SDG&E FiRM Global True-Up Support

C237-O - Findings Report

Investigation Modeling into As-Built Conditions

San Diego, California

July 23, 2021

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Introduction

This report consists of the findings for Circuit 237 Section O (C237-O) of the initial release. This section includes one segment (model) with a total of 48 method four structures and 7 method one structures. In addition to modeling the as-built condition of this line, HDR was also tasked with providing a review of the PLS-CADD model for design flaws or lack of adherence to SDG&E design standards and practices as well as infractions to GO95. HDR has provided documentation of points of concern as well as potential suggestions for remediation of the distribution line infractions.

Assumptions

1. Proper cables and properties already in models
2. Guying in models was correct concerning material for Comm vs. primary
3. Pole numbering was not checked
4. Pole height and classes were installed as designed
5. When GO95 communication to ground violations are present, wire length will remain the same after moving the wire up on the pole. Due to cable assumptions, HDR cannot verify in all instances that communication to ground violations will be fixed by moving attachments higher. In addition, a CIPS form will be created and submitted via Procore for further evaluation by SDGE.

Methodology

HDR was provided with PLS-CADD design backup files that were used as the basis of SDG&E's construction package for the line as well as LiDAR data collected for each line segment. HDR restored the models and removed all existing survey data and pictures from the existing PLS-POLE models. Newly acquired LiDAR was then imported into each line segment to check for violations of the as-built condition. HDR recorded adjustments needed to be made to the as-designed model to match to the as-built survey of the circuit. After reviewing the model and making adjustments to pole hardware, attachment points, conductor sags and cross-arm information, HDR began processing the model through the design checklist. After the model has been checked for compliance to SDG&E design methodology, several appendices were created summarizing the models, infractions identified, and potential options for remediation of infractions. A final report was then generated noting errors, omissions, missing information and providing suggested remediation recommendations.

Vicinity Map

Figure 1. Vicinity Area

General Findings

The following summary of findings were determined:

- 50 recommendations for C237-O.
- No structures fall within an avian area.
- There are 17 poles that do not meet the 10%+2’ embedment standard for poles in soil, per LiDAR data. Of the 17 poles, 2 of them do not meet GO95 Rule 49.1-C for poles in soil, not accounting for the 10% reduction in embedment depth. Further investigation of soil parameters should be completed to determine if the 10% reduction or rock embedment depths are applicable.
- 5 poles are leaning more than 2 degrees.
- 2 poles have a failing crossarm that needs replaced
- 8 spans will need vibration dampers added.
- Ground clearance violations were observed and subsequently documented in Appendix A.

C237-O falls within an 85MPH wind zone and was thus designed for 85MPH Known Local Wind. No scoped or reference poles of C237-O fall within an avian protection zone. The LiDAR provided for this section was in the file named “c237_firm_pls_part_2_2018_03_18”.

Detailed Description by Line Segment

C237-O

The following observations and findings were made during the analysis:

- 20 locations require remedial action to address clearance:
    - There is a COMM-Ground clearance violation between P112097 and P161927. The issue is addressed by re-tensioning the span to achieve clearance.
    - There is a COMM-Ground clearance violation between P112100 and P112130. The issue is addressed by re-tensioning the span and raising the COMM attachment point on P112100.
    - There is a COMM-Ground clearance violation between P112100 and P112101. The issue is addressed by re-tensioning the span to achieve clearance.
    - There is a COMM-Ground clearance violation between P211223 and P112131. The issue is addressed by raising the COMM attachment point on P211223.
    - There is a COMM-Ground clearance violation between P217178 and P217179. The issue is addressed by raising the COMM attachment point on P217178.
    - There is a COMM-Ground clearance violation between P317772 and P112131. The issue is addressed by raising the COMM attachment point on P317772.
    - There is a COMM-Ground clearance violation between P317773 and P209119. The issue is addressed by raising the COMM attachment point on P317773.
    - There is a COMM-Ground clearance violation between P317773 and P317772. The issue is addressed by raising the COMM attachment point on P317773.
    - There is a COMM-Ground clearance violation between P317773 and P815059. The issue is addressed by raising the COMM attachment point on P317773.
    - There is a COMM-Ground clearance violation between P317774 and P317775. The issue is addressed by raising the COMM attachment point on P317774.
    - There is a COMM-Ground clearance violation between P317776 and P317777. The issue is addressed by raising the COMM attachment point on P317776.
    - There is a COMM-Ground clearance violation between P317779 and P317778. The issue is addressed by raising the COMM attachment point on P317779.
    - There is a COMM-Ground clearance violation between P512326 and P512327. The issue is addressed by raising the COMM attachment point on P512326.
    - There is a COMM-Ground clearance violation between P517675 and P512329. The issue is addressed by raising the COMM attachment point on P517675.
    - There is a COMM-Ground clearance violation between P712583 and P512328. The issue is addressed by raising the COMM attachment point on P712583.
    - There is a COMM-Ground clearance violation between P712583 and P712584. The issue is addressed by raising the COMM attachment point on P712583.

- There is a SEC-COMM clearance violation between P112100 and P716621. The issue is addressed by potentially re-tensioning the secondary wire.
- There is a SEC-COMM clearance violation between P317773 and P815059. The issue is addressed by potentially re-tensioning the secondary wire.
- There is a SEC-COMM clearance violation between P512375 and P514973. The issue is addressed by potentially re-tensioning the secondary wire.
- Inadequate spacing between top and bottom crossarms on P317778.
- Top arm is failing pin spacing per crossarm check on P815059.
- No standard pins work per crossarm check for P14092.
- 5 poles are leaning more than 2 degrees: P211225, P512328, P815059, P811670, and P712584.
- There are 8 spans that need vibration dampers added to them; See Report Appendix Spreadsheet

Additional information about each individual structure and specific information regarding ground and in-span clearance violations, pole lean issues, engineer's suggested recommendations, and inconsistencies between the "as-built" and "as-designed" pole files are all detailed in the Engineer's Pole List and additional appendices.

Circuit	WO	Tier	FacilityID	Subtype	Sections	Model Name that they are in (P-P)	Review Engineer	General Comments	Asbuilt Pole Built per Design? (Y/N)	If No, Describe Descrepancies between Asbuilt Pole and Design	Asbuilt Pole passes Structural Calculations? (Y/N)	If No, Describe Calculated Structural deficiencies	Oblique Images (Y/N)	Does Structure meet Avian Protection (Y/N)	If No, what & where is the deficiency or violation	Embedment depth at or greater than 10%+2'? (Y/N)	If No, Pole height and embedment depth	If Embedment is less than 10%+2', does it meet or exceed GO95 rule 49.1-C table 6 pg IV-22	Asbuilt Pole Complies with Current SDG&E Standards? (Y/N)	If No, Describe Descrepencies between Asbuilt Pole and Current Standards	Pole Plumbness, Resultant Less than 2 deg? (Y/N)	If NO, what is the lean (ft)	Passes Wire Clearance Checks (Y/N)	If NO, list violations	Cable usage: Catenary below 4700' at 60F (Y/N)	If No, Cable type and value exceeding	Detail all Engineering Recommendations to address identified descrepancies	Finding #1	Finding #2	Finding #3	Finding #4	Finding #5	Date Received	Date Confirmed	Created By
C237	2402528	3	P112096	Distribution Pole	O	P112096-P712584	HDR/LM	Communication cables have not been transferred to new structure.	Y		Y		Y	Y		N	50' Pole; 6.85' Embedment	Y	N	Doesn't meet 10%+2	Y		Y		Y		1) No findings	TU-800					5/24/2021		[redacted]
C237	2402528	3	P112097	Distribution Pole	O	P112096-P712584	HDR/LM	Communication cables have not been transferred to new structure.	Y		Y		Y	Y		N	45' Pole; 6.15' Embedment	Y	N	Doesn't meet 10%+2	Y		N	GO95 Comm-Ground P112097-P161927	Y		1) CIPS form created	OH-459					5/24/2021		[redacted]
C237	2402528	3	P112098	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		Y			N	Dampers required for span to P161927 per OH 789	Y		Y		N	P112098-P161927, no2 AWG_SPARROW_ACSR_AW2_GCC, 4915.7' at 104.6%.	1) Add vibration dampers in span to P161927	TU-710					5/24/2021		[redacted]
C237	2402528	3	P112099	Distribution Pole	O	P112096-P712584	HDR/LM		N	Design calls for 40'-3 pole but 40'-1 was installed.	Y		Y	Y		Y			Y		Y		Y		Y		1) No findings	TU-800					5/24/2021		[redacted]
C237	2402528	3	P112100	Distribution Pole	O	P112096-P712584	HDR/LM	Communication cables have not been transferred to new structure.	Y		Y		Y	Y		Y			N	Dampers required for span to P112101 per OH 789	Y		N	GO95 Comm-Ground P112100-P112130 GO95 Comm-Ground P112100-P112101 GO95 Sec-Comm P112100-P716621	N	P112100-P112101, no2 AWG_Sover2_AWAC_GCC, 5157.8' at 109.7%.	1) Add vibration dampers in span to P112101 2) CIPS form created 3) Potentially re-tension secondary wire	TU-710	OH-459	OH-460			5/24/2021		[redacted]
C237	2402528	3	P112101	Distribution Pole	O	P112096-P712584	HDR/LM		N	Design calls for 40'-3 pole but 40'-1 was installed.	Y		Y	Y		Y			N	Dampers required for spans to P112100 and P112102 per OH 789	Y		N	GO95 Comm-Ground P112101-P112100	N	P112100-P112101, no2 AWG_Sover2_AWAC_GCC, 5157.8' at 109.7%. P112101-P112103, no2 AWG_Sover2_AWAC_GCC, 4750.3' at 101.1%.	1) Add vibration dampers in spans to P112100 and P112102 2) CIPS form created for P112100	TU-710	OH-459				5/24/2021		[redacted]
C237	2402528	3	P112102	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		Y			N	Dampers required for spans to P112101 and P112103 per OH 789	Y		Y		Y		1) Add vibration dampers in spans to P112101 and P112103	TU-710					5/24/2021		[redacted]
C237	2402528	3	P112103	Distribution Pole	O	P112096-P712584	HDR/LM	Communication cables have not been transferred to new structure.	Y		Y		Y	Y		N	45' Pole; 6.4' Embedment	Y	N	Doesn't meet 10%+2 Dampers required for span to P112102 per OH 789	Y		Y		N	P112101-P112103, no2 AWG_Sover2_AWAC_GCC, 4750.3' at 101.1%.	1) Add vibration dampers in span to P112102	TU-710					5/24/2021		[redacted]
C237	2402528	3	P204814	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		Y			Y		Y		Y		Y		1) No findings	TU-800					5/24/2021		[redacted]
C237	2402528	3	P116561	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		Y			Y		Y		Y		Y		1) No findings	TU-800					5/24/2021		[redacted]
C237	2402528	3	P512327	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		Y			Y		Y		N	GO95 Comm-Ground P512327-P512326	N	P512327-P219583, no2 AWG_Sover2_AWAC_GCC, 5640.2' at 120%	1) CIPS form created for P512326	OH-459					5/24/2021		[redacted]
C237	2402528	3	P512326	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		Y			Y		Y		N	GO95 Comm-Ground P512326-P512327	Y		1) CIPS forms created	OH-459					5/24/2021		[redacted]
C237	2402528	3	P317775	Distribution Pole	O	P112096-P712584	HDR/LM	Communication cables have not been transferred to new structure.	Y		Y		Y	Y		Y			Y		Y		N	GO95 Comm-Ground P317775-P317774	Y		1) CIPS form created for P317774	OH-459					5/24/2021		[redacted]
C237	2402528	3	P317774	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		Y			Y		Y		N	GO95 Comm-Ground P317774-P317775	Y		1) CIPS form created	OH-459					5/24/2021		[redacted]
C237	2402528	3	P209119	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		Y			Y		Y		N	GO95 Comm-Ground P209119-P317773	Y		1) CIPS form created for P317773	OH-459					5/24/2021		[redacted]
C237	2402528	3	P317773	Distribution Pole	O	P112096-P712584	HDR/LM	Communication cables have not been transferred to new structure.	Y		Y		Y	Y		N	50' Pole; 6.95' Embedment	Y	N	Doesn't meet 10%+2	Y		N	GO95 Comm-Ground P317773-P815059 GO95 Comm-Ground P317773-P209119 GO95 Comm-Ground P317773-P317772 GO95 Sec-Comm P317773-P815059	Y		1) CIPS forms created for P317772, P317773 and P815059 2) Potentially re-tension secondary wire.	OH-459	OH-460				5/24/2021		[redacted]
C237	2402528	3	P317772	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		Y			Y		Y		N	GO95 Comm-Ground P317772-P112131 GO95 Comm-Ground P317772-P317773	Y		1) CIPS forms created for P317772 and P317773	OH-459					5/24/2021		[redacted]
C237	2402528	3	P112131	Distribution Pole	O	P112096-P712584	HDR/LM	Communication cables have not been transferred to new structure.	Y		Y		Y	Y		N	50' Pole; 6.85' Embedment	Y	N	Doesn't meet 10%+2	Y		N	GO95 Comm-Ground P112131-P211223 GO95 Comm-Ground P112131-P317772	Y		1) CIPS forms created for P211223 and P317772	OH-459					5/24/2021		[redacted]
C237	2402528	3	P112130	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		Y			Y		Y		N	GO95 Comm-Ground P112130-P112100	Y		1) CIPS form created for P112100	OH-459					5/24/2021		[redacted]
C237	2402528	3	P716621	Distribution Pole	O	P112096-P712584	HDR/LM	Comm and secondary wires are no longer there in the photos so these spans were not modeled.	Y		Y		Y	Y		N	45' Pole; 6.4' Embedment	Y	N	Doesn't meet 10%+2	Y		N	GO95 Sec-Comm P716621-P112100	Y		1) Potentially re-tension secondary wire	OH-460					5/24/2021		[redacted]
C237	2402528	3	P219583	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		Y			Y		Y		Y		N	P512327-P219583, no2 AWG_Sover2_AWAC_GCC, 5640.2' at 120%	1) No findings	TU-800					5/24/2021		[redacted]
C237	2402528	3	P219584	Distribution Pole	O	P112096-P712584	HDR/LM	Communication cables have not been transferred to new structure.	Y		Y		Y	Y		N	45' Pole; 6.4' Embedment	Y	Y	Doesn't meet 10%+2	Y		Y		Y		1) No findings	TU-800					5/24/2021		[redacted]
C237	2402528	3	P211223	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		N	50' Pole; 6.85' Embedment	Y	Y	Doesn't meet 10%+2	Y		N	GO95 Comm-Ground P211223-P112131	Y		1) CIPS form created	OH-459					5/24/2021		[redacted]
C237	2402528	3	P211224	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		N	55' Pole; 7.35' Embedment	Y	N	Doesn't meet 10%+2 Dampers required for span to P211225 per OH 789	Y		Y		Y		1) Add vibration dampers in span to P211225	TU-710					5/24/2021		[redacted]
C237	2402528	3	P211225	Distribution Pole	O	P112096-P712584	HDR/LM		N	Design calls to reuse 10' arms but 12' arms were installed per obliques	Y		Y	Y		Y			Y		N	2.98'	Y		Y		1) Potentially re-plumb pole	TU-720					5/24/2021		[redacted]
C237	2402528	3	P211226	Distribution Pole	O	P112096-P712584	HDR/LM	Communication cables have not been transferred to new structure.	Y		Y		Y	Y		Y			Y		Y		Y		Y		1) No findings	TU-800					5/24/2021		[redacted]
C237	2402528	3	P211227	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		Y			Y		Y		Y		Y		1) No findings	TU-800					5/24/2021		[redacted]
C237	2402528	3	P217178	Distribution Pole	O	P112096-P712584	HDR/LM	Communication cables have not been transferred to new structure.	Y		Y		Y	Y		Y			Y		Y		N	GO95 Comm-Ground P217178-P217179	Y		1) CIPS form created	OH-459					5/24/2021		[redacted]
C237	2402528	3	P217179	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		Y			Y		Y		N	GO95 Comm-Ground P217179-P217178	Y		1) CIPS form created for P217178	OH-459					5/24/2021		[redacted]
C237	2402528	3	P419622	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		N	50' Pole; 6.8' Embedment	Y	N	Doesn't meet 10%+2	Y		Y		Y		1) No findings	TU-800					5/24/2021		[redacted]
C237	2402528	3	P317776	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		N	45' Pole; 6.2' Embedment	Y	N	Doesn't meet 10%+2	Y		N	GO95 Comm-Ground P317776-P317777	Y		1) CIPS form created	OH-459					5/24/2021		[redacted]
C237	2402528	3	P317777	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		Y			Y		Y		N	GO95 Comm-Ground P317777-P317776	Y		1) CIPS form created for P317776	OH-459					5/24/2021		[redacted]
C237	2402528	3	P317778	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		Y			Y		Y		N	GO95 Comm-Ground P317778-P317779 Top and bottom crossarm do not meet 4' seperation requirement.	Y		1) Potentially lower bottom crossarm to meet clearance requirements 2) CIPS form created for P317779	PC-902	OH-459				5/24/2021		[redacted]
C237	2402528	3	P317779	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		Y			Y		Y		N	GO95 Comm-Ground P317779-P317778	Y		1) CIPS form created	OH-459					5/24/2021		[redacted]
C237	2402528	3	P512375	Distribution Pole	O	P112096-P712584	HDR/LM	Communication cables have not been transferred to new structure.	Y		Y		Y	Y		N	50' Pole; 6.7' Embedment	Y	N	Doesn't meet 10%+2	Y		N	GO95 Sec-Comm P512375-P514973	Y		1) Potentially re-tension secondary wire	OH-459					5/24/2021		[redacted]
C237	2402528	3	P517675	Distribution Pole	O	P112096-P712584	HDR/LM	Communication cables have not been transferred to new structure.	Y		Y		Y	Y		N	50' Pole; 6.8' Embedment	Y	N	Doesn't meet 10%+2	Y		N	GO95 Comm-Ground P517675-P512329	Y		1) CIPS form created	OH-459					5/24/2021		[redacted]
C237	2402528	3	P512329	Distribution Pole	O	P112096-P712584	HDR/LM	Communication cables have not been transferred to new structure.	Y		Y		Y	Y		N	50' Pole; 6.5' Embedment	Y	N	Doesn't meet 10%+2	Y		N	GO95 Comm-Ground P512329-P517675	Y		1) CIPS form created for P517675	OH-459					5/24/2021		[redacted]
C237	2402528	3	P512328	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		Y			N	Dampers required for span to P512327 per OH 789	N	1.69'	N	GO95 Comm-Ground P512328-P712583	Y		1) Add vibration dampers in spans to P512327 2) Potentially re-plumb pole 3) CIPS form created for P712583	TU-710	TU-720	OH-459			5/24/2021		[redacted]
C237	2402528	3	P712583	Distribution Pole	O	P112096-P712584	HDR/LM	Communication cables have not been transferred to new structure.	Y		Y		Y	Y		Y			Y		Y		N	GO95 Comm-Ground P712583-P512328 GO95 Comm-Ground P712583-P712584	Y		1) CIPS form created	OH-459					5/24/2021		[redacted]
C237	2402528	3	P2545195	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		Y			Y		Y		Y		Y		1) No findings	TU-800					5/24/2021		[redacted]
C237	2402528	3	P169424	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		Y			Y		Y		Y		Y		1) No findings	TU-800					5/24/2021		[redacted]
C237	2402528	3	P14092 - REF ONLY	Distribution Pole	O	P112096-P712584	HDR/LM		Y		N	No standard pins work for top arm per crossarm spreadsheet.	Y	Y		Y			Y		Y		Y		Y		1) Change top crossarm to DE to mitigate failing pins.	PC-902					5/24/2021		[redacted]
C237	2402528	3	P161927 - REF ONLY	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		N	45' Pole; 5.05' Embedment	N	N	Doesn't meet 10%+2 or GO95 Dampers required for span to P112098 per OH 789	Y		N	GO95 Comm-Ground P161927-P112097	N	P112098-P161927, no2 AWG_SPARROW_ACSR_AW2_GCC, 4915.7' at 104.6%.	1) Pole experiences light loading and minor pole lean. Investigate soil conditions 2) Add vibration dampers in spans to P112098 3) CIPS form created for P112097	TU-740	TU-710	OH-459			5/24/2021		[redacted]
C237	2402528	3	P816324 - REF ONLY	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		Y			Y		Y		Y		Y		1) No findings	TU-800					5/24/2021		[redacted]
C237	2402528	3	P246652 - REF ONLY	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		N	50' Pole; 6.75' Embedment	Y	N	Doesn't meet 10%+2	Y		Y		Y		1) No findings	TU-800					5/24/2021		[redacted]
C237	2402528	3	P815059 - REF ONLY	Distribution Pole	O	P112096-P712584	HDR/LM		Y		N	Requires 12' arm per crossarm check.	Y	Y		Y			Y		N	2.26'	N	GO95 Comm-Ground P815059-P317773 GO95 Sec-Comm P815059-P317773	Y		1) Convert to delta configuration to meet pin spacing requirements. 2) Potentially re-plumb pole 3) CIPS form created for P317773 4) Potentially re-tension secondary wire.	PC-902	TU-720	OH-459	OH-460		5/24/2021		[redacted]
C237	2402528	3	P811670 - REF ONLY	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		N	45' Pole; 5.7' Embedment	N	N	Doesn't meet 10%+2 or GO95	N	1.85'	Y		Y		1) Pole experiences light loading and minor pole lean. Investigate soil conditions 2) Potentially re-plumb pole	TU-740	TU-720				5/24/2021		[redacted]
C237	2402528	3	P712584 - REF ONLY	Distribution Pole	O	P112096-P712584	HDR/LM		Y		Y		Y	Y		Y			N	Dampers required for span to P712583 per OH 789	N	2.74'	N	GO95 Comm-Ground P712584-P712583	Y		1) Add vibration dampers in spans to P712583 2) Potentially re-plumb pole 3) CIPS form created for P712583	TU-710	TU-720	OH-459			5/24/2021		[redacted]

Fiberglass Arm Loading

Project Description: C237O True-Up
DPSS: 2402528 **WO:** 2402528
PLS Analyst: HDR
Date: 7/23/2021

Crossarm Inputs

PLS Structure Number	Pole Number	At Installation/At Replacement	Pole Material	Arm Material	Length	Arm Type	# of Wires	Dist. Only or Underbuild?	Try Angle Pins?	Force Double Arm Check?	Ruling Span	Ruling Span Sag	Arm Take-Off Angle	Controlling Span	Minimum Required Arm Length
P112096	P112096	At Replacement	Steel	Fiberglass	10'	DE	2	Dist. Only	No	No	87.3	6.16	17.9	87.3	6' Fiberglass
P112096B	P112096B	At Replacement	Steel	Fiberglass	10'	DE	2	Dist. Only	No	No	288	8.15	28.2	288	6' Fiberglass
P112097	P112097	At Replacement	Steel	Fiberglass	10'	Tan	3	Dist. Only	No	No	288	8.15	3.9	288	8' Fiberglass
P112098	P112098	At Replacement	Steel	Fiberglass	10'	Tan	3	Dist. Only	No	No	284.7	7.4	0.5	284.7	8' Fiberglass
P112098B	P112098B	At Replacement	Steel	Fiberglass	10'	DE	2	Dist. Only	No	No	282.4	5.02	0.1	282.4	6' Fiberglass
P112099	P112099	At Replacement	Steel	Fiberglass	10'	Tan	3	Dist. Only	No	No	289.6	7.54	1.9	289.6	8' Fiberglass
P112100	P112100	At Replacement	Steel	Fiberglass	10'	DE	2	Dist. Only	No	No	289.6	7.54	3.1	289.6	6' Fiberglass
P112100B	P112100B	At Replacement	Steel	Fiberglass	10'	Tan	3	Dist. Only	No	Yes	288.1	5.09	0.7	288.1	8' Fiberglass
P112101	P112101	At Replacement	Steel	Fiberglass	10'	DE	2	Dist. Only	No	No	266.4	4.73	1.7	266.4	6' Fiberglass
P112102	P112102	At Replacement	Steel	Fiberglass	10'	Tan	2	Dist. Only	No	No	268.7	5.95	1.9	268.7	6' Fiberglass
P112103	P112103	At Replacement	Steel	Fiberglass	10'	DE	2	Dist. Only	No	No	268.7	5.95	0.2	268.7	6' Fiberglass
P112130	P112130	At Replacement	Steel	Fiberglass	10'	Tan	3	Dist. Only	No	No	288.1	5.09	0.2	288.1	8' Fiberglass
P112131	P112131	At Replacement	Steel	Fiberglass	10'	Tan	3	Dist. Only	No	No	340.6	7.34	1.2	340.6	8' Fiberglass
P112131B	P112131B	At Replacement	Steel	Fiberglass	10'	DE	3	Dist. Only	No	No	100	3.86	3.5	100	8' Fiberglass
P116561	P116561	At Replacement	Steel	Fiberglass	10'	DE	2	Dist. Only	No	No	214.3	5.23	0.2	214.3	6' Fiberglass

Crossarm Results

PLS Number	Pole Number	Will Selected Arm Work?	Arm Description	Max. Percent Usage:	Vertical Load (lb)	Transverse Load (lb)	Horizontal Load (lb)	Max Uplift (lbs)	Min. Pin Spacing	Comments
P112096	P112096	**Yes, Single Arm**	**10' DE FG**	**1.55%**	6	22	116	5	24.6	
P112096B	P112096B	**Yes, Single Arm**	**10' DE FG**	**18.27%**	62	-478	-635	26	30.0	
P112097	P112097	**Yes, Single Arm**	**10' Tan FG w/ Straight Pins**	**13.76%**	-11	156	-124	-11	26.5	
P112098	P112098	**Yes, Single Arm**	**10' Tan FG w/ Straight Pins**	**11.30%**	56	-159	-47	40	25.4	
P112098B	P112098B	**Yes, Single Arm**	**10' DE FG**	**8.43%**	-44	45	-846	-58	21.5	
P112099	P112099	**Yes, Single Arm**	**10' Tan FG w/ Straight Pins**	**8.17%**	-14	152	-32	-18	25.6	
P112100	P112100	**Yes, Single Arm**	**10' DE FG**	**20.00%**	46	737	-34	0	25.6	See criteria notes
P112100B	P112100B	**Yes, Double Arms**	**10' Tan FG w/ Straight Pins**	**20.38%**	32	-119	-478	-18	21.7	See criteria notes
P112101	P112101	**Yes, Single Arm**	**10' DE FG**	**4.48%**	13	140	85	0	21.0	
P112102	P112102	**Yes, Single Arm**	**10' Tan FG w/ Straight Pins**	**7.84%**	-12	-131	53	-15	23.1	
P112103	P112103	**Yes, Single Arm**	**10' DE FG**	**12.05%**	113	75	999	33	23.1	
P112130	P112130	**Yes, Single Arm**	**10' Tan FG w/ Straight Pins**	**13.07%**	48	-128	-101	37	21.6	
P112131	P112131	**Yes, Single Arm**	**10' Tan FG w/ Straight Pins**	**11.73%**	55	152	-59	42	25.3	
P112131B	P112131B	**Yes, Single Arm**	**10' DE FG**	**29.23%**	-8	-1	327	-8	19.4	
P116561	P116561	**Yes, Single Arm**	**10' DE FG**	**7.99%**	28	58	795	16	21.9	

NOTE:

Fiberglass Arm Loading

Project Description: C237O True-Up
DPSS: 2402528 **WO:** 2402528
PLS Analyst: HDR
Date: 7/23/2021

Crossarm Inputs

PLS Structure Number	Pole Number	At Installation/At Replacement	Pole Material	Arm Material	Length	Arm Type	# of Wires	Dist. Only or Underbuild?	Try Angle Pins?	Force Double Arm Check?	Ruling Span	Ruling Span Sag	Arm Take-Off Angle	Controlling Span	Minimum Required Arm Length
P14092 - REF ONLY	P14092 - REF ONLY	At Replacement	Steel	Fiberglass	10'	Tan	3	Dist. Only	No	Yes	342.71	6.43	1.2	342.71	8' Fiberglass
P14092 - REF ONLY	P14092 - REF ONLYB	At Replacement	Steel	Fiberglass	10'	DE	3	Dist. Only	No	No	87.31	6.16	17.8	87.31	8' Fiberglass
P161927 - REF ONL	P161927 - REF ONLY	At Replacement	Wood	Wood	10'	DE	2	Dist. Only	No	Yes	282.44	4.99	11.9	282.44	6' Wood
P204814	P204814	At Replacement	Steel	Fiberglass	10'	Tan	3	Dist. Only	No	No	214.28	5.24	1.8	214.28	8' Fiberglass
P209119	P209119	At Replacement	Steel	Fiberglass	10'	Tan	3	Dist. Only	No	No	182.09	2.32	1.3	182.09	8' Fiberglass
P211223	P211223	At Replacement	Steel	Fiberglass	12'	DE	3	Dist. Only	No	No	333.5	9.3	5.3	333.5	8' Fiberglass
P211224	P211224	At Replacement	Steel	Fiberglass	10'	DE	2	Dist. Only	No	No	333.5	9.3	2	333.5	6' Fiberglass
P211225	P211225	At Replacement	Steel	Fiberglass	12'	DE	2	Dist. Only	No	No	380.34	10.34	1.8	380.34	6' Fiberglass
P211225B	P211225B	At Replacement	Steel	Fiberglass	12'	DE	2	Dist. Only	No	No	154.7	2.68	0.3	154.7	6' Fiberglass
P211226	P211226	At Replacement	Steel	Fiberglass	10'	DE	2	Dist. Only	No	No	235.2	4.23	0.5	235.2	6' Fiberglass
P211227	P211227	At Replacement	Steel	Fiberglass	10'	Tan	2	Dist. Only	No	No	263.5	6.76	2.8	263.5	6' Fiberglass
P211227B	P211227B	At Replacement	Steel	Fiberglass	10'	DE	2	Dist. Only	No	No	86.9	4.29	-73	86.9	8' Fiberglass
P217178	P217178	At Replacement	Steel	Fiberglass	10'	Tan	2	Dist. Only	No	No	263.5	6.76	0.5	263.5	6' Fiberglass
P217179	P217179	At Replacement	Steel	Fiberglass	10'	DE	2	Dist. Only	No	No	257.2	6.57	1.6	257.2	6' Fiberglass
P219583	P219583	At Replacement	Steel	Fiberglass	10'	DE	3	Dist. Only	No	Yes	383.9	9.86	1.4	383.9	8' Fiberglass

Crossarm Results

PLS Number	Pole Number	Will Selected Arm Work?	Arm Description	Max. Percent Usage:	Vertical Load (lb)	Transverse Load (lb)	Horizontal Load (lb)	Max Uplift (lbs)	Min. Pin Spacing	Comments
P14092 - REF ONLY	P14092 - REF ONLY	**Yes, Double Arms**	**10' Tan FG w/ Straight Pins**	**84.15%**	-15	-2057	268	-44	23.9	No Standard Pins Work!
P14092 - REF ONLY	P14092 - REF ONLYB	**Yes, Single Arm**	**10' DE FG**	**10.60%**	4	22	112	3	24.6	
P161927 - REF ONL	P161927 - REF ONLY	**Yes**	**10' Dbl. Wood DE**	**50.53%**	27	-75	857	17	21.9	
P204814	P204814	**Yes, Single Arm**	**10' Tan FG w/ Straight Pins**	**10.58%**	78	78	67	27	21.9	
P209119	P209119	**Yes, Single Arm**	**10' Tan FG w/ Straight Pins**	**7.96%**	-50	82	43	-53	18.0	
P211223	P211223	**Yes, Single Arm**	**12' DE FG**	**83.57%**	12	77	-918	0	28.1	
P211224	P211224	**Yes, Single Arm**	**10' DE FG**	**9.93%**	43	94	885	0	28.0	
P211225	P211225	**Yes, Single Arm**	**12' DE FG**	**23.11%**	2	-795	-277	2	29.3	
P211225B	P211225B	**Yes, Single Arm**	**12' DE FG**	**16.28%**	-29	-317	-697	-30	18.0	
P211226	P211226	**Yes, Single Arm**	**10' DE FG**	**12.74%**	94	-73	1165	27	20.1	
P211227	P211227	**Yes, Single Arm**	**10' Tan FG w/ Straight Pins**	**6.84%**	18	-139	22	12	24.4	
P211227B	P211227B	**Yes, Single Arm**	**10' DE FG**	**2.37%**	-10	51	114	-10	69.0	
P217178	P217178	**Yes, Single Arm**	**10' Tan FG w/ Straight Pins**	**8.84%**	65	132	32	39	24.4	
P217179	P217179	**Yes, Single Arm**	**10' DE FG**	**8.17%**	39	69	744	21	24.1	
P219583	P219583	**Yes, Double Arms**	**10' DE FG**	**8.36%**	12	-90	-128	8	28.7	

NOTE:

Fiberglass Arm Loading

Project Description: C237O True-Up
DPSS: 2402528 **WO:** 2402528
PLS Analyst: HDR
Date: 7/23/2021

Crossarm Inputs

PLS Structure Number	Pole Number	At Installation/At Replacement	Pole Material	Arm Material	Length	Arm Type	# of Wires	Dist. Only or Underbuild?	Try Angle Pins?	Force Double Arm Check?	Ruling Span	Ruling Span Sag	Arm Take-Off Angle	Controlling Span	Minimum Required Arm Length
P219584	P219584	At Replacement	Steel	Fiberglass	10'	DE	2	Dist. Only	No	No	383.9	9.86	2.6	383.9	6' Fiberglass
P219584B	P219584B	At Replacement	Steel	Fiberglass	10'	DE	3	Dist. Only	No	No	96.5	6.53	6.4	96.5	8' Fiberglass
P246652 - REF ONLY	P246652 - REF ONLY	At Replacement	Wood	Fiberglass	10'	DE	2	Dist. Only	No	No	183.8	4.38	33.2	183.8	6' Fiberglass
P317772	P317772	At Replacement	Steel	Fiberglass	10'	Tan	3	Dist. Only	No	No	337.1	7.57	2.9	337.1	8' Fiberglass
P317773	P317773	At Replacement	Steel	Fiberglass	10'	Tan	3	Dist. Only	No	No	337.1	7.57	2.1	337.1	8' Fiberglass
P317773B	P317773B	At Replacement	Steel	Fiberglass	10'	DE	3	Dist. Only	No	No	98.4	5.96	6.3	98.4	8' Fiberglass
P317774	P317774	At Replacement	Steel	Fiberglass	10'	Tan	3	Dist. Only	No	No	336.7	8.39	2.3	336.7	8' Fiberglass
P317774B	P317774B	At Replacement	Steel	Fiberglass	10'	DE	3	Dist. Only	No	No	101.9	6.75	12.7	101.9	8' Fiberglass
P317775	P317775	At Replacement	Steel	Fiberglass	10'	Tan	3	Dist. Only	No	No	336.7	8.39	4.2	336.7	8' Fiberglass
P317775B	P317775B	At Replacement	Steel	Fiberglass	10'	DE	3	Dist. Only	No	No	218.6	5.17	1.1	218.6	8' Fiberglass
P317776	P317776	At Replacement	Steel	Fiberglass	10'	Tan	3	Dist. Only	No	No	239.81	5.98	2.6	239.81	8' Fiberglass
P317777	P317777	At Replacement	Steel	Fiberglass	10'	Tan	3	Dist. Only	No	No	254.2	6.71	1.4	254.2	8' Fiberglass
P317778	P317778	At Replacement	Steel	Fiberglass	10'	DE	2	Dist. Only	No	No	254.2	6.71	0.3	254.2	6' Fiberglass
P317778B	P317778B	At Replacement	Steel	Fiberglass	10'	DE	2	Dist. Only	No	No	176.91	7.6	1.4	176.91	6' Fiberglass
P317779	P317779	At Replacement	Steel	Fiberglass	10'	DE	2	Dist. Only	No	No	176.91	7.6	0.2	176.91	6' Fiberglass

Crossarm Results

PLS Number	Pole Number	Will Selected Arm Work?	Arm Description	Max. Percent Usage:	Vertical Load (lb)	Transverse Load (lb)	Horizontal Load (lb)	Max Uplift (lbs)	Min. Pin Spacing	Comments
P219584	P219584	**Yes, Single Arm**	**10' DE FG**	**12.34%**	41	154	-1014	27	28.8	See criteria notes
P219584B	P219584B	**Yes, Single Arm**	**10' DE FG**	**7.84%**	3	-26	-80	1	24.2	See criteria notes
P246652 - REF ONLY	P246652 - REF ONLY	**Yes, Single Arm**	**10' DE FG**	**14.96%**	-52	-291	-414	-52	24.3	
P317772	P317772	**Yes, Single Arm**	**10' Tan FG w/ Straight Pins**	**9.77%**	3	-170	-56	2	25.6	
P317773	P317773	**Yes, Single Arm**	**10' Tan FG w/ Straight Pins**	**12.90%**	104	-133	52	46	25.6	
P317773B	P317773B	**Yes, Single Arm**	**10' DE FG**	**11.00%**	7	-37	111	7	23.3	
P317774	P317774	**Yes, Single Arm**	**10' Tan FG w/ Straight Pins**	**14.54%**	57	-110	-129	36	26.8	
P317774B	P317774B	**Yes, Single Arm**	**10' DE FG**	**10.45%**	-2	54	-102	-3	25.0	
P317775	P317775	**Yes, Single Arm**	**10' Tan FG w/ Straight Pins**	**10.90%**	34	138	-70	33	26.8	
P317775B	P317775B	**Yes, Single Arm**	**10' DE FG**	**22.51%**	-51	76	-212	-64	21.8	
P317776	P317776	**Yes, Single Arm**	**10' Tan FG w/ Straight Pins**	**11.77%**	82	-77	84	32	23.2	
P317777	P317777	**Yes, Single Arm**	**10' Tan FG w/ Straight Pins**	**9.23%**	34	124	-51	32	24.3	
P317778	P317778	**Yes, Single Arm**	**10' DE FG**	**17.09%**	22	494	557	17	24.3	
P317778B	P317778B	**Yes, Single Arm**	**10' DE FG**	**8.65%**	5	-293	155	5	25.7	
P317779	P317779	**Yes, Single Arm**	**10' DE FG**	**4.07%**	19	48	325	13	25.7	

NOTE:

Fiberglass Arm Loading

Project Description: C237O True-Up
DPSS: 2402528 **WO:** 2402528
PLS Analyst: HDR
Date: 7/23/2021

Crossarm Inputs

PLS Structure Number	Pole Number	At Installation/At Replacement	Pole Material	Arm Material	Length	Arm Type	# of Wires	Dist. Only or Underbuild?	Try Angle Pins?	Force Double Arm Check?	Ruling Span	Ruling Span Sag	Arm Take-Off Angle	Controlling Span	Minimum Required Arm Length
P419622	P419622	At Replacement	Steel	Fiberglass	10'	DE	2	Dist. Only	No	No	218.6	5.17	0.2	218.6	6' Fiberglass
P512326	P512326	At Replacement	Steel	Fiberglass	10'	Tan	3	Dist. Only	No	No	305.1	7.56	3.1	305.1	8' Fiberglass
P512327	P512327	At Replacement	Steel	Fiberglass	10'	DE	3	Dist. Only	No	Yes	305.1	7.56	1.3	305.1	8' Fiberglass
P512328	P512328	At Replacement	Steel	Fiberglass	10'	DE	2	Dist. Only	No	No	187.8	4.18	1.4	187.8	6' Fiberglass
P512328B	P512328B	At Replacement	Steel	Fiberglass	10'	DE	2	Dist. Only	No	No	96.2	5.59	3.3	96.2	6' Fiberglass
P512329	P512329	At Replacement	Steel	Fiberglass	10'	DE	2	Dist. Only	No	No	232.8	6.54	0.3	232.8	6' Fiberglass
P512375	P512375	At Replacement	Steel	Fiberglass	10'	DE	2	Dist. Only	No	No	124.59	2.02	1.7	124.59	6' Fiberglass
P517675	P517675	At Replacement	Steel	Fiberglass	10'	Tan	3	Dist. Only	No	No	232.8	6.54	1.1	232.8	8' Fiberglass
P712583	P712583	At Replacement	Steel	Fiberglass	10'	DE	2	Dist. Only	No	No	350	11.23	29.5	350	6' Fiberglass
?712584 - REF ONL	P712584 - REF ONLY	At Replacement	Wood	Fiberglass	6'	Tan	2	Dist. Only	No	No	350	11.23	0.6	350	6' Fiberglass
P716621	P716621	At Replacement	Steel	Fiberglass	10'	Tan	3	Dist. Only	No	No	217.5	3.99	2.1	217.5	8' Fiberglass
?811670 - REF ONL	P811670 - REF ONLY	At Replacement	Wood	Wood	10'	DE	3	Dist. Only	No	Yes	259.1	9.18	17.5	259.1	10' Wood
?815059 - REF ONL	P815059 - REF ONLY	At Replacement	Steel	Fiberglass	10'	DE	3	Dist. Only	No	No	352.2	9.87	18	352.2	12' Fiberglass
?816324 - REF ONL	P816324 - REF ONLY	At Replacement	Wood	Wood	10'	DE	3	Dist. Only	No	Yes	253.9	7.86	11.1	253.9	8' Wood

Crossarm Results

PLS Number	Pole Number	Will Selected Arm Work?	Arm Description	Max. Percent Usage:	Vertical Load (lb)	Transverse Load (lb)	Horizontal Load (lb)	Max Uplift (lbs)	Min. Pin Spacing	Comments
P419622	P419622	**Yes, Single Arm**	**10' DE FG**	**8.76%**	38	50	-894	18	21.8	
P512326	P512326	**Yes, Single Arm**	**10' Tan FG w/ Straight Pins**	**8.61%**	28	133	-40	28	25.6	
P512327	P512327	**Yes, Double Arms**	**10' DE FG**	**8.02%**	7	87	-126	7	25.6	
P512328	P512328	**Yes, Single Arm**	**10' DE FG**	**25.22%**	-6	-940	-185	-6	20.0	See criteria notes
P512328B	P512328B	**Yes, Single Arm**	**10' DE FG**	**5.18%**	-3	157	-157	-3	22.6	See criteria notes
P512329	P512329	**Yes, Single Arm**	**10' DE FG**	**12.29%**	68	174	846	50	24.1	
P512375	P512375	**Yes, Single Arm**	**10' DE FG**	**11.20%**	22	91	-1141	9	18.0	
P517675	P517675	**Yes, Single Arm**	**10' Tan FG w/ Straight Pins**	**14.44%**	72	-148	-93	55	24.1	
P712583	P712583	**Yes, Single Arm**	**10' DE FG**	**14.22%**	33	357	-599	0	34.9	
?712584 - REF ONL	P712584 - REF ONLY	**Yes, Single Arm**	**6' Tan FG w/ Straight Pins**	**32.34%**	35	103	761	25	30.4	
P716621	P716621	**Yes, Single Arm**	**10' Tan FG w/ Straight Pins**	**14.38%**	43	-92	-148	28	19.6	
?811670 - REF ONL	P811670 - REF ONLY	**Yes**	**10' Dbl. Wood DE**	**39.92%**	52	21	-483	0	29.2	
?815059 - REF ONL	P815059 - REF ONLY	**Yes, Single Arm**	**10' DE FG**	**77.88%**	14	186	-822	14	30.2	
?816324 - REF ONL	P816324 - REF ONLY	**Yes**	**10' Dbl. Wood DE**	**39.92%**	52	21	-483	-22	26.5	

NOTE:

Appendix C - Pole Plumb Calculations							
Model	Structure	Pole Lean resultant (DEG)	Pole Lean Resultant based on STD Embedment (ft)	Percent Pole Lean based on AGH	Deg about X	Deg about Y	Pole Height (ft)
C237O	P112096	1.67	0.99	2.92%	-1.44	-0.85	40
C237O	P112097	1.23	0.82	2.14%	1.13	-0.47	45
C237O	P112098	0.90	0.60	1.56%	0.88	0.17	45
C237O	P112099	0.00	0.00	0.00%	0.00	0.00	40
C237O	P112100	0.64	0.38	1.11%	-0.14	0.62	40
C237O	P112101	0.59	0.39	1.02%	0.08	0.58	45
C237O	P112102	0.43	0.29	0.75%	-0.09	0.42	45
C237O	P112103	1.23	0.83	2.15%	-1.22	-0.16	45
C237O	P112130	1.08	0.81	1.88%	-1.08	0.04	50
C237O	P112131	1.34	1.01	2.34%	1.33	0.16	50
C237O	P116561	1.12	0.75	1.95%	-1.11	-0.15	45
C237O	P14092 - REF ONLY	0.41	0.31	0.72%	-0.38	0.16	50
C237O	P161927 - REF ONLY	1.26	0.85	2.20%	0.85	-0.93	45
C237O	P204814	0.33	0.22	0.57%	0.30	-0.13	45
C237O	P209119	0.82	0.49	1.44%	0.46	-0.68	40
C237O	P211223	1.05	0.79	1.84%	0.09	-1.05	50
C237O	P211224	1.08	0.89	1.88%	-0.82	-0.70	55
C237O	P211225	3.28	2.98	5.72%	-1.48	2.93	60
C237O	P211226	0.86	0.58	1.50%	0.25	-0.83	45
C237O	P211227	0.32	0.24	0.56%	-0.31	0.07	50
C237O	P217178	0.65	0.49	1.14%	0.31	0.57	50
C237O	P217179	0.42	0.32	0.74%	-0.03	0.42	50
C237O	P219583	0.23	0.16	0.40%	0.06	0.22	45
C237O	P219584	1.23	0.83	2.15%	1.23	-0.09	45
C237O	P246652 - REF ONLY	0.52	0.39	0.90%	-0.42	0.30	50
C237O	P317772	0.80	0.54	1.39%	0.71	0.36	45
C237O	P317773	0.36	0.27	0.62%	0.35	-0.05	50
C237O	P317774	0.38	0.25	0.66%	-0.21	-0.32	45
C237O	P317775	1.23	0.82	2.14%	-0.39	-1.16	45
C237O	P317776	0.08	0.06	0.14%	-0.02	-0.08	45
C237O	P317777	0.58	0.39	1.01%	-0.21	0.54	45
C237O	P317778	1.11	0.75	1.94%	0.84	0.73	45
C237O	P317779	0.00	0.00	0.00%	0.00	0.00	45
C237O	P419622	0.59	0.45	1.04%	0.35	0.48	50
C237O	P512326	1.58	1.06	2.76%	0.41	-1.53	45
C237O	P512327	0.94	0.63	1.64%	0.47	-0.81	45
C237O	P512328	2.52	1.69	4.39%	-2.35	0.90	45
C237O	P512329	0.49	0.37	0.85%	-0.48	-0.10	50
C237O	P512375	0.00	0.00	0.00%	0.00	0.00	50
C237O	P517675	0.55	0.41	0.96%	0.47	0.29	50
C237O	P712583	0.91	0.61	1.59%	0.62	-0.66	45
C237O	P712584 - REF ONLY	4.08	2.74	7.12%	0.07	4.08	45
C237O	P716621	0.34	0.23	0.60%	-0.03	-0.34	45
C237O	P811670 - REF ONLY	2.91	1.95	5.08%	-1.55	-2.46	45
C237O	P815059 - REF ONLY	3.01	2.26	5.26%	3.01	-0.22	50
C237O	P816324 - REF ONLY	1.37	0.92	2.40%	1.21	0.65	45

Appendix D - Maximum Pole Utilizations By Weather Case		
Pole	**Weather Case**	**Maximum Utilzation (%)**
P112096	KNOWN LOCAL WIND LIGHT GRD A 85- AT REPLACEMENT,T NA-	54.3
P112097	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	47.5
P112098	KNOWN LOCAL WIND LIGHT GRD A 85- AT REPLACEMENT,T NA-	24.7
P112099	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	23.1
P112100	KNOWN LOCAL WIND LIGHT GRD A 85- AT REPLACEMENT,T NA-	35
P112101	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	23.2
P112102	KNOWN LOCAL WIND LIGHT GRD A 85- AT REPLACEMENT,T NA-	22.5
P112103	KNOWN LOCAL WIND LIGHT GRD A 85- AT REPLACEMENT,T NA-	27.5
P112130	KNOWN LOCAL WIND LIGHT GRD A 85- AT REPLACEMENT,T NA-	36
P112131	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	50
P116561	KNOWN LOCAL WIND LIGHT GRD A 85- AT REPLACEMENT,T NA-	46.8
P14092 - REF ONLY	KNOWN LOCAL WIND LIGHT GRD A 85- AT REPLACEMENT,T NA-	37.1
P161927 - REF ONLY	GO95LT GRD A+ AT REPLACEMENT,S NA+	63.8
P204814	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	53.7
P209119	KNOWN LOCAL WIND LIGHT GRD A 85- AT REPLACEMENT,T NA-	20.6
P211223	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	64.9
P211224	KNOWN LOCAL WIND LIGHT GRD A 85- AT REPLACEMENT,T NA-	49.1
P211225	KNOWN LOCAL WIND LIGHT GRD A 85- AT REPLACEMENT,T NA-	63.2
P211226	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	39.6
P211227	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	42.7
P217178	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	41.2
P217179	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	50.2
P219583	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	51.9
P219584	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	47.2
P246652 - REF ONLY	KNOWN LOCAL WIND LIGHT GRD A 85- AT REPLACEMENT,T NA-	26.1
P317772	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	34
P317773	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	47.5
P317774	KNOWN LOCAL WIND LIGHT GRD A 85- AT REPLACEMENT,T NA-	41.9
P317775	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	40.9
P317776	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	37.2
P317777	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	39.8
P317778	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	44.8
P317779	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	37.9
P419622	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	47.1
P512326	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	41
P512327	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	28.8
P512328	KNOWN LOCAL WIND LIGHT GRD A 85- AT REPLACEMENT,T NA-	44
P512329	KNOWN LOCAL WIND LIGHT GRD A 85- AT REPLACEMENT,T NA-	70.8
P512375	KNOWN LOCAL WIND LIGHT GRD A 85- AT REPLACEMENT,T NA-	55.3
P517675	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	79.2
P712583	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	67.1
P712584 - REF ONLY	KNOWN LOCAL WIND LIGHT GRD A 85- AT REPLACEMENT,T NA-	67.8
P716621	KNOWN LOCAL WIND LIGHT GRD A 85- AT REPLACEMENT,T NA-	38.8
P811670 - REF ONLY	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	57.9
P815059 - REF ONLY	KNOWN LOCAL WIND LIGHT GRD A 85+ AT REPLACEMENT,T NA+	37.2
P816324 - REF ONLY	KNOWN LOCAL WIND LIGHT GRD A 85- AT REPLACEMENT,T NA-	55.4

Appendix E - Section Usage

Row #	Sec No.	Cable Name	From Str. No.	To Str. No.	Weather Case Description	Condition	Actual Catenary (ft)	% of Allowable Capacity	OK or NG.
	1	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P14092 - REF ONLY	P112096	GO95 Light	Initial FE	206.5	1.6	OK
	1	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P14092 - REF ONLY	P112096	Known Local Wind Light 85	Creep FE	223.7	3.6	OK
	1	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P14092 - REF ONLY	P112096	60	Creep FE	174.5	3.7	OK *
	2	1.5 in telephone.graphsag.wir	P14092 - REF ONLY	P169424	GO95 Light	Initial FE	1329.8	33.6	OK
	2	1.5 in telephone.graphsag.wir	P14092 - REF ONLY	P169424	Known Local Wind Light 85	Creep FE	696	36.1	OK
	2	1.5 in telephone.graphsag.wir	P14092 - REF ONLY	P169424	60	Creep FE	2028.1	55.8	OK *
	3	.5 in telephone.graphsag.wir	P14092 - REF ONLY	P169424	GO95 Light	Initial FE	4338.1	39.8	OK
	3	.5 in telephone.graphsag.wir	P14092 - REF ONLY	P169424	Known Local Wind Light 85	Creep FE	1288.4	25.4	OK
	3	.5 in telephone.graphsag.wir	P14092 - REF ONLY	P169424	60	Creep FE	2965.9	63.1	OK *
	4	.5 in telephone.graphsag.wir	P14092 - REF ONLY	P112096	GO95 Light	Initial FE	704	6.5	OK
	4	.5 in telephone.graphsag.wir	P14092 - REF ONLY	P112096	Known Local Wind Light 85	Creep FE	900.5	17.8	OK *
	4	.5 in telephone.graphsag.wir	P14092 - REF ONLY	P112096	60	Creep FE	414.2	8.8	OK
	5	.5 in telephone.graphsag.wir	P14092 - REF ONLY	P169424	GO95 Light	Initial FE	615.2	5.7	OK
	5	.5 in telephone.graphsag.wir	P14092 - REF ONLY	P169424	Known Local Wind Light 85	Creep FE	509.5	10.1	OK
	5	.5 in telephone.graphsag.wir	P14092 - REF ONLY	P169424	60	Creep FE	531.3	11.3	OK *
	6	.5 in telephone.graphsag.wir	P14092 - REF ONLY	P169424	GO95 Light	Initial FE	1395	12.8	OK
	6	.5 in telephone.graphsag.wir	P14092 - REF ONLY	P169424	Known Local Wind Light 85	Creep FE	785	15.5	OK
	6	.5 in telephone.graphsag.wir	P14092 - REF ONLY	P169424	60	Creep FE	920	19.6	OK *
	7	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P112096	P112100	GO95 Light	Initial FE	2946.7	22.1	OK
	7	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P112096	P112100	Known Local Wind Light 85	Creep FE	1787.7	28.3	OK
	7	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P112096	P112100	60	Creep FE	3122.3	66.4	OK *
	8	.5 in telephone.graphsag.wir	P112096	P112097	GO95 Light	Initial FE	1496.3	13.8	OK
	8	.5 in telephone.graphsag.wir	P112096	P112097	Known Local Wind Light 85	Creep FE	1315.3	26.1	OK
	8	.5 in telephone.graphsag.wir	P112096	P112097	60	Creep FE	1469.1	31.3	OK *
	9	.5 in telephone.graphsag.wir	P112097	P161927 - REF ONLY	GO95 Light	Initial FE	2155.7	19.9	OK
	9	.5 in telephone.graphsag.wir	P112097	P161927 - REF ONLY	Known Local Wind Light 85	Creep FE	1755.8	34.8	OK
	9	.5 in telephone.graphsag.wir	P112097	P161927 - REF ONLY	60	Creep FE	2344	49.9	OK *
	10	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P112098	P116561	GO95 Light	Initial FE	3605.1	26.9	OK
	10	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P112098	P116561	Known Local Wind Light 85	Creep FE	1622.6	25.6	OK
	10	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P112098	P116561	60	Creep FE	3813	81.1	OK *
	11	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P112098	P161927 - REF ONLY	GO95 Light	Initial FE	3127.2	50.7	OK
	11	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P112098	P161927 - REF ONLY	Known Local Wind Light 85	Creep FE	1685.5	59.5	OK
	11	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P112098	P161927 - REF ONLY	60	Creep FE	4915.7	104.6	NG *
	12	1-0 AWG_RTS Triplex_msgr AWAC no2 AWG 3-4_GCC.graphsag.wir	P112098	P204814	GO95 Light	Initial FE	820.8	9.1	OK
	12	1-0 AWG_RTS Triplex_msgr AWAC no2 AWG 3-4_GCC.graphsag.wir	P112098	P204814	Known Local Wind Light 85	Creep FE	661.3	14.3	OK
	12	1-0 AWG_RTS Triplex_msgr AWAC no2 AWG 3-4_GCC.graphsag.wir	P112098	P204814	60	Creep FE	820.1	17.4	OK *
	13	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P112098	SERVICE TAP 1	GO95 Light	Initial FE	30	0.8	OK
	13	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P112098	SERVICE TAP 1	Known Local Wind Light 85	Creep FE	31.2	1.6	OK *
	13	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P112098	SERVICE TAP 1	60	Creep FE	26.6	0.9	OK
	14	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P112100	P112101	GO95 Light	Initial FE	4401.8	32.9	OK
	14	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P112100	P112101	Known Local Wind Light 85	Creep FE	2265	35.8	OK
	14	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P112100	P112101	60	Creep FE	5157.8	109.7	NG *
	15	1-0 AWG_RTS Triplex_msgr AWAC no2 AWG 3-4_GCC.graphsag.wir	P112100	P716621	GO95 Light	Initial FE	634.4	7.1	OK
	15	1-0 AWG_RTS Triplex_msgr AWAC no2 AWG 3-4_GCC.graphsag.wir	P112100	P716621	Known Local Wind Light 85	Creep FE	557.3	12.1	OK
	15	1-0 AWG_RTS Triplex_msgr AWAC no2 AWG 3-4_GCC.graphsag.wir	P112100	P716621	60	Creep FE	636.9	13.6	OK *
	16	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P112100	SERVICE TAP 2	GO95 Light	Initial FE	122.8	3.1	OK
	16	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P112100	SERVICE TAP 2	Known Local Wind Light 85	Creep FE	125.4	6.3	OK *
	16	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P112100	SERVICE TAP 2	60	Creep FE	108.4	3.4	OK
	17	.5 in telephone.graphsag.wir	P112100	P112101	GO95 Light	Initial FE	1507.8	13.9	OK
	17	.5 in telephone.graphsag.wir	P112100	P112101	Known Local Wind Light 85	Creep FE	1363.2	27	OK
	17	.5 in telephone.graphsag.wir	P112100	P112101	60	Creep FE	1387.5	29.5	OK *
	18	.5 in telephone.graphsag.wir	P112100	MIDSPAN TAP 3	GO95 Light	Initial FE	10517.8	96.7	OK
	18	.5 in telephone.graphsag.wir	P112100	MIDSPAN TAP 3	Known Local Wind Light 85	Creep FE	4646.8	91.5	OK
	18	.5 in telephone.graphsag.wir	P112100	MIDSPAN TAP 3	60	Creep FE	16135.3	343.3	NG *
	19	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P112101	P112103	GO95 Light	Initial FE	4010.4	30	OK
	19	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P112101	P112103	Known Local Wind Light 85	Creep FE	2010.8	31.8	OK

19	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P112101	P112103	60	Creep FE	4750.3	101.1	NG *
20	.5 in telephone.graphsag.wir	P112101	P112102	GO95 Light	Initial FE	2192.1	20.2	OK
20	.5 in telephone.graphsag.wir	P112101	P112102	Known Local Wind Light 85	Creep FE	1777.9	35.1	OK
20	.5 in telephone.graphsag.wir	P112101	P112102	60	Creep FE	2005.6	42.7	OK *
21	.5 in telephone.graphsag.wir	P112102	P112103	GO95 Light	Initial FE	2528.1	23.3	OK
21	.5 in telephone.graphsag.wir	P112102	P112103	Known Local Wind Light 85	Creep FE	1902.4	37.6	OK
21	.5 in telephone.graphsag.wir	P112102	P112103	60	Creep FE	2378.7	50.6	OK *
22	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P112103	SERVICE TAP 6	GO95 Light	Initial FE	41.6	1.2	OK
22	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P112103	SERVICE TAP 6	Known Local Wind Light 85	Creep FE	42.2	2.4	OK *
22	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P112103	SERVICE TAP 6	60	Creep FE	38.1	1.5	OK
23	1-0 AWG_RTS Triplex_msgr AWAC no2 AWG 3-4_GCC.graphsag.wir	P204814	P116561	GO95 Light	Initial FE	892.9	9.9	OK
23	1-0 AWG_RTS Triplex_msgr AWAC no2 AWG 3-4_GCC.graphsag.wir	P204814	P116561	Known Local Wind Light 85	Creep FE	755.6	16.4	OK
23	1-0 AWG_RTS Triplex_msgr AWAC no2 AWG 3-4_GCC.graphsag.wir	P204814	P116561	60	Creep FE	918.2	19.5	OK *
24	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P512327	P219583	GO95 Light	Initial FE	4473.7	33.4	OK
24	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P512327	P219583	Known Local Wind Light 85	Creep FE	2466.1	39	OK
24	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P512327	P219583	60	Creep FE	5640.2	120	NG *
25	.5 in telephone.graphsag.wir	P512327	P512326	GO95 Light	Initial FE	2250.7	20.7	OK
25	.5 in telephone.graphsag.wir	P512327	P512326	Known Local Wind Light 85	Creep FE	1878.4	37.1	OK
25	.5 in telephone.graphsag.wir	P512327	P512326	60	Creep FE	2024.9	43.1	OK *
26	.5 in telephone.graphsag.wir	P512326	P317775	GO95 Light	Initial FE	2280.7	21	OK
26	.5 in telephone.graphsag.wir	P512326	P317775	Known Local Wind Light 85	Creep FE	1920.6	37.9	OK
26	.5 in telephone.graphsag.wir	P512326	P317775	60	Creep FE	1933.4	41.1	OK *
27	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P317775	P317778	GO95 Light	Initial FE	2697.3	20.2	OK
27	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P317775	P317778	Known Local Wind Light 85	Creep FE	1644.8	26	OK
27	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P317775	P317778	60	Creep FE	2709.8	57.7	OK *
28	.5 in telephone.graphsag.wir	P317775	P317776	GO95 Light	Initial FE	607.9	5.6	OK
28	.5 in telephone.graphsag.wir	P317775	P317776	Known Local Wind Light 85	Creep FE	614.3	12.1	OK *
28	.5 in telephone.graphsag.wir	P317775	P317776	60	Creep FE	556.6	11.8	OK
29	.5 in telephone.graphsag.wir	P317775	P317774	GO95 Light	Initial FE	2616.6	24.1	OK
29	.5 in telephone.graphsag.wir	P317775	P317774	Known Local Wind Light 85	Creep FE	2083.3	41.2	OK
29	.5 in telephone.graphsag.wir	P317775	P317774	60	Creep FE	2470.6	52.6	OK *
30	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P317774	P811670 - REF ONLY	GO95 Light	Initial FE	233.6	3.9	OK
30	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P317774	P811670 - REF ONLY	Known Local Wind Light 85	Creep FE	211	7.7	OK *
30	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P317774	P811670 - REF ONLY	60	Creep FE	229.9	4.9	OK
31	.5 in telephone.graphsag.wir	P317774	P209119	GO95 Light	Initial FE	2460.6	22.6	OK
31	.5 in telephone.graphsag.wir	P317774	P209119	Known Local Wind Light 85	Creep FE	1958.1	38.6	OK
31	.5 in telephone.graphsag.wir	P317774	P209119	60	Creep FE	1887.9	40.2	OK *
32	.5 in telephone.graphsag.wir	P317774	P811670 - REF ONLY	GO95 Light	Initial FE	259.8	2.5	OK
32	.5 in telephone.graphsag.wir	P317774	P811670 - REF ONLY	Known Local Wind Light 85	Creep FE	251.2	5.1	OK
32	.5 in telephone.graphsag.wir	P317774	P811670 - REF ONLY	60	Creep FE	256.2	5.5	OK *
33	.5 in telephone.graphsag.wir	P209119	P317773	GO95 Light	Initial FE	2527.6	23.2	OK
33	.5 in telephone.graphsag.wir	P209119	P317773	Known Local Wind Light 85	Creep FE	1972	38.9	OK
33	.5 in telephone.graphsag.wir	P209119	P317773	60	Creep FE	2089.4	44.5	OK *
34	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P317773	P815059 - REF ONLY	GO95 Light	Initial FE	242.2	4	OK
34	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P317773	P815059 - REF ONLY	Known Local Wind Light 85	Creep FE	252.6	9	OK *
34	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P317773	P815059 - REF ONLY	60	Creep FE	211	4.5	OK
35	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P317773	P815059 - REF ONLY	GO95 Light	Initial FE	149.2	3.8	OK
35	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P317773	P815059 - REF ONLY	Known Local Wind Light 85	Creep FE	149.8	7.7	OK *
35	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P317773	P815059 - REF ONLY	60	Creep FE	142.9	4.3	OK
36	.5 in telephone.graphsag.wir	P317773	P317772	GO95 Light	Initial FE	2273.2	20.9	OK
36	.5 in telephone.graphsag.wir	P317773	P317772	Known Local Wind Light 85	Creep FE	1926.2	38.1	OK
36	.5 in telephone.graphsag.wir	P317773	P317772	60	Creep FE	2121.4	45.1	OK *
37	.5 in telephone.graphsag.wir	P317773	P815059 - REF ONLY	GO95 Light	Initial FE	315	2.9	OK
37	.5 in telephone.graphsag.wir	P317773	P815059 - REF ONLY	Known Local Wind Light 85	Creep FE	323.4	6.4	OK *
37	.5 in telephone.graphsag.wir	P317773	P815059 - REF ONLY	60	Creep FE	290.3	6.2	OK
38	.5 in telephone.graphsag.wir	P317772	P112131	GO95 Light	Initial FE	2204.1	20.3	OK
38	.5 in telephone.graphsag.wir	P317772	P112131	Known Local Wind Light 85	Creep FE	1891.1	37.4	OK
38	.5 in telephone.graphsag.wir	P317772	P112131	60	Creep FE	2078.1	44.2	OK *
39	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P112131	P211223	GO95 Light	Initial FE	752.7	5.6	OK
39	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P112131	P211223	Known Local Wind Light 85	Creep FE	650.3	10.3	OK

39	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P112131	P211223	60	Creep FE	525.1	11.2	OK *
40	.5 in telephone.graphsag.wir	P112131	P112130	GO95 Light	Initial FE	2251.5	20.7	OK
40	.5 in telephone.graphsag.wir	P112131	P112130	Known Local Wind Light 85	Creep FE	1919.4	37.9	OK
40	.5 in telephone.graphsag.wir	P112131	P112130	60	Creep FE	2074.6	44.1	OK *
41	.5 in telephone.graphsag.wir	P112131	P211223	GO95 Light	Initial FE	280.9	2.6	OK
41	.5 in telephone.graphsag.wir	P112131	P211223	Known Local Wind Light 85	Creep FE	278.4	5.6	OK
41	.5 in telephone.graphsag.wir	P112131	P211223	60	Creep FE	275.6	5.9	OK *
42	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P112130	SERVICE TAP 7	GO95 Light	Initial FE	239.8	6	OK
42	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P112130	SERVICE TAP 7	Known Local Wind Light 85	Creep FE	285.7	14.1	OK *
42	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P112130	SERVICE TAP 7	60	Creep FE	167.9	5.2	OK
43	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P112130	SERVICE TAP 8	GO95 Light	Initial FE	92.6	2.5	OK
43	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P112130	SERVICE TAP 8	Known Local Wind Light 85	Creep FE	97.8	5	OK *
43	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P112130	SERVICE TAP 8	60	Creep FE	69.2	2.5	OK
44	.5 in telephone.graphsag.wir	P112130	MIDSPAN TAP 4	GO95 Light	Initial FE	1441	13.2	OK
44	.5 in telephone.graphsag.wir	P112130	MIDSPAN TAP 4	Known Local Wind Light 85	Creep FE	1705.1	33.6	OK *
44	.5 in telephone.graphsag.wir	P112130	MIDSPAN TAP 4	60	Creep FE	451.8	9.6	OK
45	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P716621	SERVICE TAP 3	GO95 Light	Initial FE	36.5	1.1	OK
45	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P716621	SERVICE TAP 3	Known Local Wind Light 85	Creep FE	52.6	2.8	OK *
45	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P716621	SERVICE TAP 3	60	Creep FE	12.7	0.9	OK
46	.5 in telephone.graphsag.wir	P716621	MIDSPAN TAP 2	GO95 Light	Initial FE	3905.9	35.9	OK
46	.5 in telephone.graphsag.wir	P716621	MIDSPAN TAP 2	Known Local Wind Light 85	Creep FE	2326.5	45.8	OK
46	.5 in telephone.graphsag.wir	P716621	MIDSPAN TAP 2	60	Creep FE	2608.1	55.5	OK *
47	3_8-7_strand_ehs_steel_sdge.graphsag.wir	P716621	P219583	GO95 Light	Initial FE	1257.3	5.3	OK
47	3_8-7_strand_ehs_steel_sdge.graphsag.wir	P716621	P219583	Known Local Wind Light 85	Creep FE	1195.5	8.6	OK
47	3_8-7_strand_ehs_steel_sdge.graphsag.wir	P716621	P219583	60	Creep FE	1176.5	25	OK *
48	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P219583	P219584	GO95 Light	Initial FE	3233.9	24.2	OK
48	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P219583	P219584	Known Local Wind Light 85	Creep FE	1966.2	31.2	OK
48	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P219583	P219584	60	Creep FE	3641.3	77.5	OK *
49	.5 in telephone.graphsag.wir	P219583	P219584	GO95 Light	Initial FE	3105.5	28.6	OK
49	.5 in telephone.graphsag.wir	P219583	P219584	Known Local Wind Light 85	Creep FE	2389.2	47.2	OK
49	.5 in telephone.graphsag.wir	P219583	P219584	60	Creep FE	3014.3	64.1	OK *
50	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P219584	P816324 - REF ONLY	GO95 Light	Initial FE	276	4.6	OK
50	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P219584	P816324 - REF ONLY	Known Local Wind Light 85	Creep FE	296	10.6	OK *
50	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P219584	P816324 - REF ONLY	60	Creep FE	241.9	5.1	OK
51	.5 in telephone.graphsag.wir	P219584	P816324 - REF ONLY	GO95 Light	Initial FE	419.9	3.9	OK
51	.5 in telephone.graphsag.wir	P219584	P816324 - REF ONLY	Known Local Wind Light 85	Creep FE	463.6	9.2	OK *
51	.5 in telephone.graphsag.wir	P219584	P816324 - REF ONLY	60	Creep FE	350.9	7.5	OK
52	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P816324 - REF ONLY	P816325 - M1	GO95 Light	Initial FE	1725.8	28.1	OK
52	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P816324 - REF ONLY	P816325 - M1	Known Local Wind Light 85	Creep FE	1249	44.2	OK *
52	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P816324 - REF ONLY	P816325 - M1	60	Creep FE	1511.1	32.2	OK
53	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P816324 - REF ONLY	SERVICE TAP 5	GO95 Light	Initial FE	430.3	10.6	OK
53	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P816324 - REF ONLY	SERVICE TAP 5	Known Local Wind Light 85	Creep FE	425.2	21.2	OK *
53	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P816324 - REF ONLY	SERVICE TAP 5	60	Creep FE	401.9	11.5	OK
54	.5 in telephone.graphsag.wir	P816324 - REF ONLY	P816325 - M1	GO95 Light	Initial FE	2176.5	20.1	OK
54	.5 in telephone.graphsag.wir	P816324 - REF ONLY	P816325 - M1	Known Local Wind Light 85	Creep FE	1742.8	34.5	OK
54	.5 in telephone.graphsag.wir	P816324 - REF ONLY	P816325 - M1	60	Creep FE	1960.9	41.7	OK *
55	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P211223	P211224	GO95 Light	Initial FE	3247.8	24.3	OK
55	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P211223	P211224	Known Local Wind Light 85	Creep FE	1957.7	31	OK
55	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P211223	P211224	60	Creep FE	3589.4	76.4	OK *
56	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P211223	SERVICE TAP 10	GO95 Light	Initial FE	34.9	1	OK
56	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P211223	SERVICE TAP 10	Known Local Wind Light 85	Creep FE	45.3	2.4	OK *
56	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P211223	SERVICE TAP 10	60	Creep FE	24.4	1.1	OK
57	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P211223	SERVICE TAP 9	GO95 Light	Initial FE	149	3.8	OK
57	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P211223	SERVICE TAP 9	Known Local Wind Light 85	Creep FE	164.9	8.4	OK *
57	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P211223	SERVICE TAP 9	60	Creep FE	129.4	4	OK
58	.5 in telephone.graphsag.wir	P211223	P211224	GO95 Light	Initial FE	2064.5	19	OK
58	.5 in telephone.graphsag.wir	P211223	P211224	Known Local Wind Light 85	Creep FE	1771.1	35	OK
58	.5 in telephone.graphsag.wir	P211223	P211224	60	Creep FE	1971.1	41.9	OK *
59	.5 in telephone.graphsag.wir	P211223	SERVICE TAP 9	GO95 Light	Initial FE	269.5	2.5	OK
59	.5 in telephone.graphsag.wir	P211223	SERVICE TAP 9	Known Local Wind Light 85	Creep FE	313.2	6.2	OK *

59	.5 in telephone.graphsag.wir	P211223	SERVICE TAP 9	60	Creep FE	225.4	4.8	OK
60	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P211224	P211225	GO95 Light	Initial FE	3055.6	22.9	OK
60	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P211224	P211225	Known Local Wind Light 85	Creep FE	1938.8	30.8	OK
60	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P211224	P211225	60	Creep FE	3286.6	69.9	OK *
61	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P211224	SERVICE TAP 11	GO95 Light	Initial FE	187.6	4.8	OK
61	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P211224	SERVICE TAP 11	Known Local Wind Light 85	Creep FE	205.1	10.4	OK *
61	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P211224	SERVICE TAP 11	60	Creep FE	166.6	5.2	OK
62	.5 in telephone.graphsag.wir	P211224	P211225	GO95 Light	Initial FE	1886.3	17.4	OK
62	.5 in telephone.graphsag.wir	P211224	P211225	Known Local Wind Light 85	Creep FE	1726.1	34.2	OK
62	.5 in telephone.graphsag.wir	P211224	P211225	60	Creep FE	1813	38.6	OK *
63	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P211225	P211226	GO95 Light	Initial FE	3430.2	25.7	OK
63	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P211225	P211226	Known Local Wind Light 85	Creep FE	2137.9	33.8	OK
63	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P211225	P211226	60	Creep FE	3835.5	81.6	OK *
64	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P211225	P217179	GO95 Light	Initial FE	2603.1	19.5	OK
64	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P211225	P217179	Known Local Wind Light 85	Creep FE	1539.9	24.4	OK
64	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P211225	P217179	60	Creep FE	2895.1	61.6	OK *
65	.5 in telephone.graphsag.wir	P211225	P211226	GO95 Light	Initial FE	2189.5	20.2	OK
65	.5 in telephone.graphsag.wir	P211225	P211226	Known Local Wind Light 85	Creep FE	1714	33.9	OK
65	.5 in telephone.graphsag.wir	P211225	P211226	60	Creep FE	2078.4	44.2	OK *
66	.5 in telephone.graphsag.wir	P211225	P211227	GO95 Light	Initial FE	895.1	8.3	OK
66	.5 in telephone.graphsag.wir	P211225	P211227	Known Local Wind Light 85	Creep FE	851.4	16.9	OK
66	.5 in telephone.graphsag.wir	P211225	P211227	60	Creep FE	835.7	17.8	OK *
67	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P211226	SERVICE TAP 12	GO95 Light	Initial FE	161.1	4.1	OK
67	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P211226	SERVICE TAP 12	Known Local Wind Light 85	Creep FE	168.6	8.5	OK *
67	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P211226	SERVICE TAP 12	60	Creep FE	135.7	4.3	OK
68	.5 in telephone.graphsag.wir	P211226	P815061 - M1	GO95 Light	Initial FE	780.6	7.3	OK
68	.5 in telephone.graphsag.wir	P211226	P815061 - M1	Known Local Wind Light 85	Creep FE	823.2	16.3	OK *
68	.5 in telephone.graphsag.wir	P211226	P815061 - M1	60	Creep FE	597.6	12.7	OK
69	.5 in telephone.graphsag.wir	P211226	SERVICE TAP 12	GO95 Light	Initial FE	313.6	2.9	OK
69	.5 in telephone.graphsag.wir	P211226	SERVICE TAP 12	Known Local Wind Light 85	Creep FE	332.3	6.6	OK *
69	.5 in telephone.graphsag.wir	P211226	SERVICE TAP 12	60	Creep FE	262.1	5.6	OK
70	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P211227	P246652 - REF ONLY	GO95 Light	Initial FE	340.8	5.6	OK
70	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P211227	P246652 - REF ONLY	Known Local Wind Light 85	Creep FE	266.6	9.5	OK *
70	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P211227	P246652 - REF ONLY	60	Creep FE	328.7	7	OK
71	.5 in telephone.graphsag.wir	P211227	P217178	GO95 Light	Initial FE	1568.5	14.5	OK
71	.5 in telephone.graphsag.wir	P211227	P217178	Known Local Wind Light 85	Creep FE	1382.7	27.4	OK
71	.5 in telephone.graphsag.wir	P211227	P217178	60	Creep FE	1504.2	32	OK *
72	.5 in telephone.graphsag.wir	P217178	P217179	GO95 Light	Initial FE	1358.3	12.5	OK
72	.5 in telephone.graphsag.wir	P217178	P217179	Known Local Wind Light 85	Creep FE	1200	23.8	OK
72	.5 in telephone.graphsag.wir	P217178	P217179	60	Creep FE	1331.3	28.3	OK *
73	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P217179	SERVICE TAP 13	GO95 Light	Initial FE	120.7	3.1	OK
73	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P217179	SERVICE TAP 13	Known Local Wind Light 85	Creep FE	130.4	6.6	OK *
73	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P217179	SERVICE TAP 13	60	Creep FE	108.1	3.3	OK
74	.5 in telephone.graphsag.wir	P217179	SERVICE TAP 13	GO95 Light	Initial FE	224.5	2.1	OK
74	.5 in telephone.graphsag.wir	P217179	SERVICE TAP 13	Known Local Wind Light 85	Creep FE	263.4	5.2	OK *
74	.5 in telephone.graphsag.wir	P217179	SERVICE TAP 13	60	Creep FE	191.3	4.1	OK
75	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P246652 - REF ONLY	P815061 - M1	GO95 Light	Initial FE	2030.3	33.1	OK
75	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P246652 - REF ONLY	P815061 - M1	Known Local Wind Light 85	Creep FE	1140.7	40.4	OK
75	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P246652 - REF ONLY	P815061 - M1	60	Creep FE	2200.2	46.8	OK *
76	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P815059 - REF ONLY	P815060 - M1	GO95 Light	Initial FE	2923.6	47.5	OK
76	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P815059 - REF ONLY	P815060 - M1	Known Local Wind Light 85	Creep FE	1839.3	65	OK
76	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P815059 - REF ONLY	P815060 - M1	60	Creep FE	3390.4	72.1	OK *
77	.5 in telephone.graphsag.wir	P815059 - REF ONLY	P815060 - M1	GO95 Light	Initial FE	2496.6	23	OK
77	.5 in telephone.graphsag.wir	P815059 - REF ONLY	P815060 - M1	Known Local Wind Light 85	Creep FE	2069.9	40.9	OK
77	.5 in telephone.graphsag.wir	P815059 - REF ONLY	P815060 - M1	60	Creep FE	2384.4	50.7	OK *
78	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P811670 - REF ONLY	P811669 - M1	GO95 Light	Initial FE	1791.3	29.1	OK
78	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P811670 - REF ONLY	P811669 - M1	Known Local Wind Light 85	Creep FE	1217	43.1	OK *
78	no2 AWG_SPARROW_ACSR_AW2_GCC.Graphsag.wir	P811670 - REF ONLY	P811669 - M1	60	Creep FE	1768.1	37.6	OK
79	.5 in telephone.graphsag.wir	P811670 - REF ONLY	P811669 - M1	GO95 Light	Initial FE	1138.7	10.6	OK
79	.5 in telephone.graphsag.wir	P811670 - REF ONLY	P811669 - M1	Known Local Wind Light 85	Creep FE	1011.7	20.1	OK

79	.5 in telephone.graphsag.wir	P811670 - REF ONLY	P811669 - M1	60	Creep FE	1145.7	24.4	OK *
80	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P419622	P317775	GO95 Light	Initial FE	2792	20.9	OK
80	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P419622	P317775	Known Local Wind Light 85	Creep FE	1722.6	27.2	OK
80	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P419622	P317775	60	Creep FE	2802.9	59.6	OK *
81	.5 in telephone.graphsag.wir	P317776	P317777	GO95 Light	Initial FE	1585.5	14.6	OK
81	.5 in telephone.graphsag.wir	P317776	P317777	Known Local Wind Light 85	Creep FE	1356.2	26.8	OK
81	.5 in telephone.graphsag.wir	P317776	P317777	60	Creep FE	1557.7	33.1	OK *
82	.5 in telephone.graphsag.wir	P317777	P317778	GO95 Light	Initial FE	1323.3	12.2	OK
82	.5 in telephone.graphsag.wir	P317777	P317778	Known Local Wind Light 85	Creep FE	1193.4	23.6	OK
82	.5 in telephone.graphsag.wir	P317777	P317778	60	Creep FE	1273.3	27.1	OK *
83	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P317778	P317779	GO95 Light	Initial FE	799.1	6	OK
83	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P317778	P317779	Known Local Wind Light 85	Creep FE	633.7	10.1	OK
83	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P317778	P317779	60	Creep FE	740.2	15.7	OK *
84	.5 in telephone.graphsag.wir	P317778	P317779	GO95 Light	Initial FE	903	8.3	OK
84	.5 in telephone.graphsag.wir	P317778	P317779	Known Local Wind Light 85	Creep FE	799.3	15.8	OK
84	.5 in telephone.graphsag.wir	P317778	P317779	60	Creep FE	865.4	18.4	OK *
85	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P317779	SERVICE TAP 14	GO95 Light	Initial FE	104.9	2.7	OK
85	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P317779	SERVICE TAP 14	Known Local Wind Light 85	Creep FE	115.8	5.8	OK *
85	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P317779	SERVICE TAP 14	60	Creep FE	85.8	2.7	OK
86	.5 in telephone.graphsag.wir	P317779	SERVICE TAP 14	GO95 Light	Initial FE	300.6	2.8	OK
86	.5 in telephone.graphsag.wir	P317779	SERVICE TAP 14	Known Local Wind Light 85	Creep FE	401	7.9	OK *
86	.5 in telephone.graphsag.wir	P317779	SERVICE TAP 14	60	Creep FE	193.9	4.1	OK
87	3-0 AWG_5over2_AWAC_GCC.graphsag.wir	P512375	P512329	GO95 Light	Initial FE	2080.6	12.8	OK
87	3-0 AWG_5over2_AWAC_GCC.graphsag.wir	P512375	P512329	Known Local Wind Light 85	Creep FE	1357	16	OK
87	3-0 AWG_5over2_AWAC_GCC.graphsag.wir	P512375	P512329	60	Creep FE	2132	45.4	OK *
88	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P512375	SERVICE TAP 18	GO95 Light	Initial FE	230	5.7	OK
88	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P512375	SERVICE TAP 18	Known Local Wind Light 85	Creep FE	260.1	12.9	OK *
88	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P512375	SERVICE TAP 18	60	Creep FE	173.6	5.2	OK
89	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P512375	P514973 - M1	GO95 Light	Initial FE	205.1	5.1	OK
89	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P512375	P514973 - M1	Known Local Wind Light 85	Creep FE	205.6	10.4	OK *
89	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P512375	P514973 - M1	60	Creep FE	191.7	5.6	OK
90	.5 in telephone.graphsag.wir	P512375	P517675	GO95 Light	Initial FE	415.5	3.9	OK
90	.5 in telephone.graphsag.wir	P512375	P517675	Known Local Wind Light 85	Creep FE	424.9	8.5	OK
90	.5 in telephone.graphsag.wir	P512375	P517675	60	Creep FE	405.8	8.6	OK *
91	.5 in telephone.graphsag.wir	P512375	P517675	GO95 Light	Initial FE	403.5	3.7	OK
91	.5 in telephone.graphsag.wir	P512375	P517675	Known Local Wind Light 85	Creep FE	412.3	8.2	OK
91	.5 in telephone.graphsag.wir	P512375	P517675	60	Creep FE	394.7	8.4	OK *
92	.5 in telephone.graphsag.wir	P512375	COMM2	GO95 Light	Initial FE	261.8	2.5	OK
92	.5 in telephone.graphsag.wir	P512375	COMM2	Known Local Wind Light 85	Creep FE	290.4	5.8	OK *
92	.5 in telephone.graphsag.wir	P512375	COMM2	60	Creep FE	237.2	5	OK
93	.5 in telephone.graphsag.wir	P512375	COMM2	GO95 Light	Initial FE	194.3	1.9	OK
93	.5 in telephone.graphsag.wir	P512375	COMM2	Known Local Wind Light 85	Creep FE	205.4	4.2	OK *
93	.5 in telephone.graphsag.wir	P512375	COMM2	60	Creep FE	182.9	3.9	OK
94	.5 in telephone.graphsag.wir	P512375	P517675	GO95 Light	Initial FE	387.1	3.6	OK
94	.5 in telephone.graphsag.wir	P512375	P517675	Known Local Wind Light 85	Creep FE	394.8	7.9	OK
94	.5 in telephone.graphsag.wir	P512375	P517675	60	Creep FE	379.3	8.1	OK *
95	.5 in telephone.graphsag.wir	P512375	P517675	GO95 Light	Initial FE	377	3.5	OK
95	.5 in telephone.graphsag.wir	P512375	P517675	Known Local Wind Light 85	Creep FE	384.1	7.7	OK
95	.5 in telephone.graphsag.wir	P512375	P517675	60	Creep FE	369.6	7.9	OK *
96	.5 in telephone.graphsag.wir	P512375	P517675	GO95 Light	Initial FE	355.1	3.3	OK
96	.5 in telephone.graphsag.wir	P512375	P517675	Known Local Wind Light 85	Creep FE	360.9	7.2	OK
96	.5 in telephone.graphsag.wir	P512375	P517675	60	Creep FE	348.8	7.4	OK *
97	.5 in telephone.graphsag.wir	P512375	SERVICE TAP 18	GO95 Light	Initial FE	476.8	4.4	OK
97	.5 in telephone.graphsag.wir	P512375	SERVICE TAP 18	Known Local Wind Light 85	Creep FE	1013.5	20	OK *
97	.5 in telephone.graphsag.wir	P512375	SERVICE TAP 18	60	Creep FE	283.1	6	OK
98	1-0 AWG_RTS Triplex_msgr AWAC no2 AWG 3-4_GCC.graphsag.wir	P517675	P512329	GO95 Light	Initial FE	1042.3	11.6	OK
98	1-0 AWG_RTS Triplex_msgr AWAC no2 AWG 3-4_GCC.graphsag.wir	P517675	P512329	Known Local Wind Light 85	Creep FE	810	17.6	OK
98	1-0 AWG_RTS Triplex_msgr AWAC no2 AWG 3-4_GCC.graphsag.wir	P517675	P512329	60	Creep FE	1155.3	24.6	OK *
99	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P517675	SERVICE TAP 16	GO95 Light	Initial FE	201.9	5.1	OK
99	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P517675	SERVICE TAP 16	Known Local Wind Light 85	Creep FE	367.5	18.1	OK *

99	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P517675	SERVICE TAP 16	60	Creep FE	134.7	4.2	OK
100	.5 in telephone.graphsag.wir	P517675	P512329	GO95 Light	Initial FE	1093.8	10.1	OK
100	.5 in telephone.graphsag.wir	P517675	P512329	Known Local Wind Light 85	Creep FE	939	18.6	OK
100	.5 in telephone.graphsag.wir	P517675	P512329	60	Creep FE	1122.7	23.9	OK *
101	.5 in telephone.graphsag.wir	P517675	P512329	GO95 Light	Initial FE	1084.5	10	OK
101	.5 in telephone.graphsag.wir	P517675	P512329	Known Local Wind Light 85	Creep FE	934.1	18.5	OK
101	.5 in telephone.graphsag.wir	P517675	P512329	60	Creep FE	1112.2	23.7	OK *
102	.5 in telephone.graphsag.wir	P517675	P512329	GO95 Light	Initial FE	1056.9	9.8	OK
102	.5 in telephone.graphsag.wir	P517675	P512329	Known Local Wind Light 85	Creep FE	917.1	18.2	OK
102	.5 in telephone.graphsag.wir	P517675	P512329	60	Creep FE	1081.9	23	OK *
103	.5 in telephone.graphsag.wir	P517675	P512329	GO95 Light	Initial FE	1017.7	9.4	OK
103	.5 in telephone.graphsag.wir	P517675	P512329	Known Local Wind Light 85	Creep FE	891.8	17.7	OK
103	.5 in telephone.graphsag.wir	P517675	P512329	60	Creep FE	1039.5	22.1	OK *
104	.5 in telephone.graphsag.wir	P517675	P512329	GO95 Light	Initial FE	985.3	9.1	OK
104	.5 in telephone.graphsag.wir	P517675	P512329	Known Local Wind Light 85	Creep FE	870.4	17.3	OK
104	.5 in telephone.graphsag.wir	P517675	P512329	60	Creep FE	1004.5	21.4	OK *
105	3-0 AWG_5over2_AWAC_GCC.graphsag.wir	P512329	P512328	GO95 Light	Initial FE	277.7	1.8	OK
105	3-0 AWG_5over2_AWAC_GCC.graphsag.wir	P512329	P512328	Known Local Wind Light 85	Creep FE	259.8	3.1	OK
105	3-0 AWG_5over2_AWAC_GCC.graphsag.wir	P512329	P512328	60	Creep FE	263.3	5.6	OK *
106	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P512329	SERVICE TAP 15	GO95 Light	Initial FE	183.2	4.6	OK
106	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P512329	SERVICE TAP 15	Known Local Wind Light 85	Creep FE	453.2	22.2	OK *
106	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P512329	SERVICE TAP 15	60	Creep FE	101.9	3.2	OK
107	.5 in telephone.graphsag.wir	P512329	P512328	GO95 Light	Initial FE	671.9	6.2	OK
107	.5 in telephone.graphsag.wir	P512329	P512328	Known Local Wind Light 85	Creep FE	665.2	13.1	OK *
107	.5 in telephone.graphsag.wir	P512329	P512328	60	Creep FE	556.8	11.8	OK
108	.5 in telephone.graphsag.wir	P512329	P512328	GO95 Light	Initial FE	571.9	5.3	OK
108	.5 in telephone.graphsag.wir	P512329	P512328	Known Local Wind Light 85	Creep FE	569.1	11.2	OK *
108	.5 in telephone.graphsag.wir	P512329	P512328	60	Creep FE	495.1	10.5	OK
109	.5 in telephone.graphsag.wir	P512329	P512328	GO95 Light	Initial FE	492.5	4.5	OK
109	.5 in telephone.graphsag.wir	P512329	P512328	Known Local Wind Light 85	Creep FE	491.5	9.7	OK *
109	.5 in telephone.graphsag.wir	P512329	P512328	60	Creep FE	440.3	9.4	OK
110	.5 in telephone.graphsag.wir	P512329	P512328	GO95 Light	Initial FE	419.1	3.9	OK
110	.5 in telephone.graphsag.wir	P512329	P512328	Known Local Wind Light 85	Creep FE	419.1	8.3	OK *
110	.5 in telephone.graphsag.wir	P512329	P512328	60	Creep FE	385.2	8.2	OK
111	.5 in telephone.graphsag.wir	P512329	P512328	GO95 Light	Initial FE	364.4	3.4	OK
111	.5 in telephone.graphsag.wir	P512329	P512328	Known Local Wind Light 85	Creep FE	364.7	7.2	OK
111	.5 in telephone.graphsag.wir	P512329	P512328	60	Creep FE	341.2	7.3	OK *
112	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P512328	P512327	GO95 Light	Initial FE	3307.2	24.7	OK
112	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P512328	P512327	Known Local Wind Light 85	Creep FE	1827.4	28.9	OK
112	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P512328	P512327	60	Creep FE	4168.7	88.7	OK *
113	3-0 AWG_5over2_AWAC_GCC.graphsag.wir	P512328	P712583	GO95 Light	Initial FE	242.5	1.5	OK
113	3-0 AWG_5over2_AWAC_GCC.graphsag.wir	P512328	P712583	Known Local Wind Light 85	Creep FE	241.5	2.9	OK
113	3-0 AWG_5over2_AWAC_GCC.graphsag.wir	P512328	P712583	60	Creep FE	216.7	4.6	OK *
114	.5 in telephone.graphsag.wir	P512328	P512327	GO95 Light	Initial FE	3567.8	32.8	OK
114	.5 in telephone.graphsag.wir	P512328	P512327	Known Local Wind Light 85	Creep FE	2158.4	42.5	OK
114	.5 in telephone.graphsag.wir	P512328	P512327	60	Creep FE	3202.3	68.1	OK *
115	.5 in telephone.graphsag.wir	P512328	P712583	GO95 Light	Initial FE	665.5	6.1	OK
115	.5 in telephone.graphsag.wir	P512328	P712583	Known Local Wind Light 85	Creep FE	593.2	11.7	OK *
115	.5 in telephone.graphsag.wir	P512328	P712583	60	Creep FE	524.5	11.2	OK
116	.5 in telephone.graphsag.wir	P512328	P712583	GO95 Light	Initial FE	554.1	5.1	OK
116	.5 in telephone.graphsag.wir	P512328	P712583	Known Local Wind Light 85	Creep FE	510.6	10.1	OK *
116	.5 in telephone.graphsag.wir	P512328	P712583	60	Creep FE	463.7	9.9	OK
117	.5 in telephone.graphsag.wir	P512328	COMM3	GO95 Light	Initial FE	5067.8	46.5	OK
117	.5 in telephone.graphsag.wir	P512328	COMM3	Known Local Wind Light 85	Creep FE	3412.3	67.2	OK
117	.5 in telephone.graphsag.wir	P512328	COMM3	60	Creep FE	3809.1	81	OK *
118	.5 in telephone.graphsag.wir	P512328	P712583	GO95 Light	Initial FE	493.5	4.6	OK
118	.5 in telephone.graphsag.wir	P512328	P712583	Known Local Wind Light 85	Creep FE	462.1	9.1	OK *
118	.5 in telephone.graphsag.wir	P512328	P712583	60	Creep FE	426.2	9.1	OK
119	.5 in telephone.graphsag.wir	P512328	P712583	GO95 Light	Initial FE	429.4	4	OK
119	.5 in telephone.graphsag.wir	P512328	P712583	Known Local Wind Light 85	Creep FE	408.4	8.1	OK

119	.5 in telephone.graphsag.wir	P512328	P712583	60	Creep FE	382.6	8.1	OK *
120	.5 in telephone.graphsag.wir	P512328	P712583	GO95 Light	Initial FE	379.3	3.5	OK
120	.5 in telephone.graphsag.wir	P512328	P712583	Known Local Wind Light 85	Creep FE	364.7	7.2	OK
120	.5 in telephone.graphsag.wir	P512328	P712583	60	Creep FE	345.9	7.4	OK *
121	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P712583	P712584 - REF ONLY	GO95 Light	Initial FE	2068.5	15.5	OK
121	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P712583	P712584 - REF ONLY	Known Local Wind Light 85	Creep FE	1463.4	23.3	OK
121	no2 AWG_5over2_AWAC_GCC.graphsag.wir	P712583	P712584 - REF ONLY	60	Creep FE	2097.1	44.6	OK *
122	.5 in telephone.graphsag.wir	P712583	P712584 - REF ONLY	GO95 Light	Initial FE	2221.6	20.5	OK
122	.5 in telephone.graphsag.wir	P712583	P712584 - REF ONLY	Known Local Wind Light 85	Creep FE	1738.7	34.4	OK
122	.5 in telephone.graphsag.wir	P712583	P712584 - REF ONLY	60	Creep FE	2367.5	50.4	OK *
123	.5 in telephone.graphsag.wir	P712583	P712584 - REF ONLY	GO95 Light	Initial FE	2224.6	20.5	OK
123	.5 in telephone.graphsag.wir	P712583	P712584 - REF ONLY	Known Local Wind Light 85	Creep FE	1747.5	34.6	OK
123	.5 in telephone.graphsag.wir	P712583	P712584 - REF ONLY	60	Creep FE	2360	50.2	OK *
124	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P712584 - REF ONLY	SERVICE TAP 19	GO95 Light	Initial FE	180.8	4.6	OK
124	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P712584 - REF ONLY	SERVICE TAP 19	Known Local Wind Light 85	Creep FE	189	9.6	OK *
124	1-0_AWG_Triplex SSC AL_Neritina_GCC.graphsag.wir	P712584 - REF ONLY	SERVICE TAP 19	60	Creep FE	162.4	4.9	OK
125	.5 in telephone.graphsag.wir	P712584 - REF ONLY	SERVICE TAP 19	GO95 Light	Initial FE	205.7	2	OK
125	.5 in telephone.graphsag.wir	P712584 - REF ONLY	SERVICE TAP 19	Known Local Wind Light 85	Creep FE	214.1	4.3	OK *
125	.5 in telephone.graphsag.wir	P712584 - REF ONLY	SERVICE TAP 19	60	Creep FE	191.4	4.1	OK
126	.5 in telephone.graphsag.wir	P712584 - REF ONLY	SERVICE TAP 19	GO95 Light	Initial FE	206.1	2	OK
126	.5 in telephone.graphsag.wir	P712584 - REF ONLY	SERVICE TAP 19	Known Local Wind Light 85	Creep FE	213.6	4.3	OK *
126	.5 in telephone.graphsag.wir	P712584 - REF ONLY	SERVICE TAP 19	60	Creep FE	192.6	4.1	OK
127	336kcmil_LINNET_ACSR_AW2_GCC.graphsag.wir	P714340 - M1	P14091 - M1	GO95 Light	Initial FE	6020.6	38.7	OK
127	336kcmil_LINNET_ACSR_AW2_GCC.graphsag.wir	P714340 - M1	P14091 - M1	Known Local Wind Light 85	Creep FE	3408.7	40.2	OK
127	336kcmil_LINNET_ACSR_AW2_GCC.graphsag.wir	P714340 - M1	P14091 - M1	60	Creep FE	6586.5	140.1	NG *
128	.5 in telephone.graphsag.wir	P714340 - M1	P14092 - REF ONLY	GO95 Light	Initial FE	4714.8	43.3	OK
128	.5 in telephone.graphsag.wir	P714340 - M1	P14092 - REF ONLY	Known Local Wind Light 85	Creep FE	2312.6	45.5	OK
128	.5 in telephone.graphsag.wir	P714340 - M1	P14092 - REF ONLY	60	Creep FE	4572.7	97.3	OK *
129	.5 in telephone.graphsag.wir	P714340 - M1	P14092 - REF ONLY	GO95 Light	Initial FE	4511.3	41.4	OK
129	.5 in telephone.graphsag.wir	P714340 - M1	P14092 - REF ONLY	Known Local Wind Light 85	Creep FE	2203	43.4	OK
129	.5 in telephone.graphsag.wir	P714340 - M1	P14092 - REF ONLY	60	Creep FE	4255.8	90.5	OK *
130	1.5 in telephone.graphsag.wir	P169424	P14091 - M1	GO95 Light	Initial FE	1847	46.8	OK
130	1.5 in telephone.graphsag.wir	P169424	P14091 - M1	Known Local Wind Light 85	Creep FE	1260	65.7	OK
130	1.5 in telephone.graphsag.wir	P169424	P14091 - M1	60	Creep FE	2514.2	69.4	OK *
131	.5 in telephone.graphsag.wir	P169424	P14091 - M1	GO95 Light	Initial FE	3576.2	32.9	OK
131	.5 in telephone.graphsag.wir	P169424	P14091 - M1	Known Local Wind Light 85	Creep FE	2406.9	47.5	OK
131	.5 in telephone.graphsag.wir	P169424	P14091 - M1	60	Creep FE	3231.2	68.7	OK *
132	.5 in telephone.graphsag.wir	P169424	P14091 - M1	GO95 Light	Initial FE	1654.9	15.3	OK
132	.5 in telephone.graphsag.wir	P169424	P14091 - M1	Known Local Wind Light 85	Creep FE	1476.2	29.2	OK
132	.5 in telephone.graphsag.wir	P169424	P14091 - M1	60	Creep FE	1552.6	33	OK *
133	.5 in telephone.graphsag.wir	P169424	P14091 - M1	GO95 Light	Initial FE	1544.3	14.3	OK
133	.5 in telephone.graphsag.wir	P169424	P14091 - M1	Known Local Wind Light 85	Creep FE	1398.1	27.7	OK
133	.5 in telephone.graphsag.wir	P169424	P14091 - M1	60	Creep FE	1458.1	31	OK *
134	.5 in telephone.graphsag.wir	MIDSPAN TAP 2	P219583	GO95 Light	Initial FE	3658.9	33.6	OK
134	.5 in telephone.graphsag.wir	MIDSPAN TAP 2	P219583	Known Local Wind Light 85	Creep FE	2724.3	53.7	OK
134	.5 in telephone.graphsag.wir	MIDSPAN TAP 2	P219583	60	Creep FE	3096	65.9	OK *
135	.5 in telephone.graphsag.wir	MIDSPAN TAP 2	COMM1	GO95 Light	Initial FE	186.8	1.8	OK
135	.5 in telephone.graphsag.wir	MIDSPAN TAP 2	COMM1	Known Local Wind Light 85	Creep FE	184	3.7	OK
135	.5 in telephone.graphsag.wir	MIDSPAN TAP 2	COMM1	60	Creep FE	182.7	3.9	OK *
136	.5 in telephone.graphsag.wir	MIDSPAN TAP 2	COMM1	GO95 Light	Initial FE	414.4	3.8	OK
136	.5 in telephone.graphsag.wir	MIDSPAN TAP 2	COMM1	Known Local Wind Light 85	Creep FE	384.5	7.6	OK
136	.5 in telephone.graphsag.wir	MIDSPAN TAP 2	COMM1	60	Creep FE	385.1	8.2	OK *
137	.5 in telephone.graphsag.wir	MIDSPAN TAP 3	P716621	GO95 Light	Initial FE	4085.7	37.5	OK
137	.5 in telephone.graphsag.wir	MIDSPAN TAP 3	P716621	Known Local Wind Light 85	Creep FE	2092.1	41.2	OK
137	.5 in telephone.graphsag.wir	MIDSPAN TAP 3	P716621	60	Creep FE	3314.4	70.5	OK *
138	.5 in telephone.graphsag.wir	MIDSPAN TAP 3	SERVICE TAP 2	GO95 Light	Initial FE	144.7	1.4	OK
138	.5 in telephone.graphsag.wir	MIDSPAN TAP 3	SERVICE TAP 2	Known Local Wind Light 85	Creep FE	142.7	2.9	OK
138	.5 in telephone.graphsag.wir	MIDSPAN TAP 3	SERVICE TAP 2	60	Creep FE	138.5	2.9	OK *
139	.5 in telephone.graphsag.wir	MIDSPAN TAP 5	P514973 - M1	GO95 Light	Initial FE	600.4	5.5	OK
139	.5 in telephone.graphsag.wir	MIDSPAN TAP 5	P514973 - M1	Known Local Wind Light 85	Creep FE	559.6	11.1	OK

	139	.5 in telephone.graphsag.wir	MIDSPAN TAP 5	P514973 - M1	60	Creep FE	566.8	12.1	OK *
	140	.5 in telephone.graphsag.wir	MIDSPAN TAP 4	P112100	GO95 Light	Initial FE	7944.2	73	OK
	140	.5 in telephone.graphsag.wir	MIDSPAN TAP 4	P112100	Known Local Wind Light 85	Creep FE	3692.1	72.7	OK
	140	.5 in telephone.graphsag.wir	MIDSPAN TAP 4	P112100	60	Creep FE	10869.1	231.3	NG *
	141	.5 in telephone.graphsag.wir	MIDSPAN TAP 4	SERVICE TAP 7	GO95 Light	Initial FE	162.6	1.5	OK
	141	.5 in telephone.graphsag.wir	MIDSPAN TAP 4	SERVICE TAP 7	Known Local Wind Light 85	Creep FE	156.7	3.1	OK
	141	.5 in telephone.graphsag.wir	MIDSPAN TAP 4	SERVICE TAP 7	60	Creep FE	151.4	3.2	OK *

Structure P14092
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** Existing Conditions (Field Assessment)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	37 %	***Clearances OK?*** Yes
Pole Usage	37 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	18 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	14 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	11 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage	1 %	Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p14092_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	342 ft	*Latitude*	33.08044612°
Back Span	64 ft	*Longitude*	-116.83968804°
Ahead Span Az.	180°	*Elevation*	1607 ft
Line Angle	0°	*Tangent/DE*	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft·k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P14092	50	1	Corten Steel	43.6	7.05		100	Known Local Wind Light 85 MPH Grade A at Replacement	47	37	2.7	1.0	0
P14092	50	1	Corten Steel	43.6	7.05		100	G.O.95 Light Grade A at Replacement	22	18	5.6	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height**** (ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*
12	No2 AWG 5Over2 AWAC GCC.Graphsag	-1	36.88	0.33	0.11	1	87	87	18
12	No2 AWG 5Over2 AWAC GCC.Graphsag	-1	36.72	0.33	0.11	1	87	87	18
12	No2 AWG 5Over2 AWAC GCC.Graphsag	1	36.76	0.33	0.11	1	87	87	18
12	336Kcmil LINNET ACSR AW2 GCC.Graphsag	29	42.82	0.72	0.44	1	343	316	1247
12	336Kcmil LINNET ACSR AW2 GCC.Graphsag	29	42.65	0.72	0.44	1	342	316	1247
12	336Kcmil LINNET ACSR AW2 GCC.Graphsag	29	42.59	0.72	0.44	1	343	316	1247
12	336Kcmil LINNET ACSR AW2 GCC.Graphsag	208	42.82	0.72	0.44	1	63	316	1247
12	336Kcmil LINNET ACSR AW2 GCC.Graphsag	209	42.65	0.72	0.44	1	63	316	1247
12	336Kcmil LINNET ACSR AW2 GCC.Graphsag	210	42.59	0.72	0.44	1	63	316	1247
0.0	.5 In Telephone.Graphsag	0	22.85	0.63	0.19	1	86	86	66
0.0	1.5 In Telephone.Graphsag	28	24.15	1.63	0.64	1	76	76	544
0.0	.5 In Telephone.Graphsag	28	23.95	0.63	0.19	1	76	76	99
0.0	.5 In Telephone.Graphsag	28	22.95	0.63	0.19	1	77	76	85
0.0	.5 In Telephone.Graphsag	28	22.35	0.63	0.19	1	76	76	70
0.0	.5 In Telephone.Graphsag	209	22.85	0.63	0.19	1	64	64	164
0.0	.5 In Telephone.Graphsag	209	22.35	0.63	0.19	1	64	64	158

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Strain	12kV DE	12	-1	36.88	P14092	1	141.8	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	-1	36.72	P14092	2	130.7	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	1	36.76	P14092	1	141.8	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		41.92	P14092	17	11.8	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		41.75	P14092	12	16.3	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		41.68	P14092	18	11.0	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

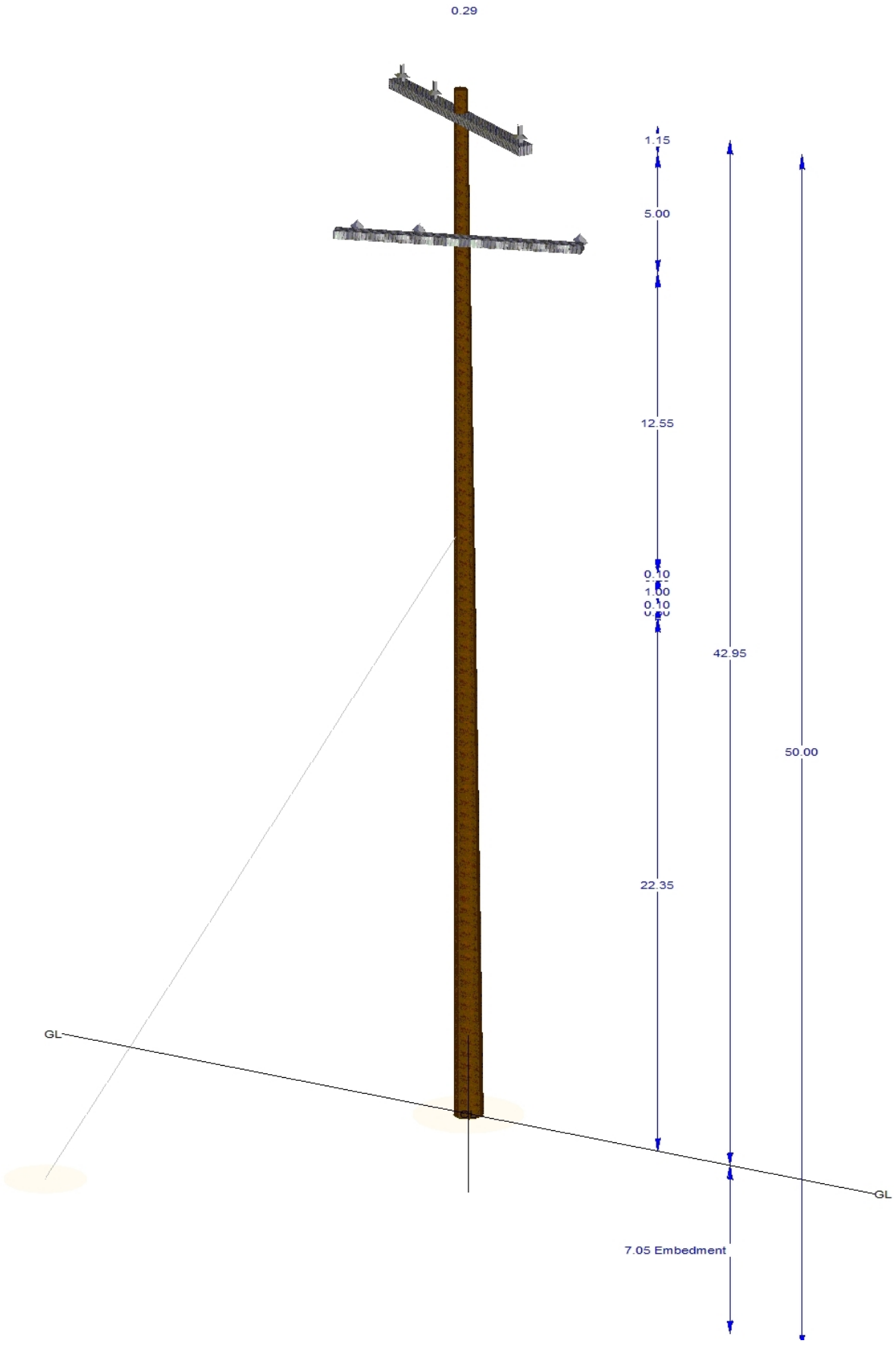
†Length = Lead Length for Down Guys, Wire Length for Span Guys

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy

Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Down	3/8" 7 Strand EHS (3/8G)	19.22	207	24.25	P14092	14	9.3	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	16" CROSSPLATE MG				P14092	11	12.1	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
X-Arm	10` DBL TAN FG ARMS (4TF-2)	119	41.8	P14092	1	266.7	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
X-Arm	10` DE FG ARM (4DF)	73	36.8	P14092		444.4	1.3	Known Local Wind Light 85 MPH Grade A at Replacement


0.29
1.15
5.00
12.55
0.10
1.00
0.10
42.95
50.00
22.35
GL
GL
7.05 Embedment

Structure P112096
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	40 %	***Clearances OK?*** Yes
Pole Usage	40 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	11 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	22 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage		
Arm Usage	1 %	Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p112096_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	289 ft	*Latitude*	33.08020966°
Back Span	86 ft	*Longitude*	-116.83968821°
Ahead Span Az.	118°	*Elevation*	1604 ft
Line Angle	-63°	*Tangent/DE*	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	Height (ft)	Class	Material	Groundline Circum. (in)	Embed. (ft)	Date Intrusive	Material Capacity %	Load Case	Max Moment (ft·k)	Usage %	Calc SF	Req SF	Max Usage Point (ft)*
P112096	50	1	Corten Steel	43.7	6.85		100	Known Local Wind Light 85 MPH Grade A at Replacement	50	40	2.5	1.0	0
P112096	50	1	Corten Steel	43.7	6.85		100	G.O.95 Light Grade A at Replacement	27	21	4.7	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	Wire Type	Direction (deg)**	Attach Height*** (ft)	Diameter (in)	Unit Weight (lbs/ft)	# of Wires	Span Length (ft)	Ruling Span (ft)	Tension (lbs)
12	No2 AWG 5Over2 AWAC GCC.Graphsag	210	41.5	0.33	0.11	1	87	87	18
12	No2 AWG 5Over2 AWAC GCC.Graphsag	210	41.26	0.33	0.11	1	87	87	18
12	No2 AWG 5Over2 AWAC GCC.Graphsag	212	42.08	0.33	0.11	1	87	87	18
12	No2 AWG 5Over2 AWAC GCC.Graphsag	329	37.93	0.33	0.11	1	287	285	185
12	No2 AWG 5Over2 AWAC GCC.Graphsag	329	37.01	0.33	0.11	1	288	285	185
12	No2 AWG 5Over2 AWAC GCC.Graphsag	329	36.86	0.33	0.11	1	289	285	185
0.0	.5 In Telephone.Graphsag	211	22.64	0.63	0.19	1	86	86	66
0.0	.5 In Telephone.Graphsag	329	22.64	0.63	0.19	1	288	288	230

Insulators

Type	Description	Voltage (kV)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Strain	12kV DE	12	210	41.5	P112096	1	139.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	210	41.26	P112096	2	128.2	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV Long DE	12	212	42.08	P112096	1	140.8	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV Long DE	12	329	37.93	P112096	11	18.6	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	329	37.01	P112096	10	19.7	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	329	36.86	P112096	10	19.4	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

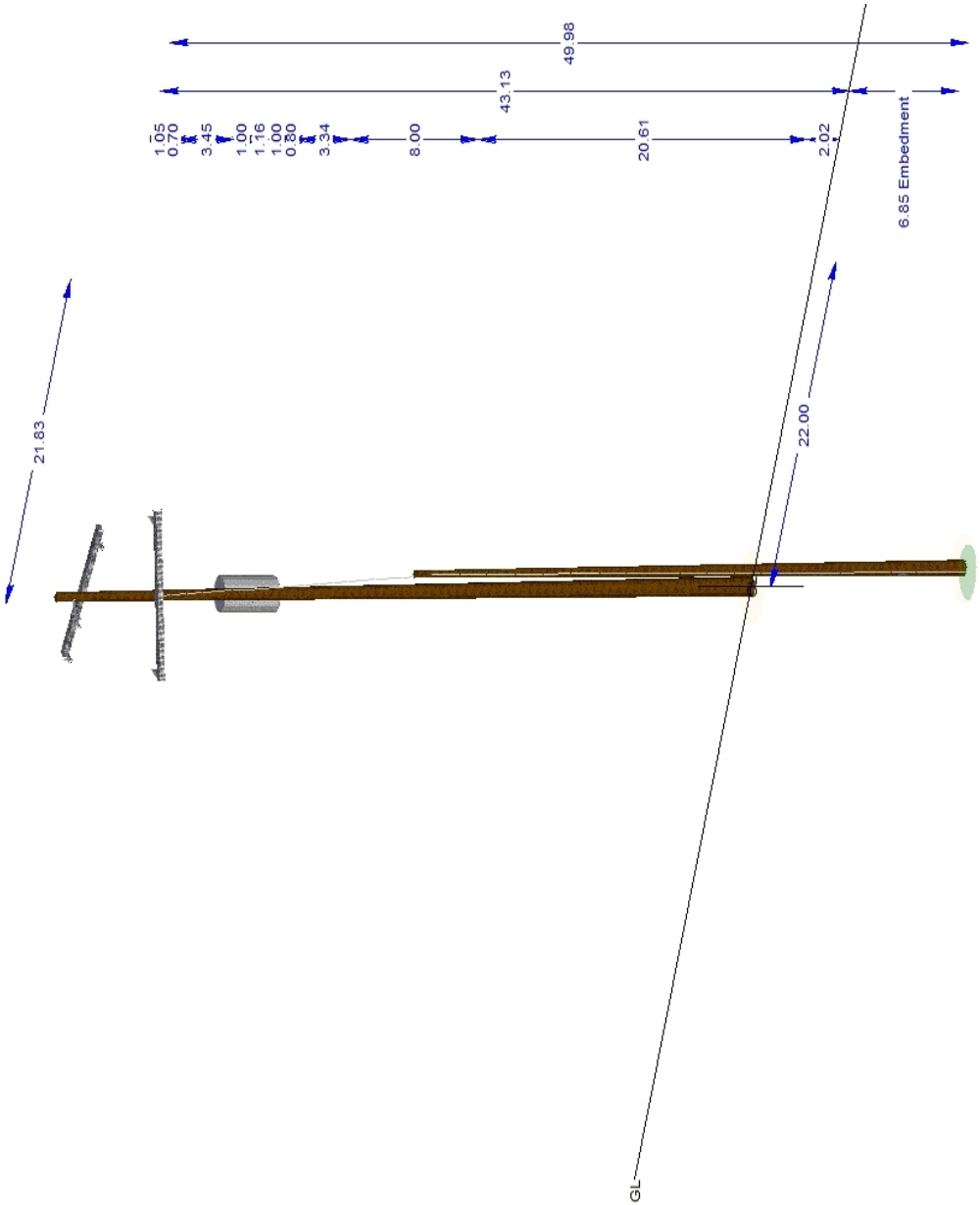
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	Wire Type	Length† (ft)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Span	3/8" 7 Strand EHS (3/8G)	41.57	-58	36.93, 31.95	P112096, P169424	22	6.0	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	Description	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Equipment	25 kVA Transformer	330	30.64	P112096				
X-Arm	10` DE FG ARM (4DF)	283	41.38	P112096		666.7	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
X-Arm	10` DE FG ARM (4DF)	59	36.93	P112096	1	133.3	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy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0.70
3.45
1.00
1.16
1.00
0.80
3.34
8.00
20.61
2.02
6.85 Embedment
21.83
22.00
GL

Structure P112097
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	49 %	***Clearances OK?*** No
Pole Usage	49 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	13 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage		
Anchor Usage		
Arm Usage		Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L3
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p112097_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	285 ft	*Latitude*	33.07984270°
Back Span	289 ft	*Longitude*	-116.83885235°
Ahead Span Az.	119°	*Elevation*	1587 ft
Line Angle	1°	*Tangent/DE*	Tangent
Framing			
Notes			

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft·k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P112097	45	1	Corten Steel	41.4	6.15		100	Known Local Wind Light 85 MPH Grade A at Replacement	57	49	2.0	1.0	0
P112097	45	1	Corten Steel	41.4	6.15		100	G.O.95 Light Grade A at Replacement	29	26	3.9	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height**** (ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	38.49	0.33	0.11	1	285	285	185
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	38.46	0.33	0.11	1	285	285	185
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	38.41	0.33	0.11	1	285	285	185
12	No2 AWG 5Over2 AWAC GCC.Graphsag	179	38.46	0.33	0.11	1	287	285	185
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	38.49	0.33	0.11	1	289	285	185
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	38.41	0.33	0.11	1	288	285	185
0.0	.5 In Telephone.Graphsag	46	22.34	0.63	0.19	1	400	400	371
0.0	.5 In Telephone.Graphsag	180	22.34	0.63	0.19	1	288	288	230

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Post	12kV Clamp Top-Al (1" Pin)	12		37.58	P112097	11	18.1	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		37.56	P112097	13	15.5	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		37.5	P112097	12	17.0	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

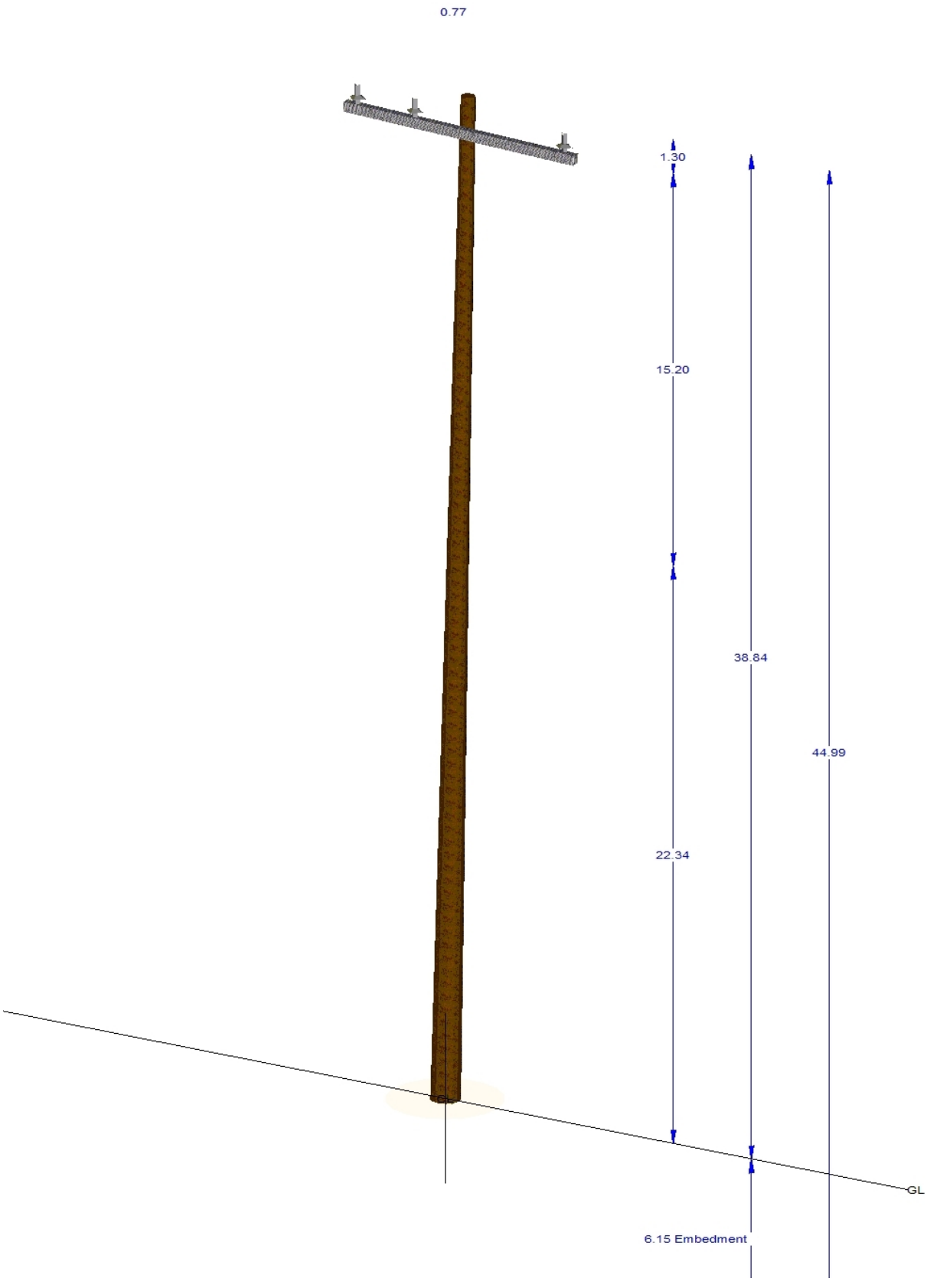
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
X-Arm	10` TAN FG ARM (4TF)	94	37.54	P112097		333.3	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy


0.77
1.30
15.20
38.84
44.99
22.34
GL
6.15 Embedment

Structure P112098
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	25 %	***Clearances OK?*** Yes
Pole Usage	20 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	12 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	23 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	25 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage		Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p112098_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	284 ft	*Latitude*	33.07946870°
Back Span	285 ft	*Longitude*	-116.83803369°
Ahead Span Az.	118°	*Elevation*	1590 ft
Line Angle	-1°	*Tangent/DE*	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft·k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P112098	45	3	Corten Steel	39.0	6.75		100	Known Local Wind Light 85 MPH Grade A at Replacement	4	20	5.0	1.0	32.3
P112098	45	3	Corten Steel	39.0	6.75		100	G.O.95 Light Grade A at Replacement	3	12	8.1	1.0	32.3

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height**** (ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*
12	No2 AWG 5Over2 AWAC GCC.Graphsag	-1	37.98	0.33	0.11	1	279	285	185
12	No2 AWG 5Over2 AWAC GCC.Graphsag	-1	37.94	0.33	0.11	1	279	285	185
12	No2 AWG 5Over2 AWAC GCC.Graphsag	-1	37.82	0.33	0.11	1	279	285	185
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	91	32.25	0.32	0.09	1	282	283	205
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	91	32.25	0.32	0.09	1	284	283	205
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.98	0.33	0.11	1	285	285	185
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.94	0.33	0.11	1	285	285	185
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.82	0.33	0.11	1	285	285	185
12	No2 AWG 5Over2 AWAC GCC.Graphsag	269	33.25	0.33	0.11	1	101	185	175
12	No2 AWG 5Over2 AWAC GCC.Graphsag	270	32.25	0.33	0.11	1	102	185	175
12	No2 AWG 5Over2 AWAC GCC.Graphsag	270	32.25	0.33	0.11	1	101	185	175
0.24	1-0 AWG Triplex SSC AL Neritina GCC.Graphsag	84	25.15	0.97	0.41	1	17	17	11
0.24	1-0 AWG RTS Triplex Msgr AWAC No2 AWG 3-4	270	25.25	0.98	0.48	1	101	101	282

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Post	12kV Clamp Top-Al (1" Pin)	12		37.07	P112098	12	16.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		37.03	P112098	11	18.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		36.92	P112098	11	18.4	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	91	32.25	P112098	11	18.3	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	91	32.25	P112098	11	18.0	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV Long DE	12	269	33.25	P112098	12	17.2	2.0	G.O.95 Light Grade A at Replacement
Strain	12kV DE	12	270	32.25	P112098	11	17.6	2.0	G.O.95 Light Grade A at Replacement
Strain	12kV DE	12	270	32.25	P112098	12	17.0	2.0	G.O.95 Light Grade A at Replacement

Guys and Cables

†Length = Lead Length for Down Guys, Wire Length for Span Guys

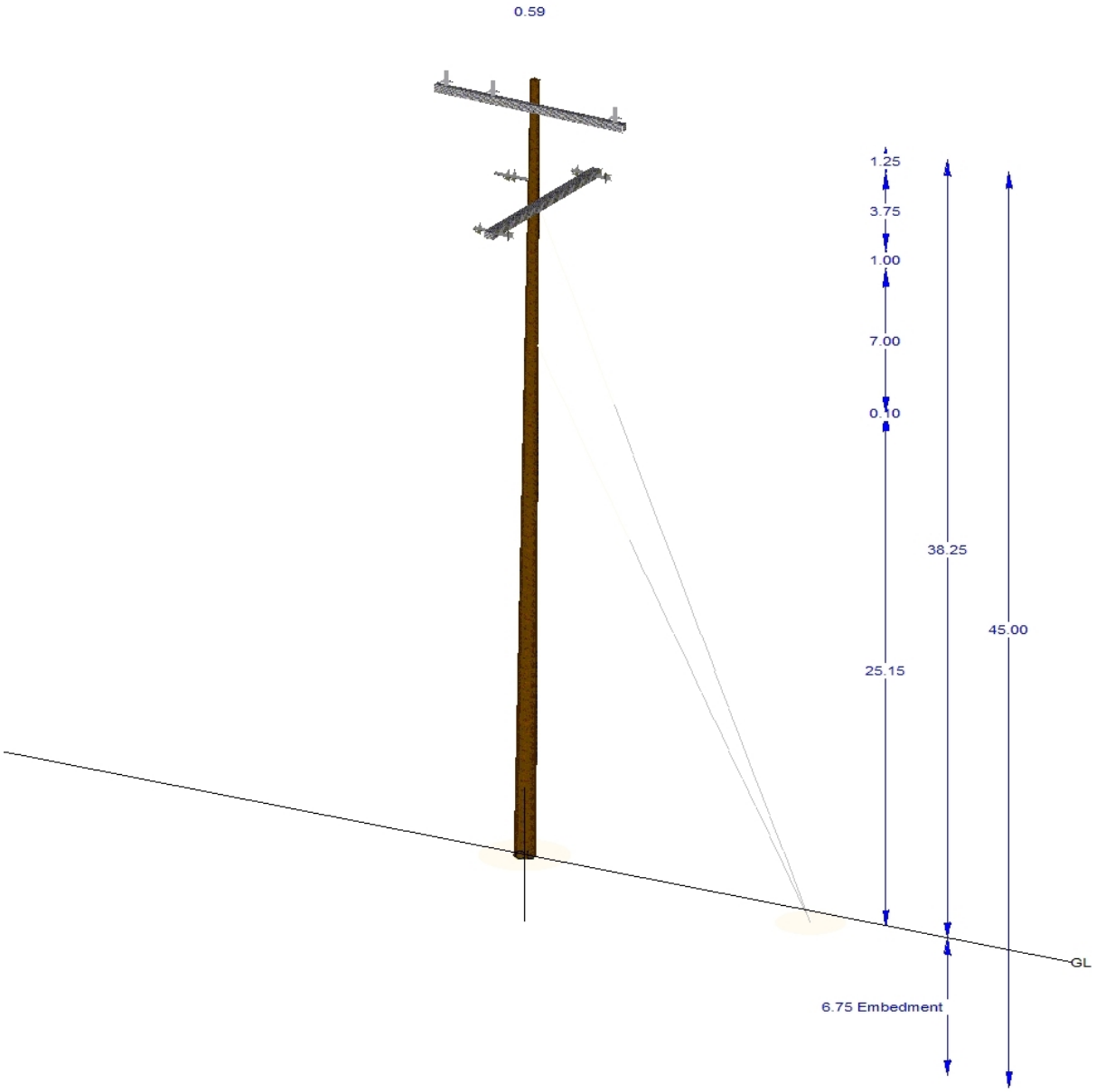
Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy

Down	7/16" 7 Strand EHS (7/16G)	14.65	91	32.25	P112098	23	5.8	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Down	7/16" 7 Strand EHS (7/16G)	14.65	91	25.25	P112098	15	8.7	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	24" CROSSPLATE MG				P112098	25	5.4	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
X-Arm	10` TAN FG ARM (4TF)	90	37	P112098		333.3	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
X-Arm	10` DE FG ARM (4DF)	0	32.25	P112098		444.4	1.3	G.O.95 Light Grade A at Replacement


0.59
1.25
3.75
1.00
7.00
0.10
38.25
45.00
25.15
GL
6.75 Embedment

Structure P112099
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	23 %	***Clearances OK?***	Yes
Pole Usage	23 %	Known Local Wind Light 85 MPH Grade A at Replacement	
Insulator Usage	11 %	Known Local Wind Light 85 MPH Grade A at Replacement	
Guy Usage			
Anchor Usage			
Arm Usage		Known Local Wind Light 85 MPH Grade A at Replacement	

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L3
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p112099_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	290 ft	*Latitude*	33.07911405°
Back Span	278 ft	*Longitude*	-116.83722841°
Ahead Span Az.	118°	*Elevation*	1589 ft
Line Angle	1°	*Tangent/DE*	Tangent
Framing			
Notes			

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft·k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P112099	40	1	Corten Steel	38.9	6		100	Known Local Wind Light 85 MPH Grade A at Replacement	23	23	4.3	1.0	0
P112099	40	1	Corten Steel	38.9	6		100	G.O.95 Light Grade A at Replacement	11	11	9.5	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height**** *(ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	33.7	0.33	0.11	1	290	285	185
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	33.62	0.33	0.11	1	290	285	185
12	No2 AWG 5Over2 AWAC GCC.Graphsag	1	33.67	0.33	0.11	1	289	285	185
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	33.7	0.33	0.11	1	279	285	185
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	33.67	0.33	0.11	1	279	285	185
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	33.62	0.33	0.11	1	279	285	185

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Post	12kV Clamp Top-Al (1" Pin)	12		32.79	P112099	11	18.7	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		32.77	P112099	11	18.0	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		32.71	P112099	10	19.3	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

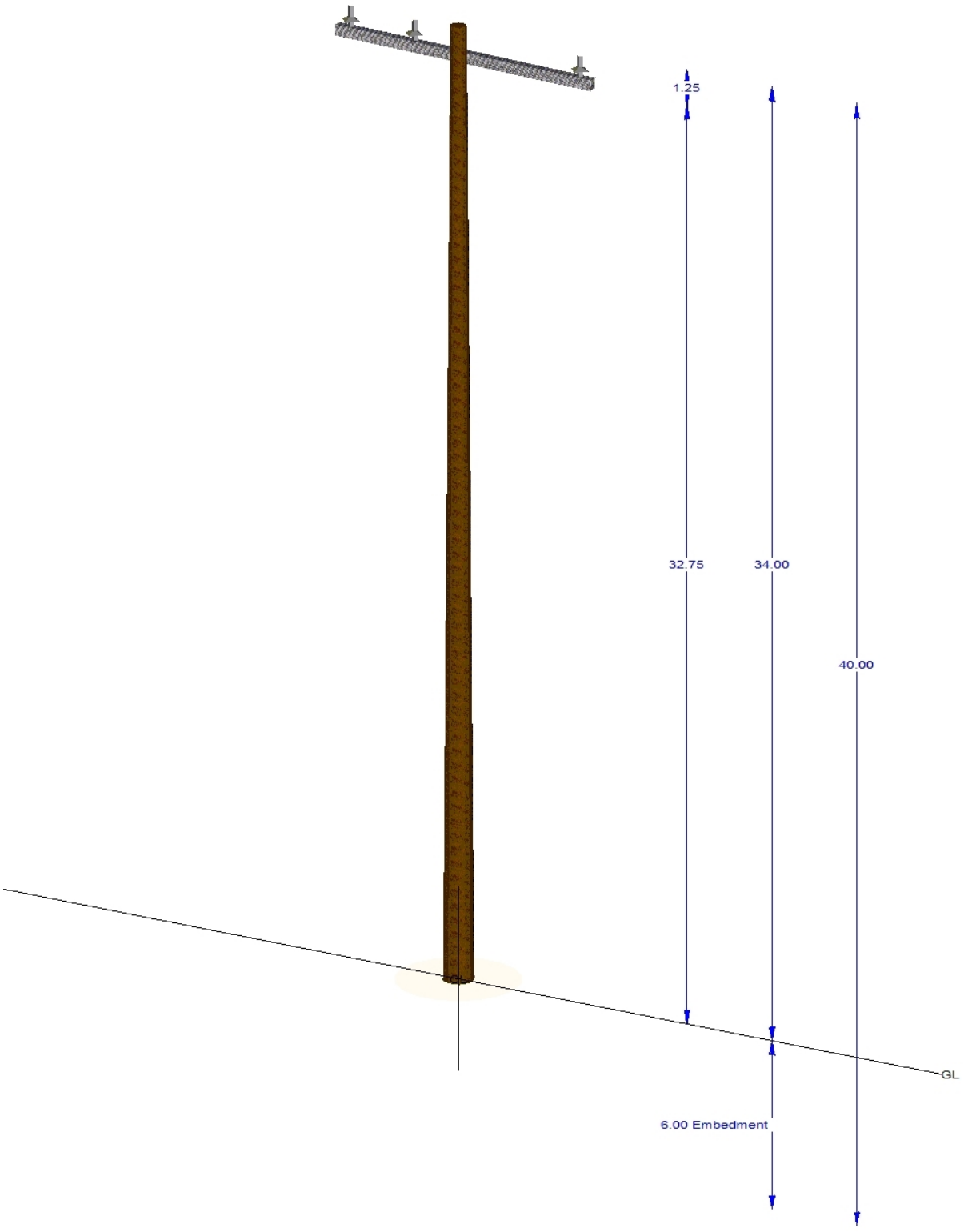
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
X-Arm	10` TAN FG ARM (4TF)	272	32.75	P112099		333.3	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy


1.25
32.75
34.00
40.00
GL
6.00 Embedment

Structure P112100
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	35 %	***Clearances OK?*** No
Pole Usage	35 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	34 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	29 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	30 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage	1 %	Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p112100_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	265 ft	*Latitude*	33.07873776°
Back Span	290 ft	*Longitude*	-116.83639241°
Ahead Span Az.	85°	*Elevation*	1593 ft
Line Angle	-33°	*Tangent/DE*	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft·k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P112100	50	3	Corten Steel	41.4	7.8		100	Known Local Wind Light 85 MPH Grade A at Replacement	10	35	2.9	1.0	36.4
P112100	50	3	Corten Steel	41.4	7.8		100	G.O.95 Light Grade A at Replacement	7	28	3.6	1.0	36.4

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height**** (ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*
12	No2 AWG 5Over2 AWAC GCC.Graphsag	105	37.25	0.33	0.11	1	288	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	105	37.25	0.33	0.11	1	288	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	105	37.25	0.33	0.11	1	288	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	197	41.5	0.33	0.11	1	289	285	185
12	No2 AWG 5Over2 AWAC GCC.Graphsag	197	40.53	0.33	0.11	1	290	285	185
12	No2 AWG 5Over2 AWAC GCC.Graphsag	197	40.37	0.33	0.11	1	290	285	185
12	No2 AWG 5Over2 AWAC GCC.Graphsag	285	37.25	0.33	0.11	1	161	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	285	37.25	0.33	0.11	1	161	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	285	37.25	0.33	0.11	1	162	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	343	40.37	0.33	0.11	1	262	264	272
12	No2 AWG 5Over2 AWAC GCC.Graphsag	344	40.53	0.33	0.11	1	266	264	272
0.24	1-0 AWG Triplex SSC AL Neritina GCC.Graphsag	162	27.1	0.97	0.41	1	49	47	43
0.24	1-0 AWG RTS Triplex Msgr AWAC No2 AWG 3-4	285	27.2	0.98	0.48	1	162	162	270
0.0	.5 In Telephone.Graphsag	105	21.4	0.63	0.19	1	244	244	452
0.0	.5 In Telephone.Graphsag	280	21.4	0.63	0.19	1	6	6	746
0.0	.5 In Telephone.Graphsag	343	22.2	0.63	0.19	1	265	265	217

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Post	12kV Clamp Top-Al (1" Pin)	12		36.35	P112100	34	5.8	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		36.35	P112100	34	5.8	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		36.35	P112100	25	7.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV Long DE	12	197	41.5	P112100	13	15.7	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	197	40.53	P112100	12	16.0	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	197	40.37	P112100	12	16.8	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	343	40.37	P112100	16	12.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	344	40.53	P112100	15	13.3	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy

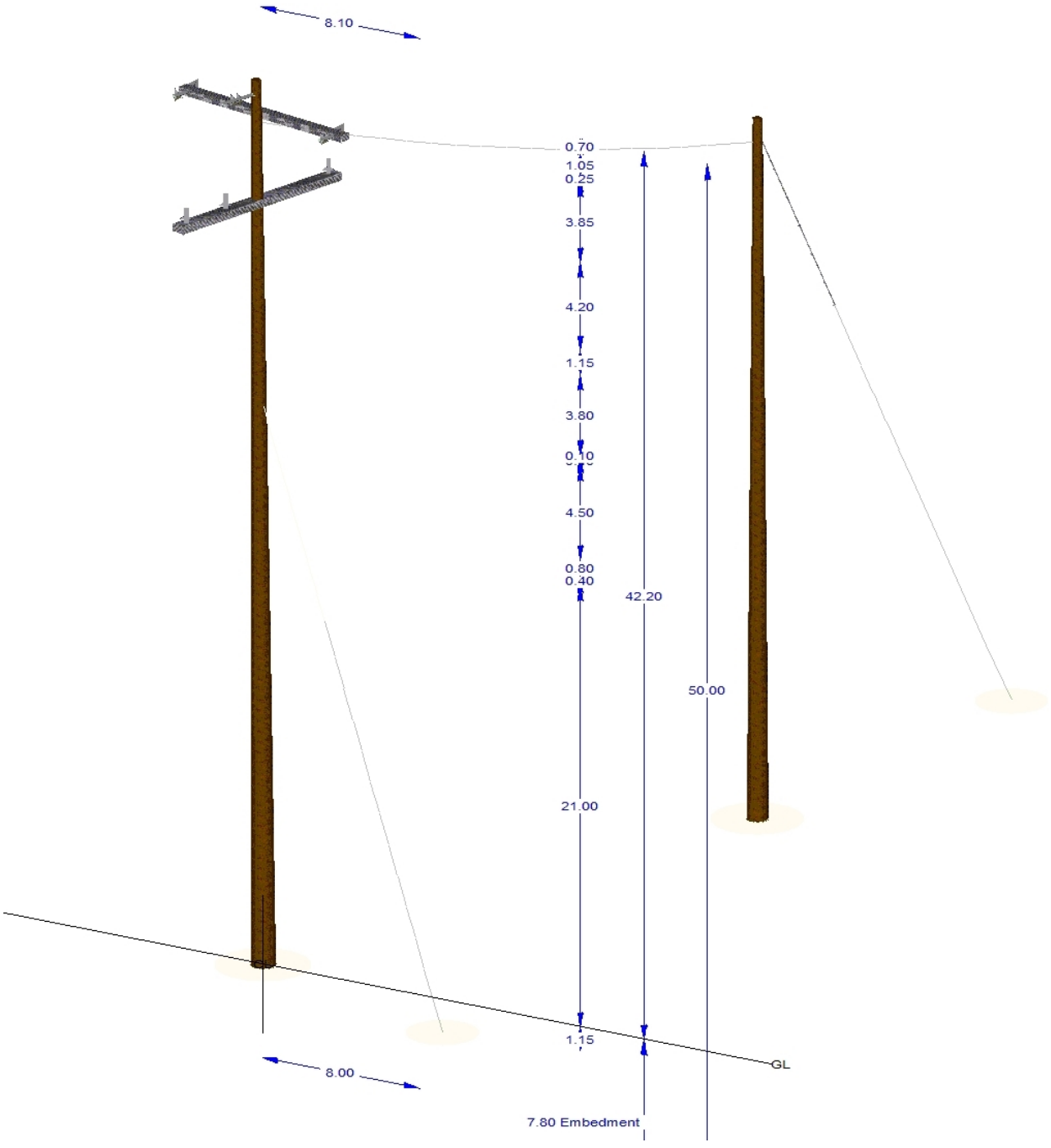
Guys and Cables

†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Down	7/16" 7 Strand EHS (7/16G)	12.24	109	26.7	P112100	29	4.6	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	16" CROSSPLATE MG				P112100	30	4.4	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Span	3/8" 7 Strand EHS (3/8G)	32.47	75	40.2, 32.15	P112100, P254519	12	10.8	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
X-Arm	10` DE FG ARM (4DF)	284	40.45	P112100	1	133.3	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
X-Arm	10` DBL TAN FG ARMS (4TF-2)	195	36.35	P112100	1	121.2	1.3	Known Local Wind Light 85 MPH Grade A at Replacement


8.10
0.70
1.05
0.25
3.85
4.20
1.15
3.80
0.10
4.50
0.80
0.40
42.20
50.00
21.00
1.15
GL
8.00
7.80 Embedment

Structure P112101
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	23 %	**Clearances OK?** Yes
Pole Usage	23 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	15 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage		
Anchor Usage		
Arm Usage		Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L3
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p112101_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	244 ft	Latitude	33.07880112°
Back Span	265 ft	Longitude	-116.83553071°
Ahead Span Az.	86°	Elevation	1603 ft
Line Angle	0°	Tangent/DE	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	Height (ft)	Class	Material	Groundline Circum. (in)	Embed. (ft)	Date Intrusive	Material Capacity %	Load Case	Max Moment (ft·k)	Usage %	Calc SF	Req SF	Max Usage Point (ft)*
P112101	45	1	Corten Steel	41.0	6.85		100	Known Local Wind Light 85 MPH Grade A at Replacement	26	23	4.3	1.0	0
P112101	45	1	Corten Steel	41.0	6.85		100	G.O.95 Light Grade A at Replacement	12	11	9.5	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	Wire Type	Direction (deg)**	Attach Height*** (ft)	Diameter (in)	Unit Weight (lbs/ft)	# of Wires	Span Length (ft)	Ruling Span (ft)	Tension (lbs)
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	37.1	0.33	0.11	1	244	257	239
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	37.1	0.33	0.11	1	244	257	239
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.1	0.33	0.11	1	262	264	272
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.1	0.33	0.11	1	266	264	272
0.0	.5 In Telephone.Graphsag	0	21.85	0.63	0.19	1	244	243	270
0.0	.5 In Telephone.Graphsag	180	21.85	0.63	0.19	1	265	265	217

Insulators

Type	Description	Voltage (kV)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Strain	12kV DE	12	0	37.1	P112101	14	14.4	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	0	37.1	P112101	13	15.0	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	180	37.1	P112101	15	13.3	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	180	37.1	P112101	15	13.7	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

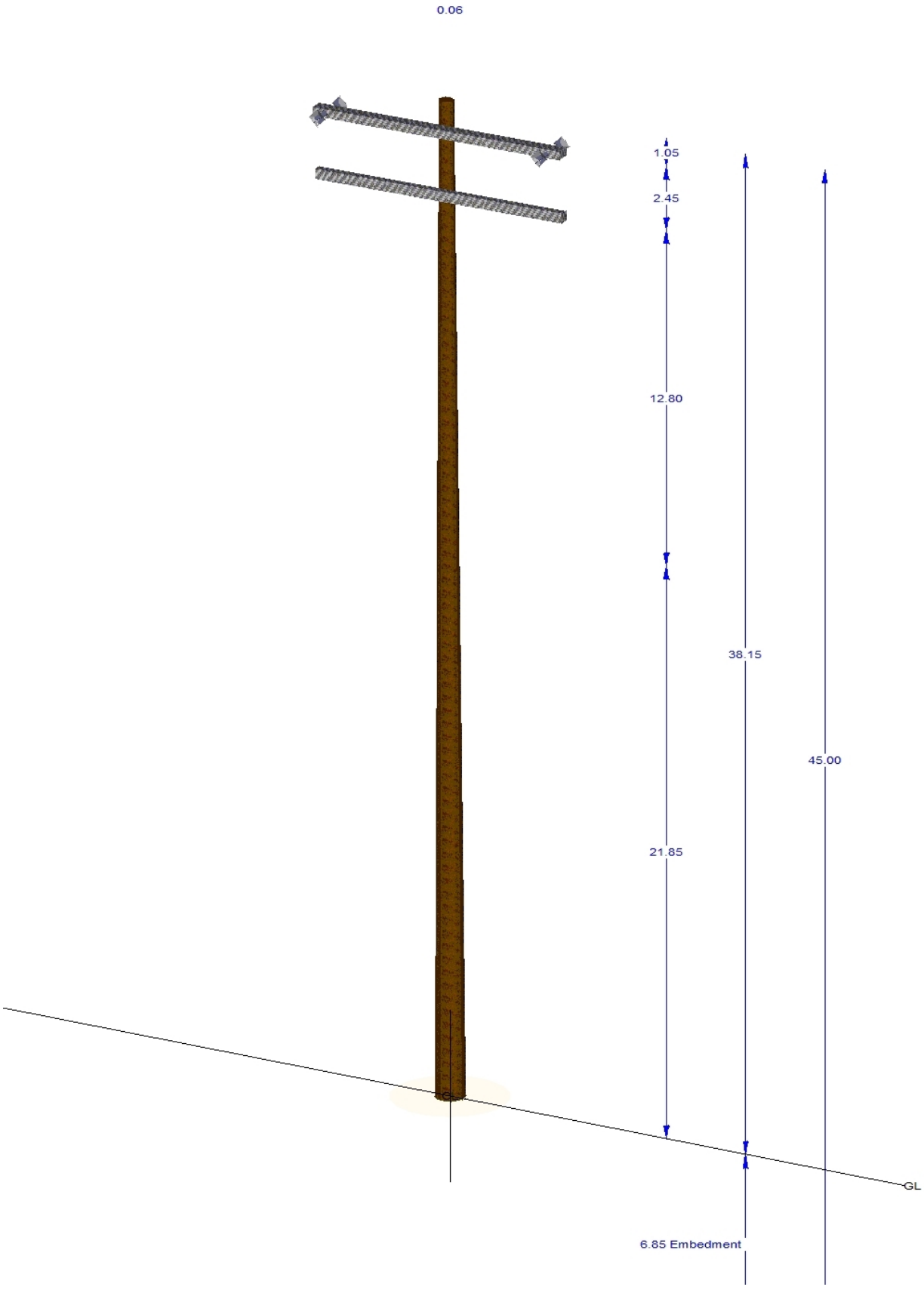
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	Wire Type	Length† (ft)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case

Crossarms and Equipment

Type	Description	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
X-Arm	10` DE FG ARM (4DF)	88	37.1	P112101		666.7	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
X-Arm	10` EQUIPMENT FG ARM (4TF)	88	34.65	P112101			1.3	G.O.95 Light Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy


0.06
1.05
2.45
12.80
38.15
45.00
21.85
GL
6.85 Embedment

Structure P112102
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	23 %	**Clearances OK?**	Yes
Pole Usage	23 %	Known Local Wind Light 85 MPH Grade A at Replacement	
Insulator Usage	9 %	Known Local Wind Light 85 MPH Grade A at Replacement	
Guy Usage			
Anchor Usage			
Arm Usage		Known Local Wind Light 85 MPH Grade A at Replacement	

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L3
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p112102_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	268 ft	Latitude	33.07885532°
Back Span	244 ft	Longitude	-116.83473836°
Ahead Span Az.	86°	Elevation	1613 ft
Line Angle	0°	Tangent/DE	Tangent
Framing			
Notes			

Pole Loading Details

Pole Label	Height (ft)	Class	Material	Groundline Circum. (in)	Embed. (ft)	Date Intrusive	Material Capacity %	Load Case	Max Moment (ft-k)	Usage %	Calc SF	Req SF	Max Usage Point (ft)*
P112102	45	1	Corten Steel	41.2	6.5		100	Known Local Wind Light 85 MPH Grade A at Replacement	26	23	4.4	1.0	0
P112102	45	1	Corten Steel	41.2	6.5		100	G.O.95 Light Grade A at Replacement	11	10	10.2	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	Wire Type	Direction (deg)**	Attach Height*** (ft)	Diameter (in)	Unit Weight (lbs/ft)	# of Wires	Span Length (ft)	Ruling Span (ft)	Tension (lbs)
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	37.68	0.33	0.11	1	269	257	239
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	37.53	0.33	0.11	1	269	257	239
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.68	0.33	0.11	1	244	257	239
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.53	0.33	0.11	1	244	257	239
0.0	.5 In Telephone.Graphsag	0	22.65	0.63	0.19	1	268	267	294
0.0	.5 In Telephone.Graphsag	180	22.65	0.63	0.19	1	244	243	270

Insulators

Type	Description	Voltage (kV)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Post	12kV Clamp Top-Al (1" Pin)	12		36.78	P112102	9	21.4	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		36.62	P112102	9	21.2	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

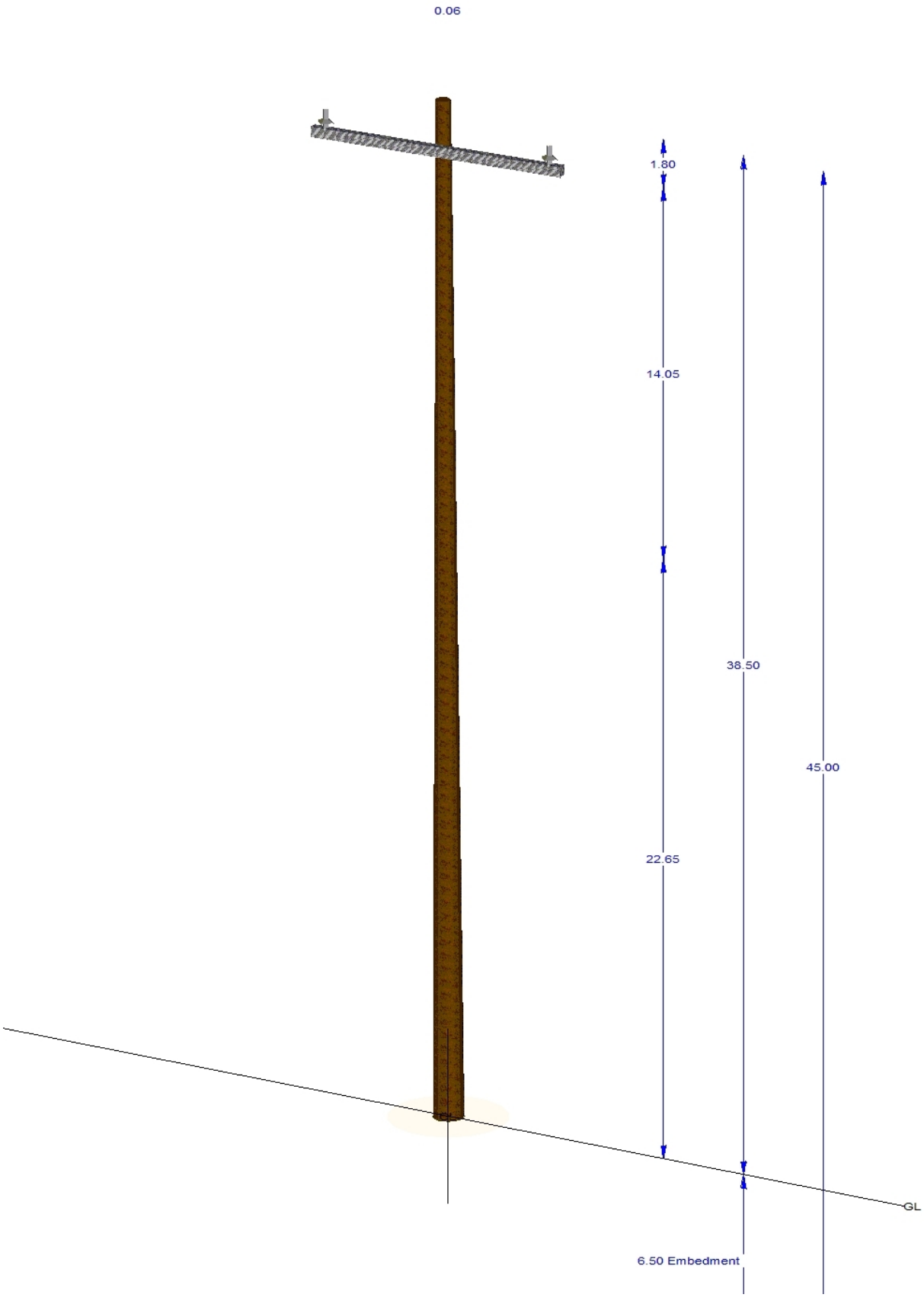
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	Wire Type	Length† (ft)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case

Crossarms and Equipment

Type	Description	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
X-Arm	10` TAN FG ARM (4TF)	88	36.7	P112102		666.7	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy


0.06
1.80
14.05
38.50
45.00
22.65
GL
6.50 Embedment

Structure P112103
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	28 %	***Clearances OK?*** Yes
Pole Usage	28 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	13 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	26 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	21 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage	1 %	G.O.95 Light Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p112103_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	40 ft	*Latitude*	33.07891334°
Back Span	268 ft	*Longitude*	-116.83386768°
Ahead Span Az.	86°	*Elevation*	1638 ft
Line Angle	0°	*Tangent/DE*	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft·k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P112103	45	1	Corten Steel	41.3	6.4		100	Known Local Wind Light 85 MPH Grade A at Replacement	29	28	3.6	1.0	0
P112103	45	1	Corten Steel	41.3	6.4		100	G.O.95 Light Grade A at Replacement	15	15	6.9	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height**** (ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.59	0.33	0.11	1	269	257	239
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.59	0.33	0.11	1	269	257	239
0.24	1-0 AWG Triplex SSC AL Neritina GCC.Graphsag	185	30.09	0.97	0.41	1	39	37	15
0.0	.5 In Telephone.Graphsag	180	22.59	0.63	0.19	1	268	267	294

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Strain	12kV DE	12	180	37.59	P112103	13	15.7	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	180	37.59	P112103	13	14.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

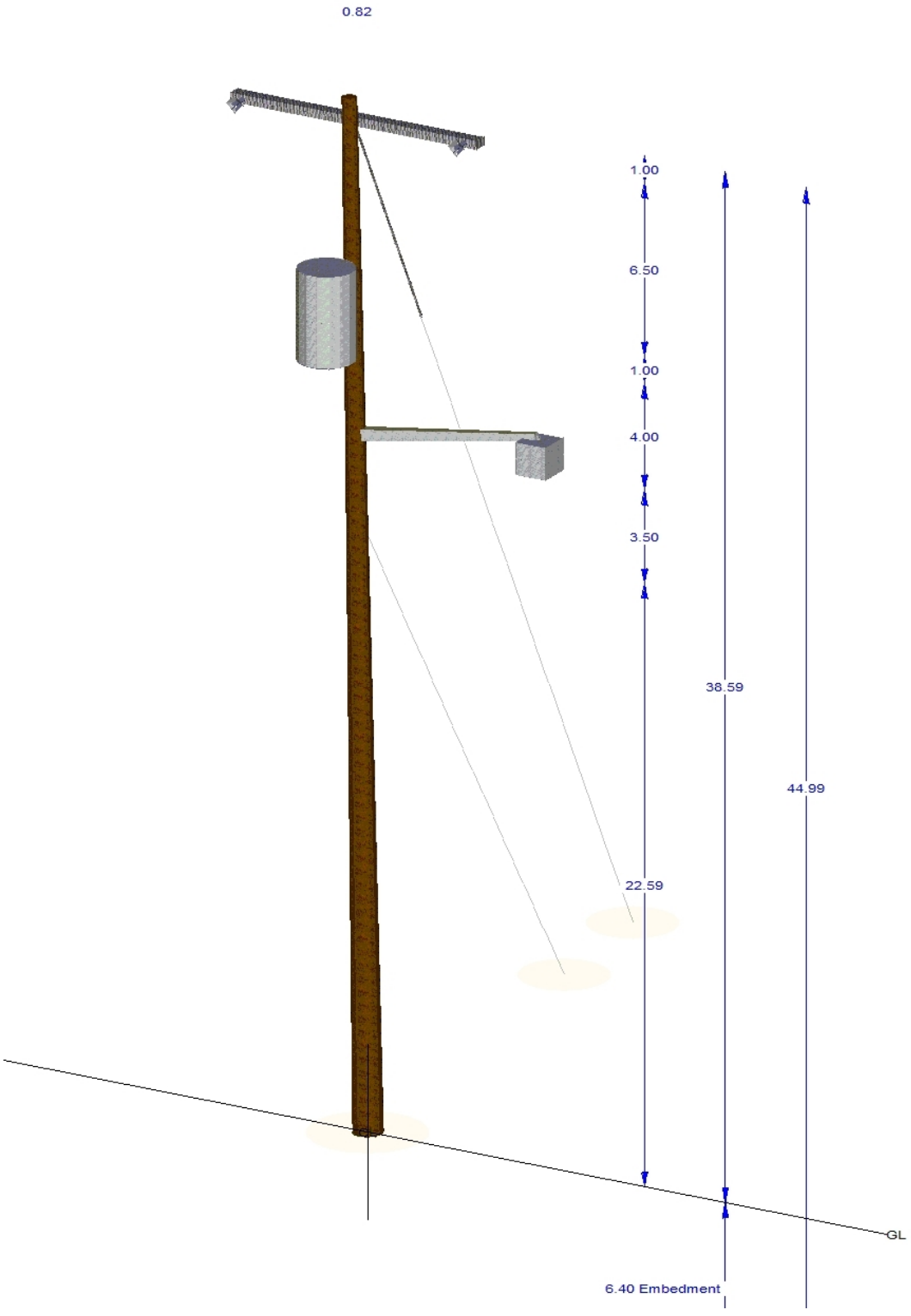
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Down	7/16" 7 Strand EHS (7/16G)	19.73	0	37.59	P112103	26	5.1	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	20" CROSSPLATE MG				P112103	21	6.4	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Down	3/8" 7 Strand EHS (3/8G)	14.21	0	22.59	P112103	25	5.4	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	16" CROSSPLATE MG				P112103	19	7.0	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Equipment	25 kVA Transformer	180	31.09	P112103				
Equipment	GE INTREPID W/Intergrated Antenna	90	27.26	P112103				
X-Arm	10` DE FG ARM (4DF)	270	37.59	P112103	1	102.6	1.3	G.O.95 Light Grade A at Replacement
Tubular Davit	M___70	90	26.09	P112103	1	100.0	1.0	G.O.95 Light Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy


0.82
1.00
6.50
1.00
4.00
3.50
38.59
44.99
22.59
GL
6.40 Embedment

Structure P112130
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	36 %	***Clearances OK?*** Yes
Pole Usage	36 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	12 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage		
Anchor Usage		
Arm Usage		Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p112130_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	288 ft	*Latitude*	33.07803155°
Back Span	273 ft	*Longitude*	-116.83681424°
Ahead Span Az.	25°	*Elevation*	1585 ft
Line Angle	-2°	*Tangent/DE*	Tangent
Framing			
Notes			

Pole Loading Details

Pole Label	Height (ft)	Class	Material	Groundline Circum. (in)	Embed. (ft)	Date Intrusive	Material Capacity %	Load Case	Max Moment (ft·k)	Usage %	Calc SF	Req SF	Max Usage Point (ft)*
P112130	50	1	Corten Steel	43.5	7.35		100	Known Local Wind Light 85 MPH Grade A at Replacement	46	36	2.8	1.0	0
P112130	50	1	Corten Steel	43.5	7.35		100	G.O.95 Light Grade A at Replacement	21	17	5.8	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	Wire Type	Direction (deg)**	Attach Height*** (ft)	Diameter (in)	Unit Weight (lbs/ft)	# of Wires	Span Length (ft)	Ruling Span (ft)	Tension (lbs)
12	No2 AWG 5Over2 AWAC GCC.Graphsag	1	42.42	0.33	0.11	1	288	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	1	42.25	0.33	0.11	1	288	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	1	42.18	0.33	0.11	1	288	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	181	42.42	0.33	0.11	1	273	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	181	42.25	0.33	0.11	1	273	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	181	42.18	0.33	0.11	1	273	282	271
0.24	1-0 AWG Triplex SSC AL Neritina GCC.Graphsag	224	31.04	0.97	0.41	1	36	32	27
0.24	1-0 AWG Triplex SSC AL Neritina GCC.Graphsag	316	31.14	0.97	0.41	1	54	52	64
0.0	.5 In Telephone.Graphsag	-1	21.65	0.63	0.19	1	44	44	56
0.0	.5 In Telephone.Graphsag	181	21.65	0.63	0.19	1	273	273	292

Insulators

Type	Description	Voltage (kV)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Post	12kV Clamp Top-Al (1" Pin)	12		41.51	P112130	12	16.6	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		41.34	P112130	12	17.3	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		41.27	P112130	10	20.3	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

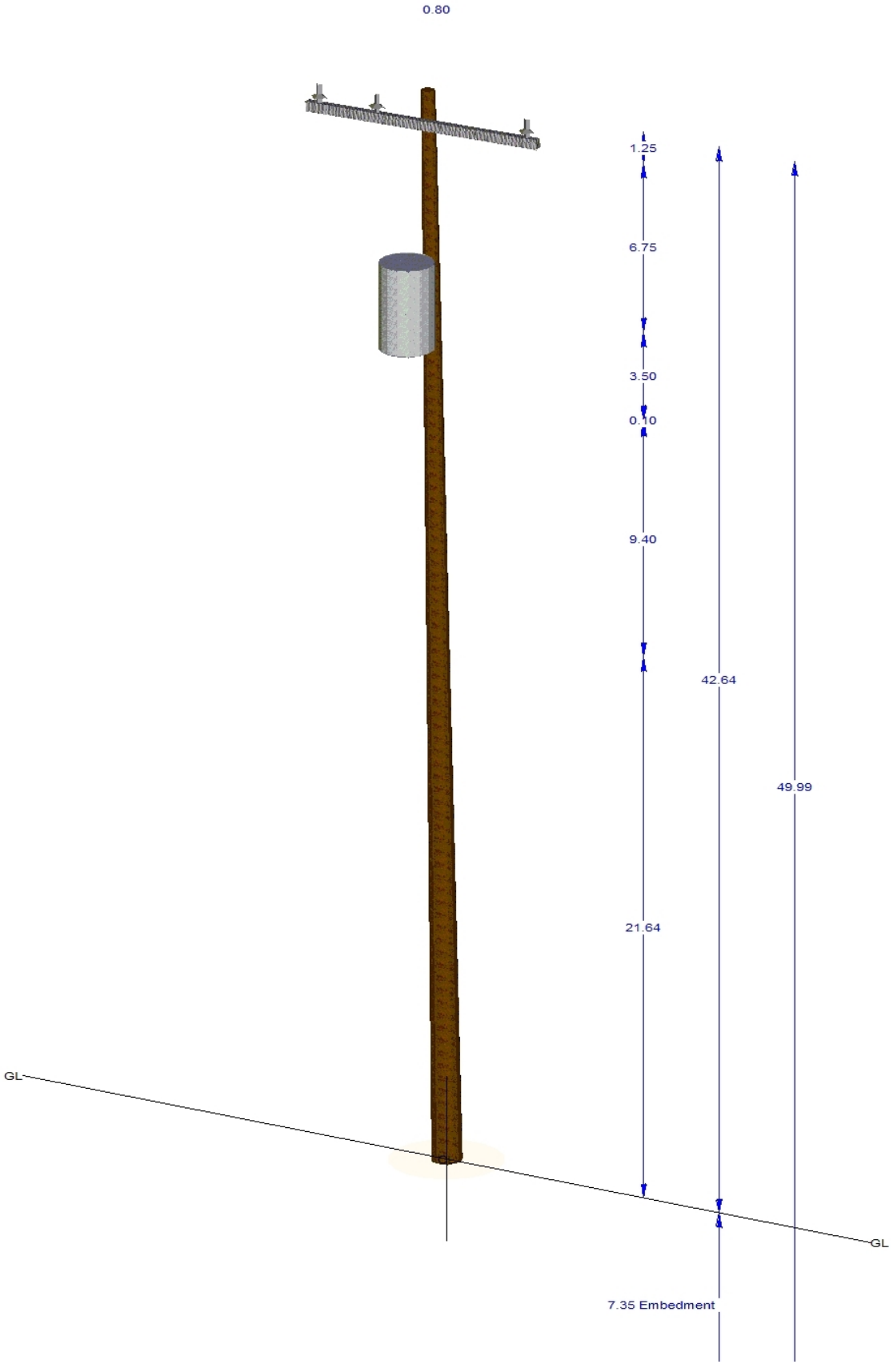
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	Wire Type	Length† (ft)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case

Crossarms and Equipment

Type	Description	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Equipment	25 kVA Transformer	180	34.64	P112130				
X-Arm	10` TAN FG ARM (4TF)	90	41.39	P112130		333.3	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy


0.80
1.25
6.75
3.50
0.10
9.40
42.64
49.99
21.64
GL
GL
7.35 Embedment

Structure P112131
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	50 %	**Clearances OK?** Yes
Pole Usage	50 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	11 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage		
Anchor Usage		
Arm Usage	1 %	Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L3
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p112131_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	273 ft	Latitude	33.07736301°
Back Span	341 ft	Longitude	-116.83721796°
Ahead Span Az.	27°	Elevation	1580 ft
Line Angle	1°	Tangent/DE	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	Height (ft)	Class	Material	Groundline Circum. (in)	Embed. (ft)	Date Intrusive	Material Capacity %	Load Case	Max Moment (ft·k)	Usage %	Calc SF	Req SF	Max Usage Point (ft)*
P112131	50	1	Corten Steel	43.7	6.85		100	Known Local Wind Light 85 MPH Grade A at Replacement	64	50	2.0	1.0	0
P112131	50	1	Corten Steel	43.7	6.85		100	G.O.95 Light Grade A at Replacement	32	25	4.0	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	Wire Type	Direction (deg)**	Attach Height*** (ft)	Diameter (in)	Unit Weight (lbs/ft)	# of Wires	Span Length (ft)	Ruling Span (ft)	Tension (lbs)
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	42.79	0.33	0.11	1	273	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	42.79	0.33	0.11	1	273	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	42.79	0.33	0.11	1	273	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	93	37.56	0.33	0.11	1	100	100	50
12	No2 AWG 5Over2 AWAC GCC.Graphsag	95	37.72	0.33	0.11	1	100	100	50
12	No2 AWG 5Over2 AWAC GCC.Graphsag	97	37.6	0.33	0.11	1	101	100	50
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	42.79	0.33	0.11	1	341	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	42.79	0.33	0.11	1	340	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	42.79	0.33	0.11	1	340	282	271
0.0	.5 In Telephone.Graphsag	0	25.14	0.63	0.19	1	273	273	292
0.0	.5 In Telephone.Graphsag	94	25.84	0.63	0.19	1	100	100	50
0.0	.5 In Telephone.Graphsag	180	25.14	0.63	0.19	1	341	341	309

Insulators

Type	Description	Voltage (kV)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Post	12kV Clamp Top-Al (1" Pin)	12		41.89	P112131	11	18.5	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		41.89	P112131	11	18.4	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		41.89	P112131	11	18.3	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	93	37.56	P112131	3	75.8	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	95	37.72	P112131	4	45.8	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	97	37.6	P112131	3	59.2	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

†Length = Lead Length for Down Guys, Wire Length for Span Guys

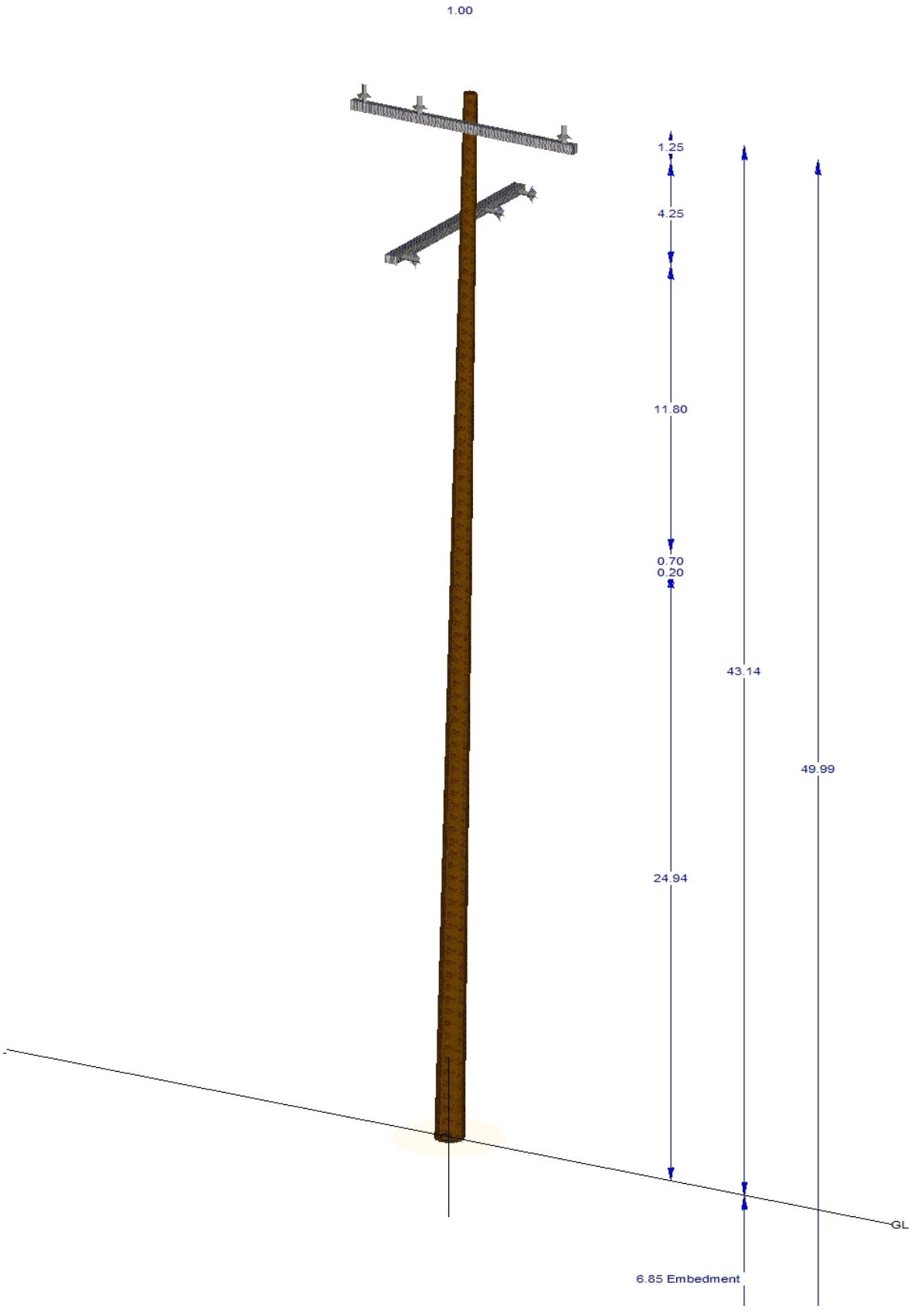
Type	Wire Type	Length† (ft)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case

Crossarms and Equipment

Type	Description	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy

X-Arm	10` TAN FG ARM (4TF)	91	41.89	P112131		333.3	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
X-Arm	10` DE FG ARM (4DF)	180	37.64	P112131	1	222.2	1.3	Known Local Wind Light 85 MPH Grade A at Replacement


1.00
1.25
4.25
11.80
0.70
0.20
43.14
49.99
24.94
GL
6.85 Embedment

Structure P116561
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	47 %	***Clearances OK?*** Yes
Pole Usage	47 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	12 %	G.O.95 Light Grade A at Replacement
Guy Usage	29 %	G.O.95 Light Grade A at Replacement
Anchor Usage	27 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage	1 %	G.O.95 Light Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p116561_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span		*Latitude*	33.08022641°
Back Span	213 ft	*Longitude*	-116.83754276°
Ahead Span Az.	29°	*Elevation*	1595 ft
Line Angle	0°	*Tangent/DE*	Terminal Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	Height (ft)	Class	Material	Groundline Circum. (in)	Embed. (ft)	Date Intrusive	Material Capacity %	Load Case	Max Moment (ft·k)	Usage %	Calc SF	Req SF	Max Usage Point (ft)*
P116561	45	3	Corten Steel	39.1	6.5		100	Known Local Wind Light 85 MPH Grade A at Replacement	33	47	2.1	1.0	0
P116561	45	3	Corten Steel	39.1	6.5		100	G.O.95 Light Grade A at Replacement	17	25	4.0	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	Wire Type	Direction (deg)**	Attach Height*** (ft)	Diameter (in)	Unit Weight (lbs/ft)	# of Wires	Span Length (ft)	Ruling Span (ft)	Tension (lbs)
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.59	0.33	0.11	1	213	185	175
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	36.57	0.33	0.11	1	214	185	175
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	36.41	0.33	0.11	1	214	185	175
0.24	1-0 AWG RTS Triplex Msgr AWAC No2 AWG 3-4	180	25.6	0.98	0.48	1	213	213	365

Insulators

Type	Description	Voltage (kV)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Strain	12kV Long DE	12	180	37.59	P116561	12	17.2	2.0	G.O.95 Light Grade A at Replacement
Strain	12kV DE	12	180	36.57	P116561	11	17.8	2.0	G.O.95 Light Grade A at Replacement
Strain	12kV DE	12	180	36.41	P116561	11	17.7	2.0	G.O.95 Light Grade A at Replacement

Guys and Cables

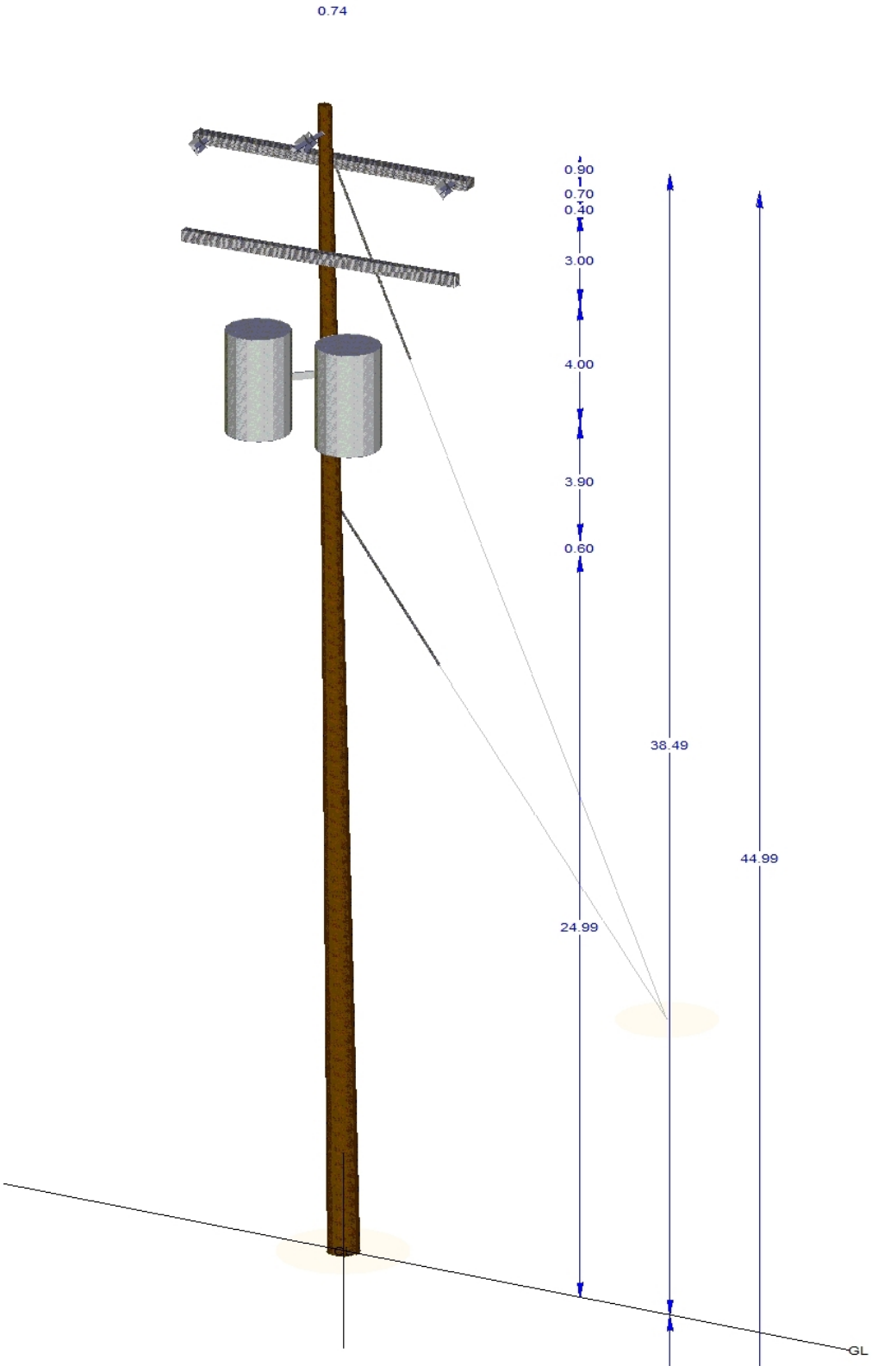
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	Wire Type	Length† (ft)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Down	7/16" 7 Strand EHS (7/16G)	21.36	0	36.89	P116561	29	4.5	1.3	G.O.95 Light Grade A at Replacement
Down	7/16" 7 Strand EHS (7/16G)	21.36	0	25	P116561	14	9.3	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	24" CROSSPLATE MG				P116561	27	4.9	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	Description	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Equipment	25 kVA Transformer	135	29.49	P116561				
Equipment	25 kVA Transformer	225	29.49	P116561				
X-Arm	10` DE FG ARM (4DF)	270	36.49	P116561	1	121.2	1.3	G.O.95 Light Grade A at Replacement
X-Arm	10` EQUIPMENT FG ARM (4TF)	90	33.49	P116561			1.3	G.O.95 Light Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy


0.74
0.90
0.70
0.40
3.00
4.00
3.90
0.60
38.49
44.99
24.99
GL

Structure P161927
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** Existing Conditions (Field Assessment)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	69 %	***Clearances OK?*** Yes
Pole Usage	69 %	G.O.95 Light Grade A at Replacement
Insulator Usage	11 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	62 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	36 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage	22 %	Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	P161927 - REF ONLY_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span		*Latitude*	33.07878605°
Back Span	284 ft	*Longitude*	-116.83848214°
Ahead Span Az.	209°	*Elevation*	1587 ft
Line Angle	0°	*Tangent/DE*	Terminal Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft-k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P161927	45	3	DF - Dougas Fir	38.0	5.05		100	G.O.95 Light Grade A at Replacement	29	69	3.8	2.6	0
P161927	45	3	DF - Dougas Fir	38.0	5.05		100	Known Local Wind Light 85 MPH Grade A at Replacement	52	62	2.2	1.3	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height**** *(ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	180	39.32	0.32	0.09	1	284	283	205
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	180	38.76	0.32	0.09	1	282	283	205
0.0	.5 In Telephone.Graphsag	135	25.54	0.63	0.19	1	400	400	371

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Strain	12kV DE	12	180	39.32	P161927	11	17.7	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	180	38.76	P161927	11	17.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

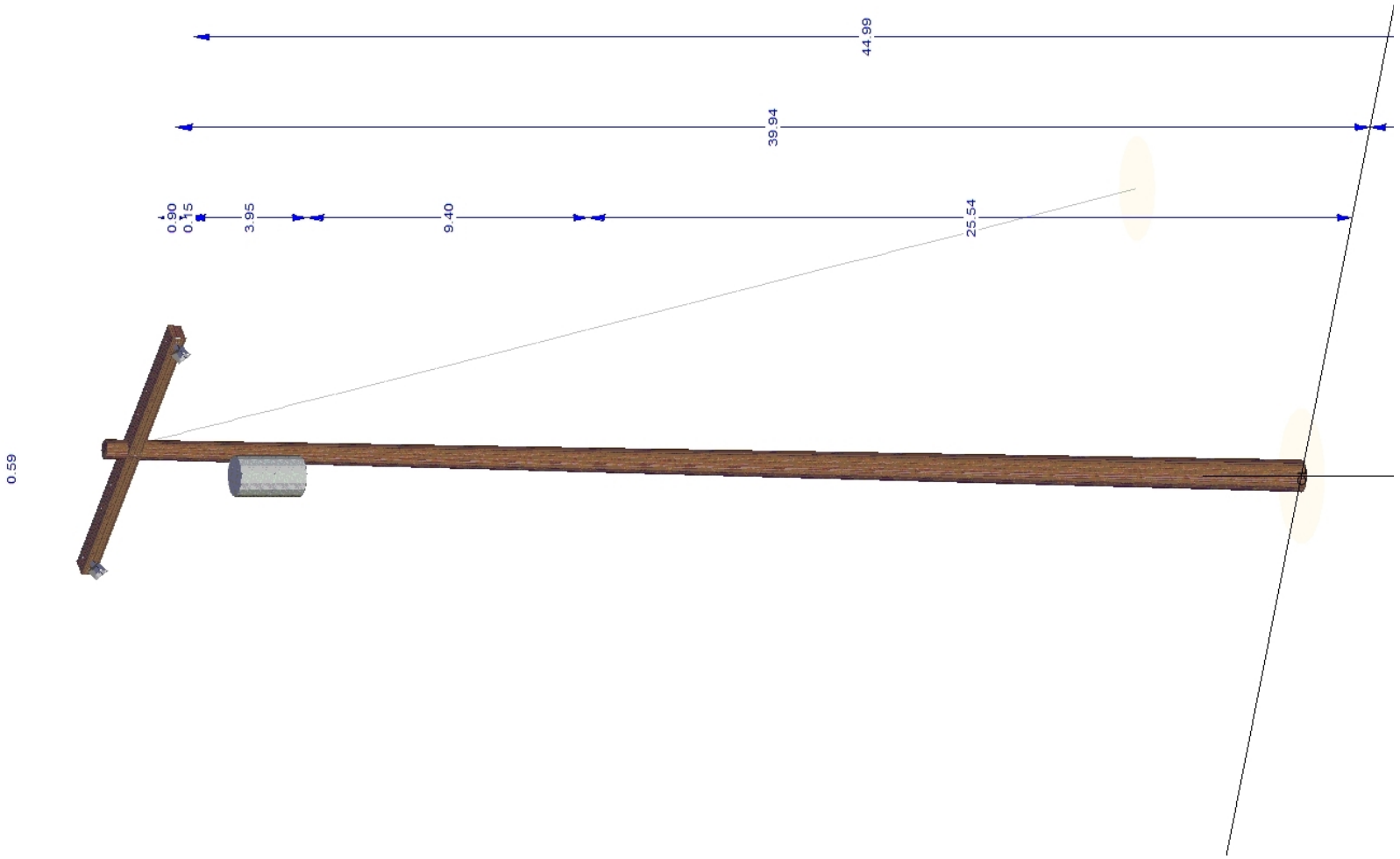
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Down	3/8" 7 Strand UG	16.16	0	38.89	P161927	62	2.1	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	16" CROSSPLATE MG				P161927	36	3.7	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Equipment	15 kVA Transformer	180	34.94	P161927				
X-Arm	10` DBL WOOD ARMS (D4)	282	39.04	P161927	22	6.2	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy


44.99
39.94
0.90
0.15
3.95
9.40
25.54
0.59

Structure P169424
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	52 %	***Clearances OK?*** Yes
Pole Usage	30 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage		
Guy Usage	52 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	42 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage		

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p112096_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	289 ft	*Latitude*	33.08020966°
Back Span	86 ft	*Longitude*	-116.83968821°
Ahead Span Az.	118°	*Elevation*	1604 ft
Line Angle	-63°	*Tangent/DE*	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft·k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P169424	40	3	Corten Steel	36.5	6.2		100	Known Local Wind Light 85 MPH Grade A at Replacement	16	30	3.3	1.0	32
P169424	40	3	Corten Steel	36.5	6.2		100	G.O.95 Light Grade A at Replacement	10	21	4.9	1.0	32

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height**** *(ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*

Guys and Cables

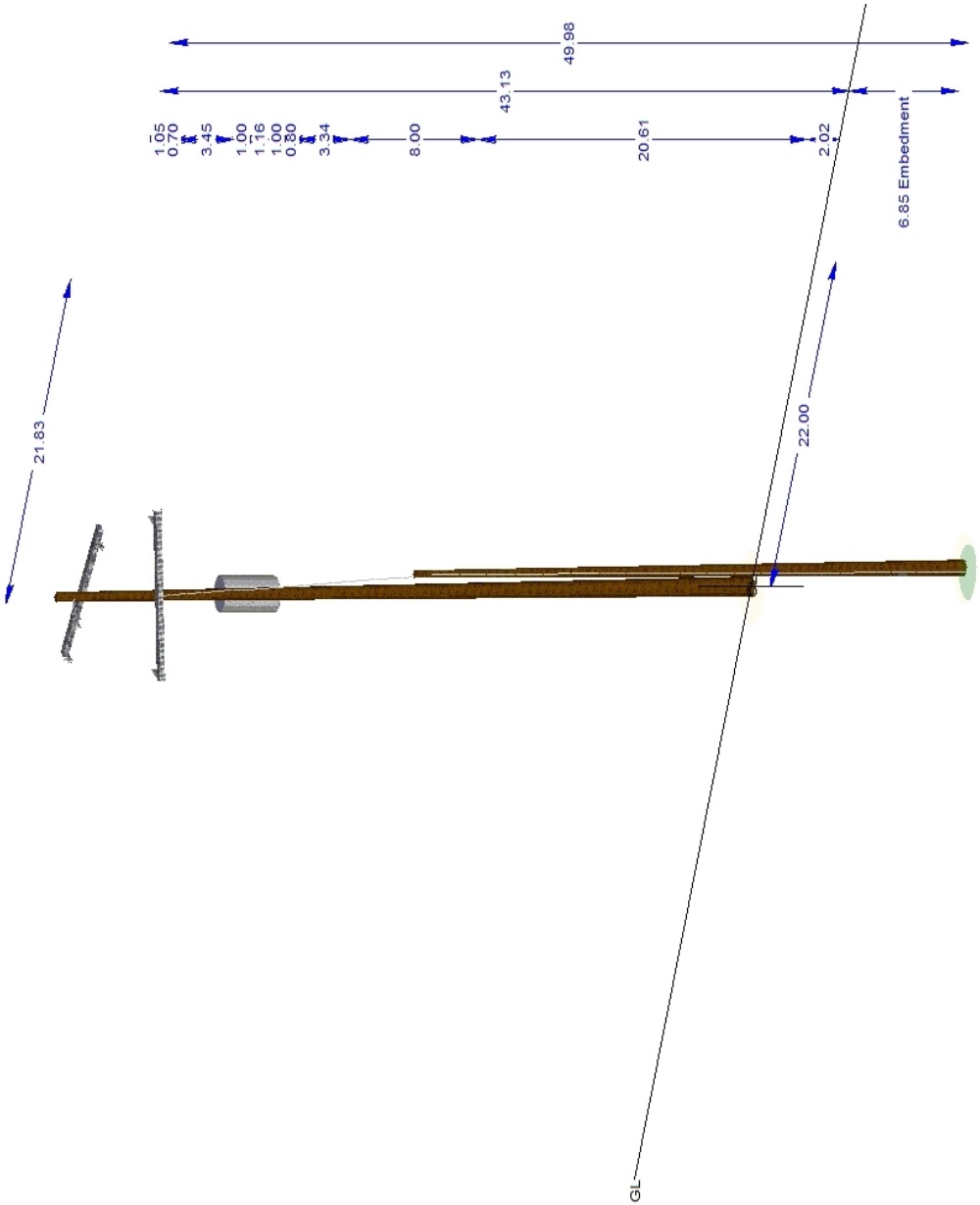
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Down	7/16" 7 Strand EHS (7/16G)	10.07	149	32.75	P169424	52	2.5	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	20" CROSSPLATE MG				P169424	42	3.2	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Span	3/8" 7 Strand EHS (3/8G)	41.57	32	36.93, 31.95	P112096, P169424	22	6.0	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy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43.13
1.05
0.70
3.45
1.00
1.16
1.00
0.80
3.34
8.00
20.61
2.02
6.85 Embedment
21.83
22.00
GL

Structure P204814
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	54 %	***Clearances OK?***	Yes
Pole Usage	54 %	Known Local Wind Light 85 MPH Grade A at Replacement	
Insulator Usage	7 %	Known Local Wind Light 85 MPH Grade A at Replacement	
Guy Usage			
Anchor Usage			
Arm Usage		G.O.95 Light Grade A at Replacement	

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p204814_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	213 ft	*Latitude*	33.07971307°
Back Span	101 ft	*Longitude*	-116.83787918°
Ahead Span Az.	29°	*Elevation*	1591 ft
Line Angle	1°	*Tangent/DE*	Tangent
Framing			
Notes			

Pole Loading Details

Pole Label	Height (ft)	Class	Material	Groundline Circum. (in)	Embed. (ft)	Date Intrusive	Material Capacity %	Load Case	Max Moment (ft·k)	Usage %	Calc SF	Req SF	Max Usage Point (ft)*
P204814	45	3	Corten Steel	39.1	6.5		100	Known Local Wind Light 85 MPH Grade A at Replacement	39	54	1.9	1.0	0
P204814	45	3	Corten Steel	39.1	6.5		100	G.O.95 Light Grade A at Replacement	18	25	4.0	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	Wire Type	Direction (deg)**	Attach Height*** (ft)	Diameter (in)	Unit Weight (lbs/ft)	# of Wires	Span Length (ft)	Ruling Span (ft)	Tension (lbs)
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	38.29	0.33	0.11	1	214	185	175
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	38.16	0.33	0.11	1	214	185	175
12	No2 AWG 5Over2 AWAC GCC.Graphsag	1	38.2	0.33	0.11	1	213	185	175
12	No2 AWG 5Over2 AWAC GCC.Graphsag	179	38.2	0.33	0.11	1	101	185	175
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	38.29	0.33	0.11	1	101	185	175
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	38.16	0.33	0.11	1	102	185	175
0.24	1-0 AWG RTS Triplex Msgr AWAC No2 AWG 3-4	0	27	0.98	0.48	1	213	213	365
0.24	1-0 AWG RTS Triplex Msgr AWAC No2 AWG 3-4	180	27	0.98	0.48	1	101	101	282

Insulators

Type	Description	Voltage (kV)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Post	12kV Clamp Top-Al (1" Pin)	12		37.38	P204814	6	31.1	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		37.29	P204814	7	29.6	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		37.26	P204814	7	30.5	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

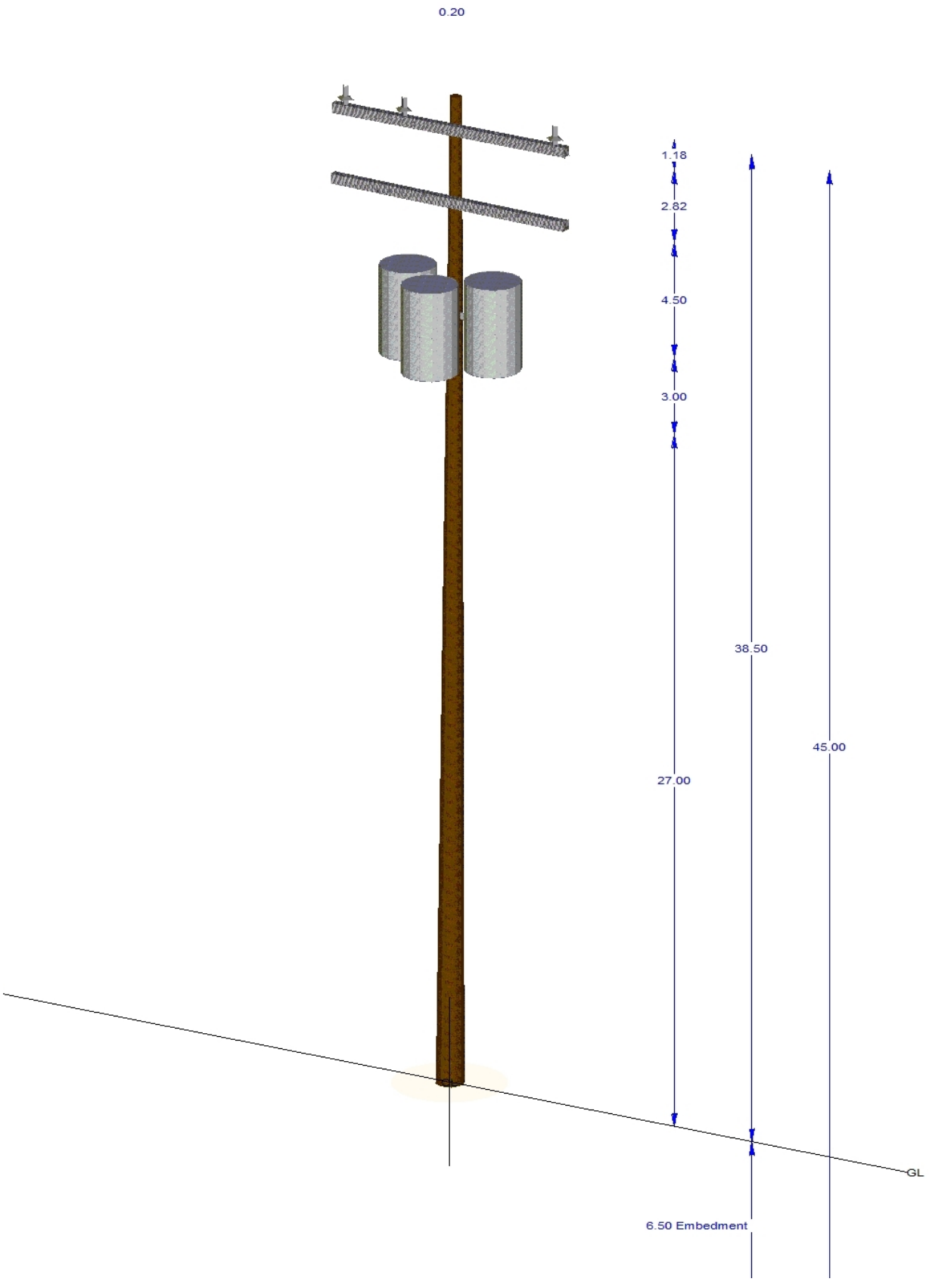
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	Wire Type	Length† (ft)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case

Crossarms and Equipment

Type	Description	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Equipment	25 kVA Transformer	180	30	P204814				
Equipment	25 kVA Transformer	100	30	P204814				
Equipment	25 kVA Transformer	260	30	P204814				
X-Arm	10` TAN FG ARM (4TF)	92	37.32	P204814		666.7	1.3	G.O.95 Light Grade A at Replacement
X-Arm	10` EQUIPMENT FG ARM (4TF)	92	34.5	P204814			1.3	G.O.95 Light Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy


0.20
1.18
2.82
4.50
3.00
38.50
45.00
27.00
GL
6.50 Embedment

Structure P209119
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	20 %	***Clearances OK?*** Yes
Pole Usage	20 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	7 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage		
Anchor Usage		
Arm Usage		Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L3
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p209119_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	184 ft	*Latitude*	33.07524542°
Back Span	152 ft	*Longitude*	-116.83847328°
Ahead Span Az.	27°	*Elevation*	1566 ft
Line Angle	0°	*Tangent/DE*	Tangent
Framing			
Notes			

Pole Loading Details

Pole Label	Height (ft)	Class	Material	Groundline Circum. (in)	Embed. (ft)	Date Intrusive	Material Capacity %	Load Case	Max Moment (ft·k)	Usage %	Calc SF	Req SF	Max Usage Point (ft)*
P209119	40	1	Corten Steel	38.8	6.05		100	Known Local Wind Light 85 MPH Grade A at Replacement	21	20	4.9	1.0	0
P209119	40	1	Corten Steel	38.8	6.05		100	G.O.95 Light Grade A at Replacement	9	9	10.6	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	Wire Type	Direction (deg)**	Attach Height*** (ft)	Diameter (in)	Unit Weight (lbs/ft)	# of Wires	Span Length (ft)	Ruling Span (ft)	Tension (lbs)
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	33.5	0.33	0.11	1	182	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	33.5	0.33	0.11	1	182	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	33.5	0.33	0.11	1	183	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	33.5	0.33	0.11	1	153	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	33.5	0.33	0.11	1	153	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	33.5	0.33	0.11	1	153	282	271
0.0	.5 In Telephone.Graphsag	0	19.65	0.63	0.19	1	183	183	247
0.0	.5 In Telephone.Graphsag	180	19.65	0.63	0.19	1	152	152	225

Insulators

Type	Description	Voltage (kV)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Post	12kV Clamp Top-Al (1" Pin)	12		32.6	P209119	6	31.0	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		32.6	P209119	7	30.2	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		32.6	P209119	7	29.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

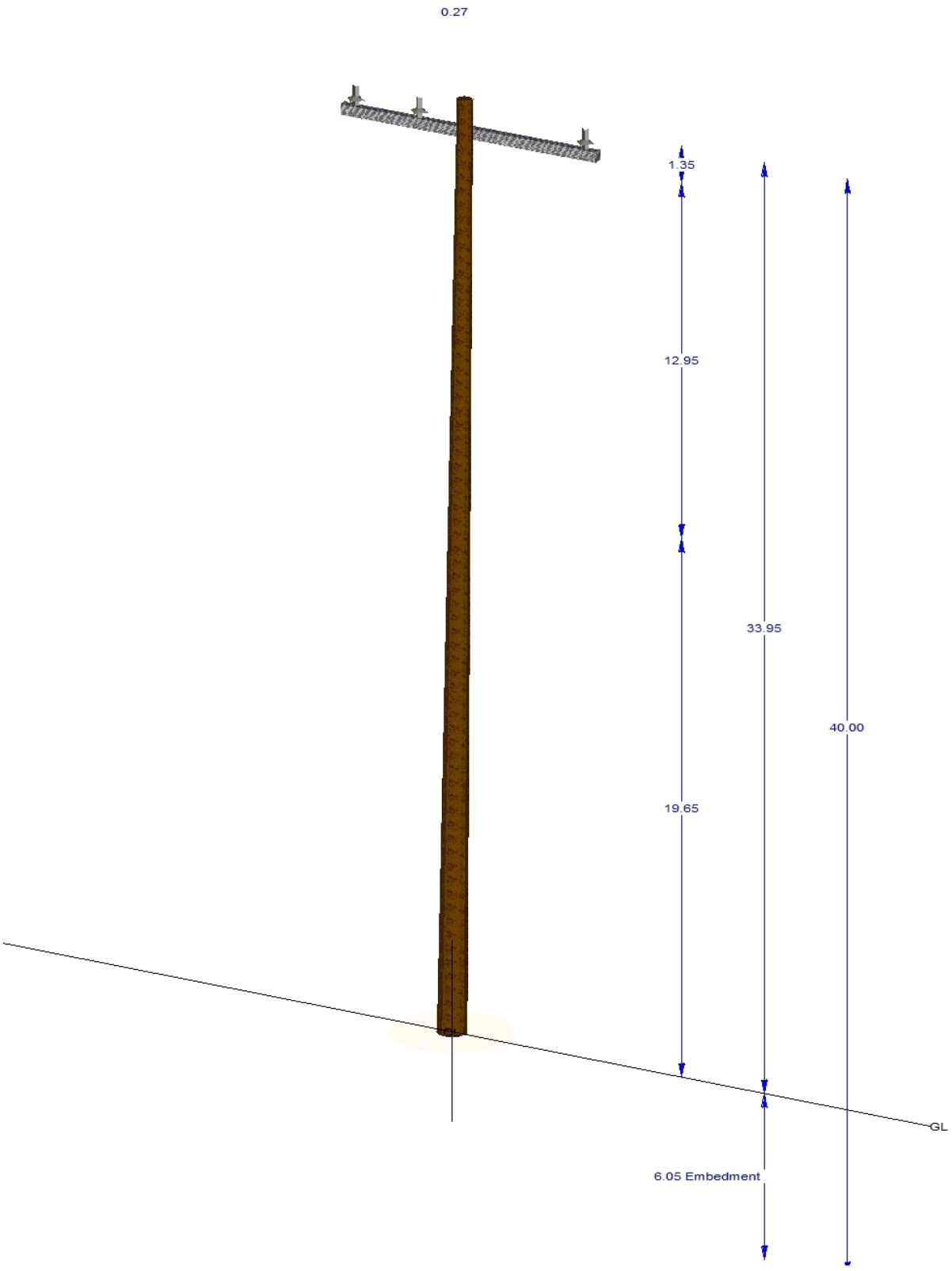
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	Wire Type	Length† (ft)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case

Crossarms and Equipment

Type	Description	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
X-Arm	10` TAN FG ARM (4TF)	269	32.6	P209119		444.4	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy


0.27
1.35
12.95
33.95
40.00
19.65
GL
6.05 Embedment

Structure P211223
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	65 %	***Clearances OK?*** No
Pole Usage	65 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	14 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	34 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	27 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage	2 %	Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p211223_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	334 ft	*Latitude*	33.07722228°
Back Span	100 ft	*Longitude*	-116.83693672°
Ahead Span Az.	117°	*Elevation*	1580 ft
Line Angle	-4°	*Tangent/DE*	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft·k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P211223	50	3	Corten Steel	42.0	6.85		100	Known Local Wind Light 85 MPH Grade A at Replacement	52	65	1.5	1.0	0
P211223	50	3	Corten Steel	42.0	6.85		100	G.O.95 Light Grade A at Replacement	22	29	3.5	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height**** (ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*
12	No2 AWG 5Over2 AWAC GCC.Graphsag	181	42.09	0.33	0.11	1	100	100	50
12	No2 AWG 5Over2 AWAC GCC.Graphsag	182	41.9	0.33	0.11	1	100	100	50
12	No2 AWG 5Over2 AWAC GCC.Graphsag	184	41.95	0.33	0.11	1	101	100	50
12	No2 AWG 5Over2 AWAC GCC.Graphsag	358	42.09	0.33	0.11	1	335	334	205
12	No2 AWG 5Over2 AWAC GCC.Graphsag	358	41.95	0.33	0.11	1	334	334	205
12	No2 AWG 5Over2 AWAC GCC.Graphsag	358	41.9	0.33	0.11	1	334	334	205
0.24	1-0 AWG Triplex SSC AL Neritina GCC.Graphsag	60	31.04	0.97	0.41	1	84	83	52
0.24	1-0 AWG Triplex SSC AL Neritina GCC.Graphsag	75	31.14	0.97	0.41	1	25	22	10
0.0	.5 In Telephone.Graphsag	57	21.55	0.63	0.19	1	84	83	40
0.0	.5 In Telephone.Graphsag	182	22.55	0.63	0.19	1	100	100	50
0.0	.5 In Telephone.Graphsag	358	22.65	0.63	0.19	1	334	333	292

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Strain	12kV DE	12	181	42.09	P211223	3	73.3	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	182	41.9	P211223	5	43.7	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	184	41.95	P211223	3	59.3	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	358	42.09	P211223	14	14.7	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	358	41.95	P211223	12	17.3	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	358	41.9	P211223	12	16.5	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

†Length = Lead Length for Down Guys, Wire Length for Span Guys

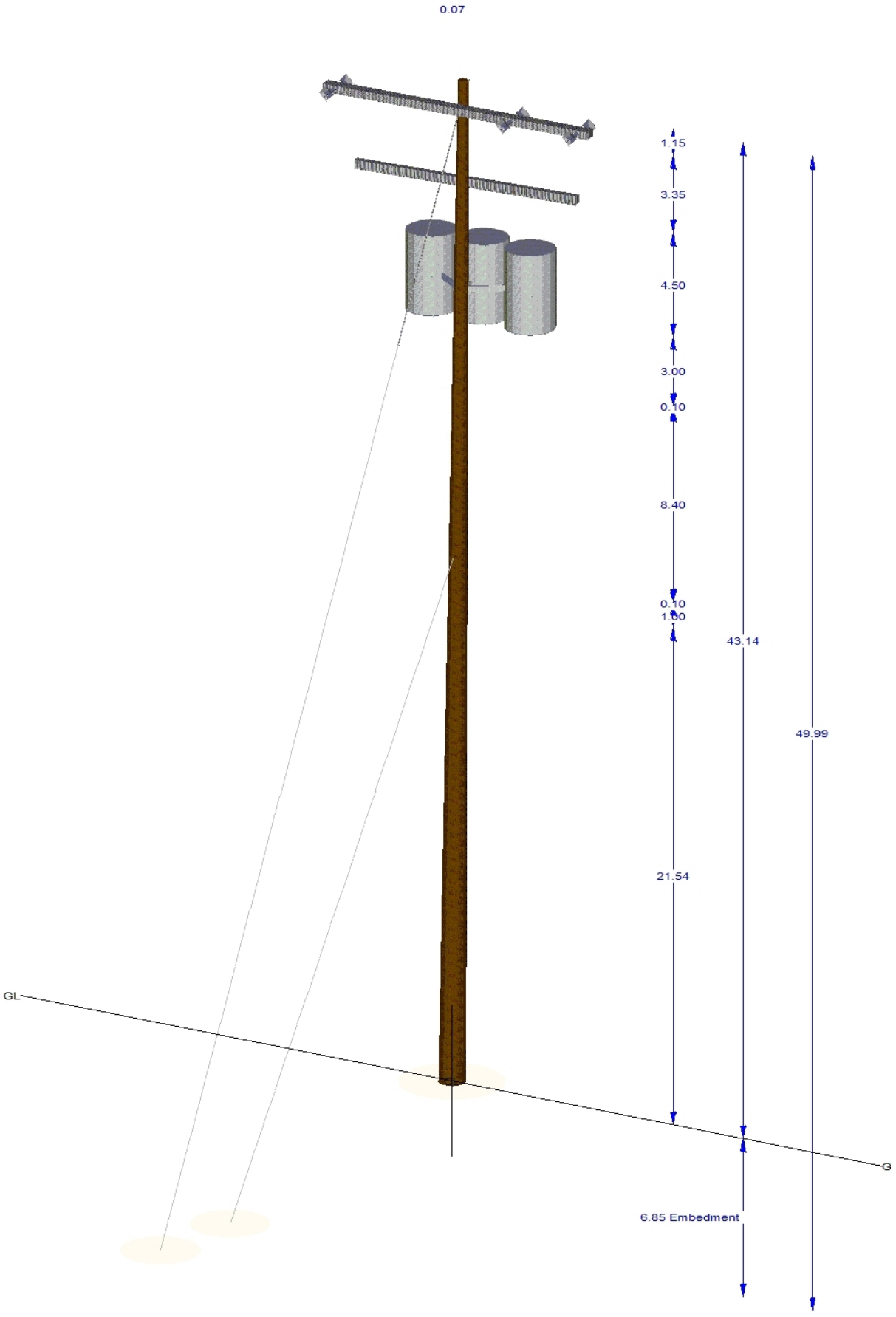
Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Down	7/16" 7 Strand EHS (7/16G)	23.96	181	41.99	P211223	34	3.9	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	20" CROSSPLATE MG				P211223	27	4.9	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Down	3/8" 7 Strand EHS (3/8G)	19.93	177	22.65	P211223	26	5.1	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy

Anchor	16" CROSSPLATE MG			P211223	20	6.6	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Equipment	25 kVA Transformer	0	34.14	P211223				
Equipment	25 kVA Transformer	55	34.14	P211223				
Equipment	25 kVA Transformer	305	34.14	P211223				
X-Arm	12` DE FG ARM (6DF)	86	41.99	P211223	2	66.7	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
X-Arm	10` EQUIPMENT FG ARM (4TF)	266	38.64	P211223			1.3	G.O.95 Light Grade A at Replacement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43.14
49.99
21.54
GL
G
6.85 Embedment

Structure P211224
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	49 %	***Clearances OK?*** Yes
Pole Usage	49 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	13 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	14 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	11 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage		Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p211224_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	383 ft	*Latitude*	33.07680669°
Back Span	334 ft	*Longitude*	-116.83596592°
Ahead Span Az.	117°	*Elevation*	1583 ft
Line Angle	0°	*Tangent/DE*	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft·k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P211224	55	1	Corten Steel	48.0	7.35		100	Known Local Wind Light 85 MPH Grade A at Replacement	74	49	2.0	1.0	0
P211224	55	1	Corten Steel	48.0	7.35		100	G.O.95 Light Grade A at Replacement	33	23	4.4	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height**** (ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	46.37	0.33	0.11	1	380	380	214
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	46.21	0.33	0.11	1	380	380	214
12	No2 AWG 5Over2 AWAC GCC.Graphsag	179	47.34	0.33	0.11	1	334	334	205
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	46.37	0.33	0.11	1	334	334	205
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	46.21	0.33	0.11	1	335	334	205
0.24	1-0 AWG Triplex SSC AL Neritina GCC.Graphsag	249	37.14	0.97	0.41	1	105	104	67
0.0	.5 In Telephone.Graphsag	0	29.64	0.63	0.19	1	382	382	295
0.0	.5 In Telephone.Graphsag	180	29.64	0.63	0.19	1	334	333	292

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Strain	12kV DE	12	0	46.37	P211224	13	15.2	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	0	46.21	P211224	13	15.0	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV Long DE	12	179	47.34	P211224	11	17.5	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	180	46.37	P211224	12	16.8	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	180	46.21	P211224	13	14.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

†Length = Lead Length for Down Guys, Wire Length for Span Guys

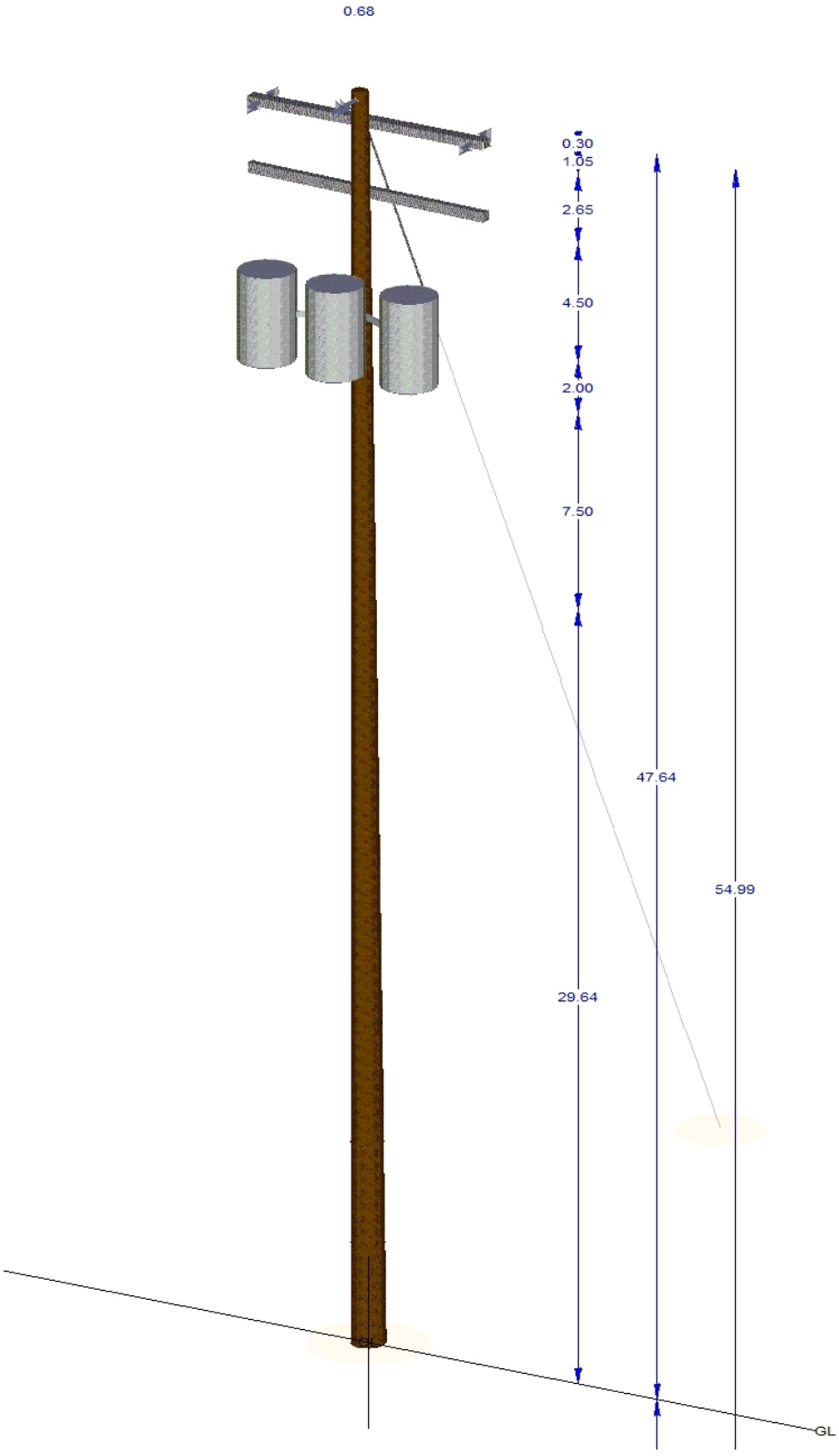
Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Down	7/16" 7 Strand EHS (7/16G)	23.78	3	46.29	P211224	14	9.2	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	20" CROSSPLATE MG				P211224	11	11.6	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Equipment	25 kVA Transformer	180	39.14	P211224				
Equipment	25 kVA Transformer	240	39.14	P211224				
Equipment	25 kVA Transformer	120	39.14	P211224				
X-Arm	10` DE FG ARM (4DF)	272	46.29	P211224		444.4	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy

X-Arm	10` EQUIPMENT FG ARM (4TF)	272	43.64	P211224	1.3	G.O.95 Light Grade A at Replacement


0.68
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1.05
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4.50
2.00
7.50
47.64
54.99
29.64
GL

Structure P211225
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	63 %	***Clearances OK?*** Yes
Pole Usage	40 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	11 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	56 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	63 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage	1 %	Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p211225_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	229 ft	*Latitude*	33.07632731°
Back Span	383 ft	*Longitude*	-116.83485110°
Ahead Span Az.	80°	*Elevation*	1597 ft
Line Angle	-38°	*Tangent/DE*	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	Height (ft)	Class	Material	Groundline Circum. (in)	Embed. (ft)	Date Intrusive	Material Capacity %	Load Case	Max Moment (ft·k)	Usage %	Calc SF	Req SF	Max Usage Point (ft)*
P211225	60	1	Corten Steel	47.4	8.35		100	Known Local Wind Light 85 MPH Grade A at Replacement	56	40	2.5	1.0	0
P211225	60	1	Corten Steel	47.4	8.35		100	G.O.95 Light Grade A at Replacement	33	24	4.2	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	Wire Type	Direction (deg)**	Attach Height*** (ft)	Diameter (in)	Unit Weight (lbs/ft)	# of Wires	Span Length (ft)	Ruling Span (ft)	Tension (lbs)
12	No2 AWG 5Over2 AWAC GCC.Graphsag	199	50.27	0.33	0.11	1	380	380	214
12	No2 AWG 5Over2 AWAC GCC.Graphsag	199	50.27	0.33	0.11	1	380	380	214
12	No2 AWG 5Over2 AWAC GCC.Graphsag	290	46.06	0.33	0.11	1	155	240	157
12	No2 AWG 5Over2 AWAC GCC.Graphsag	291	45.29	0.33	0.11	1	155	240	157
12	No2 AWG 5Over2 AWAC GCC.Graphsag	342	50.27	0.33	0.11	1	229	231	200
12	No2 AWG 5Over2 AWAC GCC.Graphsag	342	50.27	0.33	0.11	1	235	231	200
0.0	.5 In Telephone.Graphsag	199	21.32	0.63	0.19	1	382	382	295
0.0	.5 In Telephone.Graphsag	290	21.22	0.63	0.19	1	155	154	136
0.0	.5 In Telephone.Graphsag	341	21.32	0.63	0.19	1	230	229	265

Insulators

Type	Description	Voltage (kV)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Strain	12kV DE	12	290	46.06	P211225	9	21.3	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	291	45.29	P211225	10	19.6	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	342	50.27	P211225	11	17.8	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	342	50.27	P211225	11	17.8	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

†Length = Lead Length for Down Guys, Wire Length for Span Guys

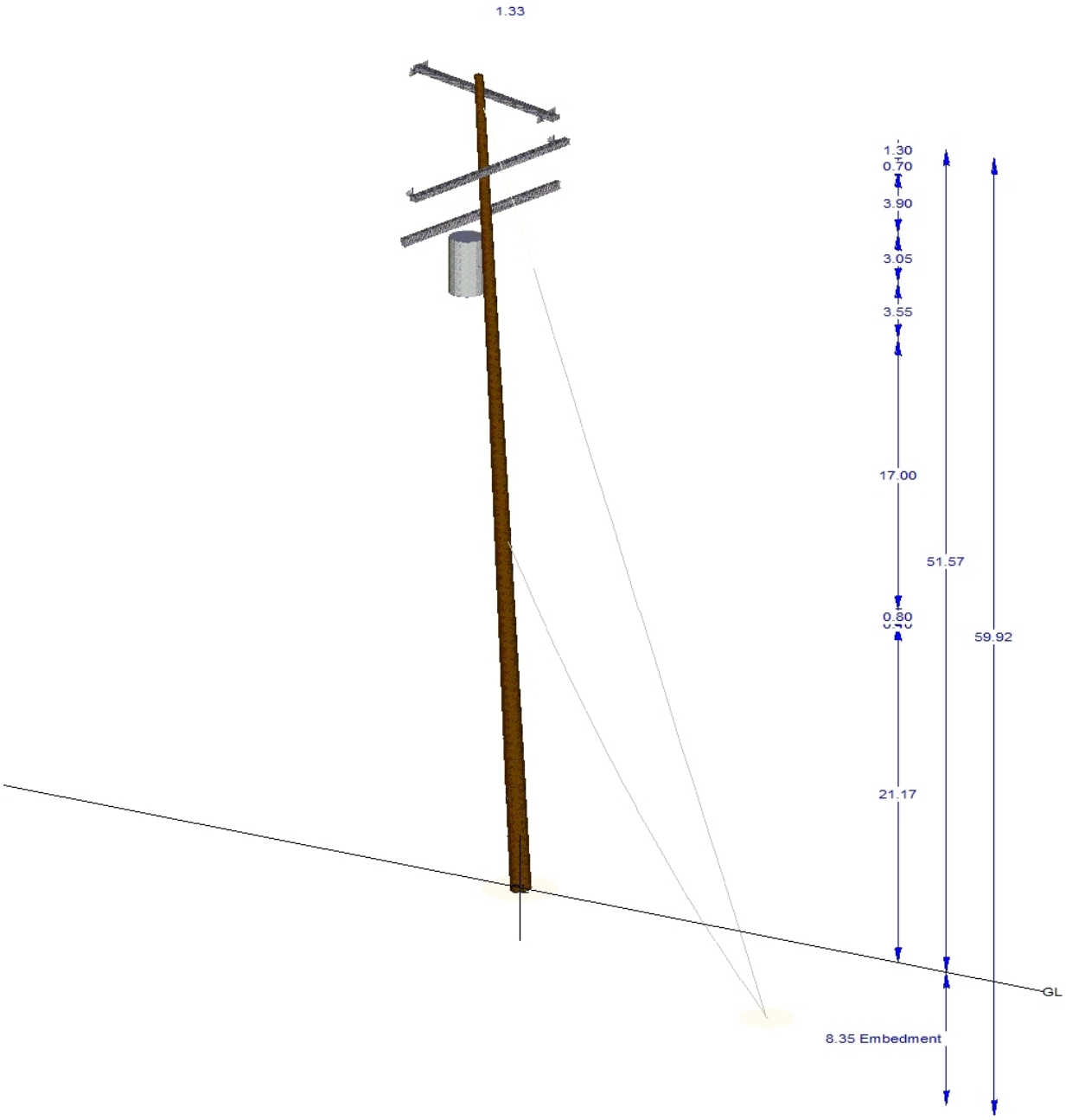
Type	Wire Type	Length† (ft)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Down	7/16" 7 Strand EHS (7/16G)	23	103	49.57	P211225	56	2.4	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Down	3/8" 7 Strand EHS (3/8G)	23	103	22.11	P211225	6	23.0	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	16" CROSSPLATE MG				P211225	63	2.1	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	Description	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Equipment	25 kVA Transformer	287	39.09	P211225				
X-Arm	12` DE FG ARM (6DF)	287	50.27	P211225	1	121.2	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
X-Arm	12` DE FG ARM (6DF)	20	45.68	P211225	1	121.2	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy

X-Arm	12` EQUIPMENT FG ARM (6TF)	200	42.63	P211225	1333.3	1.3	G.O.95 Light Grade A at Replacement


1.33
1.30
0.70
3.90
3.05
3.55
17.00
51.57
0.80
59.92
21.17
GL
8.35 Embedment

Structure P211226
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	39 %	***Clearances OK?*** Yes
Pole Usage	39 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	16 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	22 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	18 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage	2 %	Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p211226_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	64 ft	*Latitude*	33.07644415°
Back Span	229 ft	*Longitude*	-116.83411543°
Ahead Span Az.	80°	*Elevation*	1625 ft
Line Angle	0°	*Tangent/DE*	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft·k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P211226	45	3	Corten Steel	39.1	6.5		100	Known Local Wind Light 85 MPH Grade A at Replacement	28	39	2.5	1.0	0
P211226	45	3	Corten Steel	39.1	6.5		100	G.O.95 Light Grade A at Replacement	14	20	4.9	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height**** (ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.3	0.33	0.11	1	229	231	200
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.3	0.33	0.11	1	235	231	200
0.24	1-0 AWG Triplex SSC AL Neritina GCC.Graphsag	94	28.5	0.97	0.41	1	64	61	54
0.0	.5 In Telephone.Graphsag	94	18.2	0.63	0.19	1	64	63	44
0.0	.5 In Telephone.Graphsag	180	18.3	0.63	0.19	1	230	229	265
0.0	.5 In Telephone.Graphsag	349	18.3	0.63	0.19	1	100	96	92

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Strain	12kV DE	12	180	37.3	P211226	15	12.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	180	37.3	P211226	16	12.8	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

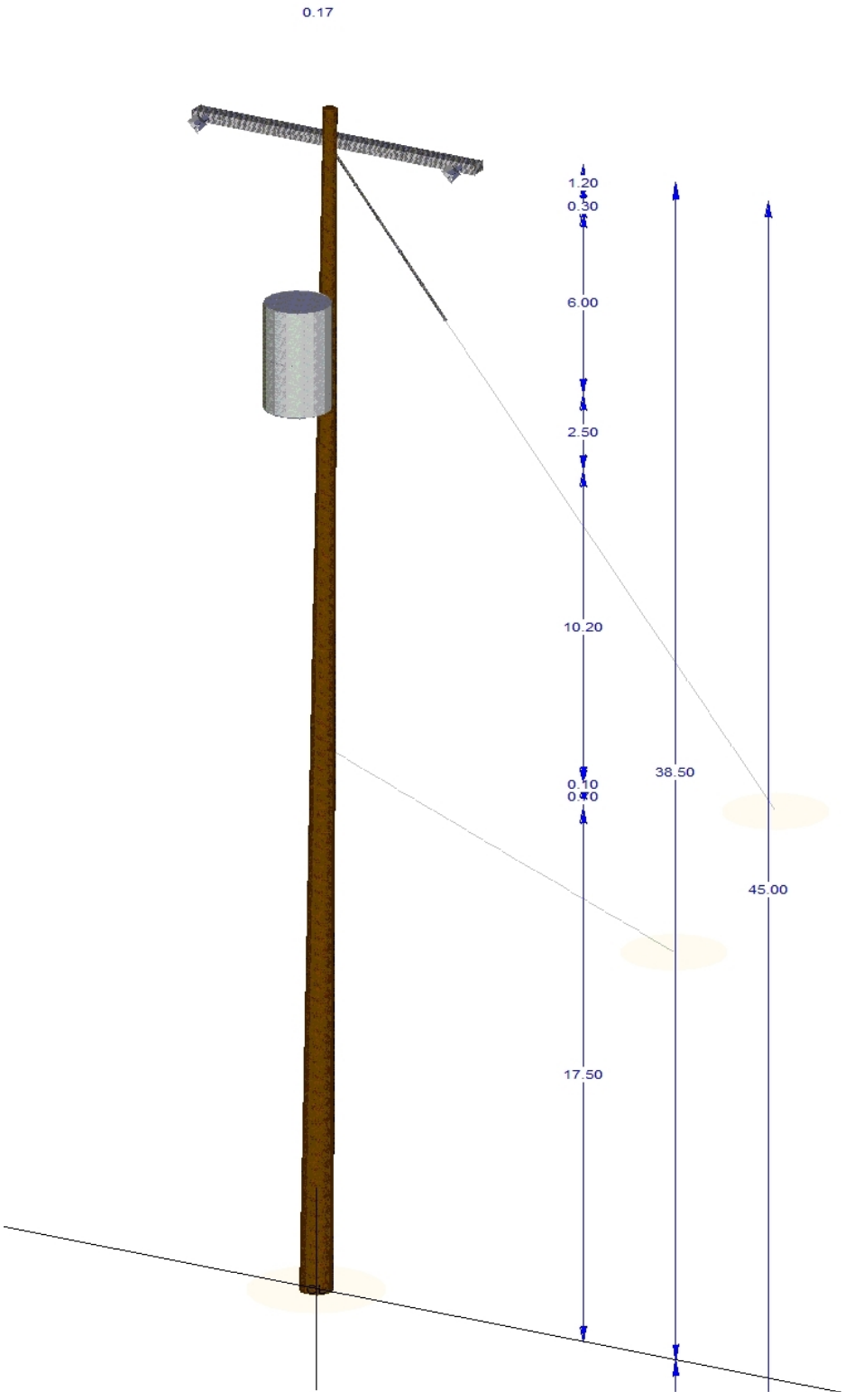
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Down	7/16" 7 Strand EHS (7/16G)	25.99	2	37	P211226	22	6.0	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	20" CROSSPLATE MG				P211226	18	7.5	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Down	3/8" 7 Strand EHS (3/8G)	20.07	2	17.5	P211226	11	11.9	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	16" CROSSPLATE MG				P211226	9	15.5	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Equipment	25 kVA Transformer	180	31	P211226				
X-Arm	10` DE FG ARM (4DF)	270	37.3	P211226	2	83.3	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy


0.17
1.20
0.30
6.00
2.50
10.20
0.10
0.10
17.50
38.50
45.00

Structure P211227
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	43 %	***Clearances OK?*** Yes
Pole Usage	43 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	9 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage		
Anchor Usage		
Arm Usage		Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L3
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p211227_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	264 ft	*Latitude*	33.07670300°
Back Span	155 ft	*Longitude*	-116.83461384°
Ahead Span Az.	27°	*Elevation*	1608 ft
Line Angle	-1°	*Tangent/DE*	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	Height (ft)	Class	Material	Groundline Circum. (in)	Embed. (ft)	Date Intrusive	Material Capacity %	Load Case	Max Moment (ft·k)	Usage %	Calc SF	Req SF	Max Usage Point (ft)*
P211227	50	3	Corten Steel	41.7	7.3		100	Known Local Wind Light 85 MPH Grade A at Replacement	35	43	2.3	1.0	0
P211227	50	3	Corten Steel	41.7	7.3		100	G.O.95 Light Grade A at Replacement	16	19	5.2	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	Wire Type	Direction (deg)**	Attach Height*** (ft)	Diameter (in)	Unit Weight (lbs/ft)	# of Wires	Span Length (ft)	Ruling Span (ft)	Tension (lbs)
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	42.48	0.33	0.11	1	264	240	157
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	42.33	0.33	0.11	1	264	240	157
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	105	37.35	0.32	0.09	1	84	85	26
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	105	37.35	0.32	0.09	1	87	85	26
12	No2 AWG 5Over2 AWAC GCC.Graphsag	181	42.48	0.33	0.11	1	155	240	157
12	No2 AWG 5Over2 AWAC GCC.Graphsag	182	42.33	0.33	0.11	1	155	240	157
0.0	.5 In Telephone.Graphsag	-1	27.2	0.63	0.19	1	264	263	228
0.0	.5 In Telephone.Graphsag	181	27.2	0.63	0.19	1	155	154	136

Insulators

Type	Description	Voltage (kV)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Strain	12kV Long DE	12	105	37.35	P211227	2	120.5	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV Long DE	12	105	37.35	P211227	1	144.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		41.58	P211227	9	23.0	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		41.42	P211227	9	21.5	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

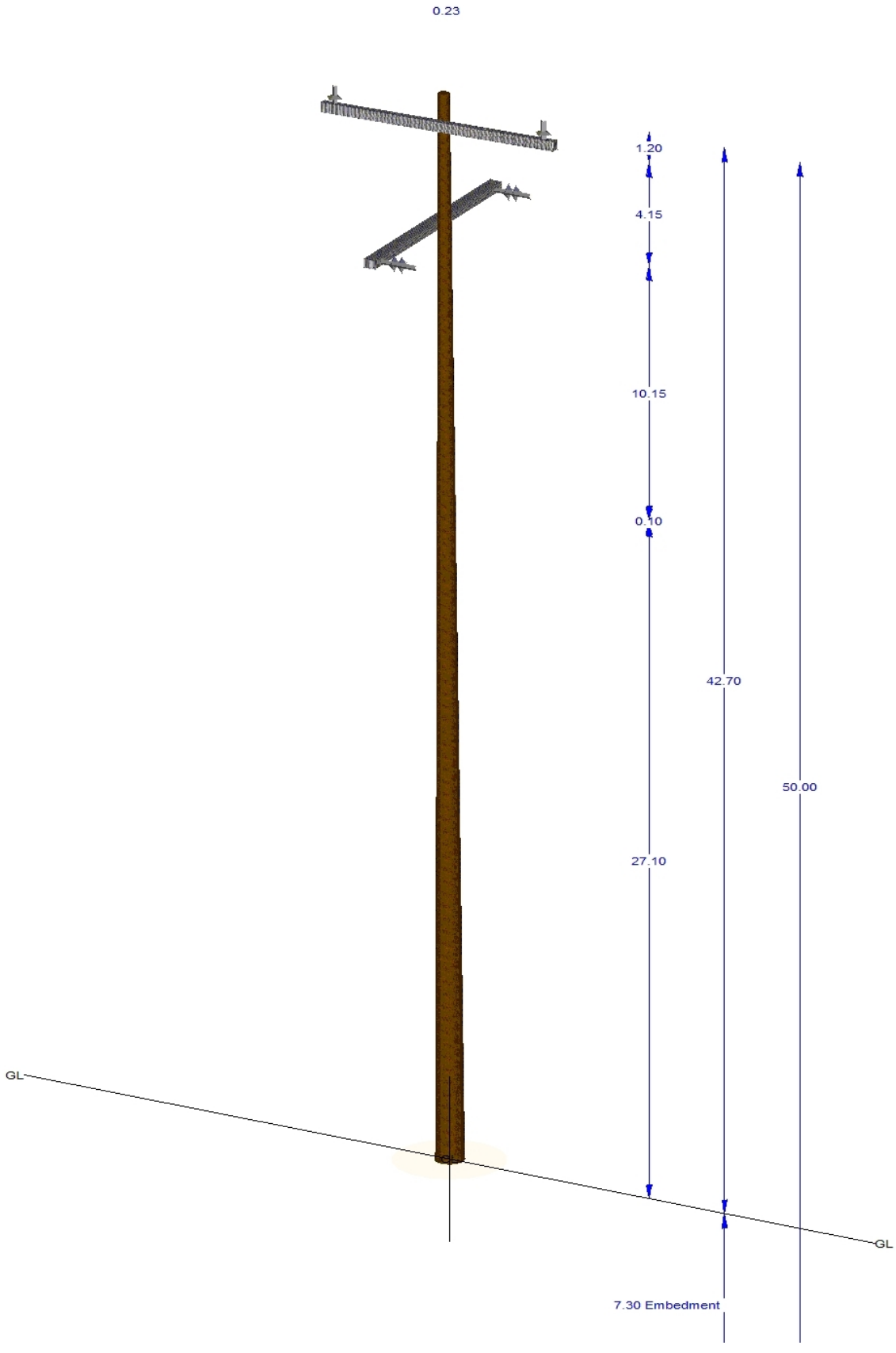
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	Wire Type	Length† (ft)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case

Crossarms and Equipment

Type	Description	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
X-Arm	10` TAN FG ARM (4TF)	89	41.5	P211227		666.7	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
X-Arm	10` DE FG ARM (4DF)	179	37.35	P211227		666.7	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy


0.23
1.20
4.15
10.15
0.10
42.70
50.00
27.10
GL
GL
7.30 Embedment

Structure P217178
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	41 %	***Clearances OK?*** No
Pole Usage	41 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	9 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage		
Anchor Usage		
Arm Usage		Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p217178_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	256 ft	*Latitude*	33.07735034°
Back Span	264 ft	*Longitude*	-116.83422533°
Ahead Span Az.	27°	*Elevation*	1625 ft
Line Angle	0°	*Tangent/DE*	Tangent
Framing			
Notes			

Pole Loading Details

Pole Label	Height (ft)	Class	Material	Groundline Circum. (in)	Embed. (ft)	Date Intrusive	Material Capacity %	Load Case	Max Moment (ft·k)	Usage %	Calc SF	Req SF	Max Usage Point (ft)*
P217178	50	3	Corten Steel	41.7	7.35		100	Known Local Wind Light 85 MPH Grade A at Replacement	34	41	2.4	1.0	0
P217178	50	3	Corten Steel	41.7	7.35		100	G.O.95 Light Grade A at Replacement	15	18	5.5	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	Wire Type	Direction (deg)**	Attach Height*** (ft)	Diameter (in)	Unit Weight (lbs/ft)	# of Wires	Span Length (ft)	Ruling Span (ft)	Tension (lbs)
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	42.49	0.33	0.11	1	258	240	157
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	42.41	0.33	0.11	1	257	240	157
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	42.49	0.33	0.11	1	264	240	157
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	42.41	0.33	0.11	1	264	240	157
0.0	.5 In Telephone.Graphsag	0	23.15	0.63	0.19	1	256	256	209
0.0	.5 In Telephone.Graphsag	180	23.15	0.63	0.19	1	264	263	228

Insulators

Type	Description	Voltage (kV)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Post	12kV Clamp Top-Al (1" Pin)	12		41.59	P217178	9	22.7	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		41.51	P217178	9	22.5	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

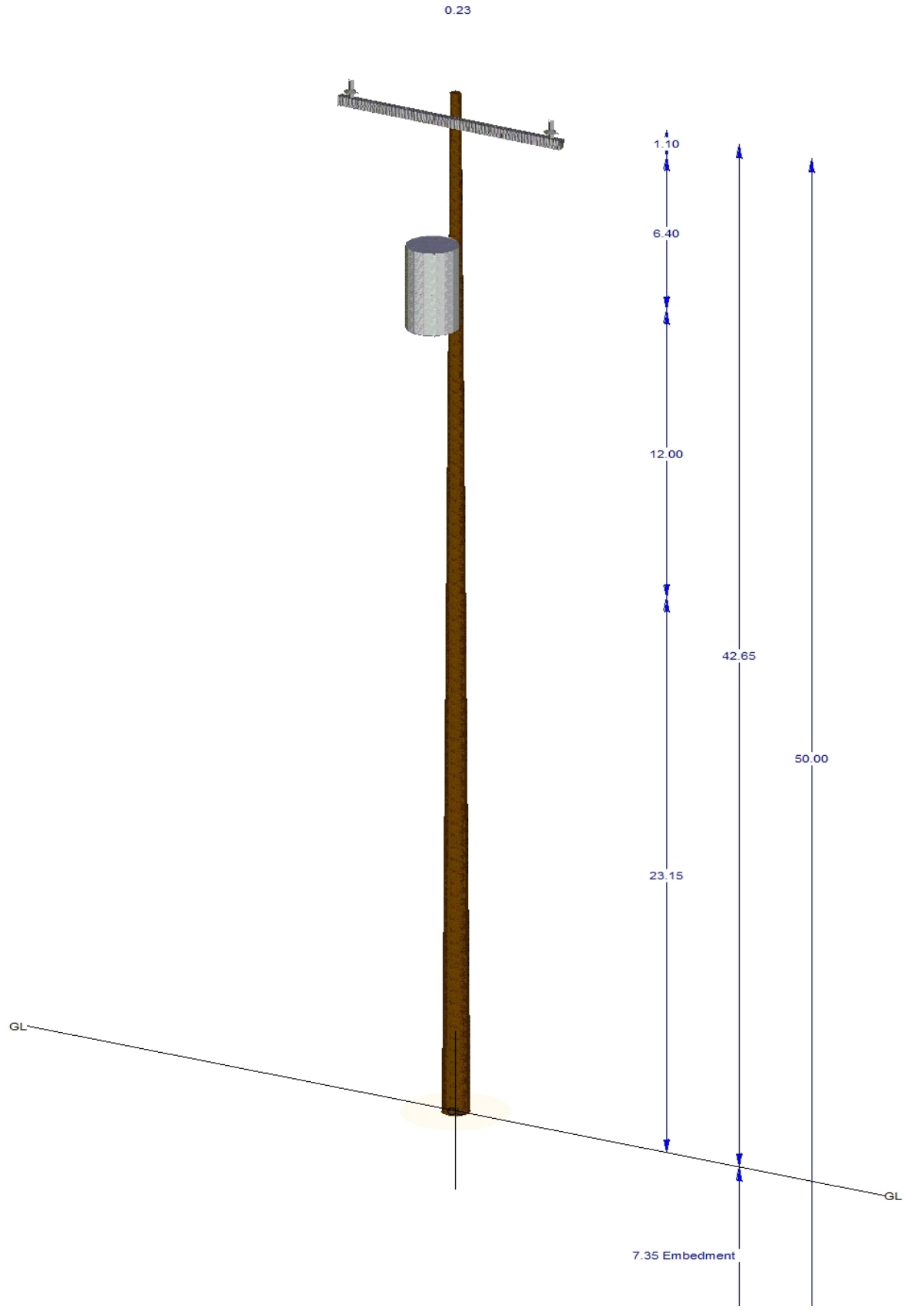
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	Wire Type	Length† (ft)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case

Crossarms and Equipment

Type	Description	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Equipment	25 kVA Transformer	180	35.15	P217178				
X-Arm	10` TAN FG ARM (4TF)	90	41.55	P217178		666.7	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy


0.23
1.10
6.40
12.00
42.65
50.00
23.15
GL
GL
7.35 Embedment

Structure P217179
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	48 %	***Clearances OK?*** Yes
Pole Usage	48 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	10 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	27 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	21 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage	1 %	Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p217179_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	65 ft	*Latitude*	33.07797837°
Back Span	256 ft	*Longitude*	-116.83384581°
Ahead Span Az.	27°	*Elevation*	1634 ft
Line Angle	0°	*Tangent/DE*	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft·k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P217179	50	3	Corten Steel	41.9	7		100	Known Local Wind Light 85 MPH Grade A at Replacement	39	48	2.1	1.0	0
P217179	50	3	Corten Steel	41.9	7		100	G.O.95 Light Grade A at Replacement	19	24	4.2	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height**** (ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	41.8	0.33	0.11	1	258	240	157
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	41.8	0.33	0.11	1	257	240	157
0.24	1-0 AWG Triplex SSC AL Neritina GCC.Graphsag	67	33.25	0.97	0.41	1	66	65	44
0.0	.5 In Telephone.Graphsag	67	22.85	0.63	0.19	1	66	66	34
0.0	.5 In Telephone.Graphsag	180	22.85	0.63	0.19	1	256	256	209

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Strain	12kV DE	12	180	41.8	P217179	10	20.1	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	180	41.8	P217179	10	19.4	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

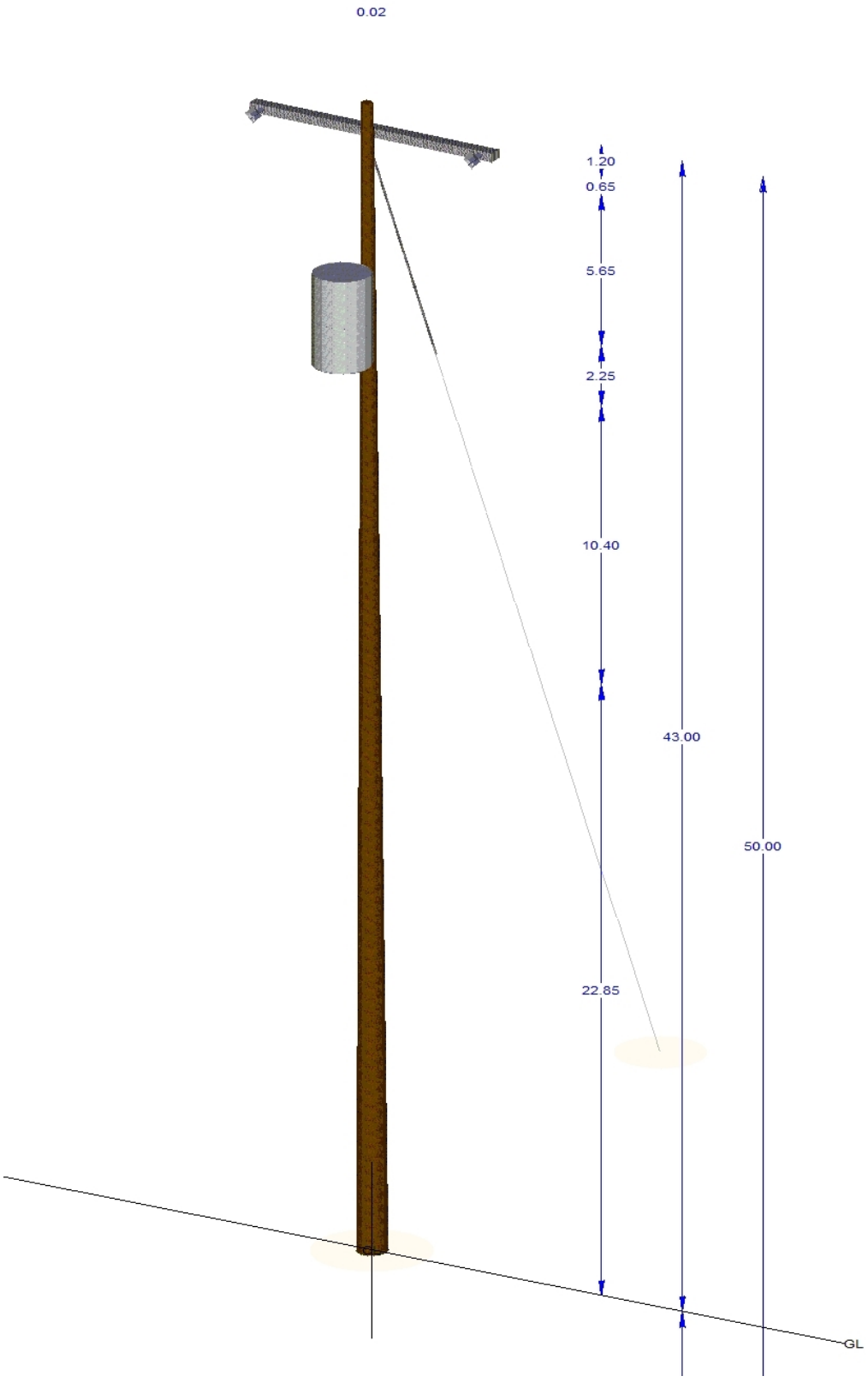
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Down	7/16" 7 Strand EHS (7/16G)	19.59	1	41.15	P217179	27	5.0	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	20" CROSSPLATE MG				P217179	21	6.3	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Equipment	25 kVA Transformer	180	35.5	P217179				
X-Arm	10` DE FG ARM (4DF)	272	41.8	P217179	1	133.3	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy


0.02
1.20
0.65
5.65
2.25
10.40
43.00
50.00
22.85
GL

Structure P219583
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	52 %	**Clearances OK?** Yes
Pole Usage	52 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	13 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	10 %	G.O.95 Light Grade A at Replacement
Anchor Usage	10 %	G.O.95 Light Grade A at Replacement
Arm Usage	1 %	Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p219583_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	385 ft	Latitude	33.07967184°
Back Span	217 ft	Longitude	-116.83584529°
Ahead Span Az.	27°	Elevation	1599 ft
Line Angle	1°	Tangent/DE	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	Height (ft)	Class	Material	Groundline Circum. (in)	Embed. (ft)	Date Intrusive	Material Capacity %	Load Case	Max Moment (ft·k)	Usage %	Calc SF	Req SF	Max Usage Point (ft)*
P219583	45	3	Corten Steel	38.9	6.8		100	Known Local Wind Light 85 MPH Grade A at Replacement	38	52	1.9	1.0	0
P219583	45	3	Corten Steel	38.9	6.8		100	G.O.95 Light Grade A at Replacement	17	24	4.2	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	Wire Type	Direction (deg)**	Attach Height*** (ft)	Diameter (in)	Unit Weight (lbs/ft)	# of Wires	Span Length (ft)	Ruling Span (ft)	Tension (lbs)
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	37.45	0.33	0.11	1	385	385	228
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	37.45	0.33	0.11	1	385	385	228
12	No2 AWG 5Over2 AWAC GCC.Graphsag	1	37.45	0.33	0.11	1	384	385	228
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.45	0.33	0.11	1	217	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.45	0.33	0.11	1	217	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.45	0.33	0.11	1	217	282	271
0.0	.5 In Telephone.Graphsag	0	24.4	0.63	0.19	1	384	384	397
0.0	.5 In Telephone.Graphsag	180	24.4	0.63	0.19	1	210	210	304

Insulators

Type	Description	Voltage (kV)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Strain	12kV DE	12	0	37.45	P219583	13	15.0	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	0	37.45	P219583	13	14.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	1	37.45	P219583	13	14.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	180	37.45	P219583	13	15.7	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	180	37.45	P219583	13	15.6	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	180	37.45	P219583	12	16.2	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

†Length = Lead Length for Down Guys, Wire Length for Span Guys

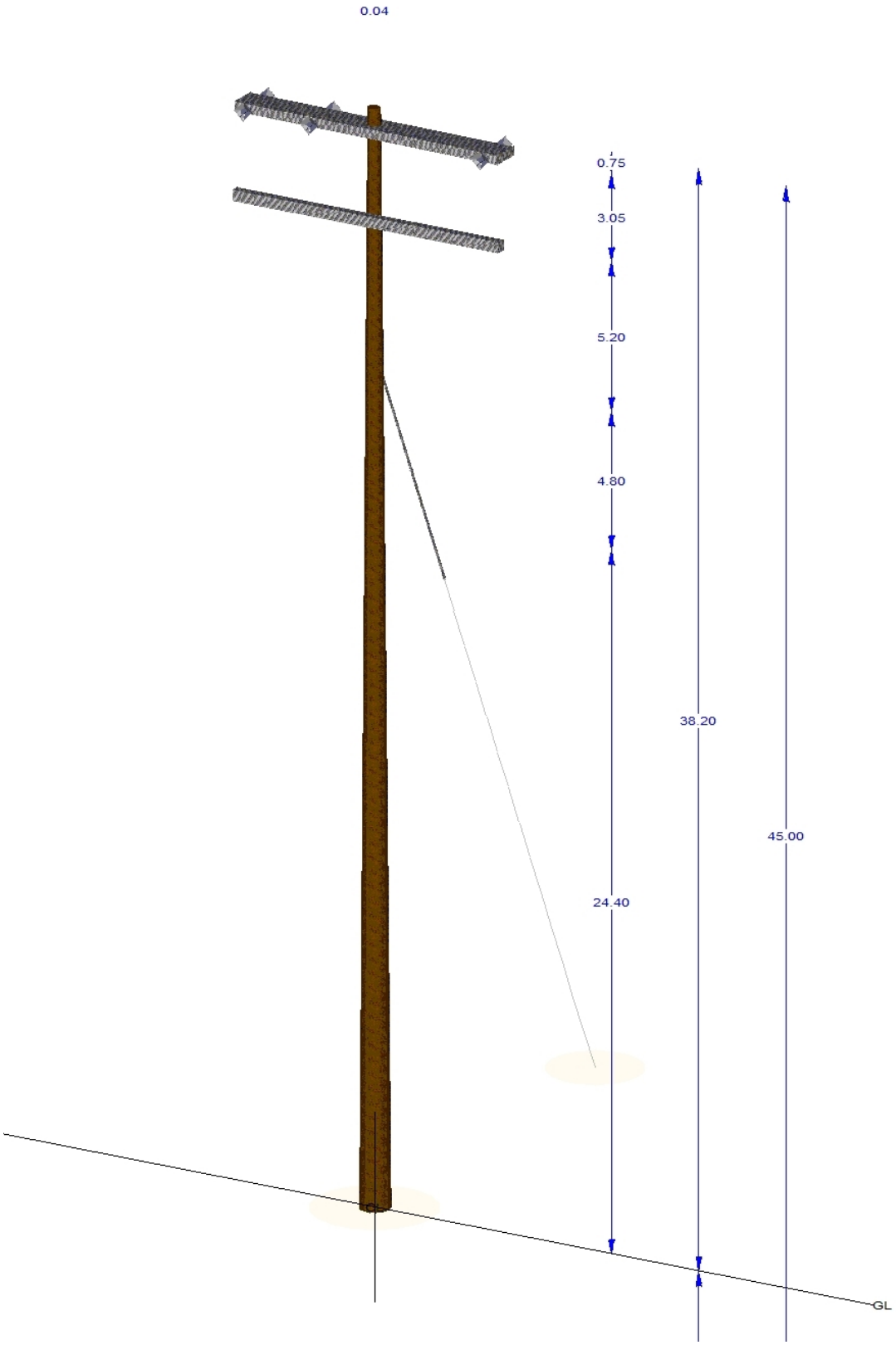
Type	Wire Type	Length† (ft)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Down	7/16" 7 Strand EHS (7/16G)	14.94	-2	29.2	P219583	10	13.2	1.3	G.O.95 Light Grade A at Replacement
Anchor	16" CROSSPLATE MG				P219583	10	12.7	1.3	G.O.95 Light Grade A at Replacement
Span	3 8-7 Strand Ehs Steel Sdge.Graphsag	217	180	29.2	P219583	6			Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	Description	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
X-Arm	10` DBL DE FG ARMS (4DF-2)	91	37.45	P219583	1	266.7	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy

X-Arm	10` EQUIPMENT FG ARM (4TF)	90	34.4	P219583	1.3	G.O.95 Light Grade A at Replacement


0.04
0.75
3.05
5.20
4.80
38.20
45.00
24.40
GL

Structure P219584
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	45 %	***Clearances OK?*** Yes
Pole Usage	34 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	14 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	45 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	36 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage	1 %	Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p219584_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	98 ft	*Latitude*	33.08061323°
Back Span	385 ft	*Longitude*	-116.83527418°
Ahead Span Az.	116°	*Elevation*	1605 ft
Line Angle	89°	*Tangent/DE*	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft·k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P219584	45	1	Corten Steel	41.3	6.4		100	Known Local Wind Light 85 MPH Grade A at Replacement	36	34	2.9	1.0	0
P219584	45	1	Corten Steel	41.3	6.4		100	G.O.95 Light Grade A at Replacement	16	16	6.2	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height**** (ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	43	32.56	0.32	0.09	1	98	98	20
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	45	32.67	0.32	0.09	1	99	98	20
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	45	32.51	0.32	0.09	1	97	98	20
12	No2 AWG 5Over2 AWAC GCC.Graphsag	136	37.84	0.33	0.11	1	384	385	228
12	No2 AWG 5Over2 AWAC GCC.Graphsag	136	36.81	0.33	0.11	1	385	385	228
12	No2 AWG 5Over2 AWAC GCC.Graphsag	136	36.57	0.33	0.11	1	385	385	228
0.0	.5 In Telephone.Graphsag	45	22.99	0.63	0.19	1	98	98	62
0.0	.5 In Telephone.Graphsag	136	22.99	0.63	0.19	1	384	384	397

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Strain	12kV Long DE	12	43	32.56	P219584	2	119.8	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV Long DE	12	45	32.67	P219584	2	108.1	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV Long DE	12	45	32.51	P219584	1	143.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV Long DE	12	136	37.84	P219584	14	14.7	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	136	36.81	P219584	14	14.8	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	136	36.57	P219584	14	14.7	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

†Length = Lead Length for Down Guys, Wire Length for Span Guys

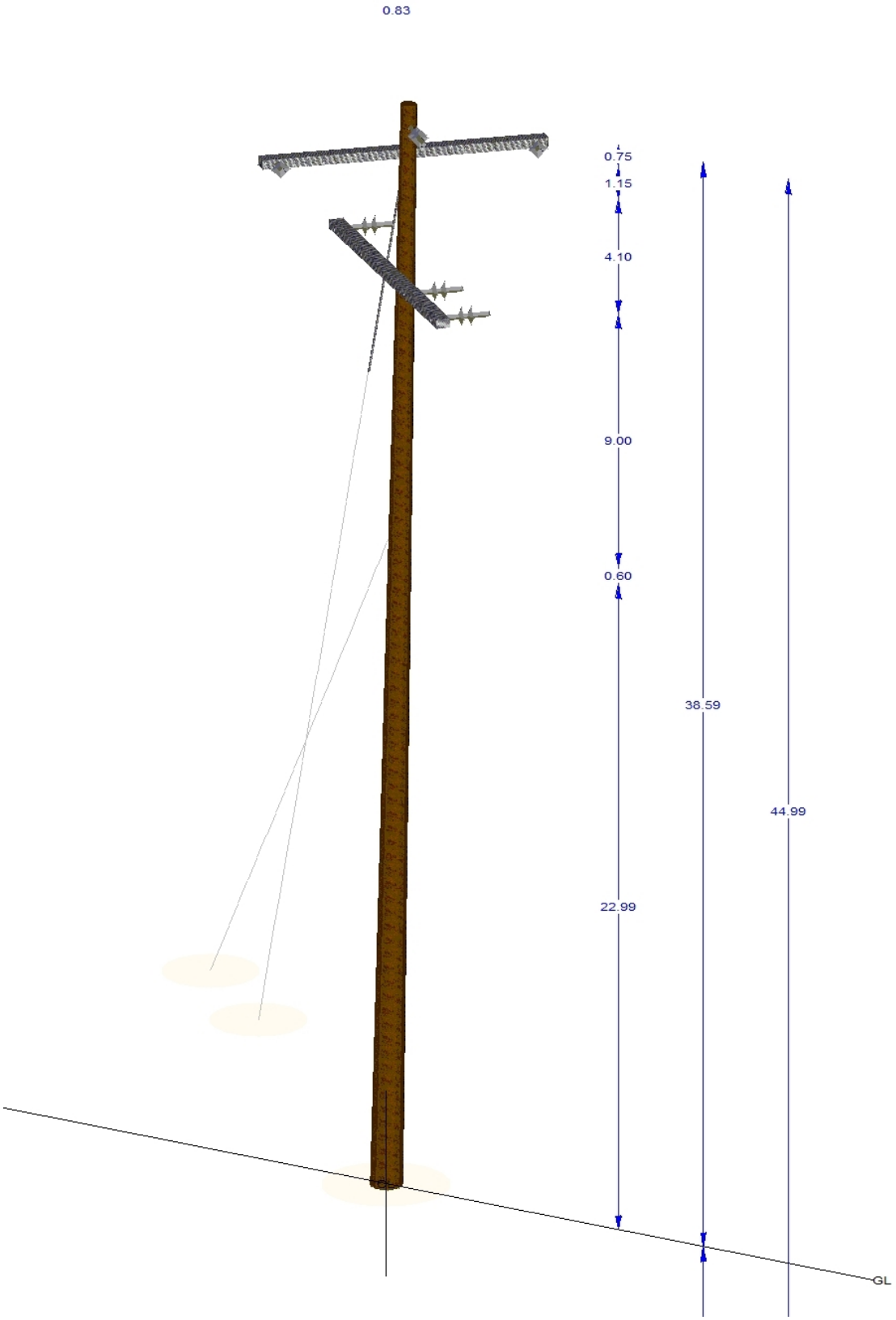
Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Down	7/16" 7 Strand EHS (7/16G)	16.29	-48	36.69	P219584	45	2.9	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	20" CROSSPLATE MG				P219584	36	3.7	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Down	3/8" 7 Strand EHS (3/8G)	21.09	-47	23.59	P219584	38	3.5	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	16" CROSSPLATE MG				P219584	29	4.6	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy

X-Arm	10` DE FG ARM (4DF)	223	36.69	P219584	1	95.2	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
X-Arm	10` DE FG ARM (4DF)	129	32.59	P219584		444.4	1.3	Known Local Wind Light 85 MPH Grade A at Replacement


0.83
0.75
1.15
4.10
9.00
0.60
38.59
44.99
22.99
GL

Structure P246652
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** Existing Conditions (Field Assessment)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	26 %	***Clearances OK?*** Yes
Pole Usage	26 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	9 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	22 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	17 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage	1 %	Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	P246652 - REF ONLY_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	182 ft	*Latitude*	33.07654358°
Back Span	86 ft	*Longitude*	-116.83440766°
Ahead Span Az.	90°	*Elevation*	1614 ft
Line Angle	-43°	*Tangent/DE*	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft·k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P246652	50	3	DF - Dougas Fir	39.1	6.75		100	Known Local Wind Light 85 MPH Grade A at Replacement	24	26	5.1	1.3	0
P246652	50	3	DF - Dougas Fir	39.1	6.75		100	G.O.95 Light Grade A at Replacement	11	25	10.5	2.6	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height**** (ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	201	43.06	0.32	0.09	1	87	85	26
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	202	42.95	0.32	0.09	1	84	85	26
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	339	42.16	0.32	0.09	1	184	181	91
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	339	42.04	0.32	0.09	1	183	181	91

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Post	12kV Clamp Top-Al (1" Pin)	12		42.16	P246652	7	29.4	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		42.04	P246652	9	23.3	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	339	42.16	P246652	8	26.7	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	339	42.04	P246652	7	26.8	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

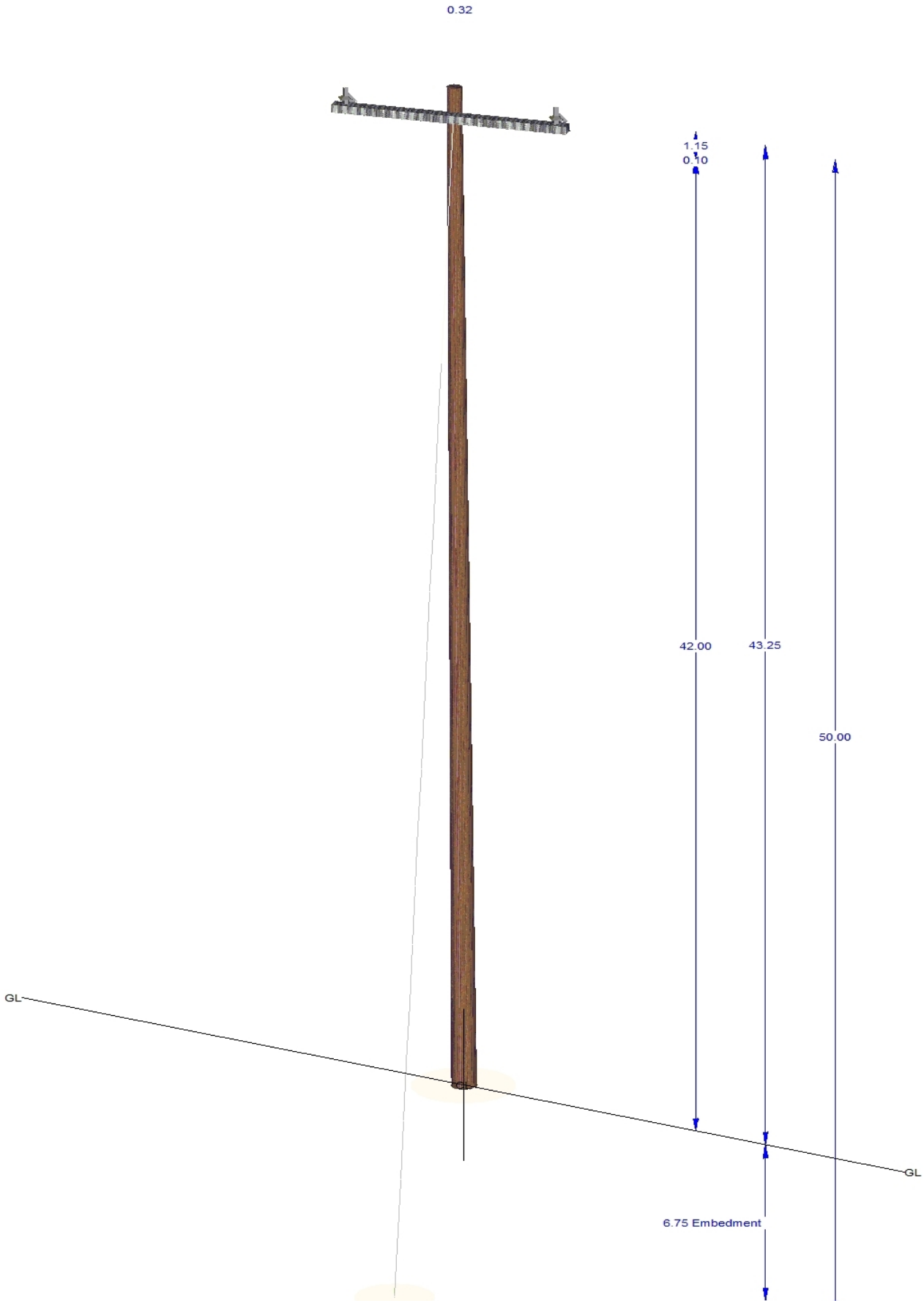
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Down	3/8" 7 Strand EHS (3/8G)	18.81	157	42	P246652	22	6.2	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	16" CROSSPLATE MG				P246652	17	8.1	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
X-Arm	10` DE FG ARM (4DF)	78	42.1	P246652	1	222.2	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy


0.32
1.15
0.10
42.00
43.25
50.00
GL
GL
6.75 Embedment

Structure P254519
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc. [redacted]

Usage Summary

Max Usage	20 %	***Clearances OK?*** Yes
Pole Usage	11 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage		
Guy Usage	19 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	20 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage		

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p112100_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	265 ft	*Latitude*	33.07873776°
Back Span	290 ft	*Longitude*	-116.83639241°
Ahead Span Az.	85°	*Elevation*	1593 ft
Line Angle	-33°	*Tangent/DE*	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft·k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P254519	40	3	Corten Steel	36.2	6.7		100	Known Local Wind Light 85 MPH Grade A at Replacement	7	11	9.1	1.0	0
P254519	40	3	Corten Steel	36.2	6.7		100	G.O.95 Light Grade A at Replacement	3	5	19.6	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height**** *(ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*

Guys and Cables

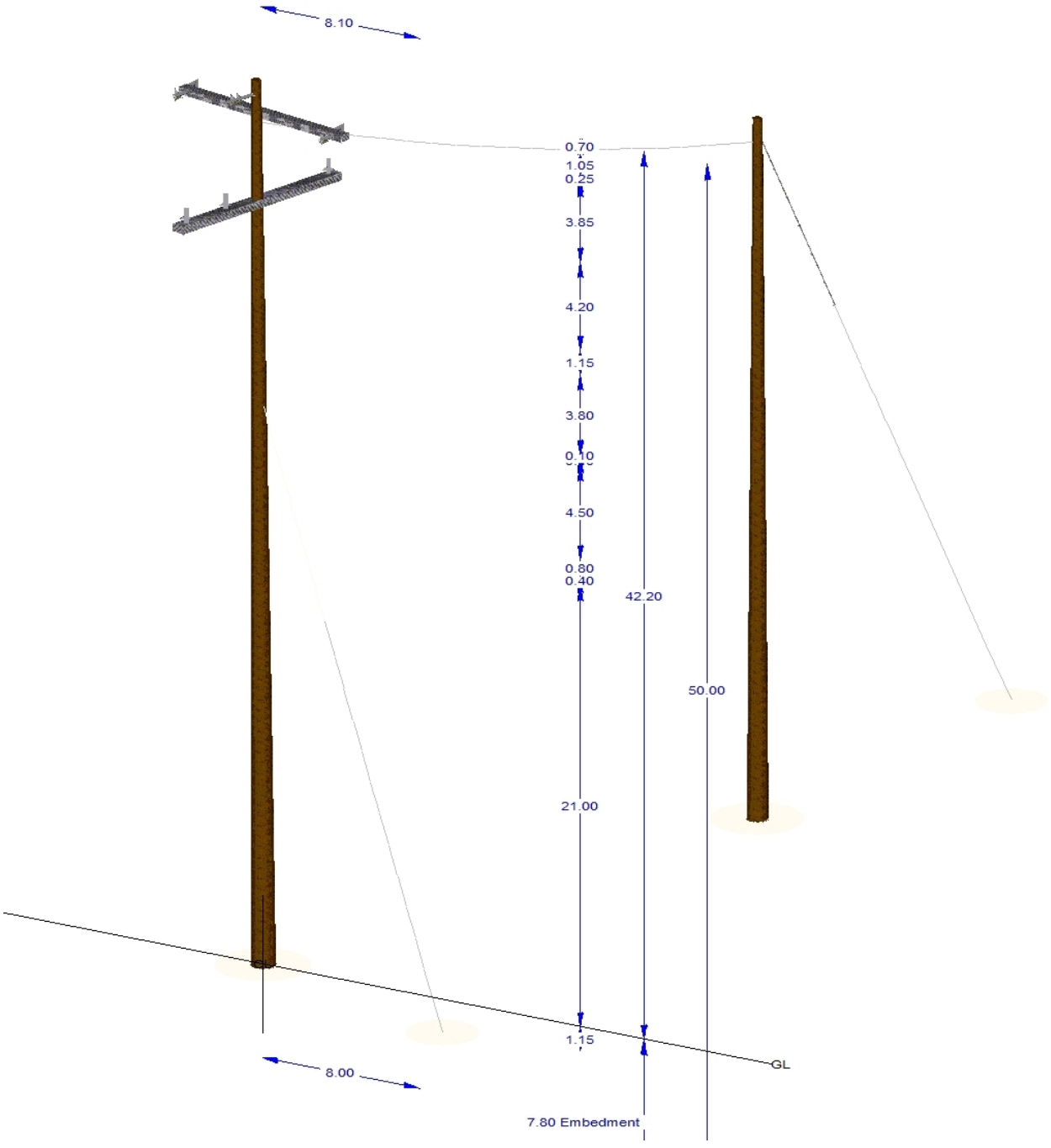
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Down	7/16" 7 Strand EHS (7/16G)	15.41	17	32.15	P254519	19	7.0	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	16" CROSSPLATE MG				P254519	20	6.8	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Span	3/8" 7 Strand EHS (3/8G)	32.47	165	40.2, 32.15	P112100, P254519	12	10.8	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy


8.10
0.70
1.05
0.25
3.85
4.20
1.15
3.80
0.10
4.50
0.80
0.40
42.20
50.00
21.00
1.15
GL
8.00
7.80 Embedment

Structure P317772
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	34 %	***Clearances OK?*** No
Pole Usage	34 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	12 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage		
Anchor Usage		
Arm Usage	1 %	Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L3
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p317772_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	341 ft	*Latitude*	33.07652343°
Back Span	336 ft	*Longitude*	-116.83771393°
Ahead Span Az.	27°	*Elevation*	1573 ft
Line Angle	0°	*Tangent/DE*	Tangent
Framing			
Notes			

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft·k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P317772	45	1	Corten Steel	41.1	6.7		100	Known Local Wind Light 85 MPH Grade A at Replacement	38	34	3.0	1.0	0
P317772	45	1	Corten Steel	41.1	6.7		100	G.O.95 Light Grade A at Replacement	17	15	6.8	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height**** (ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	38.03	0.33	0.11	1	340	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	37.99	0.33	0.11	1	340	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	37.87	0.33	0.11	1	341	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	38.03	0.33	0.11	1	337	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.99	0.33	0.11	1	337	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.87	0.33	0.11	1	337	282	271
0.0	.5 In Telephone.Graphsag	0	25.8	0.63	0.19	1	341	341	309
0.0	.5 In Telephone.Graphsag	180	25.8	0.63	0.19	1	336	336	310

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Post	12kV Clamp Top-Al (1" Pin)	12		37.12	P317772	11	17.4	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		37.08	P317772	11	17.4	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		36.97	P317772	12	17.3	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

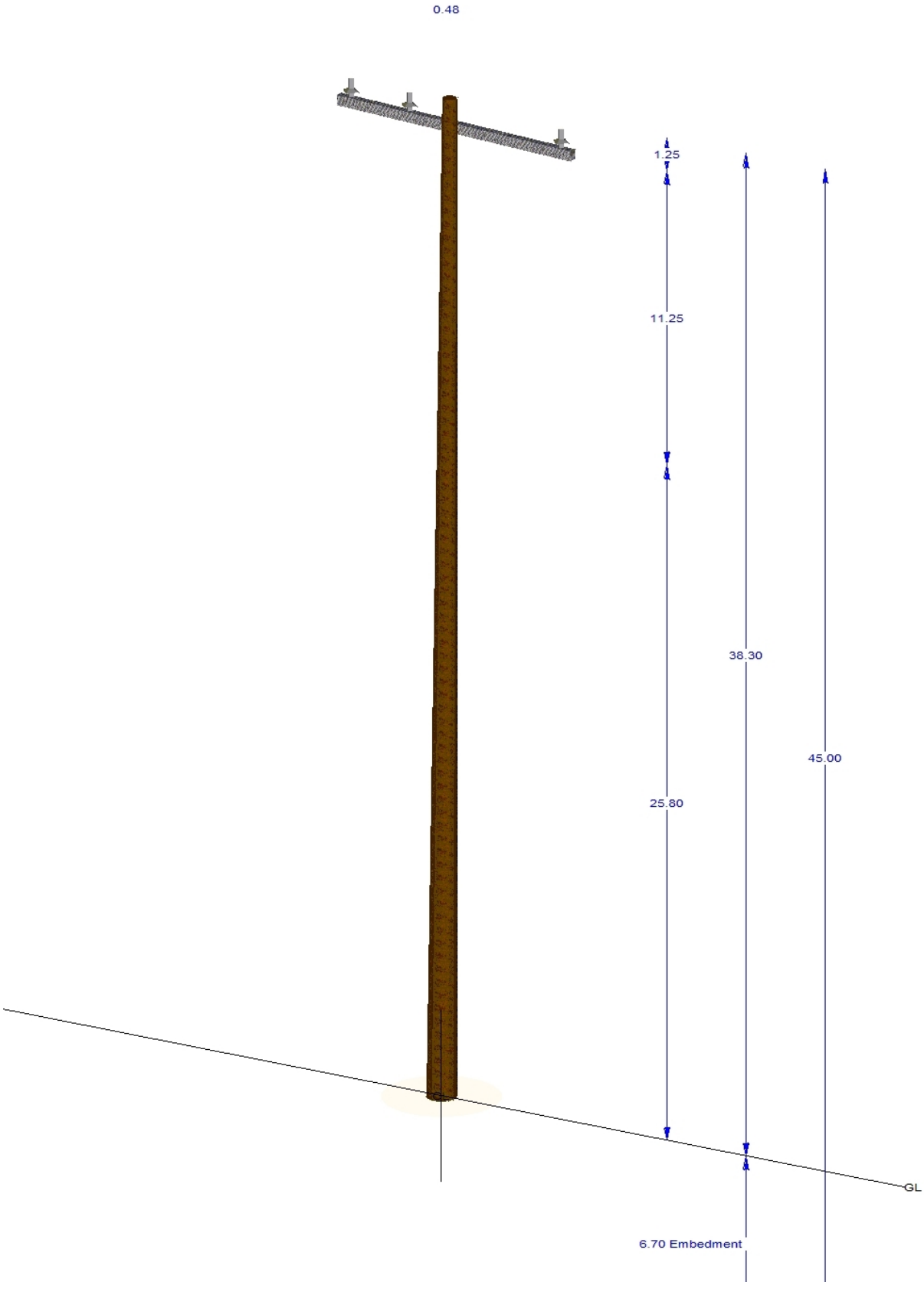
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
X-Arm	10` TAN FG ARM (4TF)	273	37.05	P317772	1	266.7	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy


0.48
1.25
11.25
38.30
45.00
25.80
GL
6.70 Embedment

Structure P317773
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	47 %	***Clearances OK?*** No
Pole Usage	47 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	9 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage		
Anchor Usage		
Arm Usage		Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L3
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p317773_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	336 ft	*Latitude*	33.07569677°
Back Span	184 ft	*Longitude*	-116.83820583°
Ahead Span Az.	27°	*Elevation*	1568 ft
Line Angle	0°	*Tangent/DE*	Dead End
Framing			
Notes	P317773-P815059: SEC TO COMM violation. Potentially re-tension secondary wire		

Pole Loading Details

Pole Label	Height (ft)	Class	Material	Groundline Circum. (in)	Embed. (ft)	Date Intrusive	Material Capacity %	Load Case	Max Moment (ft-k)	Usage %	Calc SF	Req SF	Max Usage Point (ft)*
P317773	50	1	Corten Steel	43.7	6.95		100	Known Local Wind Light 85 MPH Grade A at Replacement	60	47	2.1	1.0	0
P317773	50	1	Corten Steel	43.7	6.95		100	G.O.95 Light Grade A at Replacement	28	22	4.5	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	Wire Type	Direction (deg)**	Attach Height*** (ft)	Diameter (in)	Unit Weight (lbs/ft)	# of Wires	Span Length (ft)	Ruling Span (ft)	Tension (lbs)
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	42.82	0.33	0.11	1	337	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	42.73	0.33	0.11	1	337	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	42.69	0.33	0.11	1	337	282	271
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	84	37.65	0.32	0.09	1	98	98	18
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	84	37.65	0.32	0.09	1	98	98	18
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	84	37.65	0.32	0.09	1	97	98	18
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	42.82	0.33	0.11	1	182	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	42.73	0.33	0.11	1	182	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	42.69	0.33	0.11	1	183	282	271
0.24	1-0 AWG Triplex SSC AL Neritina GCC.Graphsag	83	28.05	0.97	0.41	1	98	98	58
0.0	.5 In Telephone.Graphsag	0	22.05	0.63	0.19	1	336	336	310
0.0	.5 In Telephone.Graphsag	83	21.95	0.63	0.19	1	98	98	53
0.0	.5 In Telephone.Graphsag	180	22.05	0.63	0.19	1	183	183	247

Insulators

Type	Description	Voltage (kV)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Strain	12kV Long DE	12	84	37.65	P317773	2	126.6	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV Long DE	12	84	37.65	P317773	2	128.2	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV Long DE	12	84	37.65	P317773	2	129.0	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		41.91	P317773	9	22.6	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		41.82	P317773	9	22.2	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		41.79	P317773	9	22.2	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

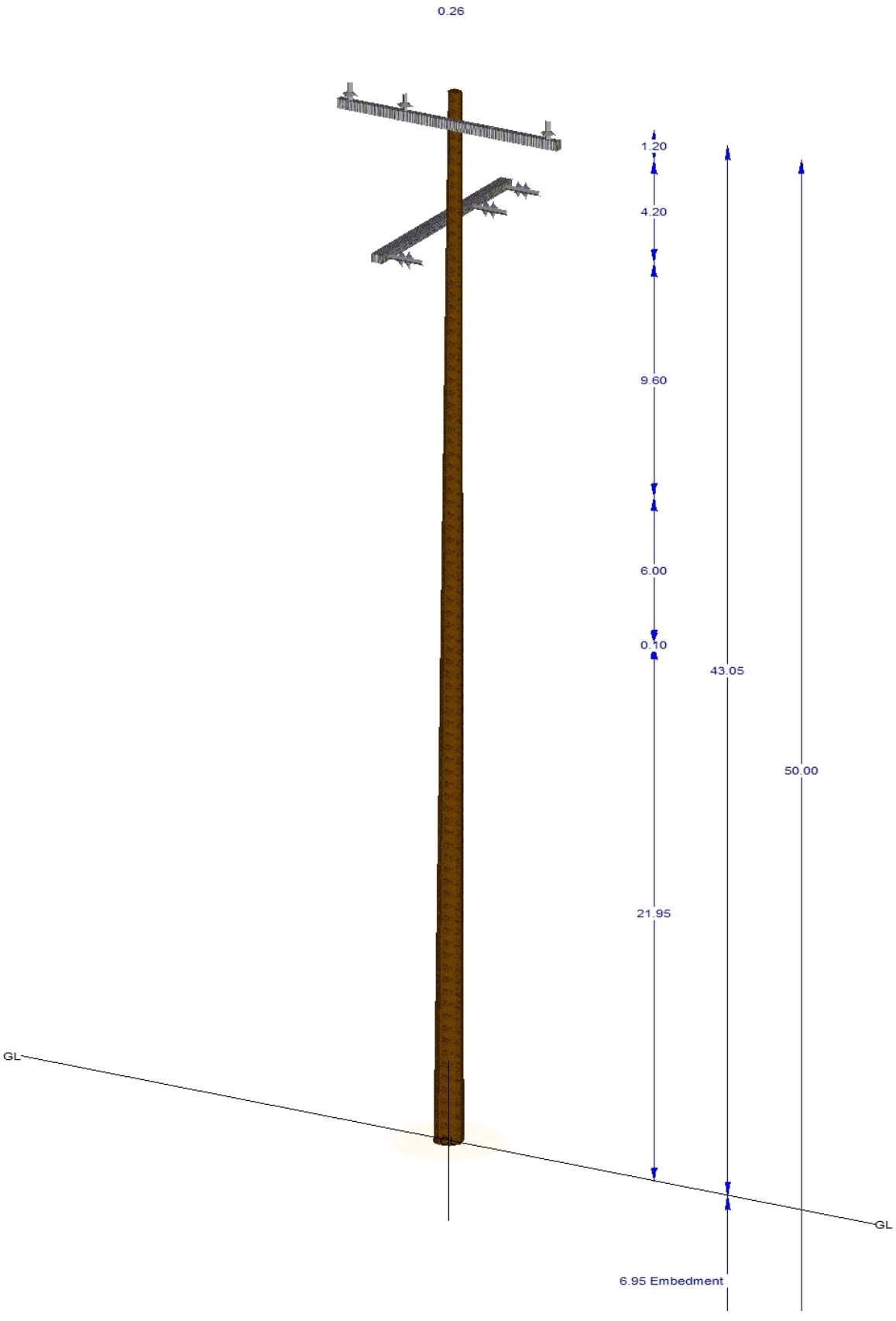
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	Wire Type	Length† (ft)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
X-Arm	10` TAN FG ARM (4TF)	92	41.85	P317773		333.3	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
X-Arm	10` DE FG ARM (4DF)	180	37.65	P317773		444.4	1.3	Known Local Wind Light 85 MPH Grade A at Replacement


0.26
1.20
4.20
9.60
6.00
0.10
43.05
50.00
21.95
GL
GL
6.95 Embedment

Structure P317774
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	42 %	***Clearances OK?*** No
Pole Usage	42 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	10 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage		
Anchor Usage		
Arm Usage		Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L3
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p317774_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	152 ft	*Latitude*	33.07487187°
Back Span	337 ft	*Longitude*	-116.83869682°
Ahead Span Az.	27°	*Elevation*	1562 ft
Line Angle	0°	*Tangent/DE*	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft·k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P317774	45	1	Corten Steel	41.1	6.65		100	Known Local Wind Light 85 MPH Grade A at Replacement	48	42	2.4	1.0	0
P317774	45	1	Corten Steel	41.1	6.65		100	G.O.95 Light Grade A at Replacement	21	19	5.3	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height**** (ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	38.11	0.33	0.11	1	153	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	37.89	0.33	0.11	1	153	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	37.8	0.33	0.11	1	153	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	38.11	0.33	0.11	1	337	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.89	0.33	0.11	1	337	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.8	0.33	0.11	1	337	282	271
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	254	32.95	0.32	0.09	1	102	102	19
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	254	32.95	0.32	0.09	1	103	102	19
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	256	32.95	0.32	0.09	1	102	102	19
0.0	.5 In Telephone.Graphsag	0	25.05	0.63	0.19	1	152	152	225
0.0	.5 In Telephone.Graphsag	180	24.95	0.63	0.19	1	337	337	330
0.0	.5 In Telephone.Graphsag	254	22.95	0.63	0.19	1	102	101	47

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Post	12kV Clamp Top-Al (1" Pin)	12		37.21	P317774	9	22.4	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		36.98	P317774	10	20.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		36.89	P317774	9	21.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV Long DE	12	254	32.95	P317774	2	129.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV Long DE	12	254	32.95	P317774	1	134.2	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV Long DE	12	256	32.95	P317774	1	142.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

†Length = Lead Length for Down Guys, Wire Length for Span Guys

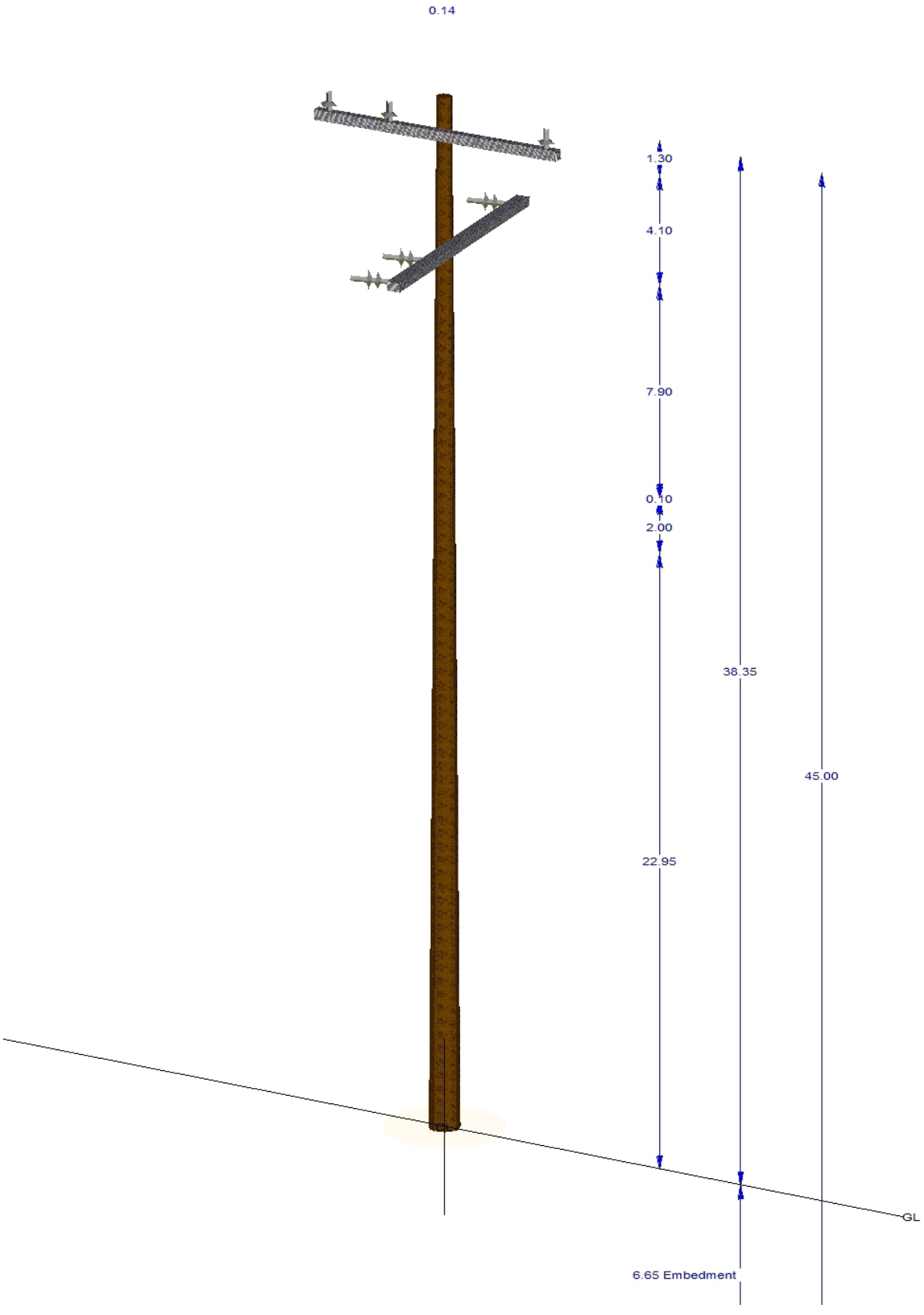
Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy

X-Arm	10` TAN FG ARM (4TF)	92	37.05	P317774	333.3	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
X-Arm	10` DE FG ARM (4DF)	357	32.95	P317774	444.4	1.3	Known Local Wind Light 85 MPH Grade A at Replacement


0.14
1.30
4.10
7.90
0.10
2.00
38.35
45.00
22.95
GL
6.65 Embedment

Structure P317775
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	41 %	***Clearances OK?*** Yes
Pole Usage	41 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	12 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage		
Anchor Usage		
Arm Usage		Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L3
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p317775_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	337 ft	*Latitude*	33.07404170°
Back Span	231 ft	*Longitude*	-116.83918721°
Ahead Span Az.	27°	*Elevation*	1556 ft
Line Angle	-1°	*Tangent/DE*	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	Height (ft)	Class	Material	Groundline Circum. (in)	Embed. (ft)	Date Intrusive	Material Capacity %	Load Case	Max Moment (ft·k)	Usage %	Calc SF	Req SF	Max Usage Point (ft)*
P317775	45	3	Corten Steel	39.0	6.6		100	Known Local Wind Light 85 MPH Grade A at Replacement	30	41	2.4	1.0	0
P317775	45	3	Corten Steel	39.0	6.6		100	G.O.95 Light Grade A at Replacement	14	20	5.1	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	Wire Type	Direction (deg)**	Attach Height*** (ft)	Diameter (in)	Unit Weight (lbs/ft)	# of Wires	Span Length (ft)	Ruling Span (ft)	Tension (lbs)
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	38.03	0.33	0.11	1	337	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	37.91	0.33	0.11	1	337	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	37.87	0.33	0.11	1	337	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	90	33.16	0.33	0.11	1	100	229	152
12	No2 AWG 5Over2 AWAC GCC.Graphsag	90	33.09	0.33	0.11	1	100	229	152
12	No2 AWG 5Over2 AWAC GCC.Graphsag	90	32.92	0.33	0.11	1	99	229	152
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	38.03	0.33	0.11	1	230	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.91	0.33	0.11	1	230	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.87	0.33	0.11	1	230	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	271	33.16	0.33	0.11	1	219	219	144
12	No2 AWG 5Over2 AWAC GCC.Graphsag	271	33.09	0.33	0.11	1	219	219	144
12	No2 AWG 5Over2 AWAC GCC.Graphsag	271	32.92	0.33	0.11	1	219	219	144
0.0	.5 In Telephone.Graphsag	0	23.69	0.63	0.19	1	337	337	330
0.0	.5 In Telephone.Graphsag	90	24.59	0.63	0.19	1	99	99	90
0.0	.5 In Telephone.Graphsag	180	23.69	0.63	0.19	1	231	231	260

Insulators

Type	Description	Voltage (kV)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Post	12kV Clamp Top-Al (1" Pin)	12		37.12	P317775	11	17.8	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		37.01	P317775	12	17.2	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		36.96	P317775	11	18.6	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	90	33.16	P317775	3	73.8	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	90	33.09	P317775	3	70.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	90	32.92	P317775	3	65.6	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

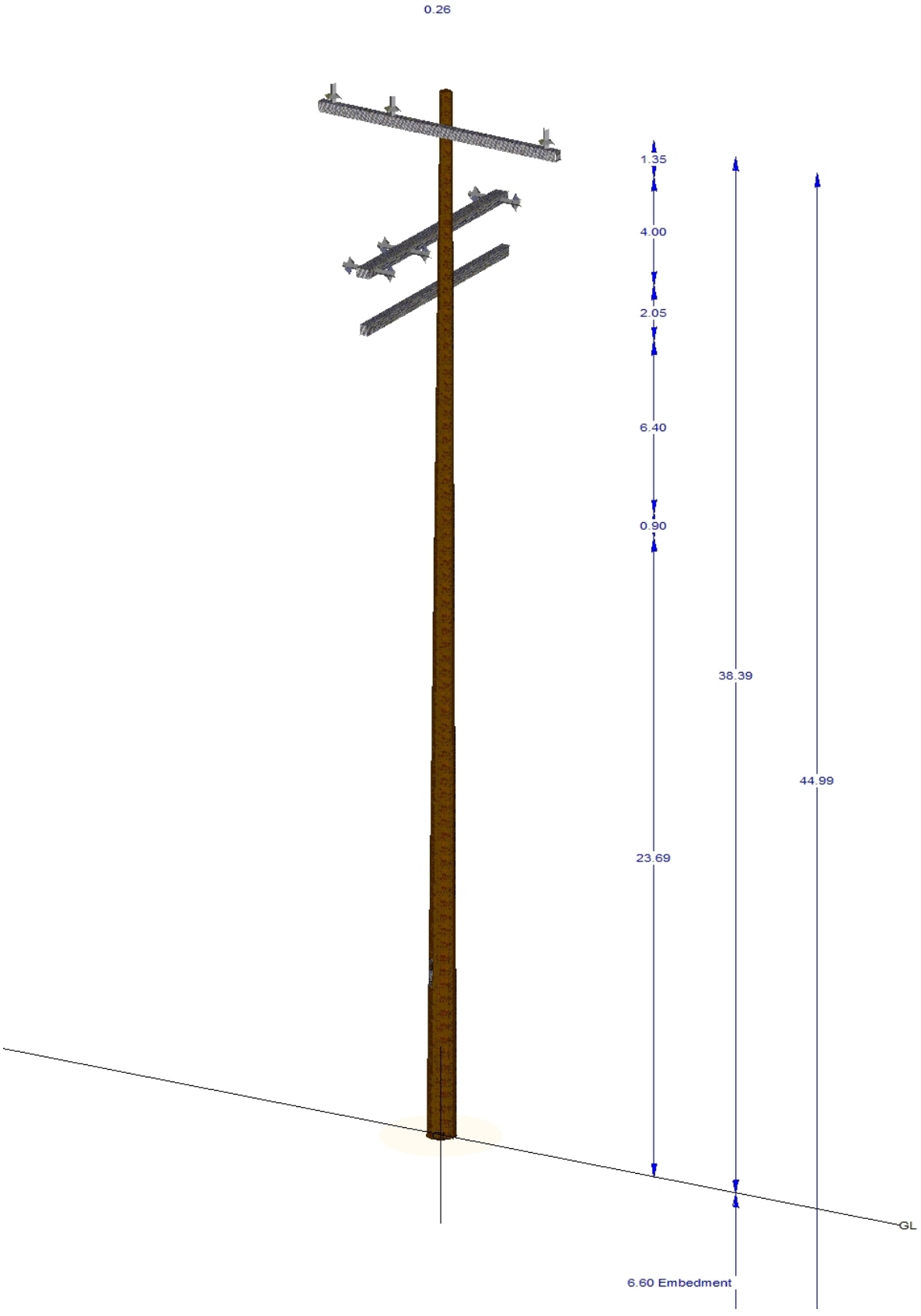
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	Wire Type	Length† (ft)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
X-Arm	10` TAN FG ARM (4TF)	95	37.04	P317775		333.3	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
X-Arm	10` DE FG ARM (4DF)	179	33.04	P317775		333.3	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
X-Arm	10` EQUIPMENT FG ARM (4TF)	180	30.99	P317775		1333.3	1.3	Known Local Wind Light 85 MPH Grade A at Replacement


0.26
1.35
4.00
2.05
6.40
0.90
38.39
44.99
23.69
GL
6.60 Embedment

Structure P317776
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	37 %	***Clearances OK?***	No
Pole Usage	37 %	Known Local Wind Light 85 MPH Grade A at Replacement	
Insulator Usage	8 %	Known Local Wind Light 85 MPH Grade A at Replacement	
Guy Usage			
Anchor Usage			
Arm Usage		G.O.95 Light Grade A at Replacement	

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L3
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p317776_asbui;lt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	241 ft	*Latitude*	33.07392312°
Back Span	98 ft	*Longitude*	-116.83889825°
Ahead Span Az.	117°	*Elevation*	1558 ft
Line Angle	1°	*Tangent/DE*	Tangent
Framing			
Notes			

Pole Loading Details

Pole Label	Height (ft)	Class	Material	Groundline Circum. (in)	Embed. (ft)	Date Intrusive	Material Capacity %	Load Case	Max Moment (ft·k)	Usage %	Calc SF	Req SF	Max Usage Point (ft)*
P317776	45	3	Corten Steel	39.3	6.2		100	Known Local Wind Light 85 MPH Grade A at Replacement	28	37	2.7	1.0	0
P317776	45	3	Corten Steel	39.3	6.2		100	G.O.95 Light Grade A at Replacement	13	17	5.8	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	Wire Type	Direction (deg)**	Attach Height*** (ft)	Diameter (in)	Unit Weight (lbs/ft)	# of Wires	Span Length (ft)	Ruling Span (ft)	Tension (lbs)
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	38.26	0.33	0.11	1	240	229	152
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	38.26	0.33	0.11	1	240	229	152
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	38.26	0.33	0.11	1	240	229	152
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	38.26	0.33	0.11	1	99	229	152
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	38.26	0.33	0.11	1	100	229	152
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	38.26	0.33	0.11	1	100	229	152
0.0	.5 In Telephone.Graphsag	0	21	0.63	0.19	1	241	240	230
0.0	.5 In Telephone.Graphsag	180	21	0.63	0.19	1	99	99	90

Insulators

Type	Description	Voltage (kV)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Post	12kV Clamp Top-Al (1" Pin)	12		37.35	P317776	6	33.4	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		37.35	P317776	8	26.5	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		37.35	P317776	6	33.1	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

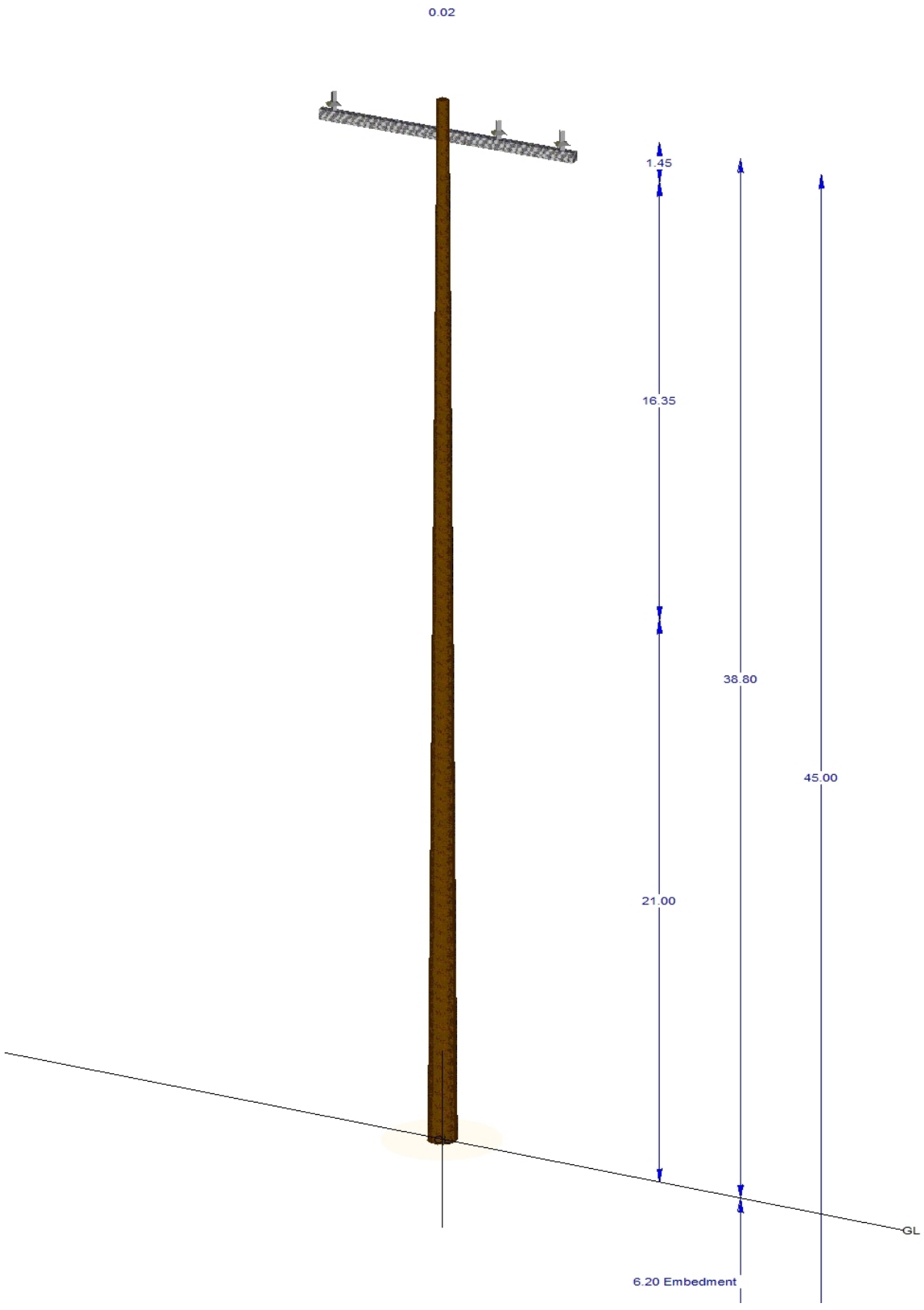
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	Wire Type	Length† (ft)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case

Crossarms and Equipment

Type	Description	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
X-Arm	10` TAN FG ARM (4TF)	267	37.35	P317776		666.7	1.3	G.O.95 Light Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy


0.02
1.45
16.35
38.80
45.00
21.00
GL
6.20 Embedment

Structure P317777
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	40 %	***Clearances OK?*** Yes
Pole Usage	40 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	9 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage		
Anchor Usage		
Arm Usage		Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L3
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p317777_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	254 ft	*Latitude*	33.07362407°
Back Span	241 ft	*Longitude*	-116.83819694°
Ahead Span Az.	117°	*Elevation*	1561 ft
Line Angle	0°	*Tangent/DE*	Tangent
Framing			
Notes			

Pole Loading Details

Pole Label	Height (ft)	Class	Material	Groundline Circum. (in)	Embed. (ft)	Date Intrusive	Material Capacity %	Load Case	Max Moment (ft·k)	Usage %	Calc SF	Req SF	Max Usage Point (ft)*
P317777	45	3	Corten Steel	39.0	6.6		100	Known Local Wind Light 85 MPH Grade A at Replacement	29	40	2.5	1.0	0
P317777	45	3	Corten Steel	39.0	6.6		100	G.O.95 Light Grade A at Replacement	13	18	5.7	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	Wire Type	Direction (deg)**	Attach Height*** (ft)	Diameter (in)	Unit Weight (lbs/ft)	# of Wires	Span Length (ft)	Ruling Span (ft)	Tension (lbs)
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	38.14	0.33	0.11	1	255	229	152
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	38.12	0.33	0.11	1	254	229	152
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	38.06	0.33	0.11	1	255	229	152
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	38.14	0.33	0.11	1	240	229	152
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	38.12	0.33	0.11	1	240	229	152
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	38.06	0.33	0.11	1	240	229	152
0.0	.5 In Telephone.Graphsag	0	26.4	0.63	0.19	1	254	254	200
0.0	.5 In Telephone.Graphsag	180	26.4	0.63	0.19	1	241	240	230

Insulators

Type	Description	Voltage (kV)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Post	12kV Clamp Top-Al (1" Pin)	12		37.24	P317777	9	23.4	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		37.22	P317777	8	23.7	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		37.16	P317777	9	22.3	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

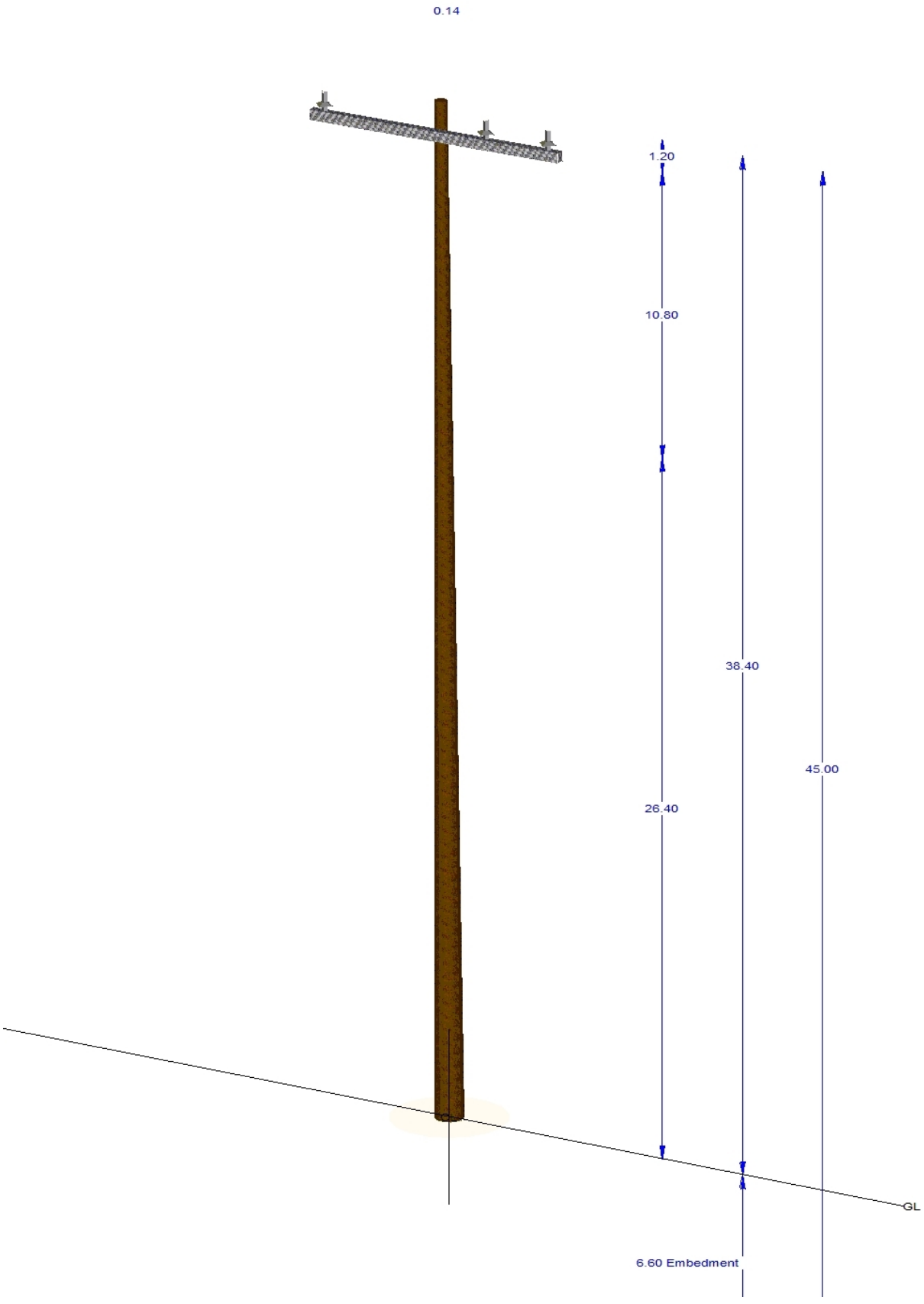
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	Wire Type	Length† (ft)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case

Crossarms and Equipment

Type	Description	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
X-Arm	10` TAN FG ARM (4TF)	89	37.2	P317777		444.4	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy


0.14
1.20
10.80
38.40
45.00
26.40
GL
6.60 Embedment

Structure P317778
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	45 %	***Clearances OK?*** No
Pole Usage	26 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	11 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	43 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	45 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage	1 %	Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p317778_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	175 ft	*Latitude*	33.07330790°
Back Span	254 ft	*Longitude*	-116.83745603°
Ahead Span Az.	190°	*Elevation*	1564 ft
Line Angle	73°	*Tangent/DE*	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft·k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P317778	45	1	Corten Steel	41.2	6.5		100	Known Local Wind Light 85 MPH Grade A at Replacement	26	26	3.9	1.0	0
P317778	45	1	Corten Steel	41.2	6.5		100	G.O.95 Light Grade A at Replacement	15	15	6.8	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height*** (ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*
12	No2 AWG 5Over2 AWAC GCC.Graphsag	36	33.49	0.33	0.11	1	174	175	63
12	No2 AWG 5Over2 AWAC GCC.Graphsag	36	32.69	0.33	0.11	1	174	175	63
12	No2 AWG 5Over2 AWAC GCC.Graphsag	36	32.69	0.33	0.11	1	177	175	63
12	No2 AWG 5Over2 AWAC GCC.Graphsag	143	37.49	0.33	0.11	1	254	229	152
12	No2 AWG 5Over2 AWAC GCC.Graphsag	144	36.83	0.33	0.11	1	255	229	152
12	No2 AWG 5Over2 AWAC GCC.Graphsag	144	36.36	0.33	0.11	1	255	229	152
0.0	.5 In Telephone.Graphsag	36	21.6	0.63	0.19	1	175	175	132
0.0	.5 In Telephone.Graphsag	144	21.6	0.63	0.19	1	254	254	200

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Strain	12kV Long DE	12	36	33.49	P317778	4	47.3	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	36	32.69	P317778	4	45.2	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	36	32.69	P317778	4	48.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV Long DE	12	143	37.49	P317778	11	18.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	144	36.83	P317778	11	18.0	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	144	36.36	P317778	11	17.8	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

†Length = Lead Length for Down Guys, Wire Length for Span Guys

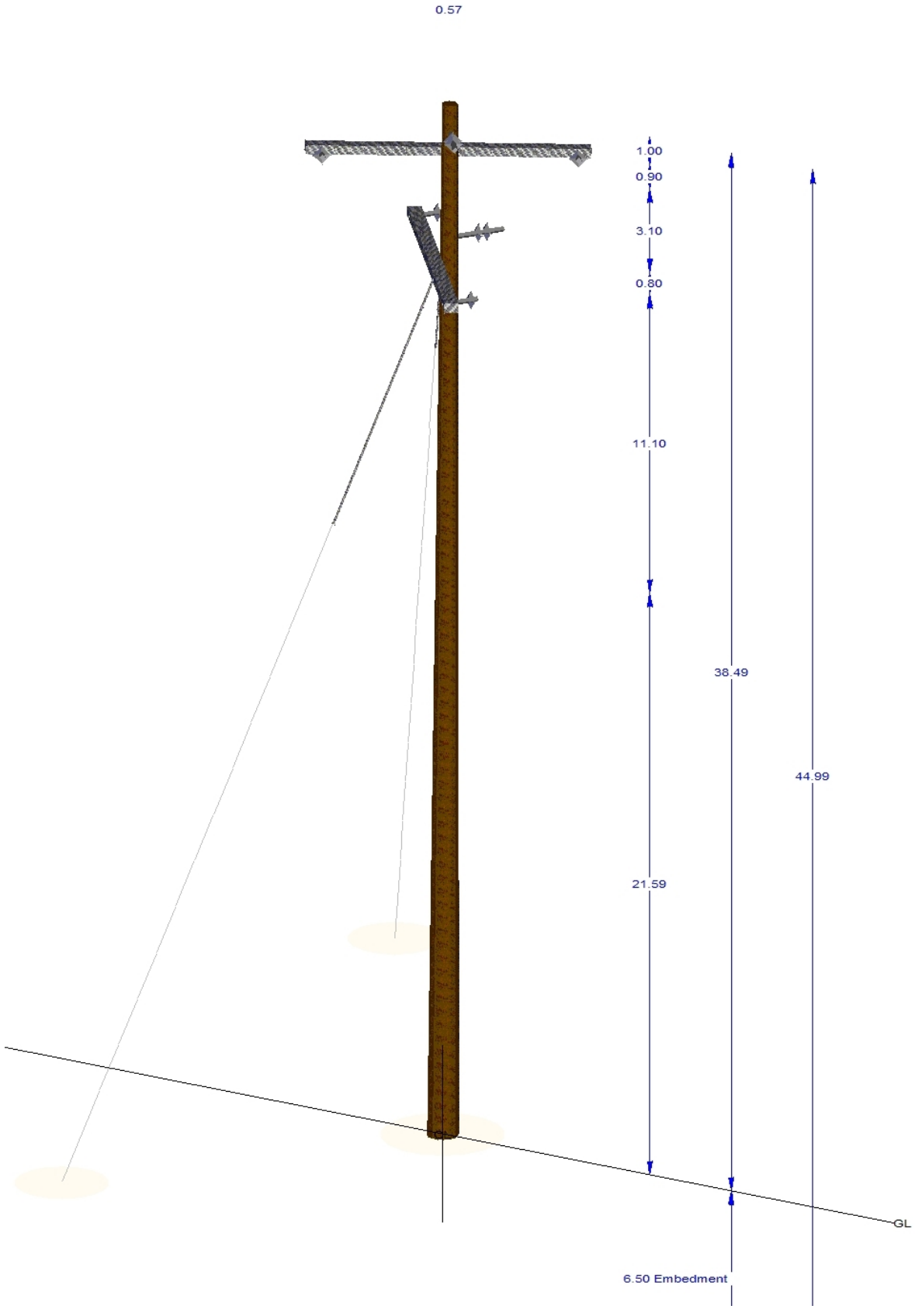
Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Down	7/16" 7 Strand EHS (7/16G)	18.36	-36	36.59	P317778	43	3.1	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	16" CROSSPLATE MG				P317778	45	3.0	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Down	7/16" 7 Strand EHS (7/16G)	15.01	212	32.69	P317778	26	5.1	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	16" CROSSPLATE MG				P317778	27	4.9	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy

X-Arm	10` DE FG ARM (4DF)	234	36.59	P317778	1	121.2	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
X-Arm	10` DE FG ARM (4DF)	143	32.69	P317778	1	266.7	1.3	Known Local Wind Light 85 MPH Grade A at Replacement


0.57
1.00
0.90
3.10
0.80
11.10
38.49
44.99
21.59
GL
6.50 Embedment

Structure P317779
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	38 %	***Clearances OK?*** No
Pole Usage	38 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	4 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	14 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	23 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage		Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p317779_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	44 ft	*Latitude*	33.07283471°
Back Span	175 ft	*Longitude*	-116.83755054°
Ahead Span Az.	190°	*Elevation*	1564 ft
Line Angle	0°	*Tangent/DE*	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft·k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P317779	45	3	Corten Steel	39.0	6.7		100	Known Local Wind Light 85 MPH Grade A at Replacement	27	38	2.6	1.0	0
P317779	45	3	Corten Steel	39.0	6.7		100	G.O.95 Light Grade A at Replacement	12	17	5.7	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height**** (ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.35	0.33	0.11	1	174	175	63
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	36.42	0.33	0.11	1	174	175	63
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	36.18	0.33	0.11	1	177	175	63
0.24	1-0 AWG Triplex SSC AL Neritina GCC.Graphsag	109	28.3	0.97	0.41	1	44	42	33
0.0	.5 In Telephone.Graphsag	109	19.2	0.63	0.19	1	44	44	31
0.0	.5 In Telephone.Graphsag	180	20.05	0.63	0.19	1	175	175	132

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Strain	12kV Long DE	12	180	37.35	P317779	4	46.8	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	180	36.42	P317779	4	45.0	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	180	36.18	P317779	4	48.5	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

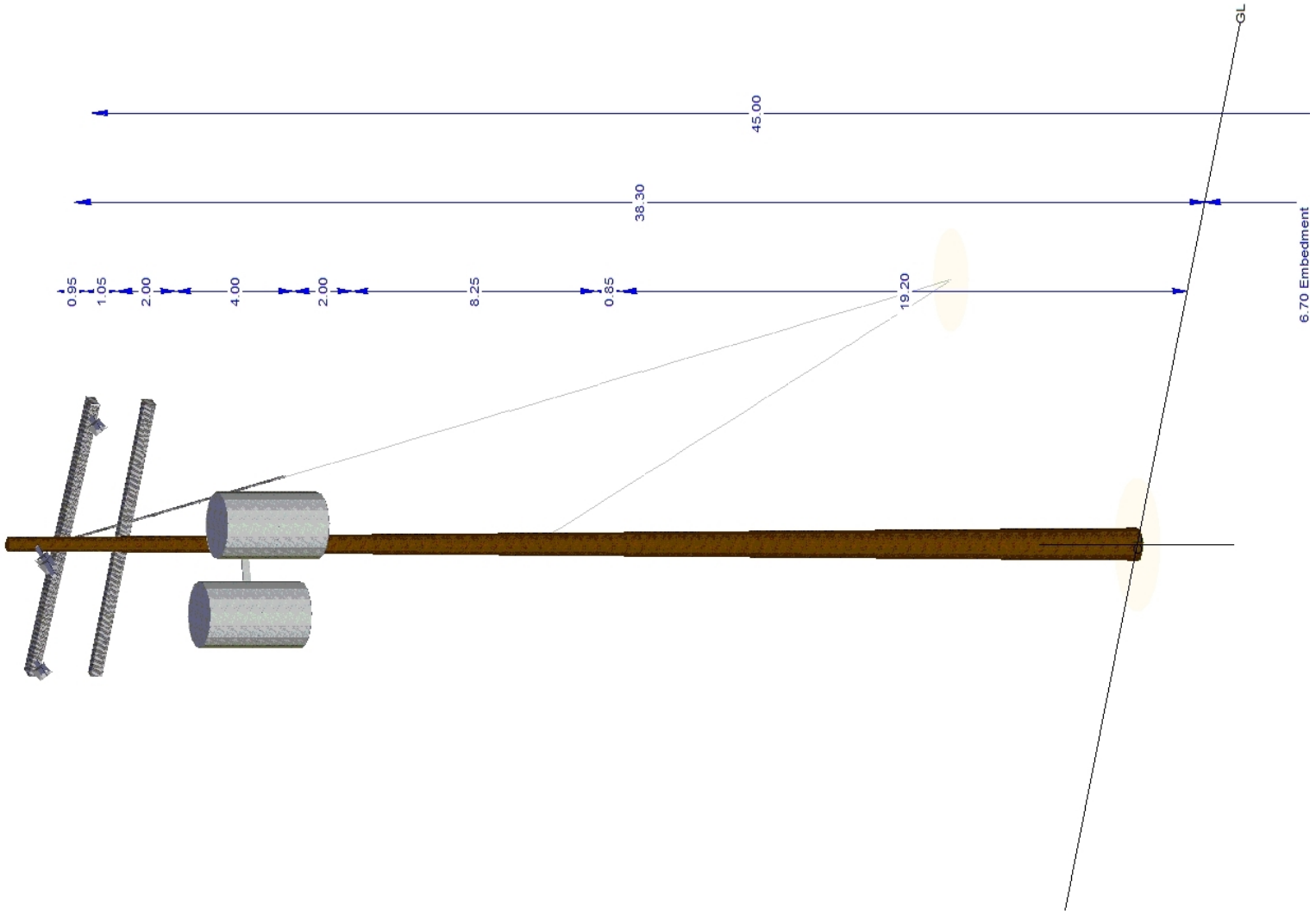
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Down	7/16" 7 Strand EHS (7/16G)	18.4	-3	36.3	P317779	14	9.2	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Down	3/8" 7 Strand EHS (3/8G)	18.4	-3	20.05	P317779	11	12.4	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	16" CROSSPLATE MG				P317779	23	5.8	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Equipment	25 kVA Transformer	135	30.3	P317779				
Equipment	25 kVA Transformer	225	30.3	P317779				
X-Arm	10` DE FG ARM (4DF)	270	36.3	P317779		333.3	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
X-Arm	10` EQUIPMENT FG ARM (4TF)	270	34.3	P317779			1.3	G.O.95 Light Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy


GL
45.00
38.30
6.70 Embedment
0.95
1.05
2.00
4.00
2.00
8.25
0.85
19.20

Structure P419622
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	47 %	***Clearances OK?*** Yes
Pole Usage	43 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	12 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	45 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	47 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage	1 %	Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p419622_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	219 ft	*Latitude*	33.07431953°
Back Span		*Longitude*	-116.83982201°
Ahead Span Az.	118°	*Elevation*	1553 ft
Line Angle	0°	*Tangent/DE*	Terminal Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft·k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P419622	50	3	Corten Steel	42.0	6.8		100	Known Local Wind Light 85 MPH Grade A at Replacement	34	43	2.3	1.0	0
P419622	50	3	Corten Steel	42.0	6.8		100	G.O.95 Light Grade A at Replacement	18	24	4.2	1.0	5.2

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height**** (ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	42.55	0.33	0.11	1	219	219	144
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	41.44	0.33	0.11	1	219	219	144
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	41.36	0.33	0.11	1	219	219	144

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Strain	12kV Long DE	12	0	42.55	P419622	11	17.8	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	0	41.44	P419622	12	17.1	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	0	41.36	P419622	12	16.8	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

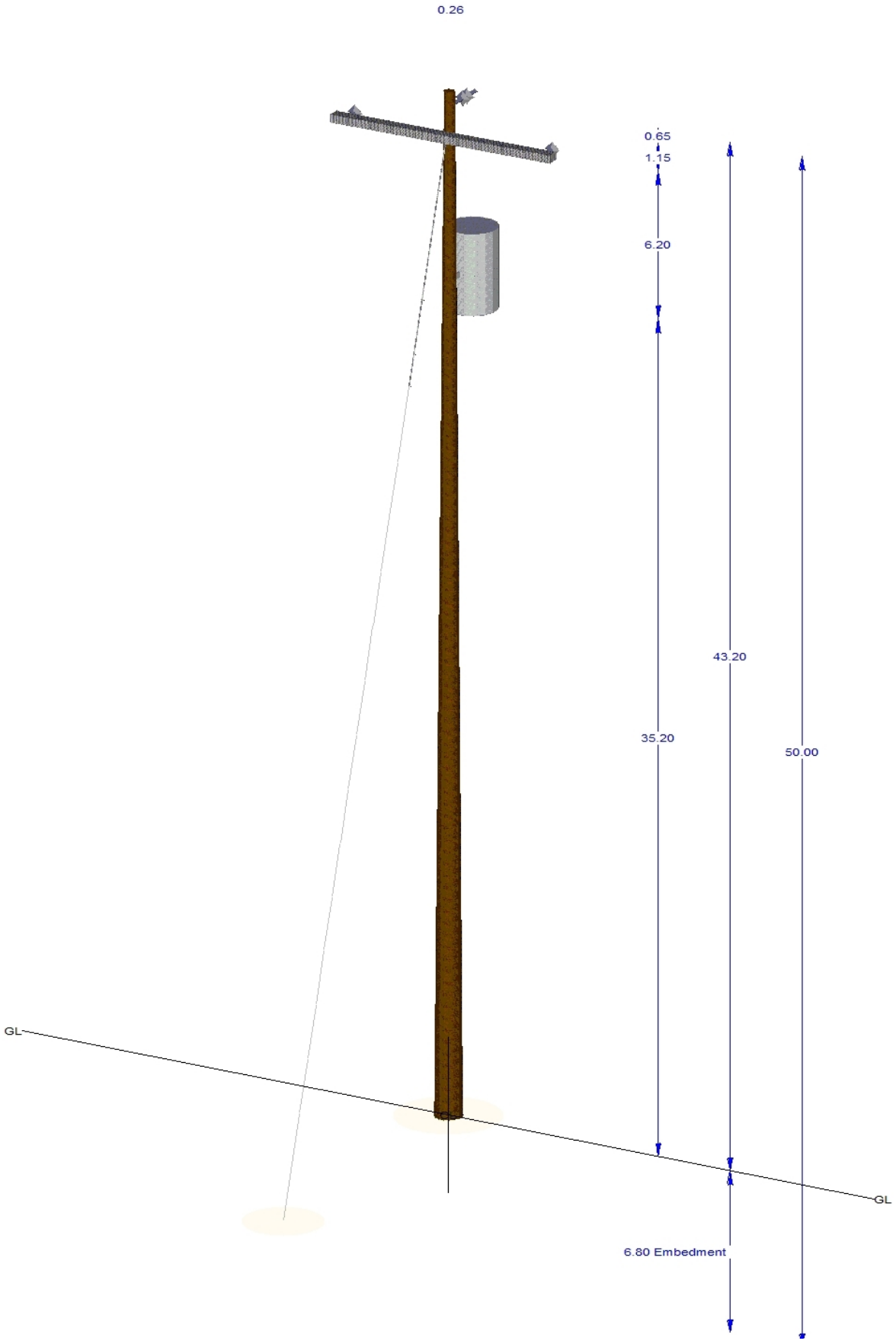
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Down	7/16" 7 Strand EHS (7/16G)	14.65	176	41.4	P419622	45	2.9	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	16" CROSSPLATE MG				P419622	47	2.8	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Equipment	25 kVA Transformer	0	35.2	P419622				
X-Arm	10` DE FG ARM (4DF)	90	41.4	P419622	1	111.1	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy


0.26
0.65
1.15
6.20
43.20
35.20
50.00
GL
GL
6.80 Embedment

Structure P512326
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	41 %	***Clearances OK?*** No
Pole Usage	41 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	9 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage		
Anchor Usage		
Arm Usage		Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L3
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p512326_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	231 ft	*Latitude*	33.07347522°
Back Span	304 ft	*Longitude*	-116.83952995°
Ahead Span Az.	27°	*Elevation*	1551 ft
Line Angle	0°	*Tangent/DE*	Tangent
Framing			
Notes			

Pole Loading Details

Pole Label	Height (ft)	Class	Material	Groundline Circum. (in)	Embed. (ft)	Date Intrusive	Material Capacity %	Load Case	Max Moment (ft·k)	Usage %	Calc SF	Req SF	Max Usage Point (ft)*
P512326	45	3	Corten Steel	38.9	6.8		100	Known Local Wind Light 85 MPH Grade A at Replacement	30	41	2.4	1.0	0
P512326	45	3	Corten Steel	38.9	6.8		100	G.O.95 Light Grade A at Replacement	13	18	5.5	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	Wire Type	Direction (deg)**	Attach Height*** (ft)	Diameter (in)	Unit Weight (lbs/ft)	# of Wires	Span Length (ft)	Ruling Span (ft)	Tension (lbs)
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	37.98	0.33	0.11	1	230	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	37.96	0.33	0.11	1	230	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	37.9	0.33	0.11	1	230	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.98	0.33	0.11	1	305	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.96	0.33	0.11	1	305	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.9	0.33	0.11	1	305	282	271
0.0	.5 In Telephone.Graphsag	0	22.64	0.63	0.19	1	231	231	260
0.0	.5 In Telephone.Graphsag	180	22.64	0.63	0.19	1	304	304	284

Insulators

Type	Description	Voltage (kV)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Post	12kV Clamp Top-Al (1" Pin)	12		37.08	P512326	9	22.4	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		37.05	P512326	9	22.5	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		37	P512326	9	22.1	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

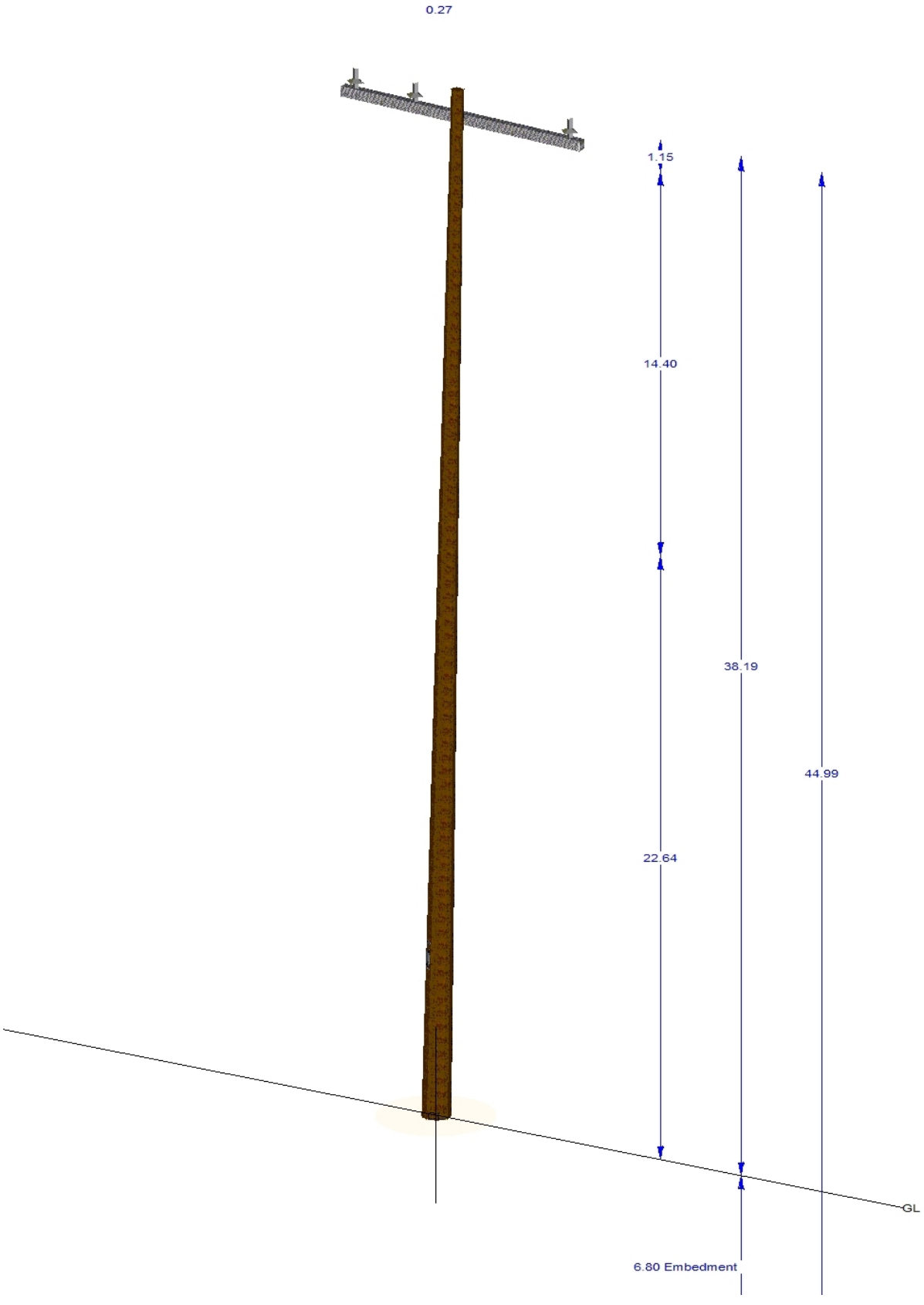
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	Wire Type	Length† (ft)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case

Crossarms and Equipment

Type	Description	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
X-Arm	10` TAN FG ARM (4TF)	273	37.04	P512326		333.3	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy


0.27
1.15
14.40
38.19
44.99
22.64
GL
6.80 Embedment

Structure P512327
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	28 %	***Clearances OK?*** Yes
Pole Usage	28 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	3 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage		
Anchor Usage		
Arm Usage		Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L3
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p512327_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	304 ft	*Latitude*	33.07272948°
Back Span	189 ft	*Longitude*	-116.83997788°
Ahead Span Az.	27°	*Elevation*	1548 ft
Line Angle	1°	*Tangent/DE*	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	Height (ft)	Class	Material	Groundline Circum. (in)	Embed. (ft)	Date Intrusive	Material Capacity %	Load Case	Max Moment (ft·k)	Usage %	Calc SF	Req SF	Max Usage Point (ft)*
P512327	45	1	Corten Steel	40.9	7.1		100	Known Local Wind Light 85 MPH Grade A at Replacement	31	28	3.6	1.0	0
P512327	45	1	Corten Steel	40.9	7.1		100	G.O.95 Light Grade A at Replacement	14	12	8.1	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	Wire Type	Direction (deg)**	Attach Height*** (ft)	Diameter (in)	Unit Weight (lbs/ft)	# of Wires	Span Length (ft)	Ruling Span (ft)	Tension (lbs)
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	37.49	0.33	0.11	1	305	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	37.49	0.33	0.11	1	305	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	37.49	0.33	0.11	1	305	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	179	37.49	0.33	0.11	1	188	188	165
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.49	0.33	0.11	1	189	188	165
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.49	0.33	0.11	1	188	188	165
0.0	.5 In Telephone.Graphsag	0	20.2	0.63	0.19	1	304	304	284
0.0	.5 In Telephone.Graphsag	180	20.2	0.63	0.19	1	188	188	262

Insulators

Type	Description	Voltage (kV)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Strain	12kV DE	12	0	37.49	P512327	2	107.5	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	0	37.49	P512327	3	61.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	0	37.49	P512327	2	81.0	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

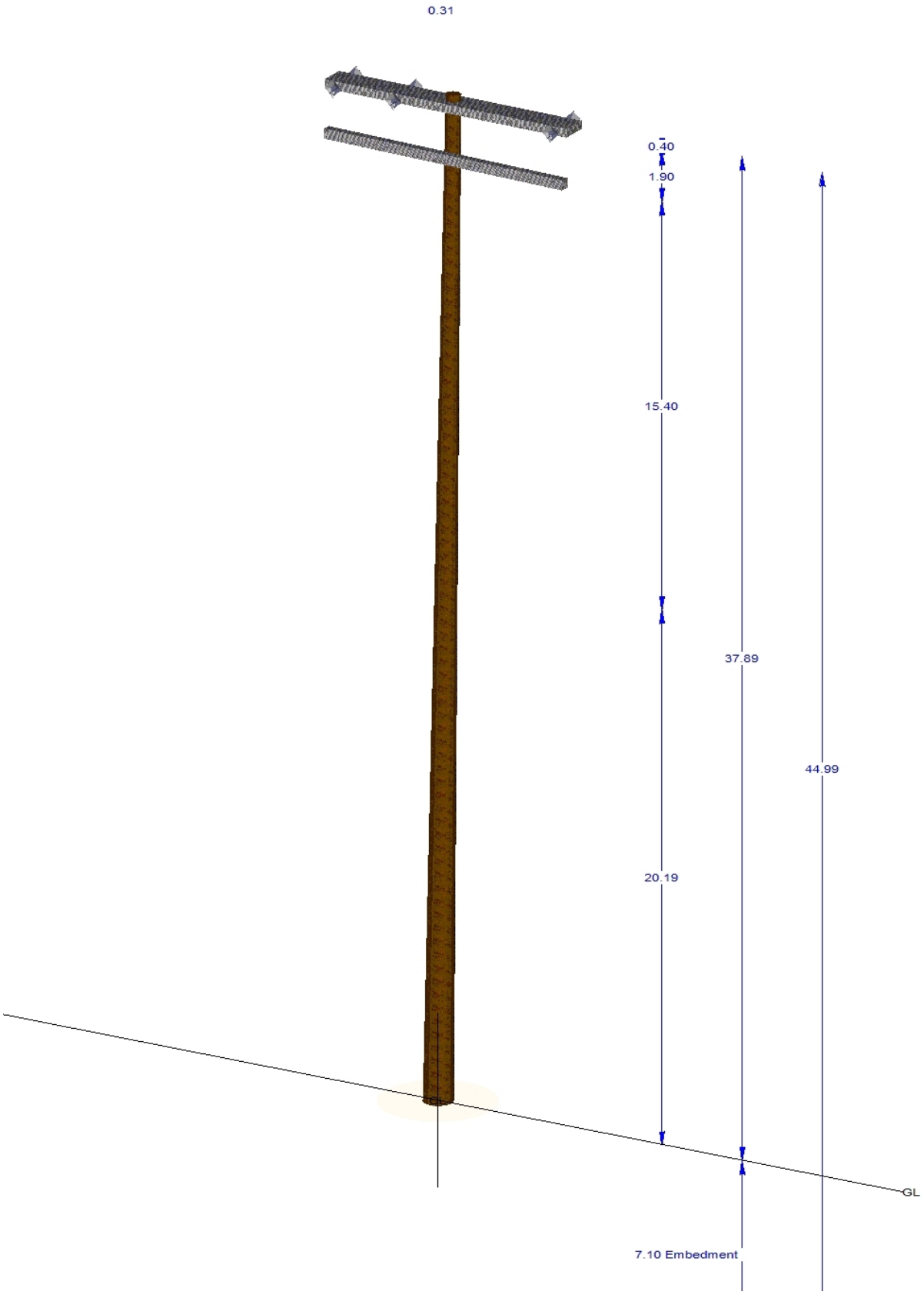
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	Wire Type	Length† (ft)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case

Crossarms and Equipment

Type	Description	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
X-Arm	10` DBL DE FG ARMS (4DF-2)	91	37.49	P512327		333.3	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
X-Arm	10` EQUIPMENT FG ARM (4TF)	93	35.6	P512327			1.3	G.O.95 Light Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy


0.31
0.40
1.90
15.40
37.89
44.99
20.19
GL
7.10 Embedment

Structure P512328
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	41 %	**Clearances OK?** Yes
Pole Usage	26 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	12 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	41 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	33 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage	1 %	Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p512328_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	189 ft	Latitude	33.07226369°
Back Span	97 ft	Longitude	-116.84024958°
Ahead Span Az.	85°	Elevation	1545 ft
Line Angle	-36°	Tangent/DE	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	Height (ft)	Class	Material	Groundline Circum. (in)	Embed. (ft)	Date Intrusive	Material Capacity %	Load Case	Max Moment (ft·k)	Usage %	Calc SF	Req SF	Max Usage Point (ft)*
P512328	45	3	Corten Steel	39.1	6.5		100	Known Local Wind Light 85 MPH Grade A at Replacement	14	26	3.9	1.0	20.6
P512328	45	3	Corten Steel	39.1	6.5		100	G.O.95 Light Grade A at Replacement	9	17	5.9	1.0	20.6

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	Wire Type	Direction (deg)**	Attach Height*** (ft)	Diameter (in)	Unit Weight (lbs/ft)	# of Wires	Span Length (ft)	Ruling Span (ft)	Tension (lbs)
12	3-0 AWG 5Over2 AWAC GCC.Graphsag	197	33.47	0.52	0.28	1	95	95	67
12	3-0 AWG 5Over2 AWAC GCC.Graphsag	197	32.59	0.52	0.28	1	96	95	67
12	3-0 AWG 5Over2 AWAC GCC.Graphsag	197	32.04	0.52	0.28	1	96	95	67
12	No2 AWG 5Over2 AWAC GCC.Graphsag	283	37.56	0.33	0.11	1	188	188	165
12	No2 AWG 5Over2 AWAC GCC.Graphsag	284	36.49	0.33	0.11	1	189	188	165
12	No2 AWG 5Over2 AWAC GCC.Graphsag	284	36.3	0.33	0.11	1	188	188	165
12	3-0 AWG 5Over2 AWAC GCC.Graphsag	343	32.59	0.52	0.28	1	83	83	56
12	3-0 AWG 5Over2 AWAC GCC.Graphsag	343	32.04	0.52	0.28	1	83	83	56
0.0	.5 In Telephone.Graphsag	105	20.58	0.63	0.19	1	107	107	212
0.0	.5 In Telephone.Graphsag	197	21.38	0.63	0.19	1	96	96	88
0.0	.5 In Telephone.Graphsag	197	21.28	0.63	0.19	1	96	96	80
0.0	.5 In Telephone.Graphsag	197	21.18	0.63	0.19	1	96	96	74
0.0	.5 In Telephone.Graphsag	197	21.08	0.63	0.19	1	96	96	66
0.0	.5 In Telephone.Graphsag	197	20.98	0.63	0.19	1	96	96	60
0.0	.5 In Telephone.Graphsag	284	20.48	0.63	0.19	1	188	188	262
0.0	.5 In Telephone.Graphsag	343	21.38	0.63	0.19	1	84	84	78
0.0	.5 In Telephone.Graphsag	343	21.28	0.63	0.19	1	84	84	72
0.0	.5 In Telephone.Graphsag	343	21.18	0.63	0.19	1	84	84	68
0.0	.5 In Telephone.Graphsag	343	21.08	0.63	0.19	1	84	84	63
0.0	.5 In Telephone.Graphsag	343	20.98	0.63	0.19	1	84	84	58

Insulators

Type	Description	Voltage (kV)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Strain	12kV Long DE	12	197	33.47	P512328	2	81.0	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	197	32.59	P512328	2	83.3	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	197	32.04	P512328	3	75.2	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV Long DE	12	283	37.56	P512328	10	19.6	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy

Strain	12kV DE	12	284	36.49	P512328	11	17.7	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	284	36.3	P512328	12	16.0	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	343	32.59	P512328	3	57.6	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	343	32.04	P512328	3	68.0	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

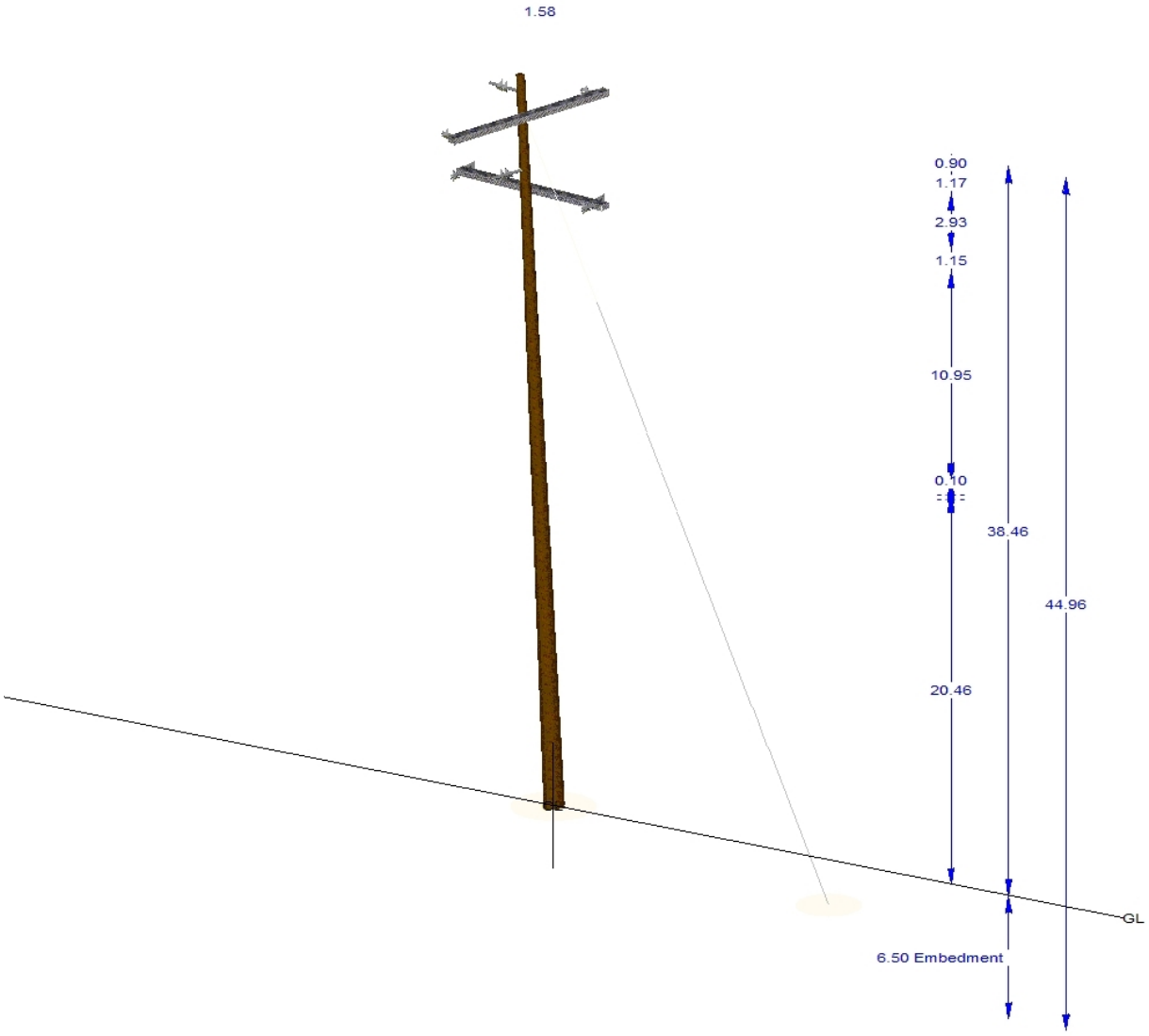
Guys and Cables

†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Down	7/16" 7 Strand EHS (7/16G)	20.71	103	36.39	P512328	41	3.2	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	20" CROSSPLATE MG				P512328	33	4.0	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
X-Arm	10` DE FG ARM (4DF)	20	36.39	P512328	1	102.6	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
X-Arm	10` DE FG ARM (4DF)	284	32.32	P512328		444.4	1.3	Known Local Wind Light 85 MPH Grade A at Replacement


1.58
0.90
1.17
2.93
1.15
10.95
0.10
38.46
44.96
20.46
GL
6.50 Embedment

Structure P512329
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	73 %	***Clearances OK?*** Yes
Pole Usage	73 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	12 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	35 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	70 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage	1 %	Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p512329_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	97 ft	*Latitude*	33.07239817°
Back Span	233 ft	*Longitude*	-116.84052249°
Ahead Span Az.	121°	*Elevation*	1544 ft
Line Angle	2°	*Tangent/DE*	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft·k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P512329	50	3	Corten Steel	42.2	6.5		100	Known Local Wind Light 85 MPH Grade A at Replacement	59	73	1.4	1.0	0
P512329	50	3	Corten Steel	42.2	6.5		100	G.O.95 Light Grade A at Replacement	28	36	2.8	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height**** (ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*
12	3-0 AWG 5Over2 AWAC GCC.Graphsag	0	42.35	0.52	0.28	1	95	95	67
12	3-0 AWG 5Over2 AWAC GCC.Graphsag	0	41.2	0.52	0.28	1	96	95	67
12	3-0 AWG 5Over2 AWAC GCC.Graphsag	0	41.2	0.52	0.28	1	96	95	67
12	3-0 AWG 5Over2 AWAC GCC.Graphsag	179	42.35	0.52	0.28	1	233	202	305
12	3-0 AWG 5Over2 AWAC GCC.Graphsag	179	41.2	0.52	0.28	1	233	202	305
12	3-0 AWG 5Over2 AWAC GCC.Graphsag	179	41.2	0.52	0.28	1	233	202	305
0.24	1-0 AWG RTS Triplex Msgr AWAC No2 AWG 3-4	179	34.65	0.98	0.48	1	233	233	440
0.24	1-0 AWG Triplex SSC AL Neritina GCC.Graphsag	261	34.65	0.97	0.41	1	61	60	41
0.0	.5 In Telephone.Graphsag	1	23.7	0.63	0.19	1	96	96	88
0.0	.5 In Telephone.Graphsag	1	23.4	0.63	0.19	1	96	96	80
0.0	.5 In Telephone.Graphsag	1	23.2	0.63	0.19	1	96	96	74
0.0	.5 In Telephone.Graphsag	1	23.1	0.63	0.19	1	96	96	66
0.0	.5 In Telephone.Graphsag	1	23	0.63	0.19	1	96	96	60
0.0	.5 In Telephone.Graphsag	179	23.7	0.63	0.19	1	233	233	176
0.0	.5 In Telephone.Graphsag	179	23.4	0.63	0.19	1	233	233	175
0.0	.5 In Telephone.Graphsag	179	23.2	0.63	0.19	1	233	233	172
0.0	.5 In Telephone.Graphsag	179	23.1	0.63	0.19	1	233	233	167
0.0	.5 In Telephone.Graphsag	179	23	0.63	0.19	1	233	233	163

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Strain	12kV Long DE	12	0	42.35	P512329	12	16.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	0	41.2	P512329	12	16.8	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	0	41.2	P512329	11	17.4	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

†Length = Lead Length for Down Guys, Wire Length for Span Guys

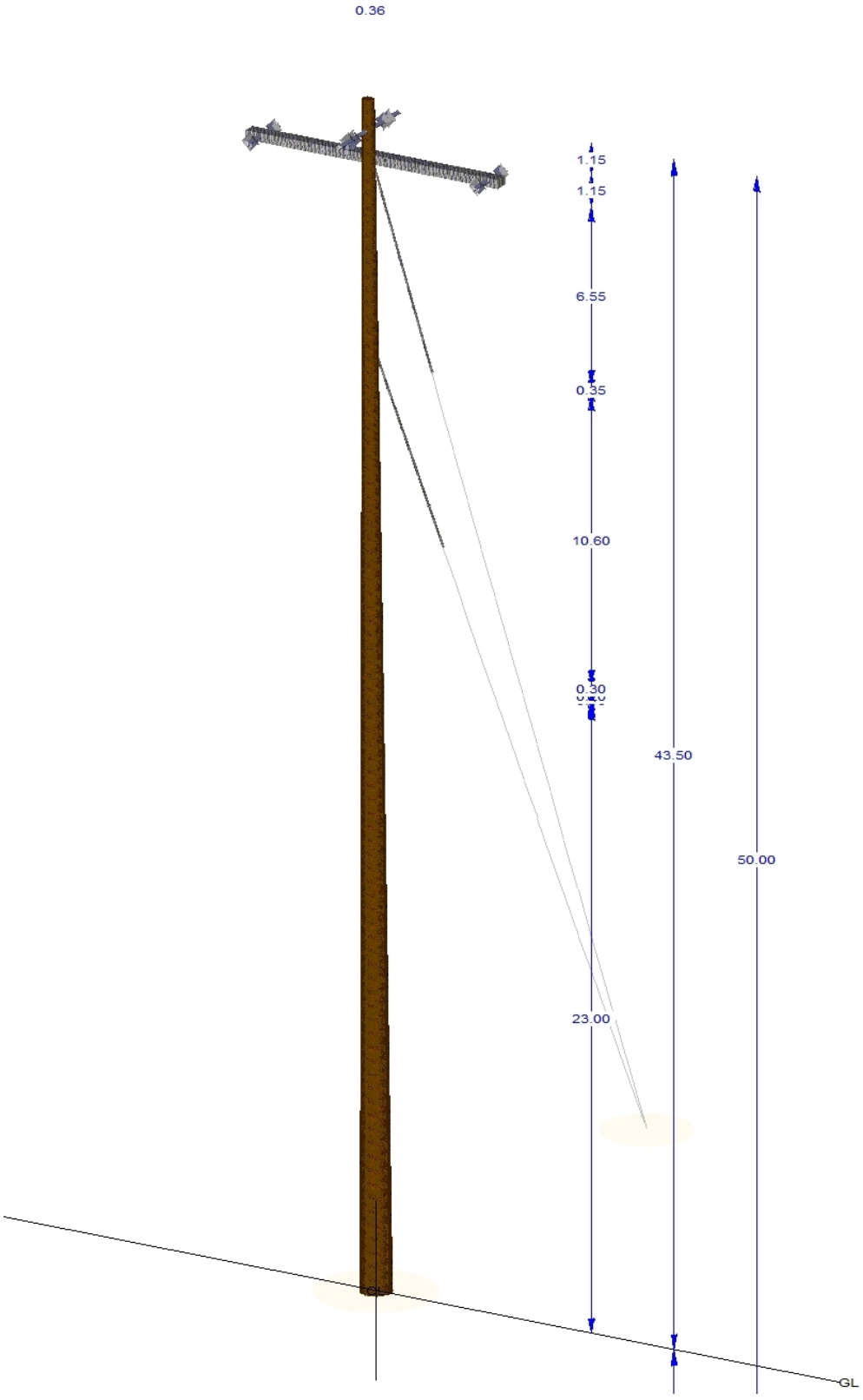
Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy

Down	7/16" 7 Strand EHS (7/16G)	19.1	0	41.2	P512329	32	4.2	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Down	7/16" 7 Strand EHS (7/16G)	19.1	0	34.3	P512329	35	3.8	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	16" CROSSPLATE MG				P512329	70	1.9	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
X-Arm	10` DE FG ARM (4DF)	270	41.2	P512329	1	111.1	1.3	Known Local Wind Light 85 MPH Grade A at Replacement


0.36
1.15
1.15
6.55
0.35
10.60
0.30
43.50
50.00
23.00
GL
GL

Structure P512375
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	56 %	***Clearances OK?*** No
Pole Usage	56 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	16 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	50 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	52 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage	1 %	Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p512375_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	125 ft	*Latitude*	33.07286853°
Back Span		*Longitude*	-116.84154620°
Ahead Span Az.	119°	*Elevation*	1545 ft
Line Angle	0°	*Tangent/DE*	Terminal Dead End
Framing			
Notes	P512375-P514973: SEC TO COMM violation. Potentially re-tension secondary wire		

Pole Loading Details

Pole Label	Height (ft)	Class	Material	Groundline Circum. (in)	Embed. (ft)	Date Intrusive	Material Capacity %	Load Case	Max Moment (ft-k)	Usage %	Calc SF	Req SF	Max Usage Point (ft)*
P512375	50	3	Corten Steel	42.1	6.7		100	Known Local Wind Light 85 MPH Grade A at Replacement	44	56	1.8	1.0	0
P512375	50	3	Corten Steel	42.1	6.7		100	G.O.95 Light Grade A at Replacement	21	27	3.6	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	Wire Type	Direction (deg)**	Attach Height*** (ft)	Diameter (in)	Unit Weight (lbs/ft)	# of Wires	Span Length (ft)	Ruling Span (ft)	Tension (lbs)
12	3-0 AWG 5Over2 AWAC GCC.Graphsag	0	41.45	0.52	0.28	1	125	202	305
12	3-0 AWG 5Over2 AWAC GCC.Graphsag	0	41.45	0.52	0.28	1	125	202	305
12	3-0 AWG 5Over2 AWAC GCC.Graphsag	1	42.55	0.52	0.28	1	125	202	305
0.24	1-0 AWG Triplex SSC AL Neritina GCC.Graphsag	207	29.8	0.97	0.41	1	69	69	66
0.24	1-0 AWG Triplex SSC AL Neritina GCC.Graphsag	299	29.7	0.97	0.41	1	111	111	77
0.0	.5 In Telephone.Graphsag	0	22.8	0.63	0.19	1	124	125	72
0.0	.5 In Telephone.Graphsag	0	22.7	0.63	0.19	1	124	125	71
0.0	.5 In Telephone.Graphsag	0	22.6	0.63	0.19	1	124	125	68
0.0	.5 In Telephone.Graphsag	0	22.3	0.63	0.19	1	124	125	67
0.0	.5 In Telephone.Graphsag	0	22.2	0.63	0.19	1	124	125	63
0.0	.5 In Telephone.Graphsag	71	22.5	0.63	0.19	1	102	102	43
0.0	.5 In Telephone.Graphsag	71	22.4	0.63	0.19	1	102	102	34
0.0	.5 In Telephone.Graphsag	207	22.9	0.63	0.19	1	69	69	47

Insulators

Type	Description	Voltage (kV)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Strain	12kV DE	12	0	41.45	P512375	14	14.6	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	0	41.45	P512375	13	15.2	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV Long DE	12	1	42.55	P512375	16	12.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

†Length = Lead Length for Down Guys, Wire Length for Span Guys

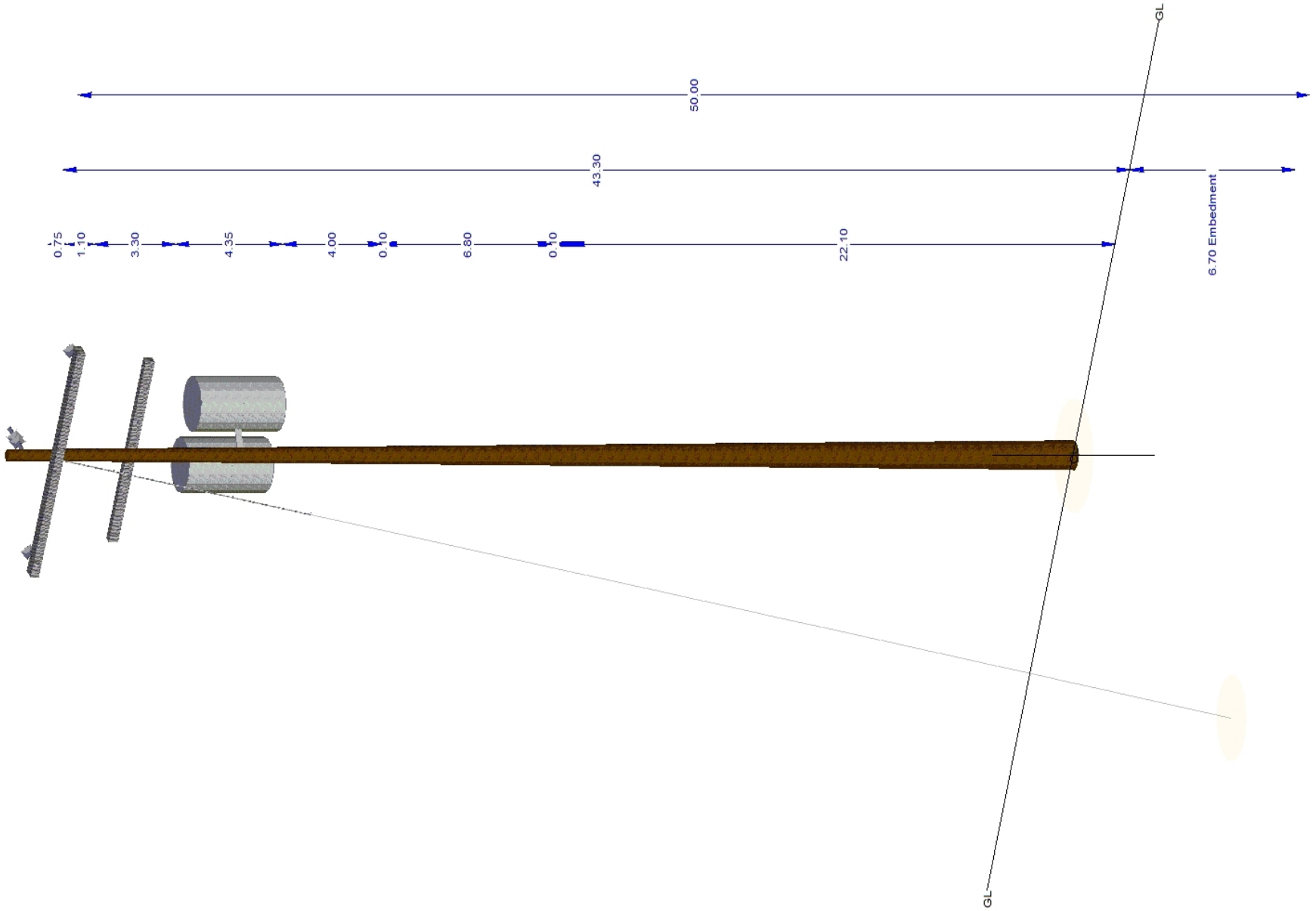
Type	Wire Type	Length† (ft)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Down	7/16" 7 Strand EHS (7/16G)	19.87	180	41.45	P512375	50	2.7	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	16" CROSSPLATE MG				P512375	52	2.6	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	Description	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy

Equipment	25 kVA Transformer	320	33.8	P512375				
Equipment	25 kVA Transformer	40	33.8	P512375				
X-Arm	10` DE FG ARM (4DF)	92	41.45	P512375	1	95.2	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
X-Arm	8` TAN FG ARM (8FT)	271	38.15	P512375			1.3	G.O.95 Light Grade A at Replacement


GL
50.00
43.30
6.70 Embedment
0.75
1.10
3.30
4.35
4.00
0.10
6.80
0.10
22.10
GL

Structure P517675
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	83 %	***Clearances OK?*** No
Pole Usage	83 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	12 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	43 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	34 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage		Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p517675_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	233 ft	*Latitude*	33.07270491°
Back Span	125 ft	*Longitude*	-116.84118892°
Ahead Span Az.	119°	*Elevation*	1545 ft
Line Angle	0°	*Tangent/DE*	Tangent
Framing			
Notes			

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft·k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P517675	50	3	Corten Steel	42.0	6.8		100	Known Local Wind Light 85 MPH Grade A at Replacement	68	83	1.2	1.0	0
P517675	50	3	Corten Steel	42.0	6.8		100	G.O.95 Light Grade A at Replacement	31	39	2.6	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height**** (ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*
12	3-0 AWG 5Over2 AWAC GCC.Graphsag	-1	42.9	0.52	0.28	1	233	202	305
12	3-0 AWG 5Over2 AWAC GCC.Graphsag	0	42.9	0.52	0.28	1	233	202	305
12	3-0 AWG 5Over2 AWAC GCC.Graphsag	0	42.9	0.52	0.28	1	233	202	305
12	3-0 AWG 5Over2 AWAC GCC.Graphsag	180	42.9	0.52	0.28	1	125	202	305
12	3-0 AWG 5Over2 AWAC GCC.Graphsag	180	42.9	0.52	0.28	1	125	202	305
12	3-0 AWG 5Over2 AWAC GCC.Graphsag	181	42.9	0.52	0.28	1	125	202	305
0.24	1-0 AWG RTS Triplex Msgr AWAC No2 AWG 3-4	0	31.7	0.98	0.48	1	233	233	440
0.24	1-0 AWG Triplex SSC AL Neritina GCC.Graphsag	88	31.6	0.97	0.41	1	75	73	53
0.0	.5 In Telephone.Graphsag	0	23	0.63	0.19	1	233	233	176
0.0	.5 In Telephone.Graphsag	0	22.8	0.63	0.19	1	233	233	175
0.0	.5 In Telephone.Graphsag	0	22.6	0.63	0.19	1	233	233	172
0.0	.5 In Telephone.Graphsag	0	22.4	0.63	0.19	1	233	233	167
0.0	.5 In Telephone.Graphsag	0	22.2	0.63	0.19	1	233	233	163
0.0	.5 In Telephone.Graphsag	180	23	0.63	0.19	1	124	125	72
0.0	.5 In Telephone.Graphsag	180	22.8	0.63	0.19	1	124	125	71
0.0	.5 In Telephone.Graphsag	180	22.6	0.63	0.19	1	124	125	68
0.0	.5 In Telephone.Graphsag	180	22.4	0.63	0.19	1	124	125	67
0.0	.5 In Telephone.Graphsag	180	22.2	0.63	0.19	1	124	125	63

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Post	12kV Clamp Top-Al (1" Pin)	12		42	P517675	11	19.0	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		42	P517675	12	17.1	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		42	P517675	11	17.5	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

†Length = Lead Length for Down Guys, Wire Length for Span Guys

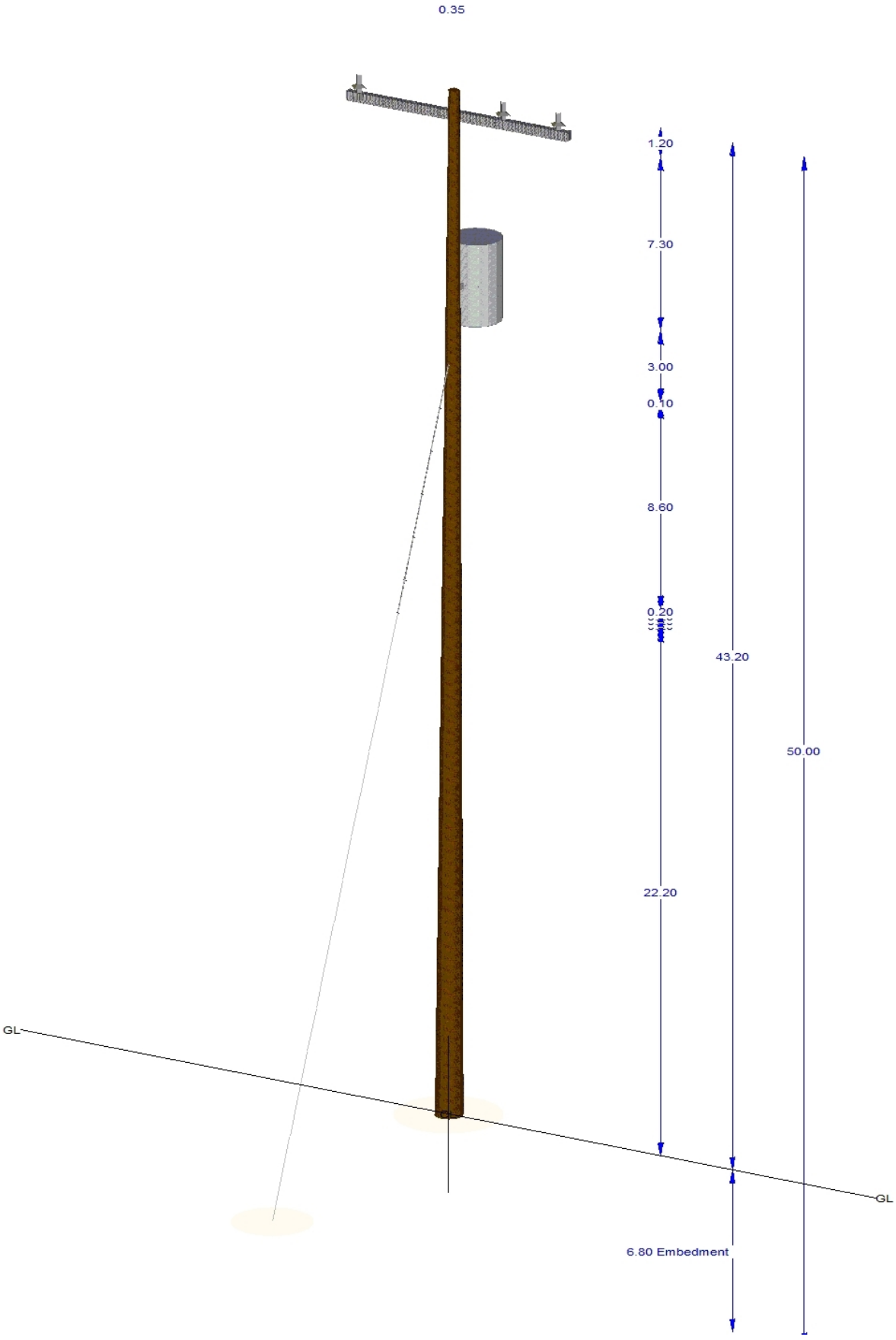
Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy

Down	7/16" 7 Strand EHS (7/16G)	13.94	180	31.7	P517675	43	3.1	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	20" CROSSPLATE MG				P517675	34	3.9	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Equipment	25 kVA Transformer	0	34.7	P517675				
X-Arm	10` TAN FG ARM (4TF)	269	42	P517675		333.3	1.3	Known Local Wind Light 85 MPH Grade A at Replacement


0.35
1.20
7.30
3.00
0.10
8.60
0.20
43.20
50.00
22.20
GL
GL
6.80 Embedment

Structure P712583
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	65 %	***Clearances OK?*** No
Pole Usage	65 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	10 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	26 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	20 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage	1 %	Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p712583_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	352 ft	*Latitude*	33.07228452°
Back Span	83 ft	*Longitude*	-116.83997854°
Ahead Span Az.	117°	*Elevation*	1547 ft
Line Angle	32°	*Tangent/DE*	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft·k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P712583	45	3	Corten Steel	39.0	6.6		100	Known Local Wind Light 85 MPH Grade A at Replacement	47	65	1.5	1.0	0
P712583	45	3	Corten Steel	39.0	6.6		100	G.O.95 Light Grade A at Replacement	23	33	3.1	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height**** (ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*
12	No2 AWG 5Over2 AWAC GCC.Graphsag	16	37.3	0.33	0.11	1	350	350	163
12	No2 AWG 5Over2 AWAC GCC.Graphsag	16	37.3	0.33	0.11	1	350	350	163
12	3-0 AWG 5Over2 AWAC GCC.Graphsag	165	37.3	0.52	0.28	1	83	83	56
12	3-0 AWG 5Over2 AWAC GCC.Graphsag	165	37.3	0.52	0.28	1	83	83	56
0.0	.5 In Telephone.Graphsag	16	21.4	0.63	0.19	1	350	350	333
0.0	.5 In Telephone.Graphsag	16	21	0.63	0.19	1	350	350	333
0.0	.5 In Telephone.Graphsag	165	21.4	0.63	0.19	1	84	84	78
0.0	.5 In Telephone.Graphsag	165	21.3	0.63	0.19	1	84	84	72
0.0	.5 In Telephone.Graphsag	165	21.2	0.63	0.19	1	84	84	68
0.0	.5 In Telephone.Graphsag	165	21.1	0.63	0.19	1	84	84	63
0.0	.5 In Telephone.Graphsag	165	21	0.63	0.19	1	84	84	58

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Strain	12kV DE	12	16	37.3	P712583	10	19.8	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	16	37.3	P712583	10	19.3	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	165	37.3	P712583	3	69.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	165	37.3	P712583	3	60.4	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

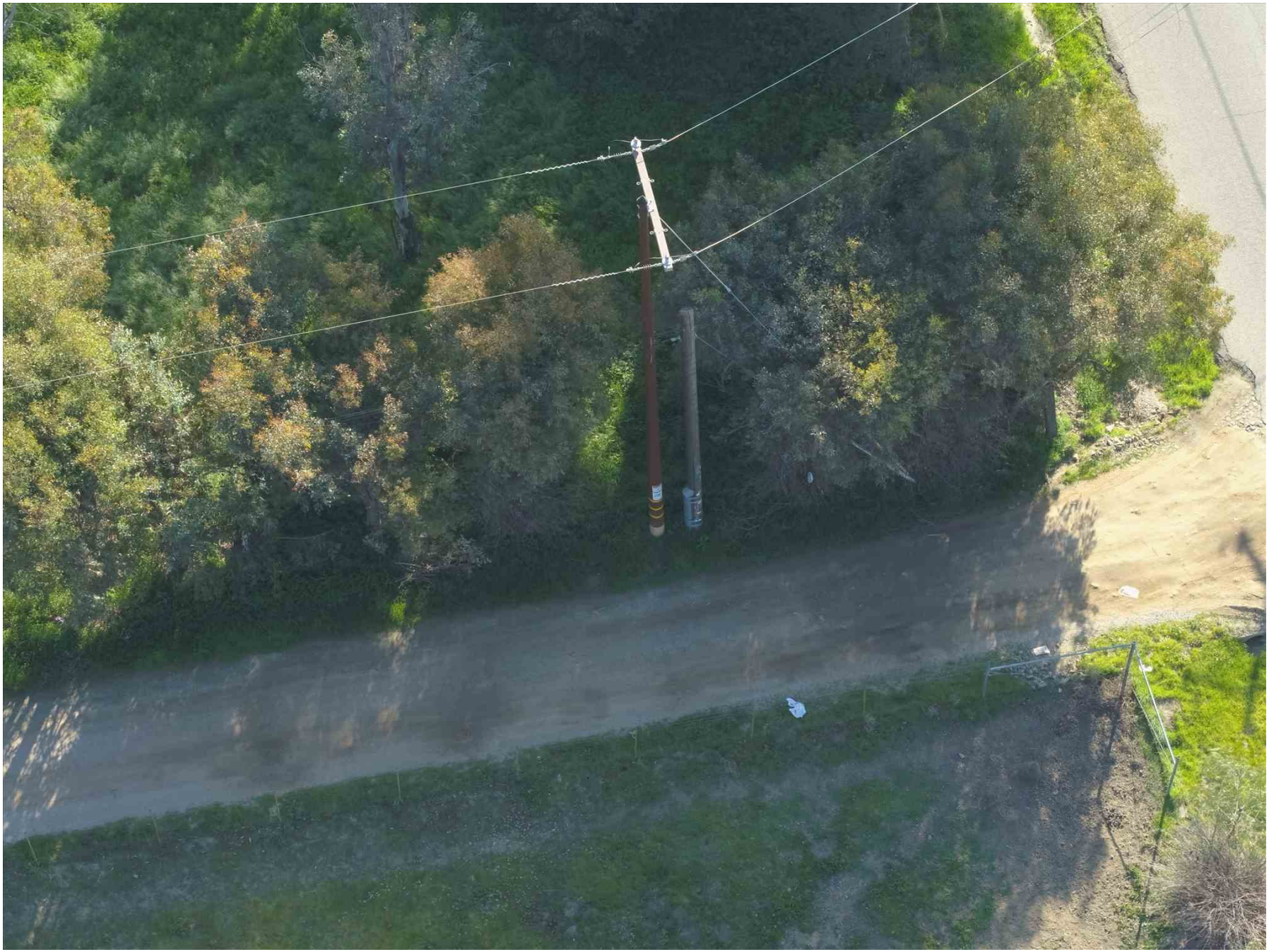
†Length = Lead Length for Down Guys, Wire Length for Span Guys

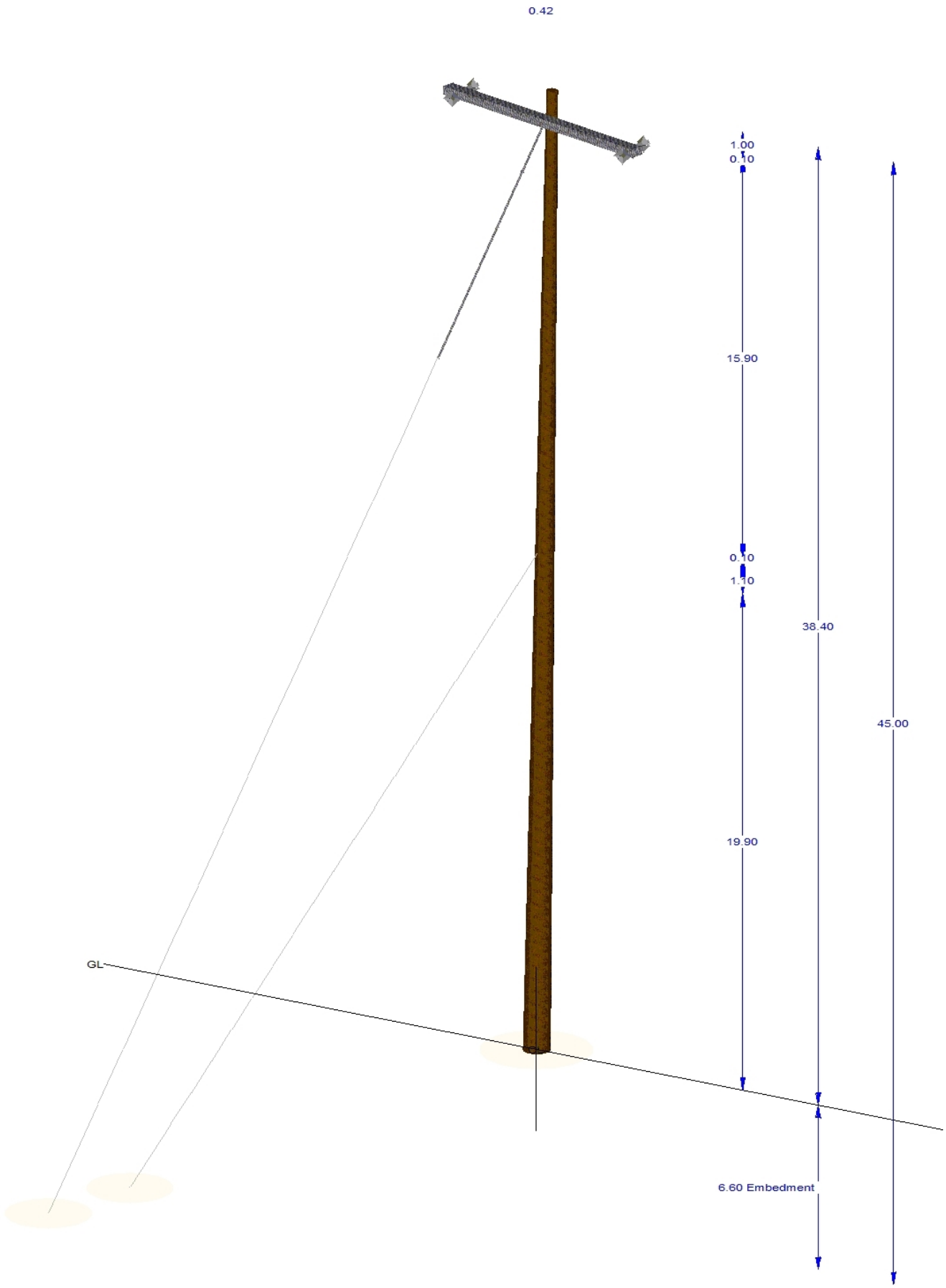
Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Down	7/16" 7 Strand EHS (7/16G)	25.37	198	37.4	P712583	17	7.7	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	16" CROSSPLATE MG				P712583	18	7.5	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Down	3/8" 7 Strand EHS (3/8G)	20.76	198	19.9	P712583	26	5.0	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	16" CROSSPLATE MG				P712583	20	6.6	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
X-Arm	10` DE FG ARM (4DF)	105	37.3	P712583	1	148.1	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

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15.90
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38.40
45.00
19.90
GL
6.60 Embedment

Structure P712584
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** Existing Conditions (Field Assessment)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	61 %	***Clearances OK?*** Yes
Pole Usage	61 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	10 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	60 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	56 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage	1 %	Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	P712584 - REF ONLY_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	98 ft	*Latitude*	33.07184914°
Back Span	352 ft	*Longitude*	-116.83895208°
Ahead Span Az.	117°	*Elevation*	1552 ft
Line Angle	0°	*Tangent/DE*	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft·k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P712584	45	3	DF - Dougas Fir	37.4	6.8		100	Known Local Wind Light 85 MPH Grade A at Replacement	49	61	2.2	1.3	0
P712584	45	3	DF - Dougas Fir	37.4	6.8		100	G.O.95 Light Grade A at Replacement	24	61	4.3	2.6	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height*** (ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.21	0.33	0.11	1	350	350	163
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	37.21	0.33	0.11	1	350	350	163
0.24	1-0 AWG Triplex SSC AL Neritina GCC.Graphsag	274	31.02	0.97	0.41	1	98	98	65
0.0	.5 In Telephone.Graphsag	180	23.04	0.63	0.19	1	350	350	333
0.0	.5 In Telephone.Graphsag	180	22.04	0.63	0.19	1	350	350	333
0.0	.5 In Telephone.Graphsag	274	23.04	0.63	0.19	1	98	98	35
0.0	.5 In Telephone.Graphsag	274	22.04	0.63	0.19	1	98	98	35

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Strain	12kV Long DE	12	180	37.21	P712584	10	19.4	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV Long DE	12	180	37.21	P712584	10	19.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

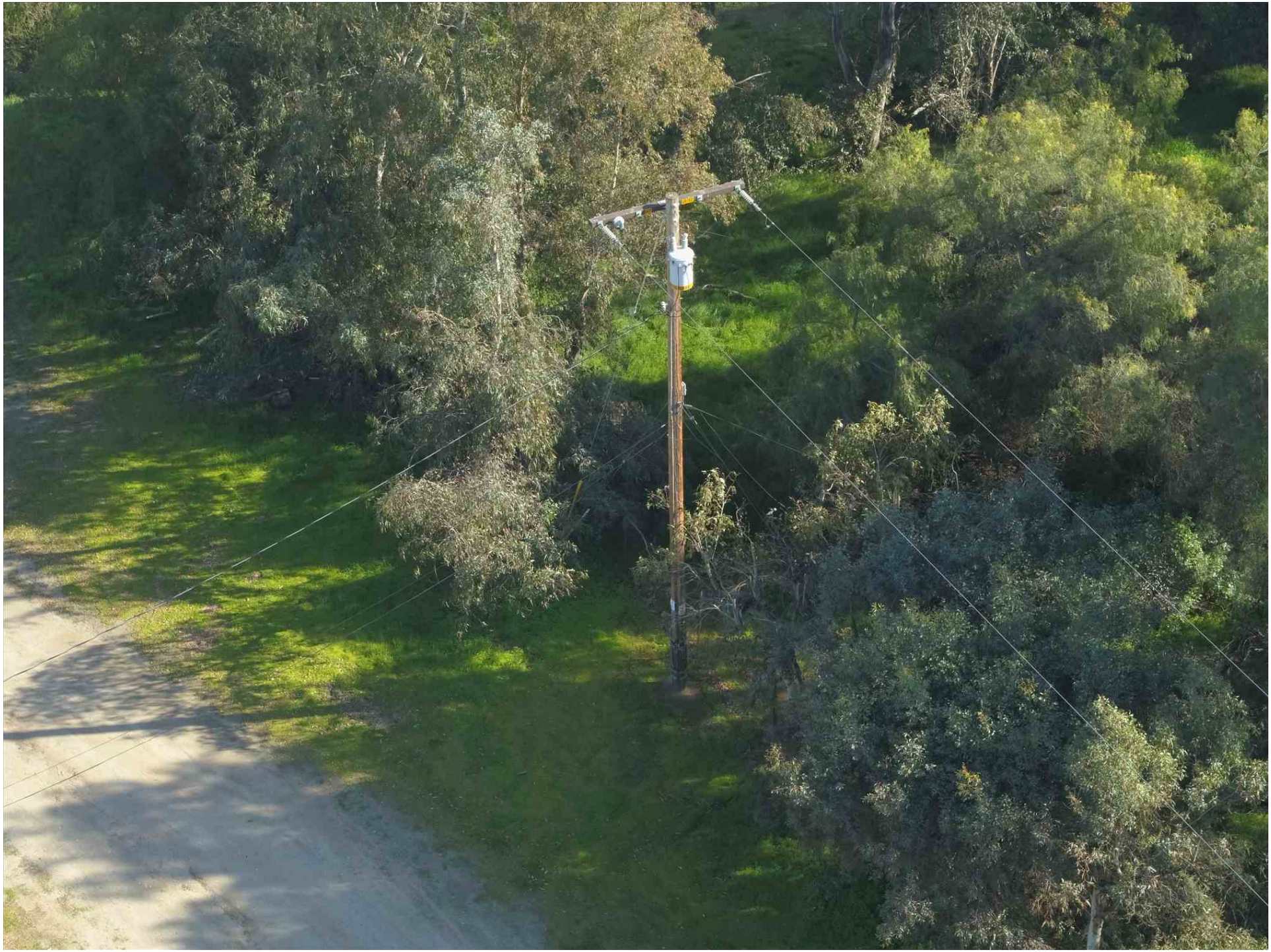
†Length = Lead Length for Down Guys, Wire Length for Span Guys

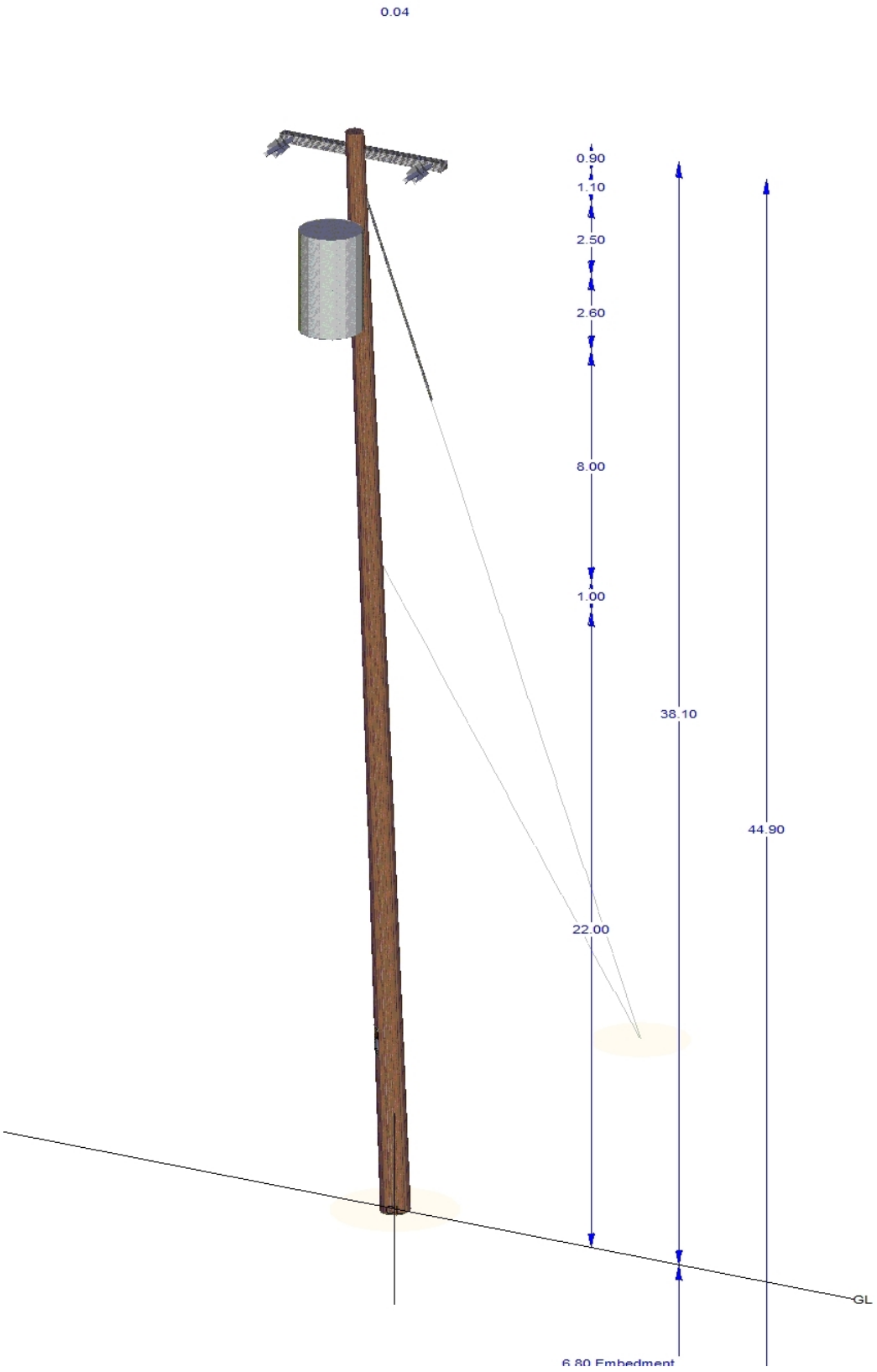
Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Down	3/8" 7 Strand EHS (3/8G)	18.38	0	36.11	P712584	47	2.8	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Down	1/4" 7 Strand EHS (1/4G)	18.38	0	23.04	P712584	60	2.2	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	16" CROSSPLATE MG				P712584	56	2.4	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Equipment	25 kVA Transformer	180	33.61	P712584				
X-Arm	6` DE FG ARM (--)	269	37.21	P712584	1	133.3	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy

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2.50
2.60
8.00
1.00
38.10
44.90
22.00
GL
6.80 Embedment

Structure P716621
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** As-Built (New Construction)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	39 %	***Clearances OK?*** No
Pole Usage	39 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	12 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	6 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage		
Arm Usage		Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	p716621_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	217 ft	*Latitude*	33.07913628°
Back Span	162 ft	*Longitude*	-116.83615999°
Ahead Span Az.	27°	*Elevation*	1597 ft
Line Angle	0°	*Tangent/DE*	Tangent
Framing			
Notes	P112100-P716621: SEC TO COMM violation. Potentially re-tension secondary wire		

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft-k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P716621	45	3	Corten Steel	39.2	6.4		100	Known Local Wind Light 85 MPH Grade A at Replacement	29	39	2.6	1.0	0
P716621	45	3	Corten Steel	39.2	6.4		100	G.O.95 Light Grade A at Replacement	13	18	5.6	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height**** (ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	38.18	0.33	0.11	1	217	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	38.07	0.33	0.11	1	217	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	0	38.03	0.33	0.11	1	217	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	38.18	0.33	0.11	1	161	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	38.07	0.33	0.11	1	161	282	271
12	No2 AWG 5Over2 AWAC GCC.Graphsag	180	38.03	0.33	0.11	1	162	282	271
0.24	1-0 AWG RTS Triplex Msgr AWAC No2 AWG 3-4	180	26.8	0.98	0.48	1	162	162	270
0.24	1-0 AWG Triplex SSC AL Neritina GCC.Graphsag	244	28.6	0.97	0.41	1	13	8	5
0.0	.5 In Telephone.Graphsag	2	19.6	0.63	0.19	1	7	7	31
0.0	.5 In Telephone.Graphsag	180	19.6	0.63	0.19	1	156	156	226

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Post	12kV Clamp Top-Al (1" Pin)	12		37.28	P716621	9	21.3	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		37.16	P716621	12	16.5	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		37.12	P716621	7	28.5	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

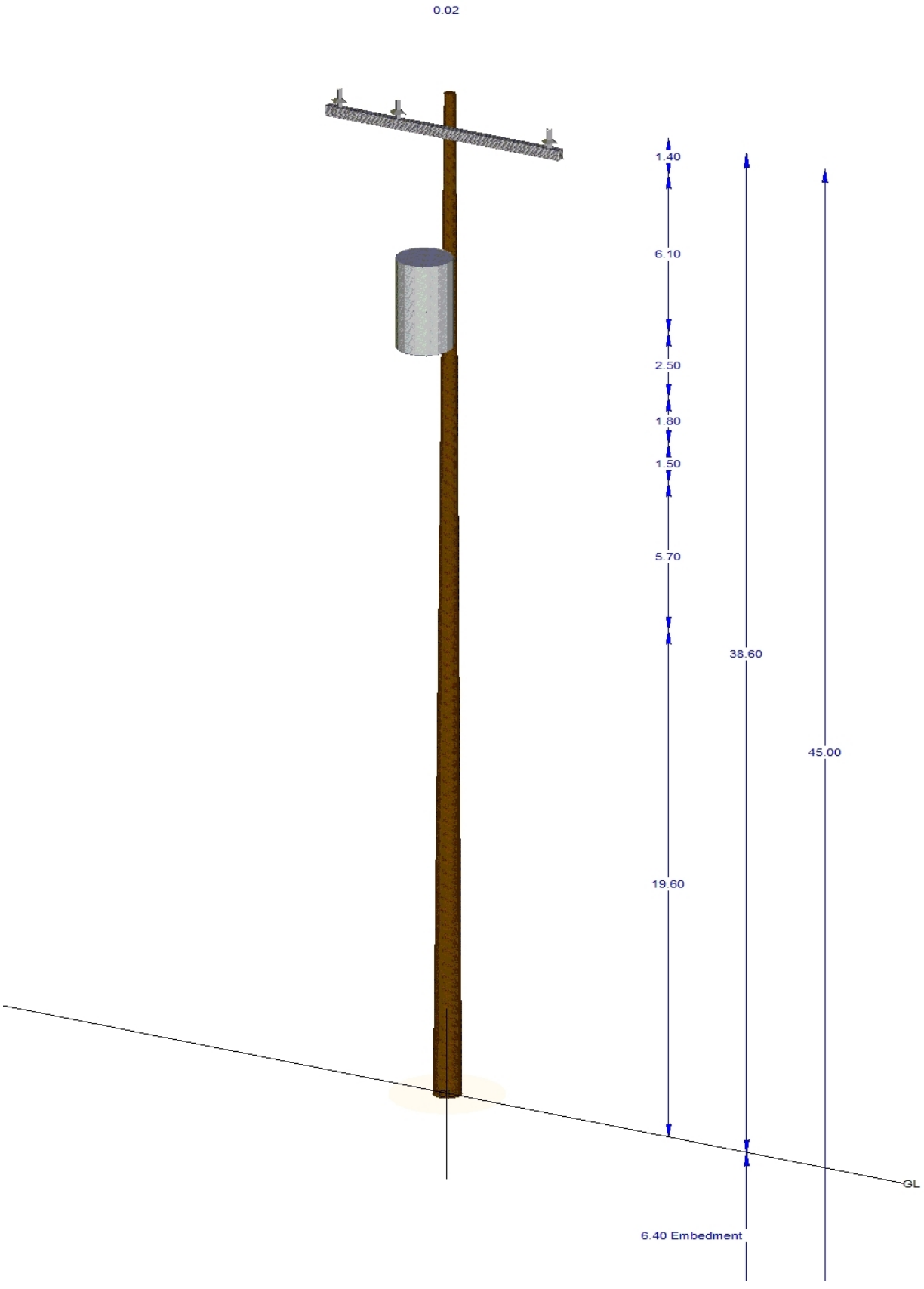
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Span	3 8-7 Strand Ehs Steel Sdge.Graphsag	217	0	25.3	P716621, P219583	6			Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Equipment	25 kVA Transformer	180	31.1	P716621				
X-Arm	10` TAN FG ARM (4TF)	92	37.2	P716621		444.4	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy


0.02
1.40
6.10
2.50
1.80
1.50
5.70
38.60
45.00
19.60
GL
6.40 Embedment

Structure P811670
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** Existing Conditions (Field Assessment)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	58 %	***Clearances OK?*** Yes
Pole Usage	58 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	8 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	43 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	24 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage	15 %	Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	P811670 - REF ONLY_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	261 ft	*Latitude*	33.07492613°
Back Span	100 ft	*Longitude*	-116.83901826°
Ahead Span Az.	299°	*Elevation*	1566 ft
Line Angle	17°	*Tangent/DE*	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	Height (ft)	Class	Material	Groundline Circum. (in)	Embed. (ft)	Date Intrusive	Material Capacity %	Load Case	Max Moment (ft·k)	Usage %	Calc SF	Req SF	Max Usage Point (ft)*
P811670	45	5	DF - Dougas Fir	32.8	5.7		100	Known Local Wind Light 85 MPH Grade A at Replacement	31	58	2.3	1.3	6.1
P811670	45	5	DF - Dougas Fir	32.8	5.7		100	G.O.95 Light Grade A at Replacement	14	51	5.2	2.6	3.1

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	Wire Type	Direction (deg)**	Attach Height*** (ft)	Diameter (in)	Unit Weight (lbs/ft)	# of Wires	Span Length (ft)	Ruling Span (ft)	Tension (lbs)
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	8	38.31	0.32	0.09	1	259	260	107
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	8	38.2	0.32	0.09	1	260	260	107
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	8	37.99	0.32	0.09	1	260	260	107
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	171	39.28	0.32	0.09	1	102	102	19
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	171	38.96	0.32	0.09	1	103	102	19
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	173	39.17	0.32	0.09	1	102	102	19
0.0	.5 In Telephone.Graphsag	9	31.06	0.63	0.19	1	260	260	186
0.0	.5 In Telephone.Graphsag	171	31.06	0.63	0.19	1	102	101	47

Insulators

Type	Description	Voltage (kV)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Strain	12kV DE	12	8	38.31	P811670	6	31.6	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	8	38.2	P811670	7	28.7	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	8	37.99	P811670	8	24.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1-3/8" Pin)	12		38.31	P811670	8	25.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1-3/8" Pin)	12		38.2	P811670	7	28.6	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1-3/8" Pin)	12		37.99	P811670	8	25.3	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

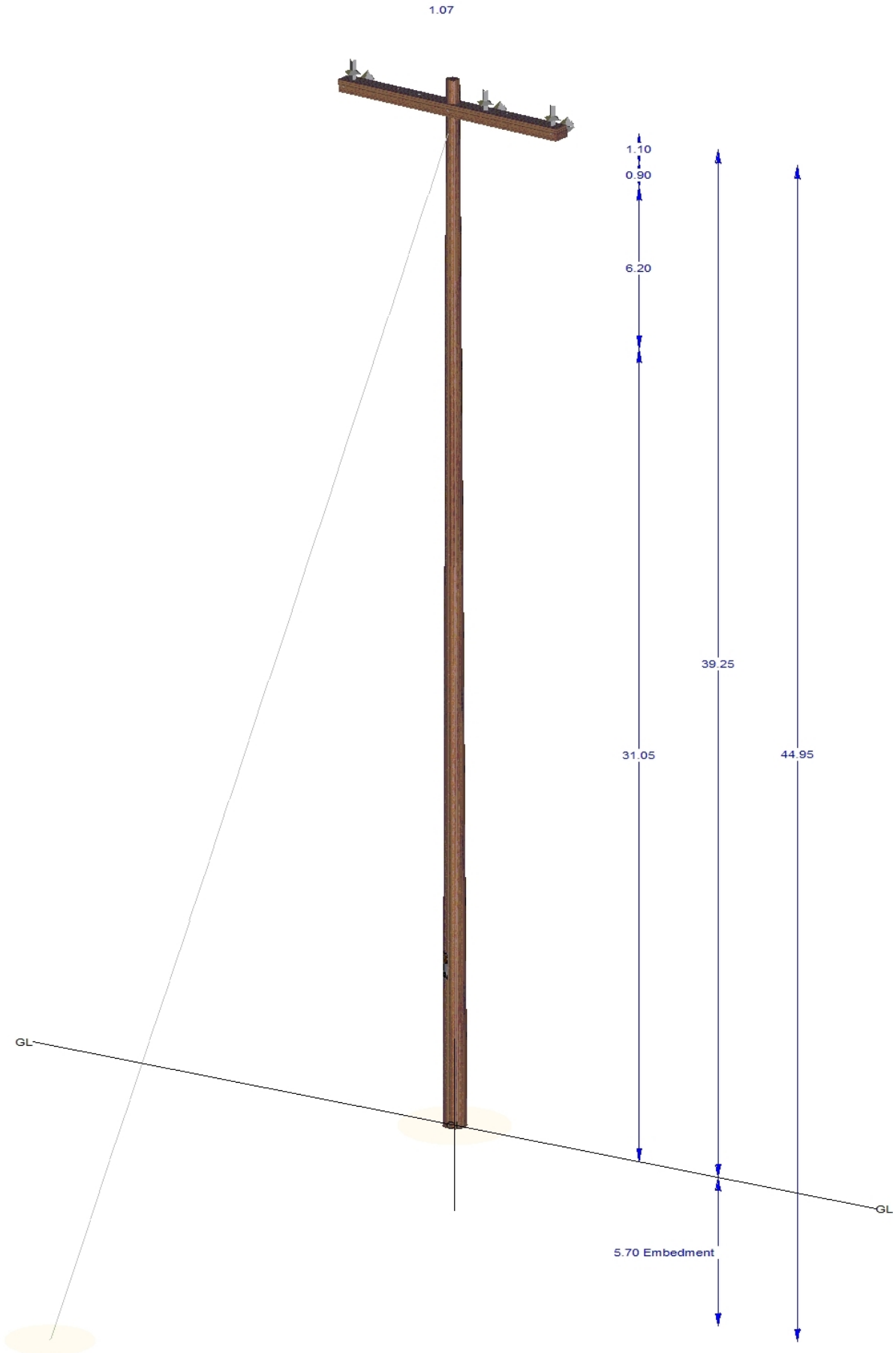
†Length = Lead Length for Down Guys, Wire Length for Span Guys

Type	Wire Type	Length† (ft)	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Down	3/8" 7 Strand UG	24.68	185	37.25	P811670	43	3.1	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	16" CROSSPLATE MG				P811670	24	5.5	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	Description	Direction (deg)	Attach Height (ft)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
X-Arm	10` DBL WOOD ARMS (D4)	99	38.15	P811670	15	8.8	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy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0.90
6.20
39.25
31.05
44.95
GL
GL
5.70 Embedment

Structure P815059
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** Existing Conditions (Field Assessment)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	37 %	***Clearances OK?*** No
Pole Usage	37 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	11 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	30 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	31 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage	2 %	Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	P815059 - REF ONLY_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	353 ft	*Latitude*	33.07560899°
Back Span	98 ft	*Longitude*	-116.83790443°
Ahead Span Az.	118°	*Elevation*	1568 ft
Line Angle	8°	*Tangent/DE*	Dead End
Framing			
Notes	P317773-P815059: SEC TO COMM violation. Potentially re-tension secondary wire		

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft-k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P815059	50	1	Corten Steel	41.5	10.95		100	Known Local Wind Light 85 MPH Grade A at Replacement	41	37	2.7	1.0	0
P815059	50	1	Corten Steel	41.5	10.95		100	G.O.95 Light Grade A at Replacement	19	18	5.7	1.0	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height**** (ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	4	38.39	0.32	0.09	1	352	352	178
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	4	38.28	0.32	0.09	1	352	352	178
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	4	38	0.32	0.09	1	352	352	178
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	177	38.39	0.32	0.09	1	98	98	18
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	177	38.28	0.32	0.09	1	98	98	18
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	177	38	0.32	0.09	1	97	98	18
0.24	1-0 AWG Triplex SSC AL Neritina GCC.Graphsag	177	31.51	0.97	0.41	1	98	98	58
0.0	.5 In Telephone.Graphsag	4	23.22	0.63	0.19	1	353	353	338
0.0	.5 In Telephone.Graphsag	177	23.22	0.63	0.19	1	98	98	53

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Strain	12kV Long DE	12	4	38.39	P815059	10	20.0	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV Long DE	12	4	38.28	P815059	10	20.5	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV Long DE	12	4	38	P815059	11	17.7	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

†Length = Lead Length for Down Guys, Wire Length for Span Guys

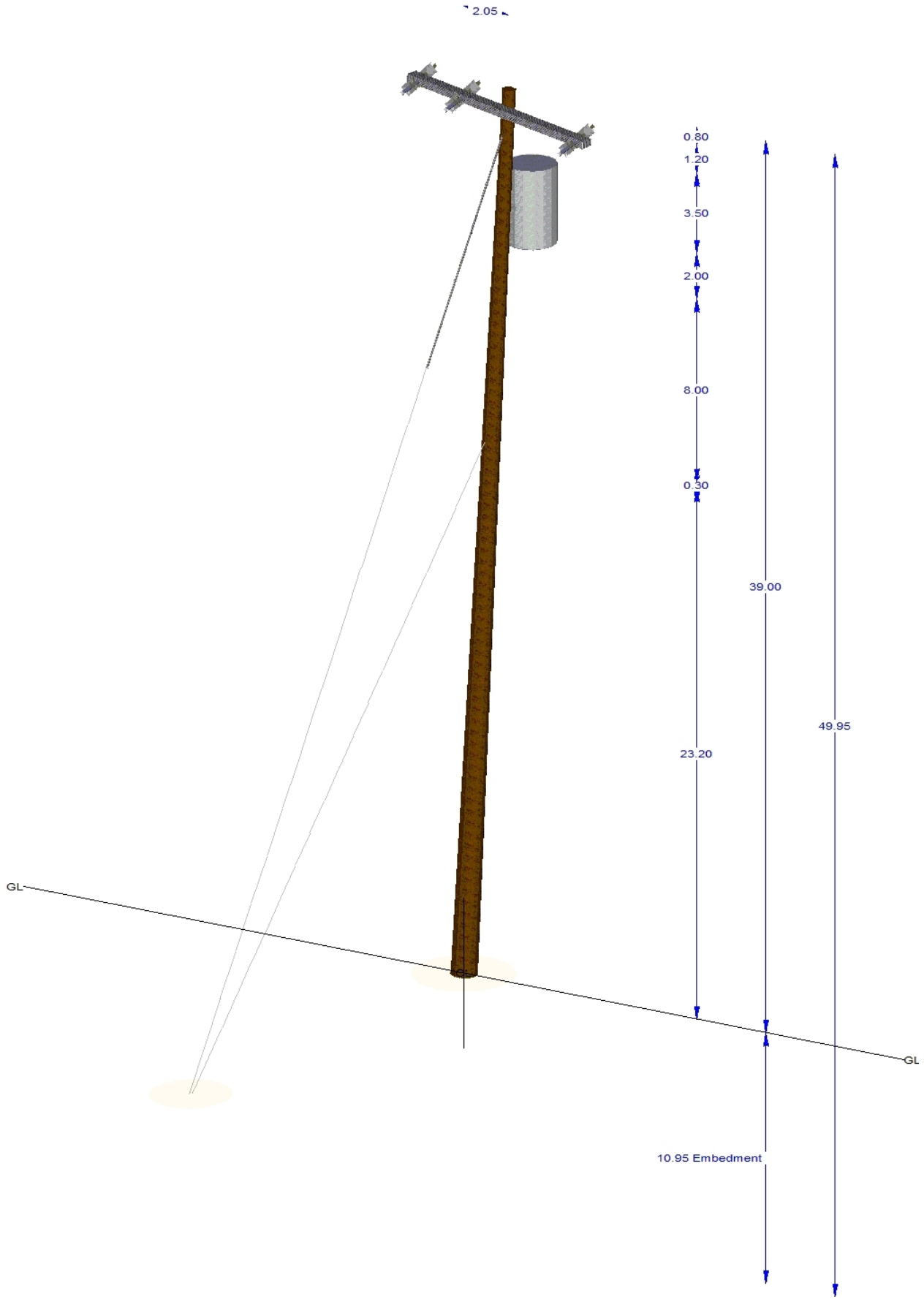
Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Down	7/16" 7 Strand EHS (7/16G)	20.16	190	37	P815059	30	4.4	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	16" CROSSPLATE MG				P815059	31	4.3	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Down	3/8" 7 Strand EHS (3/8G)	19.63	188	23.52	P815059	21	6.3	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	16" CROSSPLATE MG				P815059	16	8.1	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Equipment	25 kVA Transformer	10	33.5	P815059				

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy

X-Arm	10` DE FG ARM (4DF)	104	38.2	P815059	2	66.7	1.3	Known Local Wind Light 85 MPH Grade A at Replacement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1.20
3.50
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8.00
0.30
39.00
49.95
23.20
GL
GL
10.95 Embedment

Structure P816324
Circuit C237-O
Job # 458999-190

Field Collection Date 7/2/2021 **Build Status** Existing Conditions (Field Assessment)

Requestor [redacted]

Engineer HDR, Inc.
[redacted]

Usage Summary

Max Usage	55 %	***Clearances OK?*** Yes
Pole Usage	55 %	Known Local Wind Light 85 MPH Grade A at Replacement
Insulator Usage	9 %	Known Local Wind Light 85 MPH Grade A at Replacement
Guy Usage	23 %	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor Usage	26 %	Known Local Wind Light 85 MPH Grade A at Replacement
Arm Usage	12 %	Known Local Wind Light 85 MPH Grade A at Replacement

Analysis Information

Date 7/26/2021

Analysis Type	Finite Element L4
Analysis Software	PLS-CADD
Software Version	16.80
PRG Version	2020.0.2
Structure File	P816324 - REF ONLY_asbuilt.pol
Project File	C237O_Global True-Up

Structure Details

Ahead Span	253 ft	*Latitude*	33.08049493°
Back Span	98 ft	*Longitude*	-116.83498588°
Ahead Span Az.	118°	*Elevation*	1606 ft
Line Angle	1°	*Tangent/DE*	Dead End
Framing			
Notes			

Pole Loading Details

Pole Label	*Height (ft)*	*Class*	*Material*	*Groundline Circum. (in)*	*Embed. (ft)*	*Date Intrusive*	*Material Capacity %*	*Load Case*	*Max Moment (ft·k)*	*Usage %*	*Calc SF*	*Req SF*	*Max Usage Point (ft)**
P816324	45	3	DF - Dougas Fir	37.4	6.7		100	Known Local Wind Light 85 MPH Grade A at Replacement	45	55	2.4	1.3	0
P816324	45	3	DF - Dougas Fir	37.4	6.7		100	G.O.95 Light Grade A at Replacement	21	51	5.1	2.6	0

Wires

Wire Tension Condition | 167 : Initial Condition Horizontal Tension : Finite Element

Voltage (kV)	*Wire Type*	*Direction (deg)***	*Attach Height*** (ft)*	*Diameter (in)*	*Unit Weight (lbs/ft)*	*# of Wires*	*Span Length (ft)*	*Ruling Span (ft)*	*Tension (lbs)*
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	1	37.24	0.32	0.09	1	255	253	97
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	1	37.24	0.32	0.09	1	254	253	97
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	177	38.15	0.32	0.09	1	98	98	20
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	179	38.15	0.32	0.09	1	99	98	20
12	No2 AWG SPARROW ACSR AW2 GCC.Graphsag	179	38.15	0.32	0.09	1	97	98	20
0.24	1-0 AWG Triplex SSC AL Neritina GCC.Graphsag	281	28.29	0.97	0.41	1	180	180	156
0.0	.5 In Telephone.Graphsag	1	21.99	0.63	0.19	1	254	253	259
0.0	.5 In Telephone.Graphsag	179	21.34	0.63	0.19	1	98	98	62

Insulators

Type	*Description*	*Voltage (kV)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Strain	12kV DE	12	1	37.24	P816324	8	24.5	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Strain	12kV DE	12	1	37.24	P816324	8	26.1	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		37.24	P816324	9	22.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		37.24	P816324	8	24.9	2.0	Known Local Wind Light 85 MPH Grade A at Replacement
Post	12kV Clamp Top-Al (1" Pin)	12		37.24	P816324	7	29.4	2.0	Known Local Wind Light 85 MPH Grade A at Replacement

Guys and Cables

†Length = Lead Length for Down Guys, Wire Length for Span Guys

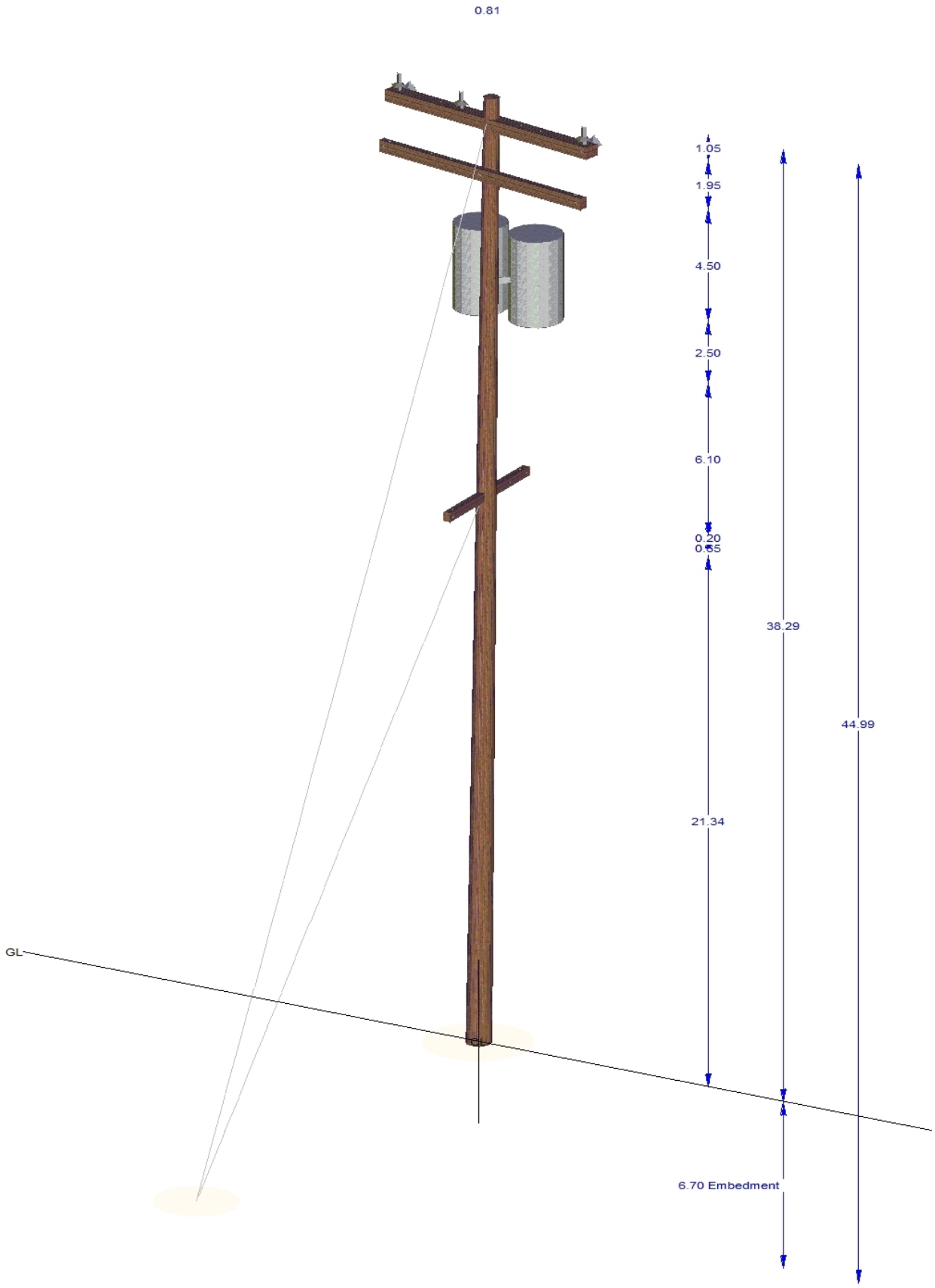
Type	*Wire Type*	*Length† (ft)*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Down	3/8" 7 Strand UG	21.01	181	37.24	P816324	22	6.0	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Down	3/8" 7 Strand UG	21.01	181	21.99	P816324	23	5.7	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
Anchor	16" CROSSPLATE MG				P816324	26	5.1	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

Crossarms and Equipment

Type	*Description*	*Direction (deg)*	*Attach Height (ft)*	*Origin Pole*	*Usage %*	*Calc SF*	*Req SF*	*Load Case*
Equipment	25 kVA Transformer	320	30.79	P816324				
Equipment	25 kVA Transformer	40	30.79	P816324				
X-Arm	10` DBL WOOD ARMS (D4)	101	37.24	P816324	12	11.0	1.3	Known Local Wind Light 85 MPH Grade A at Replacement

*Max Usage Location Measured From Groundline **Direction in degrees: 0 Degrees = Structure Longitudinal Axis towards Ahead Span CW+ ***Attach Height Measured From Groundline, GSI from Top of Guy

X-Arm	10` WOOD ARM (4)	101	35.29	P816324	1	121.2	1.3	Known Local Wind Light 85 MPH Grade A at Replacement
X-Arm	6` WOOD ARM (2)	180	22.19	P816324	2	66.7	1.3	Known Local Wind Light 85 MPH Grade A at Replacement


0.81
1.05
1.95
4.50
2.50
6.10
0.20
0.55
38.29
44.99
21.34
GL
6.70 Embedment