

PROJECT SPECIFIC TECHNICAL SPECIFICATIONS  
FOR THE PURCHASE OF  
SPUN CONCRETE TRANSMISSION POLES  
FOR THE MILLER AND CALDWELL SUB 230KV TRANSMISSION INTERCONNECTS

JEA PROJECT NO: 8009839 & 8009838  
TR NO: TR 1400 & 1401  
BID DUE DATE: October 17th, 2025  
REQUESTED BY: Jonathan Maywood

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## 1. SCOPE

- 1.1 This specification outlines the required information needed for the purchase, fabrication, and delivery of Spun Concrete Transmission poles for the "MILLER AND CALDWELL 230kV TRANSMISSION INTERCONNECTS". This specification complements the "General Technical Specifications for the Purchase of Spun Concrete Transmission Poles", Rev 1.2".
- 1.2 This specification includes the following attachments:
  - a) Bid Form
  - b) Pole Moment Capacity Tables
  - c) Pole Drawings, containing the configuration and hole drilling details of the pole(s)
  - d) Pole Attachment Details
  - e) PLS-POLE backup files for the pole(s), containing loading data and geometry
  - f) Pole Delivery Map
- 1.3 The Project Engineer (JEA) for this purchase is:  
Jonathan Maywood  
225 N Pearl St  
Jacksonville, FL, 32202  
Mobile: (904) 229-7848  
Email: [maywjw2@jea.com](mailto:maywjw2@jea.com)

## 2. DESIGN

Structures shall be designed for the configuration, drilling details, loadings and limitations contained in these and the "General Technical Specifications for the Purchase of Spun Concrete Transmission Poles", Rev 1.2".

- 2.1 Pole Configuration: The configuration of each pole to be provided is shown in the "Pole Drawings" attachment of these specifications. The Drawings specify the dimensions of the poles, the orientation, drilling details, and attachment locations for insulators, step bolts, etc.
- 2.2 Pole Attachment Details: Details of all attachments are shown in the "Attachment Details" attachment of these specifications. These details illustrate and identify required dimensions on all the insulator attachments, step bolts, etc. that are to be provided with each pole. Attachments that support any equipment if any (transformers, streetlights, etc. modeled in PLS-POLE) need to be analyzed to determine if they can withstand the dead loads of that equipment. It is the responsibility of the fabricator to ensure that the attachments are fabricated and can withstand the loads placed on them as specified in these specifications and attachments.
- 2.3 Pole Load Data: All of the loading data for which the poles are to be designed to are included as a separate electronic attachment in the form of a PLS-POLE backup file. At the least, all the poles are being subjected to a NESC Light 60 mph wind loading, NESC Extreme 120 mph wind loading, NESC Blow Out 6PSF loading, and 60 Degree loading criteria plus applicable load factors. Load

criteria is being applied from multiple directions. These loads are described in more detail in section 2.4 below.

- 2.3.1 There are six (6) PLS-POLE models with six (6) .lca files provided as described below. There are six (6) poles to be purchased in total.
  - a) One (1) PLS-POLE backup file provided for structure #62B
  - b) One (1) PLS-POLE backup file provided for structure #62C
  - c) One (1) PLS-POLE backup file provided for structure #MILLER JEA-FRP POI
  - d) One (1) PLS-POLE backup file provided for structure #CALDWELL JEA-FRP POI
  - e) One (1) PLS-POLE backup file provided for structure #37A
  - f) One (1) PLS-POLE backup file provided for structure #38A
- 2.3.2 Each PLS-POLE backup file references a Vector Loads File (.lca) which contains all the loading data on the pole and the pole attachments.
- 2.3.3 The PLS-POLE backup files also contain all the geometrical data necessary to analyze the poles with the specific loads.
- 2.3.4 The loads shown in the Vector Loads files (.lca) include the wind loads acting on the conductors/wires, attachments, and the theoretical pole that was modeled. A wind pressure is identified for each load case within the Vector Loads file (.lca). It is the manufacturer's responsibility to apply these wind pressures onto the poles and components that it will be providing.
- 2.3.5 In addition to the PLS-POLE backup files and loading data (.lca) files, the required pole strengths shall at the very least meet or exceed the moment capacity diagrams for each pole as shown in the pls-pole back up files.
- 2.3.6 See the Moment-Capacity Tables contained in Section 7 for clarity. The moment capacity tables match the same values as shown on the moment capacity diagrams in the pls-pole back up files for each pole.

2.4 Deflection: Instead of the eight (8) % deflection limit described in the General Technical Specifications (section 4.1), the poles shall be designed to meet the deflection limits as identified in the load (.lca) files found within the PLS-POLE models. In general, and where applicable, poles shall meet the deflection limits for the "NESC LIGHT 250 B", "NESC EXTREME 250 C", "NESC BLOW OUT 6 PSF", AND "60 DEG F INITIAL" loading conditions. These load conditions are identified under the "Load Case Description" column of each pole's .lca file. On all poles, loads are provided from multiple directions including loads that result with positive offset (NA+), negative offset (NA-), and maximum structure usage (MAX). The loading condition name will be followed by a comma and a wind load direction. For example, a load case description by the name of "NESC LIGHT 250B, U NA+" identifies that this is a NESC Light 250 B loading criteria with wind normal to all spans/structure in direction of positive offset.

### 3. DIMENSION RESTRICTIONS

- 3.1 Wall Thickness: All structures shall have a **minimum of a three and one-half (3-1/2) inch** wall thickness at the pole tip, and an outside total taper of not less than 0.216 inches per foot.

- 3.2 Top Diameter: The minimum tip diameter for all poles shall be fifteen (15) inches and the maximum tip diameter shall not exceed twenty-five (25) inches. The Manufacturer shall notify the Owner if the strength requirements of a controlling load case dictate a greater tip diameter.
- 3.3 Bottom Diameter: The bottom diameter will be a function of the tip diameter and the standard 0.216 inches per foot taper. No poles with straight taper or reverse taper segments are required for this project.

#### 4. POLE ATTACHMENT HARDWARE

- 4.1 The pole manufacturer shall provide all ground inserts, thru holes, threaded inserts, and a pole cap on each pole as shown in the "POLE DRAWINGS" and "POLE ATTACHMENT DETAILS" of these specifications.
- 4.1.1 Threaded inserts shall be provided at all transmission locations shown on the pole drawings. 7/8"-9 and 1" -8 threaded inserts shall be provided as indicated in the pole drawings.
- 4.1.2 Design of the threaded inserts shall be at the discretion of the pole manufacturer. Inserts shall allow standard Imperial-thread machine bolts to be attached on opposite faces of the pole. The threaded portion shall be of sufficient length, and the inserts shall be secured within the pole, such that the final installation provides at least the equivalent strength of a comparable through-bolt installation.
- 4.1.3 Pole caps shall be provided and secured on the top of each pole. Caps shall be in the shape of a cone, fabricated from steel and hot-dip galvanized. Two 1/2"-13 nuts shall be welded to the cap on opposite sides to allow attachment of ground lugs.
- 4.2 Bolts, nuts, washers and other hardware required for assembling the step bolts with the step inserts are to be provided by the manufacturer (n/a for this bid request).
- 4.3 Bolts, nuts, washers and other hardware required for attaching insulators, cross-arms, transformers, guy wires, and miscellaneous cables to poles will be supplied by JEA and are not to be provided by the manufacturer.

#### 5. DELIVERY LOCATION AND DATE

Delivery of all poles and hardware will be to storage areas near the job site within the JEA service area. The delivery location for structures 62A and 62D will be near the JEA Miller Substation, (TBD), Jacksonville, Florida. The delivery location for structures 37B and 37C will be near the JEA Caldwell Substation, (TBD), Jacksonville, Florida. Final discretion will be left to the contractor, who may chose a central delivery location for all structures

- 5.1 Specific directions for delivery will be provided by the construction contractor. The unloading will be done by the owner's forces and equipment or by a contractor representing the owner. The owner also reserves the right to allow a contractor representing the owner to coordinate delivery with the supplier. The supplier shall allow four (4) hours "turn around" time for unloading each pole. Untimely delivery, either ahead of or behind agreed upon delivery schedules, shall not be a cause for claim to the owner for any costs incurred by the Manufacturer. Freight is to be included in the

bid price. All communications regarding the delivery date/time are to be verified and approved by email with the JEA Project Engineer even if verified and coordinated verbally with the contractor representing JEA. JEA will not be responsible for any extra costs incurred by the manufacturer for delivery that was not approved by the JEA Project Engineer.

Unless the construction contractor advises differently, poles shall be delivered in order, beginning at Structure #62B and ending at Structure #38A. The poles and all associated hardware/attachments for the structures shall be delivered on the following tentative dates:

- Between March 2<sup>nd</sup> and 6<sup>th</sup>, 2026

Due to unforeseeable delays, the contractor representing the owner will update and coordinate new delivery dates with the pole supplier should they change.

## 6. BID FORM

### PROPOSAL FOR SPUN CONCRETE TRANSMISSION POLES

PROJECT: MILLER AND CALDWELL 230kV TRANSMISSION INTERCONNECTS

Bidder Please Write Company Name Here: \_\_\_\_\_

Bid Item No.	Standard Design No.	Structure No.	Total Length / Embedment	Required Quantity	Unit Price	Extended Bid Price
1	95FT / 32 kip	#62B	95'-0" / 25'-0"	1	\$ _____	\$ _____
2	95FT / 32 kip	#62C	95'-0" / 25'-0"	1	\$ _____	\$ _____
3	90FT / 28 kip	#M J-F POI	90'-0" / 20'-0"	1	\$ _____	\$ _____
4	90FT / 28 kip	#C J-F POI	90'-0" / 20'-0"	1	\$ _____	\$ _____
5	120FT / 16 kip	#37A	120'-0" / 25'-0"	1	\$ _____	\$ _____
6	120FT / 16 kip	#38A	120'-0" / 25'-0"	1	\$ _____	\$ _____
7	Freight for all poles					\$ _____
					Total =	\$ _____

My (our) lump sum bid for the items described above and in the tabulated total quantities is: \$ \_\_\_\_\_.

I (we) agree to provide approval drawings within \_\_\_\_\_ calendar days after receipt of the "notice to proceed" / purchase order.

And I (we) agree to complete deliveries of all items within \_\_\_\_\_ calendar days after the approval of the design calculations and approval drawings.

SIGNED FOR BIDDER: \_\_\_\_\_  
TITLE: \_\_\_\_\_

## 7. MOMENT-CAPACITY TABLES

120 FT 16-kip

<b>Distance Below Top (ft)</b>	<b>Zero Tension Moment Cap. (ft-k)</b>	<b>First Crack Moment Cap. (ft-k)</b>	<b>Ultimate Moment Cap. (ft-k)</b>
5	60.75	60.75	205.83
10	117	117	298.33
15	126	126	334.17
20	135.75	135.75	371.67
25	145.5	145.5	410.83
30	162.4	162.4	452.5
35	191.4	191.4	528
40	220.4	220.4	608
45	260.25	260.25	689.17
50	278.4	278.4	768
55	307.4	307.4	848
60	336.4	336.4	928
65	365.4	365.4	1008
70	394.4	394.4	1088
75	423.4	423.4	1168
80	452.4	452.4	1248
85	481.4	481.4	1328
90	510.4	510.4	1408
95	539.4	539.4	1488
100	568.4	568.4	1568
105	597.4	597.4	1648
110	626.4	626.4	1728
120	0	0	0



90 FT      28-kip

<b>Distance Below Top (ft)</b>	<b>Zero Tension Moment Cap. (ft-k)</b>	<b>First Crack Moment Cap. (ft-k)</b>	<b>Ultimate Moment Cap. (ft-k)</b>
5	106.5	106.5	315
10	212.25	212.25	515.83
15	226.5	226.5	566.67
20	240	240	620
25	255	255	672.5
30	274.4	274.4	784
35	323.4	323.4	924
40	372.4	372.4	1064
45	450.75	450.75	1204
50	470.4	470.4	1344
55	519.4	519.4	1484
60	568.4	568.4	1624
65	617.4	617.4	1764
70	666.4	666.4	1904
75	715.4	715.4	2044
80	764.4	764.4	2184
90	0	0	0

95 FT      32-kip

<b>Distance Below Top (ft)</b>	<b>Zero Tension Moment Cap. (ft-k)</b>	<b>First Crack Moment Cap. (ft-k)</b>	<b>Ultimate Moment Cap. (ft-k)</b>
5	137.25	137.25	404.17
10	270.75	270.75	651.67
15	286.5	286.5	710
20	302.25	302.25	771.67
25	318.75	318.75	833.33
30	336	336	896
35	363	363	1056
40	418	418	1216
45	534	534	1376
50	558	558	1536
55	583	583	1696
60	638	638	1856
65	693	693	2016
70	748	748	2176
75	803	803	2336
80	858	858	2496
85	913	913	2656
95	0	0	0

## 8. POLE DRAWINGS

1) Pole Drawings:

Structure Type C1244Q\*1590 – Double Deadend 90° Without Post, Slack Tension To Slack

Tension, 3-Phase

Structure(s): #62B, 62C

2) Pole Drawings:

Structure Type C1241C\*1590 – Double Deadend 180° With Post, Full Tension To Full Tension, 3-

Phase

Structure(s): #MILLER JEA-FRP POI

3) Pole Drawings:

Structure Type C1261\*1590 – Single Braced Post, Unguyed, Light Angle, 3-Phase

Structure(s): #37A, 38A

4) Pole Drawings:

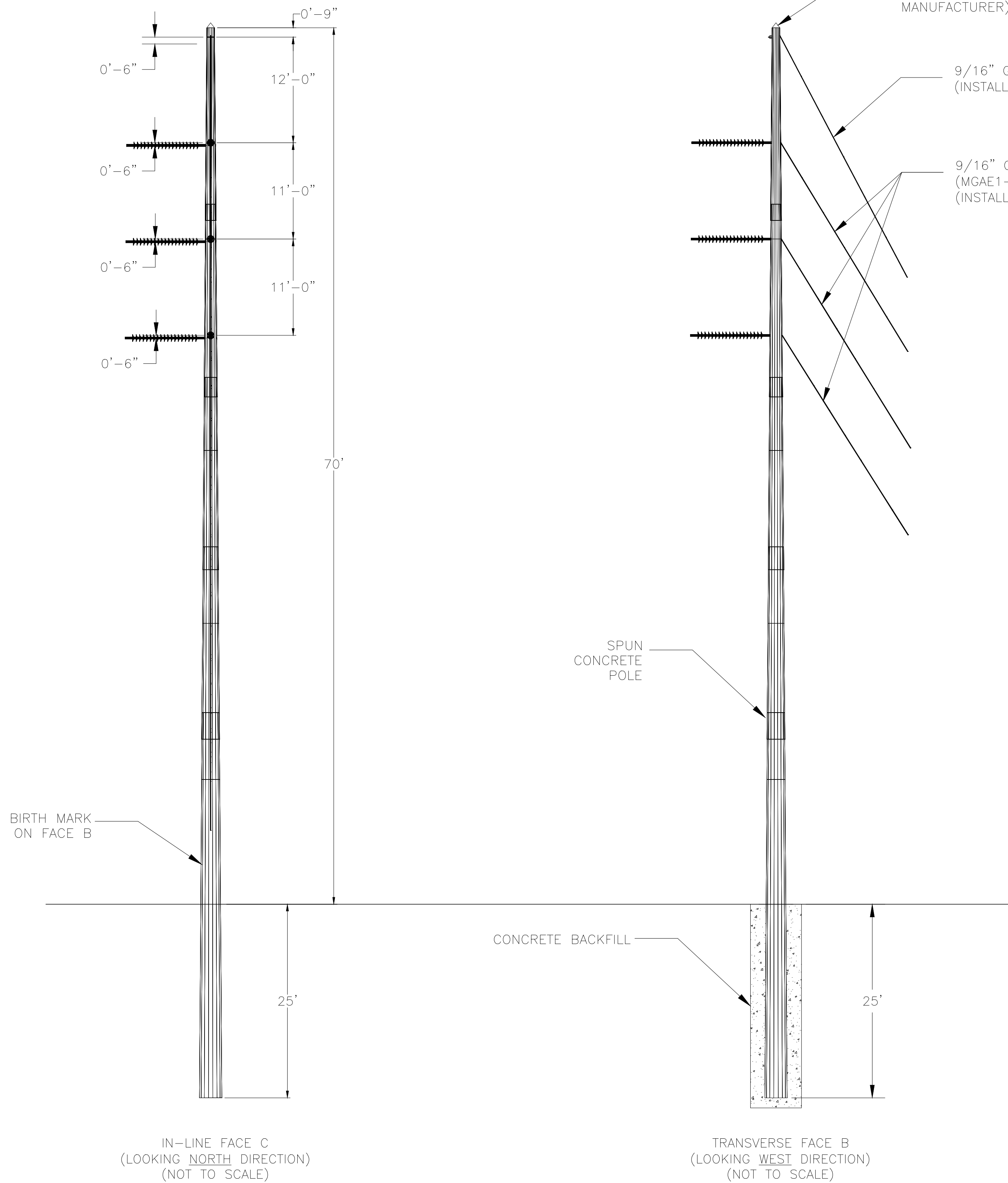
Structure Type C1241C\*1590 – Double Deadend 180° With Post, Full Tension To Full Tension, 3-

Phase

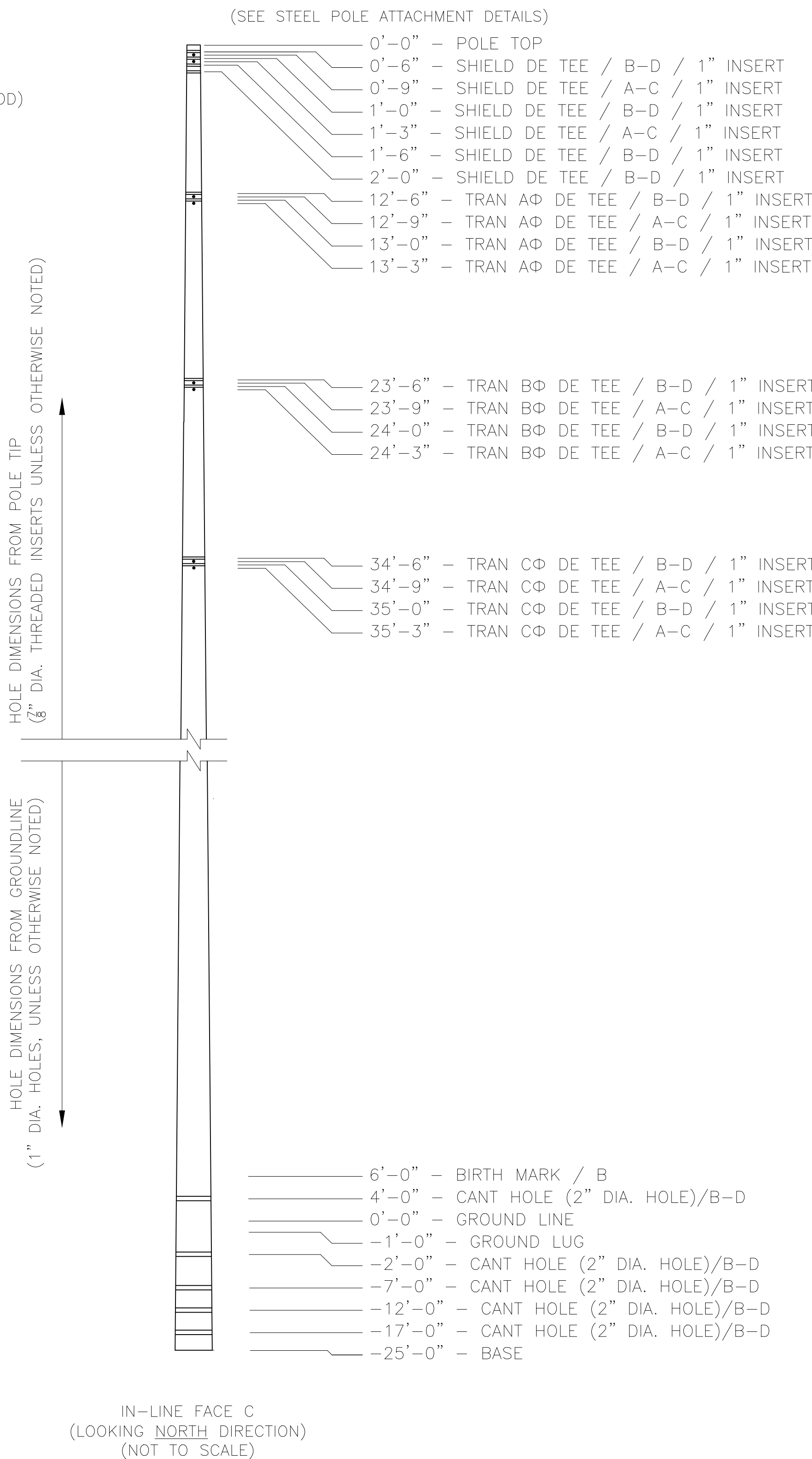
Structure(s): #CALDWELL JEA-FRP POI

STRUCTURE TYPE  
C1244Q\*1590 DOUBLE DEADEND 90° WITHOUT POST, SLACK TENSION TO SLACK TENSION, 3-PHASE  
STRUCTURES 62B & 62C

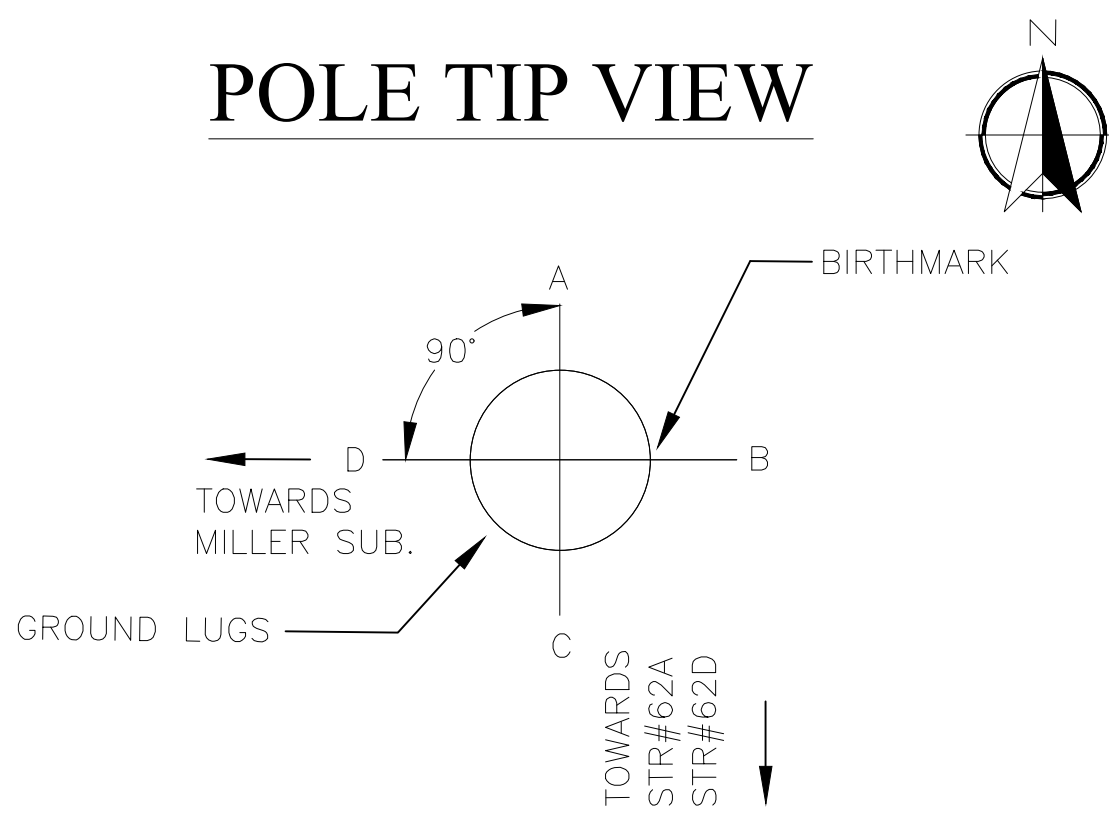
ELEVATION VIEW



DRILLING DETAIL



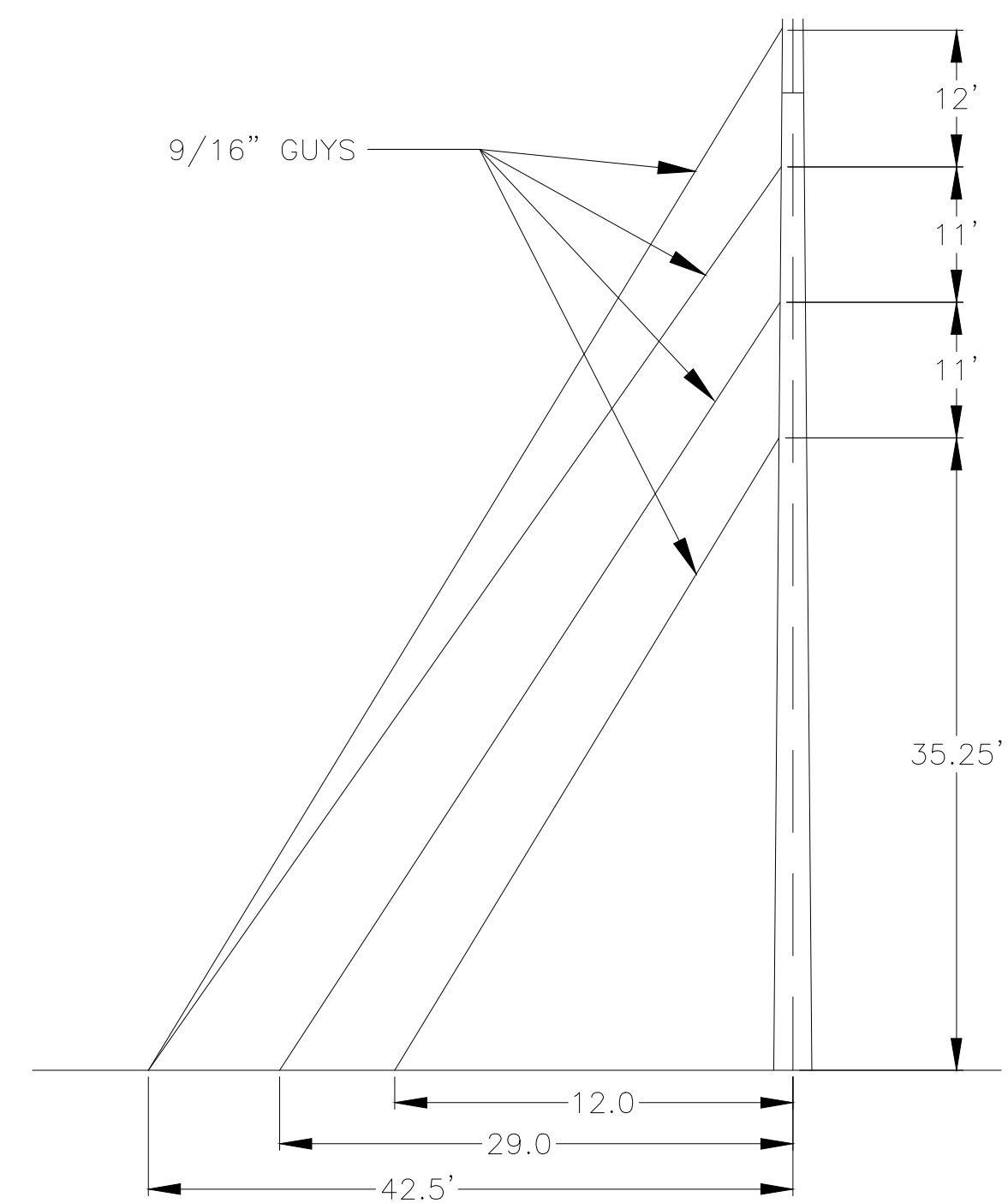
POLE TIP VIEW



GROUND LUG LOCATIONS


FOR	FROM POLE TOP	FROM POLE GROUNDLINE
SHIELD	1'-6"	-
TRANS AΦ	13'-6"	-
TRANS BΦ	24'-6"	-
TRANS CΦ	35'-6"	-

GUY ARRANGEMENT



NOTES:

- THIS POLE CONFIGURATION DRAWING IS ACCOMPANIED BY PLS-POLE FILES WITH THE SITE SPECIFIC LOADINGS FOR EACH STRUCTURE. THE FILES ARE "62B.BAK" AND "62C.BAK".
- ALL LOADS ARE ULTIMATE LOAD AND INCLUDE THE APPROPRIATE LOAD FACTORS.
- ALL REFERENCED DETAILS ARE PROVIDED IN THE "PROJECT SPECIFIC TECHNICAL SPECIFICATIONS FOR THE PURCHASE OF SPUN CONCRETE TRANSMISSION POLES FOR THE MILLER AND CALDWELL INTERCONNECT". POLES SHALL BE DESIGNED TO MEET THE REQUIREMENTS OF THESE SPECIFICATIONS AND DETAILS.
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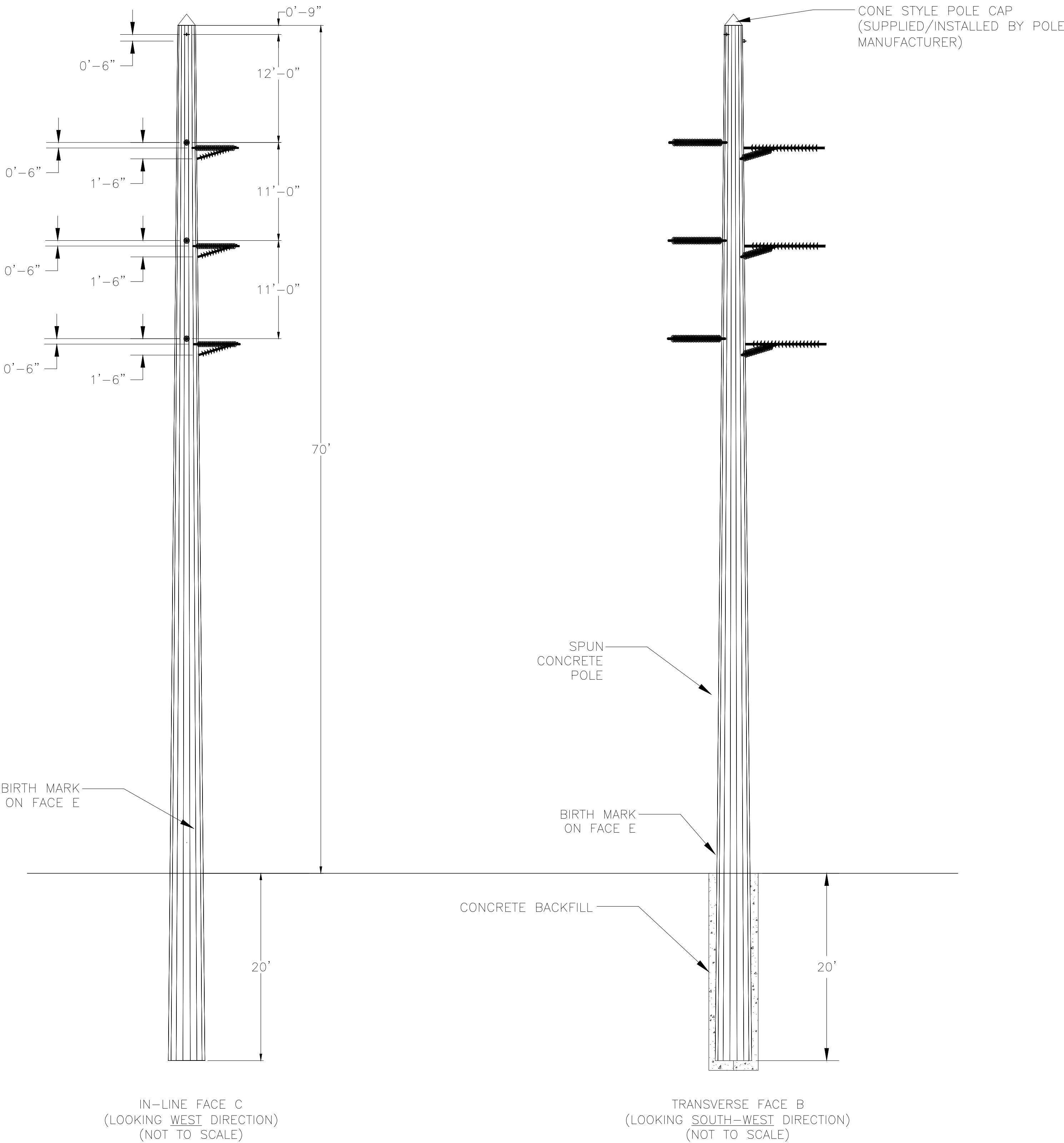
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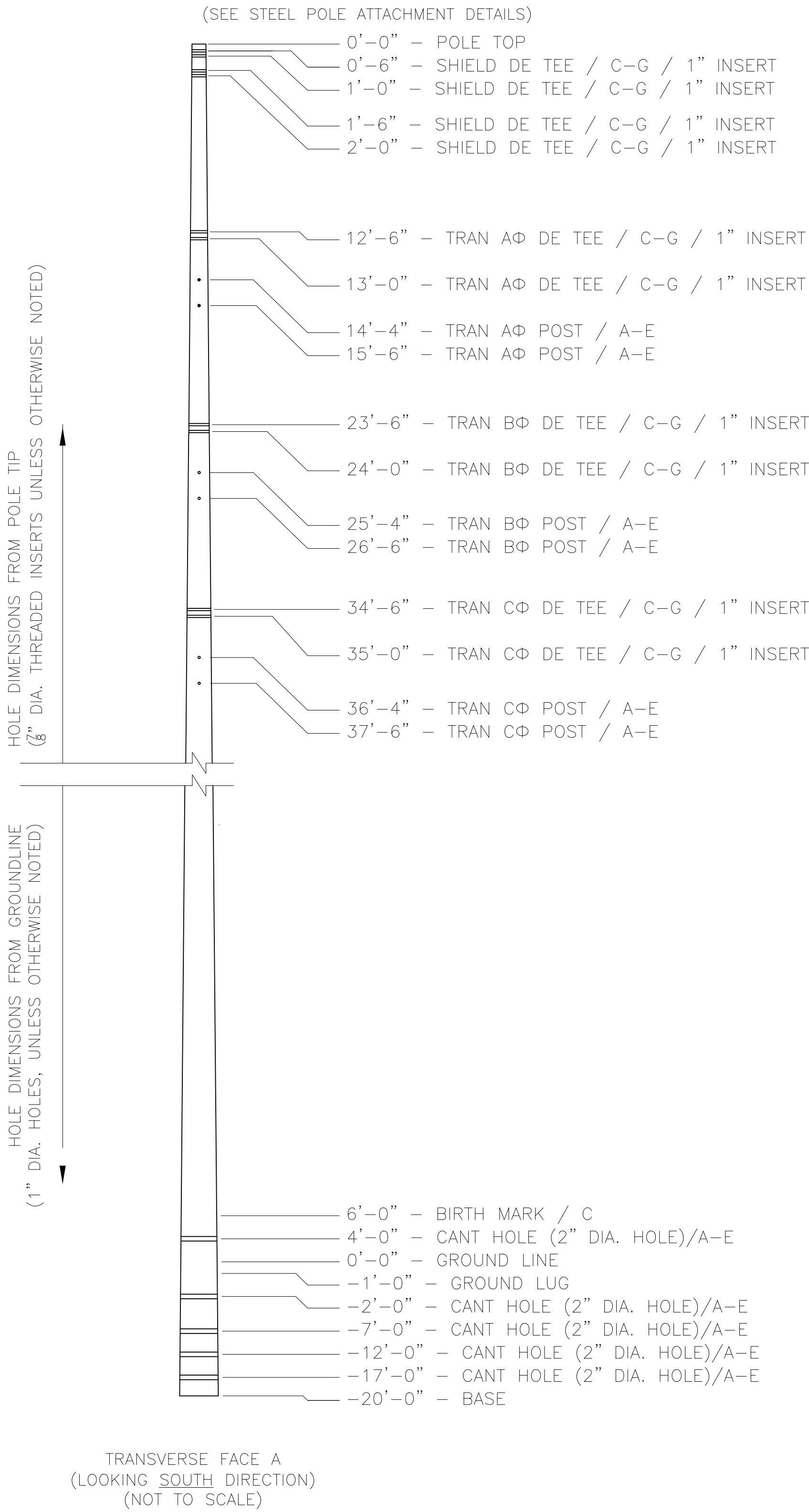
C1241C\*1590 DOUBLE DEADEND 180° WITH POST, FULL TENSION TO FULL TENSION, 3-PHASE

STRUCTURE #JEA-FRP POI

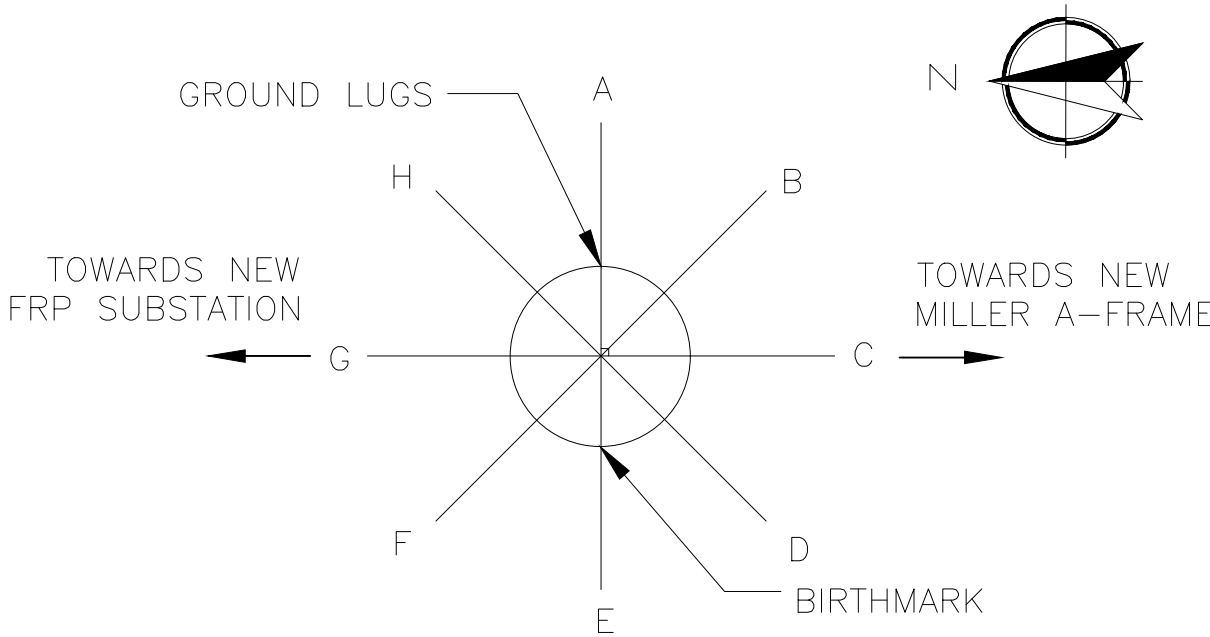
ELEVATION VIEW



DRILLING DETAIL



POLE TIP VIEW




GROUND LUG LOCATIONS

FOR	FROM POLE TOP	FROM POLE GROUNDLINE
SHIELD	1'-6"	-
TRANS AΦ	13'-6"	-
TRANS BΦ	24'-6"	-
TRANS CΦ	35'-6"	-

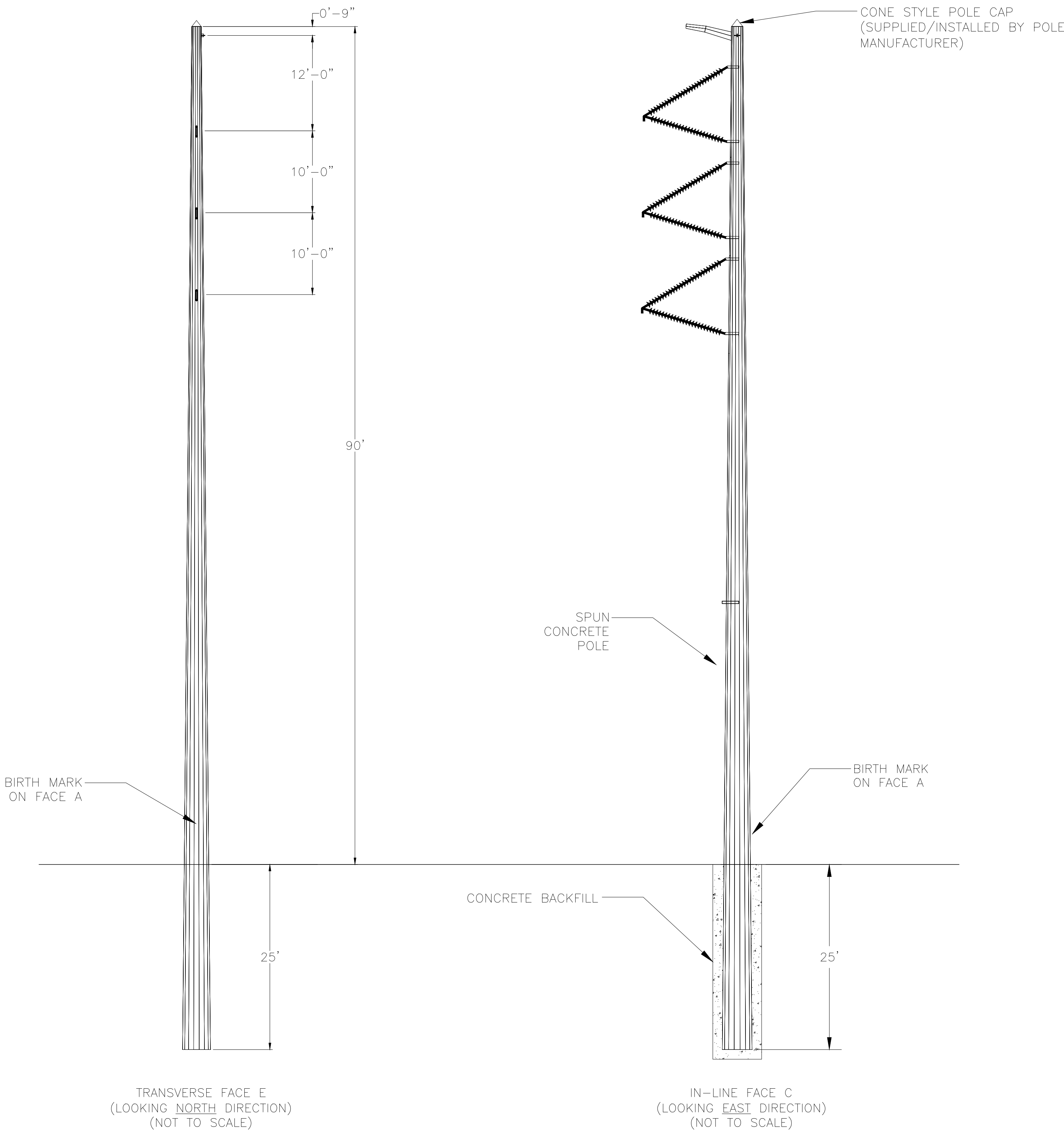
NOTES:

- THIS POLE CONFIGURATION DRAWING IS ACCOMPANIED BY A PLS-POLE FILE WITH THE SITE SPECIFIC LOADING FOR THE STRUCTURE. THE FILE "JEA-FRP MILLER".
- ALL LOADS ARE ULTIMATE LOAD AND INCLUDE THE APPROPRIATE LOAD FACTORS.
- ALL REFERENCED DETAILS ARE PROVIDED IN THE "PROJECT SPECIFIC TECHNICAL SPECIFICATIONS FOR THE PURCHASE OF SPUN CONCRETE TRANSMISSION POLES FOR THE MILLER AND CALDWELL INTERCONNECT". POLES SHALL BE DESIGNED TO MEET THE REQUIREMENTS OF THESE SPECIFICATIONS AND DETAILS.
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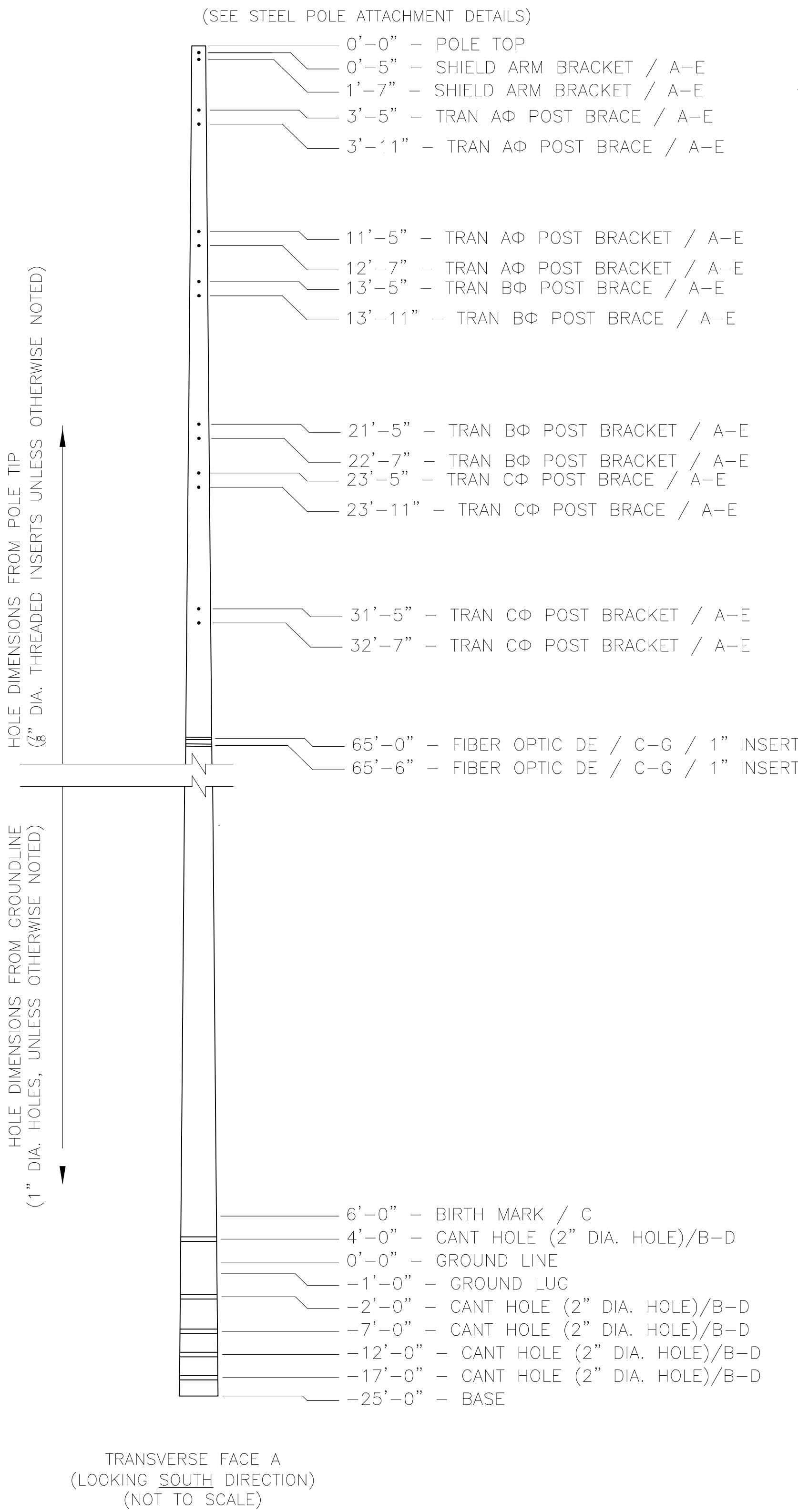
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												APP'D	TBD		-		
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STRUCTURE TYPE  
C1261\*1590 SINGLE BRACED POST, UNGUYED, LIGHT ANGLE, 3-PHASE  
STRUCTURE 37A & 38A

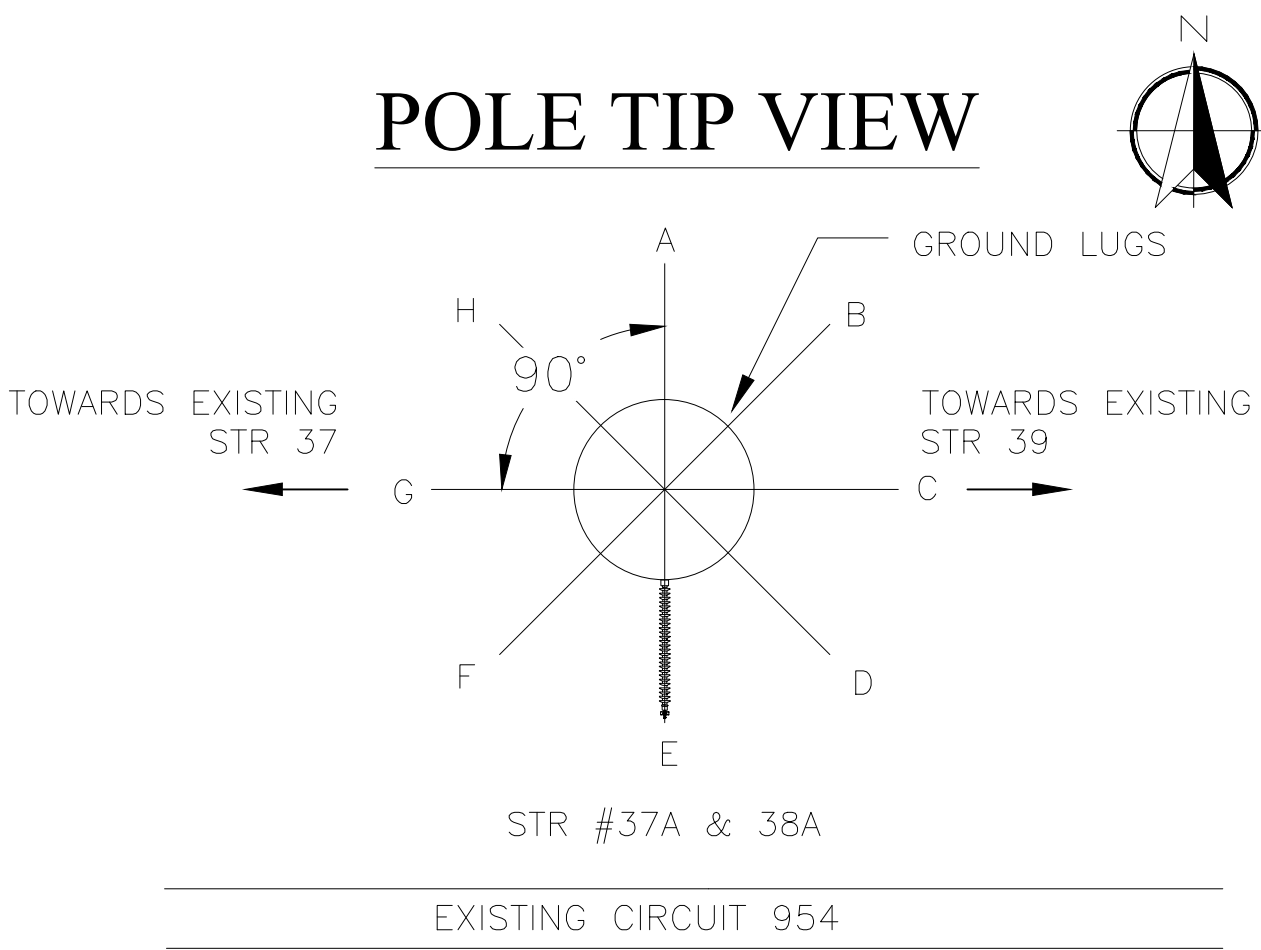
ELEVATION VIEW



DRILLING DETAIL



POLE TIP VIEW




GROUND LUG LOCATIONS

FOR	FROM POLE TOP	FROM POLE GROUNDLINE
SHIELD	2'-1"	-
TRANS AΦ	13'-1"	-
TRANS BΦ	23'-1"	-
TRANS CΦ	33'-1"	-

NOTES:

- THIS POLE CONFIGURATION DRAWING IS ACCOMPANIED BY PLS-POLE FILES WITH THE SITE SPECIFIC LOADINGS FOR EACH STRUCTURE. THE FILES ARE "37A.BAK" AND "38A.BAK".
- ALL LOADS ARE ULTIMATE LOAD AND INCLUDE THE APPROPRIATE LOAD FACTORS.
- ALL REFERENCED DETAILS ARE PROVIDED IN THE "PROJECT SPECIFIC TECHNICAL SPECIFICATIONS FOR THE PURCHASE OF SPUN CONCRETE TRANSMISSION POLES FOR THE MILLER AND CALDWELL INTERCONNECT". POLES SHALL BE DESIGNED TO MEET THE REQUIREMENTS OF THESE SPECIFICATIONS AND DETAILS.
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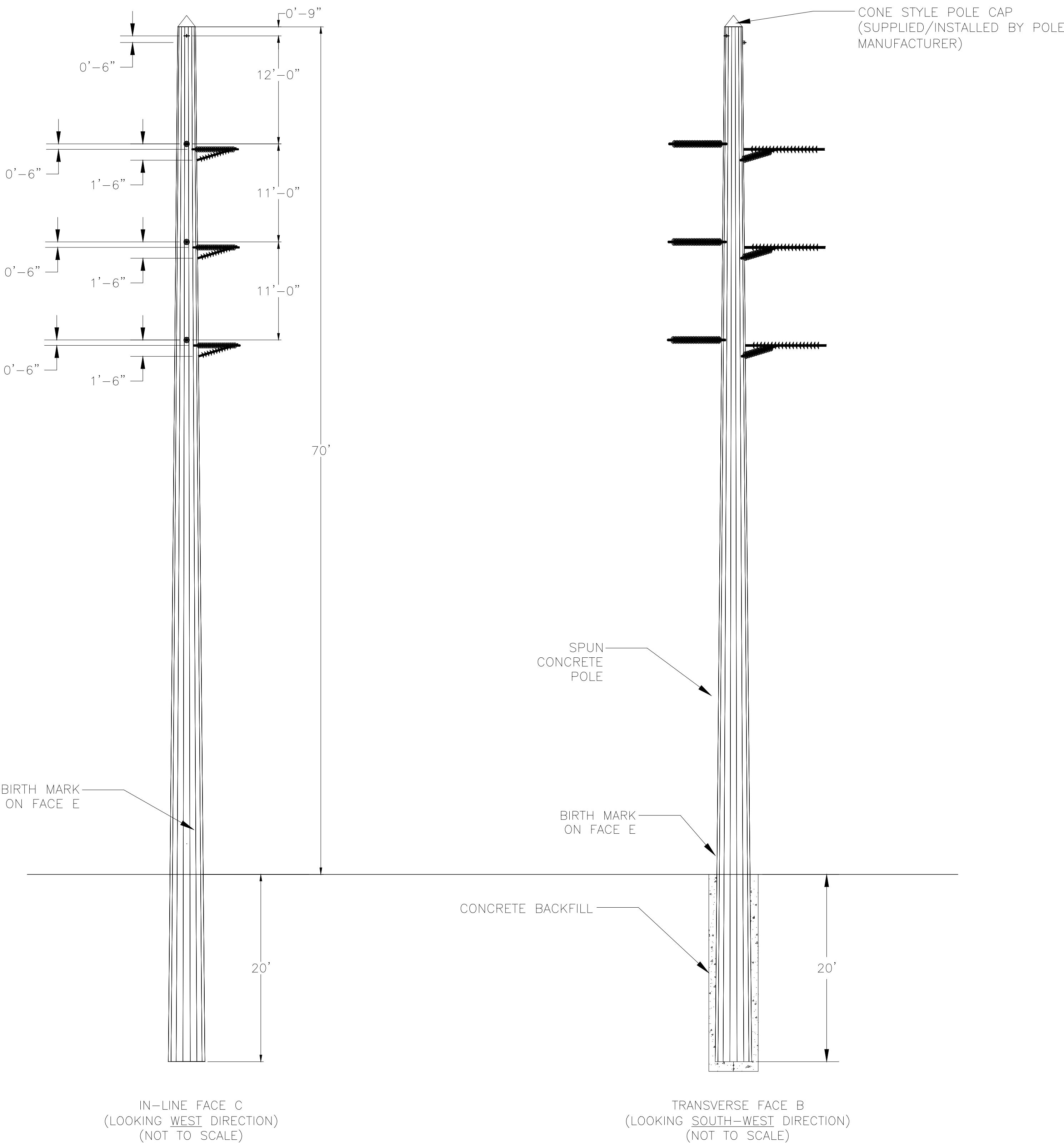
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STRUCTURE TYPE

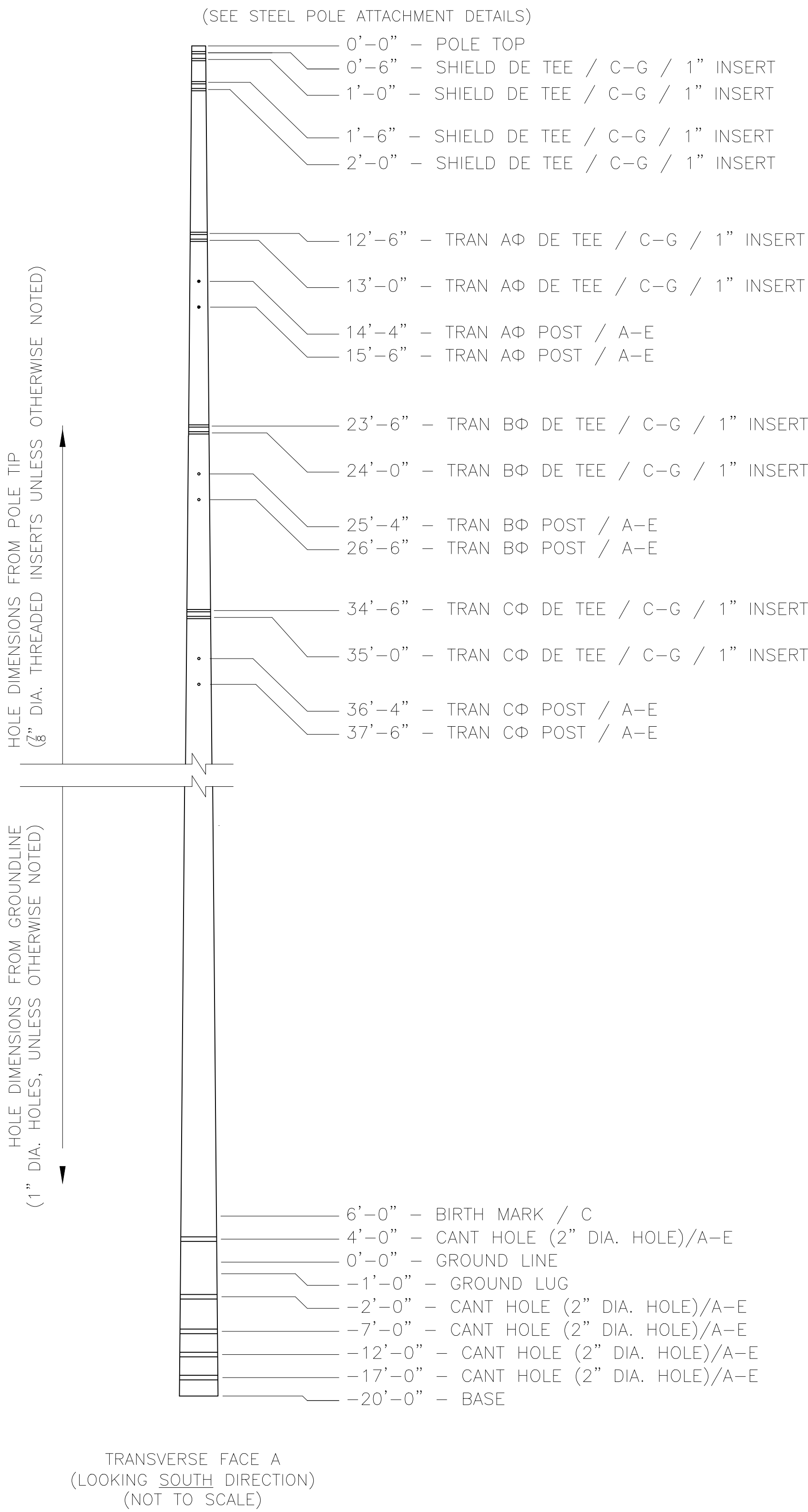
C1241C\*1590 DOUBLE DEADEND 180° WITH POST, FULL TENSION TO FULL TENSION, 3-PHASE

STRUCTURE #JEA-FRP POI

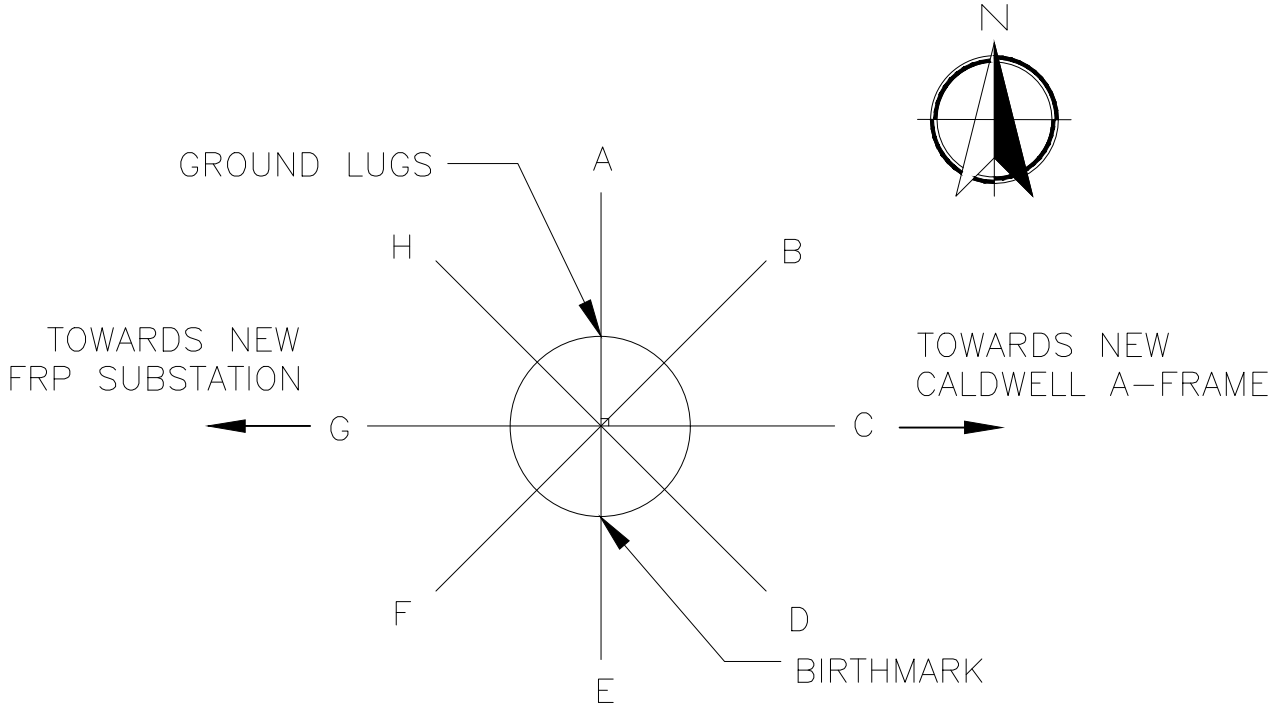
ELEVATION VIEW



DRILLING DETAIL



POLE TIP VIEW




GROUND LUG LOCATIONS

FOR	FROM POLE TOP	FROM POLE GROUNDLINE
SHIELD	1'-6"	-
TRANS AΦ	13'-6"	-
TRANS BΦ	24'-6"	-
TRANS CΦ	35'-6"	-

NOTES:

- THIS POLE CONFIGURATION DRAWING IS ACCOMPANIED BY A PLS-POLE FILE WITH THE SITE SPECIFIC LOADING FOR THE STRUCTURE. THE FILE "JEA-FRP CALDWELL".
- ALL LOADS ARE ULTIMATE LOAD AND INCLUDE THE APPROPRIATE LOAD FACTORS.
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NO.	REVISION	DATE	BY	CH'D	APP'D		REVISION	DATE	BY	CH'D	APP'D	ENGINEERING RECORD			 BUILDING COMMUNITY	PROPOSED STR JEA-FRP CALDWELL POI POLE CONFIGURATION FOR THE MILLER AND CALDWELL SUBSTATION INTERCONNECT		PROJECT NO.
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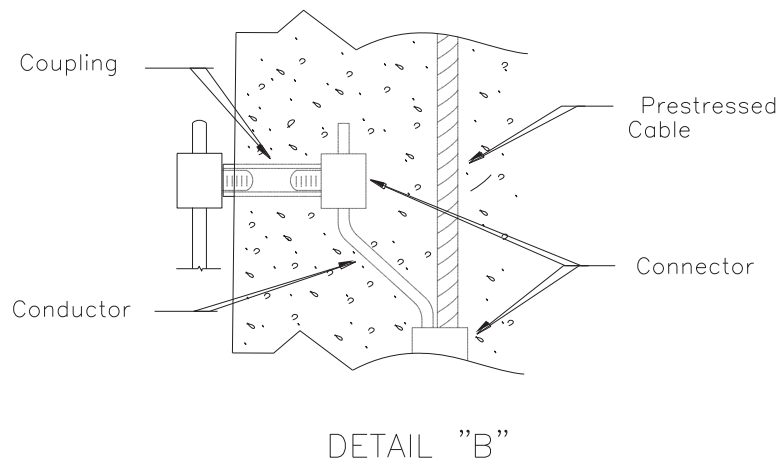
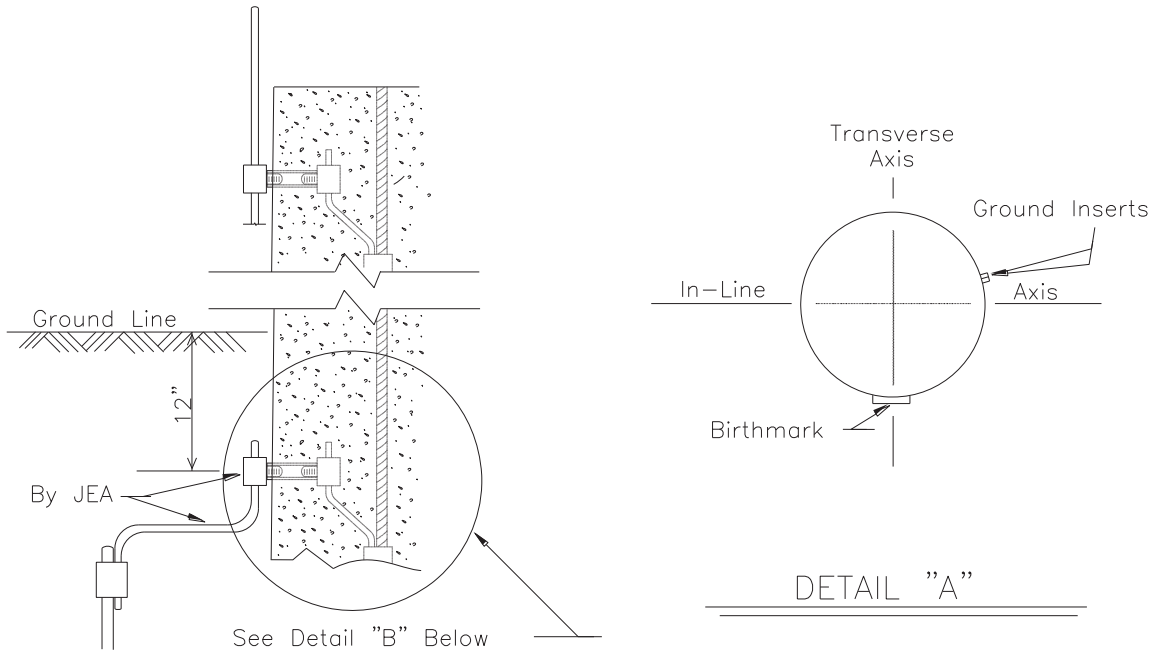
## 9. POLE ATTACHMENT DETAILS

- 1) Ground Inserts Detail PGI



## PGI

### GROUND INSERT DETAILS



Note: Coupling and Internal Cable with Connectors To Be Furnished By Pole Manufacturer

## 10. PLS-POLE BACKUP FILES

1) Pole Drawings:

Structure Type C1244Q\*1590 – Double Deadend 90° Without Post, Slack Tension To Slack

Tension, 3-Phase

Structure(s): #62B, 62C

- a. See electronically attached PLS-POLE back up file "62B.bak", "62C.bak"

2) Pole Drawings:

Structure Type C1241C\*1590 – Double Deadend 180° With Post, Full Tension To Full Tension, 3-

Phase

Structure(s): #MILLER JEA-FRP POI

See electronically attached PLS-POLE back up file "MILLER JEA-FRP POI.bak"

3) Pole Drawings:

Structure Type C1261\*1590 – Single Braced Post, Unguyed, Light Angle, 3-Phase

Structure(s): #37A, 38A

- a. See electronically attached PLS-POLE back up file "37A.bak", "38A.bak"

4) Pole Drawings:

Structure Type C1241C\*1590 – Double Deadend 180° With Post, Full Tension To Full Tension, 3-

Phase

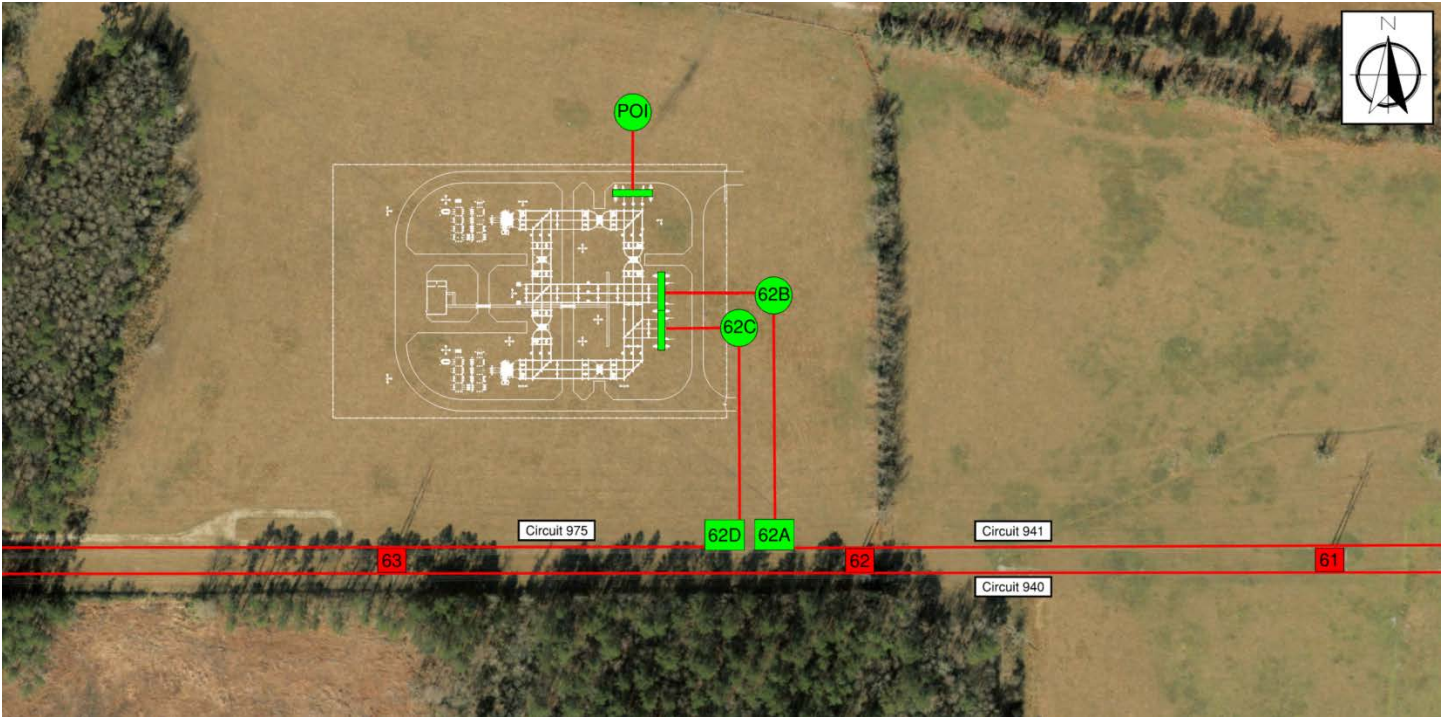
Structure(s): #CALDWELL JEA-FRP POI

- a. See electronically attached PLS-POLE back up file "CA JEA-FRP POI.bak"

## 11. POLE DELIVERY MAPS

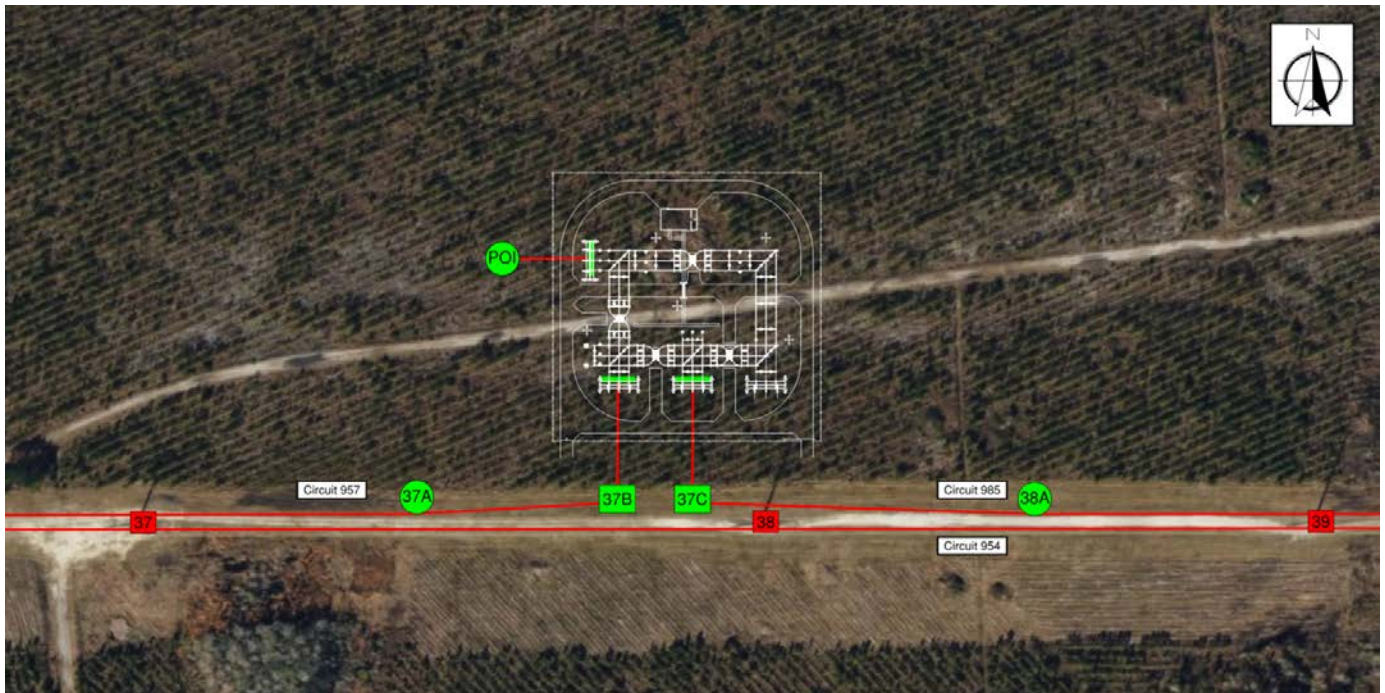
- 1) The following maps show the transmission corridor and the locations near Miller and Caldwell Substation where each pole shall be delivered. Coordinates are provided for the proposed structure spotting locations.

Miller Substation:



Miller Concrete Structure Locations		
Structure Number	Longitude (deg)	Latitude (deg)
JEA-FRP POI	-81.91691465	30.32037752
62C	-81.91641309	30.31954465
62B	-81.91633515	30.31968255

Caldwell Substation:



Caldwell Concrete Structure Locations		
Structure Number	Longitude (deg)	Latitude (deg)
37A	-81.9321187	30.27451288
38A	-81.92956863	30.27452913
JEA-FRP POI	-81.93177264	30.27538646