

APPALACHIAN POWER COMPANY  
BEFORE THE  
VIRGINIA STATE CORPORATION COMMISSION  
CASE NO. PUR-2021-00001

APPLICATION FOR APPROVAL AND CERTIFICATION OF  
ELECTRICAL TRANSMISSION LINE

Central Virginia Transmission  
Reliability Project

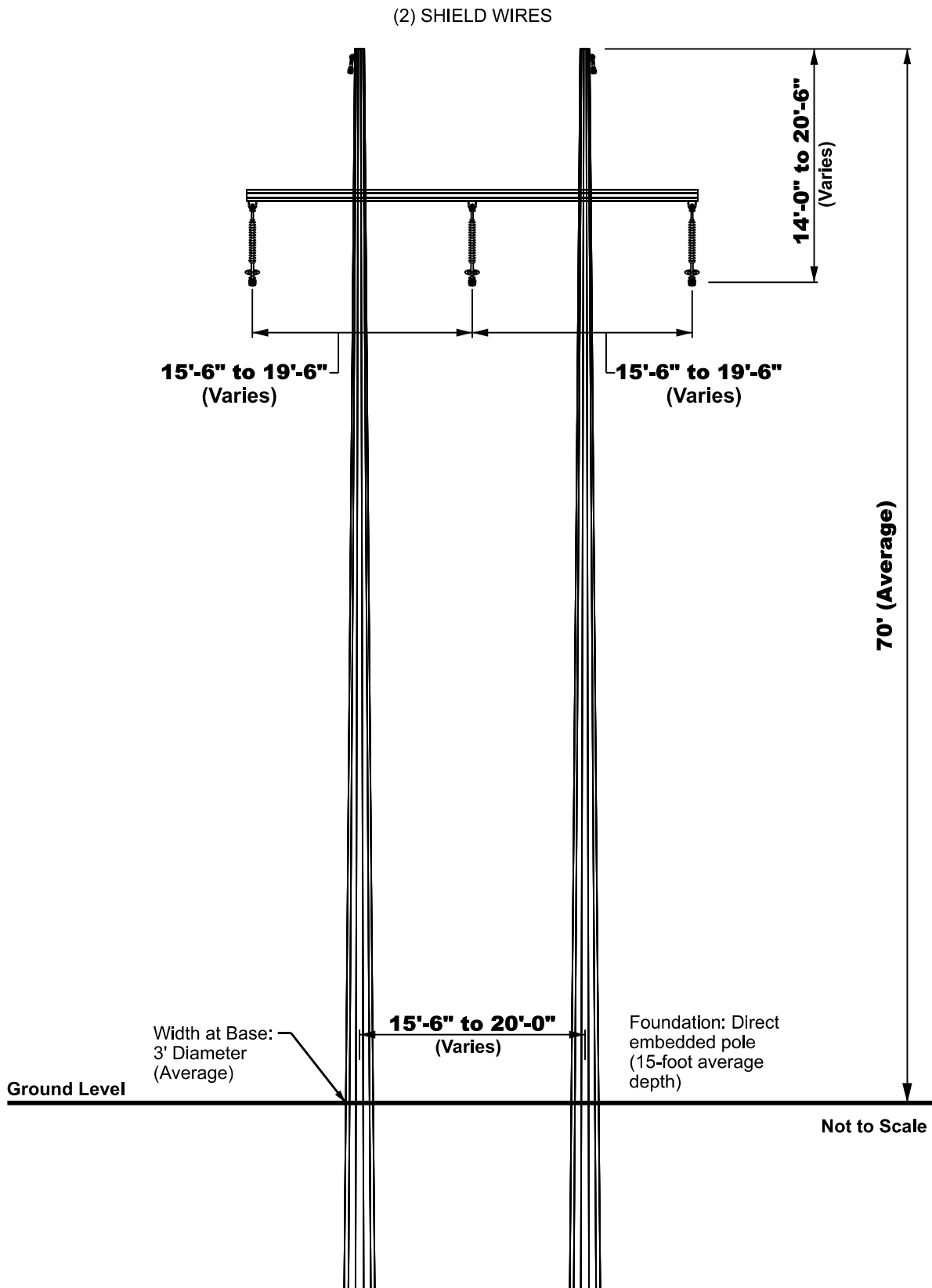
VOLUME 1 OF 4

Application, Testimony, Response to Guidelines &  
Exhibits

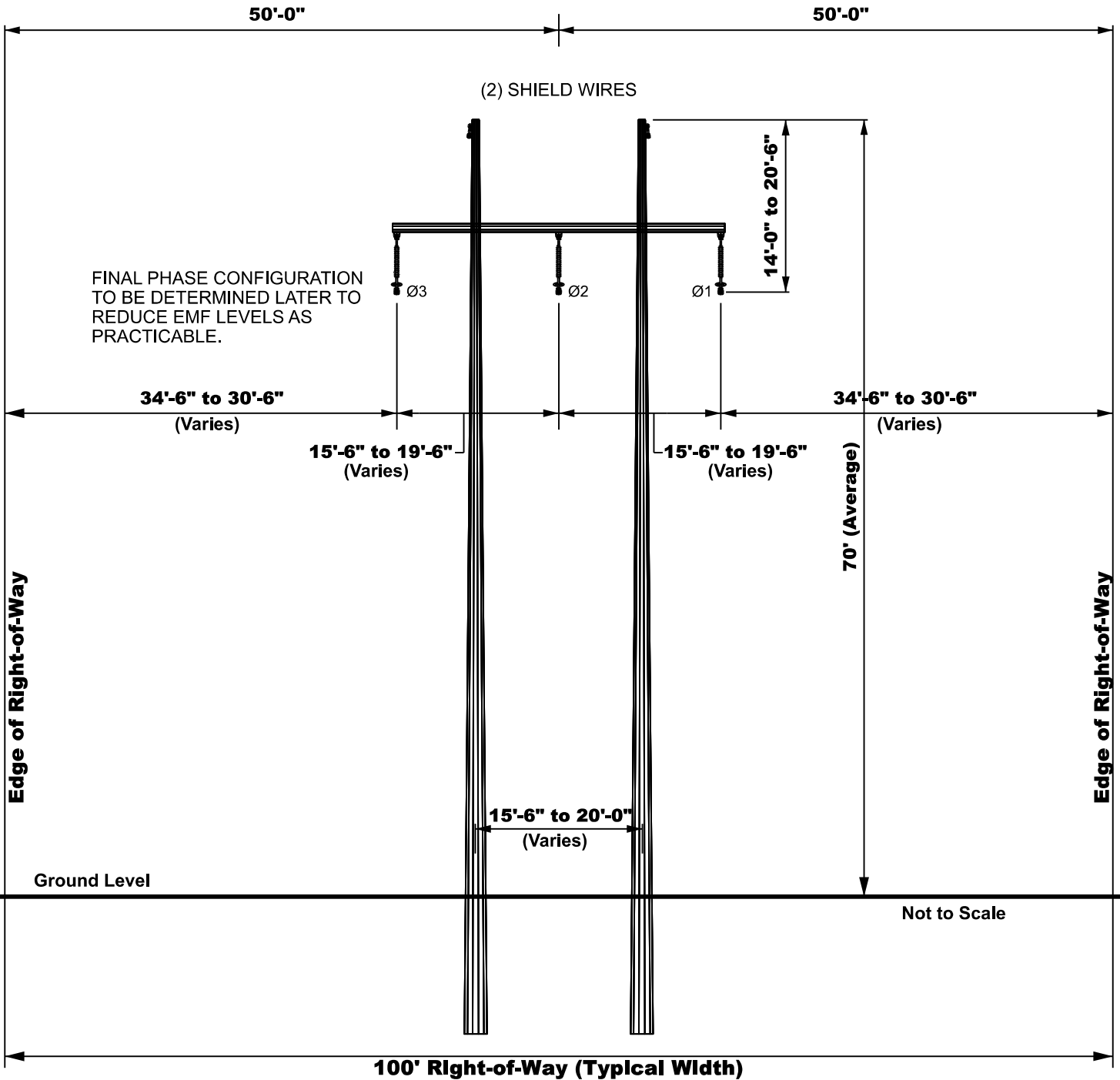
January 2021

**EXHIBIT 9: 138 KV SINGLE CIRCUIT H-FRAME**





TYPICAL SCHEMATIC



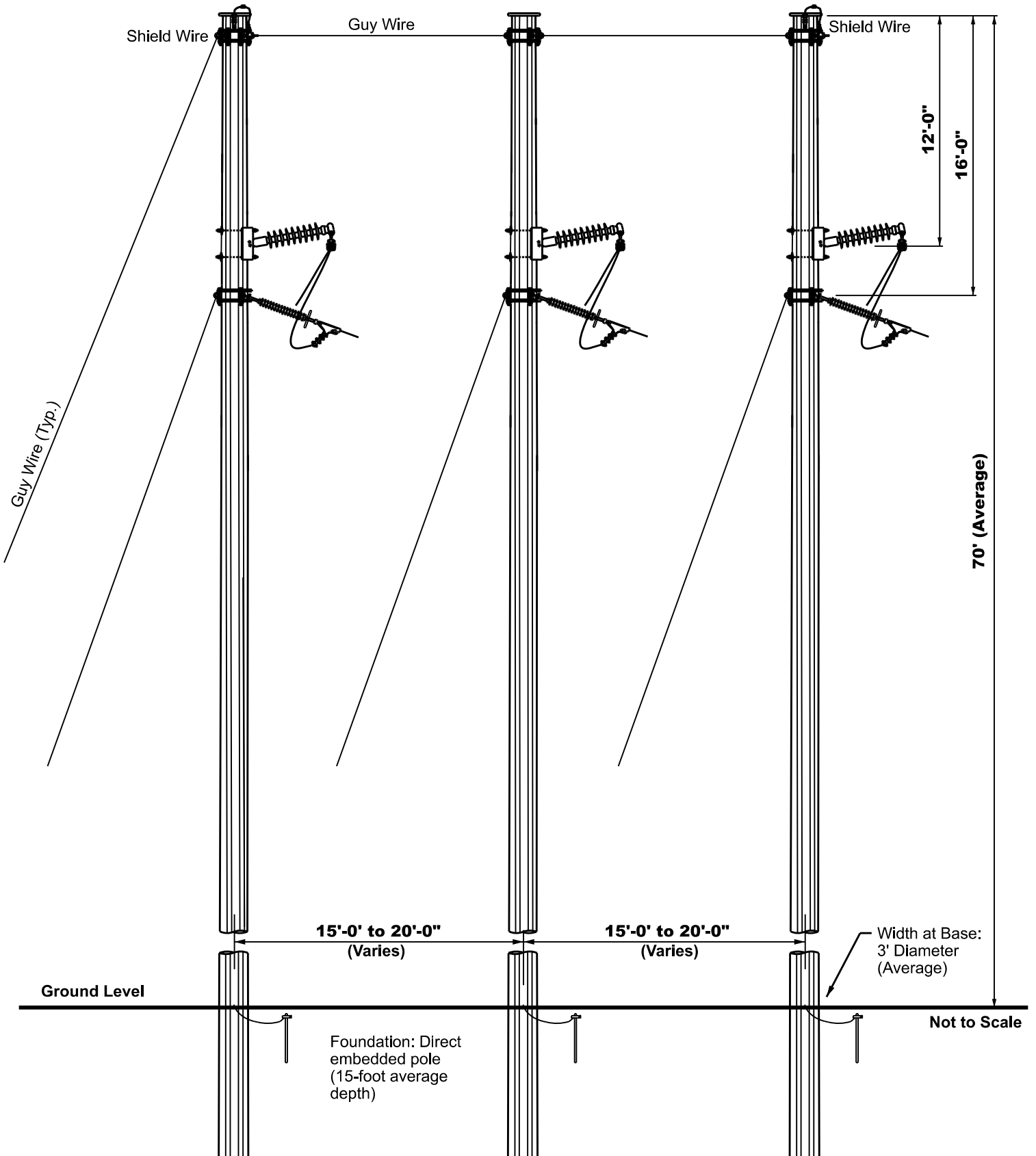
TYPICAL RIGHT-OF-WAY CROSS SECTION



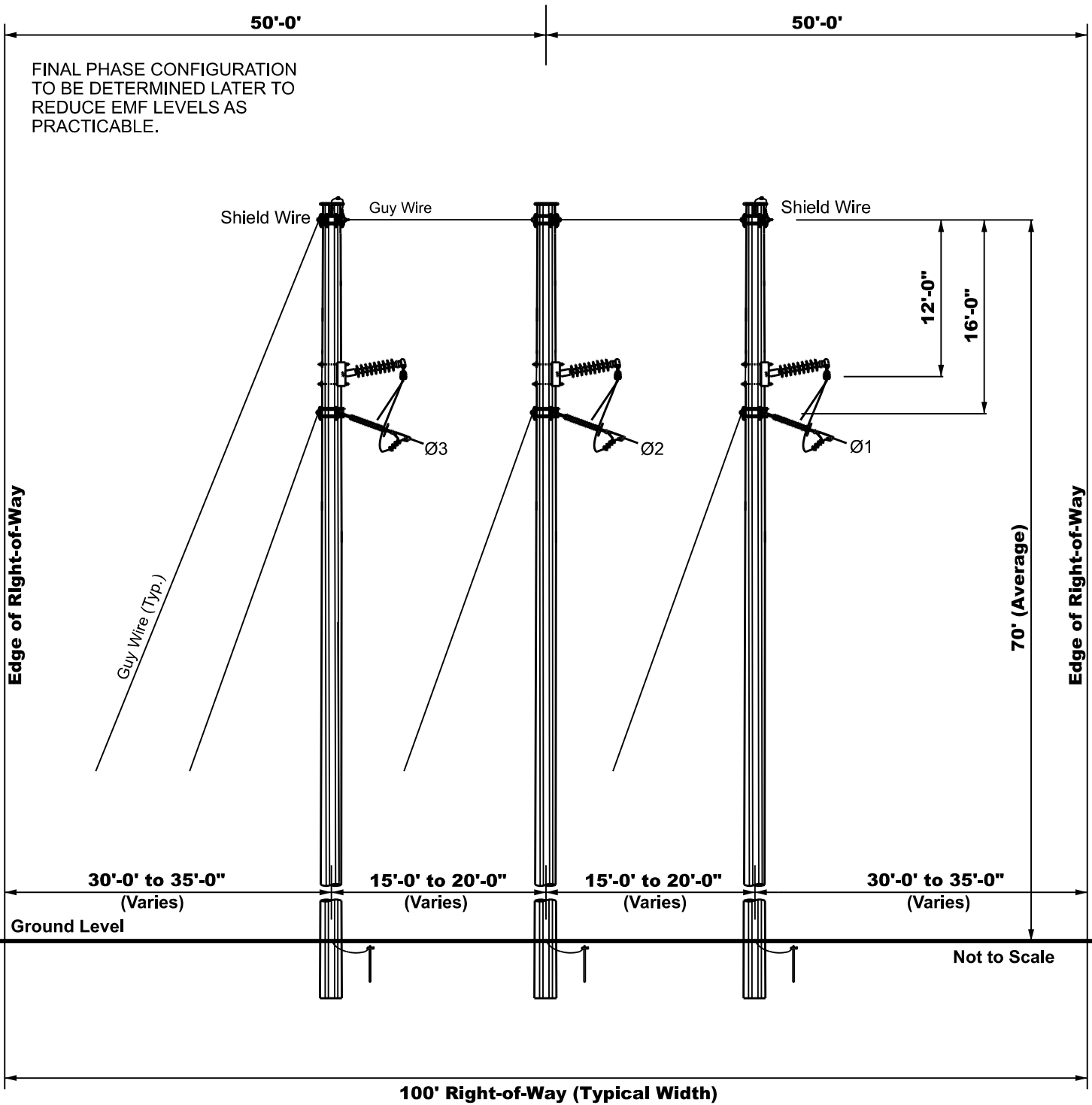
COMPARABLE EXISTING STRUCTURE PHOTOGRAPH

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

**EXHIBIT 10: 138 KV SINGLE CIRCUIT THREE POLE  
STRUCTURE WITH GUY WIRES**



TYPICAL SCHEMATIC



TYPICAL RIGHT-OF-WAY CROSS SECTION

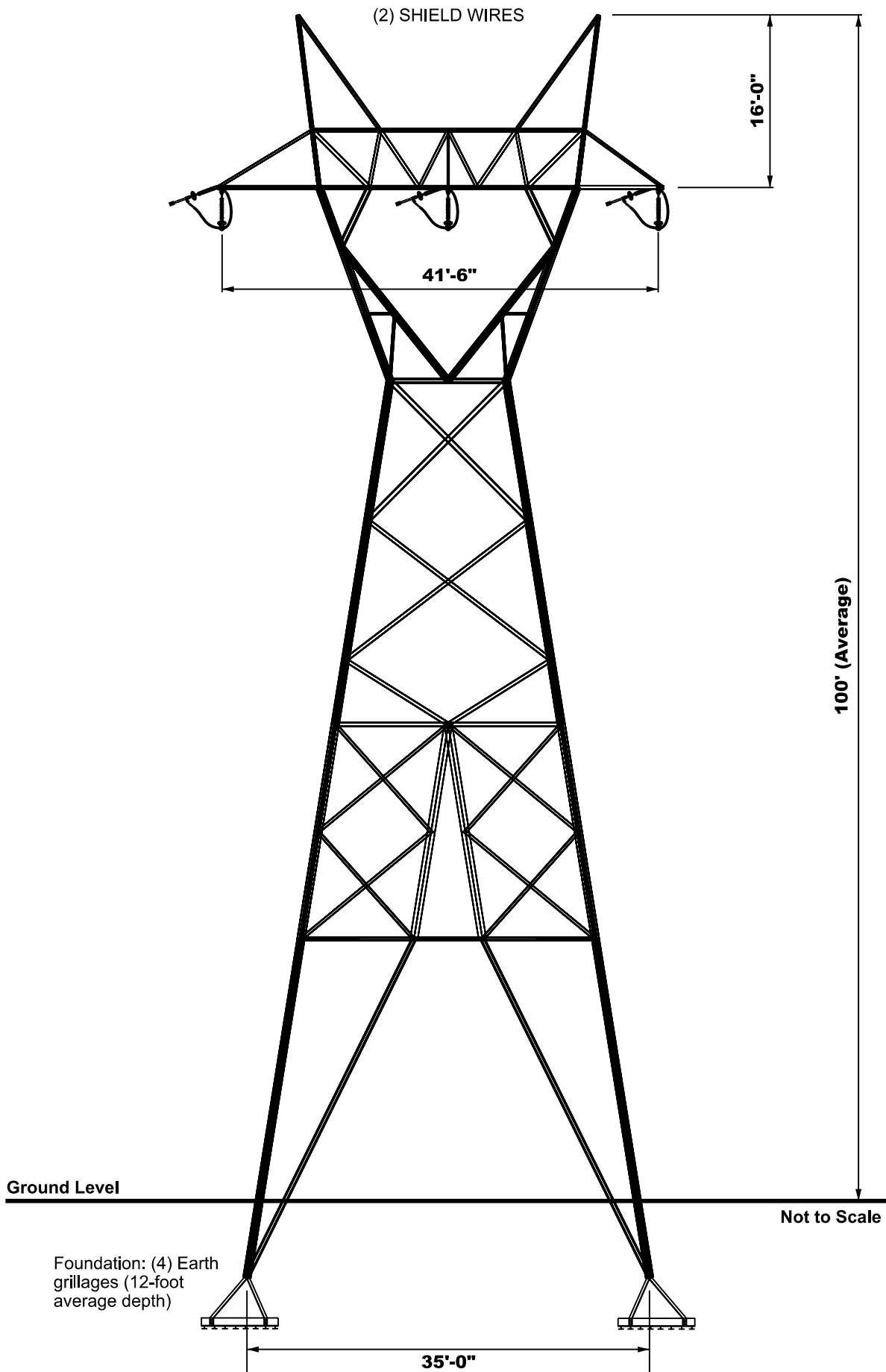


COMPARABLE EXISTING STRUCTURE PHOTOGRAPH

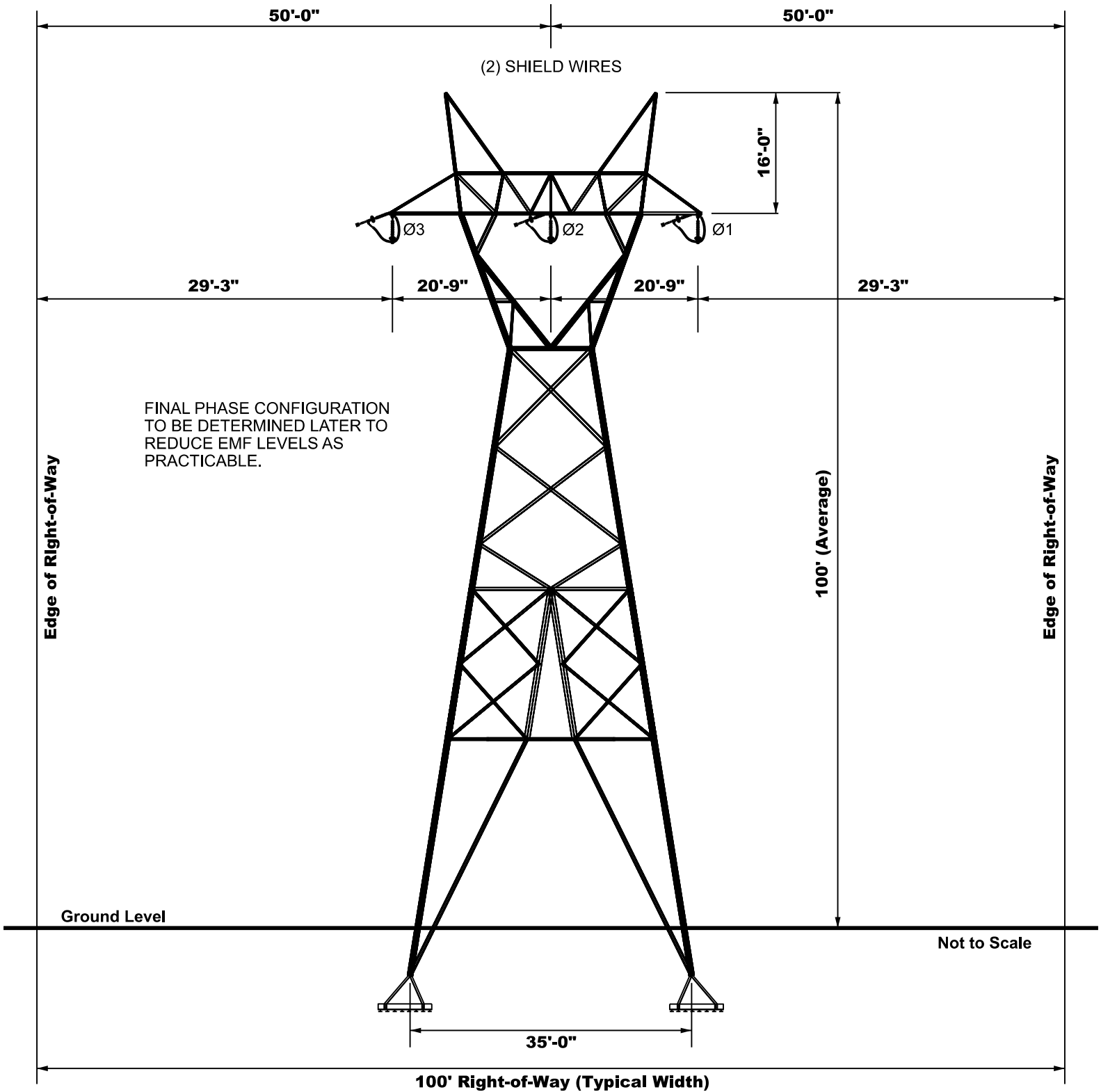
Note: The proposed material for the typical structure will be galvanized steel with a dulled finish (as shown above).

**EXHIBIT 11: 138 KV SINGLE CIRCUIT LATTICE TOWER  
(JAMES RIVER CROSSING)**

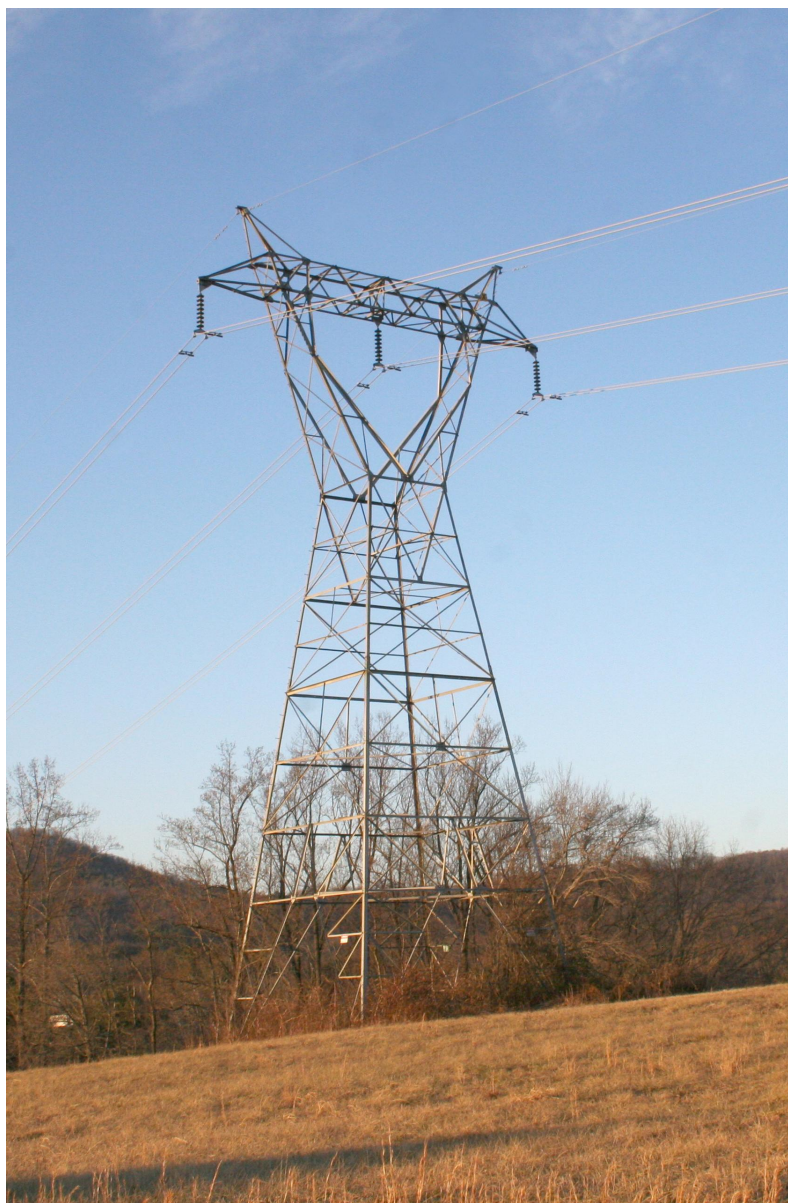




TYPICAL SCHEMATIC



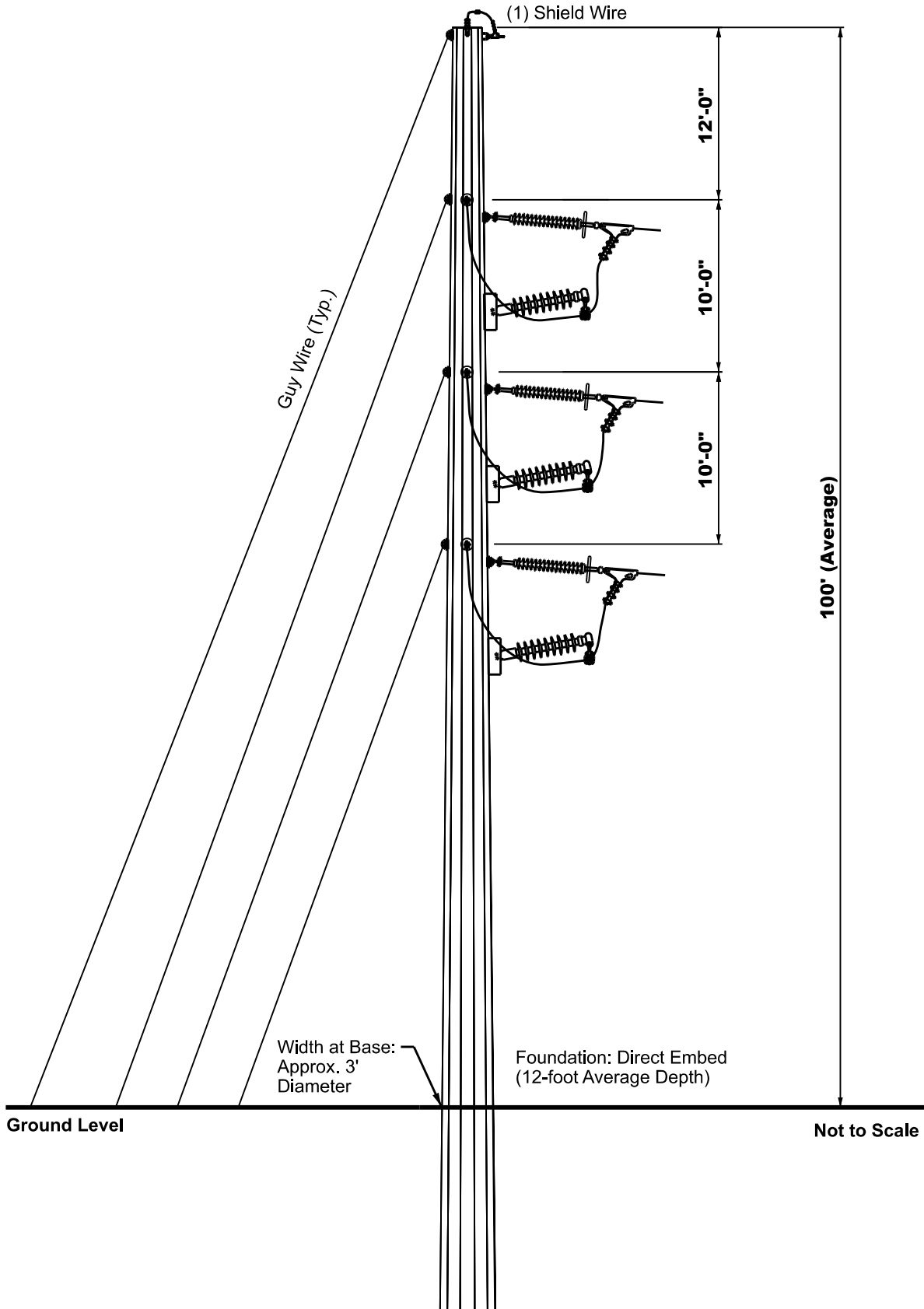
TYPICAL RIGHT-OF-WAY CROSS SECTION



### COMPARABLE EXISTING STRUCTURE PHOTOGRAPH

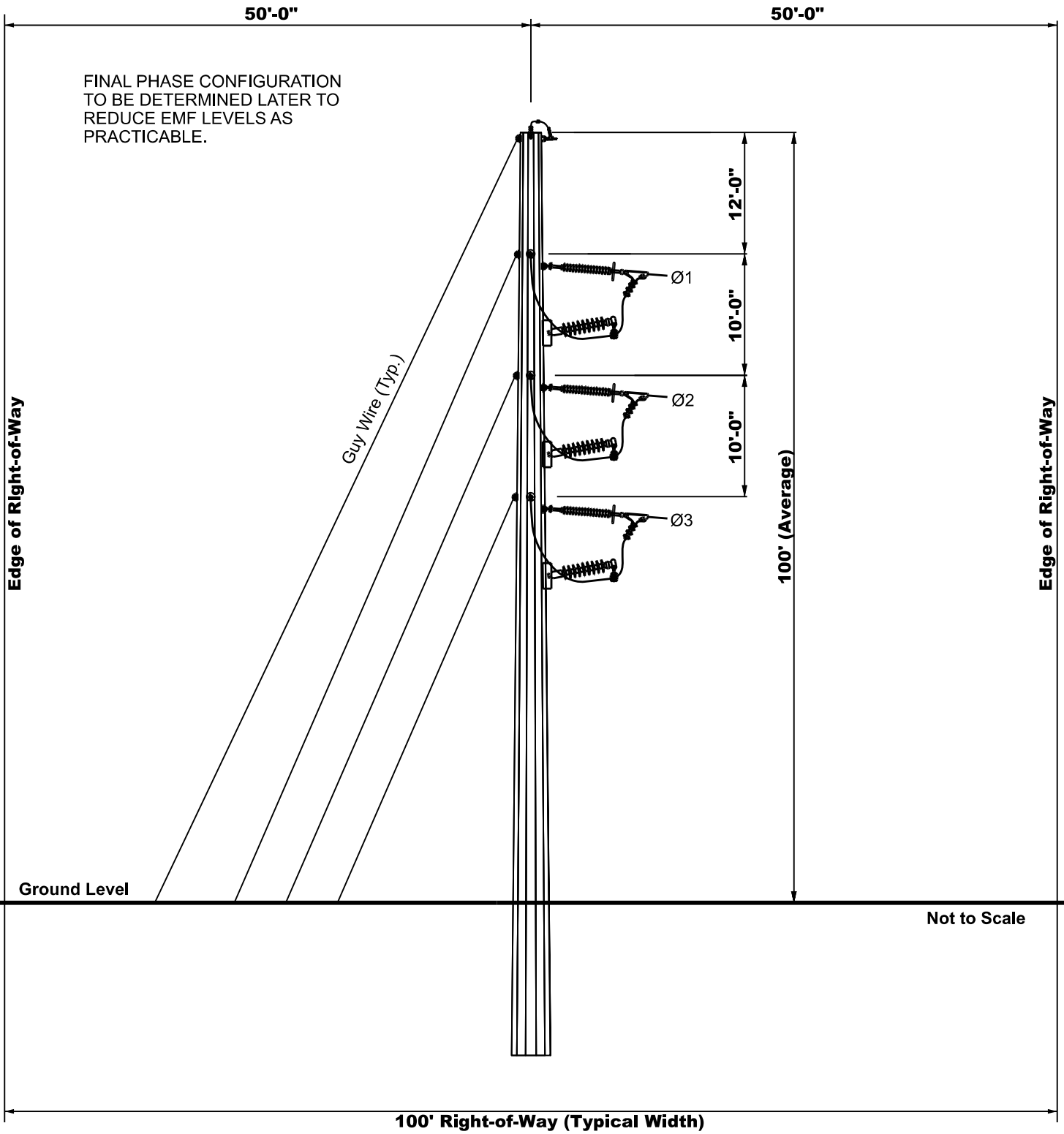
Note: The proposed material for the typical structure will be galvanized steel with a dulled finish (as shown above).

**EXHIBIT 12: 138 KV SINGLE CIRCUIT MONOPOLE DEAD-  
END (DIRECT EMBED WITH GUY WIRES)**



TYPICAL SCHEMATIC

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



TYPICAL RIGHT-OF-WAY CROSS SECTION

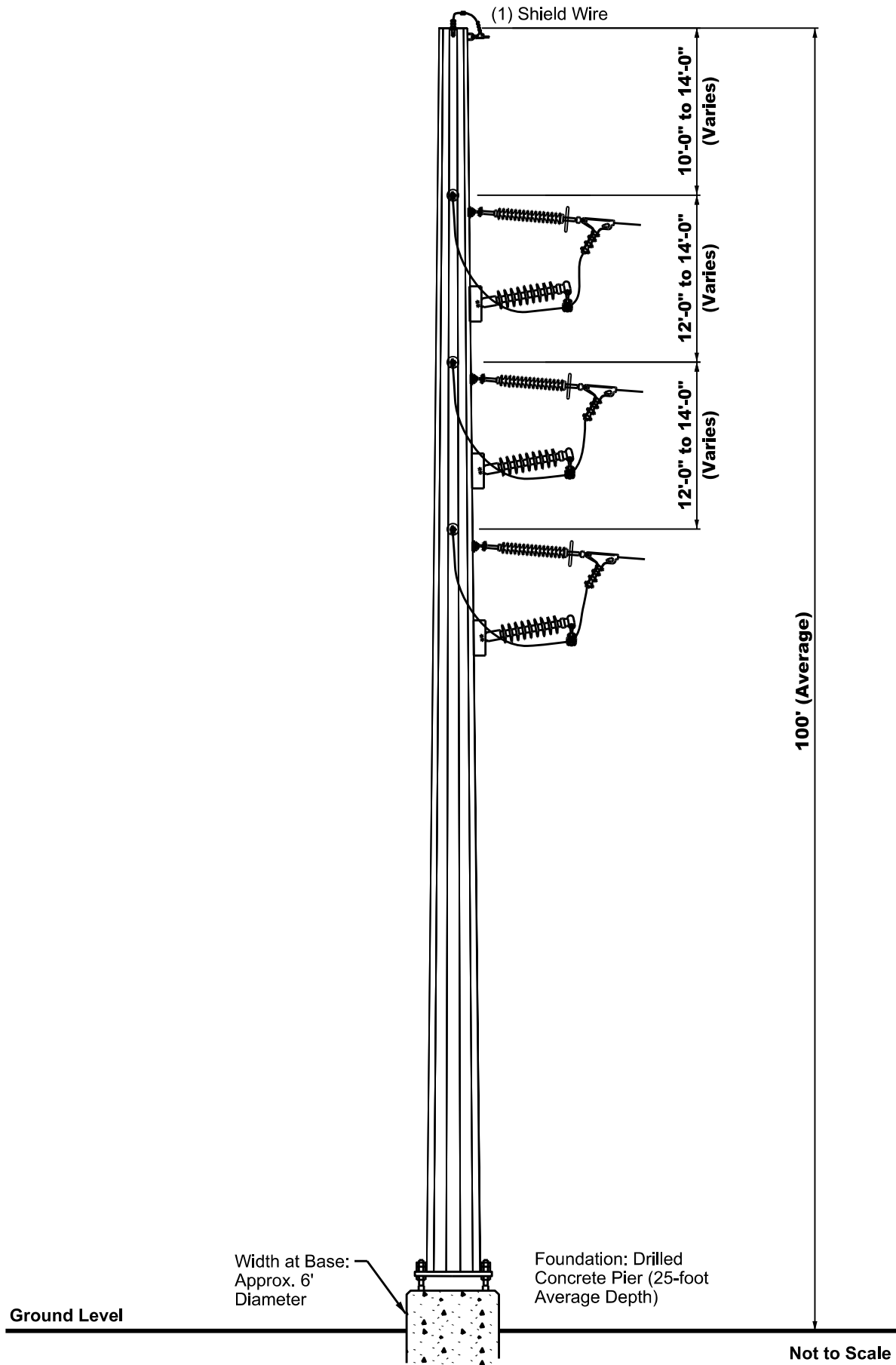


COMPARABLE EXISTING STRUCTURE PHOTOGRAPH

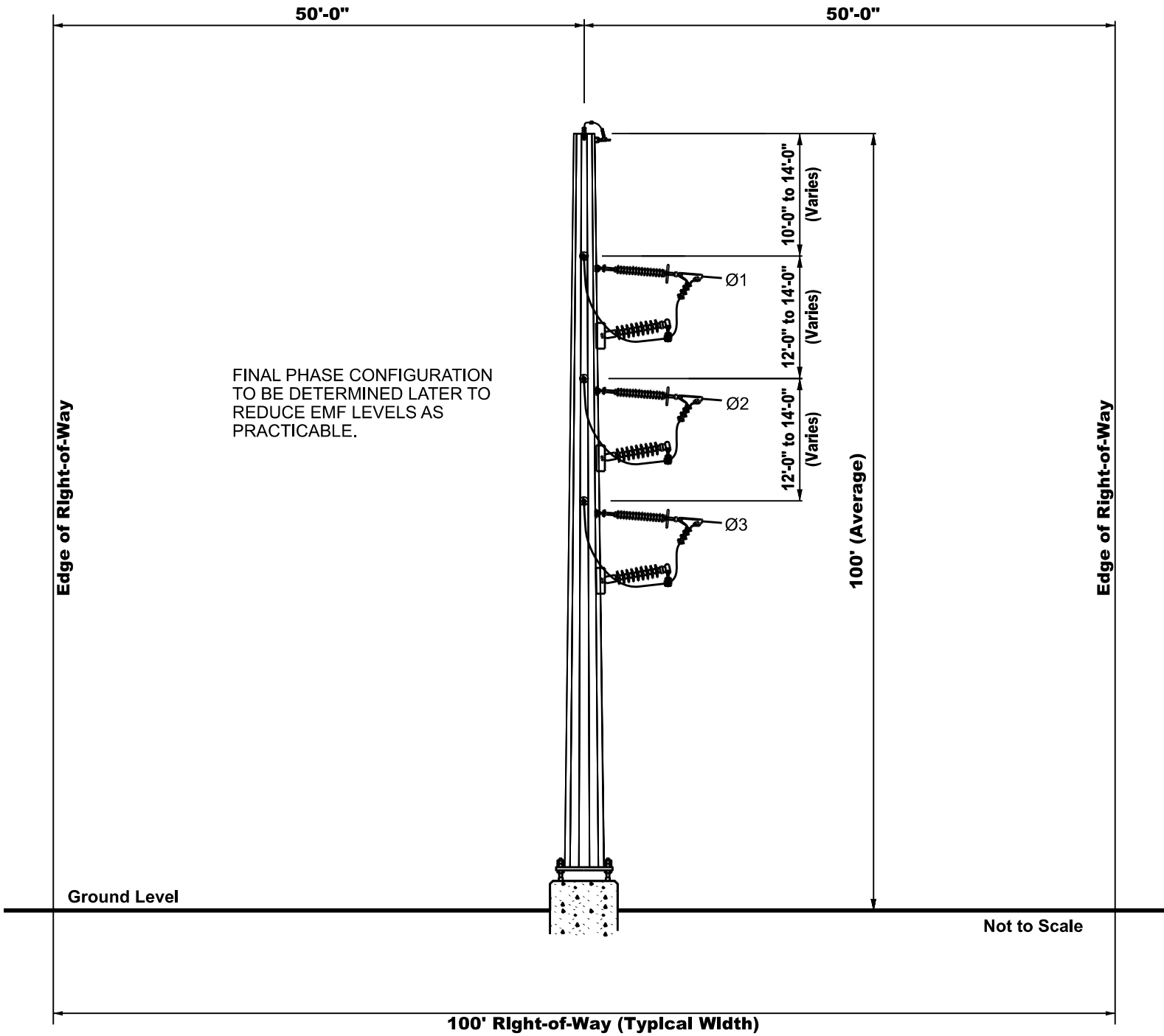
Note: The proposed material for the typical structure will be galvanized steel with a dulled finish (as shown above).

**EXHIBIT 13: 138 KV SINGLE CIRCUIT MONOPOLE DEAD-  
END (PIER FOUNDATION)**





TYPICAL SCHEMATIC



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

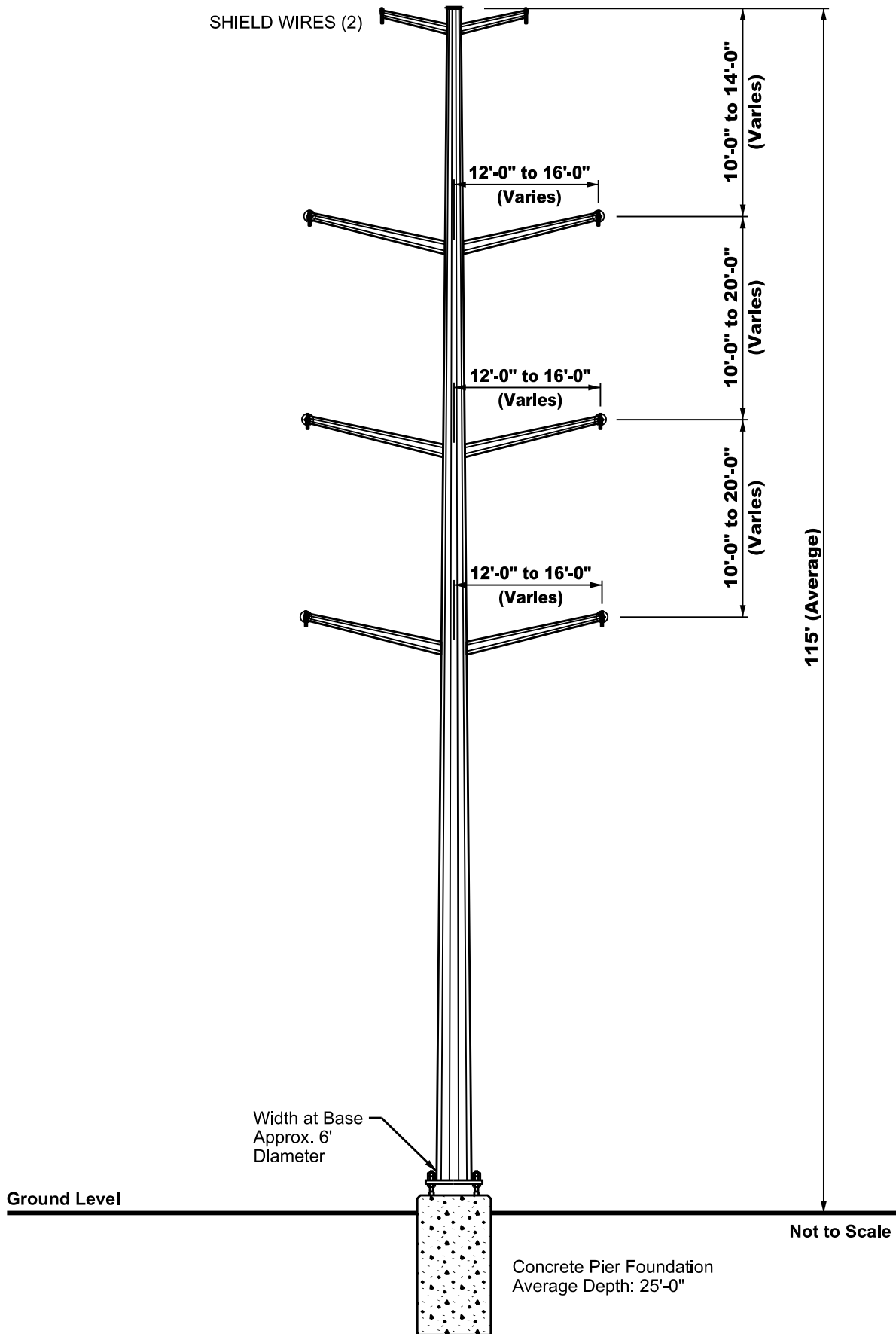
TYPICAL RIGHT-OF-WAY CROSS SECTION



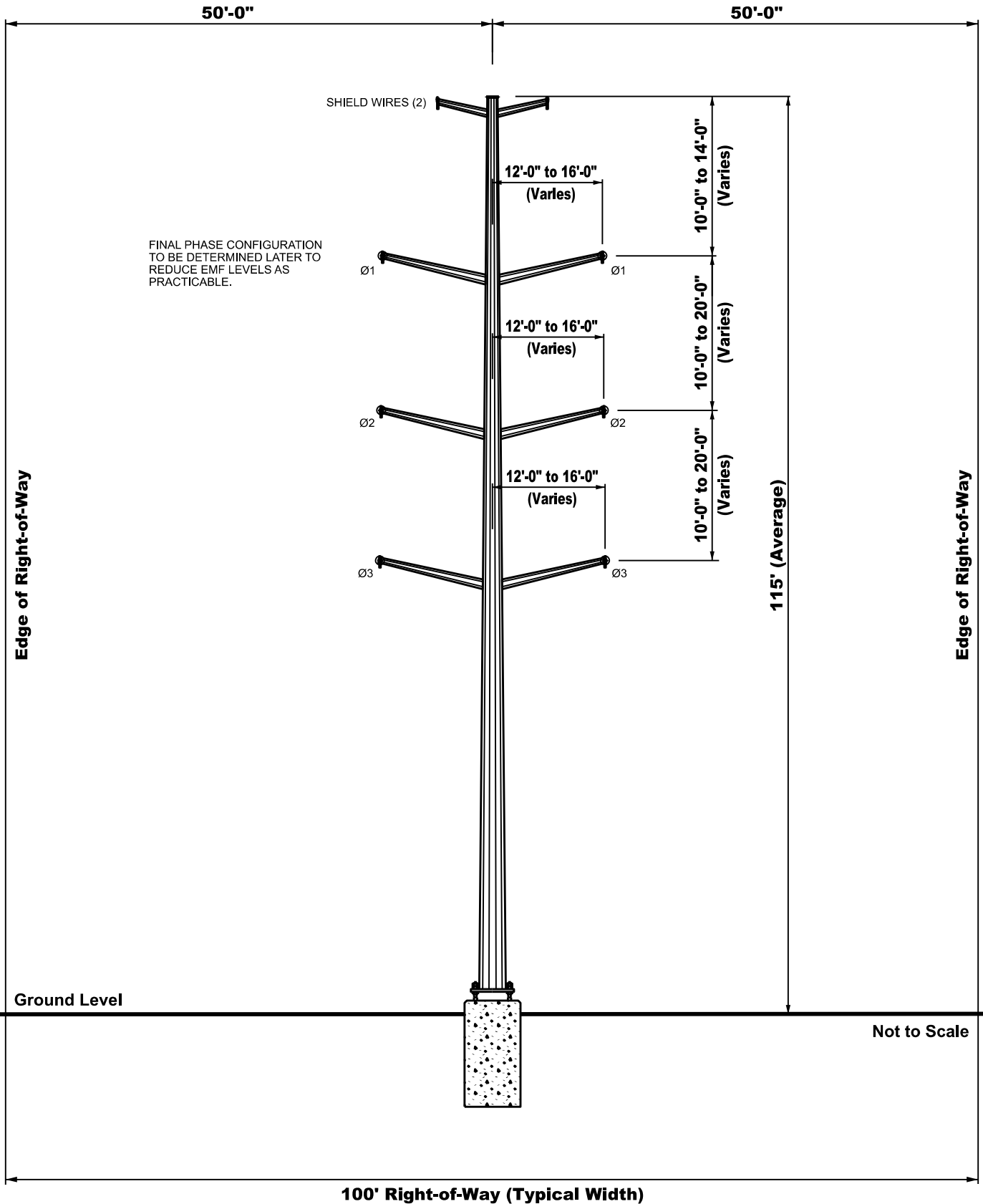
### COMPARABLE EXISTING STRUCTURE PHOTOGRAPH

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

**EXHIBIT 14: 138 KV DOUBLE CIRCUIT MONOPOLE WITH  
DAVIT ARMS**



TYPICAL SCHEMATIC



TYPICAL RIGHT-OF-WAY CROSS SECTION

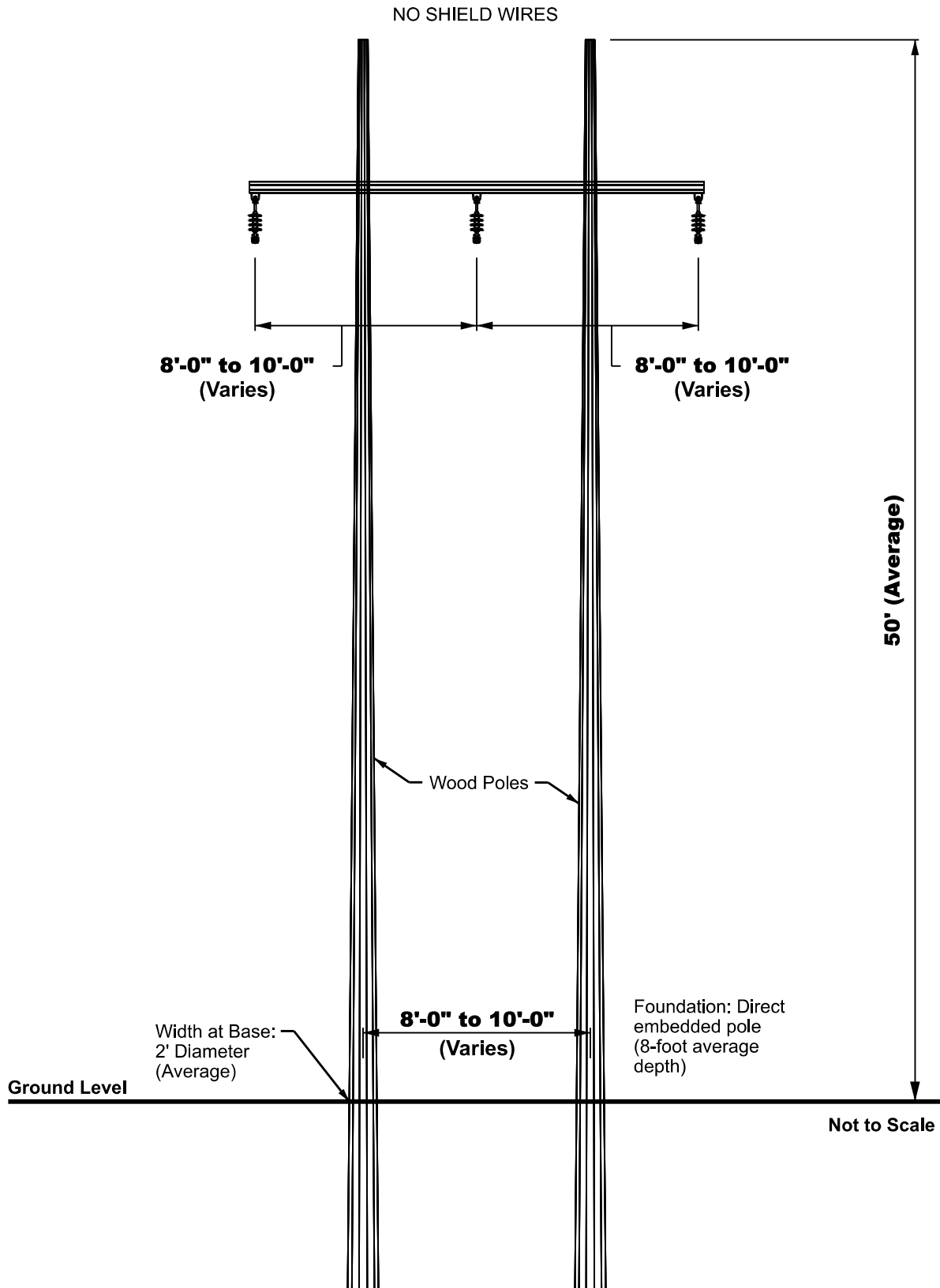


COMPARABLE STRUCTURE PHOTOGRAPH

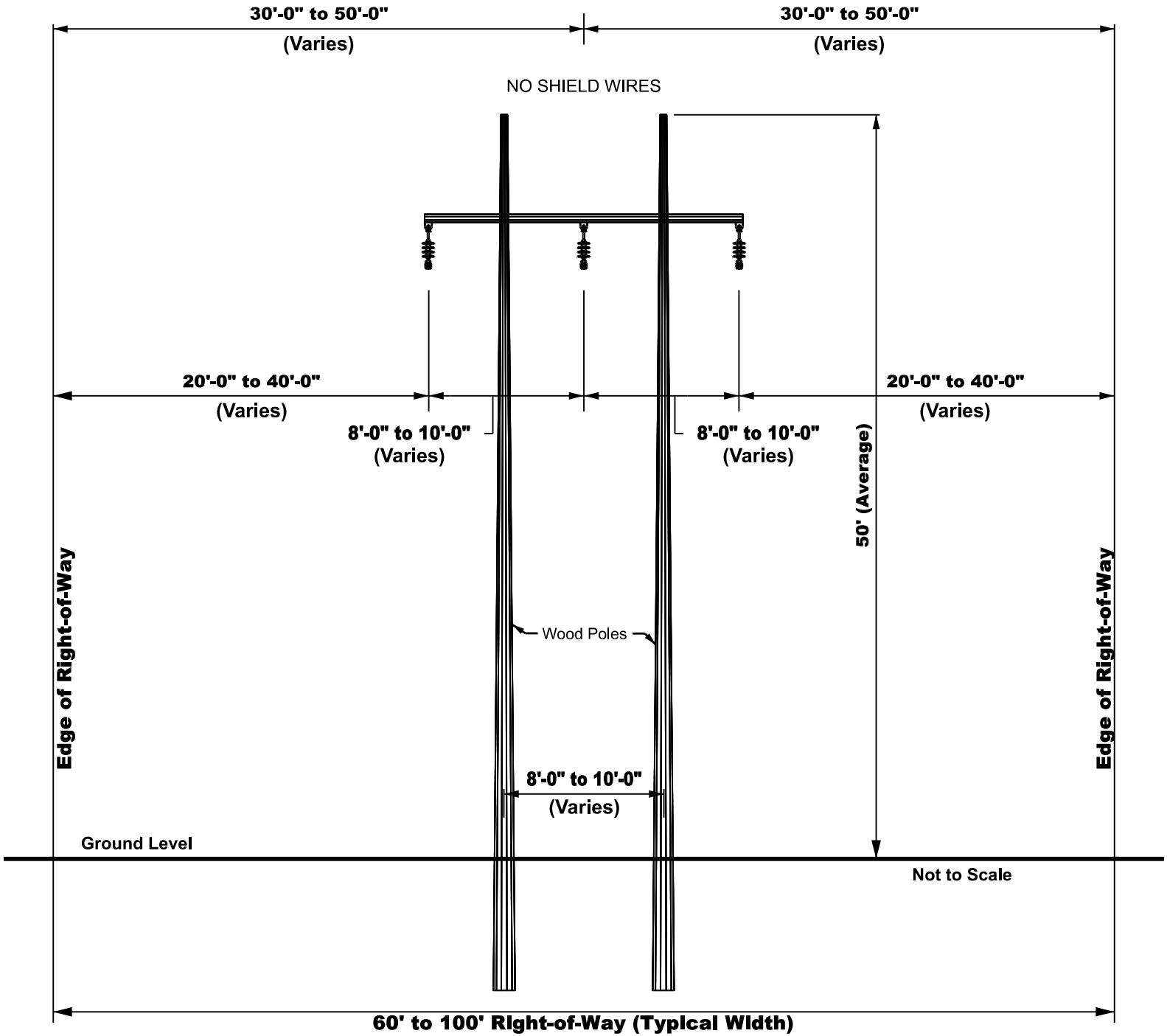
Note: The proposed material for the typical structure will be galvanized steel with a dulled finish (as shown above).

**EXHIBIT 15: 69 KV SINGLE CIRCUIT H-FRAME (EXISTING  
ROW AND STRUCTURE)**





TYPICAL SCHEMATIC



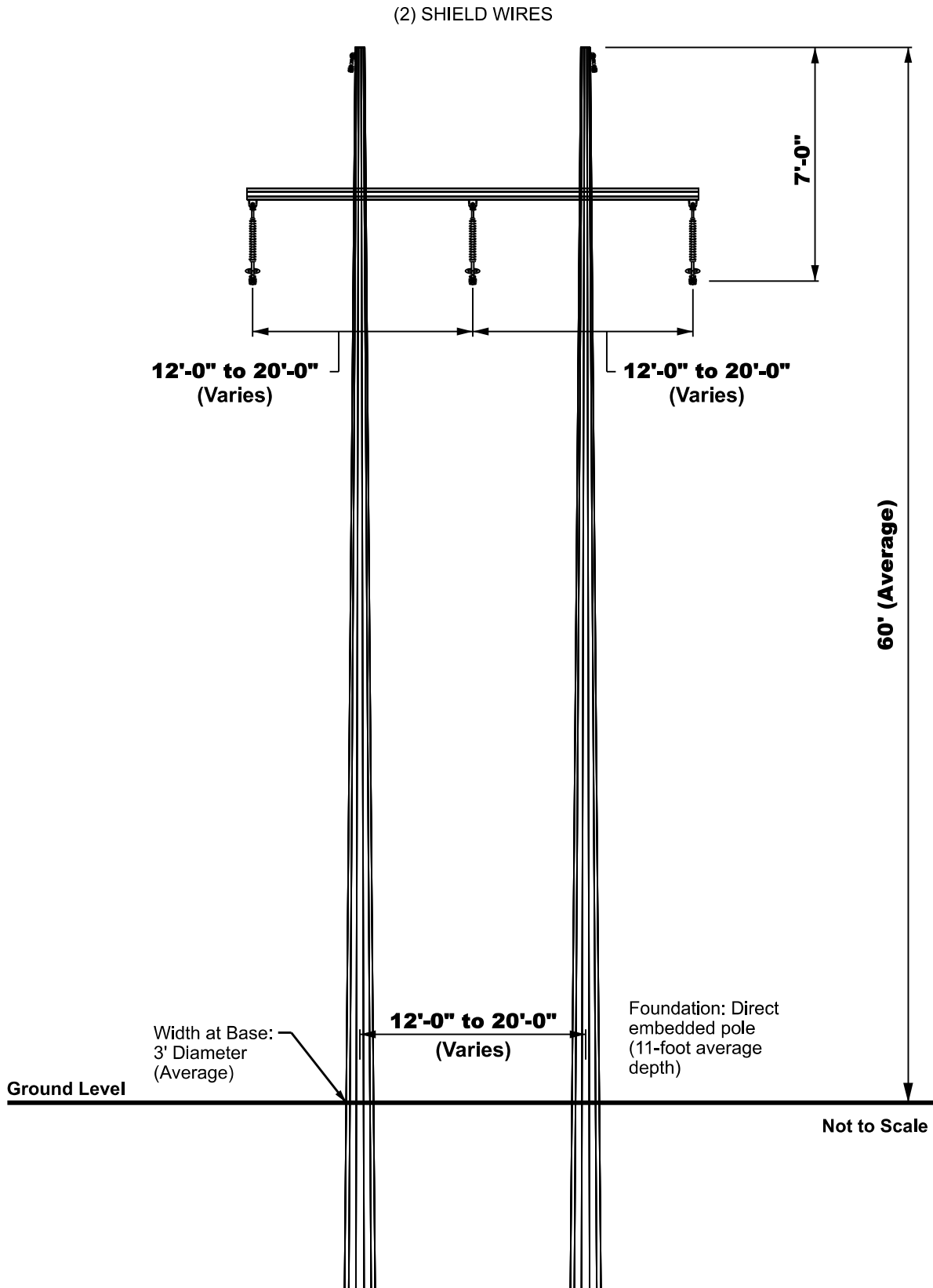
TYPICAL RIGHT-OF-WAY CROSS SECTION



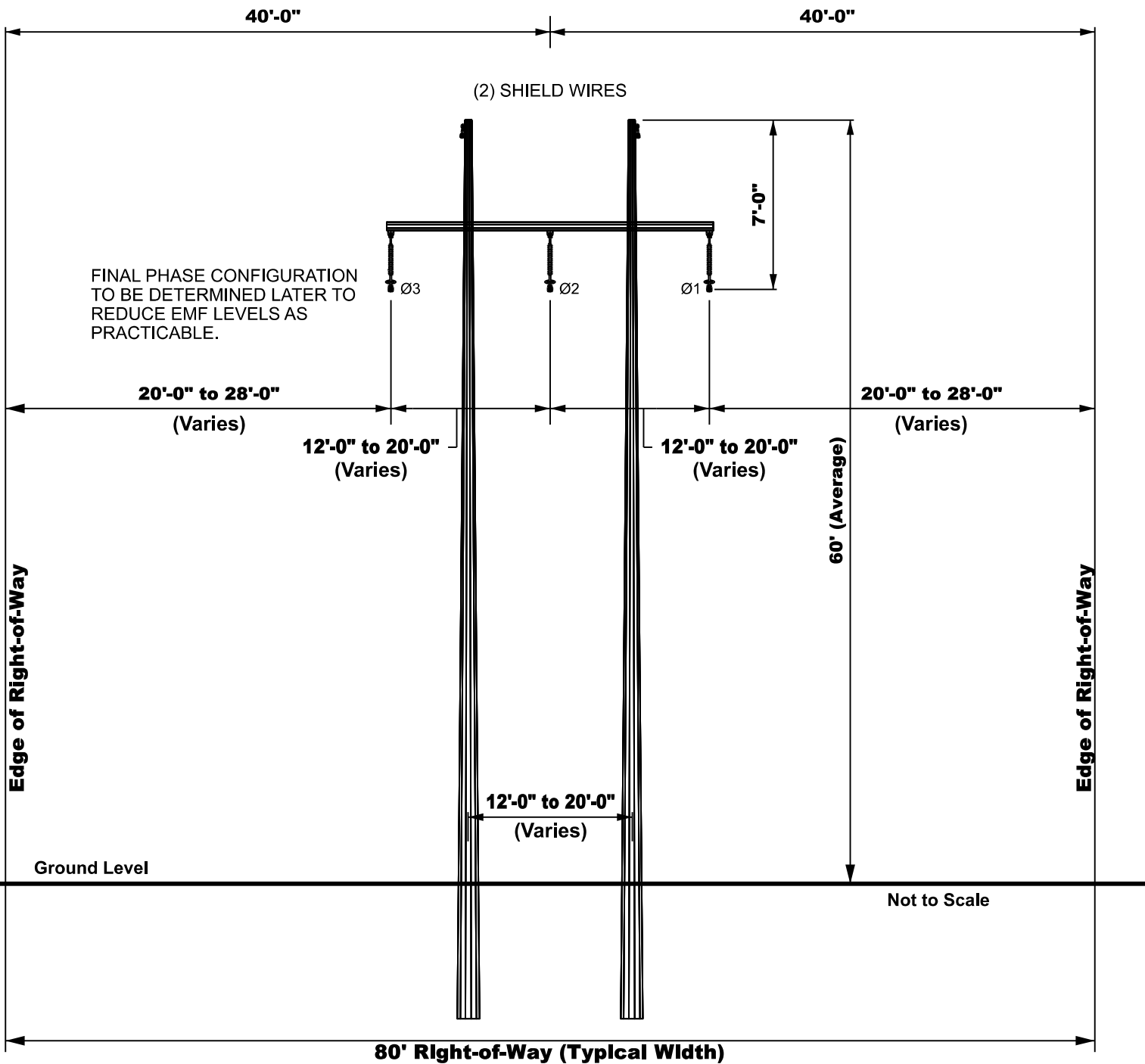
## COMPARABLE EXISTING STRUCTURE PHOTOGRAPH

Note: The material for the existing typical structure is wood  
(as shown above).

**EXHIBIT 16: 69 KV SINGLE CIRCUIT H- FRAME**



TYPICAL SCHEMATIC



TYPICAL RIGHT-OF-WAY CROSS SECTION

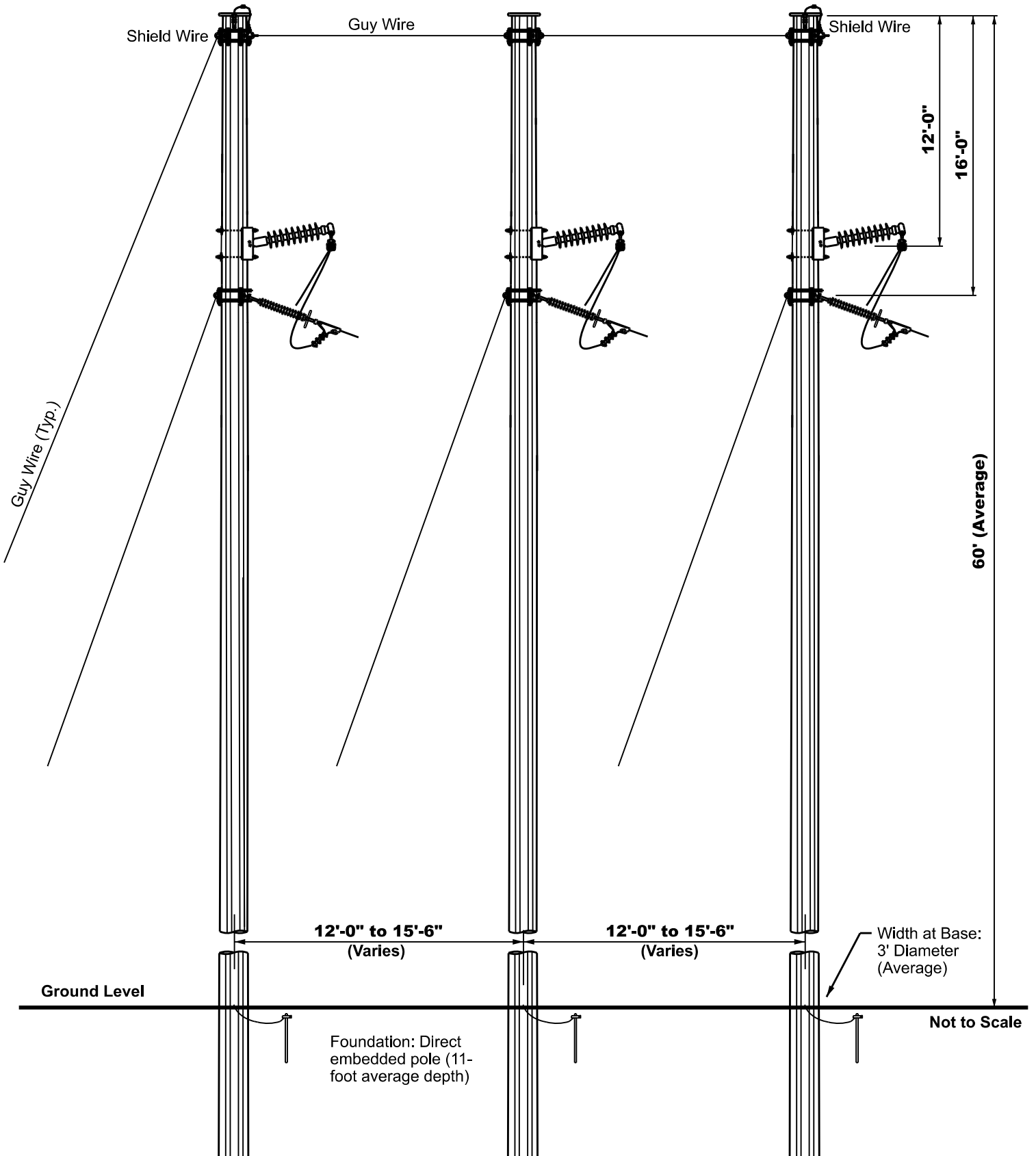


COMPARABLE EXISTING STRUCTURE PHOTOGRAPH

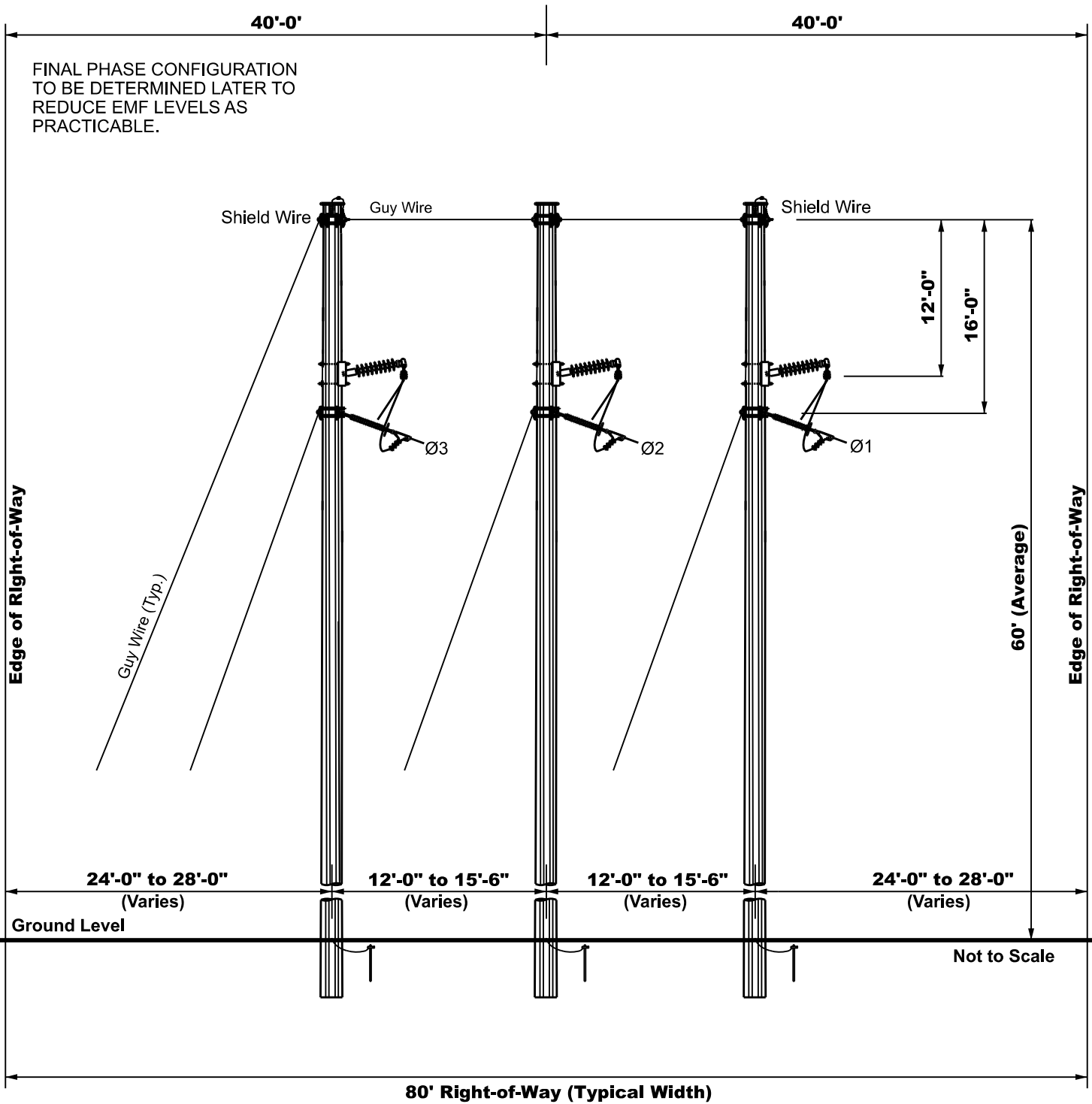
Note: The proposed material for the typical structure will be galvanized steel with a dulled finish (as shown above).

**EXHIBIT 17: 69 KV SINGLE CIRCUIT THREE POLE WITH  
GUY WIRES**





TYPICAL SCHEMATIC



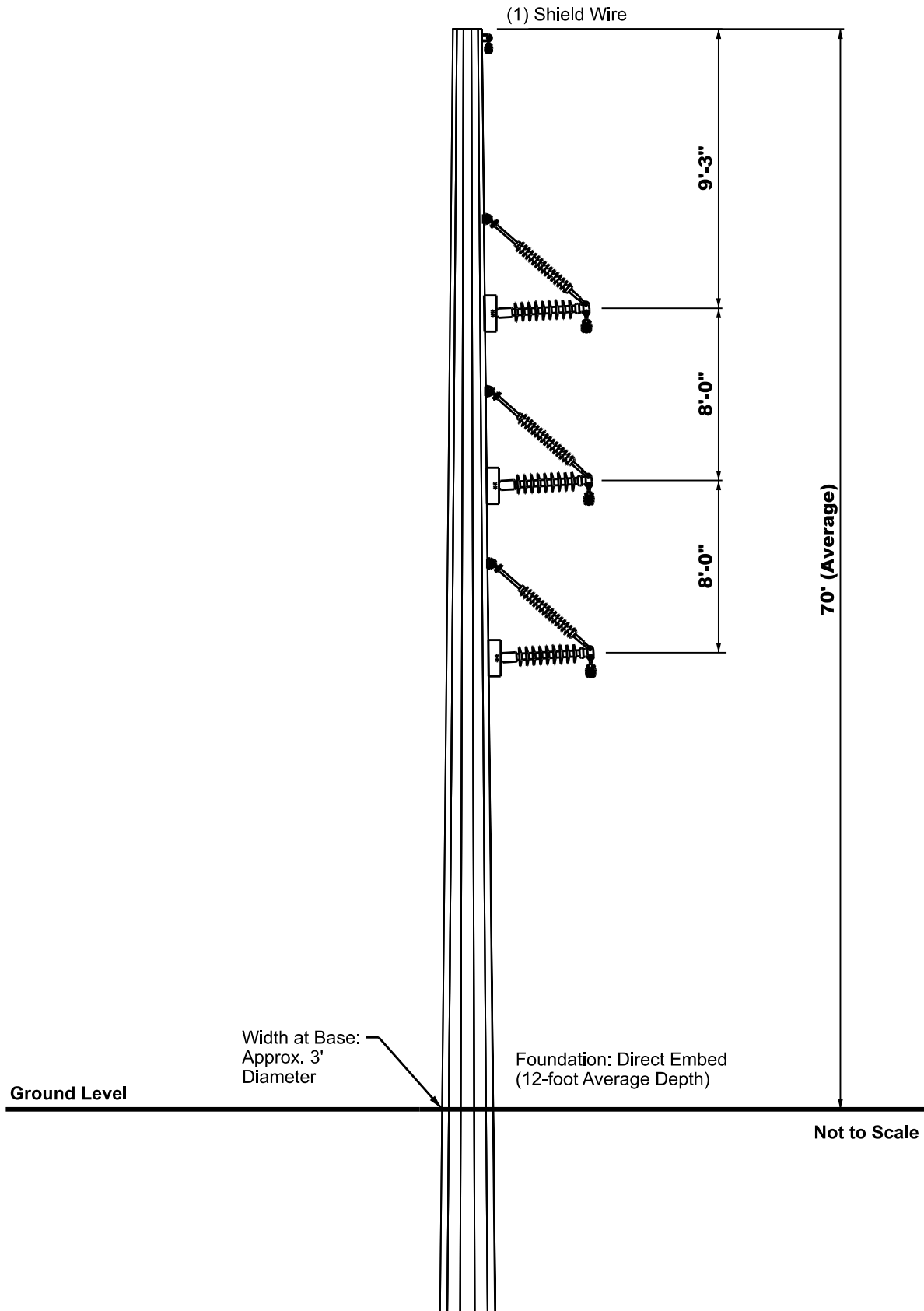
TYPICAL RIGHT-OF-WAY CROSS SECTION



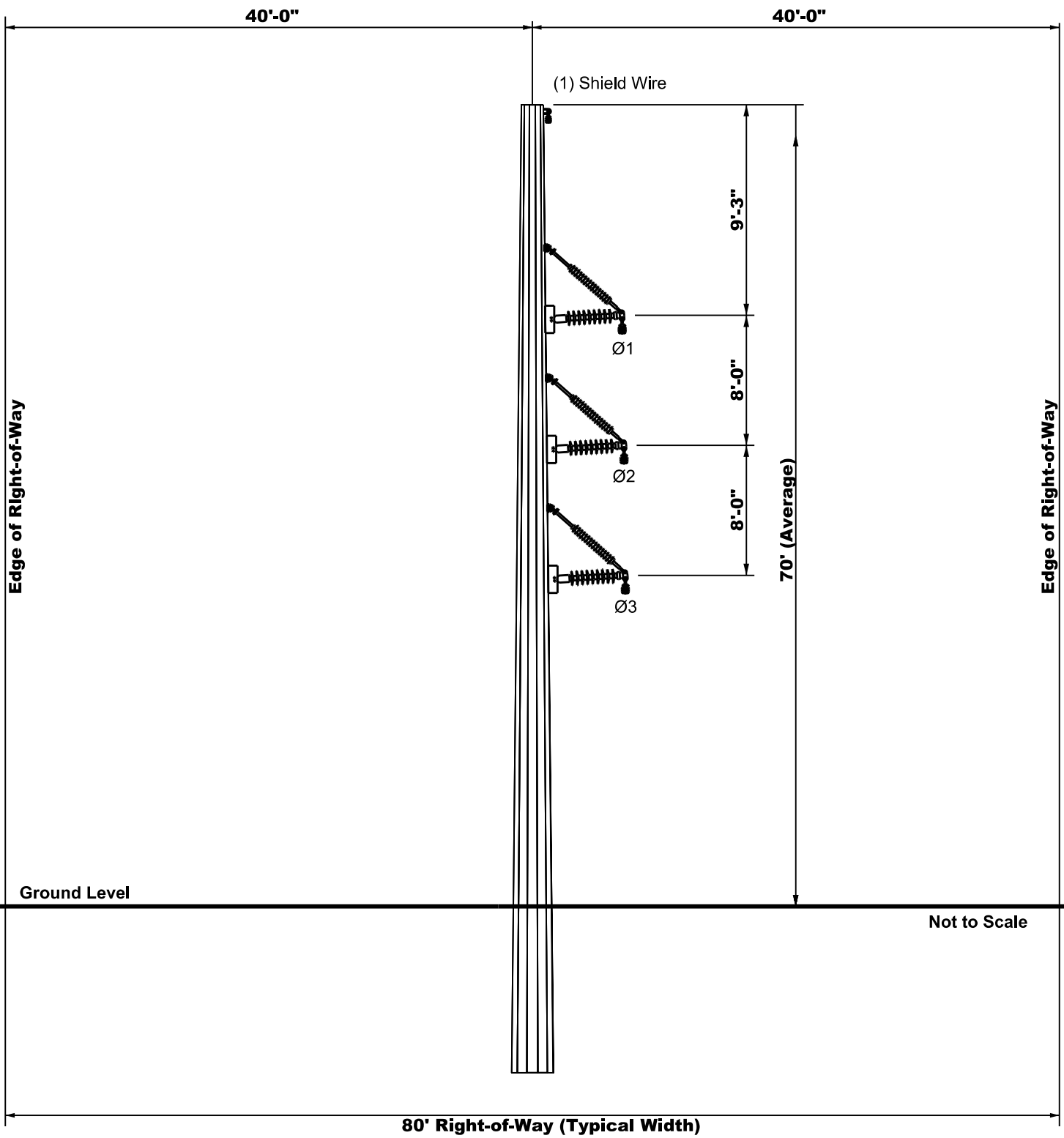
COMPARABLE EXISTING STRUCTURE PHOTOGRAPH

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

**EXHIBIT 18: 69 KV SINGLE CIRCUIT BRACED MONOPOLE**



TYPICAL SCHEMATIC



TYPICAL RIGHT-OF-WAY CROSS SECTION

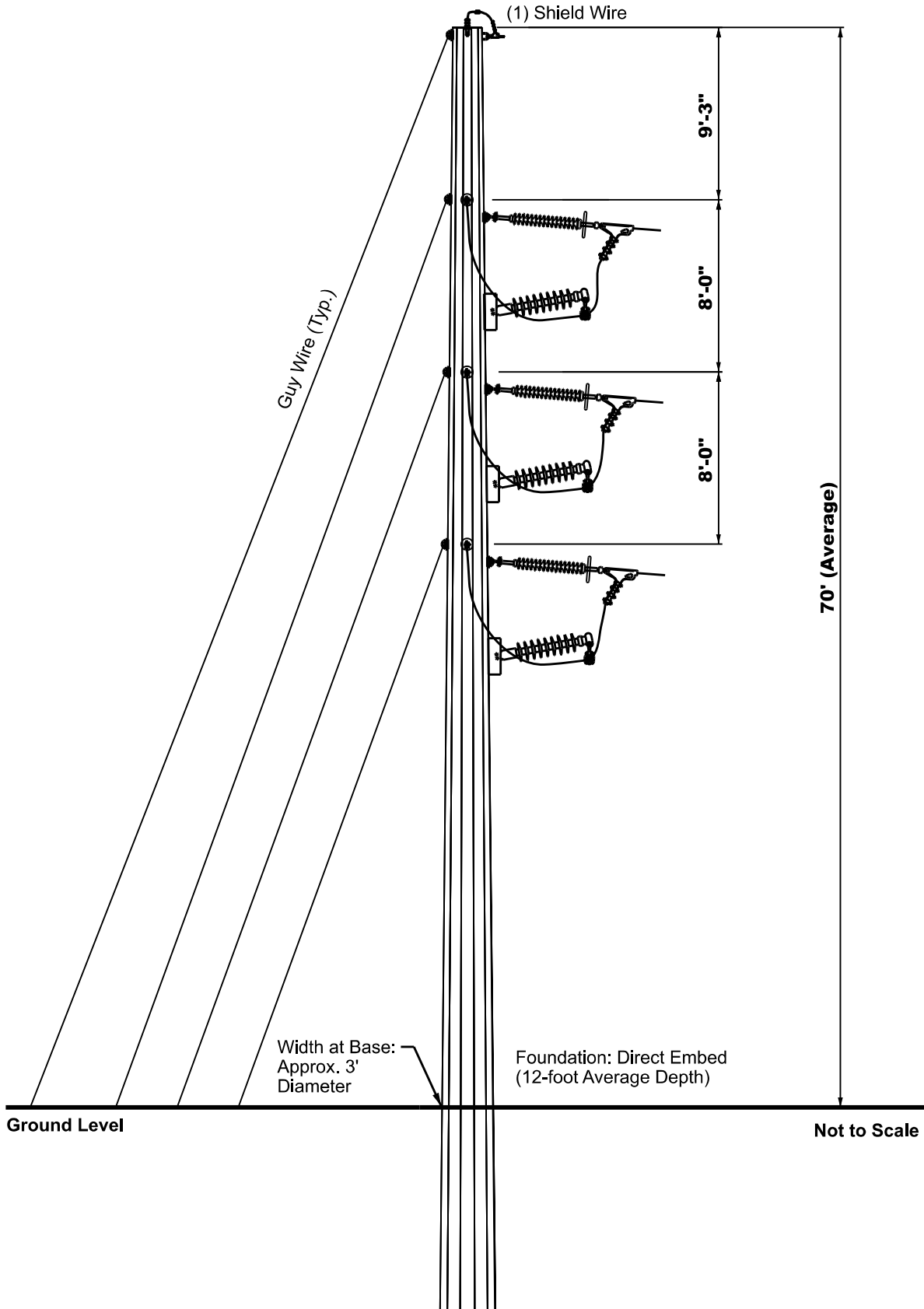


COMPARABLE EXISTING STRUCTURE PHOTOGRAPH

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

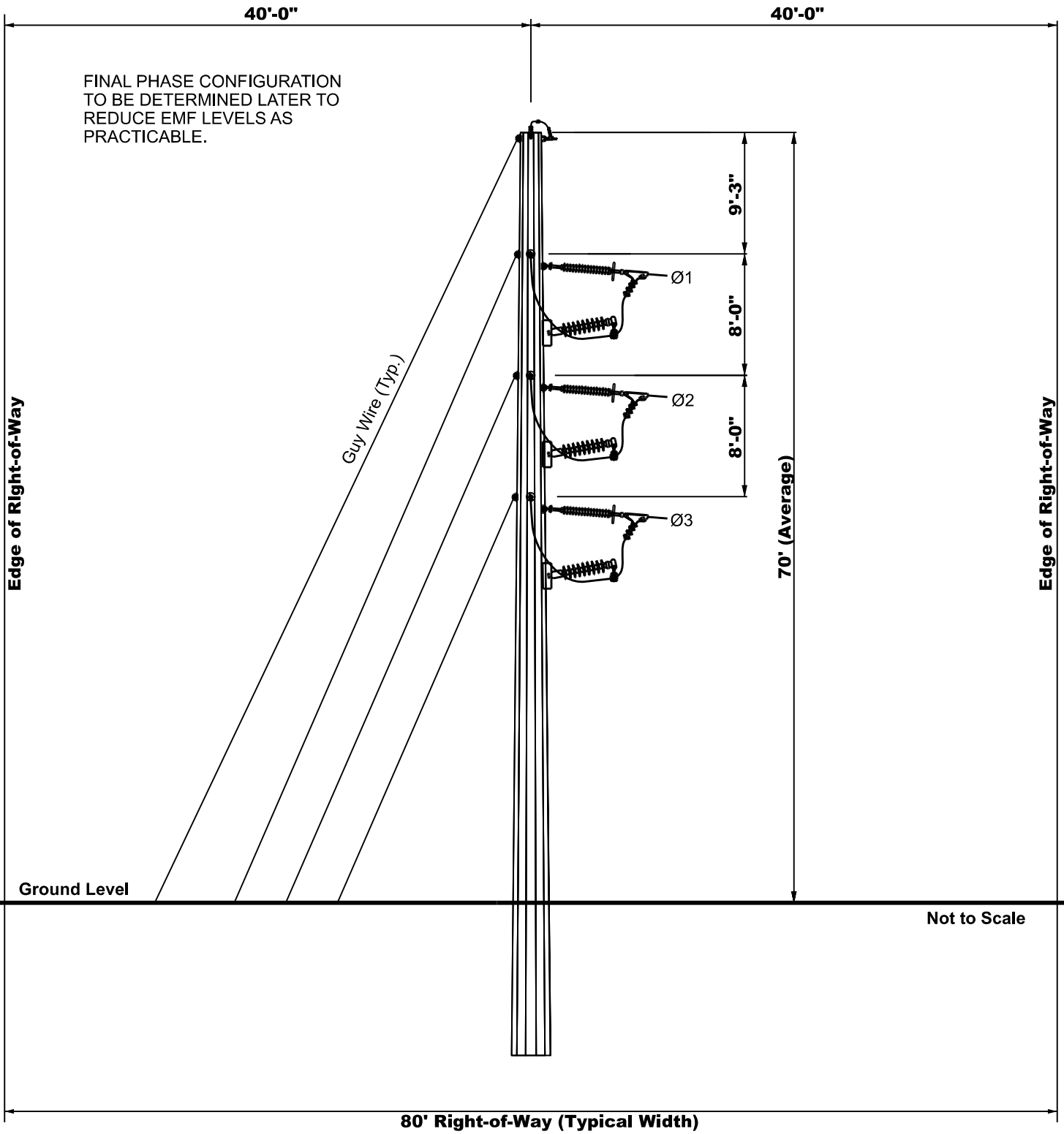
**EXHIBIT 19: 69 KV SINGLE CIRCUIT MONOPOLE WITH  
GUY WIRES**





TYPICAL SCHEMATIC

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



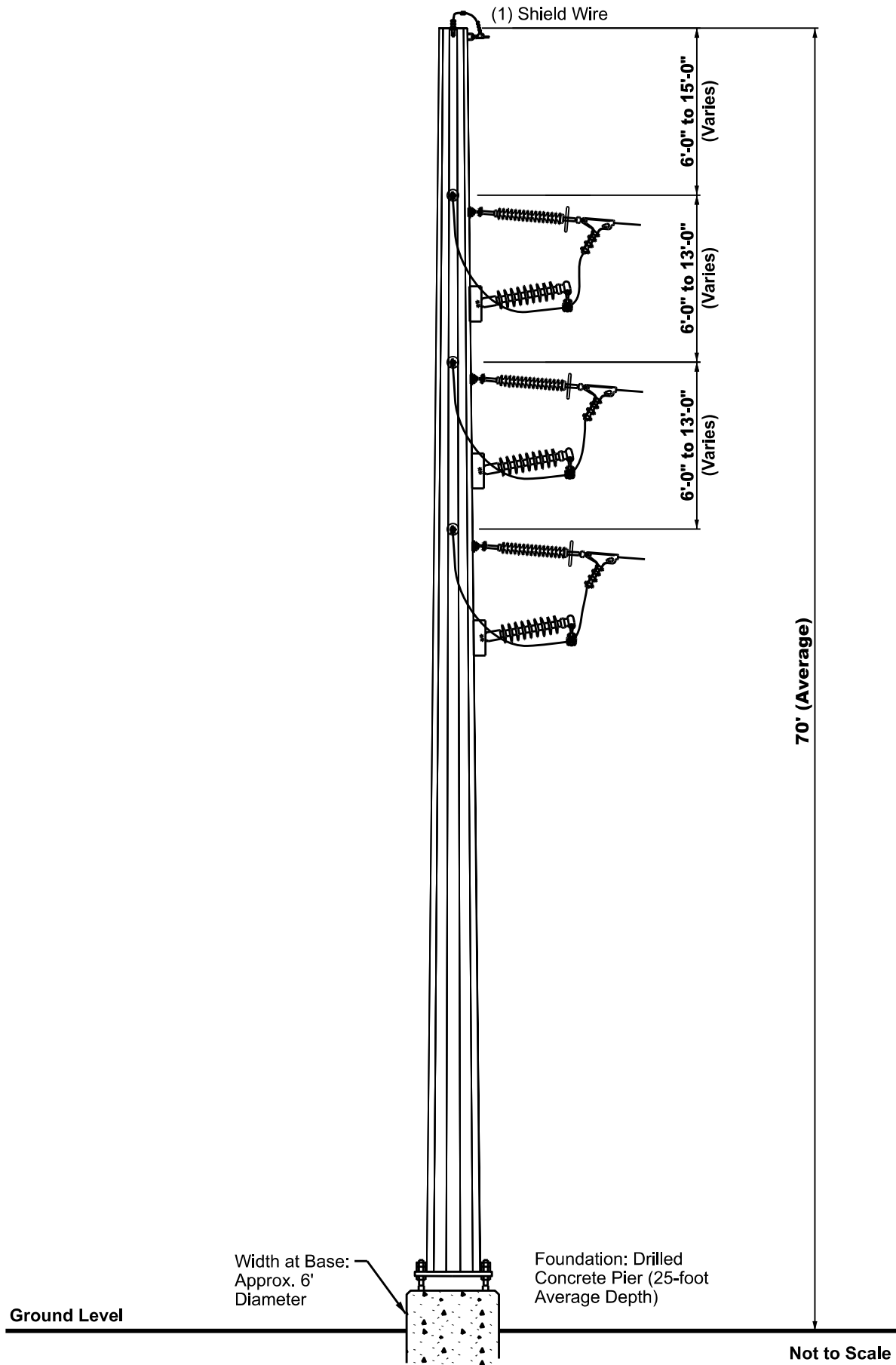
TYPICAL RIGHT-OF-WAY CROSS SECTION



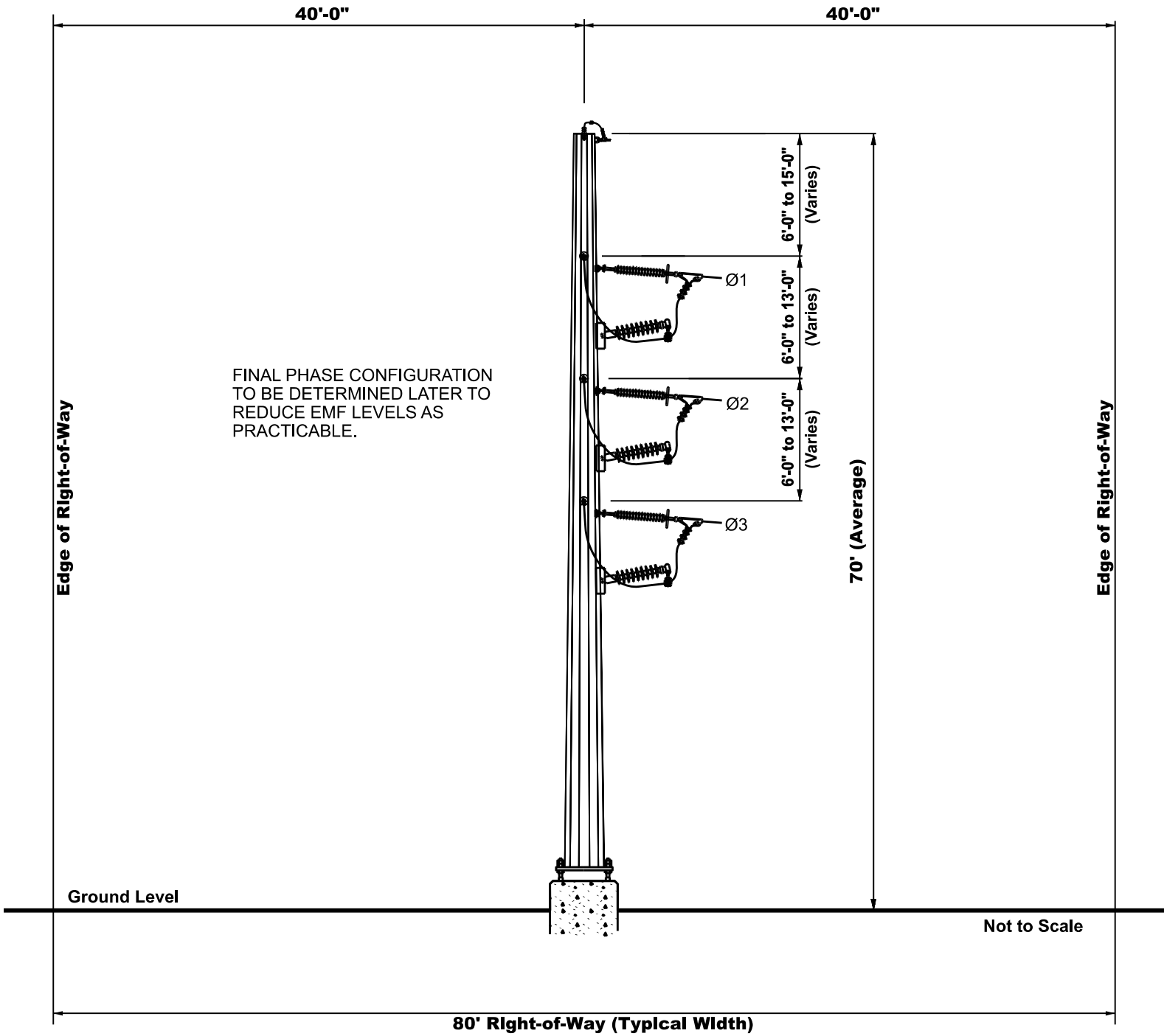
COMPARABLE EXISTING STRUCTURE PHOTOGRAPH

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

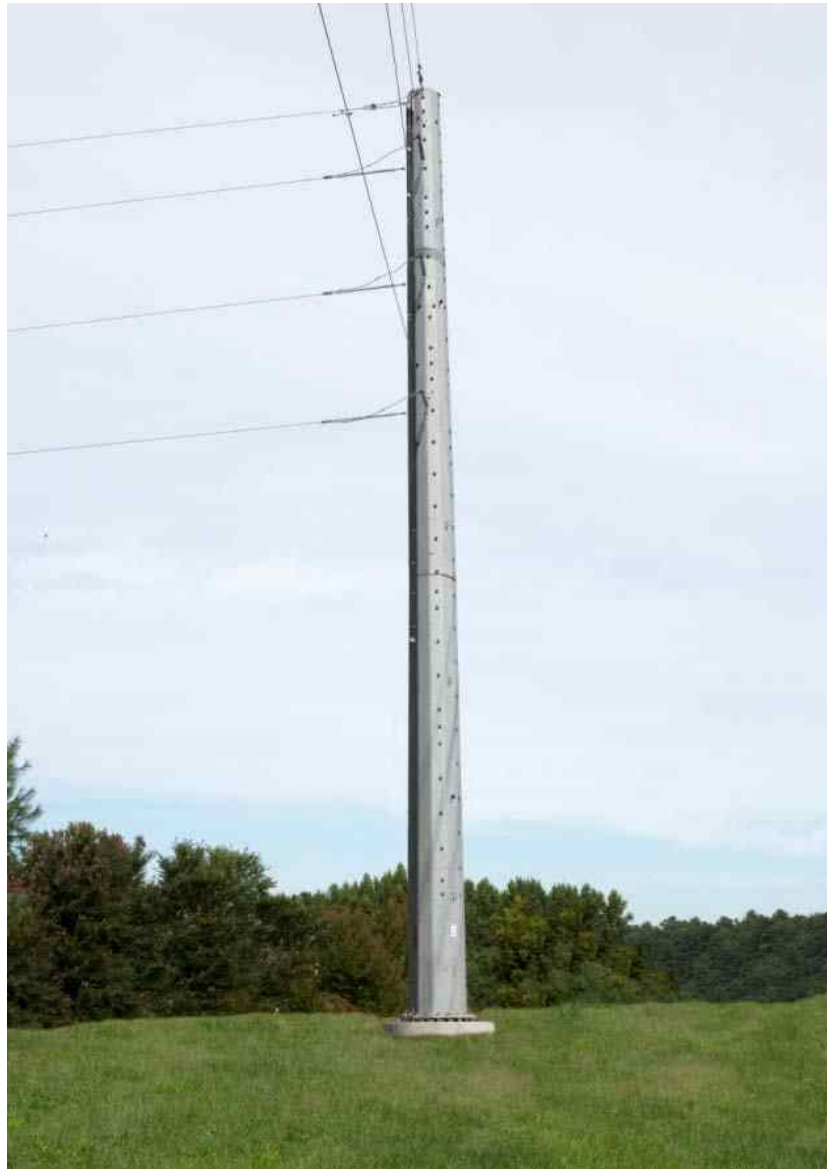
**EXHIBIT 20: 69 KV SINGLE CIRCUIT MONOPOLE SELF  
SUPPORTING**



TYPICAL SCHEMATIC



TYPICAL RIGHT-OF-WAY CROSS SECTION

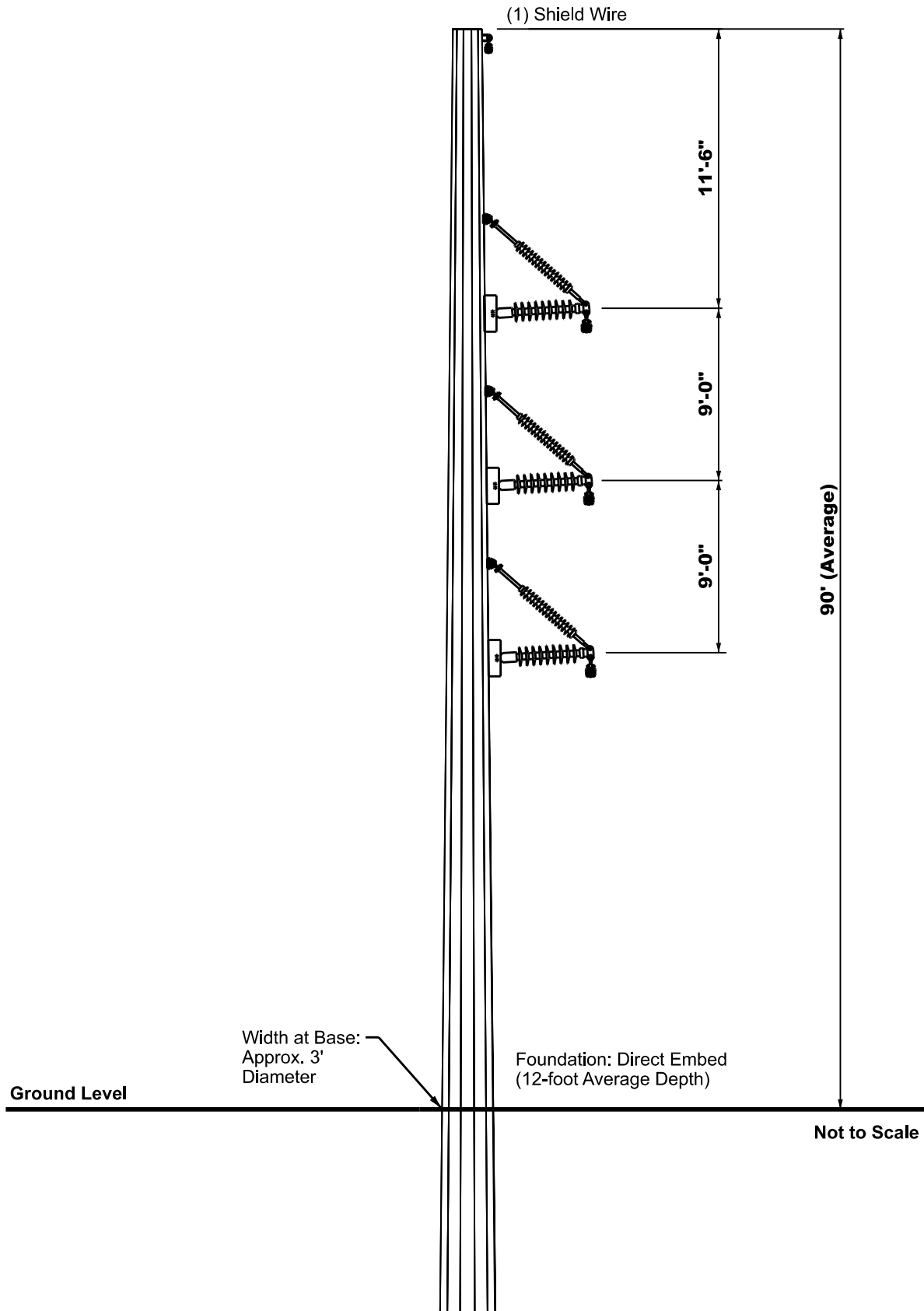


### COMPARABLE EXISTING STRUCTURE PHOTOGRAPH

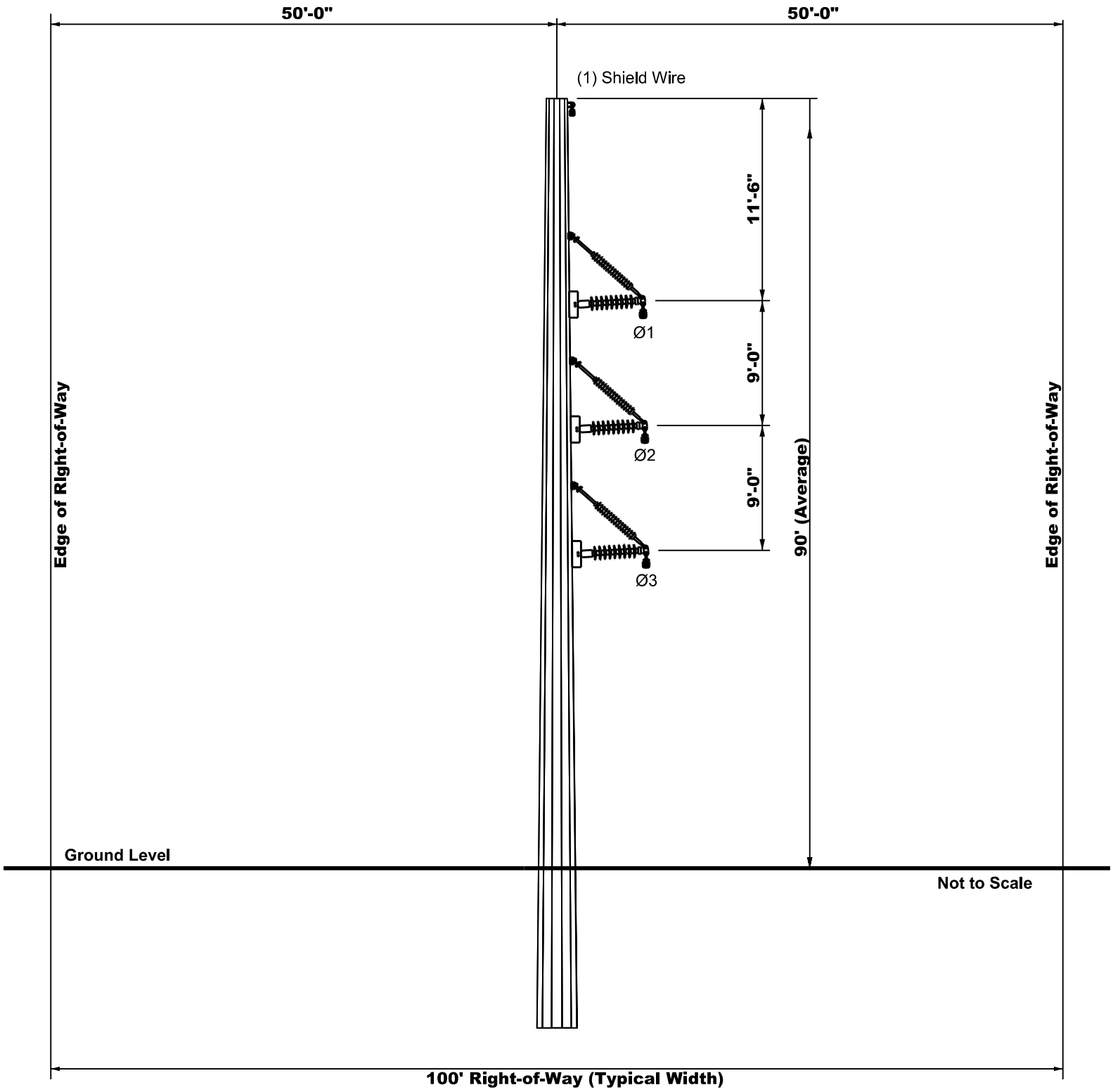
Note: The proposed material for the typical structure will be galvanized steel with a dulled finish (as shown above).

**EXHIBIT 21: 138 KV SINGLE CIRCUIT MONOPOLE WITH  
BRACED POSTS**





TYPICAL SCHEMATIC



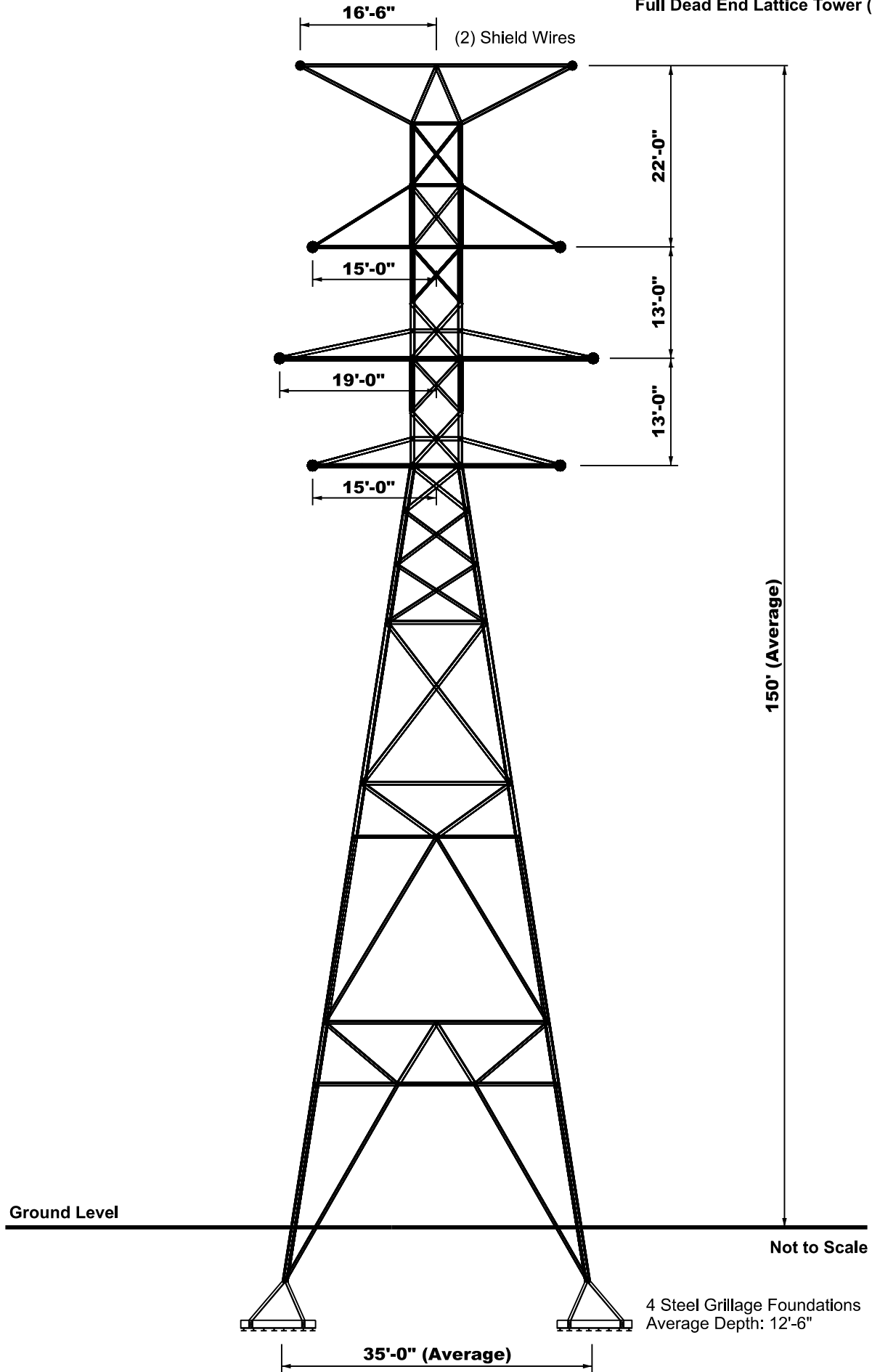
TYPICAL RIGHT-OF-WAY CROSS SECTION



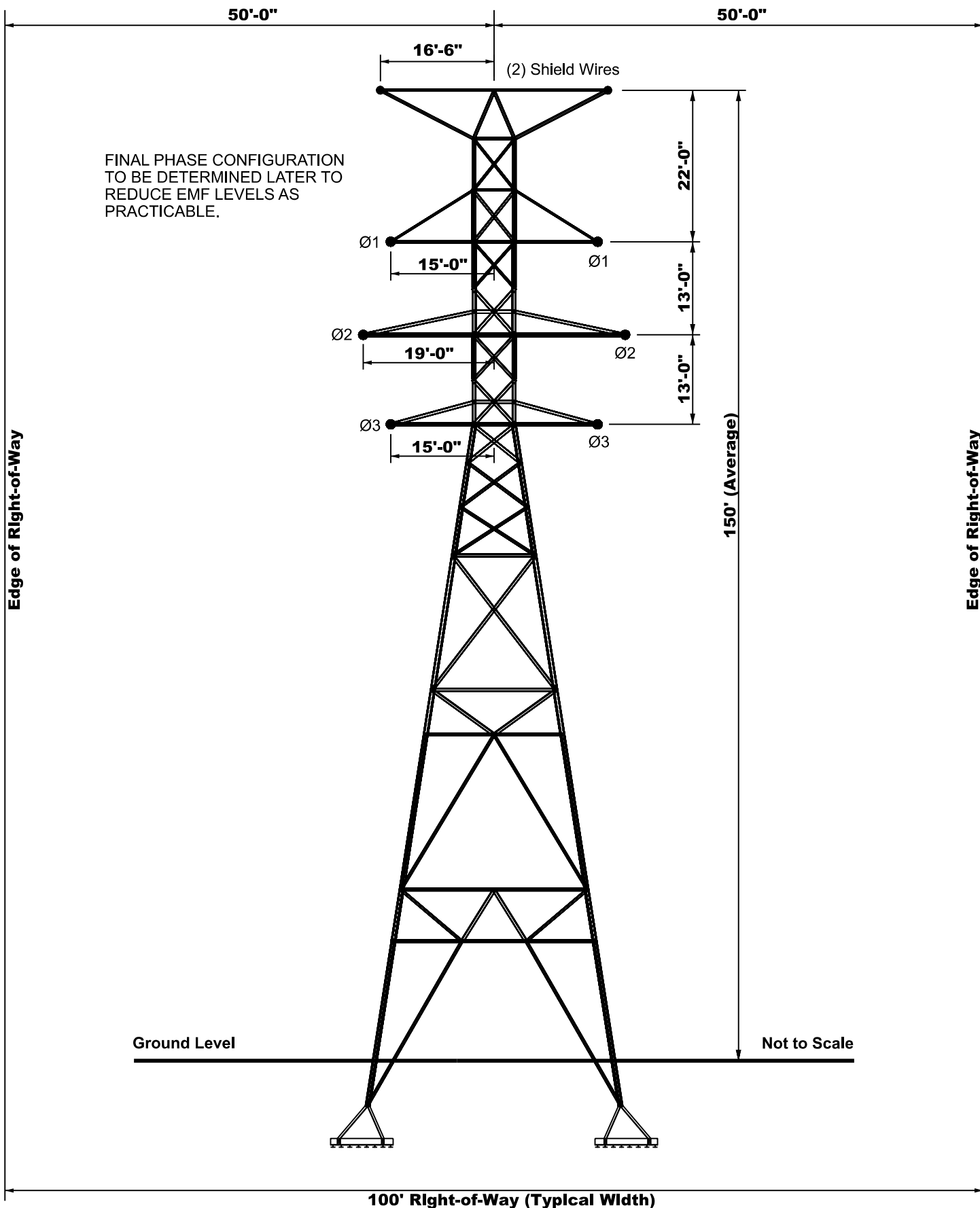
COMPARABLE EXISTING STRUCTURE PHOTOGRAPH

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

**EXHIBIT 22: 69KV /138 KV DOUBLE CIRCUIT LATTICE  
TOWER (JAMES RIVER CROSSING)**



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 23: EXISTING AMHERST - REUSENS 69 KV  
TRANSMISSION LINE STRUCTURE  
PHOTOGRAPHS (TO BE REMOVED)**



Component 4: Amherst – Reusens 69 kV Transmission Line Rebuild



Existing H-Frame Structure with Guy-Wires



Existing H-Frame Structure Self- Supporting



Existing Double Circuit Lattice Structures at the James River Crossing

## **EXHIBIT 24: VISUAL SIMULATIONS**



# CENTRAL VIRGINIA TRANSMISSION RELIABILITY PROJECT:

JOSHUA FALLS - GLADSTONE PHASE

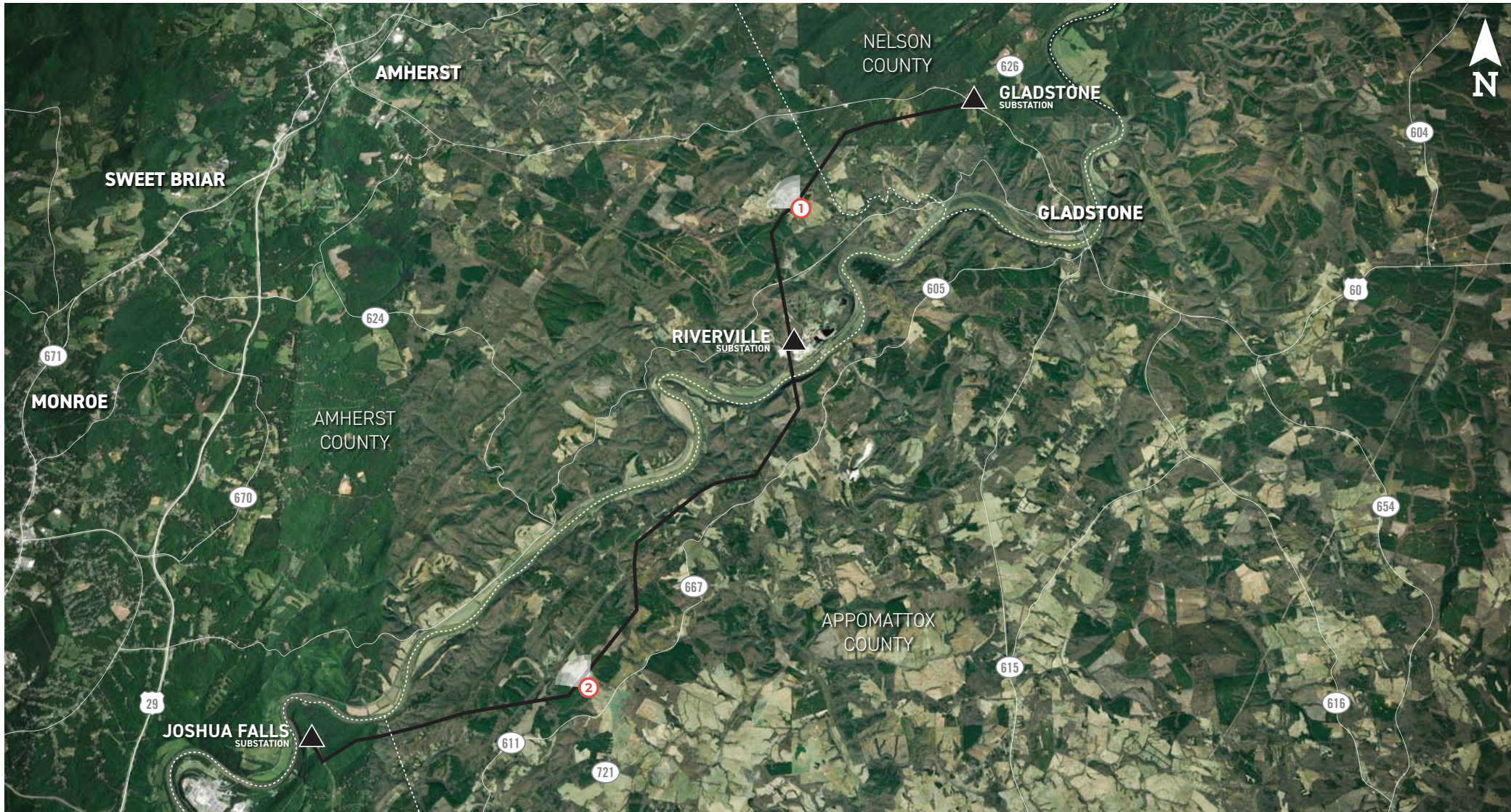
## VIEWPOINT LOCATION MAP

- TRANSMISSION LINE
- ▲ EXISTING SUBSTATION
- ① PHOTO VIEWPOINT LOCATION



**APPALACHIAN  
POWER**

An AEP Company  
BOUNDLESS ENERGY™





# CENTRAL VIRGINIA TRANSMISSION RELIABILITY PROJECT: JOSHUA FALLS - GLADSTONE PHASE

## PHOTO VIEWPOINT 1

DATE: 07/29/2020  
TIME: 12:01 PM  
DIRECTION: NORTHWEST

- TRANSMISSION LINE
- ▲ SUBSTATION
- ① PHOTO VIEWPOINT LOCATION



EXISTING CONDITIONS



PROPOSED CONDITIONS

PHOTO SIMULATIONS ARE FOR VISUALIZATION PURPOSES ONLY. FINAL DESIGN IS SUBJECT TO CHANGE PENDING PUBLIC, UTILITY, AND REGULATORY REVIEW.



# CENTRAL VIRGINIA TRANSMISSION RELIABILITY PROJECT:

JOSHUA FALLS - GLADSTONE PHASE

## PHOTO VIEWPOINT 2

DATE: 06/01/2020

TIME: 1:29 PM

DIRECTION: NORTHWEST

- TRANSMISSION LINE
- ▲ SUBSTATION
- ② PHOTO VIEWPOINT LOCATION



**APPALACHIAN  
POWER**

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EXISTING CONDITIONS



PROPOSED CONDITIONS

PHOTO SIMULATIONS ARE FOR VISUALIZATION PURPOSES ONLY. FINAL DESIGN IS SUBJECT TO CHANGE PENDING PUBLIC, UTILITY, AND REGULATORY REVIEW.





An AEP Company  
BOUNDLESS ENERGY™

# COMPARABLE SIMULATION TRANSMISSION LINE PROJECT PHOTO VIEWPOINT

## COMPARABLE REPRESENTATION OF THE AMHERST - REUSENS 69 KV TRANSMISSION LINE REBUILD

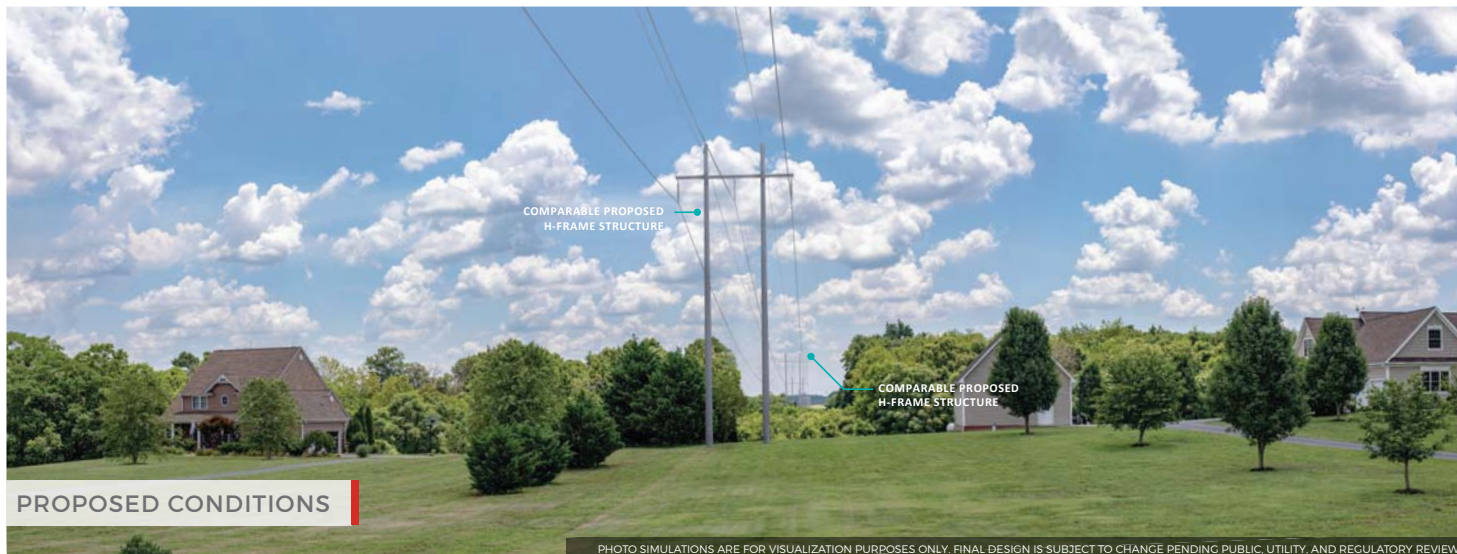
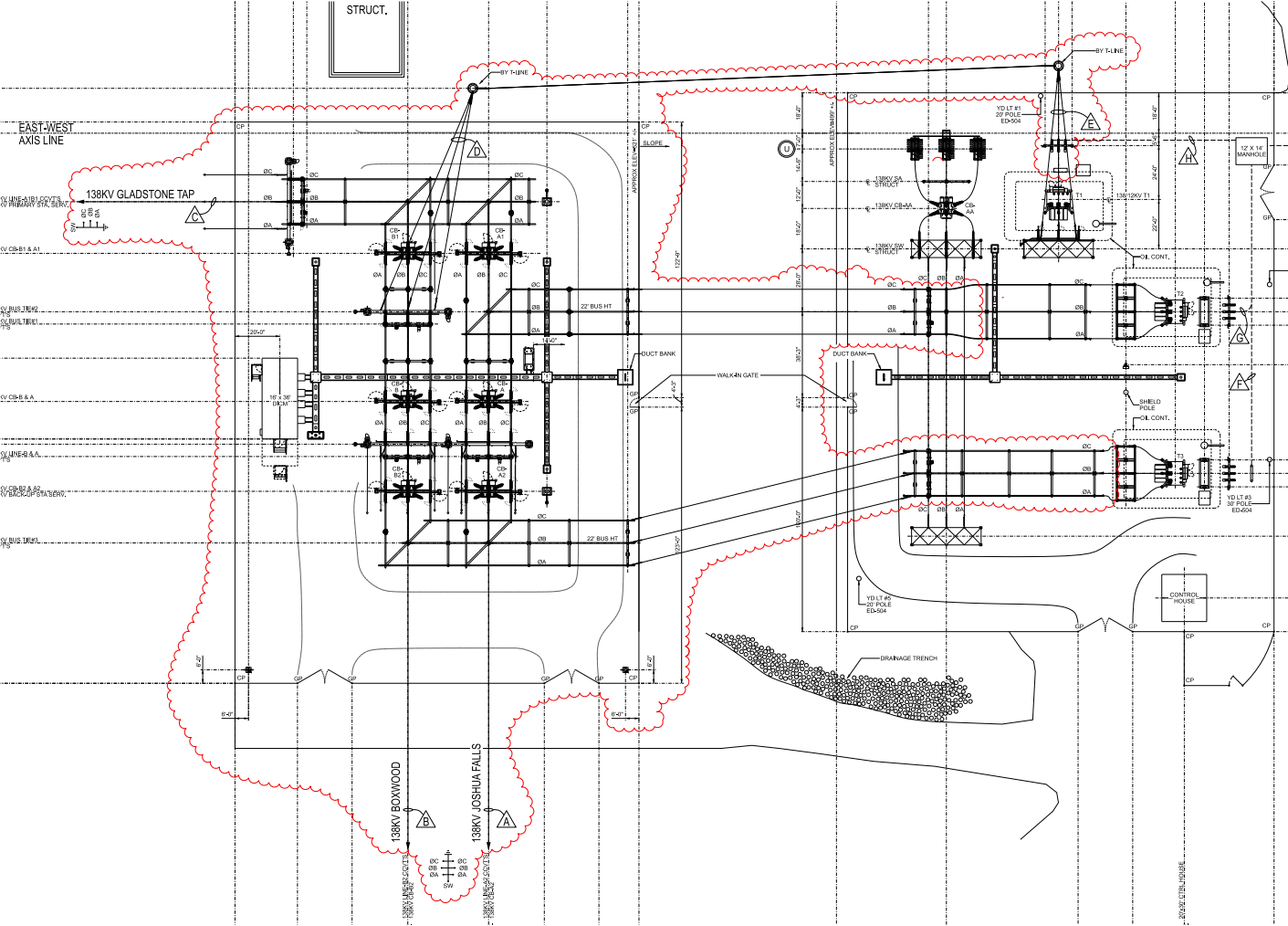


PHOTO SIMULATIONS ARE FOR VISUALIZATION PURPOSES ONLY. FINAL DESIGN IS SUBJECT TO CHANGE PENDING PUBLIC, UTILITY, AND REGULATORY REVIEW.



**EXHIBIT 25: IMPROVEMENTS AT RIVERVILLE 138 KV  
SUBSTATION**



PROPOSED SUBSTATION LAYOUT



SUBSTATION LOCATION MAP





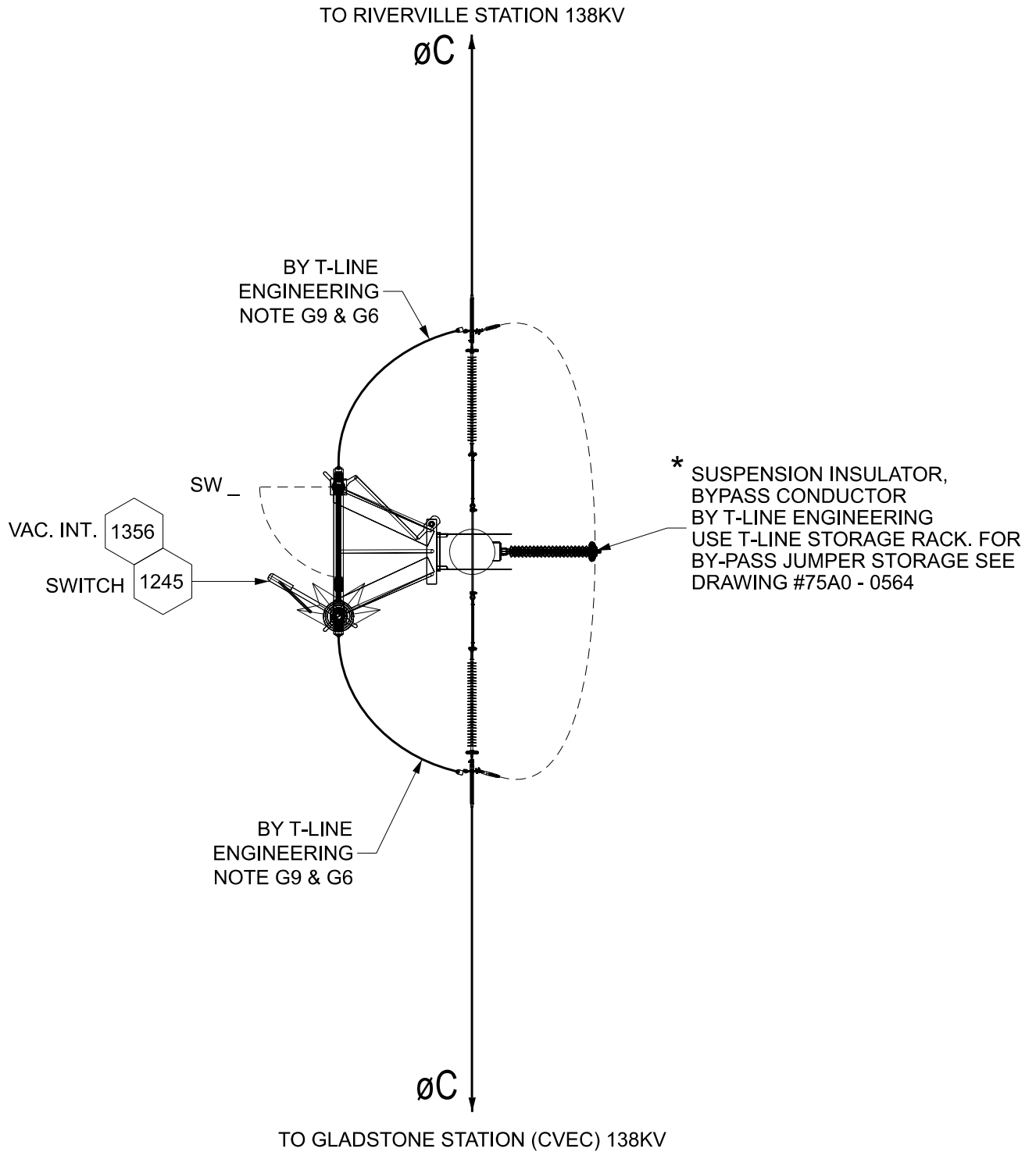
EXISTING RIVERVILLE SUBSTATION (VIEWING TO THE EAST)

CONFIDENTIAL INFORMATION

SEE CONFIDENTIAL APPENDIX - EXHIBIT 25-C FOR ONE-LINE DIAGRAM

PROPOSED SUBSTATION ONE-LINE

**EXHIBIT 26: PROPOSED FIVE FORKS SWITCH**



PLAN VIEW A-A  
PHASE C ONLY

PROPOSED SWITCH LAYOUT





COMPARABLE SWITCH PHOTOGRAPH



CONFIDENTIAL INFORMATION

SEE CONFIDENTIAL APPENDIX - EXHIBIT 26-C FOR ONE-LINE DIAGRAM

PROPOSED SWITCH ONE-LINE

**EXHIBIT 27: PROPOSED JAMES RIVER 138 KV  
SUBSTATION**





SUBSTATION LOCATION MAP





COMPARABLE SUBSTATION PHOTOGRAPH

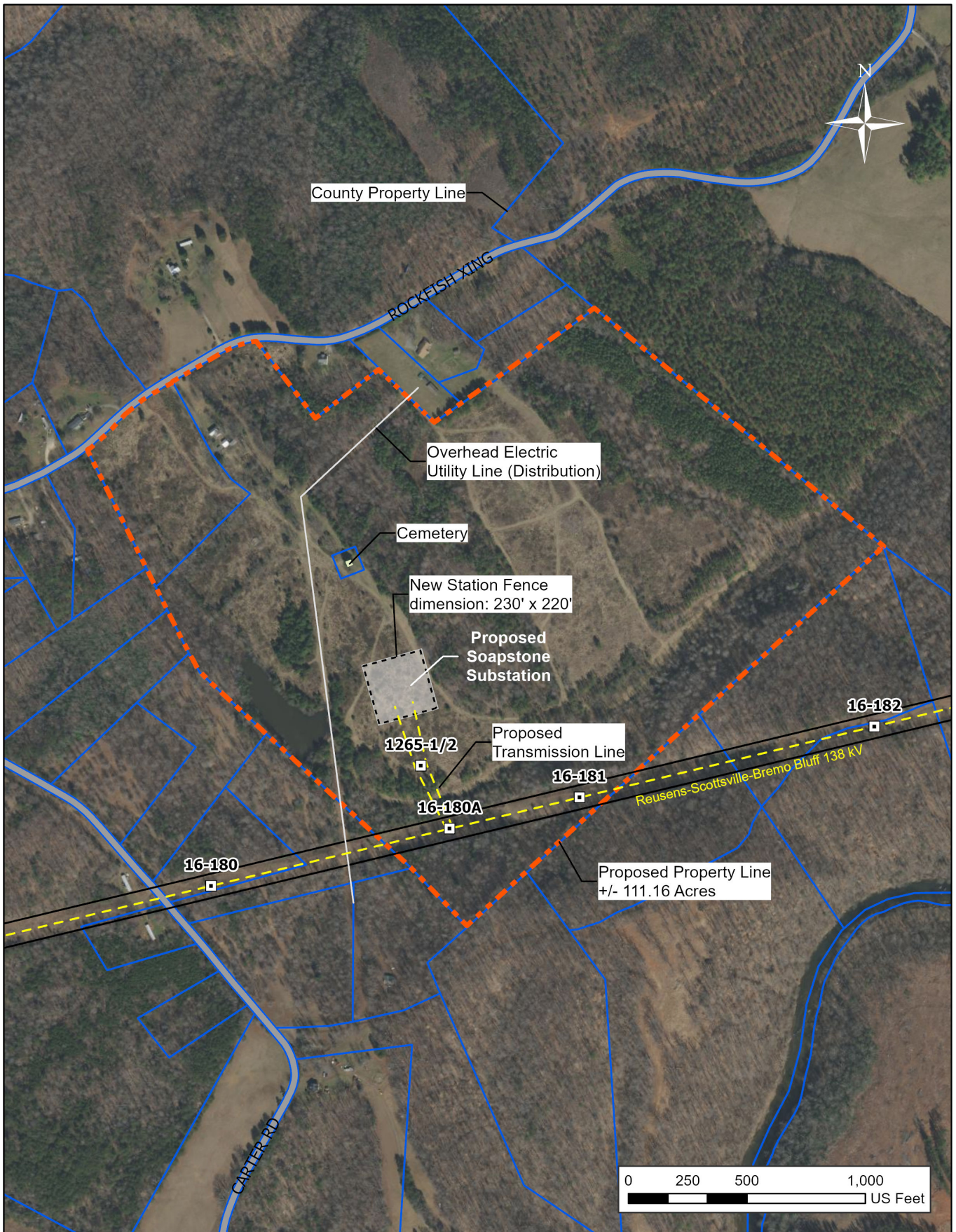
CONFIDENTIAL INFORMATION

SEE CONFIDENTIAL APPENDIX - EXHIBIT 27-C FOR ONE-LINE DIAGRAM

**EXHIBIT 28: PROPOSED SOAPSTONE 138 KV  
SUBSTATION**







SUBSTATION LOCATION MAP





COMPARABLE SUBSTATION PHOTOGRAPH

CONFIDENTIAL INFORMATION

SEE CONFIDENTIAL APPENDIX - EXHIBIT 28-C FOR ONE-LINE DIAGRAM

**EXHIBIT 29: IMPROVEMENTS AT MONROE 69 KV  
SUBSTATION**







SUBSTATION LOCATION MAP





EXISTING MONROE SUBSTATION (VIEWING TO THE EAST)

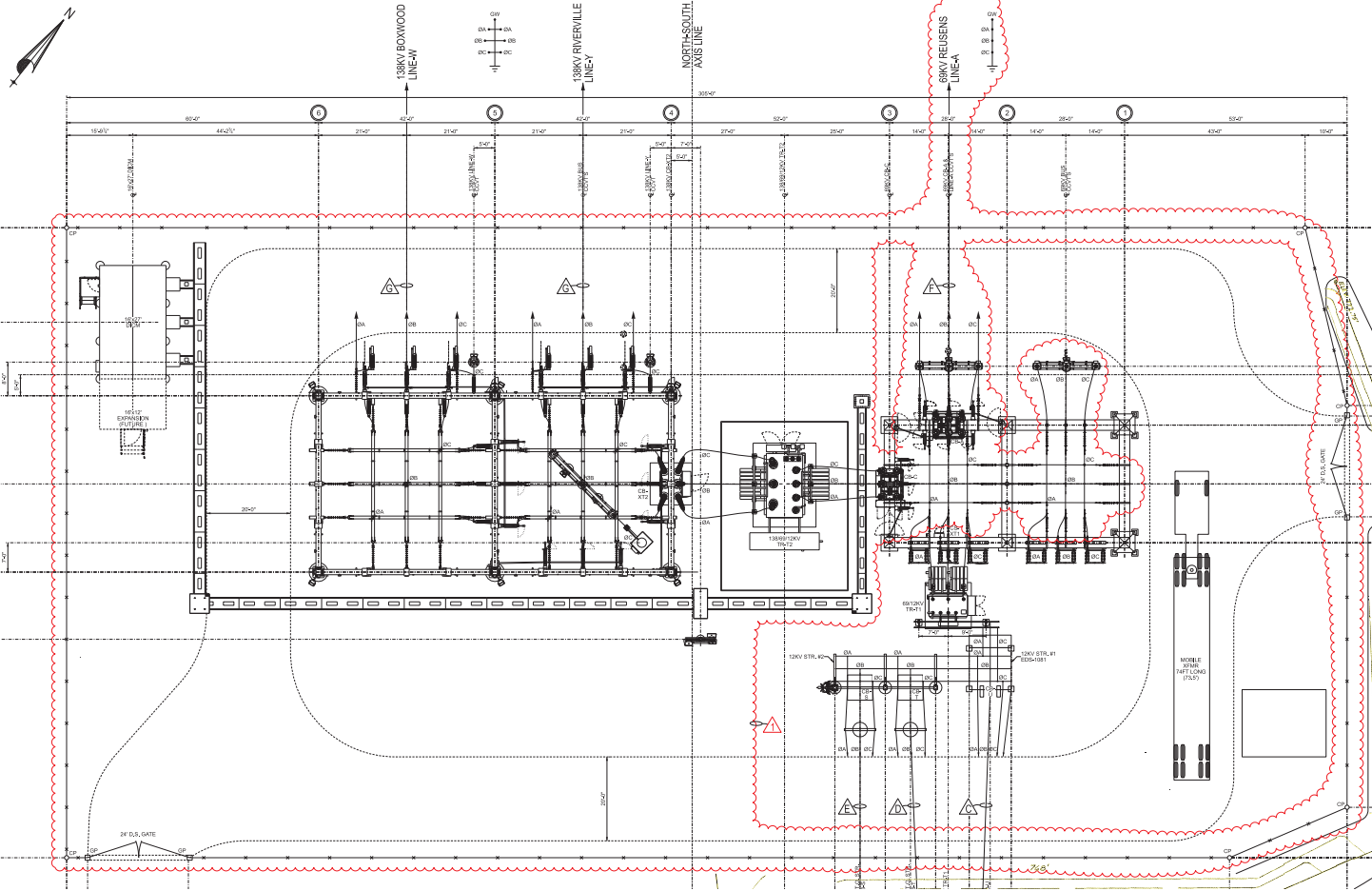
CONFIDENTIAL INFORMATION

SEE CONFIDENTIAL APPENDIX - EXHIBIT 29-C FOR ONE-LINE DIAGRAM

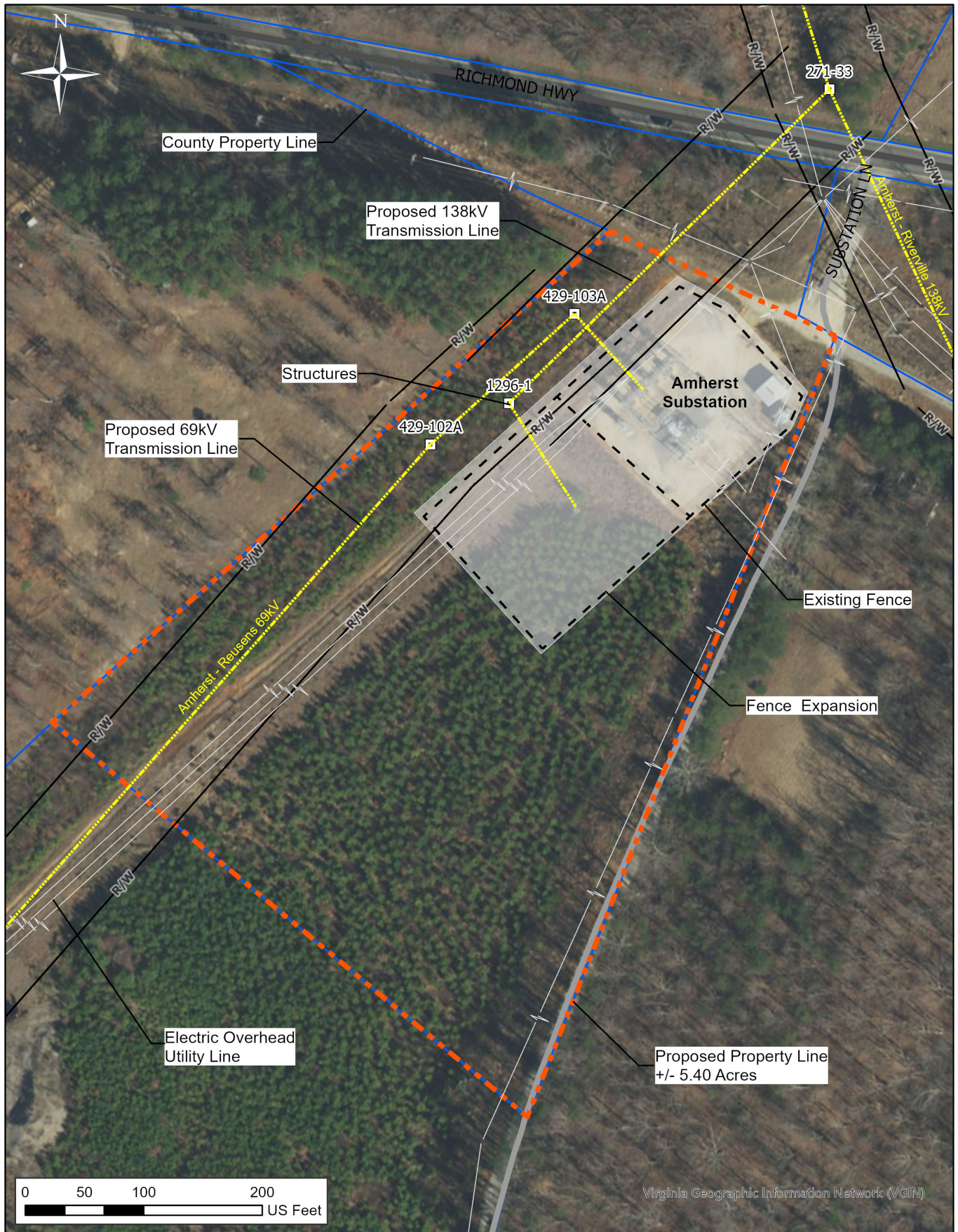
PROPOSED SUBSTATION ONE-LINE



**EXHIBIT 30: IMPROVEMENTS AT AMHERST 69 KV  
SUBSTATION**



PROPOSED SUBSTATION LAYOUT



SUBSTATION LOCATION MAP





EXISTING AMHERST SUBSTATION (VIEWING TO THE SOUTHWEST)

CONFIDENTIAL INFORMATION

SEE CONFIDENTIAL APPENDIX - EXHIBIT 30-C FOR ONE-LINE DIAGRAM

PROPOSED SUBSTATION ONE-LINE

**EXHIBIT 31: IMPROVEMENTS AT SCOTTSVILLE 138 KV  
SUBSTATION**







EXISTING SCOTTSVILLE SUBSTATION (VIEWING TO THE WEST)



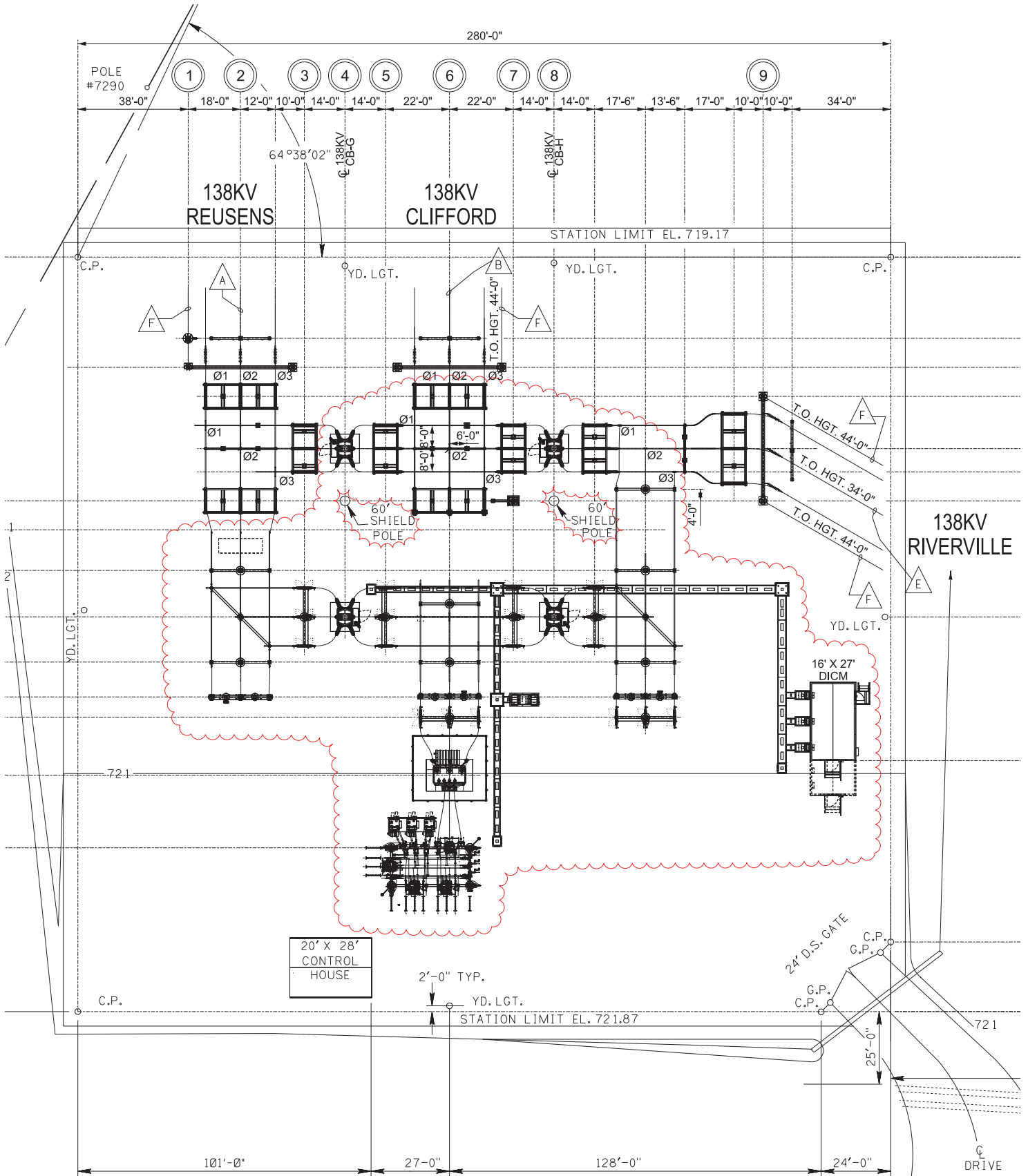
EXISTING SCOTTSVILLE SUBSTATION (VIEWING TO THE NORTHWEST)

CONFIDENTIAL INFORMATION

SEE CONFIDENTIAL APPENDIX - EXHIBIT 31-C FOR ONE-LINE DIAGRAM

PROPOSED SUBSTATION ONE-LINE

**EXHIBIT 32: IMPROVEMENTS AT BOXWOOD 138 KV  
SUBSTATION**



PROPOSED SUBSTATION LAYOUT





EXISTING BOXWOOD SUBSTATION (VIEWING TO THE NORTH)

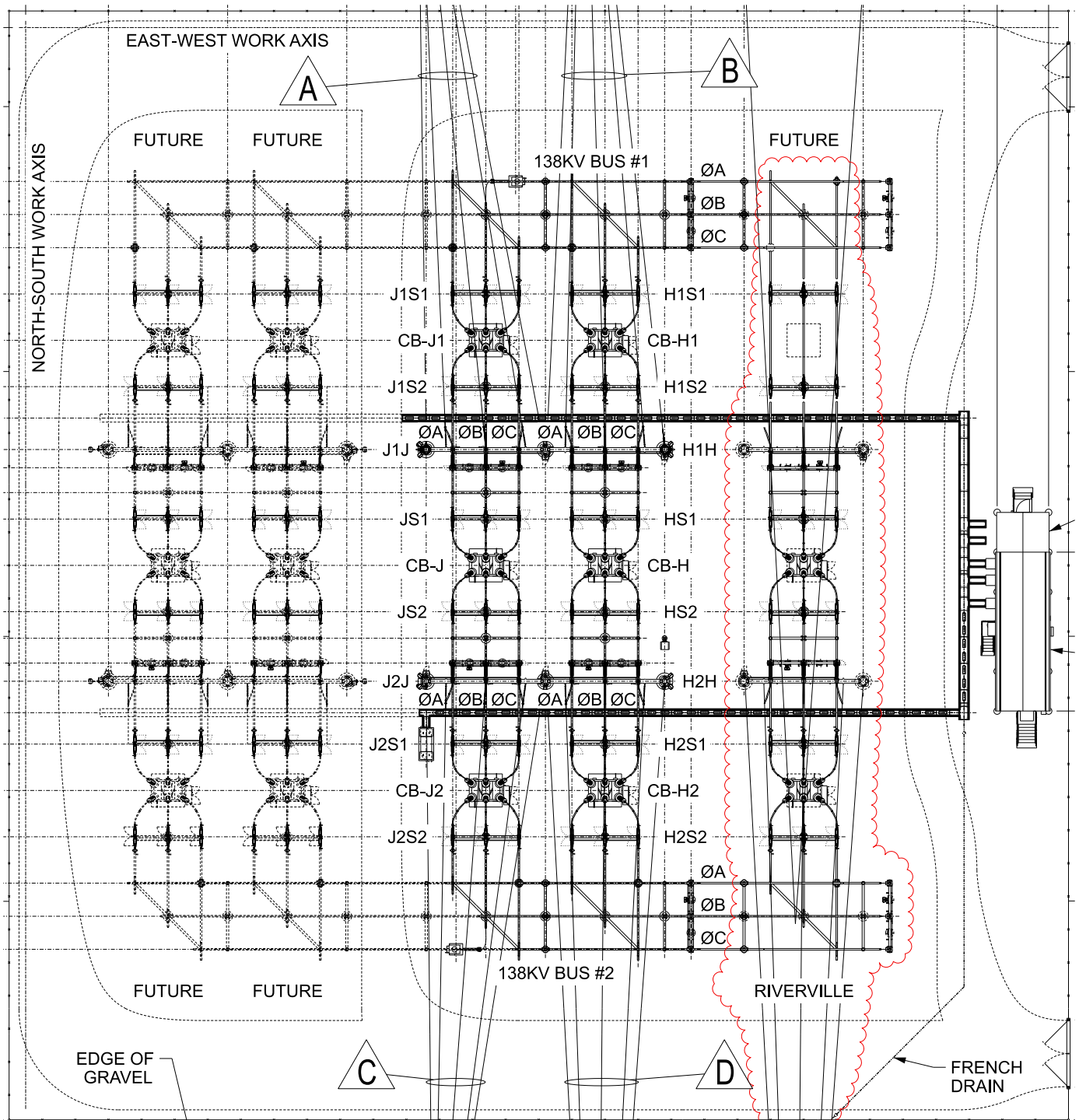
CONFIDENTIAL INFORMATION

SEE CONFIDENTIAL APPENDIX - EXHIBIT 32-C FOR ONE-LINE DIAGRAM

PROPOSED SUBSTATION ONE-LINE

**EXHIBIT 33: IMPROVEMENTS AT JOSHUA FALLS 138 KV  
SUBSTATION**





PROPOSED SUBSTATION LAYOUT



EXISTING JOSHUA FALLS SUBSTATION (VIEWING TO THE NORTH)

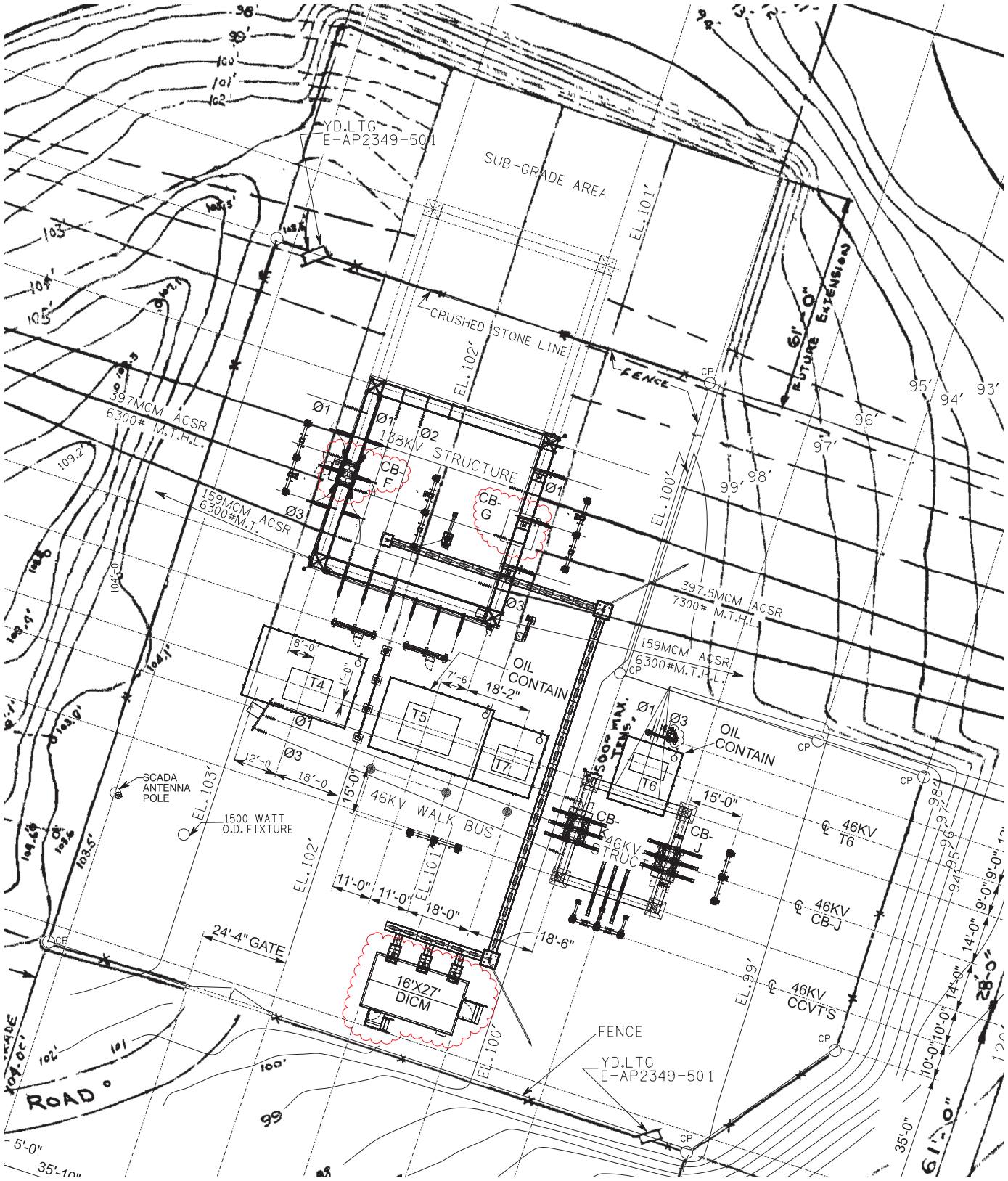
CONFIDENTIAL INFORMATION

SEE CONFIDENTIAL APPENDIX - EXHIBIT 33-C FOR ONE-LINE DIAGRAM

PROPOSED SUBSTATION ONE-LINE

**EXHIBIT 34: IMPROVEMENTS AT CLIFFORD 138 KV  
SUBSTATION**





PROPOSED SUBSTATION LAYOUT



EXISTING CLIFFORD SUBSTATION (VIEWING TO THE NORTHEAST)

CONFIDENTIAL INFORMATION

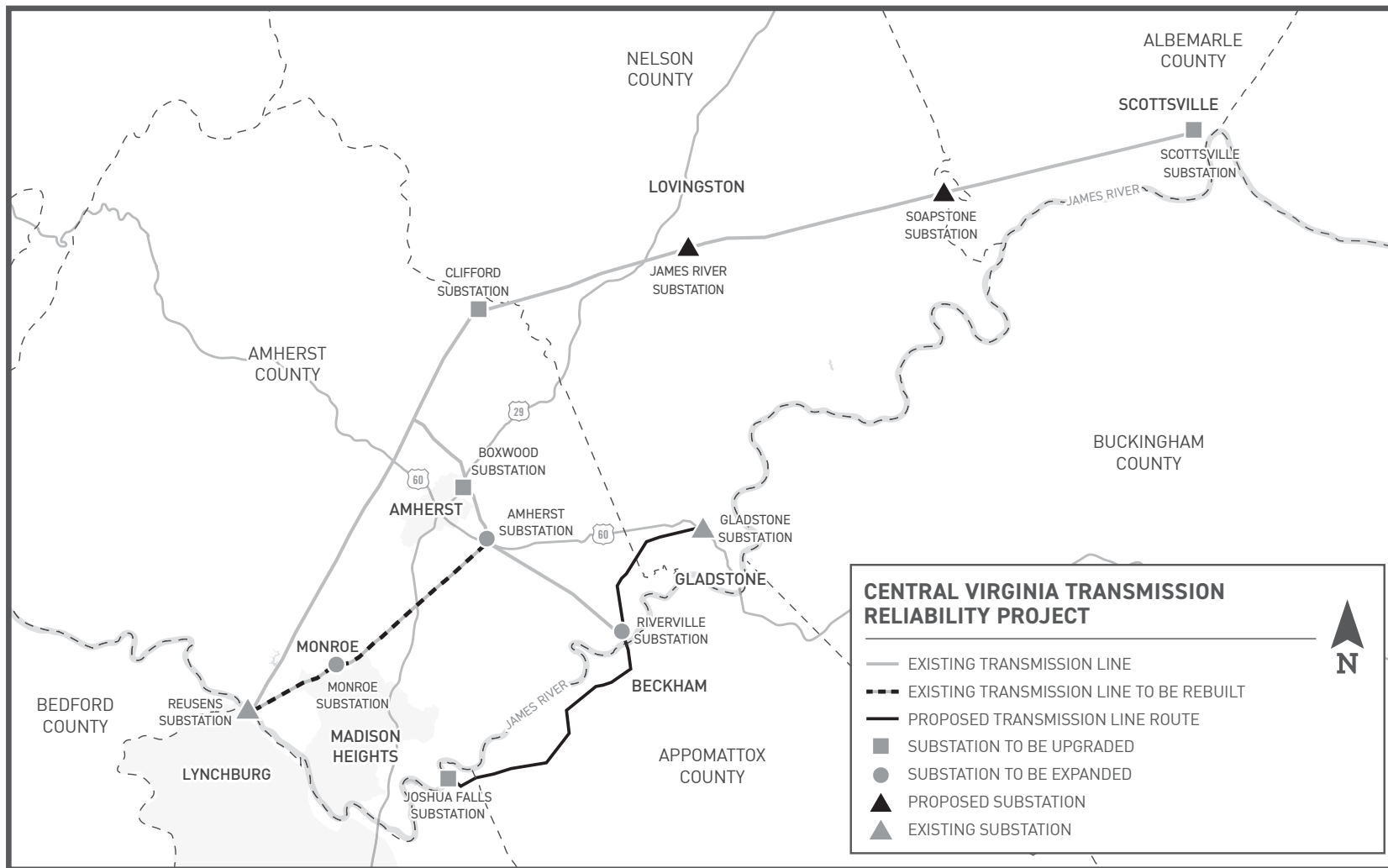
SEE CONFIDENTIAL APPENDIX - EXHIBIT 34-C FOR ONE-LINE DIAGRAM

PROPOSED SUBSTATION ONE-LINE



**EXHIBIT 35: PUBLIC NOTICE MAP**

# CENTRAL VIRGINIA TRANSMISSION RELIABILITY PROJECT



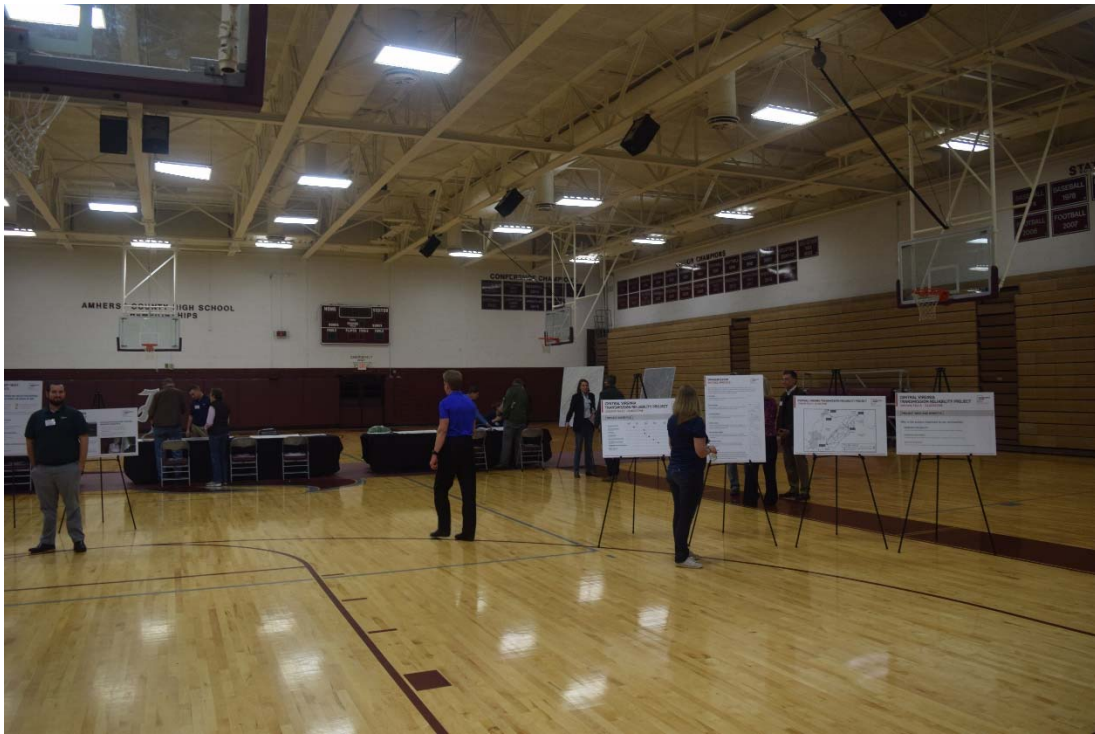
**EXHIBIT 36: OPEN HOUSE PHOTOGRAPHS**

Component 1: Joshua Falls – Riverville – Gladstone 138 kV Transmission Lines

November 6, 2019 Open House Appomattox County



November 6, 2019 Open House Amherst County





February 26, 2020 Open House Appomattox County

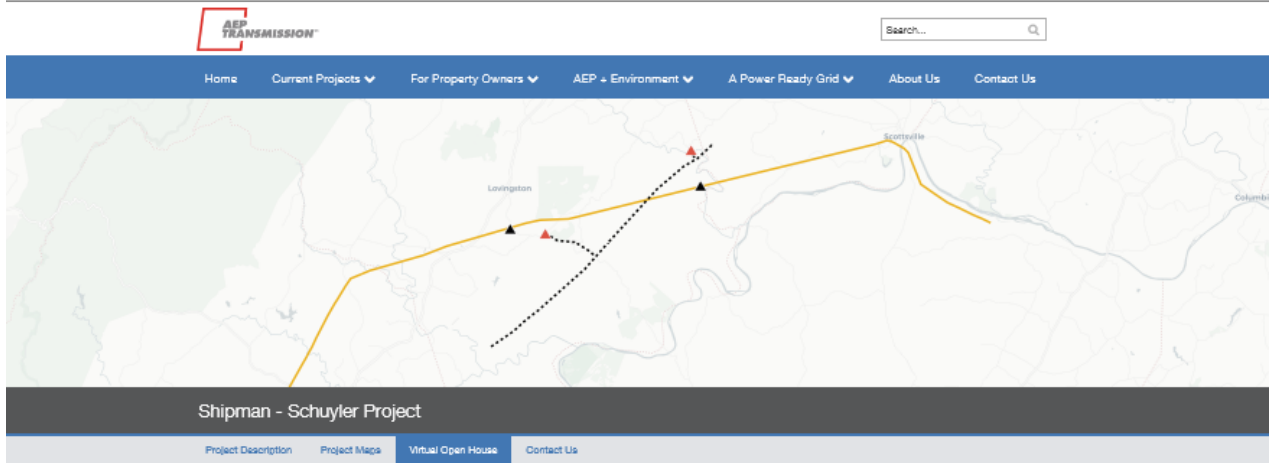


February 27, 2020 Open House Amherst County

*[No photographs available]*

Components 2 and 3: James River and Soapstone 138 kV Substations

*Presented together as Shipman – Schuyler in a Virtual Open House July 2020*



Thank you for visiting the virtual open house for the Shipman - Schuyler phase of the Central Virginia Transmission Reliability Project. Please review the information provided to learn more about this phase of the project.

Your feedback is extremely valuable to us as we move forward with the project. To ask questions or submit comments about this project use the [Contact Us](#) page found on this site.



**ADDRESS SEARCH**

Use the address look-up feature in the interactive map above to view the location of a specific address in relation to the project.

🔍 Enter an address in the search bar to place a marker on the map

🗑️ Click on the marker button in the address search bar to remove the markers



HOW DOES IT WORK



PROJECT NEED



PROJECT TIMELINE



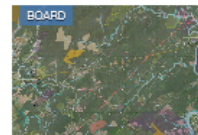
PROPOSED SUBSTATION



CONSTRUCTION PROCESS



RIGHT-OF-WAY ACTIVITIES

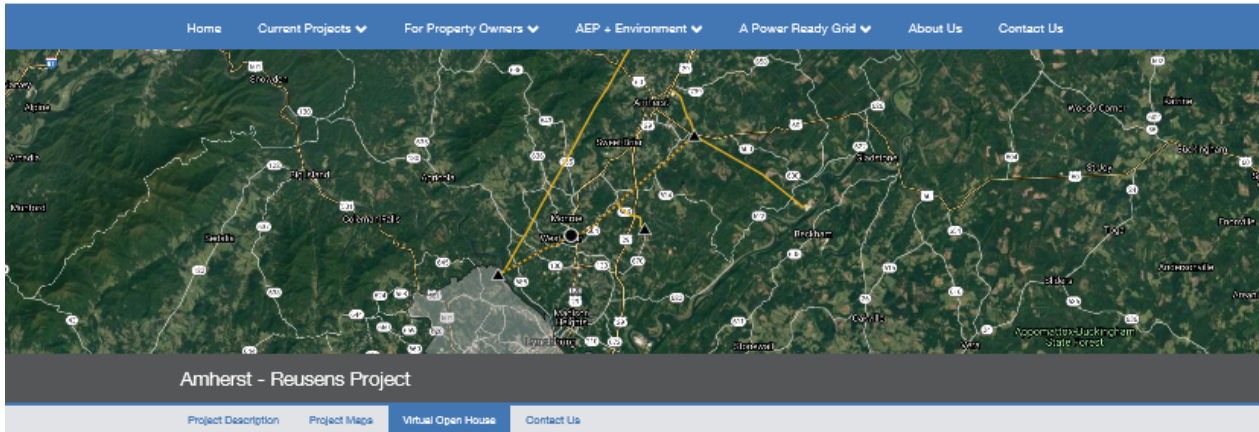


ACCESS PROJECT MAPS

\*The accompanying map depicts the project area. It should be noted that the map contained on this site is for information purposes only. AEP reserves the right to alter, change, or amend the map at any time without notice and AEP provides no warranty about the accuracy of content. Keep this in mind when reviewing this map. However, AEP will make all attempts to keep this map as accurate as possible. If you have any questions about the accuracy of the content map please [Contact Us](#).

## Component 4: Amherst – Reusens 69 kV Transmission Line Rebuild

Presented in a Virtual Open House July 2020



Thank you for visiting the virtual open house for the Amherst - Reusens phase. Please review the information provided to learn more about this phase of the Central Virginia Transmission Reliability project.

Your feedback is extremely valuable to us as we move forward with the project. To provide comments on how this project affects your property or to provide special conditions related to your property, please use the "Contact Us" page.

You can also reach Courtney Mustard, Project Outreach Specialist, by calling 888-818-8743.



### ADDRESS SEARCH

Use the address look-up feature in the interactive map above to view the location of a specific address in relation to the project.

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🗑️ Click on the marker button in the address search bar to remove the markers



HOW DOES IT WORK



PROJECT NEED



PROJECT TIMELINE



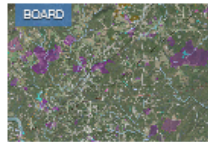
PROPOSED STRUCTURE



CONSTRUCTION PROCESS



RIGHT-OF-WAY ACTIVITIES



ACCESS PROJECT MAPS

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