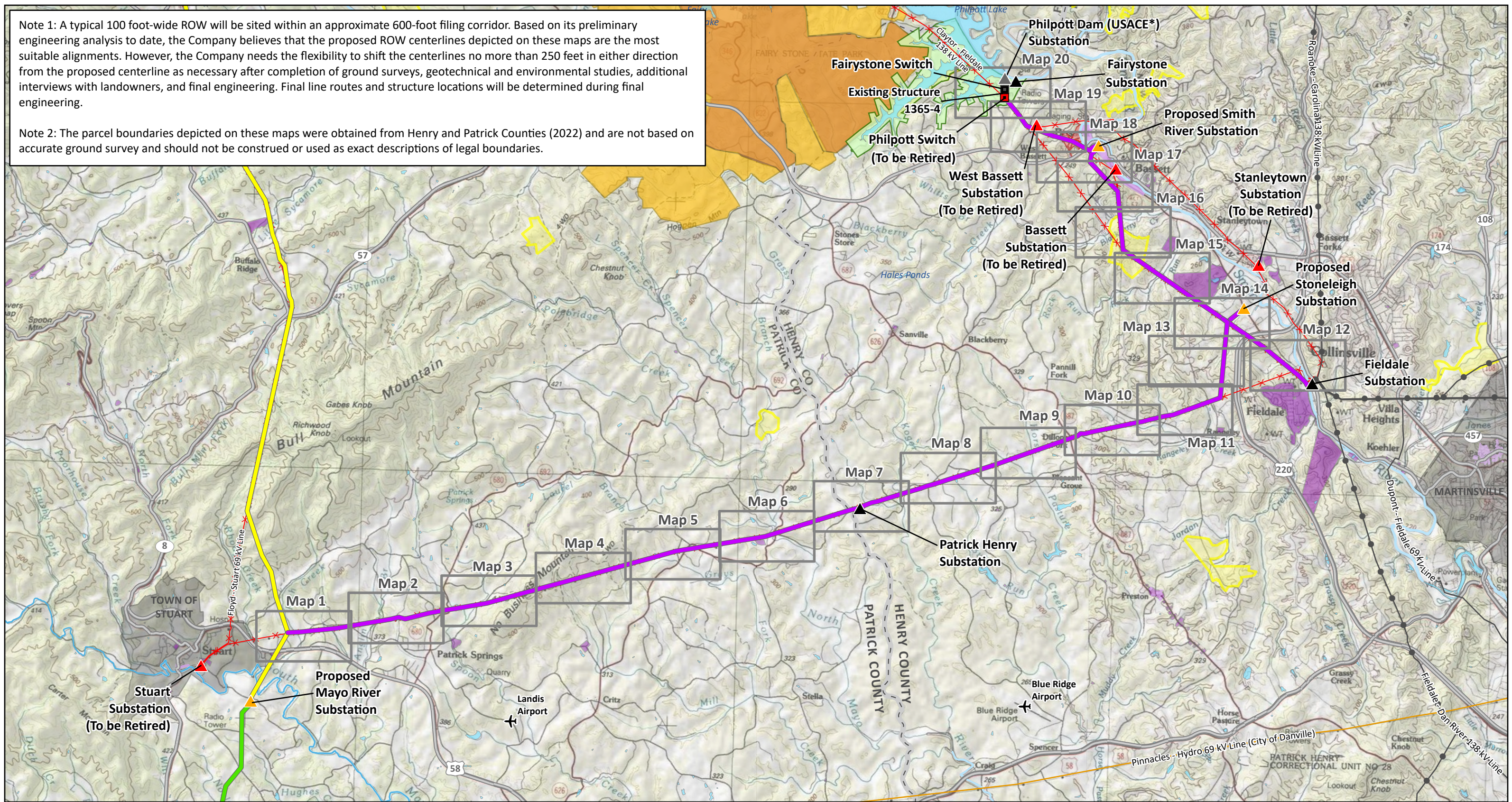
Stuart Area Transmission Improvements Project
Component 2:
Mayo River (Stuart) to Floyd Transmission Improvements

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Exhibit 9: Component 3 GIS Constraints Map

Note 1: A typical 100 foot-wide ROW will be sited within an approximate 600-foot filing corridor. Based on its preliminary engineering analysis to date, the Company believes that the proposed ROW centerlines depicted on these maps are the most suitable alignments. However, the Company needs the flexibility to shift the centerlines no more than 250 feet in either direction from the proposed centerline as necessary after completion of ground surveys, geotechnical and environmental studies, additional interviews with landowners, and final engineering. Final line routes and structure locations will be determined during final engineering.

Note 2: The parcel boundaries depicted on these maps were obtained from Henry and Patrick Counties (2022) and are not based on accurate ground survey and should not be construed or used as exact descriptions of legal boundaries.



Proposed APCo Substation	Component 3 Proposed Route	Airport	Local Conservancy
Existing APCo Substation	Component 1 Proposed Route	Highway	Philpott Lake Recreation Area (USACE)
Existing APCo Substation to be Retired	Component 2 Proposed Route	Stream (NHD)	Historic District (VDHR)
Non-APCo Generation Facility	Existing APCo Transmission Line (69 kv or lower)	River (NHD)	Architectural Resource (VDHR)
Existing Switch Station	Existing APCo Transmission Line (115 kv - 230 kv)	Waterbody (NHD)	Town Boundary
Existing Switch Station to be Retired	Existing Non-APCo Transmission Line	State Conservation Land	County Boundary
	Existing Transmission Line to be Retired	VOF Easement	Map Tile

* USACE = U.S. Army Corps of Engineers

Patrick & Henry Counties,
Virginia

Date: 7/10/2023; Author: ckunde; Project: 158529

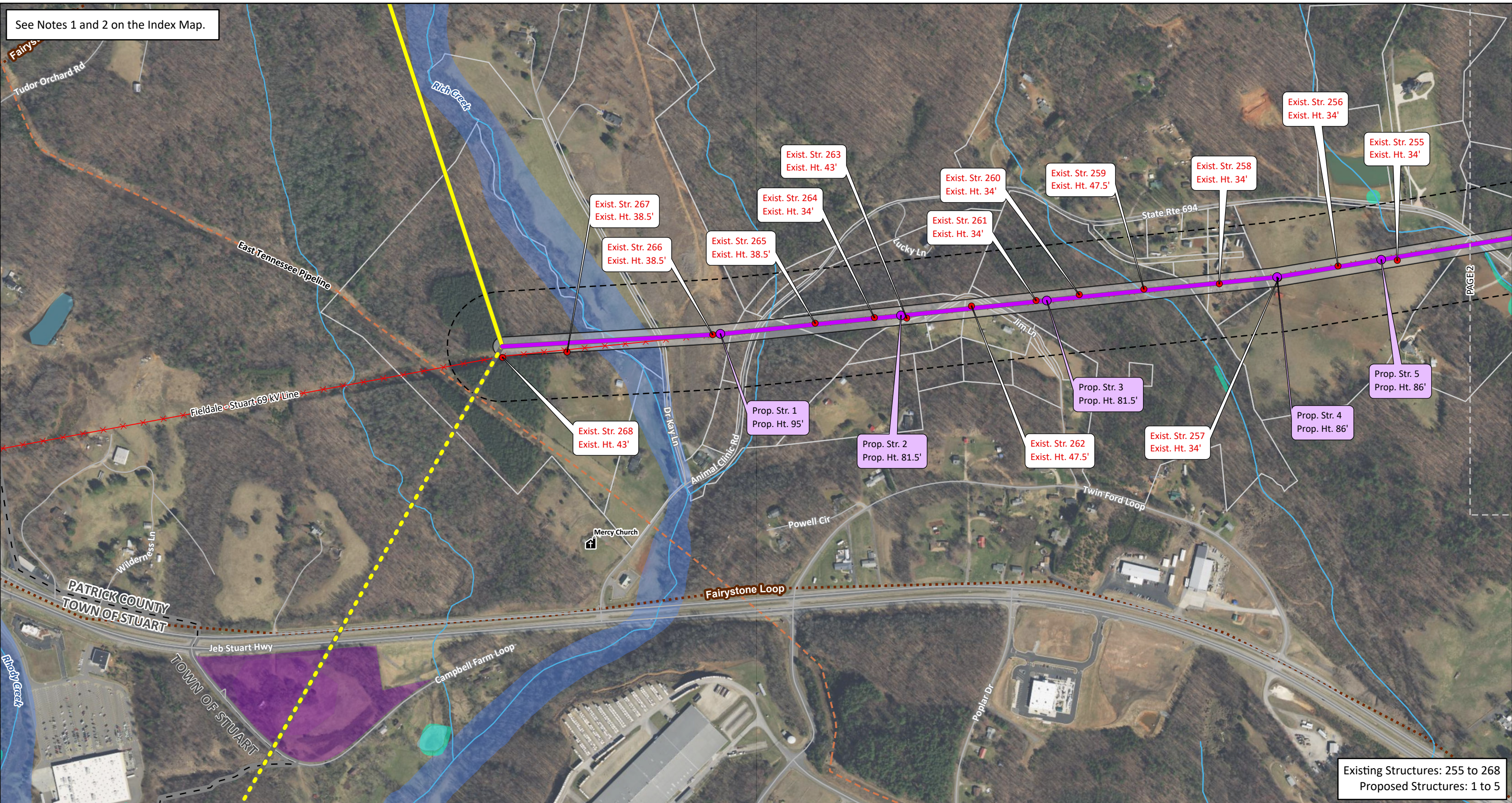
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Miles

INDEX

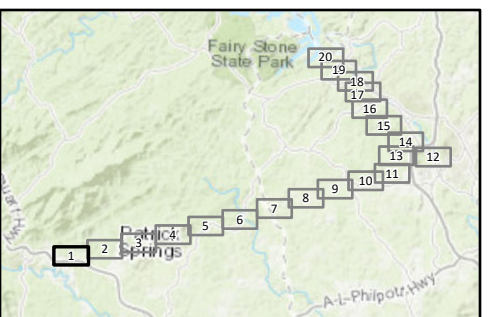
Exhibit 9: Component 3 GIS Constraints Map

Stuart Area Transmission
Improvements Project:
Component 3:
Mayo River (Stuart)
to Bassett Area
Transmission Improvements

See Notes 1 and 2 on the Index Map.



Existing Structures: 255 to 268
Proposed Structures: 1 to 5



Proposed Structure	Existing Transmission Line to be Retired	Stream (NHD)
Existing APCo Structure to be Removed	Proposed Right-of-Way (100')	Waterbody (NHD)
Component 3 Proposed Route (Single Circuit)	Filing Corridor (See Note 1)	Wetland (NWI)
Component 2 Proposed Route (Single Circuit)	Place of Worship	Floodplain
Component 2 Proposed Route (Double Circuit)	Road	Architectural Resource (VDHR)
	Natural Gas Pipeline	Town Boundary
	Recreation Trail	Parcel Boundary (See Note 2)
		Map Tile

Patrick & Henry Counties, Virginia

Date: 5/4/2023; Author: elundy; Project: 158529

0 500 1,000 Feet

Map 1 of 20

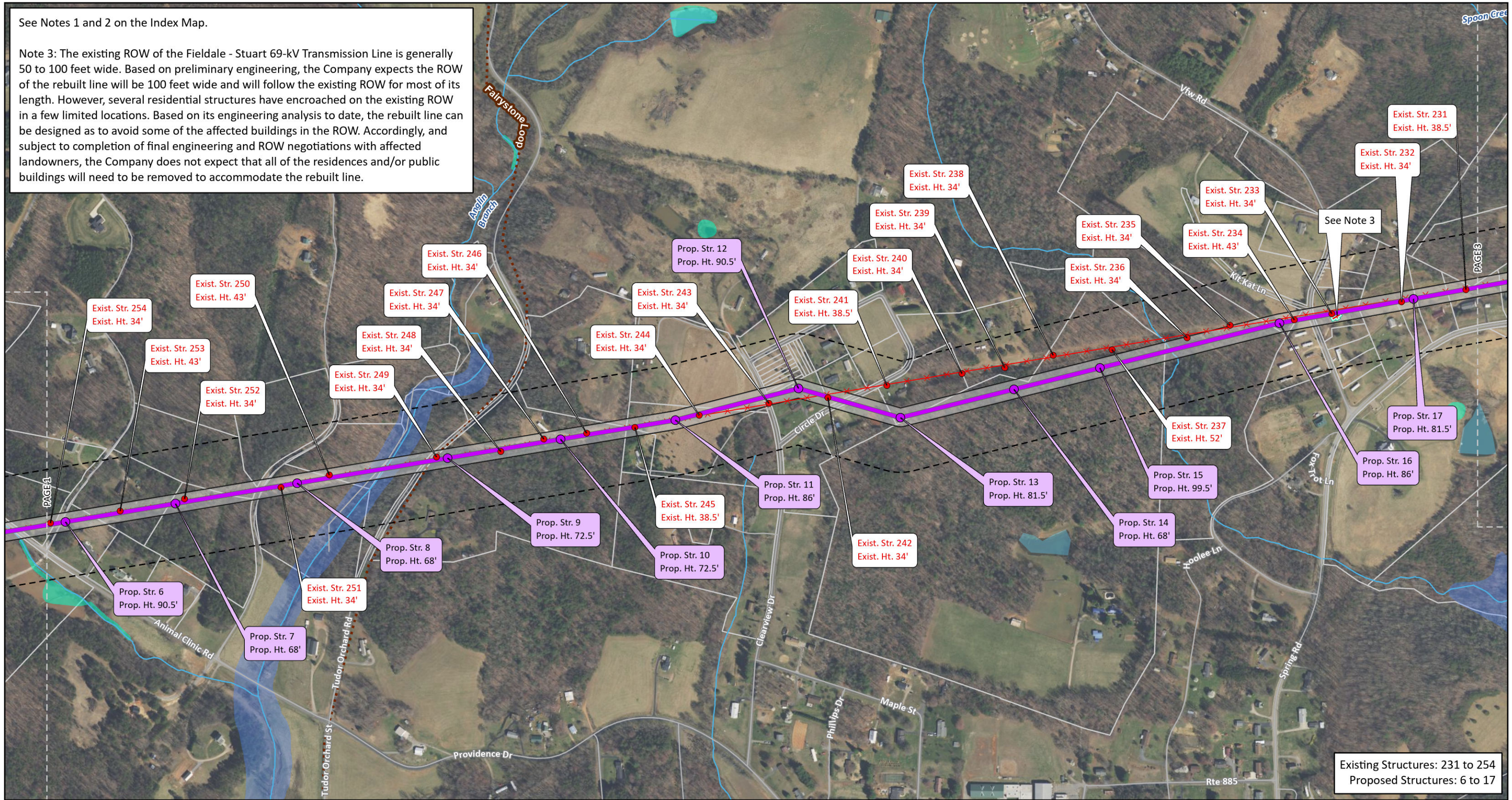
**Exhibit 9:
Component 3
GIS Constraints Map**

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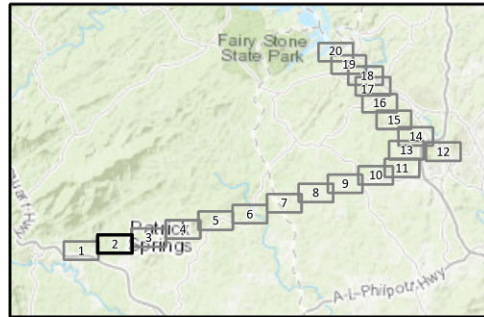
Stuart Area Transmission Improvements Project:
Component 3:
Mayo River (Stuart) to Bassett Area Transmission Improvements

See Notes 1 and 2 on the Index Map.


Note 3: The existing ROW of the Fieldale - Stuart 69-kV Transmission Line is generally 50 to 100 feet wide. Based on preliminary engineering, the Company expects the ROW of the rebuilt line will be 100 feet wide and will follow the existing ROW for most of its length. However, several residential structures have encroached on the existing ROW in a few limited locations. Based on its engineering analysis to date, the rebuilt line can be designed as to avoid some of the affected buildings in the ROW. Accordingly, and subject to completion of final engineering and ROW negotiations with affected landowners, the Company does not expect that all of the residences and/or public buildings will need to be removed to accommodate the rebuilt line.



Existing Structures: 231 to 254
Proposed Structures: 6 to 17



- Proposed Structure
- Existing APCo Structure to be Removed
- Component 3 Proposed Route (Single Circuit)
- Existing Transmission Line to be Retired
- Proposed Right-of-Way (100')
- Filing Corridor (See Note 1)
- Residential Structure (within proposed 100' ROW) (See Note 3)
- Road
- Recreation Trail
- Stream (NHD)
- Waterbody (NHD)
- Wetland (NWI)
- Floodplain
- Parcel Boundary (See Note 2)
- Map Tile



Patrick & Henry Counties,
Virginia


Date: 5/4/2023; Author: elundy; Project: 158529

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Map 2 of 20

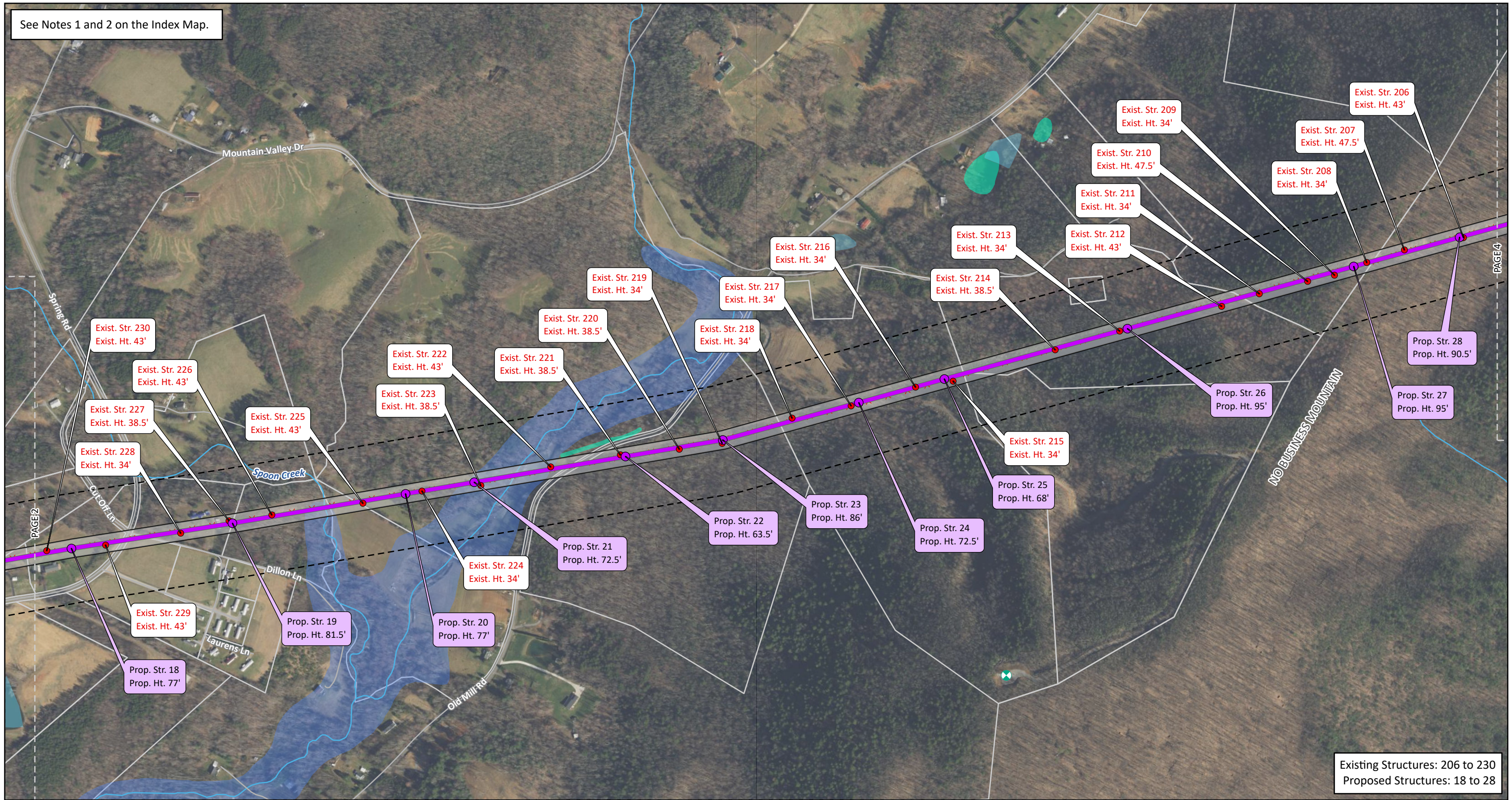
Exhibit 9: Component 3 GIS Constraints Map

Stuart Area Transmission
Improvements Project:
Component 3:
Mayo River (Stuart)
to Bassett Area
Transmission Improvements

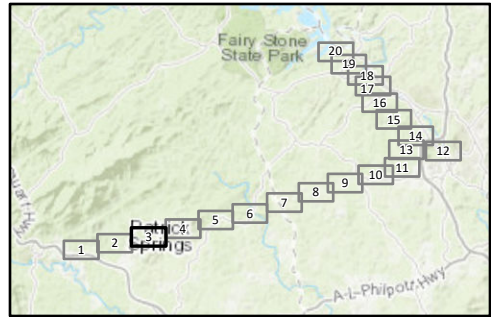


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See Notes 1 and 2 on the Index Map.



Existing Structures: 206 to 230
Proposed Structures: 18 to 28



Proposed Structure	Proposed Right-of-Way (100')	Waterbody (NHD)
Existing APCo Structure to be Removed	Filing Corridor (See Note 1)	Wetland (NWI)
Component 3 Proposed Route (Single Circuit)	Cell Tower (FCC)	Floodplain
Existing Transmission Line to be Retired	Road	Parcel Boundary (See Note 2)
	Stream (NHD)	Map Tile

Patrick & Henry Counties, Virginia

Date: 5/4/2023; Author: elundy; Project: 158529

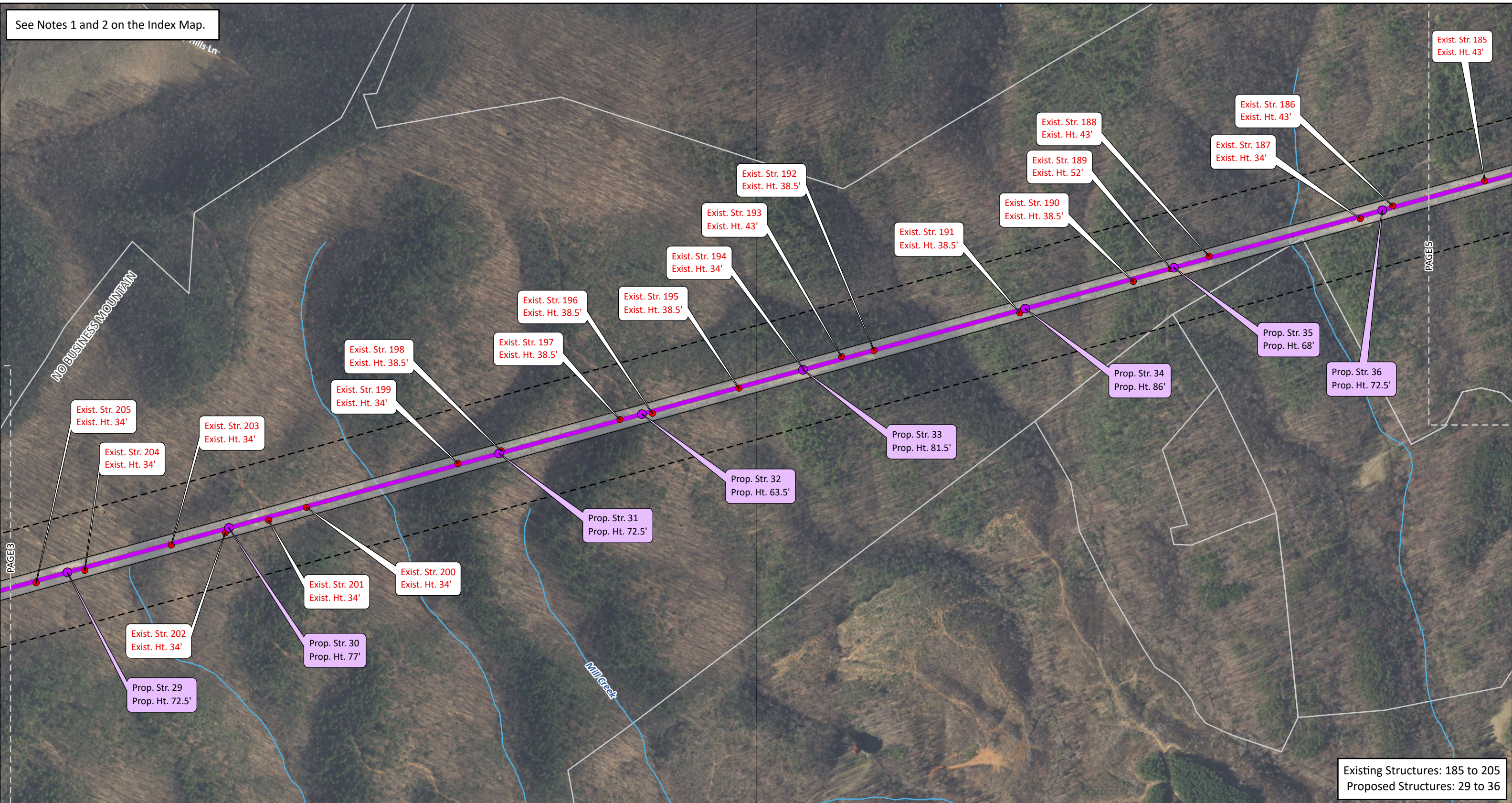
Map 3 of 20

Exhibit 9: Component 3 GIS Constraints Map

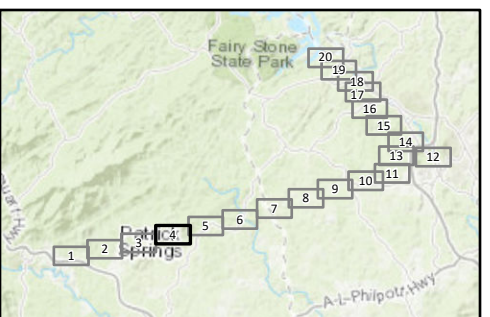
Stuart Area Transmission Improvements Project:
Component 3:
Mayo River (Stuart) to Bassett Area Transmission Improvements

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See Notes 1 and 2 on the Index Map.



Existing Structures: 185 to 205
Proposed Structures: 29 to 36



Proposed Structure	Filing Corridor (See Note 1)
Existing APCo Structure to be Removed	Road
Component 3 Proposed Route (Single Circuit)	Stream (NHD)
Existing Transmission Line to be Retired	Parcel Boundary (See Note 2)
Proposed Right-of-Way (100')	Map Tile

Patrick & Henry Counties, Virginia

Date: 5/4/2023; Author: elundy; Project: 158529

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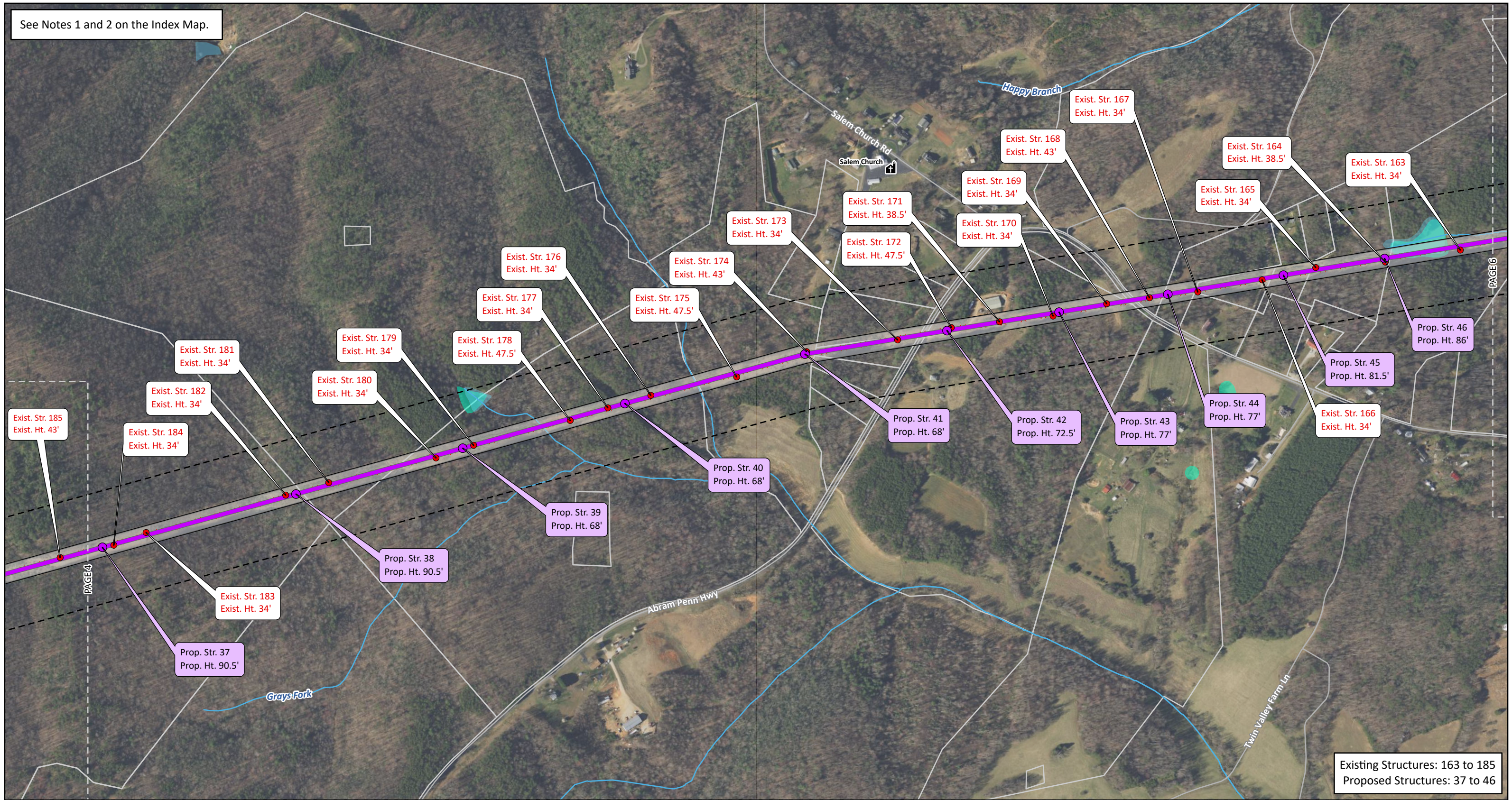
Map 4 of 20

Exhibit 9: Component 3 GIS Constraints Map

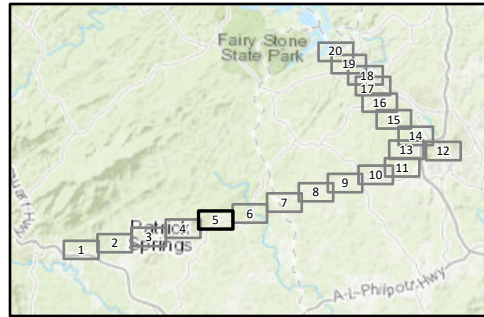
Stuart Area Transmission
Improvements Project:
Component 3:
Mayo River (Stuart)
to Bassett Area
Transmission Improvements

An AEP Company

See Notes 1 and 2 on the Index Map.



Existing Structures: 163 to 185
Proposed Structures: 37 to 46



<ul style="list-style-type: none"> ● Proposed Structure ● Existing APCo Structure to be Removed — Component 3 Proposed Route (Single Circuit) X-X Existing Transmission Line to be Retired 	<ul style="list-style-type: none"> Proposed Right-of-Way (100') Filing Corridor (See Note 1) Place of Worship Road Stream (NHD) 	<ul style="list-style-type: none"> Waterbody (NHD) Wetland (NWI) Parcel Boundary (See Note 2) Map Tile
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Patrick & Henry Counties,
Virginia

Date: 5/4/2023; Author: elundy; Project: 158529

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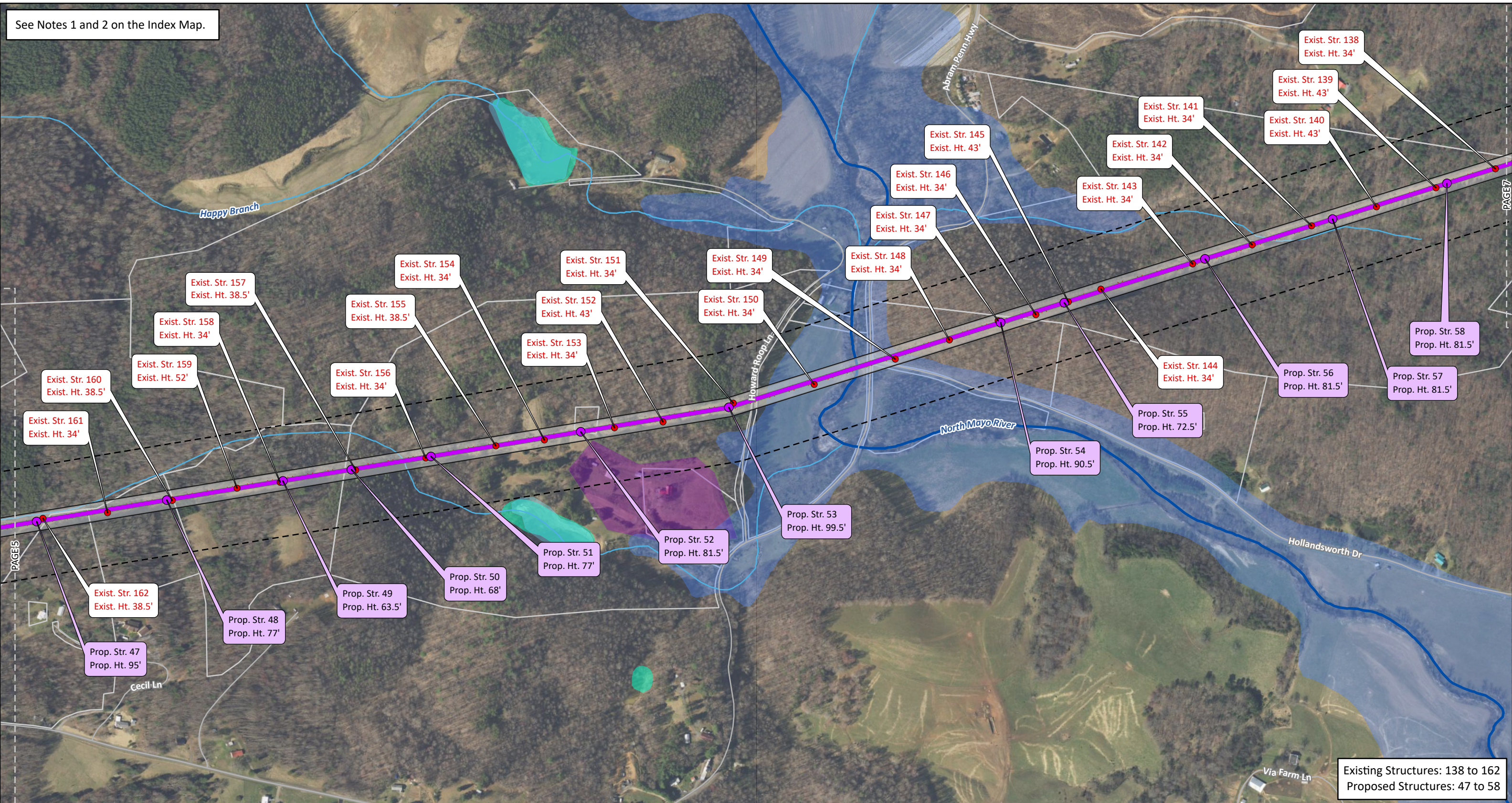
Map 5 of 20

Exhibit 9: Component 3 GIS Constraints Map

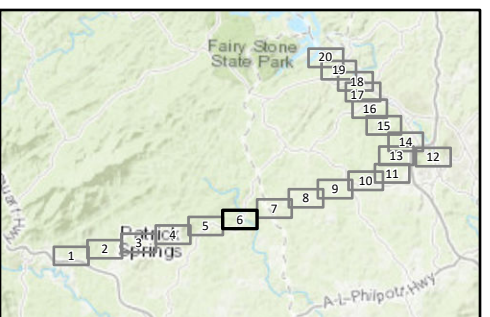
Stuart Area Transmission
Improvements Project:
Component 3:
Mayo River (Stuart)
to Bassett Area
Transmission Improvements

An AEP Company

See Notes 1 and 2 on the Index Map.



Existing Structures: 138 to 162
Proposed Structures: 47 to 58



Proposed Structure	Filing Corridor (See Note 1)	Wetland (NWI)
Existing APCo Structure to be Removed	Road	Floodplain
Component 3 Proposed Route (Single Circuit)	North Mayo Scenic River	Architectural Resource (VDHR)
Existing Transmission Line to be Retired	Stream (NHD)	Parcel Boundary (See Note 2)
Proposed Right-of-Way (100')	Waterbody (NHD)	Map Tile

Patrick & Henry Counties, Virginia

Date: 5/4/2023; Author: elundy; Project: 158529

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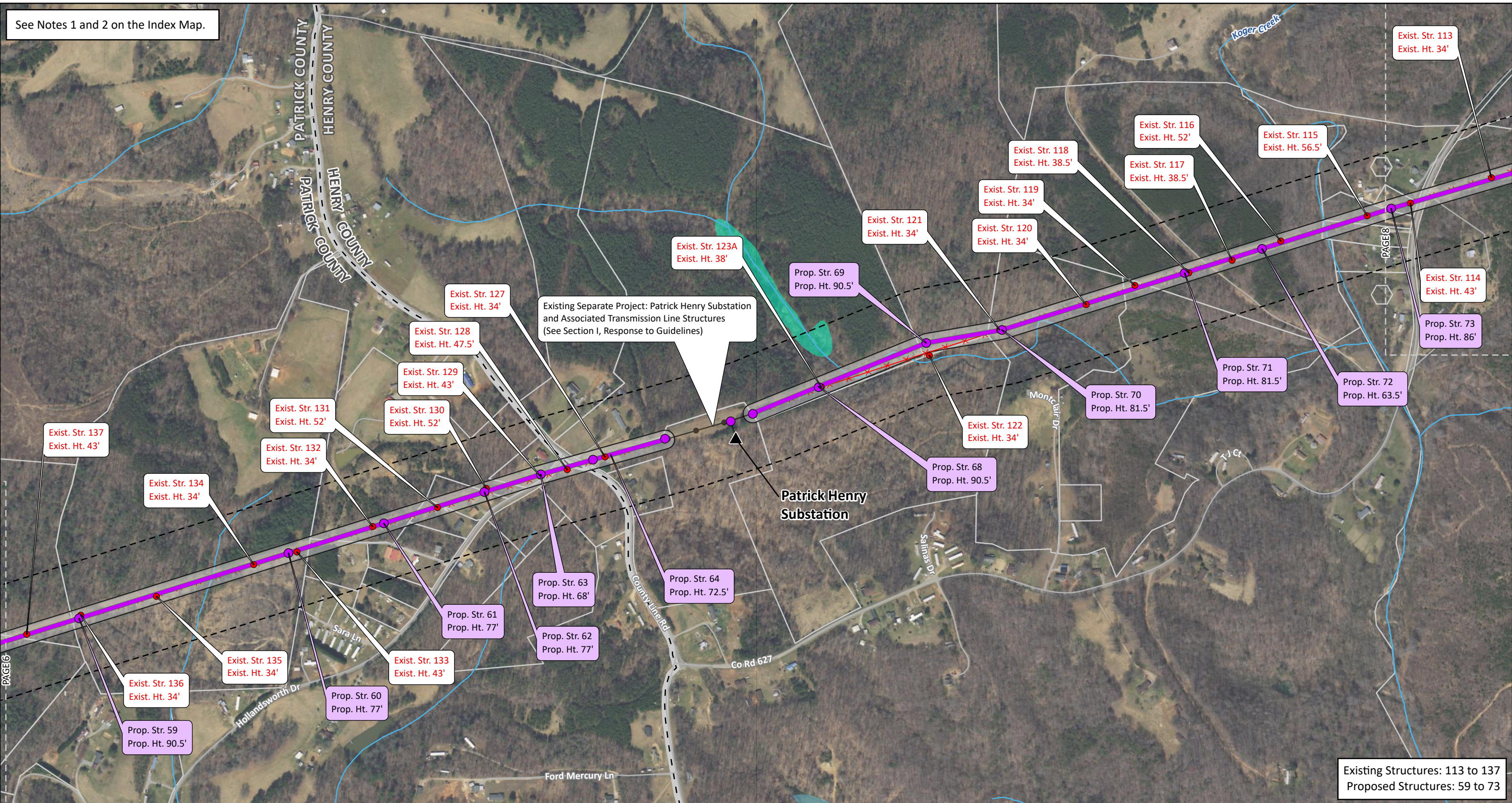
Map 6 of 20

Exhibit 9: Component 3 GIS Constraints Map

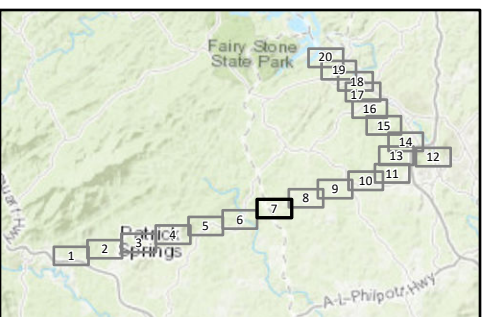
Stuart Area Transmission Improvements Project:
Component 3:
Mayo River (Stuart) to Bassett Area Transmission Improvements

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See Notes 1 and 2 on the Index Map.



Existing Structures: 113 to 137
Proposed Structures: 59 to 73



▲ Existing APCo Substation	✂ Existing Transmission Line to be Retired	Waterbody (NHD)
● Proposed Structure	▭ Proposed Right-of-Way (100')	Wetland (NWI)
● Existing APCo Structure to be Removed	▭ Filing Corridor (See Note 1)	Architectural Resource (VDHR)
— Component 3 Proposed Route (Single Circuit)	— Road	▭ Parcel Boundary (See Note 2)
— Existing APCo Transmission Line (115 kV - 230 kV)	— Stream (NHD)	▭ Map Tile
	▭ County Boundary	

Patrick & Henry Counties, Virginia

Date: 5/4/2023; Author: elundy; Project: 158529

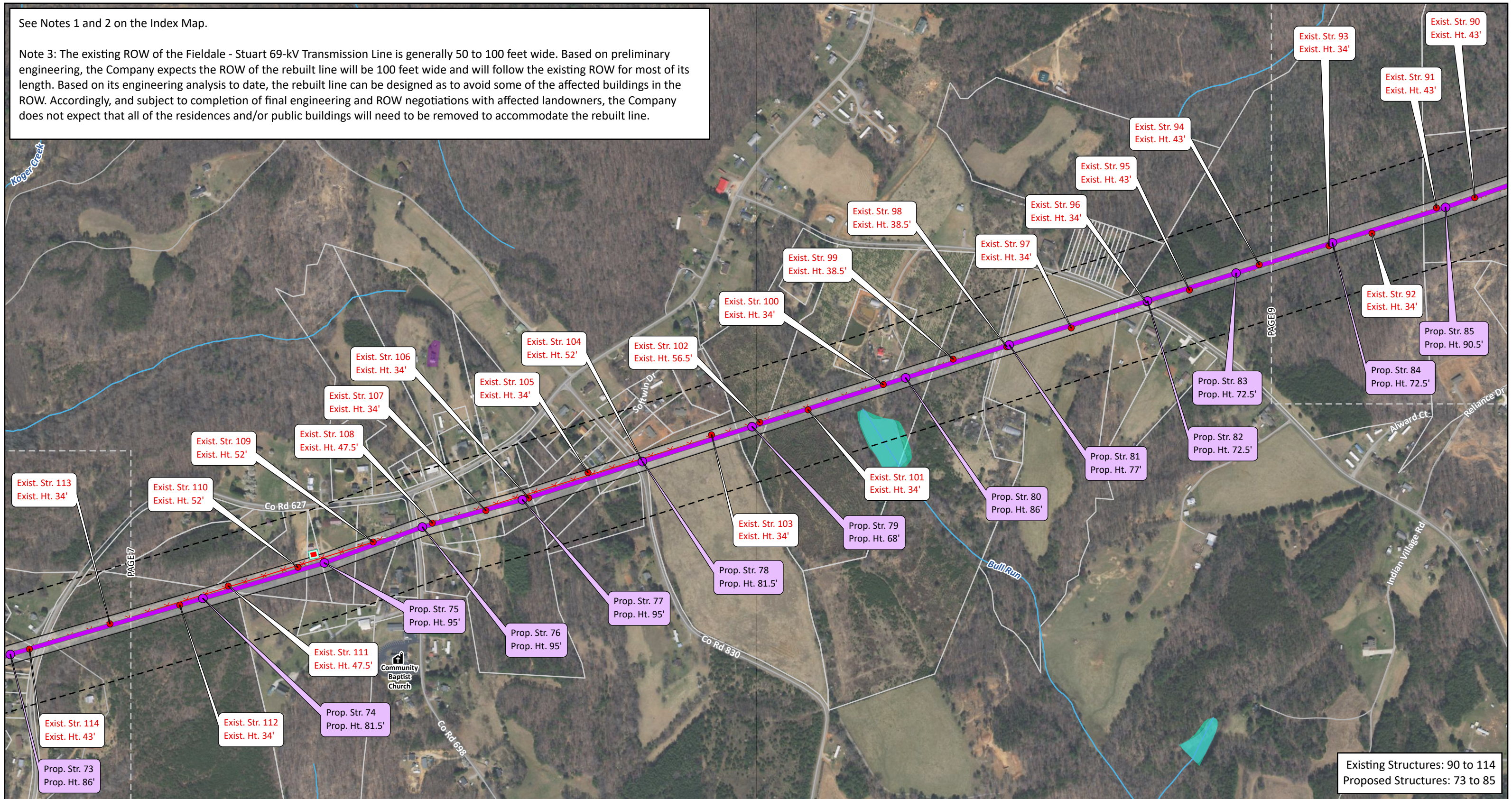
Map 7 of 20

Exhibit 9: Component 3 GIS Constraints Map

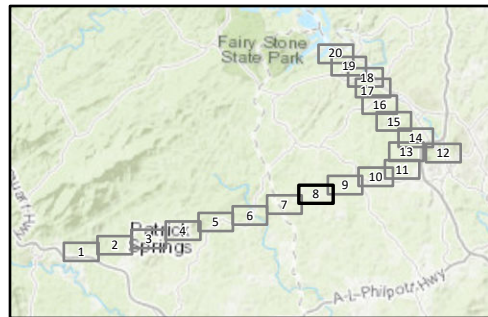
Stuart Area Transmission Improvements Project:
Component 3:
Mayo River (Stuart) to Bassett Area Transmission Improvements

See Notes 1 and 2 on the Index Map.

Note 3: The existing ROW of the Fieldale - Stuart 69-kV Transmission Line is generally 50 to 100 feet wide. Based on preliminary engineering, the Company expects the ROW of the rebuilt line will be 100 feet wide and will follow the existing ROW for most of its length. Based on its engineering analysis to date, the rebuilt line can be designed as to avoid some of the affected buildings in the ROW. Accordingly, and subject to completion of final engineering and ROW negotiations with affected landowners, the Company does not expect that all of the residences and/or public buildings will need to be removed to accommodate the rebuilt line.



Existing Structures: 90 to 114
Proposed Structures: 73 to 85



<ul style="list-style-type: none"> ● Proposed Structure ● Existing APCo Structure to be Removed — Component 3 Proposed Route (Single Circuit) X-X Existing Transmission Line to be Retired Proposed Right-of-Way (100') 	<ul style="list-style-type: none"> Filing Corridor (See Note 1) Residential Structure (within proposed 100' ROW) (See Note 3) Place of Worship Road — Stream (NHD) 	<ul style="list-style-type: none"> Waterbody (NHD) Wetland (NWI) Architectural Resource (VDHR) Parcel Boundary (See Note 2) Map Tile
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Patrick & Henry Counties, Virginia

Date: 5/4/2023; Author: elundy; Project: 158529

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1,000

Feet

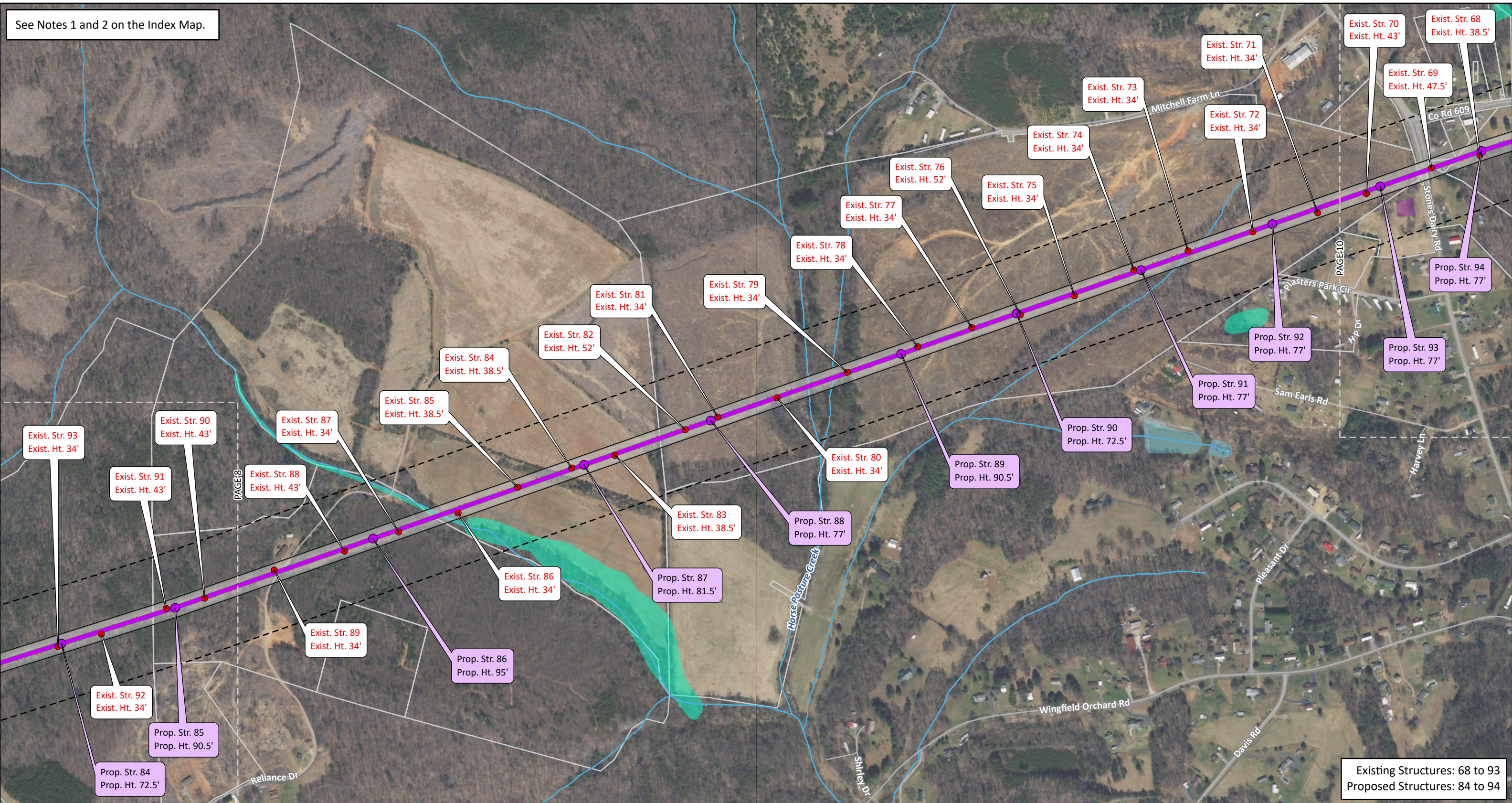
Map 8 of 20

Exhibit 9: Component 3 GIS Constraints Map

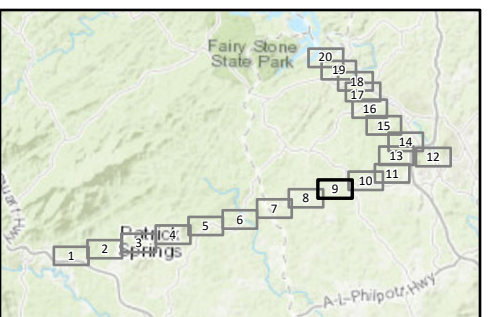
Stuart Area Transmission Improvements Project:
Component 3:
Mayo River (Stuart) to Bassett Area Transmission Improvements

An AEP Company

See Notes 1 and 2 on the Index Map.



Existing Structures: 68 to 93
Proposed Structures: 84 to 94



Proposed Structure	Proposed Right-of-Way (100')	Waterbody (NHD)
Existing APCo Structure to be Removed	Filing Corridor (See Note 1)	Wetland (NWI)
Component 3 Proposed Route (Single Circuit)	Populated Place	Architectural Resource (VDHR)
Existing Transmission Line to be Retired	Road	Parcel Boundary (See Note 2)
	Stream (NHD)	Map Tile

Patrick & Henry Counties,
Virginia

Date: 5/4/2023; Author: elundy; Project: 158529

0 500 1,000
Feet

Map 9 of 20

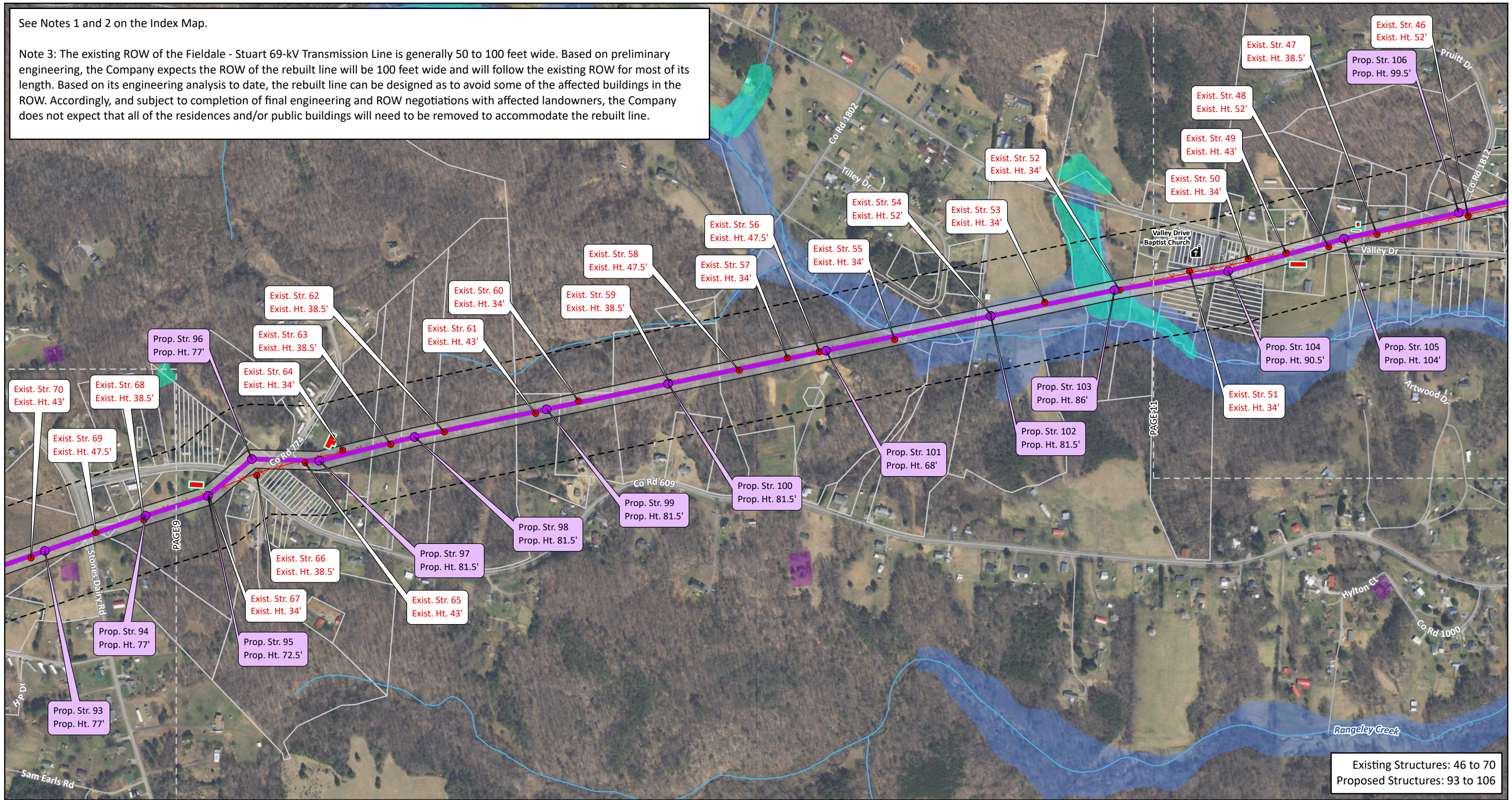
Exhibit 9: Component 3 GIS Constraints Map

An AEP Company

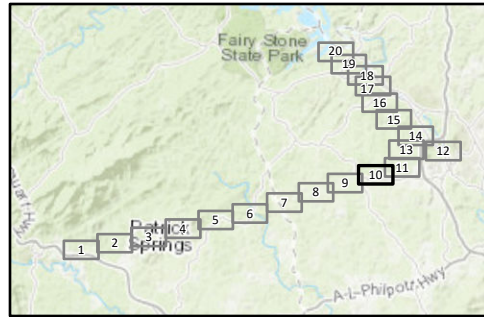
Stuart Area Transmission
Improvements Project:
Component 3:
Mayo River (Stuart)
to Bassett Area
Transmission Improvements

See Notes 1 and 2 on the Index Map.

Note 3: The existing ROW of the Fieldale - Stuart 69-kV Transmission Line is generally 50 to 100 feet wide. Based on preliminary engineering, the Company expects the ROW of the rebuilt line will be 100 feet wide and will follow the existing ROW for most of its length. Based on its engineering analysis to date, the rebuilt line can be designed as to avoid some of the affected buildings in the ROW. Accordingly, and subject to completion of final engineering and ROW negotiations with affected landowners, the Company does not expect that all of the residences and/or public buildings will need to be removed to accommodate the rebuilt line.



Existing Structures: 46 to 70
Proposed Structures: 93 to 106



<ul style="list-style-type: none"> ● Proposed Structure ● Existing APCo Structure to be Removed — Component 3 Proposed Route (Single Circuit) X-X Existing Transmission Line to be Retired Proposed Right-of-Way (100') 	<ul style="list-style-type: none"> Filing Corridor (See Note 1) Residential Structure (within proposed 100' ROW) (See Note 3) Place of Worship Populated Place Road 	<ul style="list-style-type: none"> Stream (NHD) Wetland (NWI) Floodplain Architectural Resource (VDHR) Parcel Boundary (See Note 2) Map Tile
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Patrick & Henry Counties,
Virginia

Date: 5/4/2023; Author: elundy; Project: 158529

0

500

1,000

Feet

Map 10 of 20

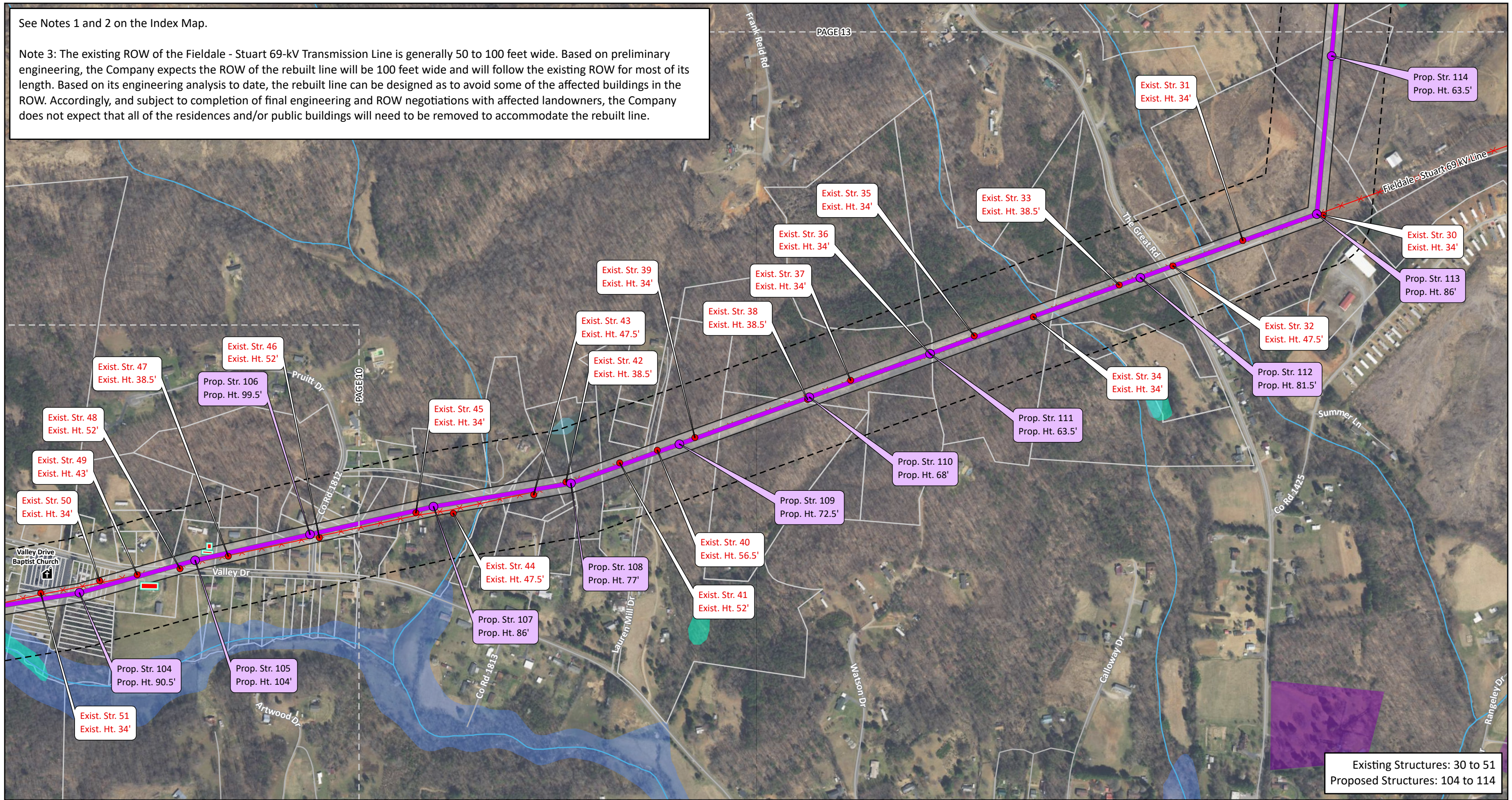
Exhibit 9: Component 3 GIS Constraints Map

Stuart Area Transmission
Improvements Project:
Component 3:
Mayo River (Stuart)
to Bassett Area
Transmission Improvements

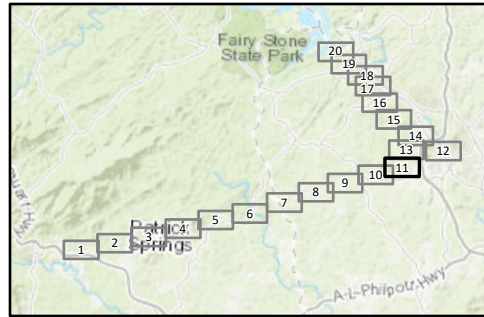
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See Notes 1 and 2 on the Index Map.

Note 3: The existing ROW of the Fieldale - Stuart 69-kV Transmission Line is generally 50 to 100 feet wide. Based on preliminary engineering, the Company expects the ROW of the rebuilt line will be 100 feet wide and will follow the existing ROW for most of its length. Based on its engineering analysis to date, the rebuilt line can be designed as to avoid some of the affected buildings in the ROW. Accordingly, and subject to completion of final engineering and ROW negotiations with affected landowners, the Company does not expect that all of the residences and/or public buildings will need to be removed to accommodate the rebuilt line.



Existing Structures: 30 to 51
Proposed Structures: 104 to 114



<ul style="list-style-type: none"> Proposed Structure Existing APCo Structure to be Removed Component 3 Proposed Route (Single Circuit) Existing Transmission Line to be Retired Proposed Right-of-Way (100') 	<ul style="list-style-type: none"> Filing Corridor (See Note 1) Residential Structure (within proposed 100' ROW) (See Note 3) Place of Worship Road Stream (NHD) 	<ul style="list-style-type: none"> Waterbody (NHD) Wetland (NWI) Floodplain Architectural Resource (VDHR) Parcel Boundary (See Note 2) Map Tile
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Patrick & Henry Counties, Virginia

Date: 5/4/2023; Author: elundy; Project: 158529

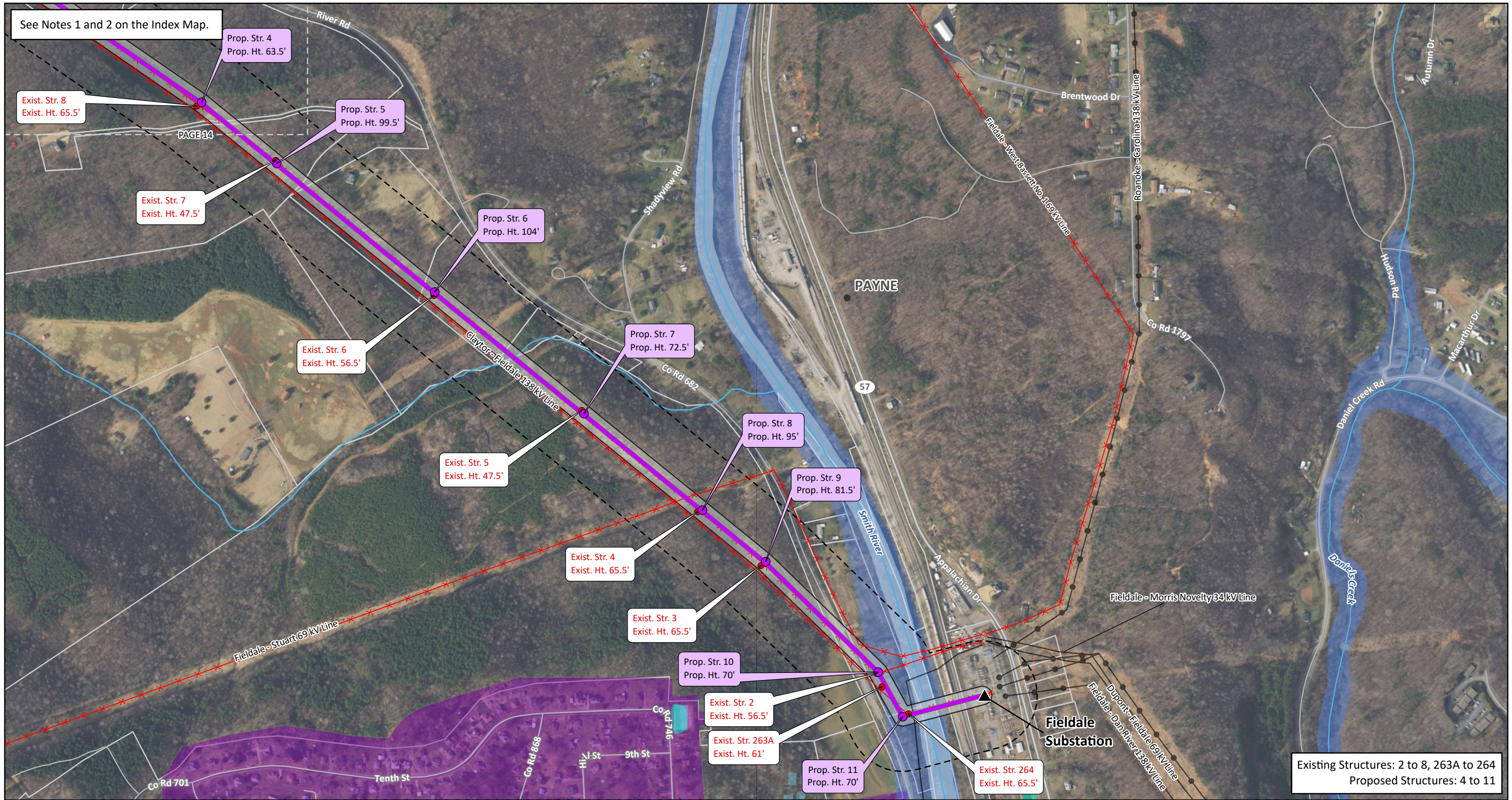
0 500 1,000
Feet

Map 11 of 20

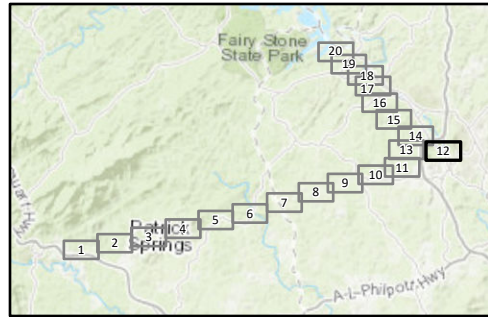
Exhibit 9: Component 3 GIS Constraints Map

Stuart Area Transmission Improvements Project:
Component 3:
Mayo River (Stuart) to Bassett Area Transmission Improvements

APPALACHIAN POWER
An AEP Company



Existing Structures: 2 to 8, 263A to 264
Proposed Structures: 4 to 11



▲ Existing APCo Substation	● Existing APCo Transmission Line (115 kv - 230 kv)	— Existing Transmission Line to be Retired	— Stream (NHD)
● Proposed Structure	— Proposed Right-of-Way (100')	— Filing Corridor (See Note 1)	— River (NHD)
● Existing APCo Structure to be Removed	● Populated Place	— Highway	— Waterbody (NHD)
— Component 3 Proposed Route (Single Circuit)	— Road	— Parcel Boundary (See Note 2)	— Wetland (NWI)
— Existing APCo Transmission Line (69 kv or lower)		— Map Tile	— Floodplain
			— Architectural Resource (VDHR)

Patrick & Henry Counties, Virginia

Date: 5/4/2023; Author: elundy; Project: 158529

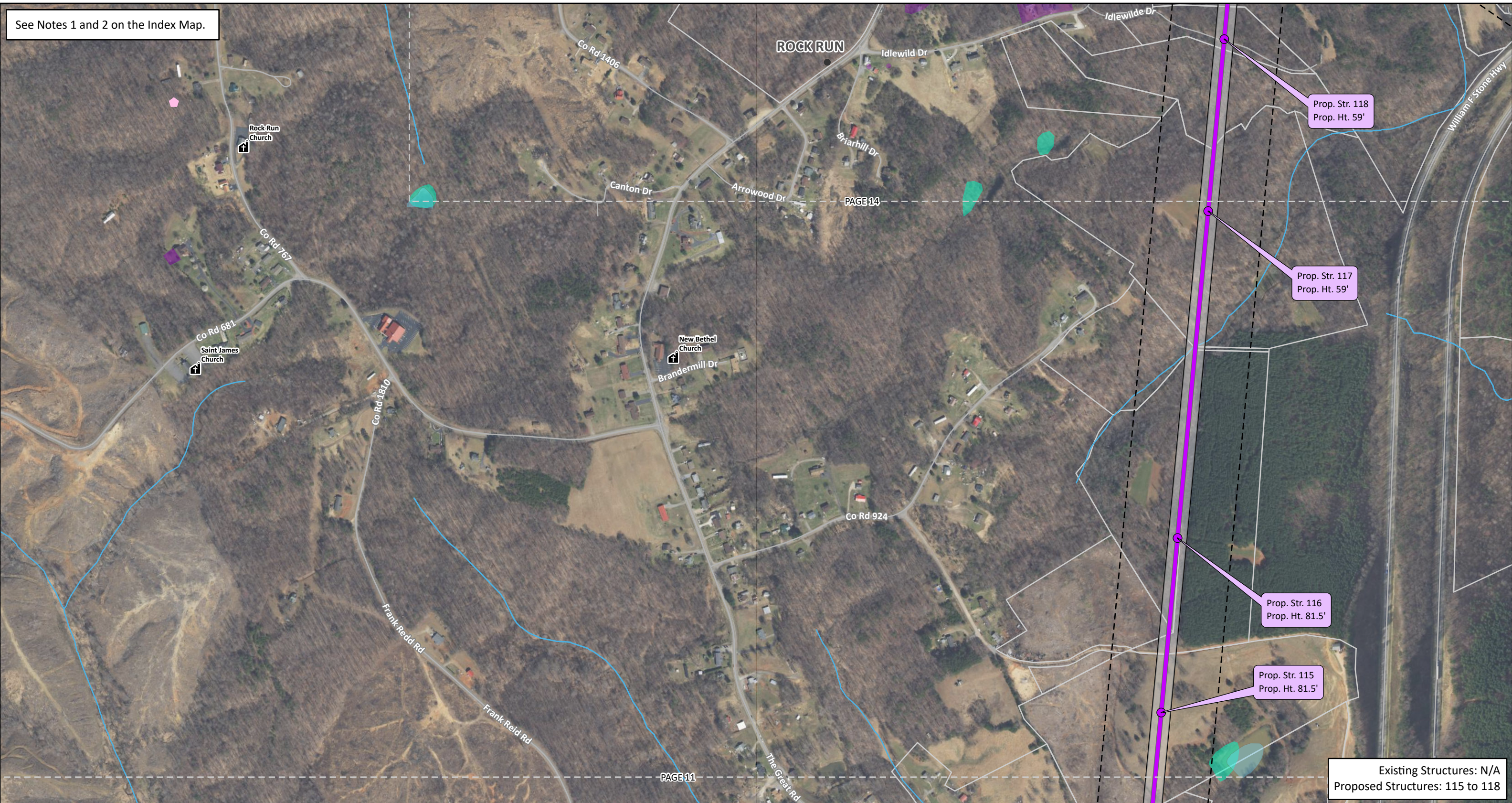
Map 12 of 20

Exhibit 9: Component 3 GIS Constraints Map

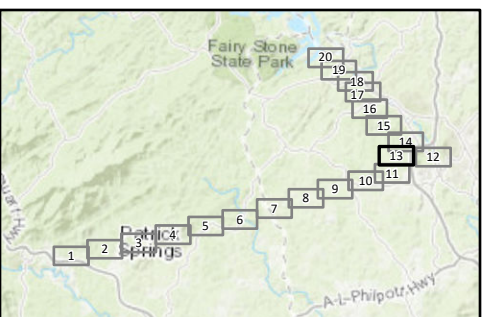
Stuart Area Transmission Improvements Project:
Component 3:
Mayo River (Stuart) to Bassett Area Transmission Improvements

An AEP Company

See Notes 1 and 2 on the Index Map.



Existing Structures: N/A
Proposed Structures: 115 to 118



Proposed Structure	Place of Worship	Waterbody (NHD)
Component 3 Proposed Route (Single Circuit)	Populated Place	Wetland (NWI)
Proposed Right-of-Way (100')	NRHP Building	Architectural Resource (VDHR)
Filing Corridor (See Note 1)	Road	Parcel Boundary (See Note 2)
	Stream (NHD)	Map Tile

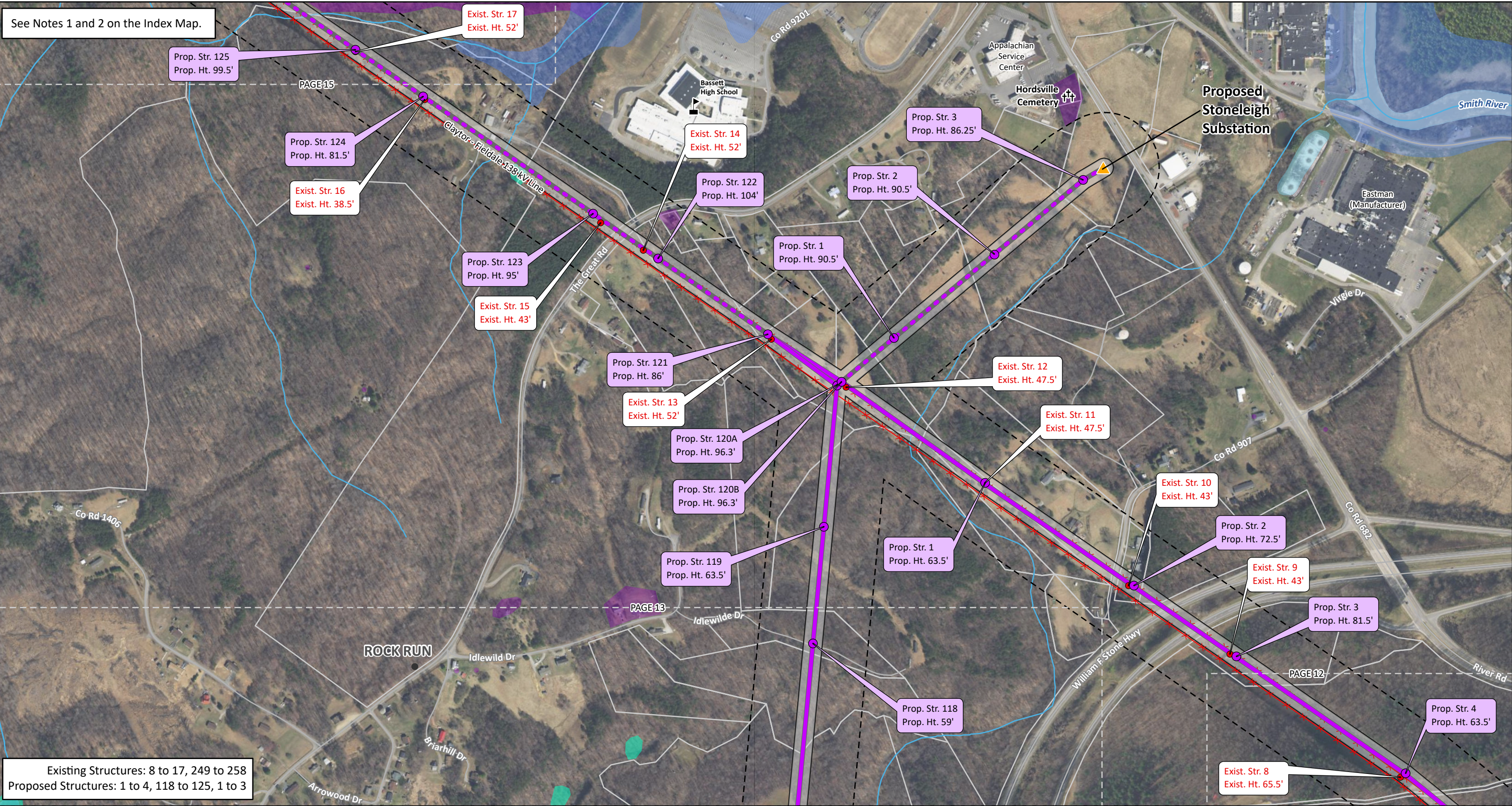
Patrick & Henry Counties, Virginia
 Date: 5/4/2023; Author: elundy; Project: 158529

0 500 1,000 Feet
 Map 13 of 20

**Exhibit 9:
Component 3
GIS Constraints Map**

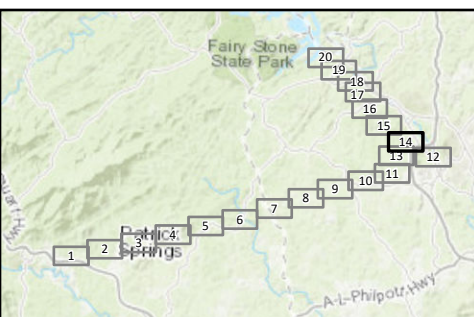
Stuart Area Transmission
 Improvements Project:
 Component 3:
 Mayo River (Stuart)
 to Bassett Area
 Transmission Improvements

An AEP Company



See Notes 1 and 2 on the Index Map.

Existing Structures: 8 to 17, 249 to 258
Proposed Structures: 1 to 4, 118 to 125, 1 to 3



Proposed APCo Substation	Proposed Right-of-Way (100')	River (NHD)
Proposed Structure	Filing Corridor (See Note 1)	Waterbody (NHD)
Existing APCo Structure to be Removed	Cemetery	Wetland (NWI)
Component 3 Proposed Route (Single Circuit)	School	Floodplain
Component 3 Proposed Route (Double Circuit)	Populated Place	Architectural Resource (VDHR)
Existing Transmission Line to be Retired	Road	Parcel Boundary (See Note 2)
	Stream (NHD)	Map Tile

Patrick & Henry Counties, Virginia

Date: 5/15/2023; Author: elundy; Project: 158529

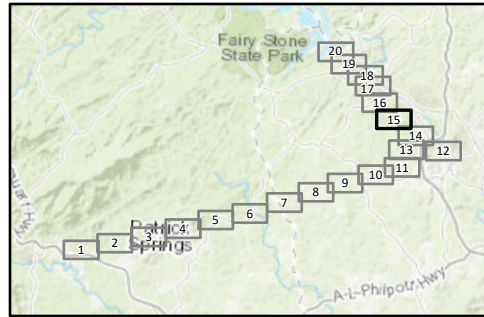
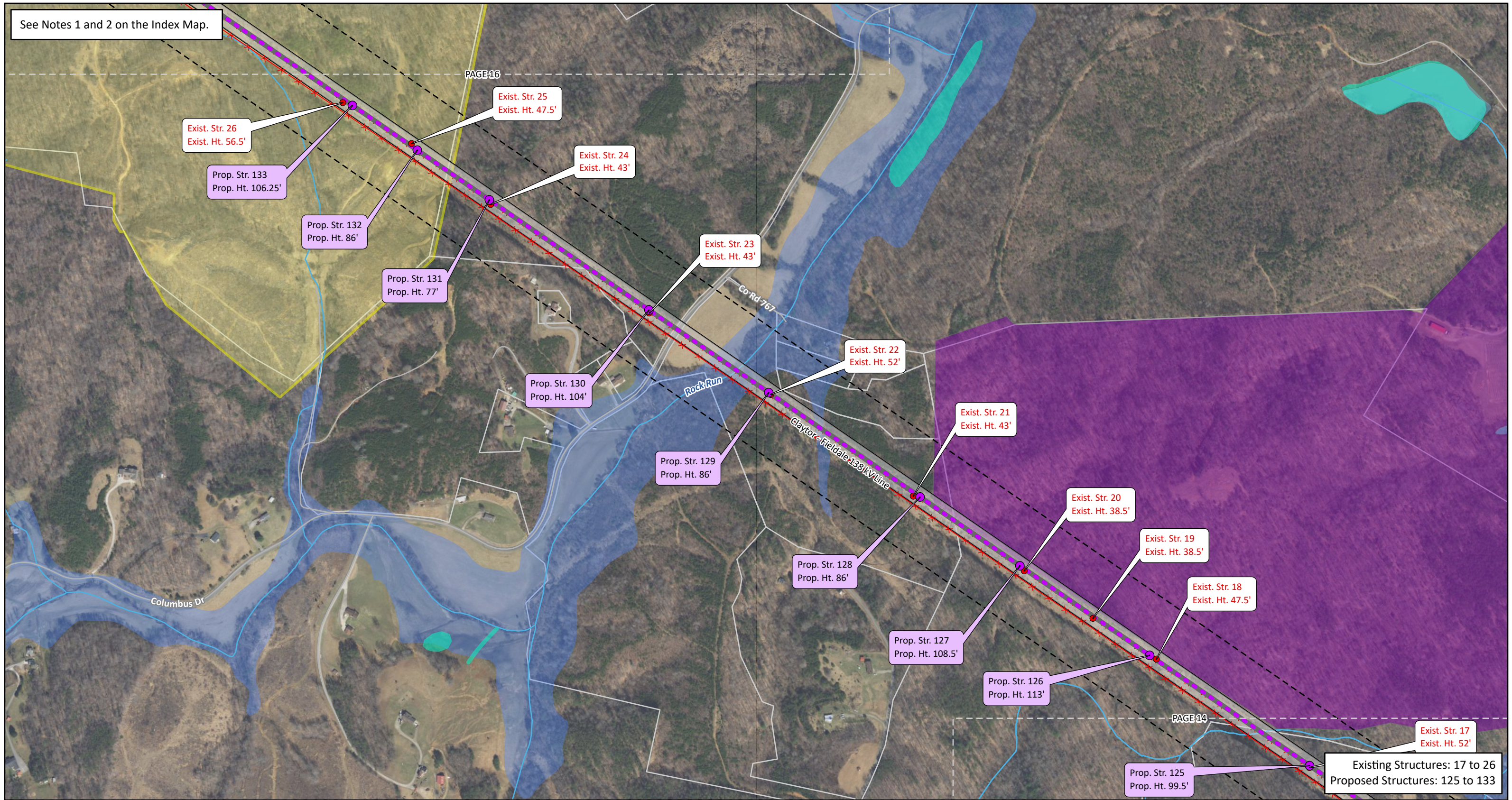
Map 14 of 20

Exhibit 9: Component 3 GIS Constraints Map

Stuart Area Transmission Improvements Project:
Component 3:
Mayo River (Stuart) to Bassett Area Transmission Improvements

An AEP Company

See Notes 1 and 2 on the Index Map.



Proposed Structure	Filing Corridor (See Note 1)	Floodplain
Existing APCo Structure to be Removed	Road	VOF Easement
Component 3 Proposed Route (Double Circuit)	Stream (NHD)	Architectural Resource (VDHR)
Existing Transmission Line to be Retired	Waterbody (NHD)	Parcel Boundary (See Note 2)
Proposed Right-of-Way (100')	Wetland (NWI)	Map Tile

Patrick & Henry Counties,
Virginia

Date: 5/4/2023; Author: elundy; Project: 158529

0 500 1,000
Feet

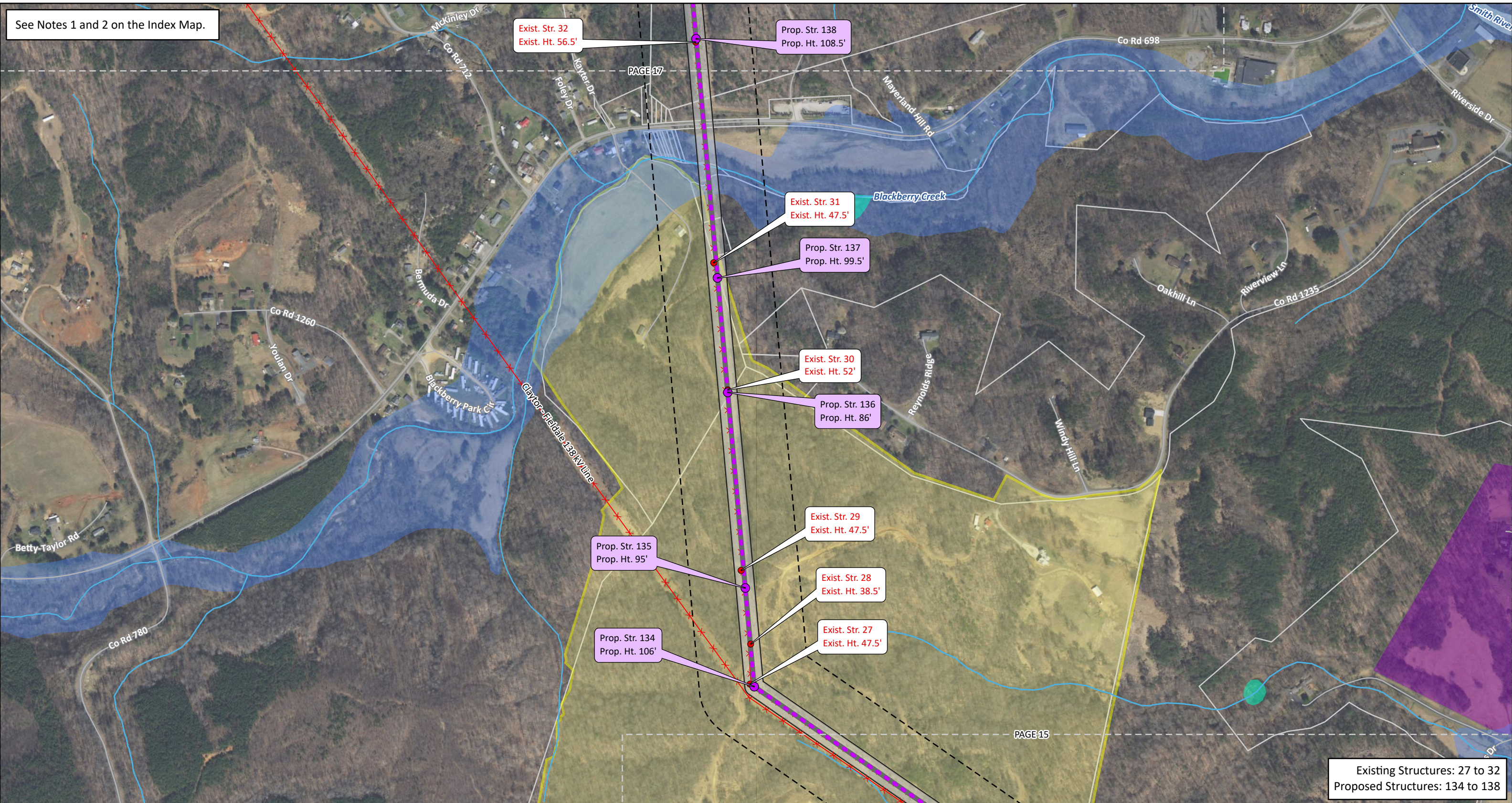
Map 15 of 20

Exhibit 9: Component 3 GIS Constraints Map

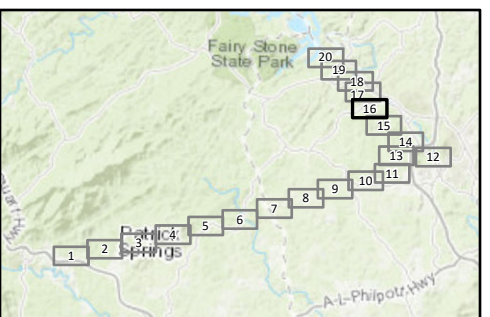
Stuart Area Transmission
Improvements Project:
Component 3:
Mayo River (Stuart)
to Bassett Area
Transmission Improvements

An AEP Company


See Notes 1 and 2 on the Index Map.



Existing Structures: 27 to 32
Proposed Structures: 134 to 138



<ul style="list-style-type: none"> ● Proposed Structure ● Existing APCo Structure to be Removed — Component 3 Proposed Route (Double Circuit) x-x Existing Transmission Line to be Retired Proposed Right-of-Way (100') 	<ul style="list-style-type: none"> Filing Corridor (See Note 1) Road Stream (NHD) River (NHD) Wetland (NWI) 	<ul style="list-style-type: none"> Floodplain VOF Easement Architectural Resource (VDHR) Parcel Boundary (See Note 2) Map Tile
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Patrick & Henry Counties,
Virginia

Date: 5/4/2023; Author: elundy; Project: 158529

0

500


1,000

Feet

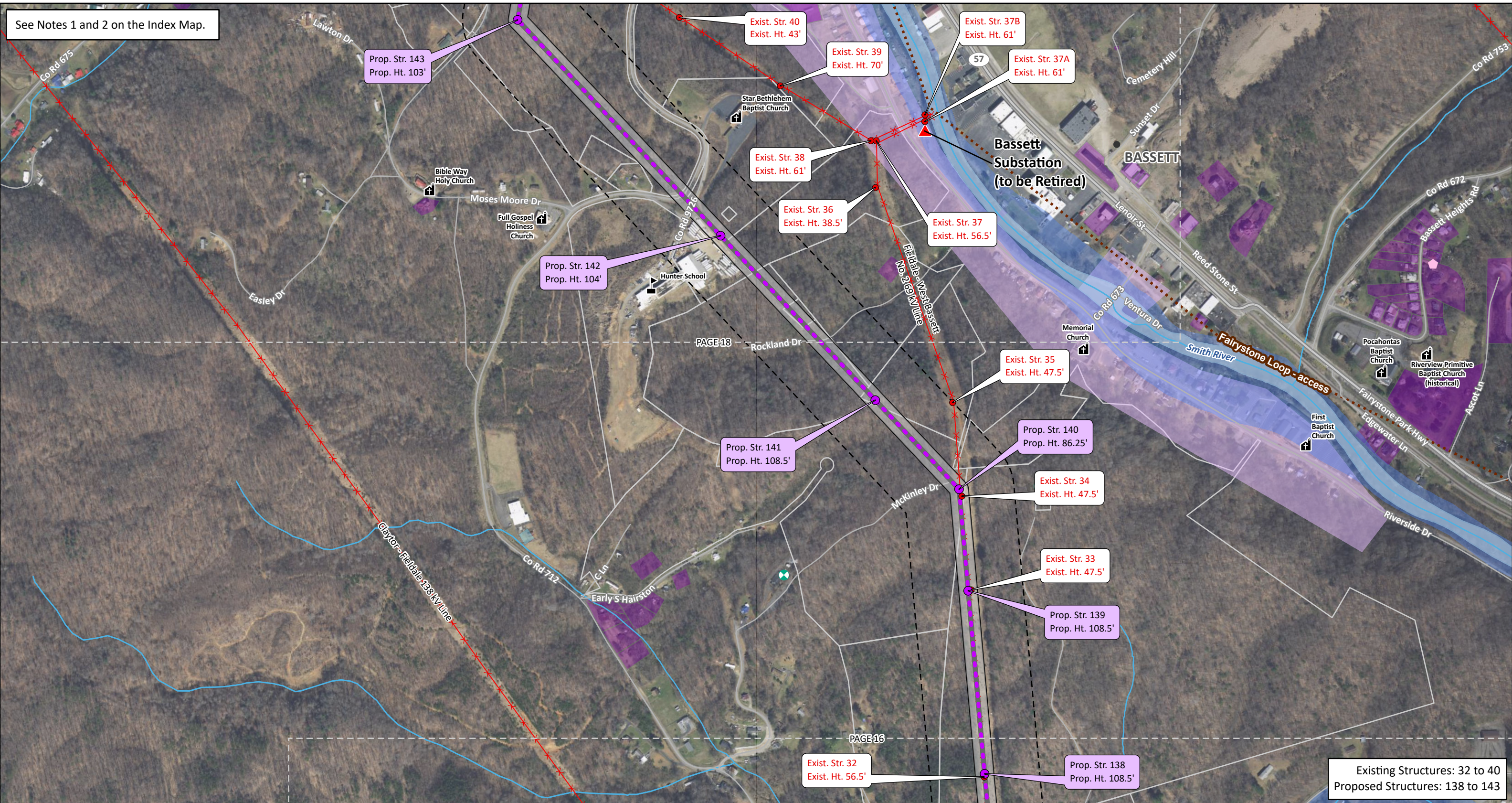
Map 16 of 20

Exhibit 9: Component 3 GIS Constraints Map

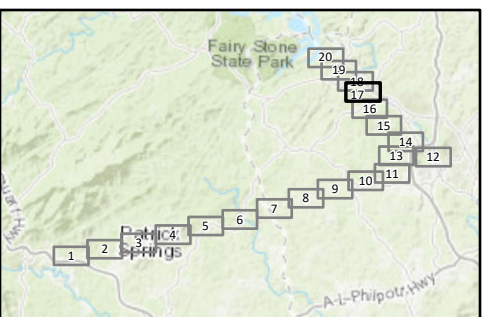
Stuart Area Transmission
Improvements Project:
Component 3:
Mayo River (Stuart)
to Bassett Area
Transmission Improvements



An AEP Company



See Notes 1 and 2 on the Index Map.



Existing APCo Substation to be Retired	Filing Corridor (See Note 1)	Highway	Historic District (VDHR)
Proposed Structure	Place of Worship	Road	Architectural Resource (VDHR)
Existing APCo Structure to be Removed	School	Recreation Trail	Parcel Boundary (See Note 2)
Component 3 Proposed Route (Double Circuit)	Populated Place	Stream (NHD)	Map Tile
Existing Transmission Line to be Retired	Cell Tower (FCC)	River (NHD)	
Proposed Right-of-Way (100')	NRHP Building	Waterbody (NHD)	
		Floodplain	

Patrick & Henry Counties, Virginia

Date: 5/4/2023; Author: elundy; Project: 158529

Map 17 of 20

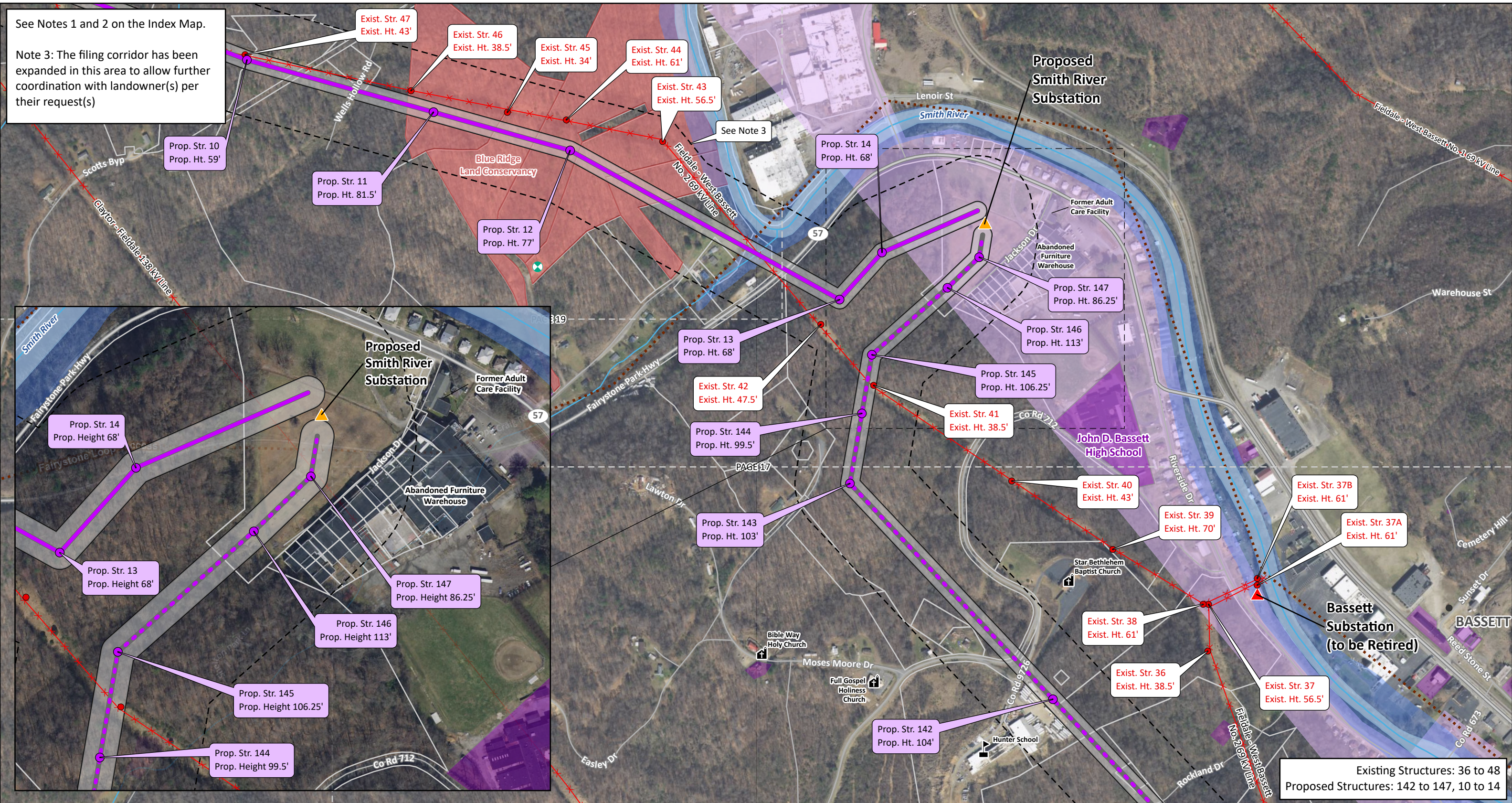
Exhibit 9: Component 3 GIS Constraints Map

Stuart Area Transmission Improvements Project:
Component 3:
Mayo River (Stuart) to Bassett Area Transmission Improvements

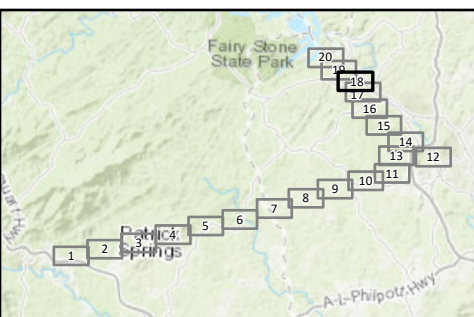
An AEP Company

See Notes 1 and 2 on the Index Map.

Note 3: The filing corridor has been expanded in this area to allow further coordination with landowner(s) per their request(s)



Existing Structures: 36 to 48
Proposed Structures: 142 to 147, 10 to 14



Proposed APCo Substation	Component 3 Proposed Route (Double Circuit)	Populated Place	Floodplain
Existing APCo Substation to be Retired	Existing Transmission Line to be Retired	Cell Tower (FCC)	Historic District (VDHR)
Proposed Structure	Proposed Right-of-Way (100')	Highway	Architectural Resource (VDHR)
Existing APCo Structure to be Removed	Filing Corridor (See Note 1)	Road	Local Conservancy
Component 3 Proposed Route (Single Circuit)	Place of Worship	Recreation Trail	Parcel Boundary (See Note 2)
	School	Stream (NHD)	Map Tile
		River (NHD)	

Patrick & Henry Counties, Virginia

Date: 5/15/2023; Author: elundy; Project: 158529

Map 18 of 20

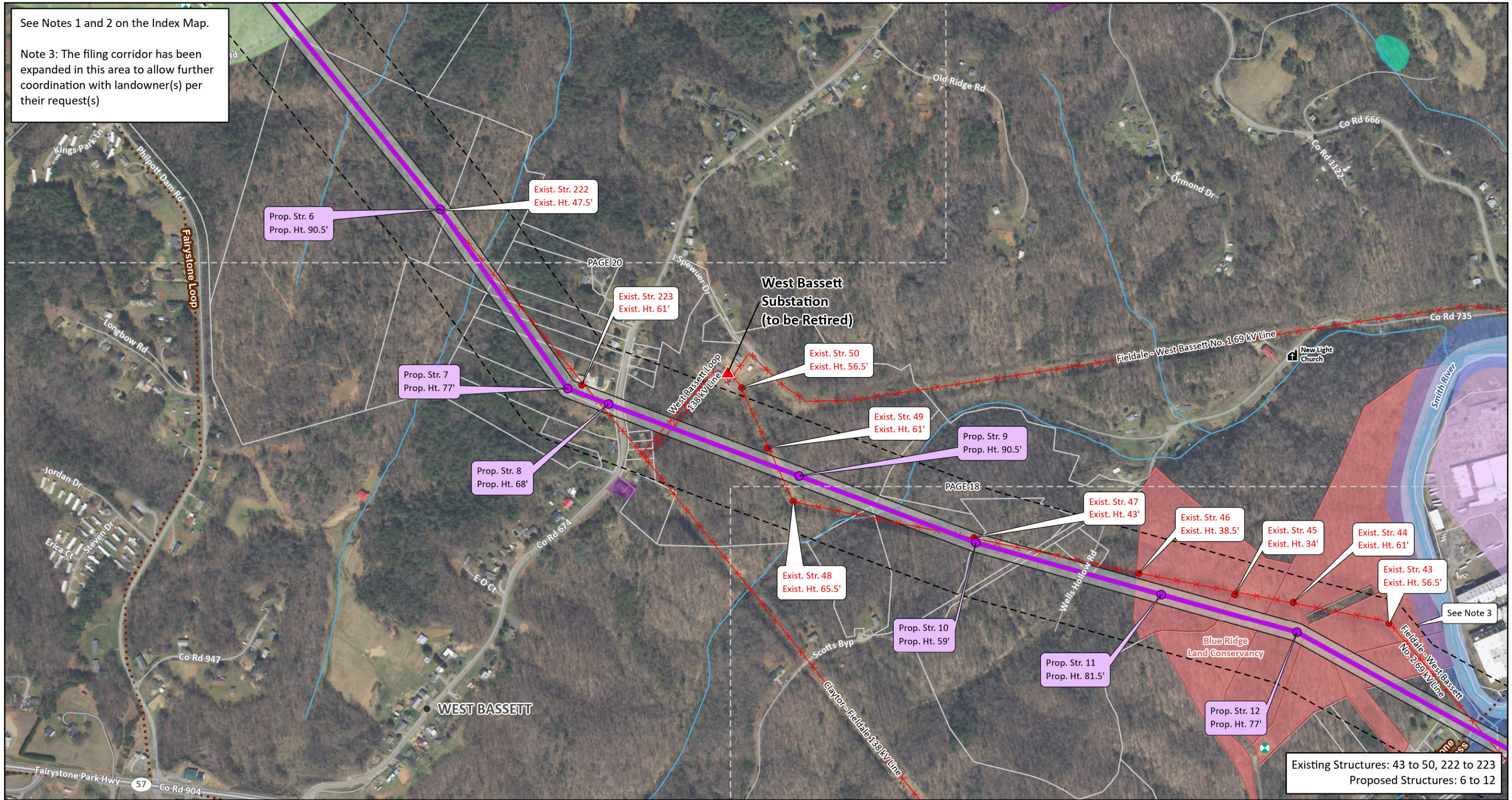
Exhibit 9: Component 3 GIS Constraints Map

Stuart Area Transmission Improvements Project:
Component 3:
Mayo River (Stuart) to Bassett Area Transmission Improvements

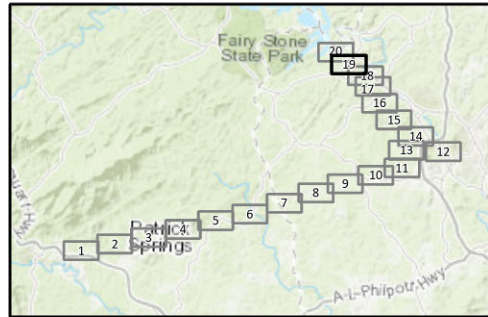
An AEP Company

See Notes 1 and 2 on the Index Map.

Note 3: The filing corridor has been expanded in this area to allow further coordination with landowner(s) per their request(s)



Existing Structures: 43 to 50, 222 to 223
Proposed Structures: 6 to 12



▲ Existing APCo Substation to be Retired	▭ Proposed Right-of-Way (100')	— Road	▭ Historic District (VDHR)
● Proposed Structure	▭ Filing Corridor (See Note 1)	— Recreation Trail	▭ Architectural Resource (VDHR)
● Existing APCo Structure to be Removed	▭ Place of Worship	— Stream (NHD)	▭ Local Conservancy
— Component 3 Proposed Route (Single Circuit)	● Populated Place	— River (NHD)	▭ Philpott Lake Recreation Area (USACE)
— Existing Transmission Line to be Retired	⊙ Cell Tower (FCC)	— Wetland (NWI)	▭ Parcel Boundary (See Note 2)
	— Highway	— Floodplain	▭ Map Tile

Patrick & Henry Counties, Virginia

Date: 5/4/2023; Author: elundy; Project: 158529

Map 19 of 20

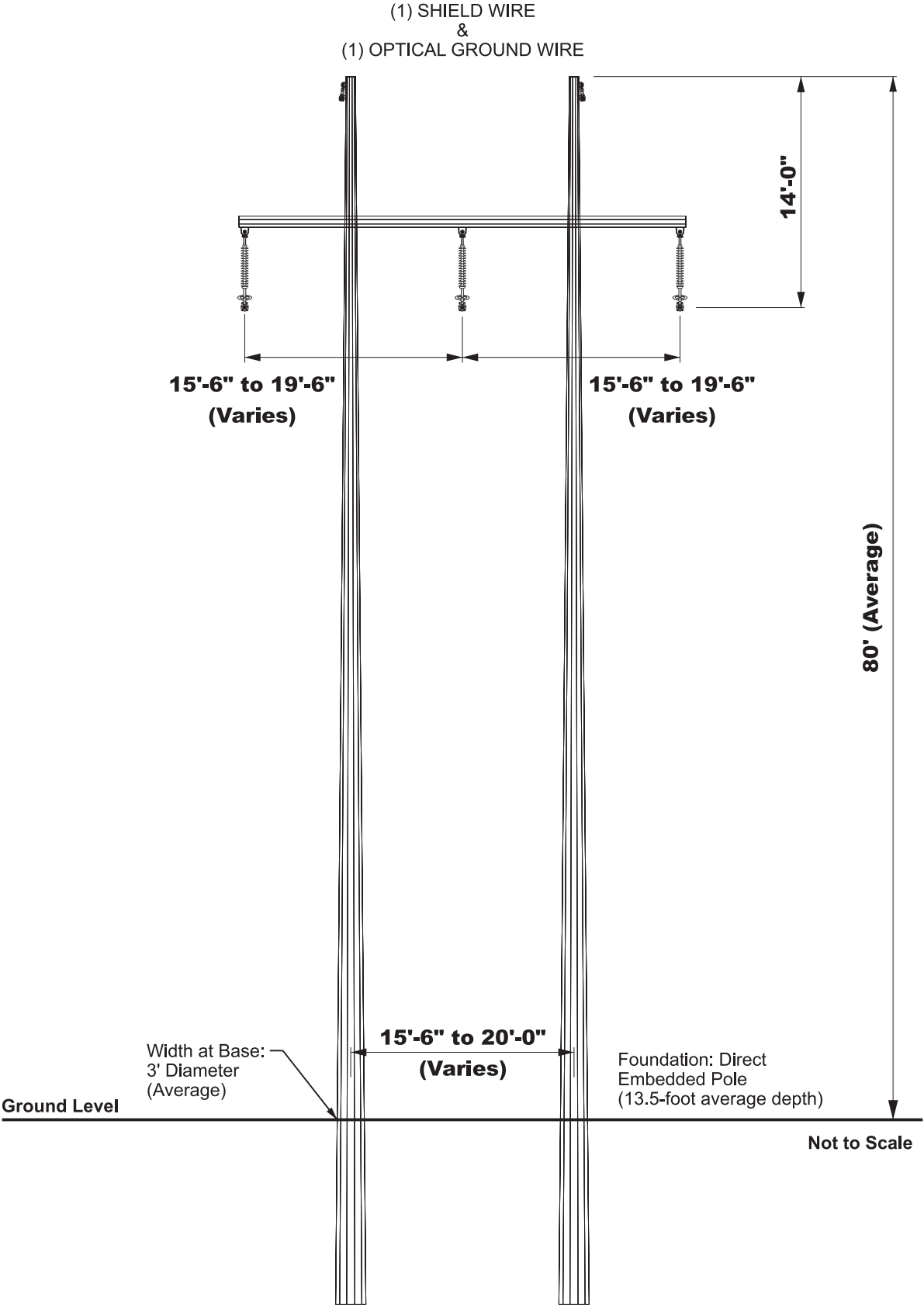
Exhibit 9: Component 3 GIS Constraints Map

Stuart Area Transmission Improvements Project:
Component 3:
Mayo River (Stuart) to Bassett Area Transmission Improvements

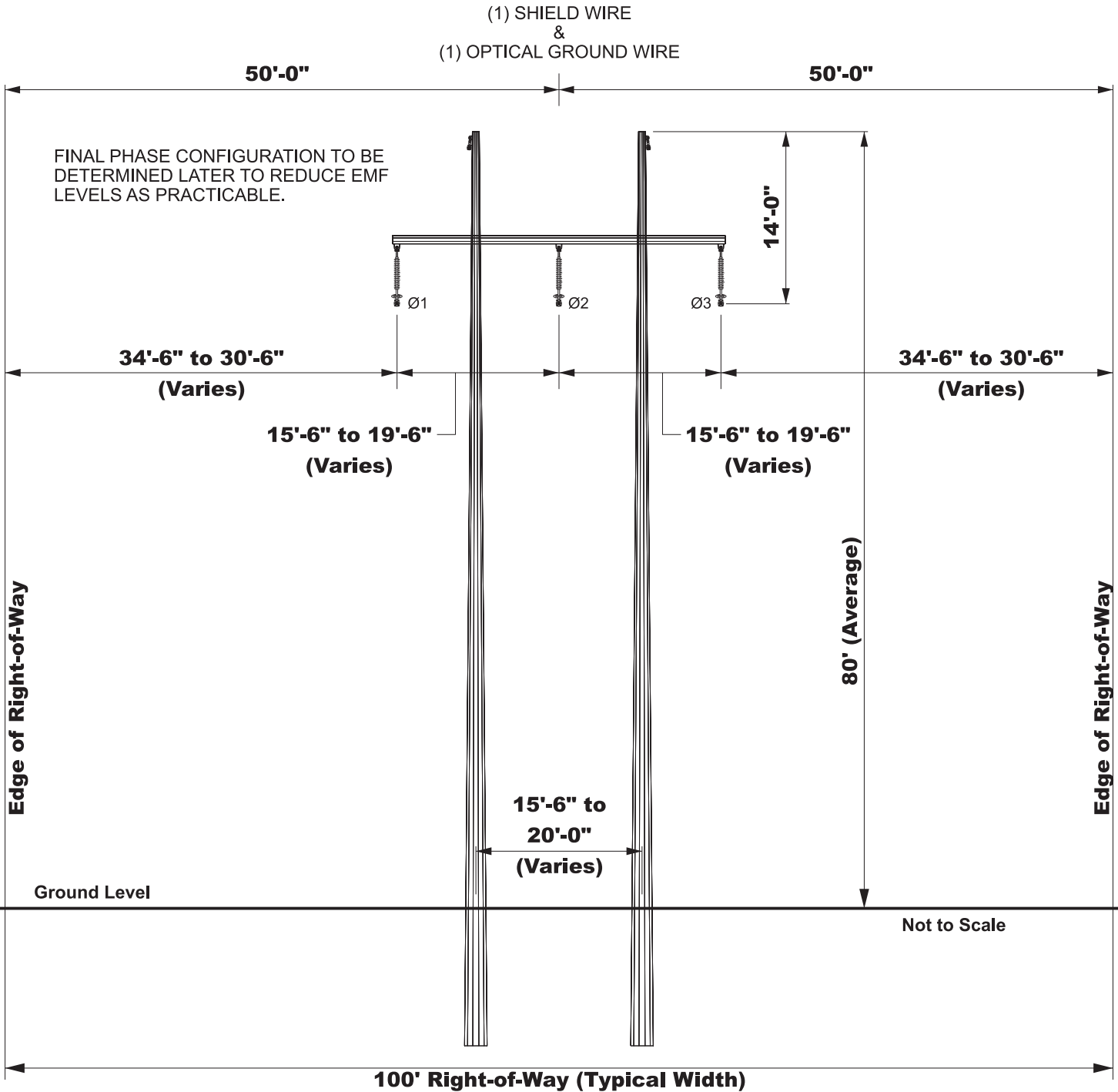
An AEP Company

**Exhibit 10: Proposed 138-kV Steel H-Frame
(Single Circuit)**

STEEL H-FRAME (Single Circuit)



TYPICAL SCHEMATIC



TYPICAL RIGHT-OF-WAY CROSS SECTION

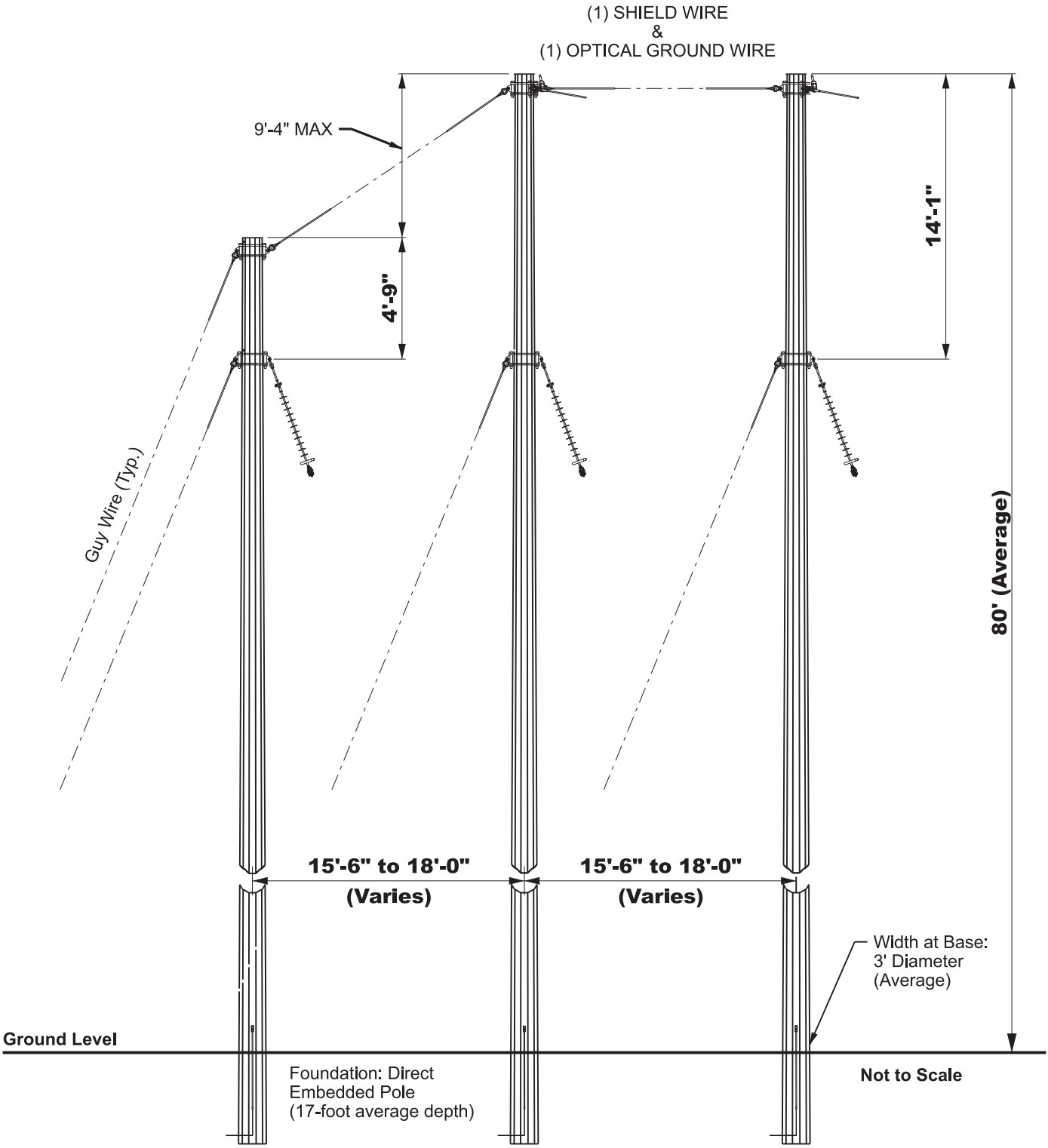


COMPARABLE EXISTING STRUCTURE PHOTOGRAPH

Note: The proposed material for the typical structure will be galvanized steel with a dulled finish (as shown above)

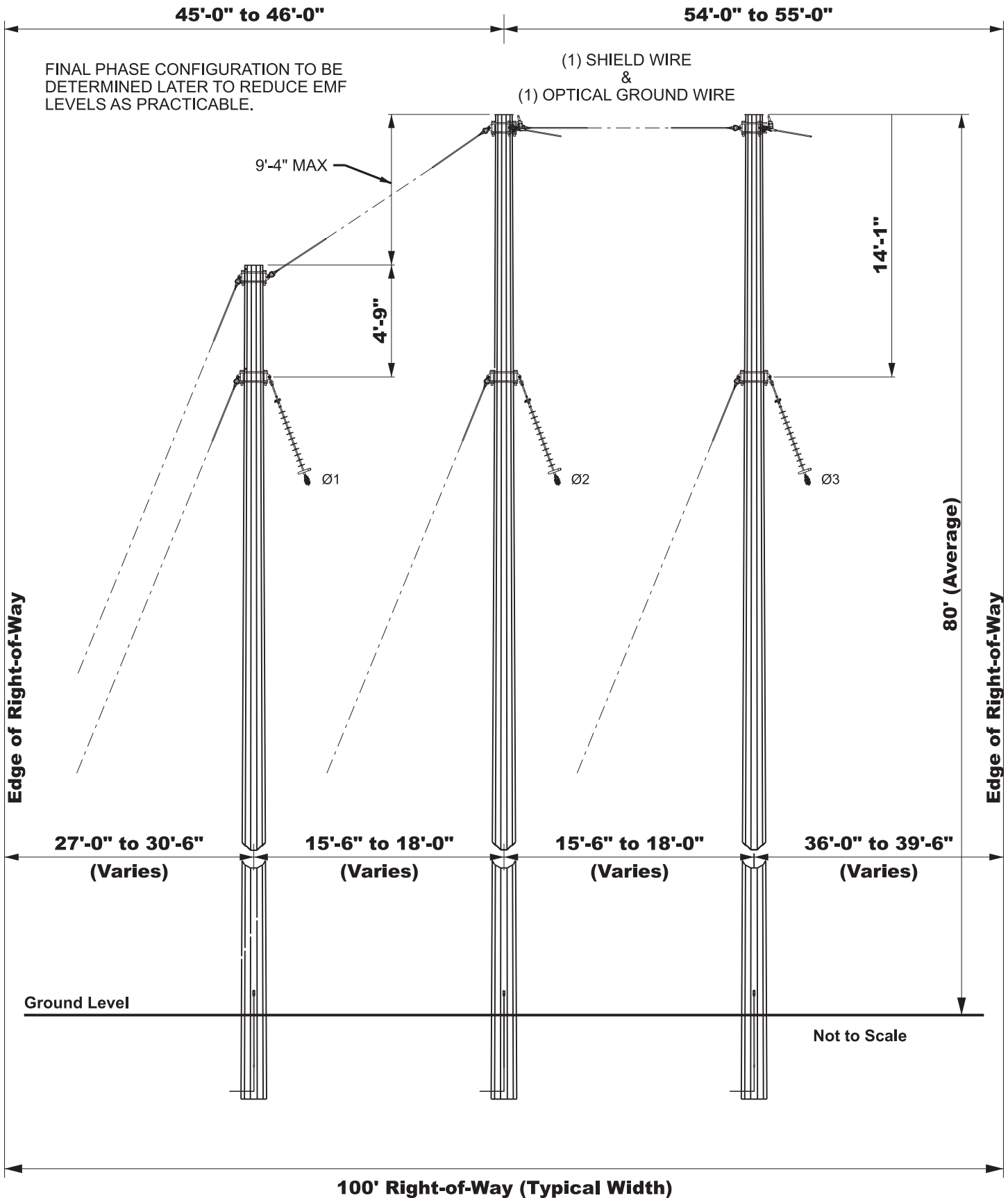
**Exhibit 11: Proposed 138-kV Steel Three-Pole
Running Angle (Single Circuit)**

STEEL THREE-POLE RUNNING ANGLE (Single Circuit)



TYPICAL SCHEMATIC

STEEL THREE-POLE RUNNING ANGLE (Single Circuit)



TYPICAL RIGHT-OF-WAY CROSS SECTION

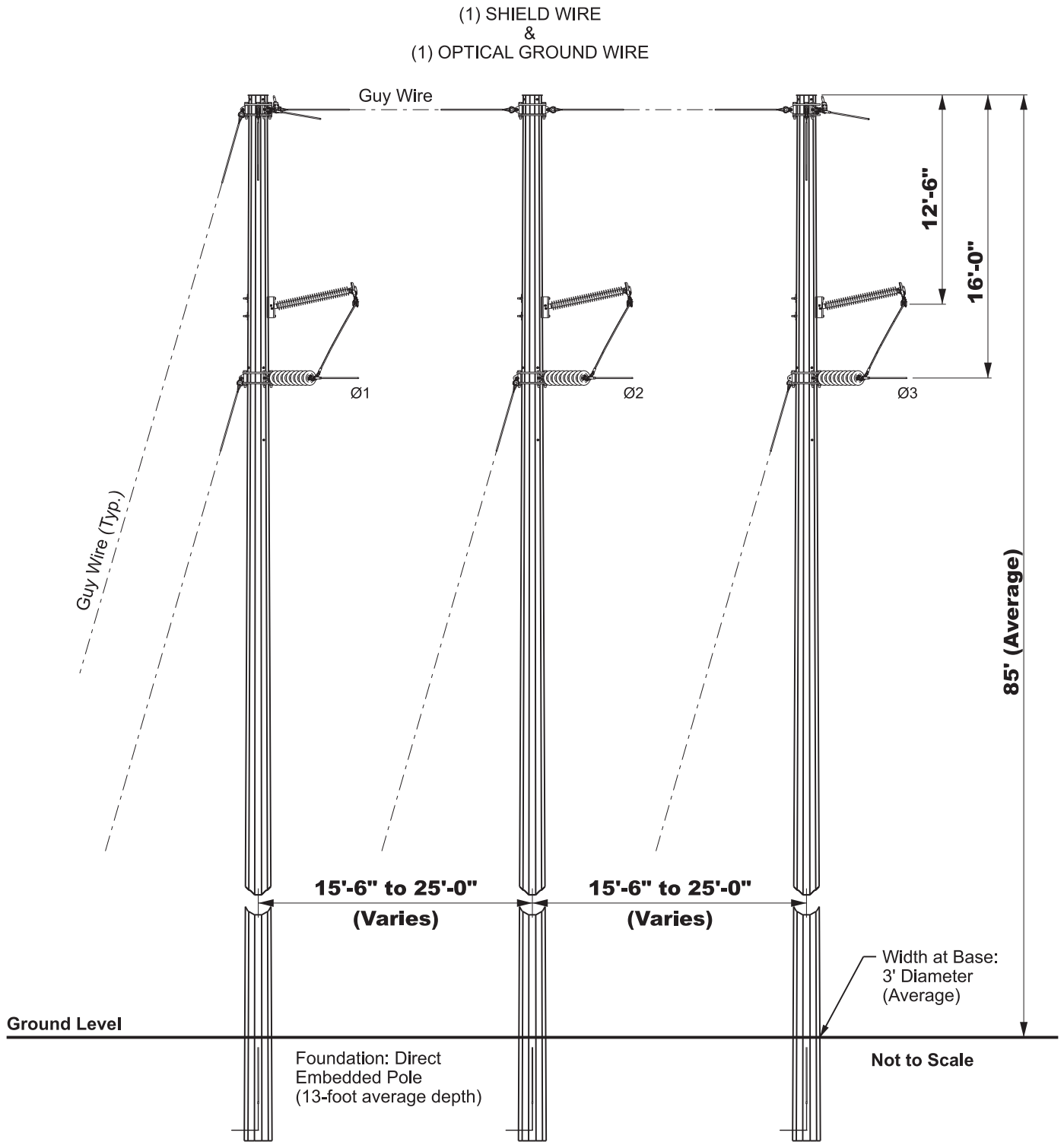


COMPARABLE EXISTING STRUCTURE PHOTOGRAPH

Note: The proposed material for the typical structure will be galvanized steel with a dulled finish (as shown above)

**Exhibit 12: Proposed 138-kV Steel Three-Pole
Dead-End (Single Circuit)**

STEEL THREE-POLE DEAD-END (Single Circuit)



TYPICAL SCHEMATIC

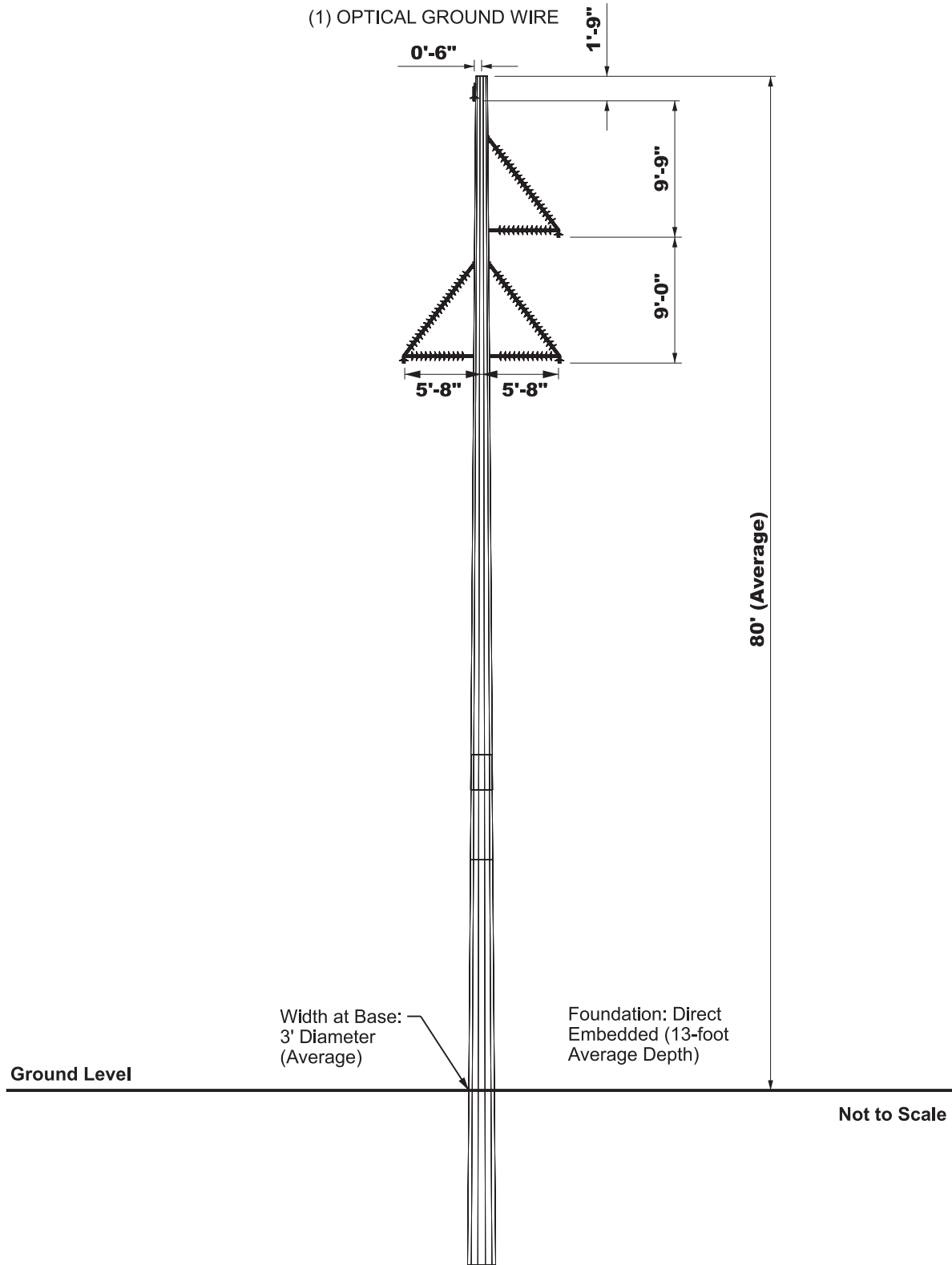


COMPARABLE EXISTING STRUCTURE PHOTOGRAPH

Note: The proposed material for the typical structure will be galvanized steel with a dulled finish (as shown above)

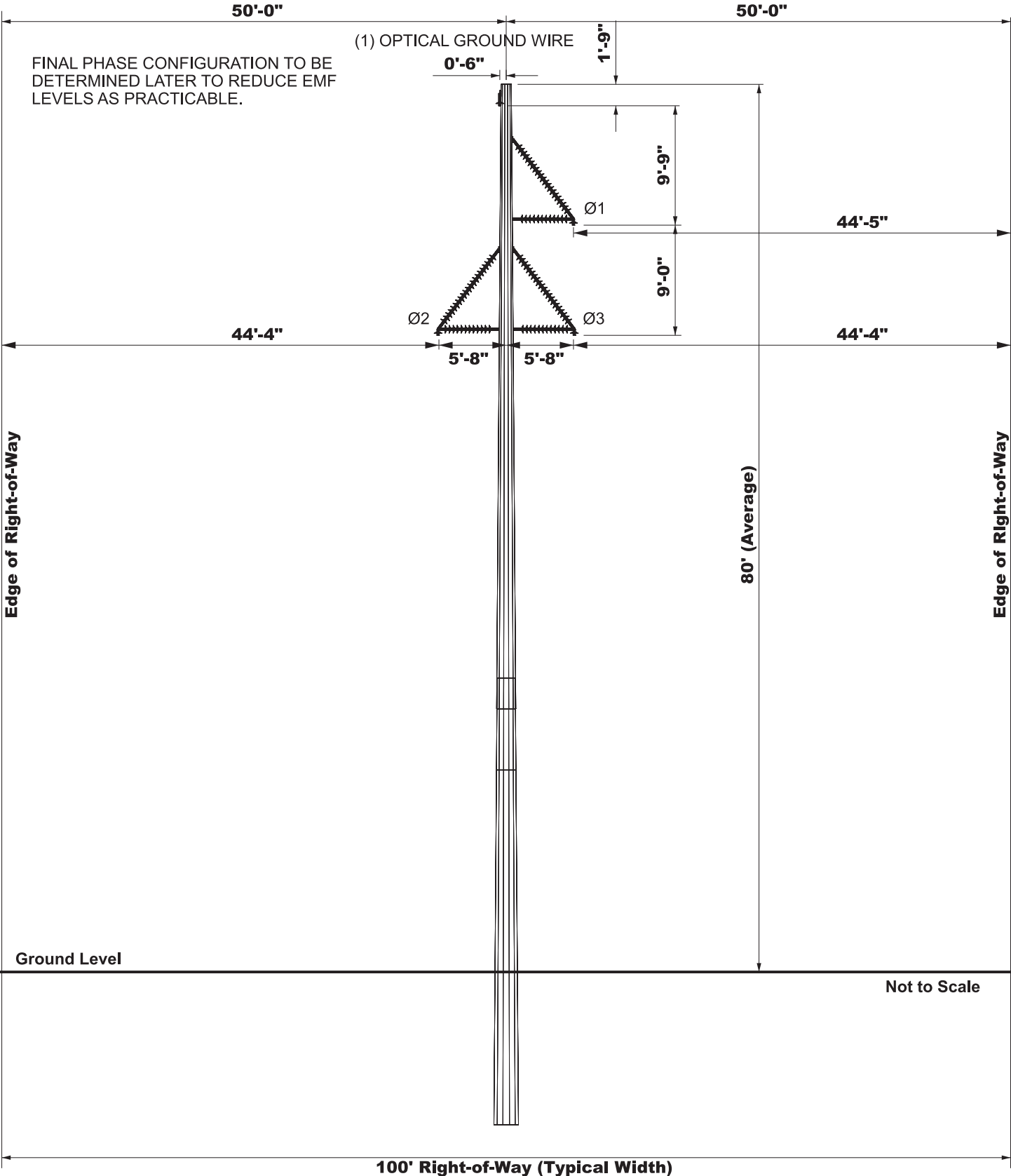
**Exhibit 13: Proposed 138-kV Steel Monopole
with Braced Posts (Single Circuit)**

STEEL MONOPOLE WITH BRACED POSTS (Single Circuit)



TYPICAL SCHEMATIC

STEEL MONOPOLE WITH BRACED POSTS (Single Circuit)



TYPICAL RIGHT-OF-WAY CROSS SECTION

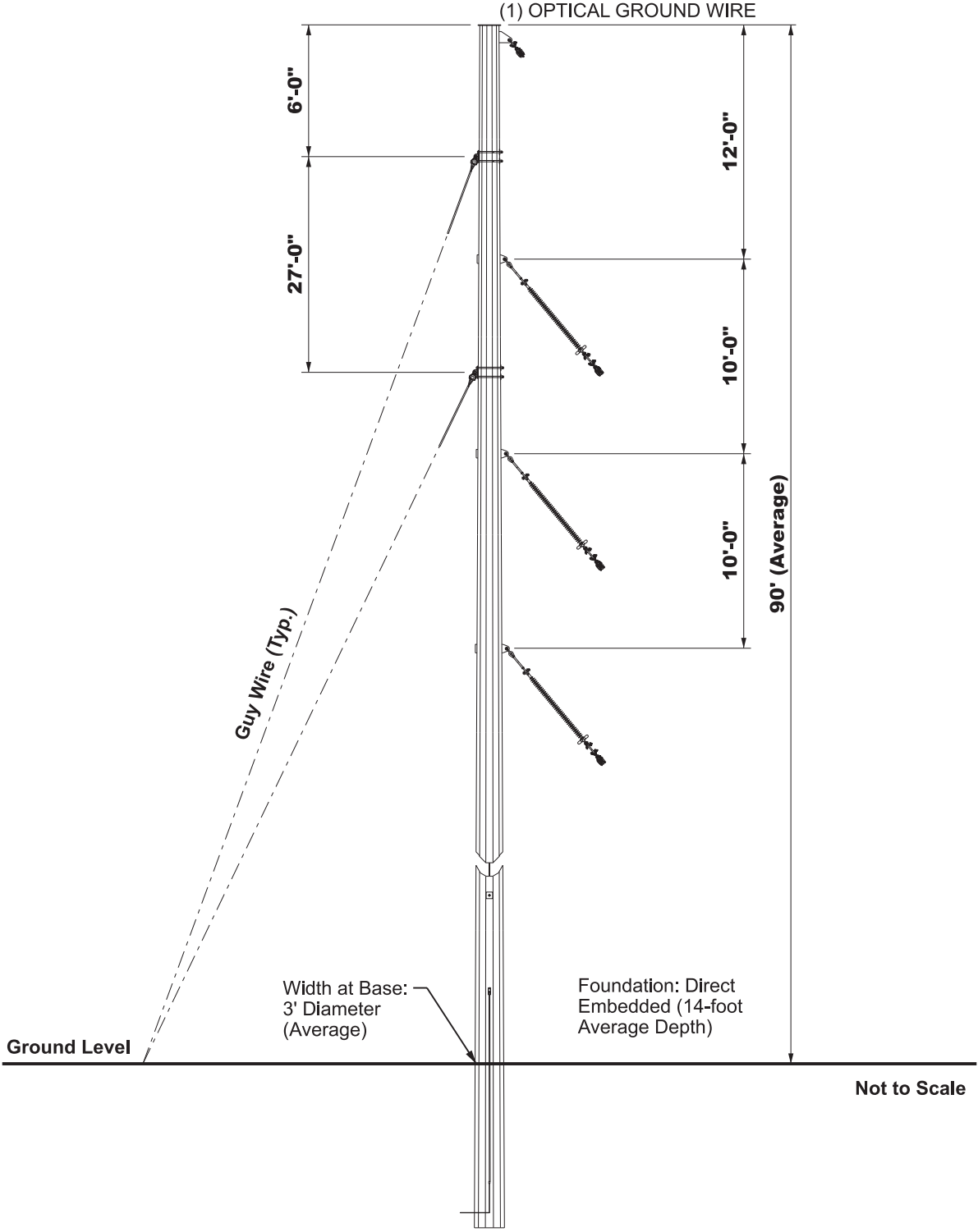


COMPARABLE EXISTING STRUCTURE PHOTOGRAPH

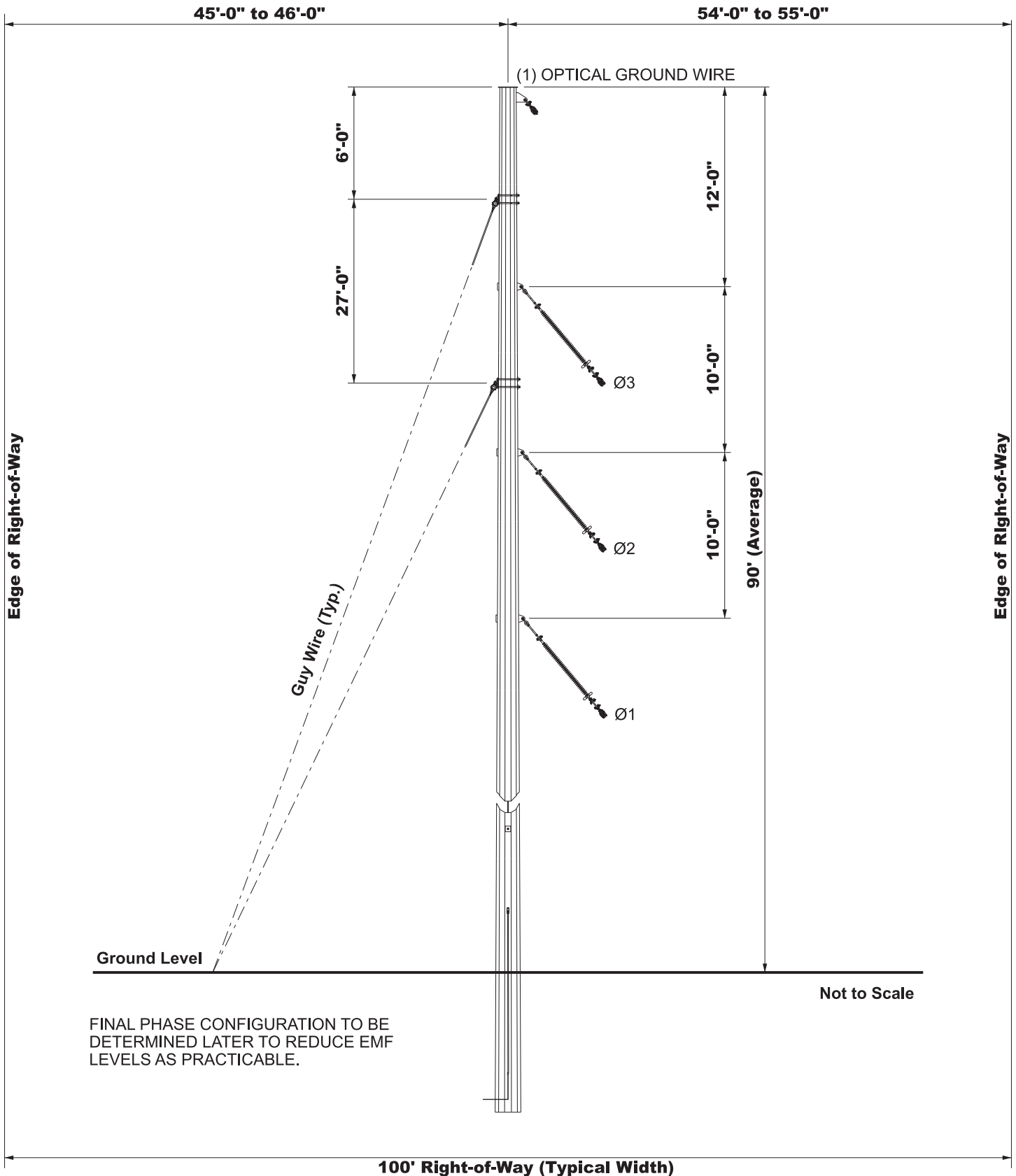
Note: The proposed material for the typical structure will be galvanized steel with a dulled finish (as shown above)

**Exhibit 14: Proposed 138-kV Steel Monopole
Running Angle (Single Circuit)**

EXHIBIT 14
PROPOSED 138-kV TRANSMISSION LINE STRUCTURES (Page 1 of 3)
STEEL MONOPOLE RUNNING ANGLE (Single Circuit)



TYPICAL SCHEMATIC



FINAL PHASE CONFIGURATION TO BE DETERMINED LATER TO REDUCE EMF LEVELS AS PRACTICABLE.

TYPICAL RIGHT-OF-WAY CROSS SECTION

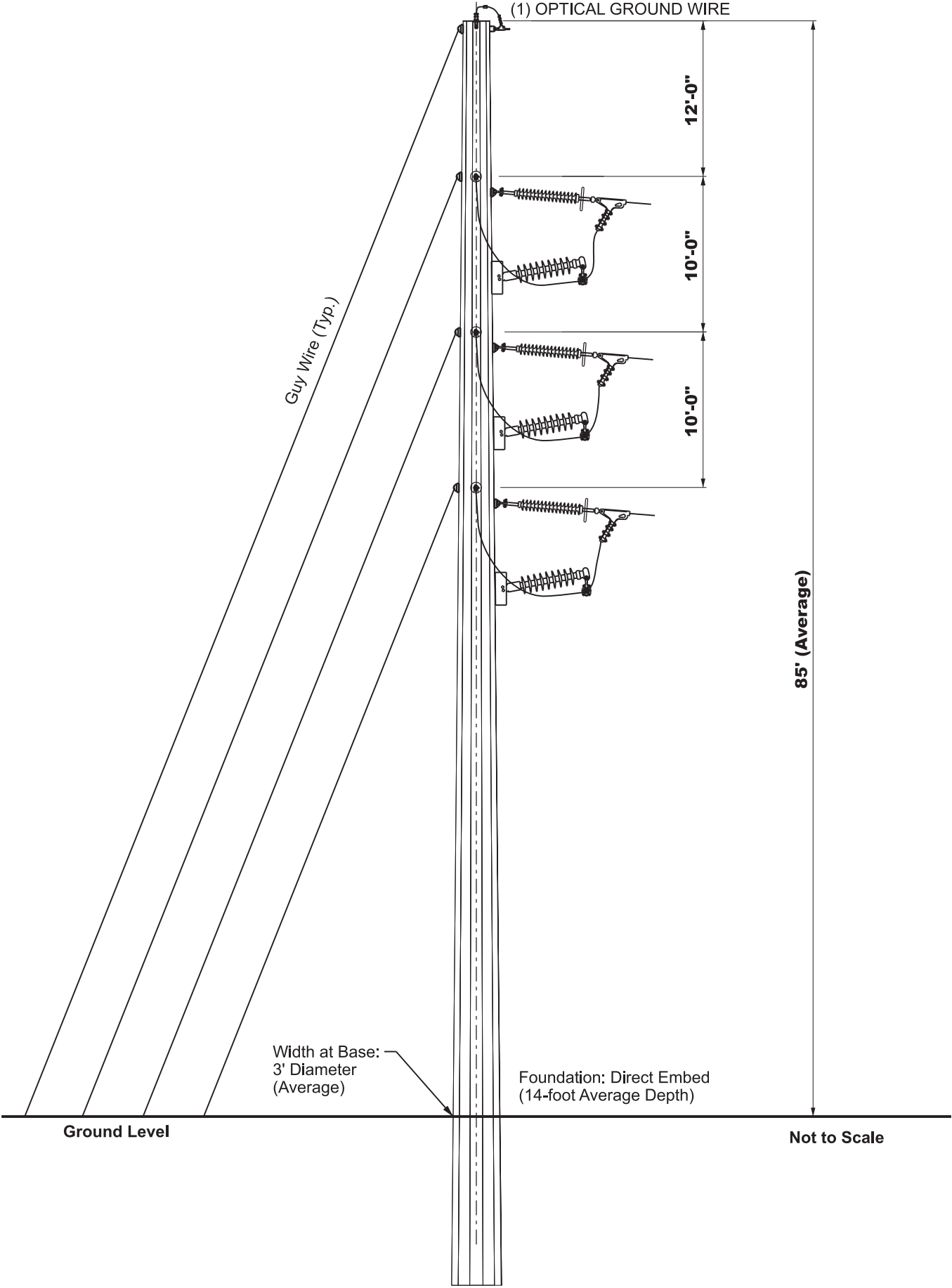


COMPARABLE EXISTING STRUCTURE PHOTOGRAPH

Note: The proposed material for the typical structure will be galvanized steel with a dulled finish (as shown above)

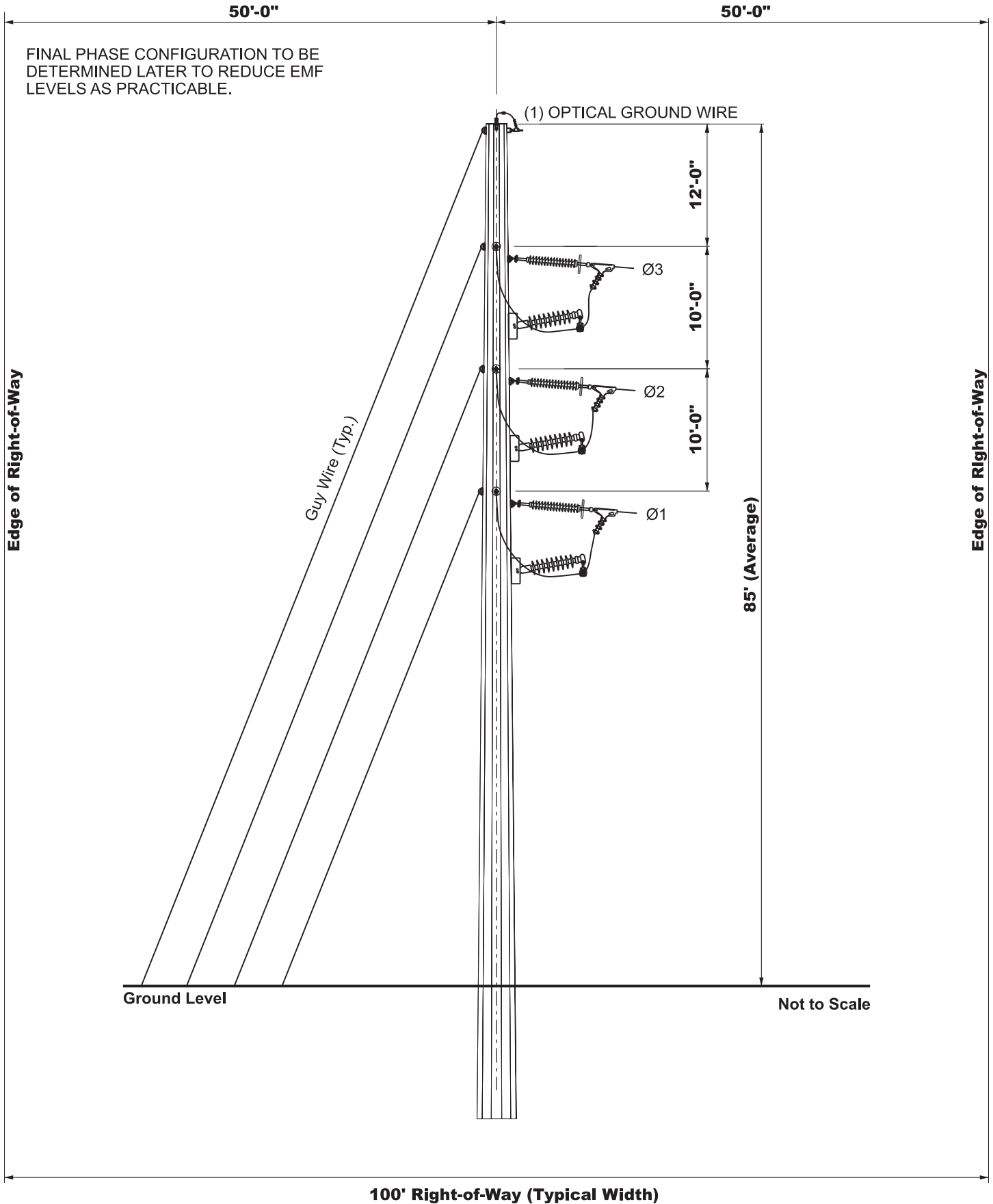
**Exhibit 15: Proposed 138-kV Guyed Steel
Monopole Dead-End (Single Circuit)**

GUYED STEEL MONOPOLE DEAD-END (SINGLE CIRCUIT)



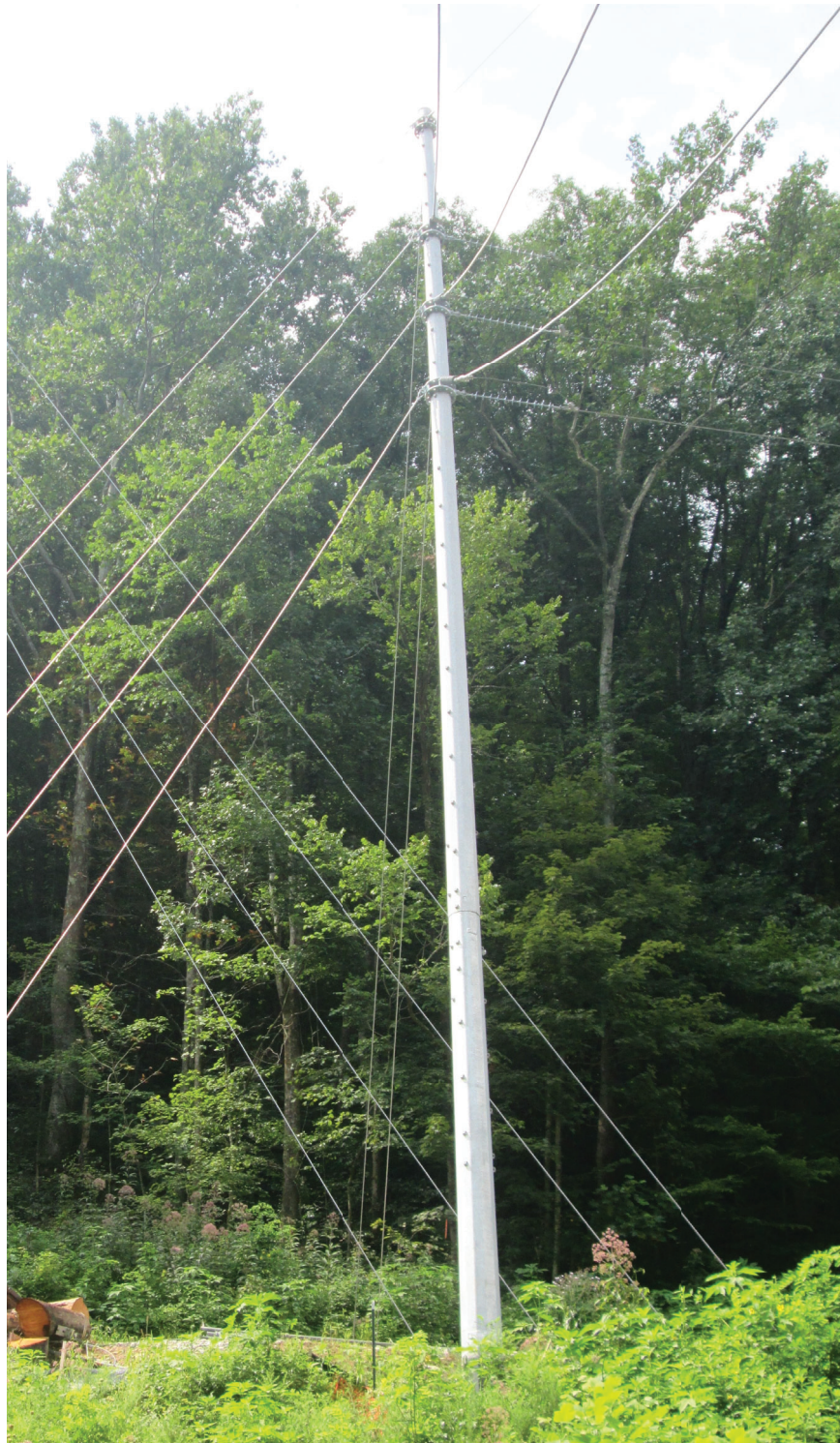
TYPICAL SCHEMATIC

GUYED STEEL MONOPOLE DEAD-END (SINGLE CIRCUIT)



TYPICAL RIGHT-OF-WAY CROSS SECTION

GUYED STEEL MONOPOLE DEAD-END (SINGLE CIRCUIT)

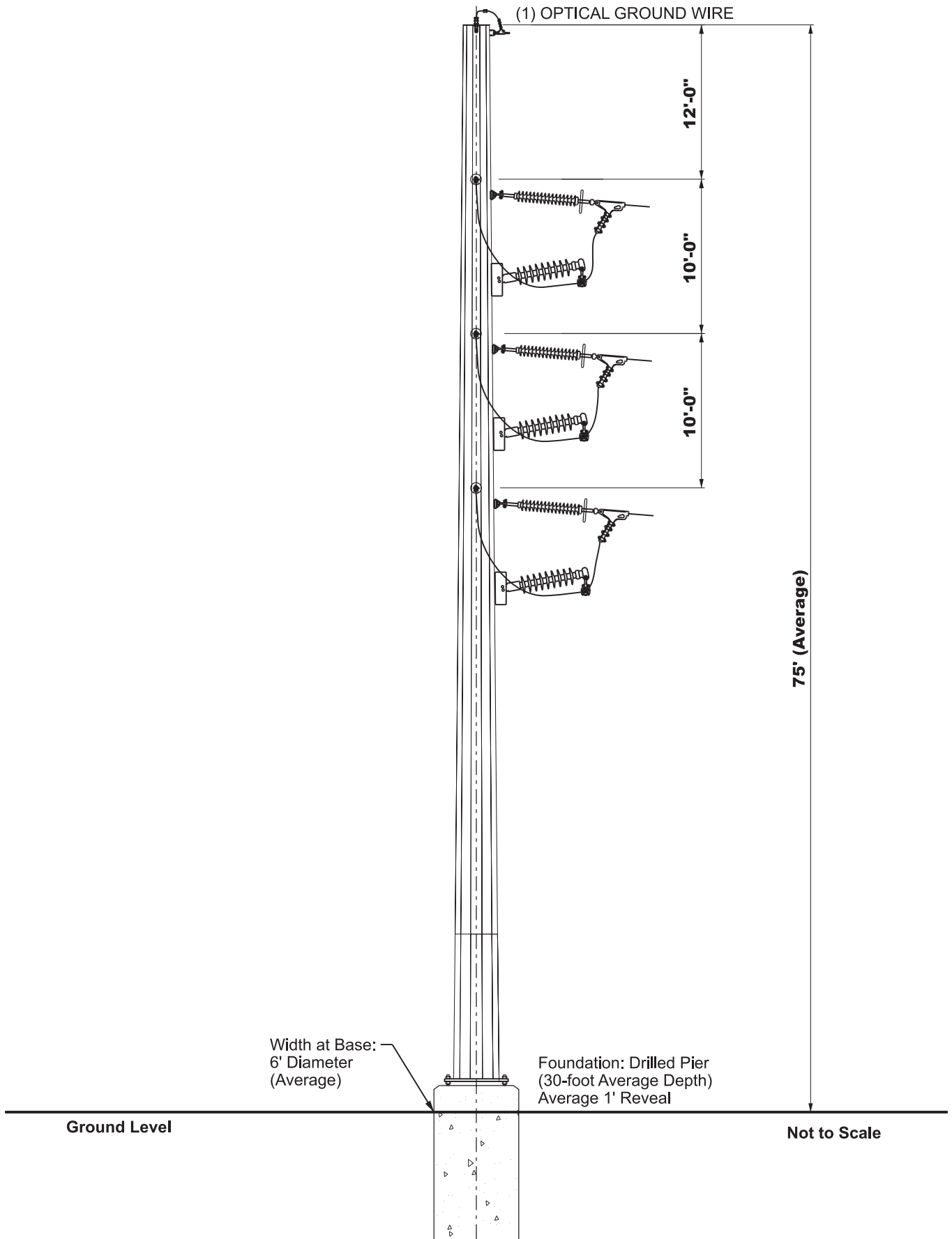


COMPARABLE EXISTING STRUCTURE PHOTOGRAPH

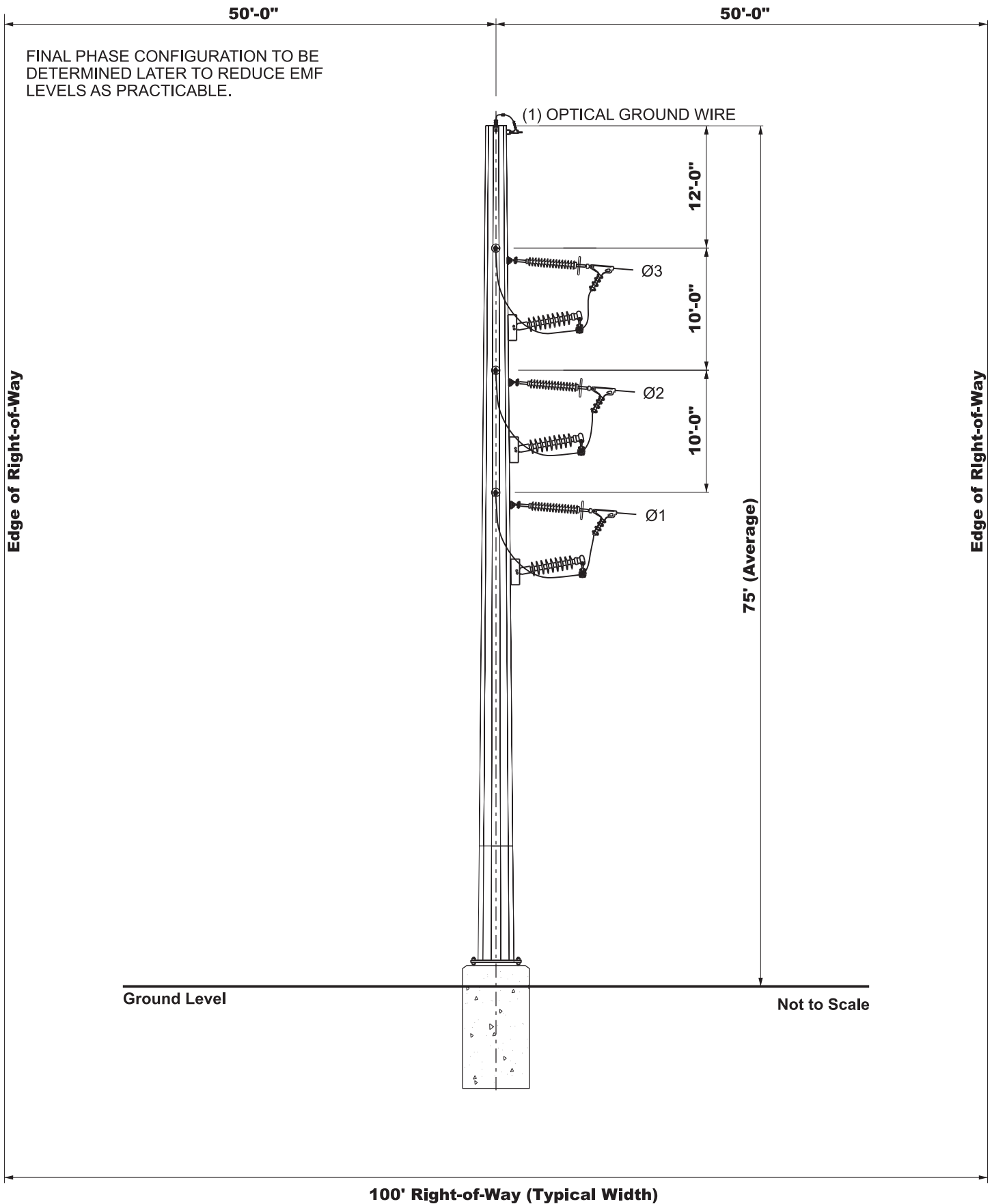
Note: The proposed material for the typical structure will be galvanized steel with a dulled finish (as shown above)

**Exhibit 16: Proposed 138-kV Steel Monopole
Dead-End (Single Circuit)**

STEEL MONOPOLE DEAD-END (SINGLE CIRCUIT)



TYPICAL SCHEMATIC



TYPICAL RIGHT-OF-WAY CROSS SECTION

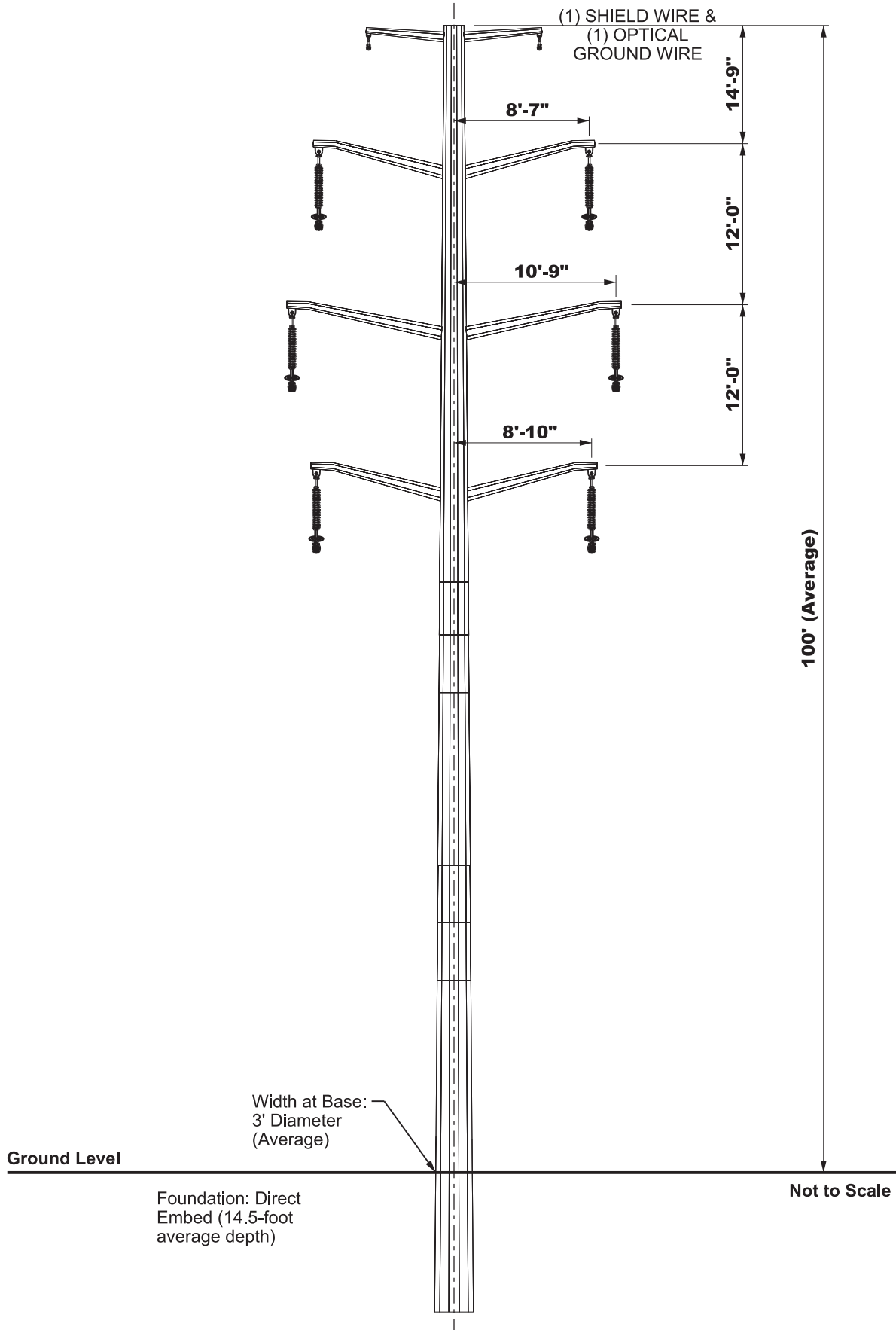


COMPARABLE EXISTING STRUCTURE PHOTOGRAPH

Note: The proposed material for the typical structure will be galvanized steel with a dulled finish (as shown above)

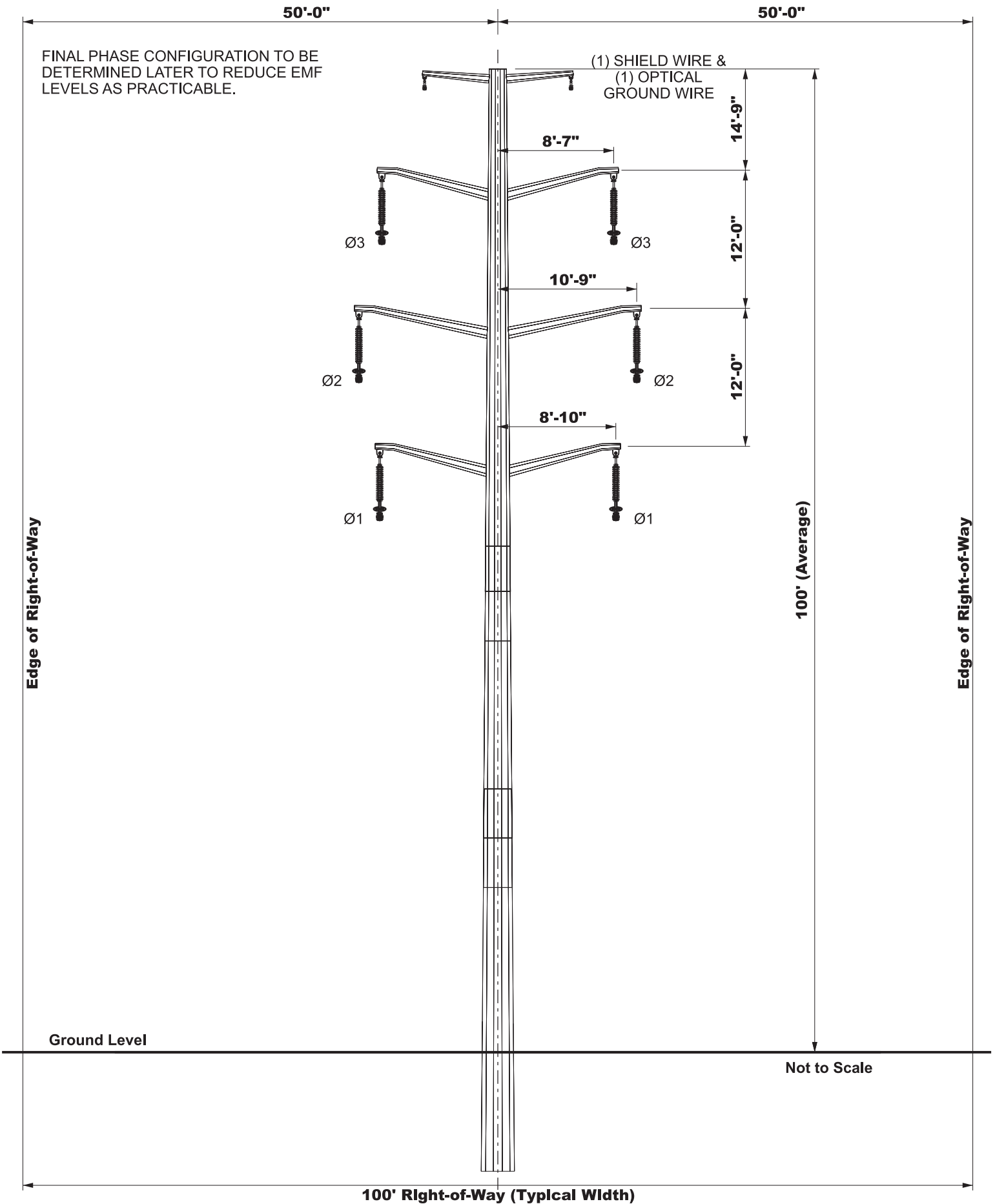
**Exhibit 17: Proposed 138-kV Steel Monopole
Tangent with Davit Arms (Double
Circuit)**

STEEL MONOPOLE TANGENT WITH DAVIT ARMS (Double Circuit)



TYPICAL SCHEMATIC

STEEL MONOPOLE TANGENT WITH DAVIT ARMS (Double Circuit)



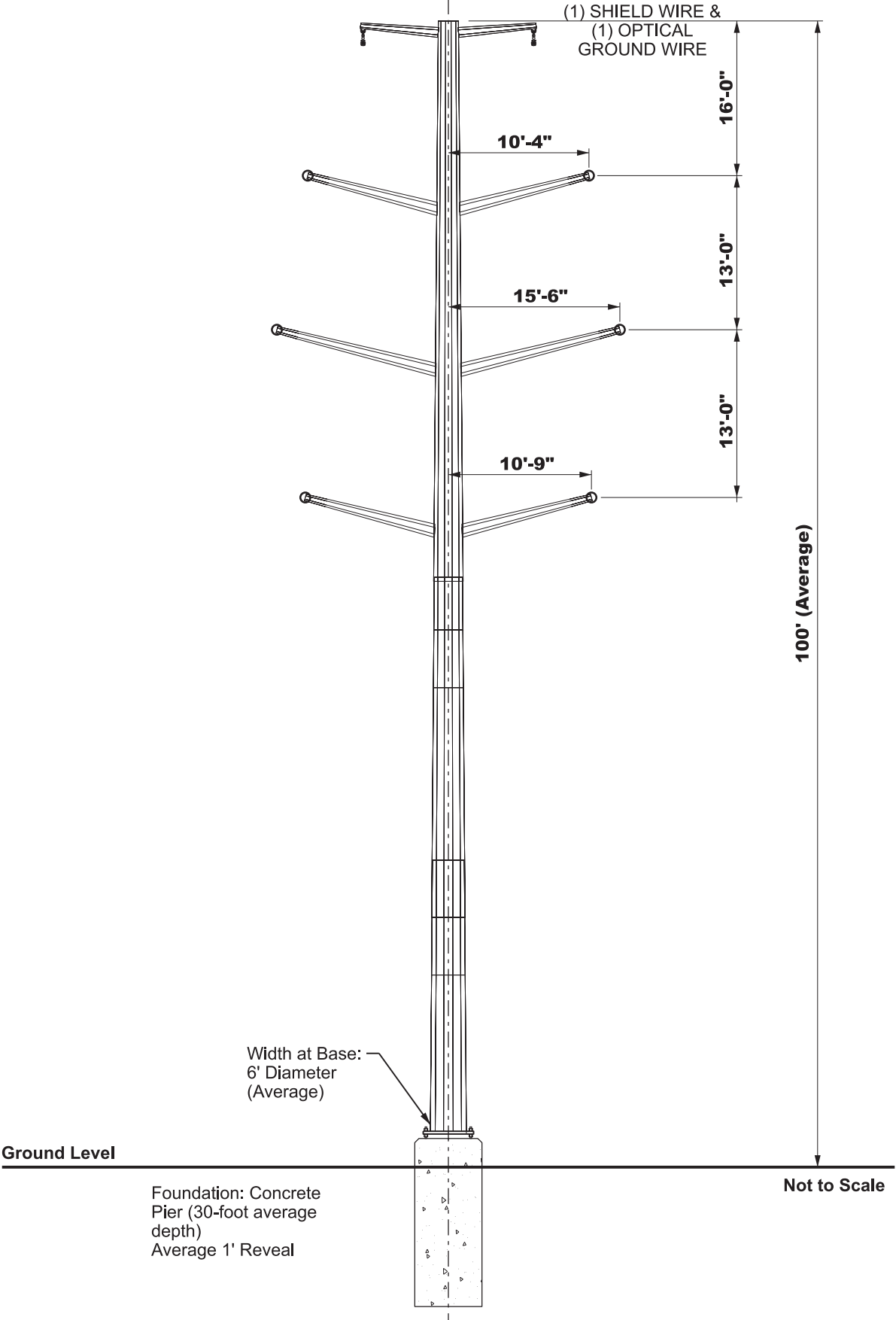
TYPICAL RIGHT-OF-WAY CROSS SECTION

STEEL MONOPOLE TANGENT WITH DAVIT ARMS (Double Circuit)**COMPARABLE EXISTING STRUCTURE PHOTOGRAPH**

Note: The proposed material for the typical structure will be galvanized steel with a dulled finish (as shown above)

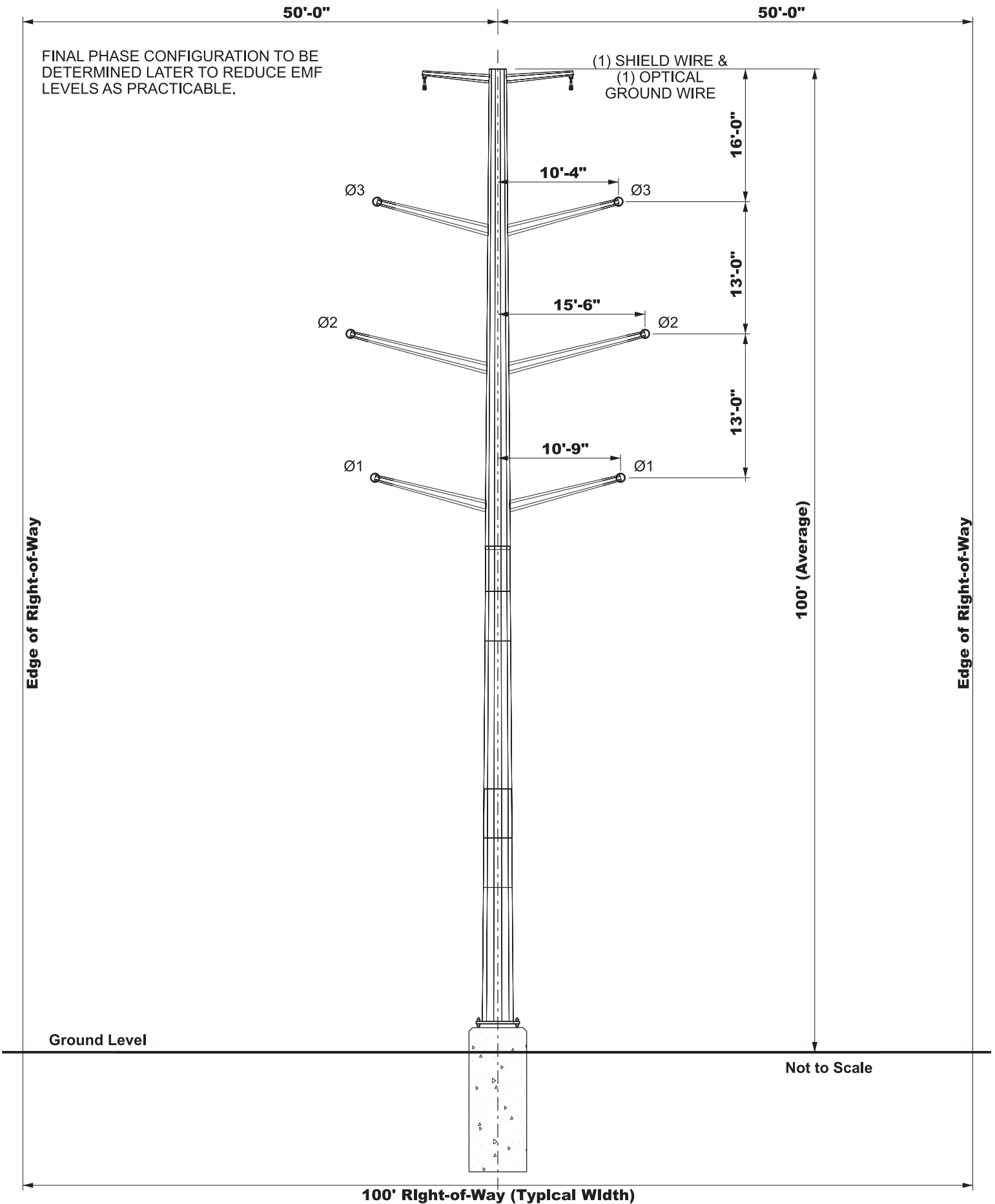
**Exhibit 18: Proposed 138-kV Steel Monopole
Dead-End with Davit Arms (Double
Circuit)**

STEEL MONOPOLE DEAD-END WITH DAVIT ARMS (Double Circuit)



TYPICAL SCHEMATIC

STEEL MONOPOLE DEAD-END WITH DAVIT ARMS (Double Circuit)



TYPICAL RIGHT-OF-WAY CROSS SECTION



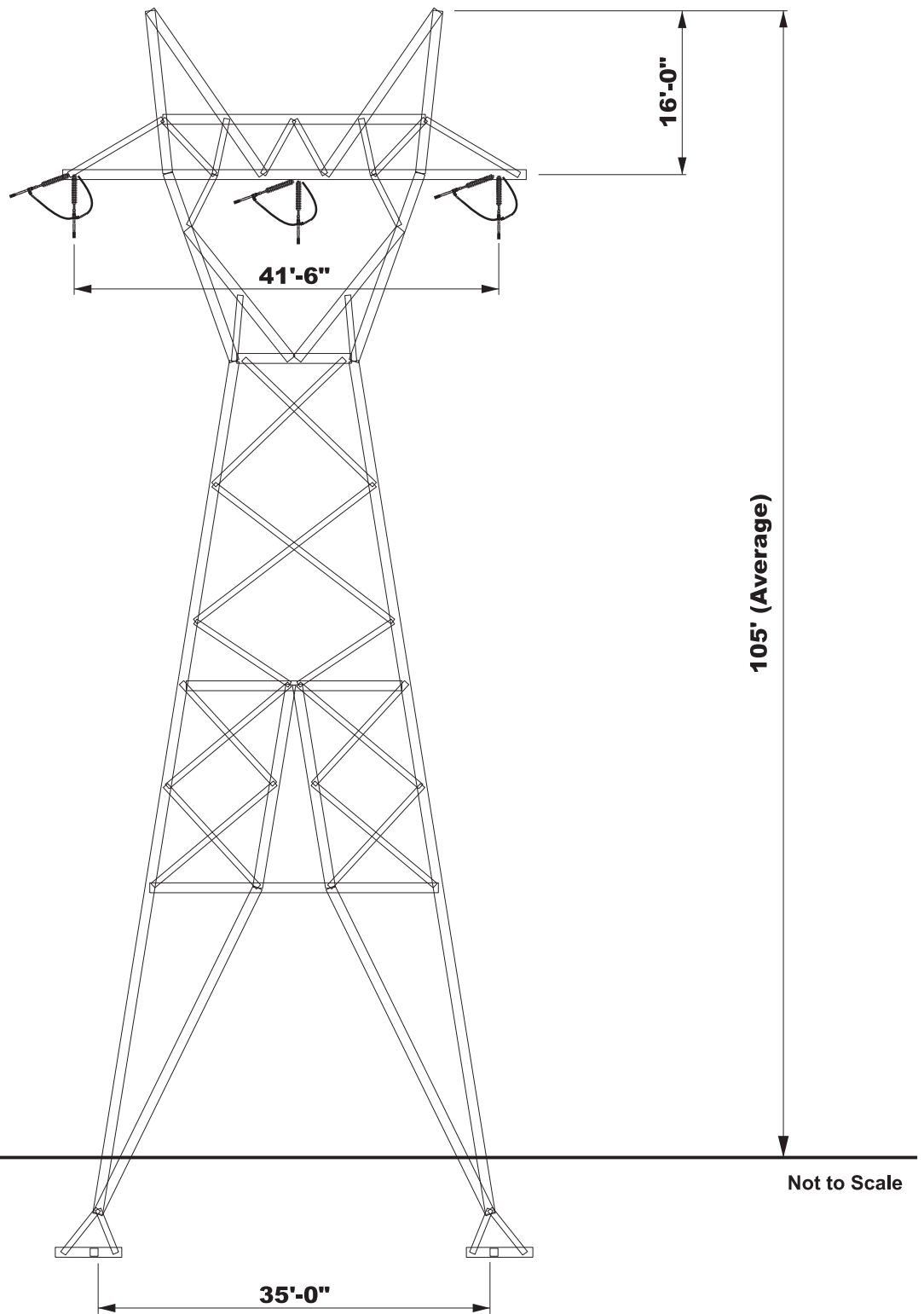
COMPARABLE EXISTING STRUCTURE PHOTOGRAPH

Note: The proposed material for the typical structure will be galvanized steel with a dulled finish (as shown above)

**Exhibit 19: Proposed 138-kV Self-Supporting
Steel Lattice Tower (Single Circuit)**

SELF-SUPPORTING STEEL LATTICE TOWER (Single Circuit)

(1) SHIELD WIRE
&
(1) OPTICAL GROUND WIRE



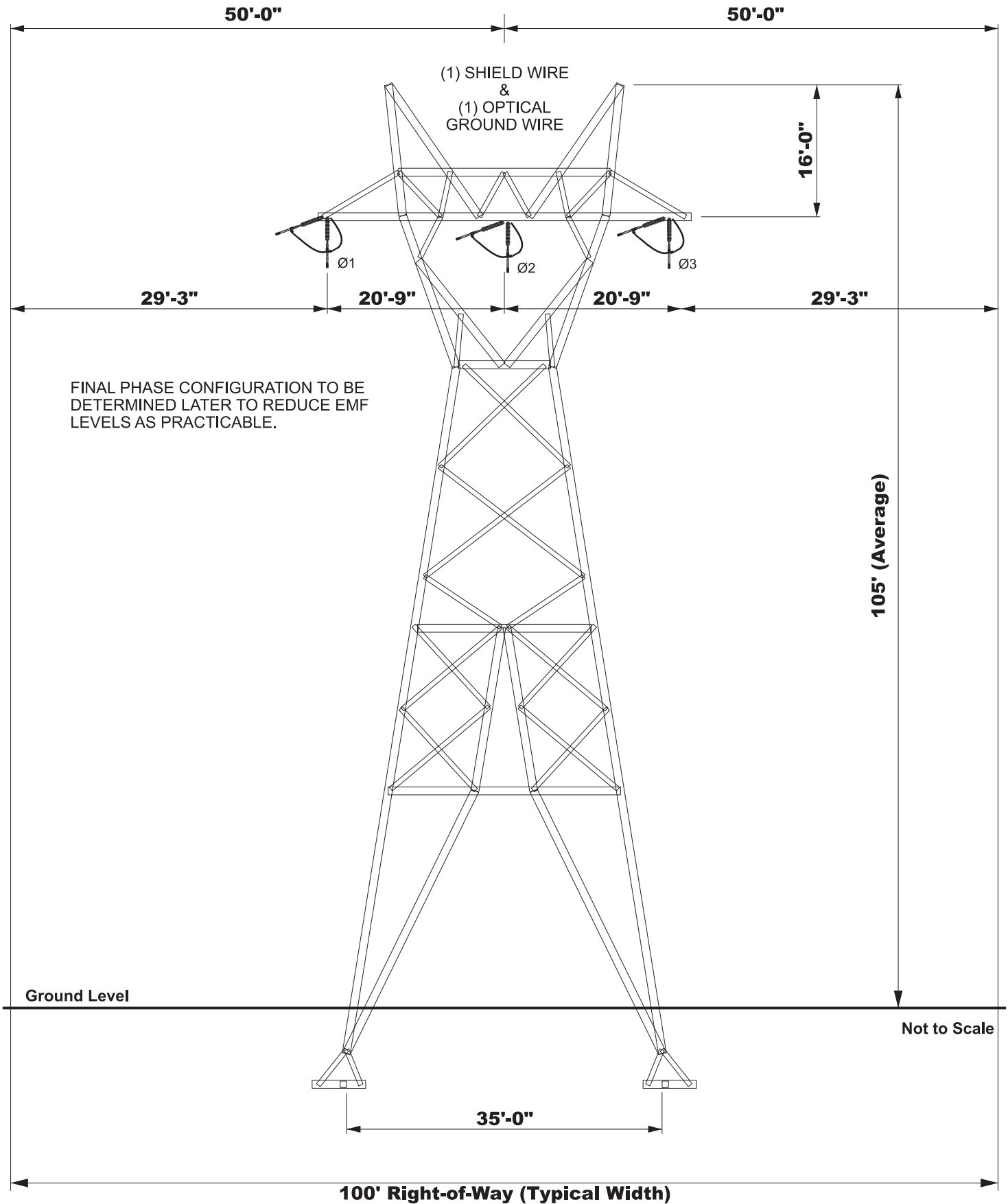
Ground Level

Foundation: (4) Earth grillages
(12-foot average depth)

Not to Scale

TYPICAL SCHEMATIC

SELF-SUPPORTING STEEL LATTICE TOWER (Single Circuit)



TYPICAL RIGHT-OF-WAY CROSS SECTION



COMPARABLE EXISTING STRUCTURE PHOTOGRAPH

Note: The proposed material for the typical structure will be galvanized steel with a dulled finish (as shown above)

Exhibit 20: Existing Structure Photographs

Component 1: Mayo River (Stuart) to Willis Gap Transmission Improvements



Existing City of Danville's Pinnacles - Hydro 69-kV Line
H-Frame

Component 2: Mayo River (Stuart) to Floyd Transmission Improvements



Existing Floyd - Stuart 69-kV Line
H-Frame

Component 3: Mayo River (Stuart) to Bassett Area Transmission Improvements



Existing Fieldale - Stuart 69-kV Line
Monopole with Cross Arms

Component 3: Mayo River (Stuart) to Bassett Area Transmission Improvements



Existing Fieldale - West Bassett No. 1 69-kV Line
Monopole with Post Insulators and Cross Arms

Component 3: Mayo River (Stuart) to Bassett Area Transmission Improvements



Existing Fieldale - West Bassett No. 1 69-kV Line
H-Frame

Component 3: Mayo River (Stuart) to Bassett Area Transmission Improvements



Existing Fieldale - West Bassett No. 2 69-kV Line
H-Frame

Component 3: Mayo River (Stuart) to Bassett Area Transmission Improvements



Existing Claytor - Fieldale 138-kV Line
H-Frame

Component 3: Mayo River (Stuart) to Bassett Area Transmission Improvements



Existing Claytor - Fieldale 138-kV Line (Left)
and Fieldale - West Bassett No. 2 69-kV Line (Right)
H-Frames