September 27, 2023

Ms. Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Notice of Exempt Modification New Cingular Wireless PCS LLC ("AT&T") Site CT5145
280 Morehouse Drive, Fairfield, CT 06612 (the "Property")
Latitude: 41-12-36 N Longitude: 73-15-41 W

Dear Ms. Bachman:

AT&T currently maintains (3) antennas at the approx. 85' level on the existing 86' electric transmission structure #876 ("Structure") located at 280 Morehouse Drive, Fairfield CT. The Structure is owned by Connecticut Light & Power ("Eversource") and the property is owned by Chijian Zhang & Hu Yuzhi. Eversource plans on replacing the existing Structure with a 125' transmission Structure #19725. AT&T intends to modify its facility by removing all (3) antennas & equipment from the existing Structure and placing (3) TPA-65R-BU4DA antennas and (6) TMAT192123B68-31 TMAs at the 111'cl level on the replacement Structure. AT&T also intends on swapping (6) RRUs with (3) 4449 B5/B12, and (3) 4415-B25 RRUs and swapping (12) diplexers with (12) CQX6192123T-DS-43 Diplexers at the equipment location at ground level. The height of AT&Ts antennas & equipment is approx. 85' on the existing Structure and the proposed antennas & TMAs is 111' cl on the replacement Structure.

This modification may include B2, B5, B17, B14, B29, B30, B66 & n77 hardware that is 4G(LTE) and/or 5GNR capable through remote software configuration and either or both services may be turned on or off at various times.

The AT&T facility received CT Siting Council ("Council") approval in Petition 525 on September 12, 2001. The Council approved Eversource's Structure replacement under Petition 1576 on August 31, 2023. The approval contained no conditions that could feasibly be violated by this modification, including facility height or mounting restrictions. AT&Ts modification complies with the above-mentioned approvals.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies ("R.C.S.A") §16-50j-73 for construction that constitutes an exempt modification pursuant to R.C.S.A §16-50j-72(b)(2). In accordance with to R.C.S.A §16-50j-73, a copy of this letter is being sent to the Honorable Brenda L. Kupchick, First Selectwoman, Town of Fairfield, as elected

official, Mr. Jim Wendt, Planning Director, Town of Fairfield, Chijian Zhang & Yuzhi Hu, the property owners and Eversource, the structure owner.

The planned modification of the facility falls squarely within those activities explicitly provided for in R.C.S.A §16-50j-72(b)(2). Specifically:

1. The proposed modifications will not result in an increase in the height of the existing structure.

2. The proposed modifications will not require an extension of the site boundary.

3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the modified facility will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and foundation can support the proposed loading.

For the foregoing reasons, AT&T respectfully submits the proposed modifications to the above referenced telecommunication facility constitute an exempt modification pursuant to R.C.S.A §16-50j-72(b)(2).

Sincerely,

Hollis M. Redding

Hollis M. Redding
SAI Communications, LLC
12 Industrial Way
Salem, NH 03079
Mobile: 860-834-6964
hredding@saigrp.com

Enclosures

Cc: Honorable Brenda L. Kupchick, First Selectwoman, Town of Fairfield
Mr. Jim Wendt, Planning Director, Town of Fairfield
Chijian Zhang & Yuzhi Hu, the property owners
Connecticut Light & Power (''Eversource"), the structure owner

C Squared Systems, LLC
65 Dartmouth Drive
Auburn, NH 03032
(603) 644-2800
support@csquaredsystems.com

Calculated Radio Frequency Emissions Report

CT5145

280 Morehouse Drive, Fairfield, CT 06825

September 26, 2023

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1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed installation of AT&T antenna arrays to be mounted at 111' AGL on Eversource's proposed replacement utility tower located at 280 Morehouse Drive in Fairfield, CT. The coordinates of the tower are 41° 12' 36" N, 73° 15' 41" W.

AT&T is proposing the following:

1) Install three (3) multi-band antennas (one (1) per sector) to support its commercial LTE network and the FirstNet National Public Safety Broadband Network ("NPSBN").

This report considers the planned antenna configuration for AT&T[1] and the existing[2] antennas for T-Mobile to derive the resulting % MPE of its proposed installation.

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment C of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment C contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

[1] As referenced to AT&T's Radio Frequency Design Sheet, dated 08/04/2023

[2] As referenced to Fox Hill Telecom's Radio Frequency Emissions Analysis Report, dated May 15, 2023

3. RF Exposure Prediction Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left(\frac{GRF^2 \times 1.64 \times \text{ERP}}{4\pi \times R^2}\right) \text{X Off Beam Loss}$$

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial Distance = $\sqrt{\left(H^2 + V^2\right)}$

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Off Beam Loss is determined by the selected antenna patterns

GRF = Ground Reflection Factor of 1.6

These calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not take into account actual terrain elevations which could attenuate the signal. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the final installations.

4. Antenna Inventory

Table 1 below outlines AT&T's proposed antenna configuration for the site. The associated data sheets and antenna patterns for these specific antenna models are included in Attachments C.

Operator	Sector / Call Sign	TX Freq (MHz)	Power at Antenna (Watts)	Ant Gain (dBi)	Power EIRP (Watts)	Antenna Model	Beam Width	Mech. Tilt	Length (ft)	Antenna Centerline Height (ft)
AT&T	Alpha / 0°	700	160	13.3	3421	TPA65R-BU4D	74	0	4	111
		850	160	13.9	3928		63			
		1900	160	17.1	8206		66			
	Beta / 120°	700	160	13.3	3421	TPA65R-BU4D	74	0	4	111
		850	160	13.9	3928		63			
		1900	160	17.1	8206		66			
	Gamma / 240°	700	160	13.3	3421	TPA65R-BU4D	74	0	4	111
		850	160	13.9	3928		63			
		1900	160	17.1	8206		66			

Table 1: Proposed Antenna Inventory[3] [4]

[3] AT&T's Radio Frequency Design Sheet, dated 08/04/2023

[4] Transmit power assumes 0 dB of cable loss.

5. Calculation Results

The calculated power density results are shown in Figure 1 below. For completeness, the calculations for this analysis range from 0 feet horizontal distance (directly below the antennas) to a value of 3,000 feet horizontal distance from the site. In addition to the other worst-case scenario considerations that were previously mentioned, the power density calculations to each horizontal distance point away from the antennas was completed using a local maximum off beam antenna gain (within ± 5 degrees of the true mathematical angle) to incorporate a realistic worst-case scenario.

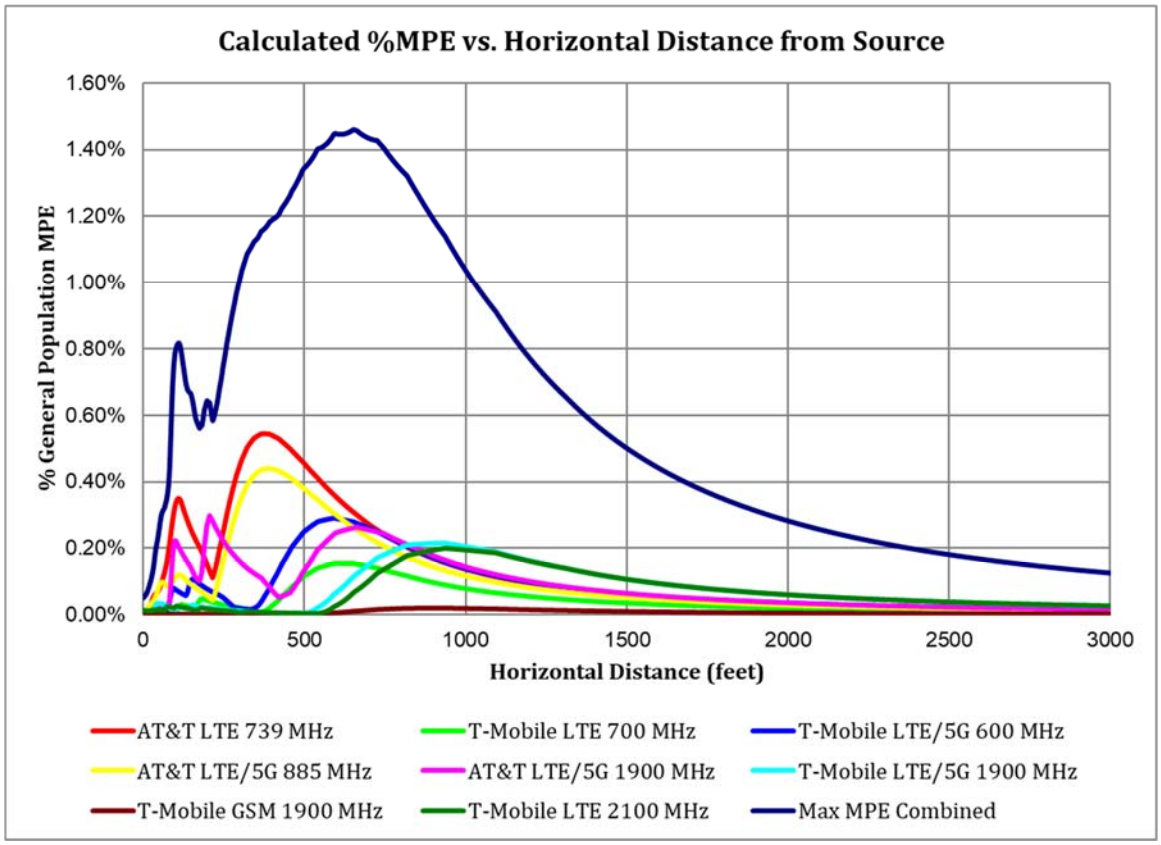


Figure 1: Graph of General Population % MPE vs. Distance

The highest percent of MPE (1.46% of the General Population limit) is calculated to occur at a horizontal distance of 652 feet from antennas. Please note that the percent of MPE calculations close to the site take into account off beam loss, which is determined from the vertical pattern of the antennas used. Therefore, RF power density levels may increase as the distance from the site increases. At distances of approximately 1500 feet and beyond, one would now be in the main beam of the antenna pattern and off beam loss is no longer considered. Beyond this point, RF levels become calculated solely on distance from the site and the percent of MPE decreases significantly as distance from the site increases.

Table 2 below lists percent of MPE values as well as the associated parameters that were included in the calculations. The highest percent of MPE value was calculated to occur at a horizontal distance of 652 feet from the site (reference Figure 1).

As stated in Section 3, all calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings etc.) that would normally attenuate the signal are not taken into account. In addition, a six-foot height offset was considered in this analysis to account for average human height. As a result, the predicted signal levels are significantly higher than the actual signal levels will be from the final configuration. The results presented in Figure 1 and Table 2 assume level ground elevation from the base of the tower out to the horizontal distances calculated.

Carrier	Number of Transmitters	Power out of Base Station Per Transmitter (Watts)	Antenna Height (Feet)	Distance to the Base of Antennas (Feet)	Power Density (mW/cm^2)	Limit (mW/cm^2)	% MPE
AT&T LTE 739 MHz	1	160.0	111.0	652	0.001522	0.493	0.31%
AT&T LTE/5G 1900 MHz	1	160.0	111.0	652	0.002615	1.000	0.26%
AT&T LTE/5G 885 MHz	1	160.0	111.0	652	0.001549	0.590	0.26%
T-Mobile GSM 1900 MHz	1	15.0	121.0	652	0.000108	1.000	0.01%
T-Mobile LTE 2100 MHz	1	160.0	121.0	652	0.000670	1.000	0.07%
T-Mobile LTE 700 MHz	1	40.0	121.0	652	0.000721	0.467	0.15%
T-Mobile LTE/5G 1900 MHz	1	160.0	121.0	652	0.001154	1.000	0.12%
T-Mobile LTE/5G 600 MHz	1	80.0	121.0	652	0.001120	0.400	0.28%
						Total	**1.46%**

Table 2: Maximum Percent of General Population Exposure Values[5]

[5] In cases where specific antenna pattern is not available, generic antenna pattern was used based on frequency, beamwidth and gain of the antenna

6. Conclusion

The above analysis verifies that RF exposure levels from the site with AT&T's proposed antenna configuration will be well below the maximum permissible levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Using the conservative calculation methods and parameters detailed above, the maximum cumulative percent of MPE in consideration of all transmitters is calculated to be **1.46% of the FCC limit (General Population/Uncontrolled)**. This maximum cumulative percent of MPE value is calculated to occur 652 feet away from the site.

7. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in ANSI/IEEE Std. C95.3, ANSI/IEEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.

Report Prepared By: Ram Acharya
RF Engineer
C Squared Systems, LLC

September 25, 2023
Date

Reviewed/Approved By: Martin J. Lavin
Senior RF Engineer
C Squared Systems, LLC

September 26, 2023
Date

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

IEEE C95.1-2005, IEEE Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz IEEE-SA Standards Board

IEEE C95.3-2002 (R2008), IEEE Recommended Practice for Measurements and Computations of Radio Frequency Electromagnetic Fields With Respect to Human Exposure to Such Fields, 100 kHz-300 GHz IEEE-SA Standards Board

Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure[6]

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5	6

(B) Limits for General Population/Uncontrolled Exposure[7]

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

f = frequency in MHz * Plane-wave equivalent power density

Table 3: FCC Limits for Maximum Permissible Exposure

[6] Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

[7] General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

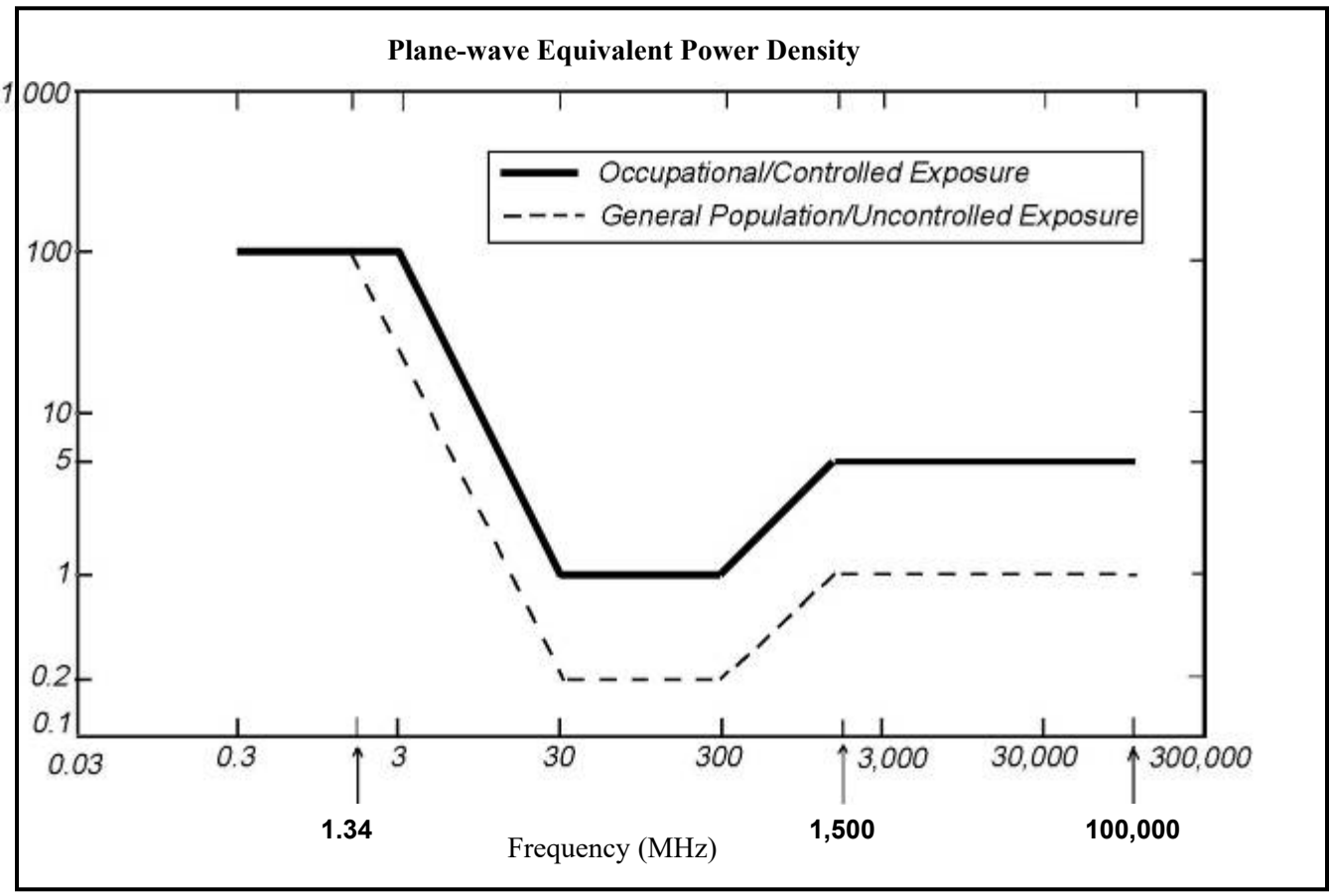
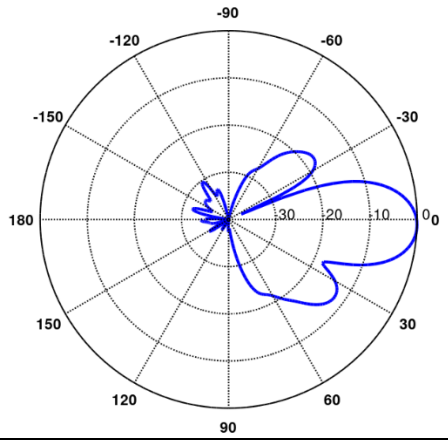


Figure 2: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

Attachment C: AT&T Mobility Antenna Model Data Sheets and Electrical Patterns

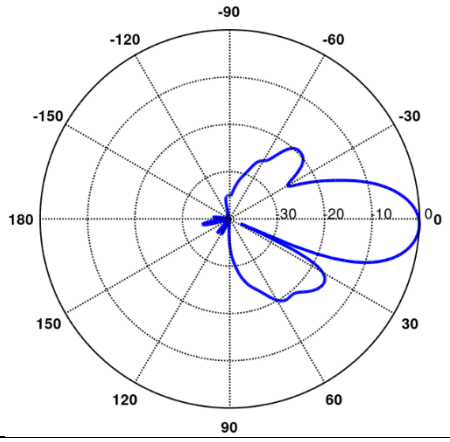
700 MHz

Manufacturer:	CCI
Model #:	TPA65R-BU4D
Frequency Band:	698-806 MHz
Gain:	13.9 dBi
Vertical Beamwidth:	20.0°
Horizontal Beamwidth:	74.0°
Polarization:	Dual Linear 45°
Dimensions (L x W x D):	48” x 20.7” x 7.7”



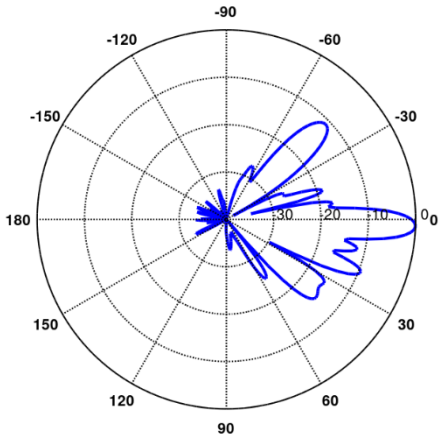
850 MHz

Manufacturer:	CCI
Model #:	TPA65R-BU4D
Frequency Band:	824-896 MHz
Gain:	13.9 dBi
Vertical Beamwidth:	17.9°
Horizontal Beamwidth:	63°
Polarization:	Dual Linear 45°
Dimensions (L x W x D):	48” x 20.7” x 7.7”



1900 MHz

Manufacturer:	CCI
Model #:	TPA65R-BU4D
Frequency Band:	698-806 MHz
Gain:	17.1 dBi
Vertical Beamwidth:	7.4°
Horizontal Beamwidth:	66°
Polarization:	Dual Linear 45°
Dimensions (L x W x D):	48” x 20.7” x 7.7”



SITE ID: CT5145
NEW EVERSOURCE STRUCT. #19725
280 MOREHOUSE ROAD
FAIRFIELD, CT 06612

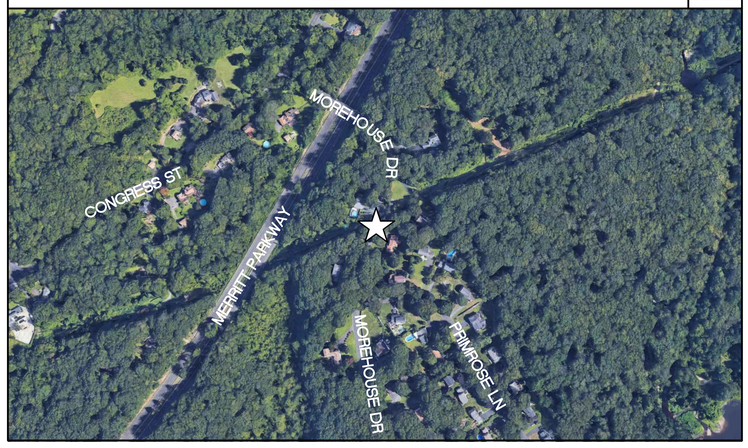
RFDS GENERAL INFORMATION

CELL SITE RF MODIFICATIONS:	5G NR UPGRADE 5G NR RADIO 5G NR 1SR
PACE ID:	PACE JOB #1 – MRCTB056927 PACE JOB #2 – MRCTB057011
FA LOCATION CODE:	10071095

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2021 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2022 CONNECTICUT SUPPLEMENT, INCLUDING THE TIA/EIA–222 REVISION "H" "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES." 2022 CONNECTICUT FIRE SAFETY CODE, NATIONAL ELECTRICAL CODE AND LOCAL CODES.
2. SHOULD ANY FIELD CONDITIONS PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH ANY AFFECTED WORK.
3. CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
4. BEFORE BEGINNING THE WORK, THE CONTRACTOR IS RESPONSIBLE FOR MAKING SUCH INVESTIGATIONS CONCERNING PHYSICAL CONDITIONS (SURFACE AND SUBSURFACE) AT OR CONTIGUOUS TO THE SITE, WHICH MAY AFFECT PERFORMANCE AND COST OF THE WORK.
5. ALL DIMENSIONS, ELEVATIONS, AND OTHER REFERENCES TO EXISTING STRUCTURES, SURFACE, AND SUBSURFACE CONDITIONS ARE APPROXIMATE. NO GUARANTEE IS MADE FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS, ELEVATIONS AND ANGLES WITH EXISTING CONDITIONS AND WITH ARCHITECTURAL AND SITE DRAWINGS BEFORE PROCEEDING WITH ANY WORK.
6. AS THE WORK PROGRESSES, THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY CONDITIONS WHICH ARE IN CONFLICT OR OTHERWISE NOT CONSISTENT WITH THE CONSTRUCTION DOCUMENTS, AND SHALL NOT PROCEED WITH SUCH WORK UNTIL THE CONFLICT IS SATISFACTORILY RESOLVED.
7. CONTRACTOR SHALL PROVIDE A COMPLETE BUILD–OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS AND PROVIDE ALL ITEMS AS SHOWN OR INDICATED ON THE DRAWINGS OR IN THE WRITTEN SPECIFICATIONS.
8. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH LOCAL AND STATE GOVERNING AUTHORITIES AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.
9. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND ALL INSPECTIONS REQUIRED AND SHALL ALSO PAY FEES REQUIRED FOR THE GENERAL CONSTRUCTION, PLUMBING, ELECTRICAL, AND HVAC. PERMITS SHALL BE PAID FOR BY THE RESPECTIVE SUBCONTRACTORS.
10. CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON SITE AT ALL TIMES AND INSURE DISTRIBUTION OF NEW DRAWINGS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. THE CONTRACTOR SHALL FURNISH AN "AS–BUILT" SET OF DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.
11. LOCATION OF EQUIPMENT AND WORK SUPPLIED BY OTHERS THAT IS DIAGRAMMATICALLY INDICATED ON THE DRAWINGS, SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE LOCATIONS AND DIMENSIONS SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF THE SUBCONTRACTORS.
12. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY.
13. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUB–CONTRACTORS FOR ANY CONDITION PER THE MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
14. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
15. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
16. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY CONDITION PER MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
17. ANY AND ALL ERRORS, DISCREPANCIES, AND 'MISSED' ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF THE AT&T CONSTRUCTION MANAGER DURING THE BIDDING PROCESS BY THE CONTRACTOR. ALL THESE ITEMS ARE TO BE INCLUDED IN THE BID. NO 'EXTRA' WILL BE ALLOWED FOR MISSED ITEMS.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON–SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.
19. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE CONSTRUCTION MANAGER FOR REVIEW.
20. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES AND EXISTING CONDITIONS AT THE SITE, PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.
21. COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUITS AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND CONFIRMED WITH THE PROJECT MANAGER AND OWNER PRIOR TO THE COMMENCEMENT OF ANY WORK
22. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
23. THE CONTRACTOR SHALL CONTACT 'CALL BEFORE YOU DIG' AT LEAST 48 HOURS PRIOR TO ANY EXCAVATIONS AT 1–800–922–4455. ALL UTILITIES SHALL BE IDENTIFIED AND CLEARLY MARKED. CONTRACTOR SHALL MAINTAIN AND PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.
24. CONTRACTOR SHALL COMPLY WITH THE OWNER'S ENVIRONMENTAL ENGINEER ON ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES INCLUDING SOIL DISPOSAL. ALL BACKFILL MATERIALS TO BE PROVIDED BY THE CONTRACTOR.
25. THE COUNTY/CITY/TOWN MAY MAKE PERIODIC FIELD INSPECTIONS TO ENSURE COMPLIANCE WITH THE DESIGN PLANS, SPECIFICATIONS, AND CONTRACT DOCUMENTS.
26. THE COUNTY/CITY/TOWN MUST BE NOTIFIED (2) WORKING DAYS PRIOR TO CONCEALMENT/BURIAL OF ANY SYSTEM OR MATERIAL THAT WILL PREVENT THE DIRECT INSPECTION OF MATERIALS, METHODS OR WORKMANSHIP. EXAMPLES OF THESE PROCESSES ARE BACKFILLING A GROUND RING OR TOWER FOUNDATION, POURING TOWER FOUNDATIONS, BURYING GROUND RODS, PLATES OR GRIDS, ETC. THE CONTRACTOR MAY PROCEED WITH THE SCHEDULED PROCESS (2) WORKING DAYS AFTER PROVIDING NOTICE UNLESS NOTIFIED OTHERWISE BY THE COUNTY/CITY/TOWN.
27. PRIOR TO THE SUBMISSION OF BIDS, THE CONTRACTOR SHALL VISIT THE SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF ENGINEER ON RECORD, PRIOR TO THE COMMENCEMENT OF ANY WORK.

SITE LOCATION MAP — N.T.S.

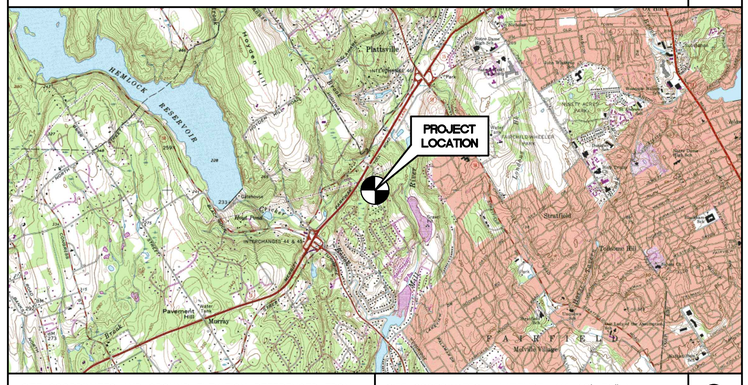


SITE COORDINATES AND GROUND ELEVATION REFERENCED FROM GOOGLE EARTH.

SITE COORDINATES: LATITUDE: 41°–12'–36" N
LONGITUDE: 73°–15'–41" W
GROUND ELEVATION: ±223' AMSL

NORTH

VICINITY MAP — N.T.S.



SITE COORDINATES AND GROUND ELEVATION REFERENCED FROM GOOGLE EARTH.

SITE COORDINATES: LATITUDE: 41°–12'–36" N
LONGITUDE: 73°–15'–41" W
GROUND ELEVATION: ±223' AMSL

NORTH

PROJECT SUMMARY

THE PROPOSED SCOPE OF WORK CONSISTS OF A MODIFICATION TO THE EXISTING UNMANNED TELECOMMUNICATIONS FACILITY INCLUDING THE FOLLOWING:

1. REMOVE (3) EXISTING AT&T ANTENNAS.
2. REMOVE (12) EXISTING TMA'S.
3. REMOVE (12) EXISTING DIPLEXERS.
4. REMOVE ALL EXISTING AT&T COAX CABLES.
5. INSTALL (12) PROPOSED 1–5/8" COAX CABLES.
6. INSTALL PROPOSED ICE CABLE BRIDGE AS SHOWN HEREIN.
7. INSTALL PROPOSED RMQLP–4120–H10 ANTENNA MOUNT PLATFORM
8. INSTALL (24) PROPOSED SURGE ARRESTORS AT GRADE.
9. INSTALL 12) PROPOSED DIPLEXERS AT GRADE.
10. INSTALL (6) PROPOSED TMAs AT ANTENNA.
11. INSTALL (3) PROPOSED CCI ANTENNAS.
12. INSTALL (3) PROPOSED 4449 B5/B12 RRHs AT GRADE.
13. INSTALL (3) PROPOSED 4415 B25 RRHs AT GRADE.

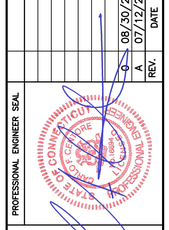
PROJECT INFORMATION

SITE NAME:	FAIRFIELD MOREHOUSE ROAD
SITE ADDRESS:	EVERSOURCE STRUCT. NO. 19725 280 MOREHOUSE RD FAIRFIELD, CT 06612
PROPERTY OWNER:	EVERSOURCE 107 SELDEN STREET BERLIN, CT 06037
LESSEE/TENANT:	AT&T MOBILITY 500 ENTERPRISE DRIVE, SUITE 3A ROCKY HILL, CT 06067
CONTACT PERSON:	TARAH NOLAN SITE ACQUISITION MANAGER (SAI) (603) 212–5049
ENGINEER:	CENTEK ENGINEERING, INC. 63–2 NORTH BRANFORD ROAD, BRANFORD, CT 06405 (203) 488–0580
TOWER COORDINATES:	LATITUDE: 41°–12'–36" N LONGITUDE: 73°–15'–41" W GROUND ELEVATION: ±223' AMSL SITE COORDINATES AND GROUND ELEVATION REFERENCED FROM GOOGLE EARTH.

SHEET INDEX

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	08/30/23	ASC	TJR	CONSTRUCTION DRAWINGS – ISSUED FOR CONSTRUCTION
A	07/12/23	ASC	TJR	CONSTRUCTION DRAWINGS – ISSUED FOR CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL



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AT&T MOBILITY

FAIRFIELD MOREHOUSE RD
SITE ID: CT5145
280 MOREHOUSE ROAD
FAIRFIELD, CT 06612

DATE:	07/12/23
SCALE:	AS NOTED
JOB NO.	22007.08

TITLE SHEET

T–1

Sheet No. 1 of 8

NOTES AND SPECIFICATIONS:

DESIGN BASIS:

GOVERNING CODE: 2021 INTERNATIONAL BUILDING (IBC) AS MODIFIED BY THE 2022 CONNECTICUT STATE BUILDING CODE.

1. DESIGN CRITERIA:

- RISK CATEGORY III (BASED ON IBC TABLE 1604.5)
- NOMINAL DESIGN SPEED: 97 MPH (Vult)
  (EXPOSURE B/ IMPORTANCE FACTOR 1.0 BASED ON ASCE 7-16).

SITE NOTES

1. THE CONTRACTOR SHALL CALL UTILITIES PRIOR TO THE START OF CONSTRUCTION.
2. ACTIVE EXISTING UTILITIES, WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY, PRIOR TO PROCEEDING, SHOULD ANY UNCOVERED EXISTING UTILITY PRECLUDE COMPLETION OF THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
3. THE AREAS OF THE COMPOUND DISTURBED BY THE WORK SHALL BE RETURNED TO THEIR ORIGINAL CONDITION.
4. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
5. IF ANY FIELD CONDITIONS EXIST WHICH PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL PROCEED WITH AFFECTED WORK AFTER CONFLICT IS SATISFACTORILY RESOLVED.

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2021 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2022 CONNECTICUT SUPPLEMENT, INCLUDING THE TIA/EIA-222 REVISION "H" "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES." 2022 CONNECTICUT FIRE SAFETY CODE, NATIONAL ELECTRICAL CODE AND LOCAL CODES.
2. SHOULD ANY FIELD CONDITIONS PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH ANY AFFECTED WORK.
3. CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
4. BEFORE BEGINNING THE WORK, THE CONTRACTOR IS RESPONSIBLE FOR MAKING SUCH INVESTIGATIONS CONCERNING PHYSICAL CONDITIONS (SURFACE AND SUBSURFACE) AT OR CONTIGUOUS TO THE SITE, WHICH MAY AFFECT PERFORMANCE AND COST OF THE WORK.
5. ALL DIMENSIONS, ELEVATIONS, AND OTHER REFERENCES TO EXISTING STRUCTURES, SURFACE, AND SUBSURFACE CONDITIONS ARE APPROXIMATE. NO GUARANTEE IS MADE FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS, ELEVATIONS AND ANGLES WITH EXISTING CONDITIONS AND WITH ARCHITECTURAL AND SITE DRAWINGS BEFORE PROCEEDING WITH ANY WORK.
6. AS THE WORK PROGRESSES, THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY CONDITIONS WHICH ARE IN CONFLICT OR OTHERWISE NOT CONSISTENT WITH THE CONSTRUCTION DOCUMENTS, AND SHALL NOT PROCEED WITH SUCH WORK UNTIL THE CONFLICT IS SATISFACTORILY RESOLVED.
7. CONTRACTOR SHALL PROVIDE A COMPLETE BUILD-OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS AND PROVIDE ALL ITEMS AS SHOWN OR INDICATED ON THE DRAWINGS OR IN THE WRITTEN SPECIFICATIONS.
8. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH LOCAL AND STATE GOVERNING AUTHORITIES AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.
9. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND ALL INSPECTIONS REQUIRED AND SHALL ALSO PAY FEES REQUIRED FOR THE GENERAL CONSTRUCTION, PLUMBING, ELECTRICAL, AND HVAC. PERMITS SHALL BE PAID FOR BY THE RESPECTIVE SUBCONTRACTORS.
10. CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON SITE AT ALL TIMES AND INSURE DISTRIBUTION OF NEW DRAWINGS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. THE CONTRACTOR SHALL FURNISH AN 'AS-BUILT' SET OF DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.
11. LOCATION OF EQUIPMENT AND WORK SUPPLIED BY OTHERS THAT IS DIAGRAMMATICALLY INDICATED ON THE DRAWINGS, SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE LOCATIONS AND DIMENSIONS SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF THE SUBCONTRACTORS.
12. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY.
13. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUB-CONTRACTORS FOR ANY CONDITION PER THE MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
14. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
15. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
16. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY CONDITION PER MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
17. ANY AND ALL ERRORS, DISCREPANCIES, AND 'MISSED' ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF THE AT&T CONSTRUCTION MANAGER DURING THE BIDDING PROCESS BY THE CONTRACTOR. ALL THESE ITEMS ARE TO BE INCLUDED IN THE BID. NO 'EXTRA' WILL BE ALLOWED FOR MISSED ITEMS.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.
19. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE CONSTRUCTION MANAGER FOR REVIEW.
20. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES AND EXISTING CONDITIONS AT THE SITE, PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.
21. COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUITS AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND CONFIRMED WITH THE PROJECT MANAGER AND OWNER PRIOR TO THE COMMENCEMENT OF ANY WORK
22. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
23. THE CONTRACTOR SHALL CONTACT 'CALL BEFORE YOU DIG' AT LEAST 48 HOURS PRIOR TO ANY EXCAVATIONS AT 1-800-922-4455. ALL UTILITIES SHALL BE IDENTIFIED AND CLEARLY MARKED. CONTRACTOR SHALL MAINTAIN AND PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.
24. CONTRACTOR SHALL COMPLY WITH THE OWNER'S ENVIRONMENTAL ENGINEER ON ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES INCLUDING SOIL DISPOSAL. ALL BACKFILL MATERIALS TO BE PROVIDED BY THE CONTRACTOR.
25. THE COUNTY/CITY/TOWN MAY MAKE PERIODIC FIELD INSPECTIONS TO ENSURE COMPLIANCE WITH THE DESIGN PLANS, SPECIFICATIONS, AND CONTRACT DOCUMENTS.
26. THE COUNTY/CITY/TOWN MUST BE NOTIFIED (2) WORKING DAYS PRIOR TO CONCEALMENT/BURIAL OF ANY SYSTEM OR MATERIAL THAT WILL PREVENT THE DIRECT INSPECTION OF MATERIALS, METHODS OR WORKMANSHIP. EXAMPLES OF THESE PROCESSES ARE BACKFILLING A GROUND RING OR TOWER FOUNDATION, POURING TOWER FOUNDATIONS, BURYING GROUND RODS, PLATES OR GRIDS, ETC. THE CONTRACTOR MAY PROCEED WITH THE SCHEDULED PROCESS (2) WORKING DAYS AFTER PROVIDING NOTICE UNLESS NOTIFIED OTHERWISE BY THE COUNTY/CITY/TOWN.
27. PRIOR TO THE SUBMISSION OF BIDS, THE CONTRACTOR SHALL VISIT THE SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF ENGINEER ON RECORD, PRIOR TO THE COMMENCEMENT OF ANY WORK.

ANTENNA/APPURTENANCE SCHEDULE

SECTOR	EXISTING/PROPOSED	ANTENNA (AT TOWER)	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	AZIMUTH	(E/P) RRU (AT GRADE) (QTY)	(E/P) TMA (AT TOWER)	(E/P) DIPLEXER (AT GRADE)	(QTY) PROPOSED HYBRID/COAX (AT TOWER)
									(12) 1 5/8" COAX
A4	PROPOSED	CCI (TPA-65R-BU4DA)	48 x 20.7 x 7.7	111'	0°	(P) 4449 B5/B12 (1), (P) 4415 B25 (1)	(P) TMAT19213B68-31 (2)	(P) CQX6192123T-DS-43 (4)	
B4	PROPOSED	CCI (TPA-65R-BU4DA)	48 x 20.7 x 7.7	111'	120°	(P) 4449 B5/B12 (1), (P) 4415 B25 (1)	(P) TMAT19213B68-31 (2)	(P) CQX6192123T-DS-43 (4)	
C4	PROPOSED	CCI (TPA-65R-BU4DA)	48 x 20.7 x 7.7	111'	240°	(P) 4449 B5/B12 (1), (P) 4415 B25 (1)	(P) TMAT19213B68-31 (2)	(P) CQX6192123T-DS-43 (4)	

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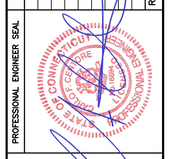

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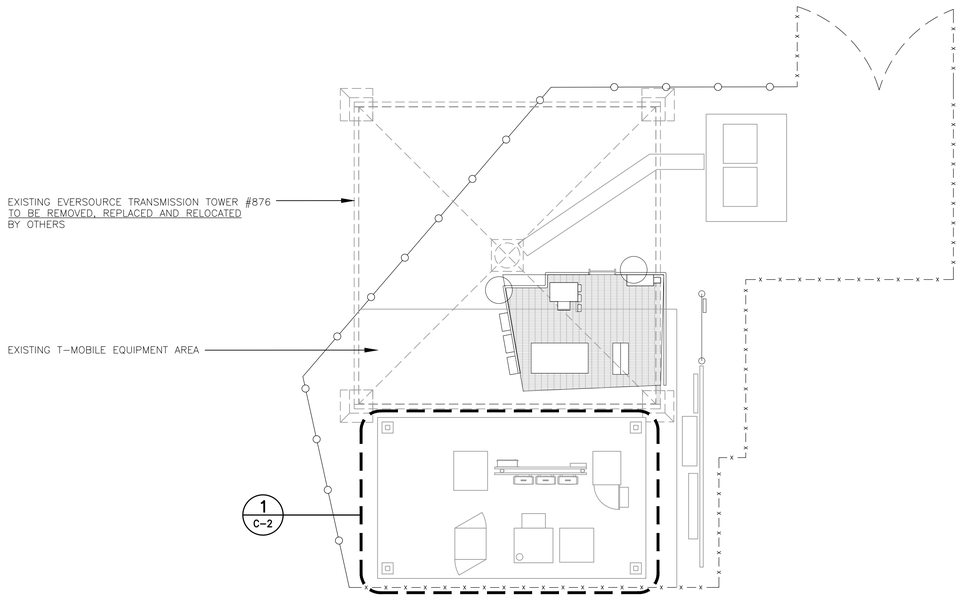
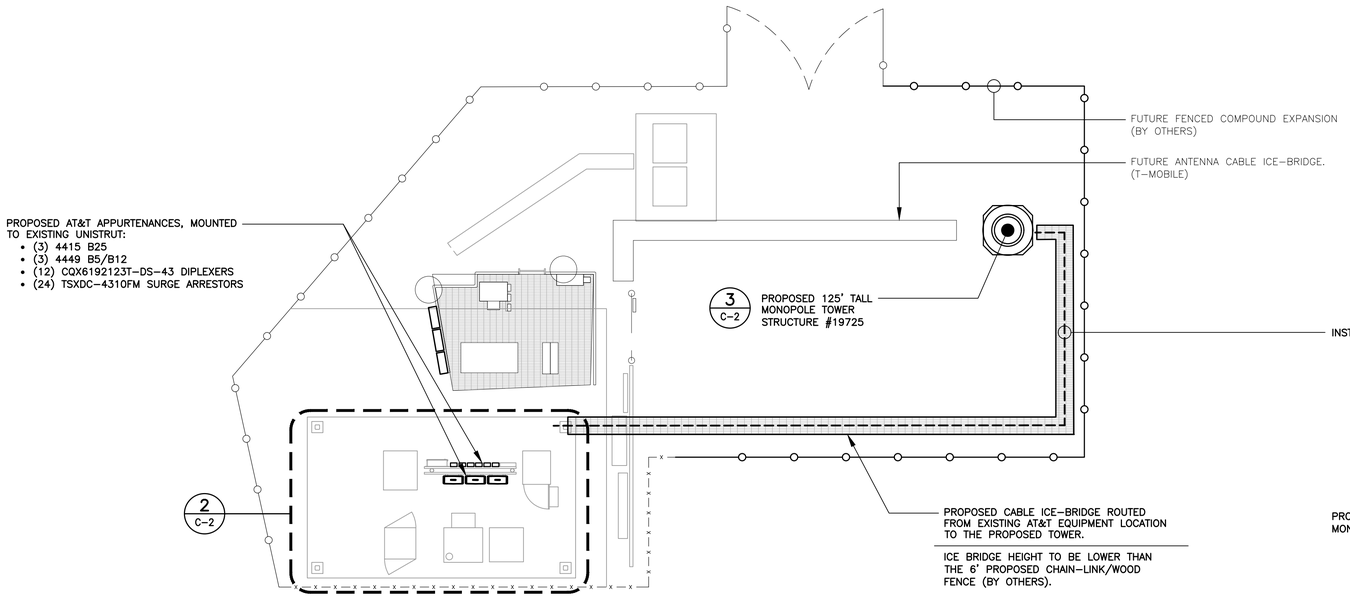
SPECIFICATIONS, NOTES, AND ANT. SCHEDULE

N-1



1 C-1 **COMPOUND PLAN - EXISTING**
SCALE: 1/4" = 1'

TRUE NORTH



2 C-1 **COMPOUND PLAN - PROPOSED**
SCALE: 1/4" = 1'

TRUE NORTH

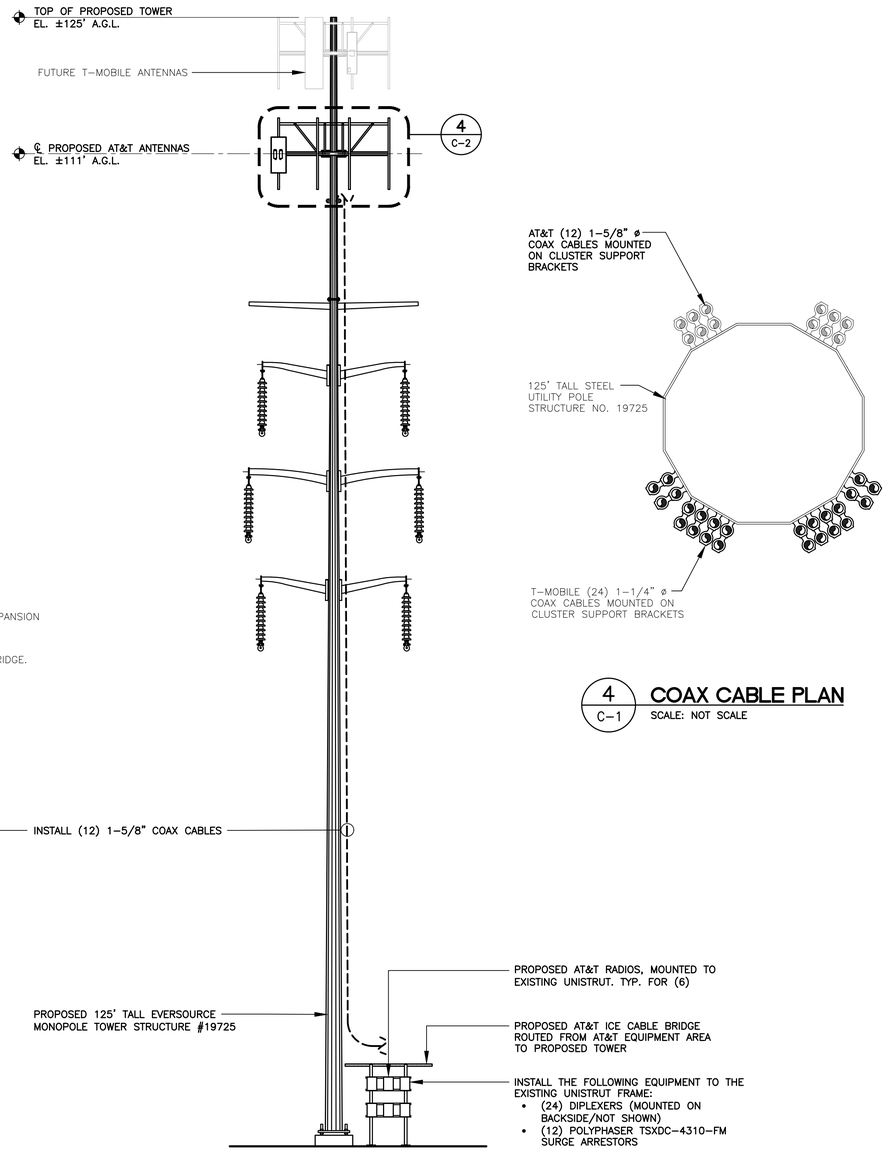
STRUCTURAL COMPLIANCE

TOWER AND TOWER FOUNDATION

A STRUCTURAL ANALYSIS OF THE TOWER AND TOWER FOUNDATION WAS PERFORMED FOR THE PROPOSED EQUIPMENT INSTALLATION AND THEY WERE FOUND TO BE STRUCTURALLY SUFFICIENT TO ACCOMMODATE THE PROPOSED LOADING.

REFER TO THE STRUCTURAL ANALYSIS REPORT PREPARED BY CENTEK ENGINEERING (PROJECT # 22007.08) DATED 05/23/23 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

NOTE: NO EQUIPMENT SHALL BE INSTALLED ON THE HOSTING STRUCTURE WITHOUT A PASSING STRUCTURAL ANALYSIS REPORT AND CONTRACTOR PRIOR CONFIRMATION THAT ANY AND ALL REQUISITE MODIFICATIONS HAVE BEEN COMPLETED.



3 C-1 **TOWER ELEVATION - PROPOSED**
SCALE: 1" = 8'

4 C-1 **COAX CABLE PLAN**
SCALE: NOT SCALE

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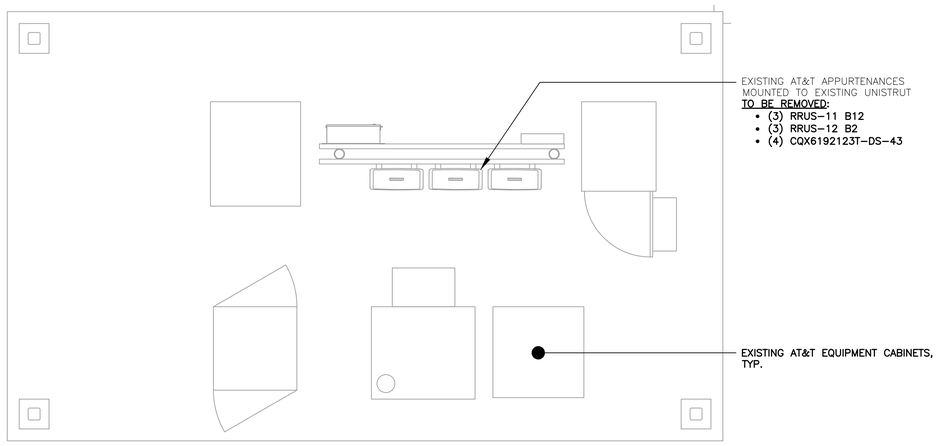
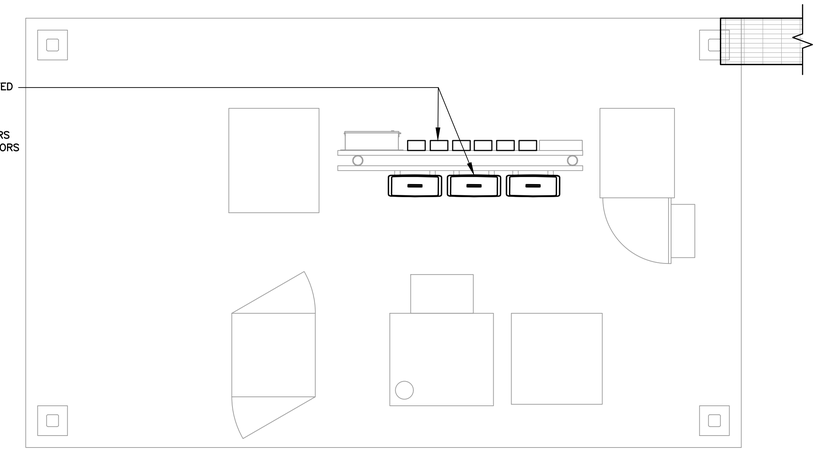
COMPOUND PLAN AND ELEVATION

C-1

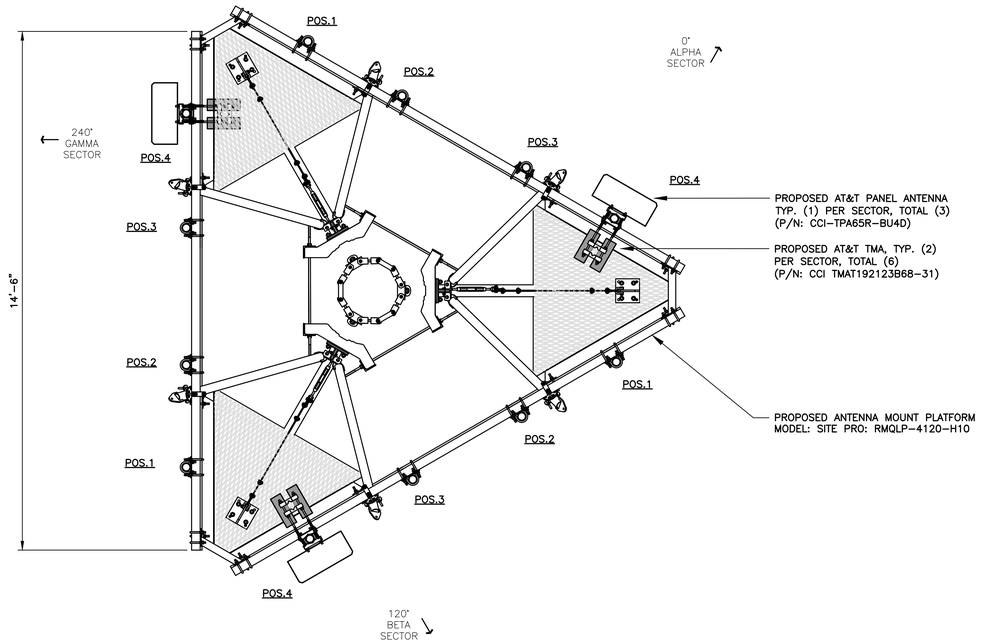
Sheet No. 3 of 8



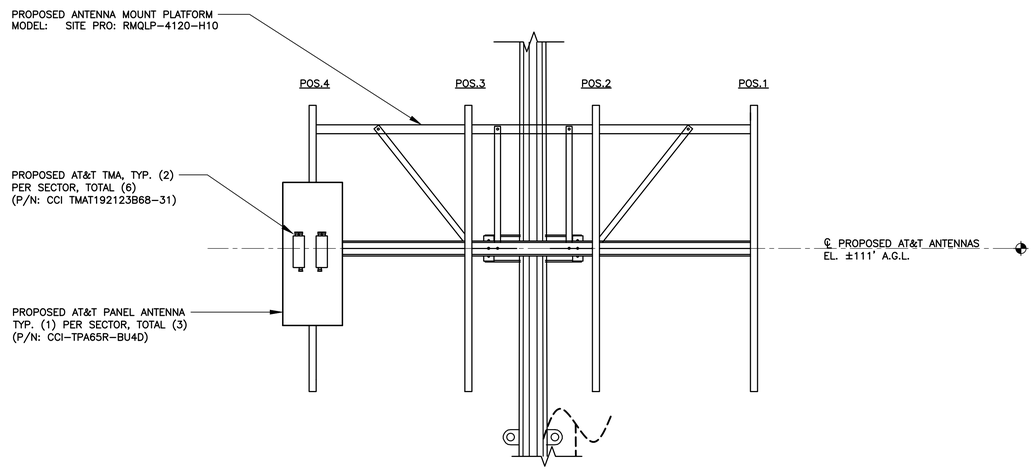
1 C–2 **EXISTING EQUIPMENT PLAN**
SCALE: 1/2" = 1' – 0"
TRUE NORTH



2 C–2 **PROPOSED EQUIPMENT PLAN**
SCALE: 1/2" = 1' – 0"
TRUE NORTH



3 C–2 **ANTENNA CONFIGURATION PLAN**
SCALE: 1/2" = 1' – 0"
TRUE NORTH



4 C–2 **TYPICAL ANTENNA CONFIGURATION ELEVATION**
SCALE: 1/2" = 1' – 0"

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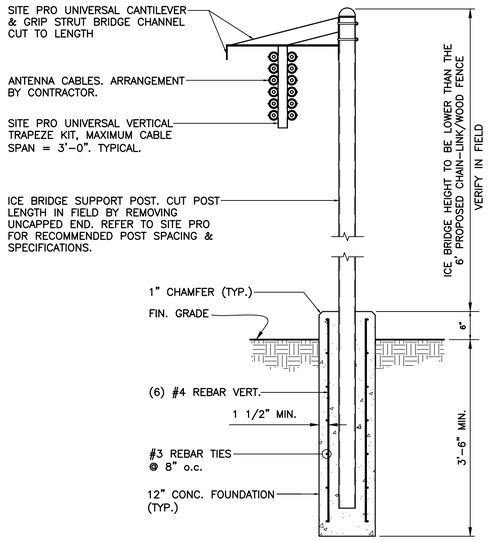
EQUIPMENT PLANS AND ANTENNA ELEVATION/PLAN

C-2

Sheet No. 4 of 8



1 C-3 **TYPICAL COAX CABLE ICE-BRIDGE DETAIL**
SCALE: NOT TO SCALE

TPA65R-BU4D

ALPHA/BETA/GAMMA ANTENNA		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: CCI MODEL: TPA65R-BU4D	48.0"L x 20.7"W x 7.7"D	±53 LBS.
NOTES: 1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.		

2 C-3 **PROPOSED ANTENNA DETAIL**
SCALE: NOT TO SCALE

RRU 4449 B5/B12

RRU 4415 B25

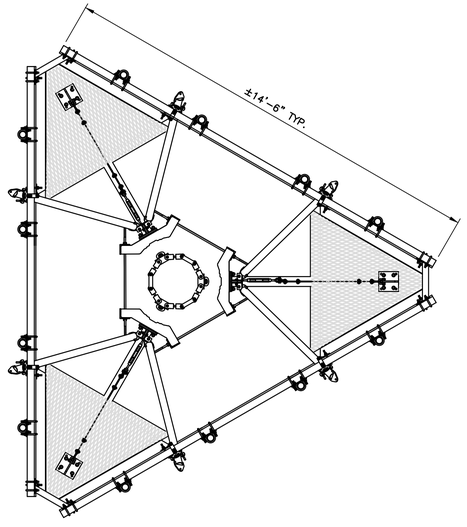
RRU (REMOTE RADIO UNIT)		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: ERICSSON MODEL: 4449 B5/B12	17.9"H x 13.2"W x 9.4"D	±71 LBS.
MAKE: ERICSSON MODEL: 4415 B25	15.0"H x 13.2"W x 5.4"D	±44 LBS.
NOTES: 1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.		

3 C-3 **PROPOSED RRU DETAILS**
SCALE: NOT TO SCALE

TMAT192123B68-31

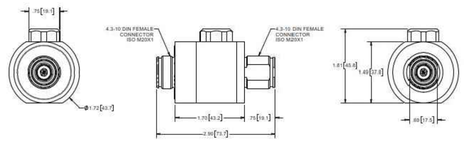
TMA (SINGLE UNIT)		
EQUIPMENT	DIMENSIONS	WEIGHT
MODEL: TMAT192123B68-31	11.1"H x 9.4"W x 3.8"D	±22.9 LBS
NOTES: 1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.		

4 C-3 **PROPOSED TMA DETAIL**
SCALE: NOT TO SCALE



SITEPRO1:
RMQLP-4120-H10

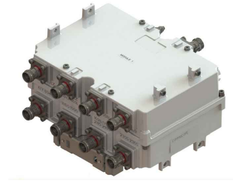
5 C-3 **PLATFORM ANTENNA MOUNT DETAIL**
SCALE: NOT TO SCALE



TSXDC-4310FM

SURGE ARRESTOR	
EQUIPMENT	DIMENSIONS
MAKE: POLYPHASER MODEL: TSXDC-4310FM	2.9"H x 1.81"W x 1.72"D

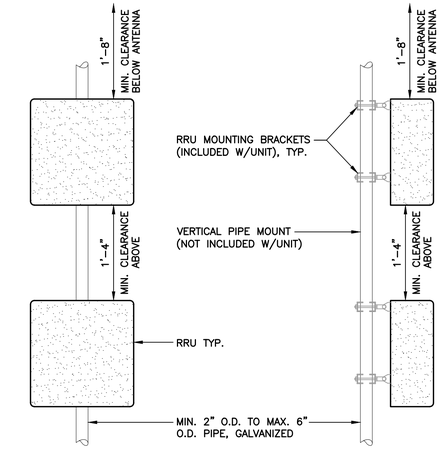
6 C-3 **PROPOSED SURGE ARRESTOR**
SCALE: NOT TO SCALE



CQX6192123T-DS-43

DIPLEXER (SINGLE UNIT)		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: COMMSCOPE MODEL: CQX6192123T-DS-43	7.2"H x 10.0"W x 4.3"D	±3.5 LBS
CONNECTORS: LONG NECK 4.3-10 FEMALE		

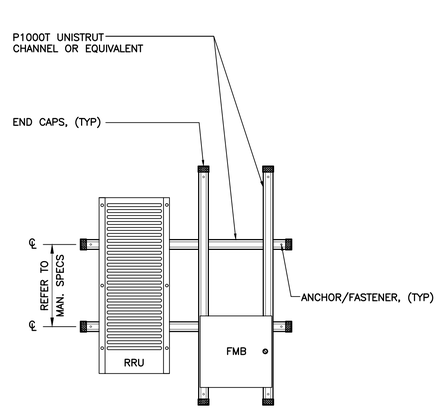
7 C-3 **PROPOSED DIPLEXER DETAIL**
SCALE: NOT TO SCALE



FRONT ELEVATION SIDE ELEVATION

NOTES: (PIPE MOUNTING)

1. AT&T SHALL SUPPLY RRU, AND RRU POLE-MOUNTING BRACKET. CONTRACTOR SHALL SUPPLY POLE/PIPE AND INSTALL ALL MOUNTING HARDWARE INCLUDING ERICSSON RRU POLE-MOUNTING BRACKET.
2. NO PAINTING OF THE RRU OR SOLAR SHIELD IS ALLOWED.



FRONT ELEVATION

NOTES: (UNISTRUT MOUNTING)

1. INSTALL A MINIMUM OF (2) ANCHORS PER UNISTRUT (± 16"o/c MIN).
2. MOUNT RRU TO UNISTRUT WITH 3/8"ø UNISTRUT BOLTING HARDWARE AND SPRING NUTS. TYPICAL FOUR PER BRACKET.
3. NO PAINTING OF THE RRU OR SOLAR SHIELD IS ALLOWED.

8 C-3 **TYPICAL RRU MOUNTING DETAILS**
SCALE: NOT TO SCALE

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JOB NO. 22007.08

TYPICAL EQUIPMENT DETAILS

C-3

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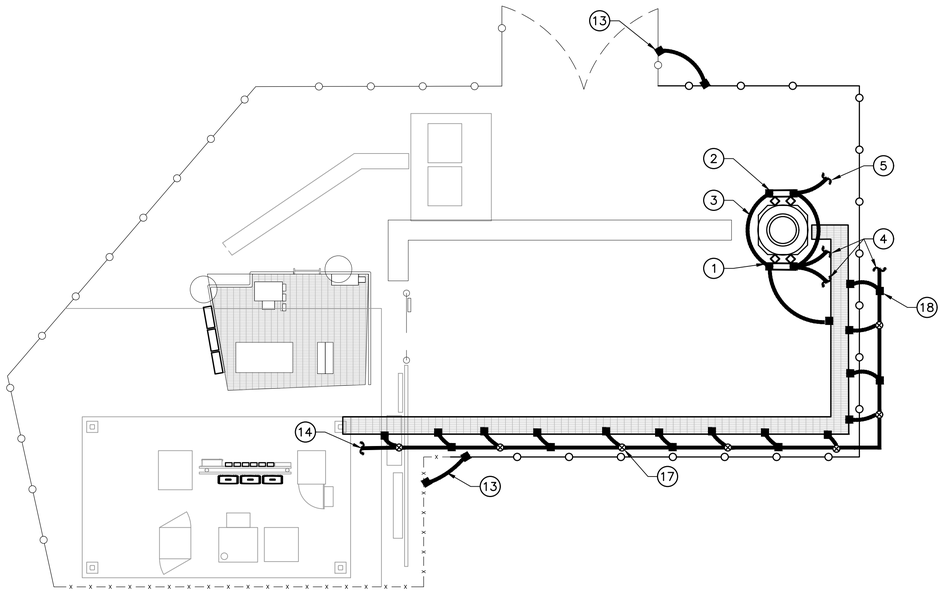


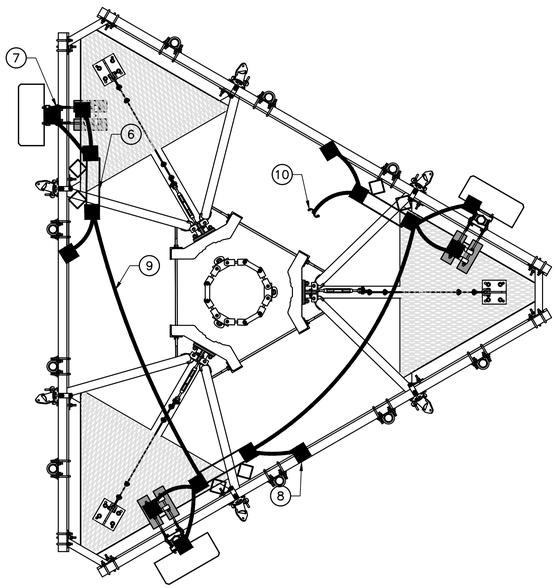
1 / E-1 **ELECTRICAL GROUNDING PLAN**
SCALE: 1/4" = 1'

GROUNDING PLAN NOTES

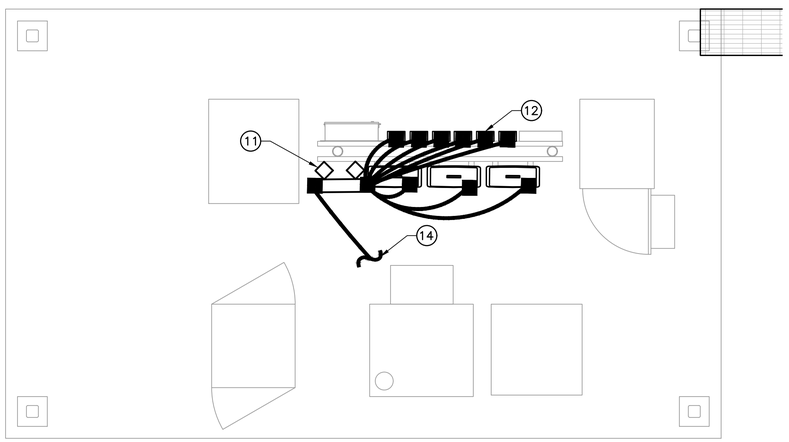
1. LOWER TOWER MOUNTED GROUND BAR.
2. UPPER TOWER MOUNTED GROUND BAR.
3. BOND UPPER TOWER MOUNTED GROUND BAR TO LOWER TOWER MOUNTED GROUND BAR (2) # 2/0 GROUND LEADS.
4. BOND TO EXISTING TOWER GROUND RING.
5. BOND UPPER TOWER MOUNTED GROUND BAR TO SECTOR GROUND BAR TYP.
6. SECTOR GROUND BAR TYP.
7. BOND ANTENNA MOUNTING PIPES TO SECTOR GROUND BAR. (TYPICAL)
8. BOND SECTOR GROUND BAR TO TOWER STEEL. (TYPICAL)
9. ALL SECTOR GROUND BARS SHALL BE BONDED TOGETHER WITH #2 AWG SOLID TINNED BCW.
10. BOND TO UPPER TOWER MOUNTED GROUND BAR.
11. NEW EQUIPMENT GROUND BAR.
12. BOND RADIO EQUIPMENT TO NEW GROUND BAR PER MANUFACTURERS SPECIFICATIONS (TYP).
13. BOND NEW SECTION OF FENCE TO EXISTING SECTION OF FENCE.
14. BOND TO EXISTING PLATFORM GROUND RING.
15. #2/0 AWG GREEN INSULATED
16. #6 AWG
17. GROUND ROD PER DETAILS (TYP)
18. BOND EACH SECTION OF ICE BRIDGE TO GROUND. (TYP)

GENERAL NOTES:

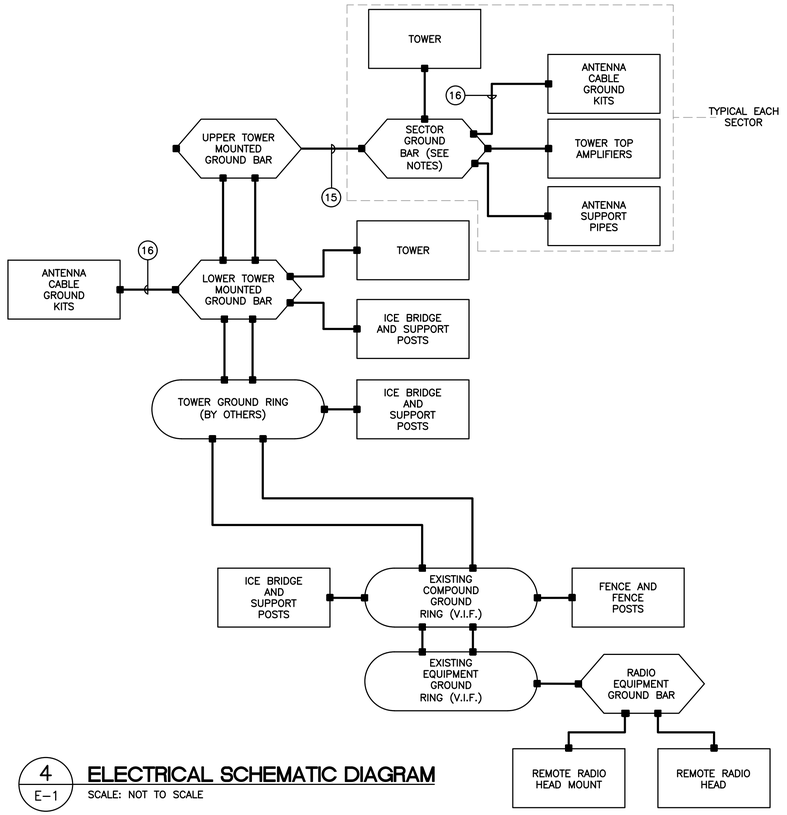
1. ALL SURGE SUPPRESSION EQUIPMENT SHALL BE BONDED TO GROUND PER MANUFACTURER'S SPECIFICATIONS
2. UNLESS OTHERWISE NOTED OR REQUIRED BY CODE, GROUND CONDUCTORS SHOWN SHALL BE #2 AWG (SOLID TINNED BCW – EXTERIOR; STRANDED GREEN INSULATED – INTERIOR).
3. BOND CABLE TRAY AND ICE BRIDGE SECTIONS TOGETHER WITH #6 AWG STRANDED GREEN INSULATED JUMPERS.
4. ALL SECTOR GROUND BARS SHALL BE BONDED TOGETHER WITH #2 AWG SOLID TINNED BCW.
5. BOND ALL EQUIPMENT CABINETS AND BATTERY CABINETS TO GROUND PER MANUFACTURER'S SPECIFICATIONS.
6. ALL BONDS TO TOWER SHALL BE MADE IN STRICT ACCORDANCE WITH SPECIFICATIONS OF TOWER MANUFACTURER OR STRUCTURAL ENGINEER.
7. REFER TO GROUNDING PLAN FOR LOCATION OF GROUNDING DEVICES.
8. REFER TO ALL ELECTRICAL AND GROUNDING DETAILS.
9. COORDINATE ALL TOWER MOUNTED EQUIPMENT WITH OWNER.
10. ALL TOWER MOUNTED AMPLIFIERS AND ASSOCIATED EQUIPMENT SHALL BE BONDED TO THE SECTOR GROUND BAR PER MANUFACTURER'S SPECIFICATIONS.
11. ALL GROUNDING SHALL BE IN ACCORDANCE WITH NEC AND OWNER'S REQUIREMENTS.
12. COORDINATE WITH EVERSOURCE TRANSMISSION DEPARTMENT REPRESENTATIVE TO DETERMINE ADDITIONAL GROUNDING REQUIREMENTS. PROVIDE ALL REQUIRED ELEMENTS TO MEET EVERSOURCE APPROVAL.
13. COORDINATE WITH TOWER OWNER BEFORE INSTALLING ANY GROUNDING ELEMENTS ON TOWER OR BONDING TO EXISTING TOWER GROUND RING.
14. BOND NEW FENCE POSTS TO EXISTING COMPOUND GROUND RING.



2 / E-1 **ANTENNA GROUNDING PLAN**
SCALE: 1/2" = 1' – 0"
TRUE NORTH



3 / E-1 **EQUIPMENT GROUNDING PLAN**
SCALE: 1/2" = 1' – 0"
TRUE NORTH



4 / E-1 **ELECTRICAL SCHEMATIC DIAGRAM**
SCALE: NOT TO SCALE

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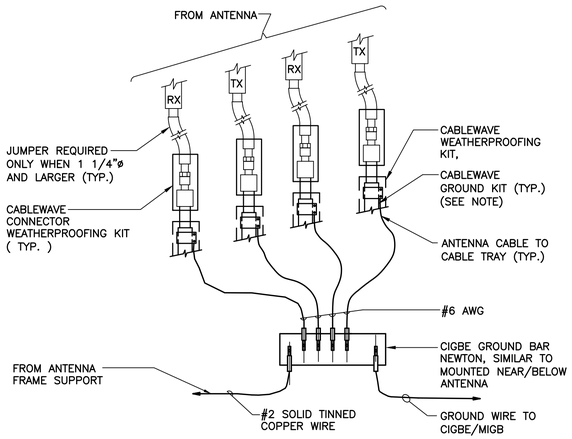
ELECTRICAL GROUNDING PLANS

E-1
Sheet No. 6 of 8

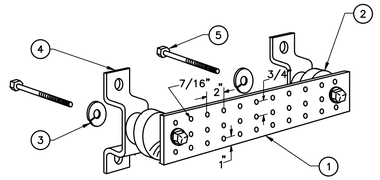


NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE

1 E-2 CONNECTION OF GROUND WIRES TO GROUND BAR

SCALE: NOT TO SCALE

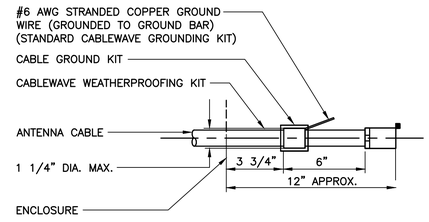


NOTES

1. TINNED COPPER GROUND BAR, 1/4" x 4" x 20", NEWTON INSTRUMENT CO. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
2. INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4.
3. 5/8" LOCK WASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8.
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-6056.
5. 5/8-11 x 1" STAINLESS STEEL TRUSS SPANNER MACHINE SCREWS.

2 E-2 GROUND BAR DETAIL

SCALE: NOT TO SCALE

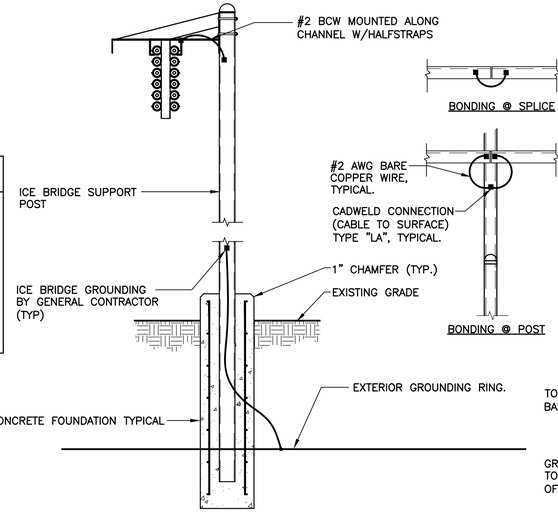


NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.

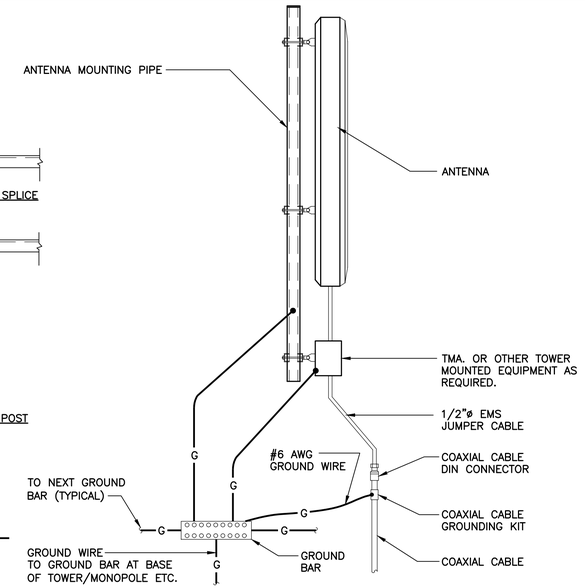
3 E-2 ANTENNA CABLE GROUNDING DETAIL

SCALE: NOT TO SCALE



4 E-2 ICE BRIDGE BONDING DETAIL

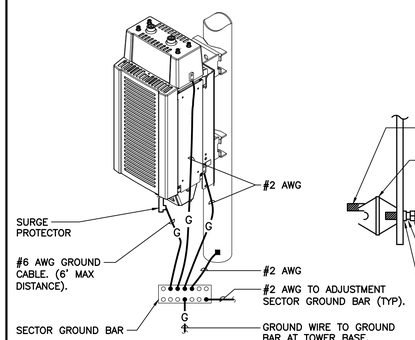
SCALE: NOT TO SCALE



5 E-2 TYPICAL ANTENNA GROUNDING DETAIL

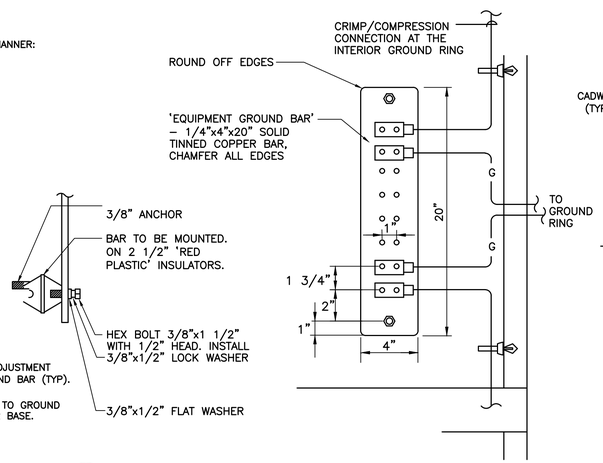
SCALE: NOT TO SCALE

EACH RRH CABINET SHALL BE GROUNDED IN THE FOLLOWING MANNER:
1. AT TOP OF THE CABINET
2. AT RIGHT SIDE OF THE CABINET.



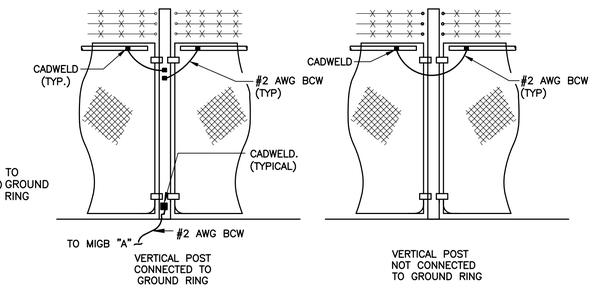
6 E-2 RRH POLE MOUNT GROUNDING

SCALE: NOT TO SCALE



7 E-2 EQUIPMENT GROUND BAR DETAIL

SCALE: NOT TO SCALE

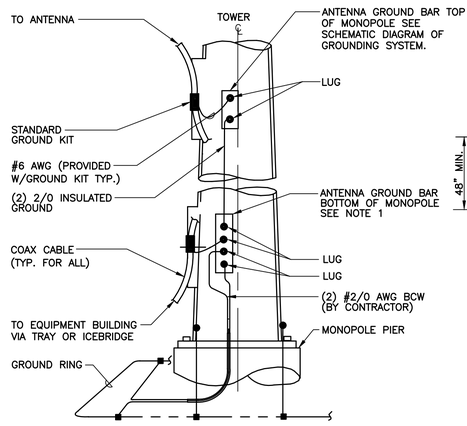


NOTES:

1. VERTICAL POSTS SHALL BE BONDED TO THE RING AT EACH CORNER AND AT EACH GATE POST. AS A MINIMUM ONE VERTICAL POST SHALL BE BONDED TO THE GROUND RING IN EVERY 100 FOOT STRAIGHT RUN OF FENCE.
2. HORIZONTAL POLES SHALL BE BONDED TO EACH OTHER.
3. BOND EACH HORIZONTAL POLE / BRACE TO EACH OTHER AND TO EACH VERTICAL POST THAT IS BONDED TO THE EXTERIOR GROUND RING.

8 E-2 GROUND-STD. DETAIL FENCE GROUNDING

SCALE: NOT TO SCALE

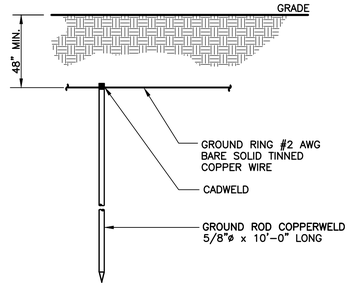


NOTES:

1. NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, LOCATION AND CONNECTION ORIENTATION. PROVIDE AS REQUIRED.
2. A SEPARATE GROUND BAR TO BE USED FOR GPS ANTENNA IF REQUIRED.

9 E-2 ANTENNA CABLE GROUNDING

SCALE: NOT TO SCALE



NOTES:

1. USE GROUND PLATE DETAIL IF 10 FT. GROUND ROD DEPTH CANNOT BE ACHIEVED DUE TO LEDGE CONDITION OR IF EXISTING TOWER FOUNDATION IS ENCOUNTERED.

10 E-2 GROUND ROD DETAIL

SCALE: NOT TO SCALE

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ELECTRICAL DETAILS

E-2

Sheet No. 7 of 8

ELECTRICAL SPECIFICATIONS

SECTION 16010

1.02. GENERAL REQUIREMENTS

A. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE MADE IN STRICT ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES AND REGULATIONS WHICH MAY APPLY AND NOTHING IN THE DRAWINGS OR SPECIFICATIONS SHALL BE INTERPRETED AS AN INFRINGEMENT OF SUCH CODES OR REGULATIONS.

B. THE ELECTRICAL CONTRACTOR IS TO BE RESPONSIBLE FOR THE COMPLETE INSTALLATION AND COORDINATION OF THE ENTIRE ELECTRICAL SERVICE. ALL ACTIVITIES TO BE COORDINATED THROUGH OWNERS REPRESENTATIVE, DESIGN ENGINEER AND OTHER AUTHORITIES HAVING JURISDICTION OF TRADES.

C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND PAY ALL FEES THAT MAY BE REQUIRED FOR THE ELECTRICAL WORK AND FOR THE SCHEDULING OF ALL INSPECTIONS THAT MAY BE REQUIRED BY THE LOCAL AUTHORITY.

D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE BUILDING OWNER FOR NEW AND/OR DEMOLITION WORK INVOLVED.

E. NO MATERIAL OTHER THAN THAT CONTAINED IN THE "LATEST LIST OF ELECTRICAL FITTINGS" APPROVED BY THE UNDERWRITERS' LABORATORIES, SHALL BE USED IN ANY PART OF THE WORK. ALL MATERIAL FOR WHICH LABEL SERVICE HAS BEEN ESTABLISHED SHALL BEAR THE U.L. LABEL.

F. THE CONTRACTOR SHALL GUARANTEE ALL NEW WORK FOR A PERIOD OF ONE YEAR FROM THE ACCEPTANCE DATE BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING WARRANTIES FROM ALL EQUIPMENT MANUFACTURERS FOR SUBMISSION TO THE OWNER.

G. DRAWINGS INDICATE GENERAL ARRANGEMENT OF WORK INCLUDED IN CONTRACT. CONTRACTOR SHALL, WITHOUT EXTRA CHARGE, MAKE MODIFICATIONS TO THE LAYOUT OF THE WORK TO PREVENT CONFLICT WITH WORK OF OTHER TRADES AND FOR THE PROPER INSTALLATION OF WORK. CHECK ALL DRAWINGS AND VISIT JOB SITE TO VERIFY SPACE AND TYPE OF EXISTING CONDITIONS IN WHICH WORK WILL BE DONE, PRIOR TO SUBMITTAL OF BID.

H. THE ELECTRICAL CONTRACTOR SHALL SUPPLY THREE (3) COMPLETE SETS OF APPROVED DRAWINGS, ENGINEERING DATA SHEETS, MAINTENANCE AND OPERATING INSTRUCTION MANUALS FOR ALL SYSTEMS AND THEIR RESPECTIVE EQUIPMENT. THESE MANUALS SHALL BE INSERTED IN VINYL COVERED 3-RING BINDERS AND TURNED OVER TO OWNER'S REPRESENTATIVE ONE (1) WEEK PRIOR TO FINAL PUNCH LIST.

I. ALL WORK SHALL BE INSTALLED IN A NEAT AND WORKMAN LIKE MANNER AND WILL BE SUBJECT TO THE APPROVAL OF THE OWNER'S REPRESENTATIVE.

J. ALL EQUIPMENT AND MATERIALS TO BE INSTALLED SHALL BE NEW, UNLESS OTHERWISE NOTED.

K. BEFORE FINAL PAYMENT, THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF PRINTS (AS-BUILTS), LEGIBLY MARKED IN RED PENCIL TO SHOW ALL CHANGES FROM THE ORIGINAL PLANS.

L. PROVIDE TEMPORARY POWER AND LIGHTING IN WORK AREAS AS REQUIRED.

M. SHOP DRAWINGS:

1. CONTRACTOR SHALL SUBMIT SIX (6) COPIES OF SHOP DRAWINGS ON ALL EQUIPMENT AND MATERIALS PROPOSED FOR USE ON THIS PROJECT, GIVING ALL DETAILS, WHICH INCLUDE DIMENSIONS, CAPACITIES, ETC.

2. CONTRACTOR SHALL SUBMIT SIX (6) COPIES OF ALL TEST REPORTS CALLED FOR IN THE SPECIFICATIONS AND DRAWINGS.

N. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE IN ACCORDANCE WITH OWNER'S SPECIFICATIONS, AND REQUIREMENTS OF ALL LOCAL AUTHORITIES HAVING JURISDICTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH APPROPRIATE INDIVIDUALS TO OBTAIN ALL SUCH SPECIFICATIONS AND REQUIREMENTS. NOTHING CONTAINED IN, OR OMITTED FROM, THESE DOCUMENTS SHALL RELIEVE CONTRACTOR FROM THIS OBLIGATION.

SECTION 16111

1.01. CONDUITS

A. MINIMUM CONDUIT SIZE FOR BRANCH CIRCUITS, LOW VOLTAGE CONTROL AND ALARM CIRCUITS SHALL BE 3/4". CONDUITS SHALL BE PROPERLY FASTENED AS REQUIRED BY THE N.E.C.

B. THE INTERIOR OF RACEWAYS/ENCLOSURES INSTALLED UNDERGROUND SHALL BE CONSIDERED TO BE WET LOCATION, INSULATED CONDUCTORS SHALL BE LISTED FOR USE IN WET LOCATIONS. PROVIDE WEATHERPROOF CONSTRUCTION IN WET LOCATIONS.

C. CONDUIT INSTALLED UNDERGROUND SHALL BE INSTALLED TO MEET MINIMUM COVER REQUIREMENTS OF TABLE 300.5.

D. PROVIDE RIGID GALVANIZED STEEL CONDUIT (RMC) FOR THE FIRST 10 FOOT SECTION WHEN LEAVING A BUILDING OR SECTIONS PASSING THROUGH FLOOR SLABS

E. ONLY LISTED PVC CONDUIT AND FITTINGS ARE PERMITTED FOR THE INSTALLATION OF ELECTRICAL CONDUCTORS, SUITABLE FOR UNDERGROUND APPLICATIONS.

CONDUIT SCHEDULE SECTION 16111

CONDUIT TYPE	NEC REFERENCE	APPLICATION	MIN BURIAL DEPTH (PER NEC TABLE 300.5) [2,3]
EMT	ARTICLE 358	INTERIOR CIRCUITING, EQUIPMENT ROOMS, SHELTERS	N/A
RMC, RIGID GALV. STEEL	ARTICLE 344, 300.5, 300.50	ALL INTERIOR/ EXTERIOR CIRCUITING, ALL UNDERGROUND INSTALLATIONS.	6 INCHES
PVC, SCHEDULE 40	ARTICLE 352, 300.5, 300.50	INTERIOR/ EXTERIOR CIRCUITING AND GROUNDING SYSTEMS, UNDERGROUND INSTALLATIONS, WHERE NOT SUBJECT TO PHYSICAL DAMAGE. [1]	18 INCHES
PVC, SCHEDULE 80	ARTICLE 352, 300.5, 300.50	INTERIOR/ EXTERIOR CIRCUITING AND GROUNDING SYSTEMS, UNDERGROUND INSTALLATIONS, WHERE SUBJECT TO PHYSICAL DAMAGE. [1]	18 INCHES
LIQUID TIGHT FLEX. METAL	ARTICLE 350	SHORT LENGTHS (MAX. 3FT.) WIRING TO VIBRATING EQUIPMENT IN WET LOCATIONS.	N/A
FLEX. METAL	ARTICLE 348	SHORT LENGTHS (MAX. 3FT.) WIRING TO VIBRATING EQUIPMENT IN WET LOCATIONS.	N/A

[1] PHYSICAL DAMAGE IS SUBJECT TO THE AUTHORITY HAVING JURISDICTION.

[2] UNDERGROUND CONDUIT INSTALLED UNDER ROADS, HIGHWAYS, DRIVEWAYS, PARKING LOTS SHALL HAVE MINIMUM DEPTH OF 24".

[3] WHERE SOLID ROCK PREVENTS COMPLIANCE WITH MINIMUM COVER DEPTHS, WIRING SHALL BE INSTALLED IN PERMITTED RACEWAY FOR DIRECT BURIAL. THE RACEWAY SHALL BE COVERED BY A MINIMUM OF 2" OF CONCRETE EXTENDING DOWN TO ROCK.

SECTION 16123

1.01. CONDUCTORS

A. ALL CONDUCTORS SHALL BE TYPE THWN (INT. APPLICATION) AND XHHW (EXT. APPLICATION), 75 DEGREE C, 600 VOLT INSULATION, SOFT ANNEALED STRANDED COPPER. #10 AWG AND SMALLER SHALL BE SPLICED USING ACCEPTABLE SOLDERLESS PRESSURE CONNECTORS. #8 AWG AND LARGER SHALL BE SPLICED USING COMPRESSION SPLIT-BOLT TYPE CONNECTORS. #12 AWG SHALL BE THE MINIMUM SIZE CONDUCTOR FOR LINE VOLTAGE BRANCH CIRCUITS. REFER TO PANEL SCHEDULE FOR BRANCH CIRCUIT CONDUCTOR SIZE(S). CONDUCTORS SHALL BE COLOR CODED FOR CONSISTENT PHASE IDENTIFICATION:

	120/208/240V	277/480V
LINE	COLOR	COLOR
A	BLACK	BROWN
B	RED	ORANGE
C	BLUE	YELLOW
N	CONTINUOUS WHITE	GREY
G	CONTINUOUS GREEN	GREEN WITH YELLOW STRIPE

B. MINIMUM BENDING RADIUS FOR CONDUCTORS SHALL BE 12 TIMES THE LARGEST DIAMETER OF BRANCH CIRCUIT CONDUCTOR.

SECTION 16450

1.01. GROUNDING

A. ALL NON-CURRENT CARRYING PARTS OF THE ELECTRICAL AND TELEPHONE CONDUIT SYSTEMS SHALL BE MECHANICALLY AND ELECTRICALLY CONNECTED TO PROVIDE AN INDEPENDENT RETURN PATH TO THE EQUIPMENT GROUNDING SOURCES.

B. GROUNDING SYSTEM WILL BE IN ACCORDANCE WITH THE LATEST ACCEPTABLE EDITION OF THE NATIONAL ELECTRICAL CODE AND REQUIREMENTS PER LOCAL INSPECTOR HAVING JURISDICTION.

C. EQUIPMENT GROUNDING CONDUCTOR:

1. EACH EQUIPMENT GROUND CONDUCTOR SHALL BE SIZED IN ACCORDANCE WITH THE N.E.C. ARTICLE 250-122.

2. THE MINIMUM SIZE OF EQUIPMENT GROUND CONDUCTOR SHALL BE #12 AWG COPPER.

3. EACH FEEDER OR BRANCH CIRCUIT SHALL HAVE EQUIPMENT GROUND CONDUCTOR(S) INSTALLED IN THE SAME RACEWAY(S).

D. CELLULAR GROUNDING SYSTEM:

CONTRACTOR SHALL PROVIDE A CELLULAR GROUNDING SYSTEM WITH THE MAXIMUM AC RESISTANCE TO GROUND OF 10 OHM BETWEEN ANY POINT ON THE GROUNDING SYSTEM AS MEASURED BY 3-POINT GROUNDING TEST. (REFER TO SECTION 16960).

PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO:

1. GROUND BARS

2. EXTERIOR GROUNDING (WHERE REQUIRED DUE TO MEASURED AC RESISTANCE GREATER THAN SPECIFIED).

3. ANTENNA GROUND CONNECTIONS AND PLATES.

E. CONTRACTOR, AFTER COMPLETION OF THE COMPLETE GROUNDING SYSTEM BUT PRIOR TO CONCEALMENT/BURIAL OF SAME, SHALL NOTIFY OWNER'S PROJECT ENGINEER WHO WILL HAVE A DESIGN ENGINEER VISIT SITE AND MAKE A VISUAL INSPECTION OF THE GROUNDING GRID AND CONNECTIONS OF THE SYSTEM.

F. ALL EQUIPMENT SHALL BE BONDED TO GROUND AS REQUIRED BY N.E.C., MFG. SPECIFICATIONS, AND OWNER'S SPECIFICATIONS.

SECTION 16960

1.01. TESTS BY INDEPENDENT ELECTRICAL TESTING FIRM

A. CONTRACTOR SHALL RETAIN THE SERVICES OF A LOCAL INDEPENDENT ELECTRICAL TESTING FIRM (WITH MINIMUM 5 YEARS COMMERCIAL EXPERIENCE IN THE ELECTRICAL TESTING INDUSTRY) AS SPECIFIED BY OWNER TO PERFORM:

TEST 1: RESISTANCE TO GROUND TEST ON THE CELLULAR GROUNDING SYSTEM.

THE TESTING FIRM SHALL INCLUDE THE FOLLOWING INFORMATION WITH THE REPORT:

1. TESTING PROCEDURE INCLUDING THE MAKE AND MODEL OF TEST EQUIPMENT.

2. CERTIFICATION OF TESTING EQUIPMENT CALIBRATION WITHIN SIX (6) MONTHS OF DATE OF TESTING. INCLUDE CERTIFICATION LAB ADDRESS AND TELEPHONE NUMBER.

3. GRAPHICAL DESCRIPTION OF TESTING METHOD ACTUALLY IMPLEMENTED.

B. THESE TESTS SHALL BE PERFORMED IN THE PRESENCE AND TO THE SATISFACTION OF OWNER'S CONSTRUCTION REPRESENTATIVE. TESTING DATA SHALL BE INITIALED AND DATED BY THE CONSTRUCTION REPRESENTATIVE AND INCLUDED WITH THE WRITTEN REPORT/ANALYSIS.

C. THE CONTRACTOR SHALL FORWARD SIX (6) COPIES OF THE INDEPENDENT ELECTRICAL TESTING FIRM'S REPORT/ANALYSIS TO ENGINEER A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO THE JOB TURNOVER.

D. CONTRACTOR TO PROVIDE A MINIMUM OF ONE (1) WEEK NOTICE TO OWNER AND ENGINEER FOR ALL TESTS REQUIRING WITNESSING.

SECTION 16961

1.01. TESTS BY CONTRACTOR

A. ALL TESTS AS REQUIRED UPON COMPLETION OF WORK, SHALL BE MADE BY THIS CONTRACTOR. THESE SHALL BE CONTINUITY AND INSULATION TESTS; TEST TO DETERMINE THE QUALITY OF MATERIALS, ETC. AND SHALL BE MADE IN ACCORDANCE WITH N.E.C. RECOMMENDATIONS. ALL FEEDERS AND BRANCH CIRCUIT WIRING (EXCEPT CLASS 2 SIGNAL CIRCUITS) MUST BE TESTED FREE FROM SHORT CIRCUIT AND GROUND FAULT CONDITIONS AT 500V IN A REASONABLY DRY AMBIENT OF APPROXIMATELY 70 DEGREES F.

B. CONTRACTOR SHALL PERFORM LOAD PHASE BALANCING TESTS. CIRCUITS SHALL BE CONNECTED TO THE PANELBOARDS SO THAT THE NEW LOAD IS DISTRIBUTED AS EQUALLY AS POSSIBLE BETWEEN EACH LOAD AND NEUTRAL. 10% SHALL BE CONSIDERED AS A REASONABLE AND ACCEPTABLE ALLOWANCE. BRANCH CIRCUITS SHALL BE BALANCED ON THEIR OWN PANELBOARDS; FEEDER LOADS SHALL, IN TURN, BE BALANCED ON THE SERVICE EQUIPMENT. REASONABLE LOAD TEST SHALL BE ARRANGED TO VERIFY LOAD BALANCE IF REQUESTED BY THE ENGINEER.

C. ALL TESTS, UPON REQUEST, SHALL BE REPEATED IN THE PRESENCE OF OWNER'S REPRESENTATIVE. ALL TESTS SHALL BE DOCUMENTED AND TURNED OVER TO OWNER. OWNER SHALL HAVE THE AUTHORITY TO STOP ANY OF THE WORK NOT BEING PROPERLY INSTALLED. ALL SUCH DETECTED WORK SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL EXPENSE TO THE OWNER AND THE TESTS SHALL BE REPEATED.

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	08/30/23	ASC	TJR	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION
A	07/12/23	ASC	TJR	CONSTRUCTION DRAWINGS - ISSUED FOR CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

STATE OF CONNECTICUT — TIMOTHY J. RAMOS — LICENSED PROFESSIONAL ENGINEER

at&t

SAI communications

CENTEK engineering
Centered on Solutions℠
(203) 488-0580
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63-2 North Branford Road
Branford, CT 06405
www.CentekEng.com

AT&T MOBILITY

FAIRFIELD MOREHOUSE RD

SITE ID: CT5145

280 MOREHOUSE ROAD
FAIRFIELD, CT 06612

DATE: 07/12/23
SCALE: AS NOTED
JOB NO. 22007.08

ELECTRICAL SPECIFICATIONS

E-3

Sheet No. 8 of 8

CENTEK engineering

Centered on Solutions℠

Structural Analysis of Utility Pole

AT&T Site Ref: CT5145

Eversource Structure No. 19725

125' Tall Electric Transmission Pole

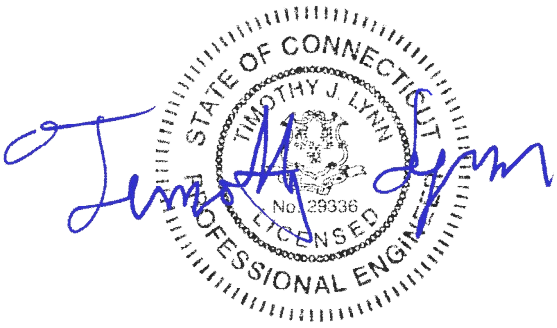
280 Morehouse Road
Fairfield, CT

CENTEK Project No. 22007.08

~~Date: April 6, 2023~~

Rev 1: May 23, 2023

Max Stress Ratio = 88.7%



Prepared for:
AT&T Mobility
500 Enterprise Drive, Suite 3A
Rocky Hill, CT 06067

Table of Contents

Introduction

The purpose of this report is to analyze the 125' utility pole located in Fairfield, CT for the proposed antenna and equipment upgrade by AT&T.

The loads consist of the following:

- **AT&T (Final Configuration):**
  Antennas: Three (3) CCI TPA65R-BU4D panel antennas and six (6) Commscope TMAT192123B68-31 TMAs mounted on one (1) Platform (SitePro p/n RMQLP-4120-H10) to the utility pole with a RAD center elevation of 111-ft above grade.
  Cables: Twelve (12) 1-5/8" ∅ coax cables mounted to the outside of the pole as indicated in Section 4 of this report.
- T-MOBILE (Final Configuration):
  Antennas: Three (3) RFS APXVAALL24_43 panel antennas, three (3) RFS APX16DWV-16DWVS panel antennas and six (6) Commscope ATSBT-TOP-MF-4G Bias Tees mounted on one (1) Platform (SitePro p/n RMQLP-496-HK) to the utility pole with a RAD center elevation of 121-ft above grade.
  Cables: Twenty-four (24) 1-1/4" ∅ coax cables mounted to the outside of the pole as indicated in Section 4 of this report.

Primary assumptions used in the analysis

- Design steel stresses are defined by AISC-LRFD 14th edition for design of the antenna Mast and antenna supporting elements.
- ASCE Manual No. 48-19, "Design of Steel Transmission Pole Structures", defines allowable steel stresses for evaluation of the utility pole.
- All utility pole members are adequately protected to prevent corrosion of steel members.
- All proposed antenna mounts are modeled as listed above.
- Pipe mast will be properly installed and maintained.
- No residual stresses exist due to incorrect pole erection.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All welds conform to the requirements of AWS D1.1.
- Pipe mast and utility pole will be in plumb condition.
- Utility pole was properly installed and maintained and all members were properly designed, detailed, fabricated, and installed and have been properly maintained since erection.
- Any deviation from the analyzed loading will require a new analysis for verification of structural adequacy.

A n a l y s i s

Structural analysis of the utility pole was independently completed using the current version of PLSPole computer program licensed to CENTEK Engineering, Inc.

NESC prescribed loads for the proposed wireless equipment were calculated to analyze the utility tower. Section 5 of this report details these loads.

D e s i g n B a s i s

Our analysis was performed in accordance with ASCE 48-19, "Design of Steel Transmission Pole Structures", NESC C2-2023 and Eversource Design Criteria.

- UTILITY POLE ANALYSIS

  The purpose of this analysis is to determine the adequacy of the existing utility pole to support the proposed antenna loads. The loading and design requirements were analyzed in accordance with the Eversource Design Criteria Table, NESC C2-2023 ~ Construction Grade B, and ASCE Manual No. 48-19.

  Load cases considered:

  Load Case 1: NESC Heavy Wind
  Wind Pressure…….. 4.0 psf
  Radial Ice Thickness……. 0.5"
  Vertical Overload Capacity Factor……. 1.50
  Wind Overload Capacity Factor……. 2.50
  Wire Tension Overload Capacity Factor…… 1.65

  Load Case 2: NESC Extreme Wind
  Wind Speed……. 110 mph (1)
  Radial Ice Thickness……. 0"

  Load Case 3: NESC Extreme Ice w/ Wind
  Wind Pressure…….. 6.4 psf
  Radial Ice Thickness……. 0.75"
  Vertical Overload Capacity Factor……. 1.0
  Wind Overload Capacity Factor……. 1.0

  Note 1: NESC C2-2023, Section25, Rule 250C: Extreme Wind Loading, 1.25 x Gust Response Factor (wind speed: 3-second gust)

R e s u l t s

- UTILITY POLE

This analysis finds that the subject utility pole is adequate to support the proposed antenna mast and related appurtenances. The pole stresses meet the requirements set forth by the ASCE Manual No. 48-19, "Design of Steel Transmission Pole Structures", for the applied NESC Heavy and Hi-Wind load cases. The detailed analysis results are provided in Section 6 of this report. The analysis results are summarized as follows:

A maximum usage of **88.66%** occurs in the utility pole base plate under the **NESC Extreme** loading condition.

POLE SECTION:

The utility pole was found to be within allowable limits.

Tower Section	Elevation	Stress Ratio (% of capacity)	Result
Section 3	53.00' -100.00' (AGL)	57.96%	**PASS**

BASE PLATE:

The base plate was found to be within allowable limits from the PLS output.

Tower Component	Design Limit	Stress Ratio (percentage of capacity)	Result
Base Plate	Bending	88.66%	**PASS**

FLANGE:

The flange bolts and flange plate were found to be within allowable limits.

Tower Component	Design Limit	Stress Ratio (% of capacity)	Result
Flange Bolts	Tension	54.6%	**PASS**
Flange Plate	Bending	50.1%	**PASS**

- FOUNDATION AND ANCHORS

The base of the tower is connected to the foundation by means of (24) 2.25"∅, ASTM A615-75 anchor bolts embedded into the concrete foundation structure. Review of the foundation consisted of a comparison of the base reactions obtained from the proposed tower analysis and the original foundation design.

BASE REACTIONS:

From PLS-Pole analysis of utility pole based on NESC/NU prescribed loads.

Load Case	Shear	Axial	Moment
NESC Heavy Wind	29.48 kips	115.65 kips	2386.79 ft-kips
NESC Extreme Wind	53.61 kips	57.99 kips	4344.25 ft-kips
NESC Extreme Ice w/ Wind	22.73 kips	101.83 kips	1854.34 ft-kips

Note 1 – 10% increase to be applied to tower base reactions for foundation verification per OTRM 051

ANCHOR BOLTS:

The anchor bolts were found to be within allowable limits.

Tower Component	Design Limit	Stress Ratio (% of capacity)	Result
Anchor Bolts	Tension	50.9%	**PASS**

FOUNDATION:

Force	Original Design Loading	Proposed Loading	Result
Moment	7,478 ft-kips	4,779 ft-kips	**PASS**
Shear	97.3 kips	59.0 kips	**PASS**

Note 1: Taken from Sabre design calculations.

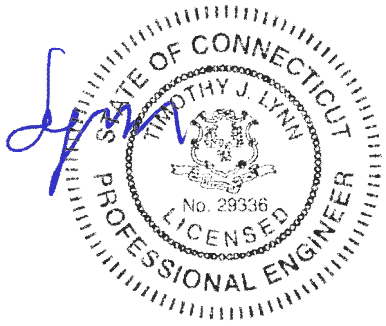
Conclusion

This analysis shows that the subject utility pole **is adequate** to support the proposed equipment upgrade.

The analysis is based, in part on the information provided to this office by Eversource and AT&T. If the existing conditions are different than the information in this report, CENTEK engineering, Inc. must be contacted for resolution of any potential issues.

Please feel free to call with any questions or comments.

Respectfully Submitted by:



Timothy J. Lynn, PE
Structural Engineer

STANDARD CONDITIONS FOR FURNISHING OF PROFESSIONAL ENGINEERING SERVICES ON EXISTING STRUCTURES

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessarily limited to:

- Information supplied by the client regarding the structure itself, its foundations, the soil conditions, the antenna and feed line loading on the structure and its components, or other relevant information.

- Information from the field and/or drawings in the possession of CENTEK engineering, Inc. or generated by field inspections or measurements of the structure.

- It is the responsibility of the client to ensure that the information provided to CENTEK engineering, Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated. It is therefore assumed that its capacity has not significantly changed from the “as new” condition.

- All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest revision of ANSI/ASCE10 & ANSI/EIA-222.

- All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. CENTEK engineering, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAM ~ PLS-POLE

PLS-POLE provides all of the capabilities a structural engineer requires to design transmission, substation or communications structures. It does so using a simple easy to use graphical interface that rests upon our time tested finite element engine. Regardless of whether you want to model a simple wood pole or a guyed steel X-Frame; PLS-POLE can handle the job simply, reliably and efficiently.

Modeling Features:

- Structures are made of standard reusable components that are available in libraries. You can easily create your own libraries or get them from a manufacturer
- Structure models are built interactively using interactive menus and graphical commands
- Automatic generation of underlying finite element model of structure
- Steel poles can have circular, 4, 6, 8, 12, 16, or 18-sided, regular, elliptical or user input cross sections (flat-to-flat or tip-to-tip orientations)
- Steel and concrete poles can be selected from standard sizes available from manufacturers
- Automatic pole class selection
- Cross brace position optimizer
- Capability to specify pole ground line rotations
- Capability to model foundation displacements
- Can optionally model foundation stiffness
- Guys are easily handled (modeled as exact cable elements in nonlinear analysis)
- Powerful graphics module (members color-coded by stress usage)
- Graphical selection of joints and components allows graphical editing and checking
- Poles can be shown as lines, wire frames or can be rendered as 3-d polygon surfaces

Analysis Features:

- Automatic distribution of loads in 2-part suspension insulators (v-strings, horizontal vees, etc.)
- Design checks for ASCE, ANSI/TIA/EIA 222 (Revisions F and G) or other requirements
- Automatic calculation of dead and wind loads
- Automated loading on structure (wind, ice and drag coefficients) according to:
    - ASCE 74-1991
    - NESC 2002
    - NESC 2007
    - IEC 60826:2003
    - EN50341-1:2001 (CENELEC)
    - EN50341-3-9:2001 (UK NNA)
    - EN50341-3-17:2001 (Portugal NNA)
    - ESAA C(b)1-2003 (Australia)
    - TPNZ (New Zealand)
    - REE (Spain)
    - EIA/TIA 222-F
    - ANSI/TIA 222-G
    - CSA S37-01
- Automated microwave antenna loading as per EIA/TIA 222-F and ANSI/TIA 222-G
- Detects buckling by nonlinear analysis

Results Features:

- Detects buckling by nonlinear analysis
- Easy to interpret text, spreadsheet and graphics design summaries
- Automatic determination of allowable wind and weight spans
- Automatic determination of interaction diagrams between allowable wind and weight spans
- Automatic tracking of part numbers and costs

Criteria for Design of PCS Facilities On or Extending Above Metal Electric Transmission Towers & Analysis of Transmission Towers Supporting PCS Masts (1)

Introduction

This criteria is the result from an evaluation of the methods and loadings specified by the separate standards, which are used in designing telecommunications towers and electric transmission towers. That evaluation is detailed elsewhere, but in summary; the methods and loadings are significantly different. This criteria specifies the manner in which the appropriate standard is used to design PCS facilities including masts and brackets (hereafter referred to as "masts"), and to evaluate the electric transmission towers to support PCS masts. The intent is to achieve an equivalent level of safety and security under the extreme design conditions expected in Connecticut and Massachusetts.

ANSI Standard TIA-222 covering the design of telecommunications structures specifies a limit state design approach. This approach applies the loads from extreme weather loading conditions, and designs the structure so that the design strength exceeds the required strength.

ANSI Standard C2-2023 (National Electrical Safety Code) covering the design of electric transmission metal structures is based upon an ultimate strength/yield stress design approach. This approach applies a multiplier (overload capacity factor) to the loads possible from extreme weather loading conditions, and designs the structure so that it does not exceed its ultimate strength (yield stress).

Each standard defines the details of how loads are to be calculated differently. Most of the NU effort in "unifying" both codes was to establish what level of strength each approach would provide, and then increasing the appropriate elements of each to achieve a similar level of security under extreme weather loadings.

Two extreme weather conditions are considered. The first is an extreme wind condition (hurricane) based upon a 50-year recurrence (2% annual probability). The second is a winter condition combining wind and ice loadings.

The following sections describe the design criteria for any PCS mast extending above the top of an electric transmission tower, and the analysis criteria for evaluating the loads on the transmission tower from such a mast from the lower portions of such a mast, and loads on the pre-existing electric lower portions of such a mast, and loads on the pre-existing electric transmission tower and the conductors it supports.

Note 1: Prepared from documentation provide from Northeast Utilities.

P C S M a s t

The PCS facility (mast, external cable/trays, including the initial and any planned future support platforms, antennas, etc. extending the full height above the top level of the electric transmission structure) shall be designed in accordance with the provisions of TIA 222-H:

E L E C T R I C T R A N S M I S S I O N T O W E R

The electric transmission tower shall be analyzed using yield stress theory in accordance with the attached table titled “Eversource Design Criteria”. This specifies uniform loadings (different from the TIA loadings) on the each of the following components of the installed facility:

- PCS mast for its total height above ground level, including the initial and planned future support platforms, antennas, etc. above the top of an electric transmission structure.
- Conductors are related devices and hardware.
- Electric transmission structure. The loads from the PCS facility and from the electric conductors shall be applied to the structure at conductor and PCS mast attachment points, where those load transfer to the tower.

The uniform loadings and factors specified for the above components in the table are based upon the National Electrical Safety Code 2023 Edition Extreme Wind (Rule 250C), Combined Ice and Wind (Rule 250B-Heavy) and Extreme Ice w/ Wind (Rule 250D) Loadings. These provide equivalent loadings compared to TIA and its loads and factors with the exceptions noted above. (Note that the NESC does not require the projected wind surfaces of structures and equipment to be increased by the ice covering.)

In the event that the electric transmission tower is not sufficient to support the additional loadings of the PCS mast, reinforcement will be necessary to upgrade the strength of the overstressed members.

Attachment A
Eversource Design Criteria

		Attachment A ES Design Criteria	Basic Wind Speed	Pressure	Height Factor	Gust Factor	Load or Stress Factor	Force Coef. - Shape Factor
			V (MPH)	Q (PSF)	Kz	Gh		
Ice Condition	TIA/EIA	Antenna Mount	TIA	TIA (0.75Wi)	TIA	TIA	TIA, Section 3.1.1.1 disallowed for connection design	TIA
	NESC Heavy	Tower/Pole Analysis with antennas extending above top of Tower/Pole (Yield Stress)	-----	4	1	1	2.5	1.6 Flat Surfaces 1.3 Round Surfaces
		Tower/Pole Analysis with antennas below top of Tower/Pole (on two faces)	-----	4	1	1	2.5	1.6 Flat Surfaces 1.3 Round Surfaces
		Conductors:	Conductor Loads Provided by ES					
High Wind Condition	TIA/EIA	Antenna Mount	85	TIA	TIA	TIA	TIA, Section 3.1.1.1 disallowed for connection design	TIA
	NESC Extreme Wind	Tower/Pole Analysis with antennas extending above top of Tower/Pole	For wind speed use OTRM 060 Map 1, Rule 250C: Extreme Wind Loading Apply a 1.25 x Gust Response Factor to all telecommunication equipment projected above top of tower/pole and apply a 1.0 x Gust Response Factor to the tower/pole structure					1.6 Flat Surfaces 1.3 Round Surfaces
		Tower/Pole Analysis with antennas below top of Tower/Pole	For wind speed use OTRM 060 Map 1, Rule 250C: Extreme Wind Loading Height above ground is based on overall height to top of tower/pole					1.6 Flat Surfaces 1.3 Round Surfaces
		Conductors:	Conductor Loads Provided by ES					
NESC Extreme Ice with Wind Condition*		Tower/Pole Analysis with antennas extending above top of Tower/Pole	For wind speed use OTRM 060 Map 1, Rule 250D: Extreme Ice with Wind Loading 4 PSF Wind Load 1.25 x Gust Response Factor Apply a 1.25 x Gust Response Factor to all telecommunication equipment projected above top of tower/pole and apply a 1.0 x Gust Response Factor to the tower/pole structure					1.6 Flat Surfaces 1.3 Round Surfaces
		Tower/Pole Analysis with antennas below top of Tower/Pole	For wind speed use OTRM 060 Map 1, Rule 250D: Extreme Ice with Wind Loading 4 PSF Wind Load Height above ground is based on overall height to top of tower/pole					1.6 Flat Surfaces 1.3 Round Surfaces
		Conductors:	Conductor Loads Provided by ES					
		*Only for structures installed after 2007						

determined from NESC applied loading conditions (not TIA Loads) on the structure and mount as specified below, and shall include the wireless communication mast and antenna loads per NESC criteria)

The strength reduction factor obtained from the field investigation shall be applied to the members or connections that are showing signs of deterioration from their original condition With the written approval of Eversource Transmission Line Engineering on a case by case the existing structures may be analyzed initially using the current NESC code, then it is permitted to use the original design code with the original conductor load should the existing tower fail the current NESC code.

The structure shall be analyzed using yield stress theory in accordance with Attachment A, "Eversource Design Criteria." This specifies uniform loadings (different from the TIA loadings) on each of the following components of the installed facility:

a) Wireless communication mast for its total height above ground level, including the initial and any planned future equipment (Support Platforms, Antennas, TMA's etc.) above the top of an electric transmission structure.

b) Conductors and related devices and hardware (wire loads will be provided by Eversource).

c) Electric Transmission Structure

i) The loads from the wireless communication equipment components based on NESC and Eversource Criteria in Attachment A, and from the electric conductors shall be applied to the structure at conductor and wireless communication mast attachment points, where those loads transfer to the tower. ii)

ii) Shape Factor Multiplier:

NESC Structure Shape	Cd
Polyround (for polygonal steel poles)	1.3
Flat	1.6
Open Lattice	3.2
Pole with Coaxial Cable	See Below Table

iii) When Coaxial Cables are mounted alongside the pole structure, the shape multiplier shall be:

Mount Type	Cable Cd	Pole Cd
Coaxial Cables on outside periphery (One layer)	1.45	1.45
Coaxial Cables mounted on stand offs	1.6	1.6

d) The uniform loadings and factors specified for the above components in Attachment A, "Eversource Design Criteria" are based upon the National Electric Safety Code 2007 Edition Extreme Wind (Rule 250C) and Combined Ice and Wind (Rule 250B-Heavy) Loadings. These provide equivalent loadings compared to the TIA and its loads and factors with the exceptions noted above.

Northeast Utilities System

Wire Loads

Project Name	1714/1720/1222 Line Rebuild		
Work Order	80060915		
Structure #	PCS-2 (19766 & 19725)		
Line #	1714/1720		
Prepared By	GJG	Date	6/3/2022
Checked By	JFAP	Date	6/3/2022

Structure Data

Structure Height (AGL)	125	Load Zone	Central CT
# of Circuits	2	Insulation Type	Suspension (Concrete Foundation
Insulator Weight	150	Broken Wire Side	Back
Broken Wire Side	Left	Structure Type	Double Circuit Steel Pole

Wire Data

Circuit #	Left	Right
Shield Wire	FOCAS-120	FOCAS-120
Conductor	FALCON/ACSS	FALCON/ACSS
# of Conductors	1	1

Line Geometry

	Circuit 1			Circuit 2		
	Ahead	Back	Total	Ahead	Back	Total
Wind Span	300	300	600	300	300	600
Weight Span	650	650	1300	650	650	1300
Minimum Line Angle	0	0	0	0	0	0
Maximum Line Angle	2.5	2.5	5	2.5	2.5	5

Wire Tensions

	Left Circuit		Right Circuit		
	Ahead	Back	Ahead	Back	
NESC Rule 250B	14000	14000	14000	14000	Conductor
NESC Rule 250C	13447	13447	13447	13447	
NESC Rule 250D	17202	17202	17202	17202	
60°F, No wind or ice	7271	7271	7271	7271	
NESC Rule 250B	6000	6000	6000	6000	Shield Wire
NESC Rule 250C	6236	6236	6236	6236	
NESC Rule 250D	7829	7829	7829	7829	
60°F, No wind or ice	2429	2429	2429	2429	

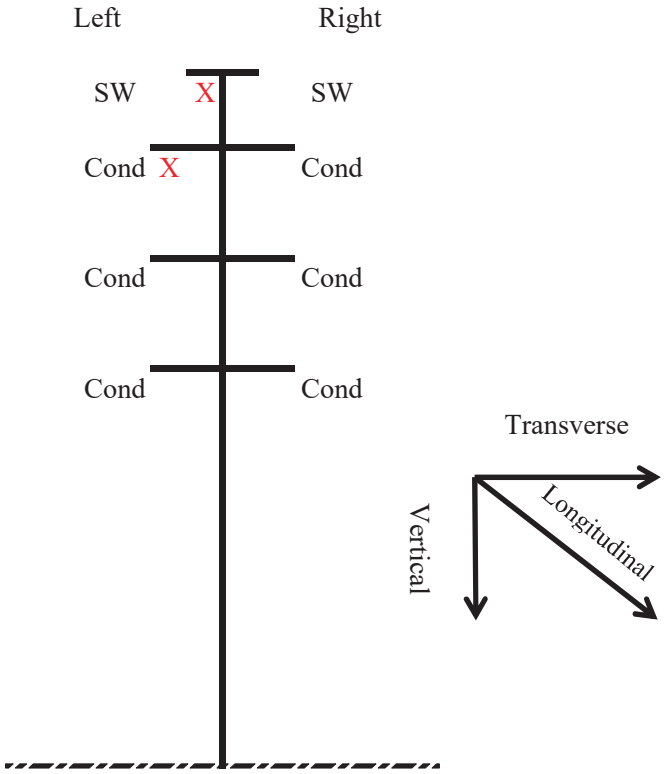
All Loads include Overload Factors but not Pole Shape Factors

Load Case	Description
1	NESC Rule 250B; 0°F, ½" of ice, 4 psf wind
2	NESC Rule 250C; (Extreme Wind Loading)
3	NESC Rule 250C; Extreme Wind Longtitudinal On The Pole Only
4	NESC Rule 250D; 15°F 1" of ice, 4 psf or NU Ice Case; 32°F 1" Ice
5	NESC Rule 250B with no OLFs (Service Load)
6	60°F, No wind or Ice (Deflection)
7a	NESC Rule 250B/261C Broken Wire Case (Broken SW and Borken Conductor)
7b	NESC Rule 250B/261C Broken Wire Case (Broken SW or Broken Phase)

Northeast Utilities System

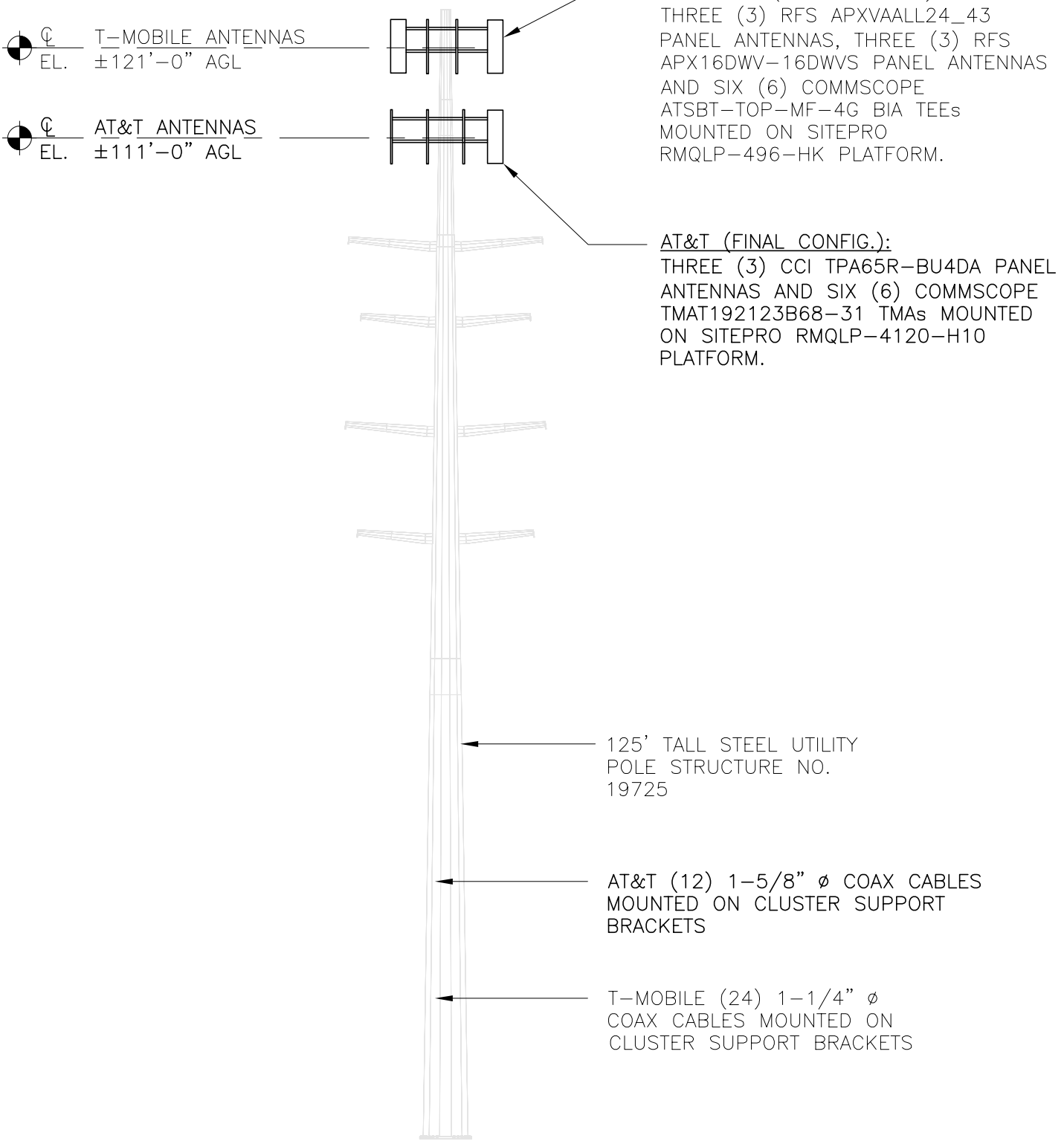
Wire Loads
Load Tree

Project Number
1714/1720/1222 Line Re
Structure Number
PCS-2 (19766 & 19725)
Line Number
1714/1720



Double Circuit Steel Pole Configuration
X Denotes Broken Wire Location. This attachment receives case 7 loads. All others receive Case 1 Loads for Case 7

	Left Circuit				Right Circuit			
Conductor	Case	Vertical	Transverse	Longitudinal	Case	Vertical	Transverse	Longitudinal
	1	6911.1105	2715.9771	0	1	6911.1105	2715.9771	0
	2	2953.82	3965.0998	0	2	2953.82	3965.0998	0
	3	2953.82	634.31313	0	3	2953.82	634.31313	0
	4	7069.594	2249.6814	0	4	7069.594	2249.6814	0
	5	4607.407	1770.3428	0	5	4607.407	1770.3428	0
	6	2953.82	634.31313	0	6	2953.82	634.31313	0
	7a	3455.5553	1357.9886	15400	7a	3455.5553	1357.9886	15400
	7b	3455.5553	1357.9886	15400	7b	3455.5553	1357.9886	15400
Shield Wire	Case	Vertical	Transverse	Longitudinal	Case	Vertical	Transverse	Longitudinal
	1	2511.6702	1444.7759	0	1	2511.6702	1444.7759	-6.281738
	2	673.4	1724.821	0	2	673.4	1724.821	-5.93529
	3	673.4	211.90298	0	3	673.4	211.90298	-2.31187
	4	3484.0936	1230.5924	0	4	3484.0936	1230.5924	-7.451473
	5	1674.4468	871.03265	0	5	1674.4468	871.03265	-5.710671
	6	673.4	211.90298	0	6	673.4	211.90298	-2.31187
	7a	1255.8351	722.38796	6600	7a	1255.8351	722.38796	6593.7183
	7b	1255.8351	722.38796	6600	7b	1255.8351	722.38796	6593.7183



1
SK-1

TOWER ELEVATION

SCALE: NOT TO SCALE

REVISIONS		
00	4/6/23	ISSUED FOR REVIEW
01	5/23/23	CONSTRUCTION

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CT5145
STRUCTURE 19725

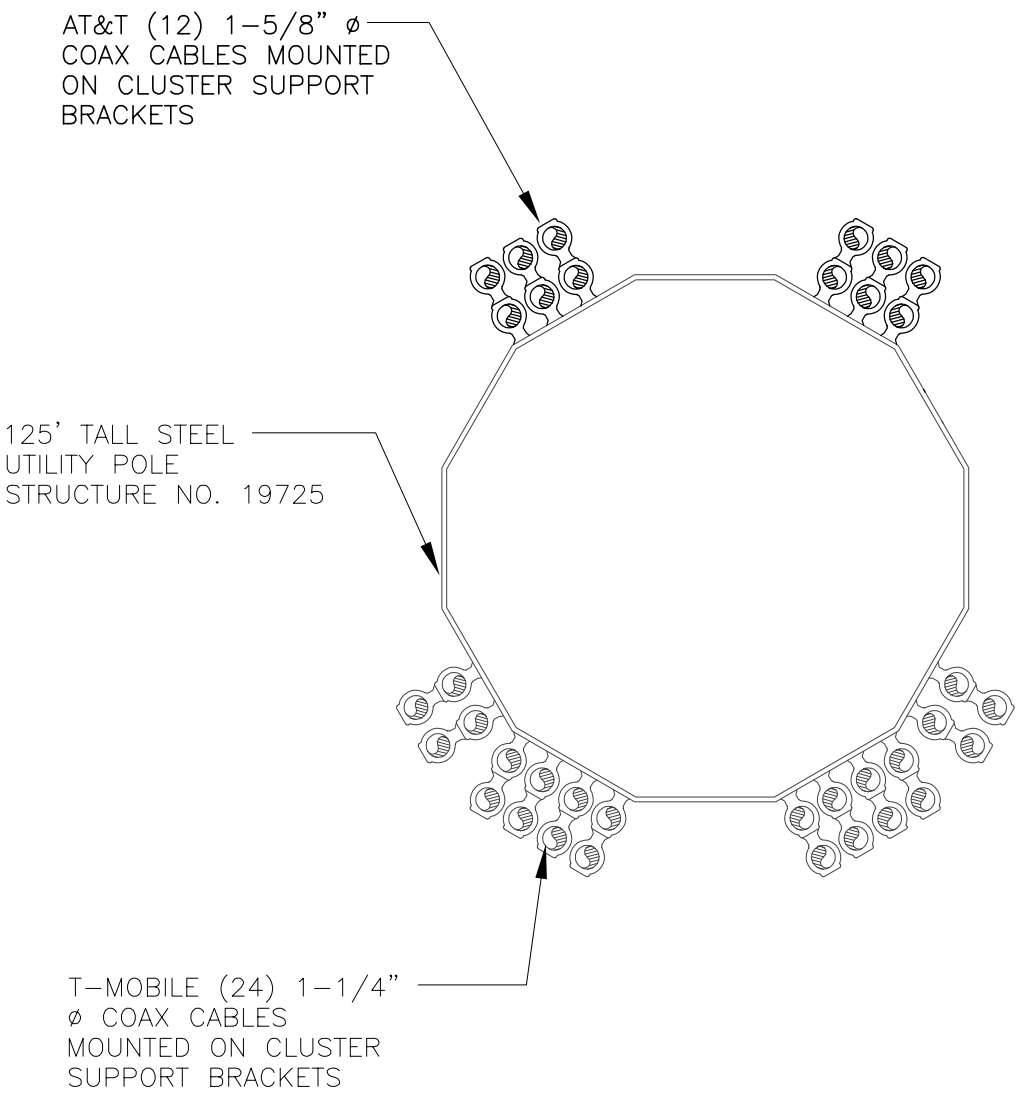
280 MOREHOUSE ROAD
FAIRFIELD, CT

PROJECT NO:	22007.08
DRAWN BY:	TJL
CHECKED BY:	CFC
SCALE:	AS NOTED
DATE:	4/6/23

TOWER ELEVATION

SK-1

DWG. 1 OF 2



1 / SK–2 COAX CABLE PLAN

SCALE: NOT TO SCALE

REVISIONS		
00	4/6/23	ISSUED FOR REVIEW
01	5/23/23	CONSTRUCTION

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CT5145
STRUCTURE 19725

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PROJECT NO:	22007.08
DRAWN BY:	TJL
CHECKED BY:	CFC
SCALE:	AS NOTED
DATE:	4/6/23

FEELINE PLAN

SK-2

DWG. 2 OF 2

CENTEK engineering
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63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

Subject: Loads - Structure #19725

Location: Fairfield, CT

Rev. 1: 5/23/23

Prepared by: T.J.L Checked by: C.F.C.
Job No. 22007.08

Basic Components

Heavy Wind Pressure =	$p := 4.00 \cdot psf$	(User Input NESC 2023 Figure 250-1 & Table 250-1)
Basic Windspeed =	$V := 110$ mph	(User Input)
Radial Ice Thickness =	$Ir := 0.50 \cdot in$	(User Input NESC 2023 Figure 250-1 & Table 250-1)
Radial Ice Density =	$Id := 56.0 \cdot pcf$	(User Input)

Factors for Extreme Wind Calculation

Elevation of Top of Mast Above Grade =	$TME := 125$ ft	(User Input)
Multiplier Gust Response Factor =	$m := 1.25$	(User Input - Only for NESC Extreme wind case)
Velocity Pressure Coefficient =	$Kz := 2.01 \cdot \left(\frac{TME}{900}\right)^{\frac{2}{9.5}} = 1.326$	(NESC 2023 Table 250-2)
Turbulence Intensity Constant =	$C_{exp} := 0.2$	(NESC 2023 Table 250-3)
Integral Length Scale of Turbulence Constant =	$L_s := 220$	(NESC 2023 Table 250-3)
Effective Height =	$z_s := 0.67 \cdot TME = 83.75$	(NESC 2023 Table 250-3)
Turbulence Intensity =	$I_z := C_{exp} \cdot \left(\frac{33}{z_s}\right)^{\frac{1}{6}} = 0.171$	(NESC 2023 Table 250-3)
Response Term =	$B_t := \left[\frac{1}{\left[1 + \left(0.56 \cdot \frac{z_s}{L_s}\right)\right]}\right]^{0.5} = 0.908$	(NESC 2023 Table 250-3)
Gust Response Factor =	$Grf := \frac{\left[1 + \left(4.61 \cdot I_z \cdot B_t\right)\right]}{\left(1 + 6.1 \cdot I_z\right)} = 0.84$	(NESC 2023 Table 250-3)
Wind Pressure =	$qz := 0.00256 \cdot Kz \cdot V^2 \cdot Grf \cdot psf = 34.5 \cdot psf$	(NESC 2023 Section 250.C.1)

NESC Extreme Ice w/ Wind Components

Heavy Wind Pressure =	$p_{ex} := 6.4 \cdot psf$	(User Input NESC 2023 Figure 250-3 & Table 250-4)
Radial Ice Thickness =	$Ir_{ex} := 0.75 \cdot in$	(User Input NESC 2023 Figure 250-3)

Shape Factors

Shape Factor for Round Members =	$Cd_R := 1.3$	(User Input)
Shape Factor for Flat Members =	$Cd_F := 1.6$	(User Input)
Shape Factor for Coax Cables Attached to Outside of Pole =	$Cd_{coax} := 1.6$	(User Input)

Overload Factors

Overload Factors for Wind Loads:

NESC Heavy Loading =	**2.5**	(User Input)
NESC Extreme Loading =	**1.0**	(User Input)
NESC Extreme Ice with Wind Loading =	**1.0**	(User Input)

Overload Factors for Vertical Loads:

NESC Heavy Loading =	**1.5**	(User Input)
NESC Extreme Loading =	**1.0**	(User Input)
NESC Extreme Ice with Wind Loading =	**1.0**	(User Input)

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Development of Wind & Ice Load on Antennas

Antenna Data: (AT&T)

Antenna Model =	CCI TPA65-BU4D	
Antenna Shape =	Flat	(User Input)
Antenna Height =	$L_{ant} := 48 \cdot in$	(User Input)
Antenna Width =	$W_{ant} := 20.7 \cdot in$	(User Input)
Antenna Thickness =	$T_{ant} := 7.7 \cdot in$	(User Input)
Antenna Weight =	$WT_{ant} := 60 \cdot lb$	(User Input)
Number of Antennas =	$N_{ant} := 3$	(User Input)

Gravity Load (without ice)

Weight of All Antennas = $Wt_{ant1} := WT_{ant} \cdot N_{ant} = 180 lb$

Gravity Load (ice only)

Volume of Each Antenna = $V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 7651 \cdot in^3$

Volume of Ice on Each Antenna = $V_{ice} := (L_{ant} + 2 \cdot Ir)(W_{ant} + 2 \cdot Ir)(T_{ant} + 2 \cdot Ir) - V_{ant} = 1600 \cdot in^3$

Weight of Ice on Each Antenna = $W_{ICEant} := V_{ice} \cdot Id = 52 lb$

Weight of Ice on All Antennas = $Wt_{ice.ant1} := W_{ICEant} \cdot N_{ant} = 156 lb$

Gravity Load (Extreme ice only)

Volume of Extreme Ice on Each Antenna = $V_{ice.ex} := (L_{ant} + 2 \cdot Ir_{ex})(W_{ant} + 2 \cdot Ir_{ex})(T_{ant} + 2 \cdot Ir_{ex}) - V_{ant} = 2459 \cdot in^3$

Weight of Extreme Ice on Each Antenna = $W_{ICE.exant} := V_{ice.ex} \cdot Id = 80 lb$

Weight of Extreme Ice on All Antennas = $Wt_{ice.ex.ant1} := W_{ICE.exant} \cdot N_{ant} = 239 lb$

Wind Load (NESC Heavy)

Surface Area for One Antenna w/ Ice = $SA_{ICEant} := (L_{ant} + 2 \cdot Ir) \cdot (W_{ant} + 2 \cdot Ir) = 7.4 ft^2$

Antenna Projected Surface Area w/ Ice = $A_{ICEant} := SA_{ICEant} \cdot N_{ant} = 22.2 ft^2$

Total Antenna Wind Force w/ Ice = $Fi_{ant1} := p \cdot Cd_F \cdot A_{ICEant} = 142 lb$

Wind Load (NESC Extreme)

Surface Area for One Antenna = $SA_{ant} := L_{ant} \cdot W_{ant} = 6.9 ft^2$

Antenna Projected Surface Area = $A_{ant} := SA_{ant} \cdot N_{ant} = 20.7 ft^2$

Total Antenna Wind Force = $F_{ant1} := qz \cdot Cd_F \cdot A_{ant} \cdot m = 1428 lb$

Wind Load (NESC Extreme Ice w/ Wind)

Surface Area for One Antenna w/ Extreme Ice = $SA_{ICE.exant} := (L_{ant} + 2 \cdot Ir_{ex}) \cdot (W_{ant} + 2 \cdot Ir_{ex}) = 7.6 ft^2$

Antenna Projected Surface Area w/ Extreme Ice = $A_{ICE.exant} := SA_{ICE.exant} \cdot N_{ant} = 22.9 ft^2$

Total Antenna Wind Force w/ Extreme Ice = $Fi_{ex.ant1} := p_{ex} \cdot Cd_F \cdot A_{ICE.exant} = 234 lb$

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Development of Wind & Ice Load on Antennas

Antenna Data: (AT&T)

Antenna Model =	Commscope TMAT192123B68-31	
Antenna Shape =	Flat	(User Input)
Antenna Height =	$L_{ant} := 9.37 \cdot in$	(User Input)
Antenna Width =	$W_{ant} := 11.142 \cdot in$	(User Input)
Antenna Thickness =	$T_{ant} := 3.819 \cdot in$	(User Input)
Antenna Weight =	$WT_{ant} := 21 \cdot lb$	(User Input)
Number of Antennas =	$N_{ant} := 6$	(User Input)

Gravity Load (without ice)

Weight of All Antennas = $Wt_{ant2} := WT_{ant} \cdot N_{ant} = 126 lb$

Gravity Load (ice only)

Volume of Each Antenna = $V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 399 \cdot in^3$

Volume of Ice on Each Antenna = $V_{ice} := (L_{ant} + 2 \cdot Ir)(W_{ant} + 2 \cdot Ir)(T_{ant} + 2 \cdot Ir) - V_{ant} = 208 \cdot in^3$

Weight of Ice on Each Antenna = $W_{ICEant} := V_{ice} \cdot Id = 7 lb$

Weight of Ice on All Antennas = $Wt_{ice.ant2} := W_{ICEant} \cdot N_{ant} = 40 lb$

Gravity Load (Extreme ice only)

Volume of Extreme Ice on Each Antenna = $V_{ice.ex} := (L_{ant} + 2 \cdot Ir_{ex})(W_{ant} + 2 \cdot Ir_{ex})(T_{ant} + 2 \cdot Ir_{ex}) - V_{ant} = 332 \cdot in^3$

Weight of Extreme Ice on Each Antenna = $W_{ICE.exant} := V_{ice.ex} \cdot Id = 11 lb$

Weight of Extreme Ice on All Antennas = $Wt_{ice.ex.ant2} := W_{ICE.exant} \cdot N_{ant} = 65 lb$

Wind Load (NESC Heavy)

Surface Area for One Antenna w/ Ice = $SA_{ICEant} := (L_{ant} + 2 \cdot Ir) \cdot (W_{ant} + 2 \cdot Ir) = 0.9 ft^2$

Antenna Projected Surface Area w/ Ice = $A_{ICEant} := SA_{ICEant} \cdot N_{ant} = 5.2 ft^2$

Total Antenna Wind Force w/ Ice = $Fi_{ant2} := p \cdot Cd_F \cdot A_{ICEant} = 34 lb$

Wind Load (NESC Extreme)

Surface Area for One Antenna = $SA_{ant} := L_{ant} \cdot W_{ant} = 0.7 ft^2$

Antenna Projected Surface Area = $A_{ant} := SA_{ant} \cdot N_{ant} = 4.4 ft^2$

Total Antenna Wind Force = $F_{ant2} := qz \cdot Cd_F \cdot A_{ant} \cdot m = 300 lb$

Wind Load (NESC Extreme Ice w/ Wind)

Surface Area for One Antenna w/ Extreme Ice = $SA_{ICE.exant} := (L_{ant} + 2 \cdot Ir_{ex}) \cdot (W_{ant} + 2 \cdot Ir_{ex}) = 1 ft^2$

Antenna Projected Surface Area w/ Extreme Ice = $A_{ICE.exant} := SA_{ICE.exant} \cdot N_{ant} = 5.7 ft^2$

Total Antenna Wind Force w/ Extreme Ice = $Fi_{ex.ant2} := p_{ex} \cdot Cd_F \cdot A_{ICE.exant} = 59 lb$

Development of Wind & Ice Load on Mounts

Mount Data: (AT&T)

Mount Type:	SitePro RMQLP-4120-H10	
Mount EPA (no ice) =	$EPA := 28.15 \cdot ft^2$	(User Input from SitePro Document)
Mount EPA (0.5" ice) =	$EPA_{ice} := 34.10 \cdot ft^2$	(User Input from SitePro Document)
Mount EPA (0.75" ice) =	$EPA_{ice.ex} := 37.10 \cdot ft^2$	(User Input from SitePro Document/Interpolation)
Weight (no ice) =	$W := 3265 \cdot lb$	(User Input from SitePro Document)
Weight (0.5" ice) =	$W_{ice} := 3657 \cdot lb$	(User Input from SitePro Document)
Weight (0.75" ice) =	$W_{ice.ex} := 3920 \cdot lb$	(User Input from SitePro Document/Interpolation)
Weight 0.5" ice on Antenna Pipes =	$Wap_{ice} := \left[\left[(3.375)^2 - (2.375)^2\right] \cdot 120 \cdot 12\right] \cdot in^3 \cdot \frac{\pi}{4} \cdot (ld) = 211 \cdot lb$	
Weight 0.75" ice on Antenna Pipes =	$Wap_{ice.ex} := \left[\left[(3.875)^2 - (2.375)^2\right] \cdot 120 \cdot 12\right] \cdot in^3 \cdot \frac{\pi}{4} \cdot (ld) = 344 \cdot lb$	
Total Pipe Length =	$TPL := 12 \cdot 10 \cdot ft = 120 ft$	
Total Antenna Length =	$TAL := 48 \cdot in \cdot 3 = 12 ft$	
Exposed Pipe Area =	$ExPA := (TPL - TAL) 2.375 \cdot in = 21.375 ft^2$	
Exposed Pipe Area (0.5" Ice) =	$ExPA_{ice} := (TPL - TAL) 3.375 \cdot in = 30.375 ft^2$	
Exposed Pipe Area (0.75' Ice) =	$ExPA_{ice.ex} := (TPL - TAL) 3.875 \cdot in = 34.875 ft^2$	
Mount Projected Surface Area =	$CdAa := 1.3 \cdot ExPA + EPA = 55.9 ft^2$	
Mount Projected Surface Area w/ Ice =	$CdAa_{ice} := 1.3 \cdot ExPA_{ice} + EPA_{ice} = 73.6 ft^2$	
Mount Projected Surface Area w/ Extreme Ice =	$CdAa_{ice.ex} := 1.3 \cdot ExPA_{ice.ex} + EPA_{ice.ex} = 82.4 ft^2$	

Gravity Loads (without ice)

Weight of All Mounts = $Wt_{mnt1} := W = 3265 lb$

Gravity Load (ice only)

Weight of Ice on All Mounts = $Wt_{ice.mnt1} := W_{ice} - W + Wap_{ice} = 603 lb$

Gravity Load (extreme ice only)

Weight of Ice on All Mounts = $Wt_{ice.ex.mnt1} := W_{ice.ex} - W + Wap_{ice.ex} = 999 lb$

Wind Load (NESC Heavy)

Total Mount Wind Force w/ Ice = $Fi_{mnt1} := p \cdot CdAa_{ice} = 294 lb$

Wind Load (NESC Extreme)

Total Mount Wind Force = $F_{mnt1} := qz \cdot CdAa \cdot m = 2412 lb$

Wind Load (NESC Extreme Ice w/ Wind)

Total Mount Wind Force w/ Extreme Ice = $Fi_{ex.mnt1} := p_{ex} \cdot CdAa_{ice.ex} = 528 lb$

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Development of Wind & Ice Load on Antennas

Antenna Data: (T-Mobile)

Antenna Model =	RFSAPXVAALL24_43	
Antenna Shape =	Flat	(User Input)
Antenna Height =	$L_{ant} := 95.9 \cdot in$	(User Input)
Antenna Width =	$W_{ant} := 24 \cdot in$	(User Input)
Antenna Thickness =	$T_{ant} := 8.5 \cdot in$	(User Input)
Antenna Weight =	$WT_{ant} := 150 \cdot lb$	(User Input)
Number of Antennas =	$N_{ant} := 3$	(User Input)

Gravity Load (without ice)

Weight of All Antennas = $Wt_{ant3} := WT_{ant} \cdot N_{ant} = 450 lb$

Gravity Load (ice only)

Volume of Each Antenna = $V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 19564 \cdot in^3$

Volume of Ice on Each Antenna = $V_{ice} := (L_{ant} + 2 \cdot Ir)(W_{ant} + 2 \cdot Ir)(T_{ant} + 2 \cdot Ir) - V_{ant} = 3450 \cdot in^3$

Weight of Ice on Each Antenna = $W_{ICEant} := V_{ice} \cdot Id = 112 lb$

Weight of Ice on All Antennas = $Wt_{ice.ant3} := W_{ICEant} \cdot N_{ant} = 335 lb$

Gravity Load (Extreme ice only)

Volume of Extreme Ice on Each Antenna = $V_{ice.ex} := (L_{ant} + 2 \cdot Ir_{ex})(W_{ant} + 2 \cdot Ir_{ex})(T_{ant} + 2 \cdot Ir_{ex}) - V_{ant} = 5273 \cdot in^3$

Weight of Extreme Ice on Each Antenna = $W_{ICE.exant} := V_{ice.ex} \cdot Id = 171 lb$

Weight of Extreme Ice on All Antennas = $Wt_{ice.ex.ant3} := W_{ICE.exant} \cdot N_{ant} = 513 lb$

Wind Load (NESC Heavy)

Surface Area for One Antenna w/ Ice = $SA_{ICEant} := (L_{ant} + 2 \cdot Ir) \cdot (W_{ant} + 2 \cdot Ir) = 16.8 ft^2$

Antenna Projected Surface Area w/ Ice = $A_{ICEant} := SA_{ICEant} \cdot N_{ant} = 50.5 ft^2$

Total Antenna Wind Force w/ Ice = $Fi_{ant3} := p \cdot Cd_F \cdot A_{ICEant} = 323 lb$

Wind Load (NESC Extreme)

Surface Area for One Antenna = $SA_{ant} := L_{ant} \cdot W_{ant} = 16 ft^2$

Antenna Projected Surface Area = $A_{ant} := SA_{ant} \cdot N_{ant} = 47.9 ft^2$

Total Antenna Wind Force = $F_{ant3} := qz \cdot Cd_F \cdot A_{ant} \cdot m = 3309 lb$

Wind Load (NESC Extreme Ice w/ Wind)

Surface Area for One Antenna w/ Extreme Ice = $SA_{ICE.exant} := (L_{ant} + 2 \cdot Ir_{ex}) \cdot (W_{ant} + 2 \cdot Ir_{ex}) = 17.2 ft^2$

Antenna Projected Surface Area w/ Extreme Ice = $A_{ICE.exant} := SA_{ICE.exant} \cdot N_{ant} = 51.7 ft^2$

Total Antenna Wind Force w/ Extreme Ice = $Fi_{ex.ant3} := p_{ex} \cdot Cd_F \cdot A_{ICE.exant} = 530 lb$

Development of Wind & Ice Load on Antennas

Antenna Data: (T-Mobile)

Antenna Model =	RFSAPX16DWV-16DWVS	
Antenna Shape =	Flat	(User Input)
Antenna Height =	$L_{ant} := 55.9 \cdot in$	(User Input)
Antenna Width =	$W_{ant} := 13 \cdot in$	(User Input)
Antenna Thickness =	$T_{ant} := 3.15 \cdot in$	(User Input)
Antenna Weight =	$WT_{ant} := 45 \cdot lb$	(User Input)
Number of Antennas =	$N_{ant} := 3$	(User Input)

Gravity Load (without ice)

Weight of All Antennas = $Wt_{ant4} := WT_{ant} \cdot N_{ant} = 135\,lb$

Gravity Load (ice only)

Volume of Each Antenna = $V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 2289 \cdot in^3$

Volume of Ice on Each Antenna = $V_{ice} := (L_{ant} + 2 \cdot Ir)(W_{ant} + 2 \cdot Ir)(T_{ant} + 2 \cdot Ir) - V_{ant} = 1017 \cdot in^3$

Weight of Ice on Each Antenna = $W_{ICEant} := V_{ice} \cdot Id = 33\,lb$

Weight of Ice on All Antennas = $Wt_{ice.ant4} := W_{ICEant} \cdot N_{ant} = 99\,lb$

Gravity Load (Extreme ice only)

Volume of Extreme Ice on Each Antenna = $V_{ice.ex} := (L_{ant} + 2 \cdot Ir_{ex})(W_{ant} + 2 \cdot Ir_{ex})(T_{ant} + 2 \cdot Ir_{ex}) - V_{ant} = 1581 \cdot in^3$

Weight of Extreme Ice on Each Antenna = $W_{ICE.exant} := V_{ice.ex} \cdot Id = 51\,lb$

Weight of Extreme Ice on All Antennas = $Wt_{ice.ex.ant4} := W_{ICE.exant} \cdot N_{ant} = 154\,lb$

Wind Load (NESC Heavy)

Surface Area for One Antenna w/ Ice = $SA_{ICEant} := (L_{ant} + 2 \cdot Ir) \cdot (W_{ant} + 2 \cdot Ir) = 5.5\,ft^2$

Antenna Projected Surface Area w/ Ice = $A_{ICEant} := SA_{ICEant} \cdot N_{ant} = 16.6\,ft^2$

Total Antenna Wind Force w/ Ice = $Fi_{ant4} := p \cdot Cd_F \cdot A_{ICEant} = 106\,lb$

Wind Load (NESC Extreme)

Surface Area for One Antenna = $SA_{ant} := L_{ant} \cdot W_{ant} = 5\,ft^2$

Antenna Projected Surface Area = $A_{ant} := SA_{ant} \cdot N_{ant} = 15.1\,ft^2$

Total Antenna Wind Force = $F_{ant4} := qz \cdot Cd_F \cdot A_{ant} \cdot m = 1045\,lb$

Wind Load (NESC Extreme Ice w/ Wind)

Surface Area for One Antenna w/ Extreme Ice = $SA_{ICE.exant} := (L_{ant} + 2 \cdot Ir_{ex}) \cdot (W_{ant} + 2 \cdot Ir_{ex}) = 5.8\,ft^2$

Antenna Projected Surface Area w/ Extreme Ice = $A_{ICE.exant} := SA_{ICE.exant} \cdot N_{ant} = 17.3\,ft^2$

Total Antenna Wind Force w/ Extreme Ice = $Fi_{ex.ant4} := p_{ex} \cdot Cd_F \cdot A_{ICE.exant} = 178\,lb$

Development of Wind & Ice Load on Antennas

Antenna Data: (T-Mobile)

Antenna Model =	CommscopeATSBT-TOP-MF-4G	
Antenna Shape =	Flat	(User Input)
Antenna Height =	$L_{ant} := 5.63 \cdot in$	(User Input)
Antenna Width =	$W_{ant} := 3.701 \cdot in$	(User Input)
Antenna Thickness =	$T_{ant} := 1.969 \cdot in$	(User Input)
Antenna Weight =	$WT_{ant} := 2 \cdot lb$	(User Input)
Number of Antennas =	$N_{ant} := 6$	(User Input)

Gravity Load (without ice)

Weight of All Antennas = $Wt_{ant5} := WT_{ant} \cdot N_{ant} = 12\,lb$

Gravity Load (ice only)

Volume of Each Antenna = $V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 41 \cdot in^3$

Volume of Ice on Each Antenna = $V_{ice} := (L_{ant} + 2 \cdot Ir)(W_{ant} + 2 \cdot Ir)(T_{ant} + 2 \cdot Ir) - V_{ant} = 52 \cdot in^3$

Weight of Ice on Each Antenna = $W_{ICEant} := V_{ice} \cdot Id = 2lb$

Weight of Ice on All Antennas = $Wt_{ice.ant5} := W_{ICEant} \cdot N_{ant} = 10\,lb$

Gravity Load (Extreme ice only)

Volume of Extreme Ice on Each Antenna = $V_{ice.ex} := (L_{ant} + 2 \cdot Ir_{ex})(W_{ant} + 2 \cdot Ir_{ex})(T_{ant} + 2 \cdot Ir_{ex}) - V_{ant} = 88 \cdot in^3$

Weight of Extreme Ice on Each Antenna = $W_{ICE.exant} := V_{ice.ex} \cdot Id = 3lb$

Weight of Extreme Ice on All Antennas = $Wt_{ice.ex.ant5} := W_{ICE.exant} \cdot N_{ant} = 17lb$

Wind Load (NESC Heavy)

Surface Area for One Antenna w/ Ice = $SA_{ICEant} := (L_{ant} + 2 \cdot Ir) \cdot (W_{ant} + 2 \cdot Ir) = 0.2\,ft^2$

Antenna Projected Surface Area w/ Ice = $A_{ICEant} := SA_{ICEant} \cdot N_{ant} = 1.3\,ft^2$

Total Antenna Wind Force w/ Ice = $Fi_{ant5} := p \cdot Cd_F \cdot A_{ICEant} = 8lb$

Wind Load (NESC Extreme)

Surface Area for One Antenna = $SA_{ant} := L_{ant} \cdot W_{ant} = 0.1\,ft^2$

Antenna Projected Surface Area = $A_{ant} := SA_{ant} \cdot N_{ant} = 0.9\,ft^2$

Total Antenna Wind Force = $F_{ant5} := qz \cdot Cd_F \cdot A_{ant} \cdot m = 60lb$

Wind Load (NESC Extreme Ice w/ Wind)

Surface Area for One Antenna w/ Extreme Ice = $SA_{ICE.exant} := (L_{ant} + 2 \cdot Ir_{ex}) \cdot (W_{ant} + 2 \cdot Ir_{ex}) = 0.3\,ft^2$

Antenna Projected Surface Area w/ Extreme Ice = $A_{ICE.exant} := SA_{ICE.exant} \cdot N_{ant} = 1.5\,ft^2$

Total Antenna Wind Force w/ Extreme Ice = $Fi_{ex.ant5} := p_{ex} \cdot Cd_F \cdot A_{ICE.exant} = 16lb$

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Development of Wind & Ice Load on Mounts

Mount Data: (T-Mobile)

Mount Type:	SitePro RMQLP-496-HK	
Mount EPA (no ice) =	$EPA := 26.29 \cdot ft^2$	(User Input from SitePro Document)
Mount EPA (0.5" ice) =	$EPA_{ice} := 32.25 \cdot ft^2$	(User Input from SitePro Document)
Mount EPA (0.75" ice) =	$EPA_{ice.ex} := 35.12 \cdot ft^2$	(User Input from SitePro Document/Interpolation)
Weight (no ice) =	$W := 2130 \cdot lb$	(User Input from SitePro Document)
Weight (0.5" ice) =	$W_{ice} := 2580 \cdot lb$	(User Input from SitePro Document)
Weight (0.75" ice) =	$W_{ice.ex} := 2873 \cdot lb$	(User Input from SitePro Document/Interpolation)
Weight 0.5" ice on Antenna Pipes =	$Wap_{ice} := \left[\left[(3.375)^2 - (2.375)^2\right] \cdot 96 \cdot 12\right] \cdot in^3 \cdot \frac{\pi}{4} \cdot (Id) = 169 \cdot lb$	
Weight 0.75" ice on Antenna Pipes =	$Wap_{ice.ex} := \left[\left[(3.875)^2 - (2.375)^2\right] \cdot 96 \cdot 12\right] \cdot in^3 \cdot \frac{\pi}{4} \cdot (Id) = 275 \cdot lb$	
Total Pipe Length =	$TPL := 12 \cdot 8 \cdot ft = 96\,ft$	
Total Antenna Length =	$TAL := 95.9 \cdot in \cdot 3 + 55.9 \cdot in \cdot 3 = 37.95\,ft$	
Exposed Pipe Area =	$ExPA := (TPL - TAL) 2.375 \cdot in = 11.489\,ft^2$	
Exposed Pipe Area (0.5" Ice) =	$ExPA_{ice} := (TPL - TAL) 3.375 \cdot in = 16.327\,ft^2$	
Exposed Pipe Area (0.75" Ice) =	$ExPA_{ice.ex} := (TPL - TAL) 3.875 \cdot in = 18.745\,ft^2$	
Mount Projected Surface Area =	$CdAa := 1.3 \cdot ExPA + EPA = 41.2\,ft^2$	
Mount Projected Surface Area w/ Ice =	$CdAa_{ice} := 1.3 \cdot ExPA_{ice} + EPA_{ice} = 53.5\,ft^2$	
Mount Projected Surface Area w/ Extreme Ice =	$CdAa_{ice.ex} := 1.3 \cdot ExPA_{ice.ex} + EPA_{ice.ex} = 59.5\,ft^2$	

Gravity Loads (without ice)

Weight of All Mounts = $Wt_{mnt2} := W = 2130\,lb$

Gravity Load (ice only)

Weight of Ice on All Mounts = $Wt_{ice.mnt2} := W_{ice} - W + Wap_{ice} = 619\,lb$

Gravity Load (extreme ice only)

Weight of Ice on All Mounts = $Wt_{ice.ex.mnt2} := W_{ice.ex} - W + Wap_{ice.ex} = 1018\,lb$

Wind Load (NESC Heavy)

Total Mount Wind Force w/ Ice = $Fi_{mnt2} := p \cdot CdAa_{ice} = 214\,lb$

Wind Load (NESC Extreme)

Total Mount Wind Force = $F_{mnt2} := qz \cdot CdAa \cdot m = 1778\,lb$

Wind Load (NESC Extreme Ice w/ Wind)

Total Mount Wind Force w/ Extreme Ice = $Fi_{ex.mnt2} := p_{ex} \cdot CdAa_{ice.ex} = 381\,lb$

Total Equipment Loads:

AT&T Loads:

NESC Heavy Wind Vertical =

$Wt_{tot} := \left(Wt_{ant1} + Wt_{ant2} + Wt_{mnt1}\right) = 3571\,lb$

$Wt_{ice.tot} := \left(Wt_{ice.ant1} + Wt_{ice.ant2} + Wt_{ice.mnt1}\right) = 799\,lb$

$\left(Wt_{tot} + Wt_{ice.tot}\right)\cdot 1.5 = 6555\,lb$

NESC Heavy Wind Trasnsverse = $\left(Fi_{ant1} + Fi_{ant2} + Fi_{mnt1}\right)\cdot 2.5 = 1174\,lb$

NESC Extreme Wind Vertical = $\left(Wt_{ant1} + Wt_{ant2} + Wt_{mnt1}\right) = 3571\,lb$

NESC Extreme Wind Trasnsverse = $\left(F_{ant1} + F_{ant2} + F_{mnt1}\right) = 4141\,lb$

NESC Extreme Ice w/ Wind Vertical =

$Wt_{ice.ex.tot} := \left(Wt_{ice.ex.ant1} + Wt_{ice.ex.ant2} + Wt_{ice.ex.mnt1}\right) = 1302\,lb$

$\left(Wt_{tot} + Wt_{ice.ex.tot}\right) = 4873\,lb$

NESC Extreme Ice w/ Wind Trasnsverse = $\left(Fi_{ex.ant1} + Fi_{ex.ant2} + Fi_{ex.mnt1}\right) = 821\,lb$

T-Mobile Loads:

NESC Heavy Wind Vertical =

$Wt_{tot} := \left(Wt_{ant3} + Wt_{ant4} + Wt_{ant5} + Wt_{mnt2}\right) = 2727\,lb$

$Wt_{ice.tot} := \left(Wt_{ice.ant3} + Wt_{ice.ant4} + Wt_{ice.ant5} + Wt_{ice.mnt2}\right) = 1063\,lb$

$\left(Wt_{tot} + Wt_{ice.tot}\right)\cdot 1.5 = 5685\,lb$

NESC Heavy Wind Trasnsverse = $\left(Fi_{ant3} + Fi_{ant4} + Fi_{ant5} + Fi_{mnt2}\right)\cdot 2.5 = 1629\,lb$

NESC Extreme Wind Vertical = $\left(Wt_{ant3} + Wt_{ant4} + Wt_{ant5} + Wt_{mnt2}\right) = 2727\,lb$

NESC Extreme Wind Trasnsverse = $\left(F_{ant3} + F_{ant4} + F_{ant5} + F_{mnt2}\right) = 6191\,lb$

NESC Extreme Ice w/ Wind Vertical =

$Wt_{ice.ex.tot} := \left(Wt_{ice.ex.ant3} + Wt_{ice.ex.ant4} + Wt_{ice.ex.ant5} + Wt_{ice.ex.mnt2}\right) = 1701\,lb$

$\left(Wt_{tot} + Wt_{ice.ex.tot}\right) = 4428\,lb$

NESC Extreme Ice w/ Wind Trasnsverse = $\left(Fi_{ex.ant3} + Fi_{ex.ant4} + Fi_{ex.ant5} + Fi_{ex.mnt2}\right) = 1104\,lb$

CENTEK engineering
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63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

Subject:	Coax Cable on Pole #19725
Location:	Fairfield, CT
Rev. 0: 4/6/23	Prepared by: T.J.L Checked by: C.F.C. Job No. 22007.08

Coax Cable on CL&P Pole

Coaxial Cable Span	$Coax_{Span} := 10ft$		*(User Input)*
Heavy Wind Pressure =	$p := 4 \cdot psf$		*(User Input)*
Radial Ice Thickness =	$Ir := 0.5 \cdot in$		*(User Input)*
Radial Ice Density =	$Id := 56 \cdot pcf$		*(User Input)*
Extreme Ice w/ Wind Pressure =	$p_{ex} := 6.4 \cdot psf$		*(User Input)*
Extreme Radial Ice Thickness =	$Ir_{ex} := 0.75 \cdot in$		*(User Input)*
Basic Windspeed =	$V := 110$	mph	(User Input)
Height to Top of Coax Above Grade =	$TC := 125$	ft	(User Input)
Multiplier Gust Response Factor =	$m := 1.00$		(User Input - Only for NESC Extreme wind case)
Velocity Pressure Coefficient =	$Kz := 2.01 \cdot \left(\frac{0.67TC}{900}\right)^{\frac{2}{9.5}} = 1.219$		(NESC 2023 Table 250-2)
Turbulence Intensity Constant =	$C_{exp} := 0.2$		(NESC 2023 Table 250-3)
Integral Length Scale of Turbulence Constant =	$L_s := 220$		(NESC 2023 Table 250-3)
Effective Height =	$z_s := 0.67 \cdot TC = 83.75$		(NESC 2023 Table 250-3)
Turbulence Intensity =	$I_z := C_{exp} \cdot \left(\frac{33}{z_s}\right)^{\frac{1}{6}} = 0.171$		(NESC 2023 Table 250-3)
Response Term =	$B_t := \left[\frac{1}{\left[1 + \left(0.56 \cdot \frac{z_s}{L_s}\right)\right]}\right]^{0.5} = 0.908$		(NESC 2023 Table 250-3)
Gust Response Factor =	$Grf := \frac{\left[1 + \left(4.61 \cdot I_z \cdot B_t\right)\right]}{\left(1 + 6.1 \cdot I_z\right)} = 0.84$		(NESC 2023 Table 250-3)
Wind Pressure =	$qz := 0.00256 \cdot Kz \cdot V^2 \cdot Grf = 31.7$	psf	(NESC 2023 Section 250.C.1)

Diameter of Coax Cable =	$D_{coax} := 1.98 \cdot in$	*(User Input)*	
Weight of Coax Cable =	$W_{coax} := 1.04 \cdot plf$	*(User Input)*	
Number of Coax Cables =	$N_{coax} := 36$	*(User Input)*	(12) AT&T Coax Cables (24) T-Mobile Coax Cables
Number of Projected Coax Cables =	$NP_{coax} := 4$	*(User Input)*	{1-5/8 size conservatively used for all}

Shape Factor = $Cd_{coax} := 1.6$ *(User Input)*

Overload Factor for NESC Heavy Wind Transverse Load = $OF_{HWT} := 2.5$ *(User Input)*

Overload Factor for NESC Heavy Wind Vertical Load = $OF_{HWV} := 1.5$ *(User Input)*

Overload Factor for NESC Extreme Wind Transverse Load = $OF_{EWT} := 1.0$ *(User Input)*

Overload Factor for NESC Extreme Wind Vertical Load = $OF_{EWV} := 1.0$ *(User Input)*

Overload Factor for NESC Extreme Ice w/ Wind Transverse Load = $OF_{EIT} := 1.0$ *(User Input)*

Overload Factor for NESC Extreme Ice w/ Wind Vertical Load = $OF_{EIV} := 1.0$ *(User Input)*

Wind Area without Ice = $A := \left(NP_{coax} \cdot D_{coax}\right) = 7.92 \cdot in$

Wind Area with Ice = $A_{ice} := \left(NP_{coax} \cdot D_{coax} + 2 \cdot Ir\right) = 8.92 \cdot in$

Wind Area with Extreme Ice = $A_{ice.ex} := \left(NP_{coax} \cdot D_{coax} + 2 \cdot Ir_{ex}\right) = 9.42 \cdot in$

Ice Area per Liner Ft = $Ai_{coax} := \frac{\pi}{4} \cdot \left[\left(D_{coax} + 2 \cdot Ir\right)^2 - D_{coax}^2\right] = 0.027\,ft^2$

Weight of Ice on All Coax Cables = $W_{ice} := Ai_{coax} \cdot Id \cdot N_{coax} = 54.538 \cdot plf$

Extreme Ice Area per Liner Ft = $Ai_{coax.ex} := \frac{\pi}{4} \cdot \left[\left(D_{coax} + 2 \cdot Ir_{ex}\right)^2 - D_{coax}^2\right] = 0.045\,ft^2$

Weight of Extreme Ice on All Coax Cables = $W_{ice.ex} := Ai_{coax.ex} \cdot Id \cdot N_{coax} = 90.054 \cdot plf$

Heavy Wind Vertical Load =

$$\overrightarrow{Heavy\_WInd_{Vert} := \left[\left(N_{coax} \cdot W_{coax} + W_{ice}\right) \cdot Coax_{Span} \cdot OF_{HWV}\right]}$$

Heavy Wind Transverse Load =

$$\overrightarrow{Heavy\_Wind_{Trans} := \left(p \cdot A_{ice} \cdot Cd_{coax} \cdot Coax_{Span} \cdot OF_{HWT}\right)}$$

$Heavy\_WInd_{Vert} = 1380\,lb$ $Heavy\_Wind_{Trans} = 119\,lb$

Extreme Wind Vertical Load =

$$\overrightarrow{Extreme\_Wind_{Vert} := \left(N_{coax} \cdot W_{coax} \cdot Coax_{Span} \cdot OF_{EWV}\right)}$$

Extreme Wind Transverse Load =

$$\overrightarrow{Extreme\_Wind_{Trans} := \left[\left(qz \cdot psf \cdot A \cdot Cd_{coax}\right) \cdot Coax_{Span} \cdot OF_{EWT}\right]}$$

$Extreme\_Wind_{Vert} = 374\,lb$ $Extreme\_Wind_{Trans} = 335\,lb$

Extreme Ice w/ Wind Vertical Load =

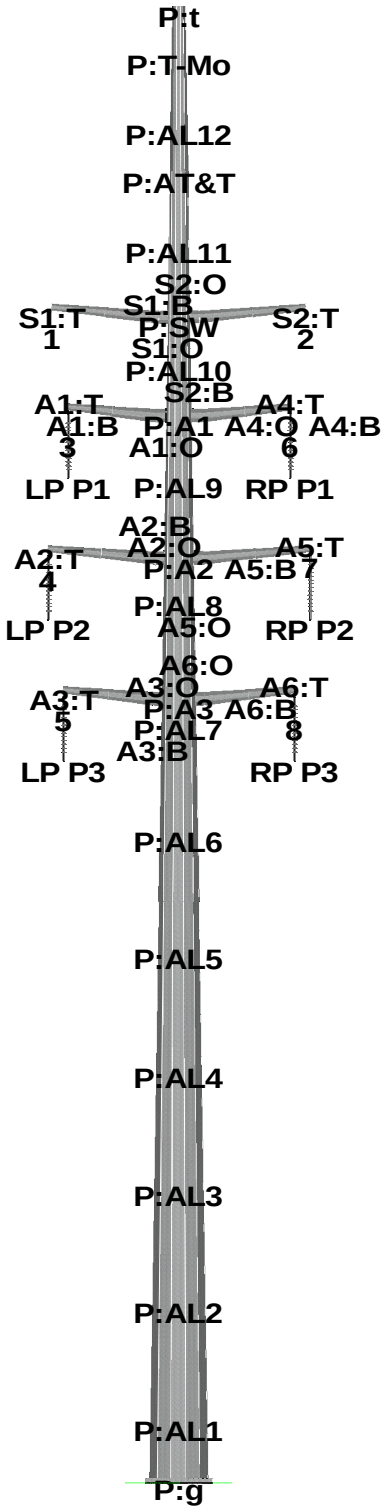
$$\overrightarrow{Extreme\_Ice_{Vert} := \left[\left(N_{coax} \cdot W_{coax} + W_{ice.ex}\right) \cdot Coax_{Span} \cdot OF_{EIV}\right]}$$

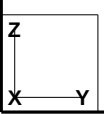
Extreme Ice w/ Wind Transverse Load =

$$\overrightarrow{Extreme\_Ice_{Trans} := \left(p_{ex} \cdot A_{ice.ex} \cdot Cd_{coax} \cdot Coax_{Span} \cdot OF_{EIT}\right)}$$

$Extreme\_Ice_{Vert} = 1275\,lb$ $Extreme\_Ice_{Trans} = 80\,lb$

Centek Engineering Inc, Project: "039-23-23422-125FT"
PLS-POLE Version 17.50, 3:46:56 PM Thursday, April 06, 2023
Undeformed geometry displayed





10 (ft)

Project Name : 22007.08 - Fairfield, CT
Project Notes: Structure # 19725 / AT&T CT5145
Project File : J:\Jobs\2200700.WI\08_CT5145\05_Structural\Tower Analysis\Backup Documentation\Rev (1)\Calcs\PLS-Pole\039-23-23422-125FT.POL
Date run : 9:28:32 AM Tuesday, May 23, 2023
by : PLS-POLE Version 17.50
Licensed to : Centek Engineering Inc

Successfully performed nonlinear analysis

Load case 'RULE 250C' uses loading method NESC 2023 which is still being tested and/or is a draft. Carefully check your results. ??
The model has 1 warning. ??

Loads from file: J:\Jobs\2200700.WI\08_CT5145\05_Structural\Tower Analysis\Backup Documentation\Rev (1)\Calcs\PLS-Pole\19725.lca

*** Analysis Results:

Maximum element usage is 88.66% for Base Plate "P" in load case "RULE 250C"
Maximum insulator usage is 24.73% for Suspension "S1" in load case "RULE 250D"

Foundation Design Forces For All Load Cases:

Note: loads are factored.

Load Case	Foundation Description	Axial Force (kips)	Shear Force (kips)	Resultant Force (kips)	Bending Moment (ft-k)	Foundation Usage %
RULE 250B	P:g	115.65	29.48	119.35	2386.79	0.00
RULE 250C	P:g	57.99	53.61	78.98	4344.25	0.00
RULE 250D	P:g	101.83	22.73	104.33	1854.34	0.00

Summary of Joint Support Reactions For All Load Cases:

Load Case	Joint Label	Long. Force (kips)	Tran. Force (kips)	Vert. Force (kips)	Shear Force (kips)	Tran. Moment (ft-k)	Long. Moment (ft-k)	Bending Moment (ft-k)	Vert. Moment (ft-k)	Found. Usage %
RULE 250B	P:g	-0.15	-29.48	-115.65	29.48	2386.78	-7.63	2386.79	-0.07	0.00
RULE 250C	P:g	-0.04	-53.61	-57.99	53.61	4344.25	-1.48	4344.25	-0.07	0.00
RULE 250D	P:g	-0.06	-22.73	-101.83	22.73	1854.34	-2.56	1854.34	-0.08	0.00

Summary of Tip Deflections For All Load Cases:

Note: positive tip load results in positive deflection

Load Case	Joint Label	Long. Defl. (in)	Tran. Defl. (in)	Vert. Defl. (in)	Resultant Defl. (in)	Long. Rot. (deg)	Tran. Rot. (deg)	Twist (deg)
RULE 250B	P:t	0.08	30.10	-0.46	30.11	0.01	-2.10	0.00
RULE 250C	P:t	0.01	59.52	-1.66	59.54	0.00	-4.58	0.00
RULE 250D	P:t	0.02	23.06	-0.29	23.07	0.00	-1.57	0.00

Tubes Summary:

Pole Label	Tube Num.	Weight (lbs)	Load Case	Maximum Usage %	Resultant Moment (ft-k)

P	1	300	RULE 250C	18.36	40.32
P	2	592	RULE 250C	51.56	203.24
P	3	6943	RULE 250C	57.96	1712.06
P	4	14287	RULE 250C	57.38	4077.77

*** Overall summary for all load cases - Usage = Maximum Stress / Allowable Stress

Summary of Steel Pole Usages:

Steel Pole Label	Maximum Usage %	Load Case	Height AGL (ft)	Segment Number	Weight (lbs)
P	57.96	RULE 250C	52.6	21	24957.2

Summary of Tubular Davit Usages:

Tubular Davit Label	Maximum Usage %	Load Case	Height AGL (ft)	Segment Number	Weight (lbs)
S1	12.66	RULE 250D	97.3	1	399.1
S2	13.42	RULE 250D	97.3	1	399.1
A1	22.16	RULE 250D	89.1	2	298.7
A2	22.15	RULE 250D	77.0	2	420.7
A3	22.21	RULE 250D	65.1	2	298.7
A4	22.40	RULE 250D	88.9	1	298.7
A5	22.52	RULE 250D	76.8	1	420.7
A6	22.42	RULE 250D	64.9	1	298.7

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Usage %	Element Label	Element Type
RULE 250B	80.74	P	Base Plate
RULE 250C	88.66	P	Base Plate
RULE 250D	80.21	P	Base Plate

Summary of Steel Pole Usages by Load Case:

Load Case	Maximum Usage %	Steel Pole Label	Height AGL (ft)	Segment Number
RULE 250B	32.91	P	1.1	32
RULE 250C	57.96	P	52.6	21
RULE 250D	25.76	P	1.1	32

Summary of Base Plate Usages by Load Case:

Load Case	Pole Label	Bend Line #	Length (in)	Vertical Load (kips)	X Moment (ft-k)	Y Moment (ft-k)	Bending Stress (ksi)	Bolt Moment Sum (ft-k)	# Bolts Acting On Bend Line	Max Bolt Load For Bend Line (kips)	Minimum Plate Thickness (in)	Usage %
RULE 250B	P	1	15.943	112.818	3847.545	-12.297	40.372	94.424	-3	112.298	2.920	80.74
RULE 250C	P	1	15.943	55.158	4344.248	-1.484	44.332	103.686	3	123.664	3.060	88.66

RULE 250D	P	1	15.943	98.992	3847.561	-5.308	40.106	93.802		-3	111.653	2.911	80.21

Summary of Tubular Davit Usages by Load Case:

Load Case	Maximum Tubular Usage %	Davit Label	Height AGL (ft)	Segment Number
RULE 250B	22.32	A5	76.8	1
RULE 250C	9.75	A5	76.8	1
RULE 250D	22.52	A5	76.8	1

Summary of Insulator Usages:

Insulator Label	Insulator Type	Maximum Usage %	Load Case	Weight (lbs)
1	Clamp	0.00	RULE 250B	0.0
2	Clamp	0.00	RULE 250B	0.0
3	Clamp	0.00	RULE 250B	0.0
4	Clamp	0.00	RULE 250B	0.0
5	Clamp	0.00	RULE 250B	0.0
6	Clamp	0.00	RULE 250B	0.0
7	Clamp	3.70	RULE 250D	0.0
8	Clamp	3.70	RULE 250D	0.0
9	Clamp	4.56	RULE 250D	0.0
10	Clamp	4.94	RULE 250D	0.0
13	Clamp	1.28	RULE 250D	0.0
14	Clamp	1.28	RULE 250D	0.0
15	Clamp	1.28	RULE 250D	0.0
16	Clamp	1.28	RULE 250D	0.0
17	Clamp	1.28	RULE 250D	0.0
18	Clamp	1.28	RULE 250D	0.0
19	Clamp	1.28	RULE 250D	0.0
20	Clamp	1.28	RULE 250D	0.0
21	Clamp	1.28	RULE 250D	0.0
22	Clamp	1.28	RULE 250D	0.0
23	Clamp	1.28	RULE 250D	0.0
24	Clamp	1.28	RULE 250D	0.0
25	Clamp	0.00	RULE 250B	0.0
SW1	Clamp	0.00	RULE 250B	0.0
SW2	Clamp	0.00	RULE 250B	0.0
S1	Suspension	24.73	RULE 250D	50.0
S2	Suspension	24.73	RULE 250D	50.0
S3	Suspension	24.73	RULE 250D	50.0
S4	Suspension	24.73	RULE 250D	50.0
S5	Suspension	24.73	RULE 250D	50.0
S6	Suspension	24.73	RULE 250D	50.0

*** Weight of structure (lbs):

Weight of Tubular Davit Arms:	2834.6
Weight of Steel Poles:	24957.2
Weight of Suspensions:	300.0
Total:	28091.8

*** End of Report

```
**************************************************************************
*                                                                        *
*                              PLS-POLE                                  *
*                   POLE AND FRAME ANALYSIS AND DESIGN                   *
*               Copyright Power Line Systems 1999-2022                   *
*                                                                        *
**************************************************************************

Project Name : 22007.08 - Fairfield, CT
Project Notes: Structure # 19725 / AT&T CT5145
Project File : J:\Jobs\2200700.WI\08_CT5145\05_Structural\Tower Analysis\Backup Documentation\Rev (1)\Calcs\PLS-Pole\039-23-23422-125FT.POL
Date run     : 9:28:30 AM Tuesday, May 23, 2023
by           : PLS-POLE Version 17.50
Licensed to  : Centek Engineering Inc

Successfully performed nonlinear analysis
```

Load case 'RULE 250C' uses loading method NESC 2023 which is still being tested and/or is a draft. Carefully check your results. ??
The model has 1 warning. ??

```
Modeling options:
  Offset Arms from Pole/Mast:   Yes
  Offset Braces from Pole/Mast: Yes
  Offset Guys from Pole/Mast:   Yes
  Offset Posts from Pole/Mast:  Yes
  Offset Strains from Pole/Mast:  Yes
  Use Alternate Convergence Process: No
  Steel poles and tubular arms checked with ASCE/SEI 48-19
```

Vang Connectivity:

Vang Label	Attach Label	Tip Label	Azimuth (deg)	Length (ft)	Measured Relative To
1	S1:T	1	0	0.25	Face
2	S2:T	2	0	0.25	Face

3	A1:T	3	0	0.25	Face
4	A2:T	4	0	0.25	Face
5	A3:T	5	0	0.25	Face
6	A4:T	6	0	0.25	Face
7	A5:T	7	0	0.25	Face
8	A6:T	8	0	0.25	Face

Default Modulus of Elasticity for Steel = 29000.00 (ksi)
Default Weight Density for Steel = 490.00 (lbs/ft^3)

Steel Pole Properties:

Steel Pole Property	Stock Number	Length	Default Embedded Length	Base Plate	Shape	Tip Diameter	Base Diameter	Taper	Default Drag Coef.	Tubes	Modulus of Elasticity Override	Weight Density Override	Shape At Base	Strength Check Type	Distance From Tip	Ultimate Trans. Load	Ultimate Long. Load
Label		(ft)	(ft)			(in)	(in)	(in/ft)			(ksi)	(lbs/ft^3)			(ft)	(kips)	(kips)
039-23-23422-125FT		125.00	0	Yes	12F	13	59.5	0	1.6	4 tubes	0	0		Calculated	0.000	0.0000	0.0000

Steel Tubes Properties:

Pole Property	Tube No.	Length (ft)	Thickness (in)	Lap Length (ft)	Lap Factor	Lap Butt Offset (in)	Gap or Yield Stress (ksi)	Moment Cap. Override (ft-k)	Tube Weight (lbs)	Center of Gravity (ft)	Calculated Taper (in/ft)	Tube Top Diameter (in)	Tube Bot. Diameter (in)	1.5x Diam. Lap Length (in)	Actual Overlap (ft)
039-23-23422-125FT	1	10	0.1875	0.000	0.000	0.000	65.000	0.000	300	5.21	0.36700	13.00	16.67	2.037	0.000
039-23-23422-125FT	2	15	0.1875	0.000	0.000	0.000	65.000	0.000	592	7.86	0.36700	16.67	22.17	2.725	0.000
039-23-23422-125FT	3	47	0.4375	0.000	0.000	0.000	65.000	0.000	6943	25.69	0.36700	22.68	39.92	4.881	0.000
039-23-23422-125FT	4	53	0.5	0.000	0.000	0.000	65.000	0.000	14287	28.24	0.36700	40.05	59.50	0.000	0.000

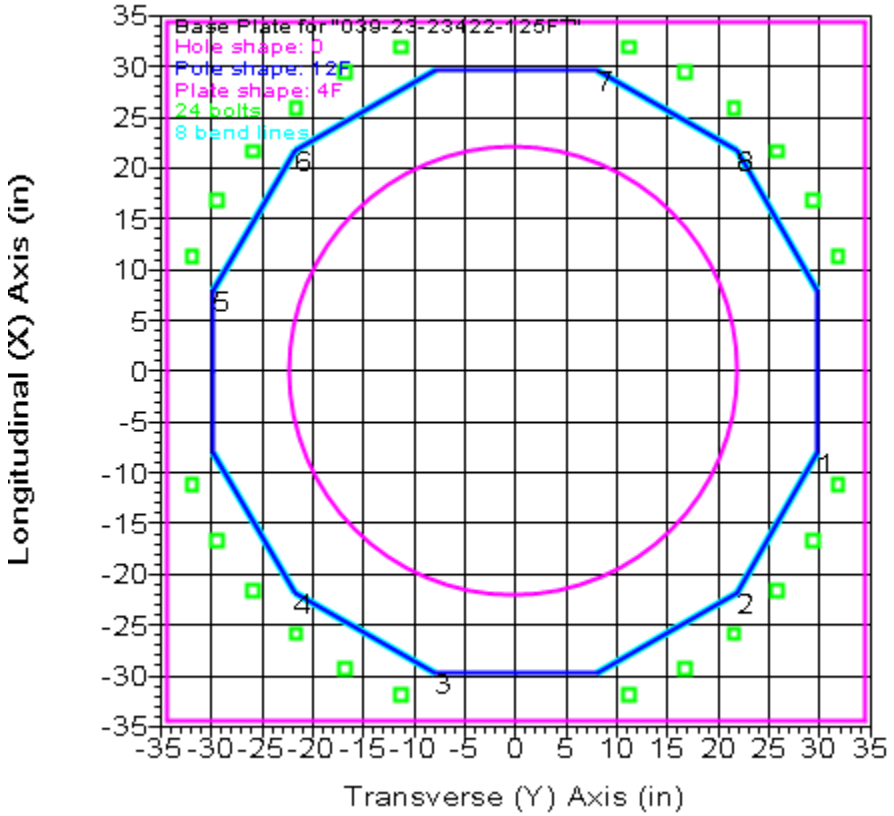
Base Plate Properties:

Pole Property	Plate Diam. (in)	Plate Shape	Plate Thick. (in)	Plate Weight (lbs)	Bend Line Length Override (in)	Hole Diam. (in)	Hole Shape	Steel Density (lbs/ft^3)	Steel Yield Stress (ksi)	Bolt Diam. (in)	Bolt Pattern Diam. (in)	Num. Of Bolts	Bolt Cage X Inertia (in^4)	Bolt Cage Y Inertia (in^4)
039-23-23422-125FT	68.750	4F	3.250	2835	0.000	44.500	0	490.00	50.000	2.250	67.500	24	54442.50	54442.50

Base Plate Bolt Coordinates for Property "039-23-23422-125FT":

Bolt X Coord.	Bolt Y Coord.	Bolt Angle

		(deg)
0.3333	0.9444	0
0.4963	0.8704	0
0.6407	0.7667	0
0.7667	0.6407	0
0.8704	0.4963	0
0.9444	0.3333	0



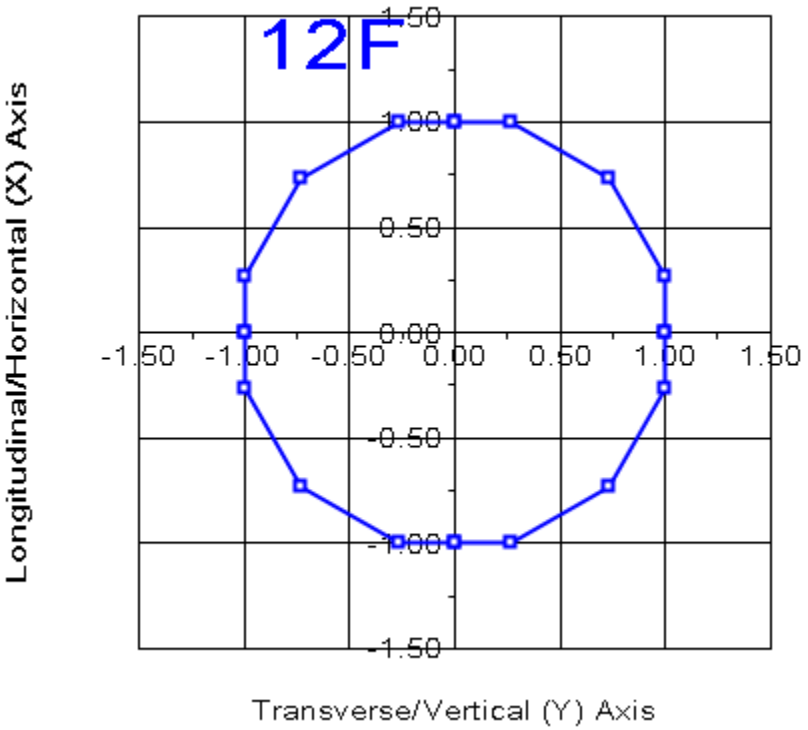
Steel Pole Connectivity:

Pole Label	Tip Joint	Base Joint	X of Base (ft)	Y of Base (ft)	Z of Base (ft)	Inclin. About X (deg)	Inclin. About Y (deg)	Property Set	Attach. Labels	Base Connect	Embed % Override	Embed C. Override (ft)
P			0	0	0	0	0	039-23-23422-125FT	18 labels		0.00	0

Relative Attachment Labels for Steel Pole "P":

Joint	Distance From	Global Z

Label	Origin/Top Joint (ft)	of Attach (ft)
P:T-Mo	4.00	0.00
P:AT&T	14.00	0.00
P:SW	26.31	0.00
P:A1	34.69	0.00
P:A2	46.81	0.00
P:A3	58.69	0.00
P:AL1	120.00	0.00
P:AL2	110.00	0.00
P:AL3	100.00	0.00
P:AL4	90.00	0.00
P:AL5	80.00	0.00
P:AL6	70.00	0.00
P:AL7	60.00	0.00
P:AL8	50.00	0.00
P:AL9	40.00	0.00
P:AL10	30.00	0.00
P:AL11	20.00	0.00
P:AL12	10.00	0.00



Pole Steel Properties:

Element Label	Joint Label	Joint Position	Rel. Dist. (ft)	Outer Diam. (in)	Area (in^2)	T-Moment Inertia (in^4)	L-Moment Inertia (in^4)	D/t	W/t Max.	Fy (ksi)	Fa Min. (ksi)	T-Moment Capacity (ft-k)	L-Moment Capacity (ft-k)
P	P:t	P:t Ori	0.00	13.00	7.72	162.33	162.33	0.00	15.9	65.00	65.00	135.28	135.28
P	P:T-Mo	P:T-Mo End	4.00	14.47	8.61	224.76	224.76	0.00	18.0	65.00	65.00	168.30	168.30
P	P:T-Mo	P:T-Mo Ori	4.00	14.47	8.61	224.76	224.76	0.00	18.0	65.00	65.00	168.30	168.30
P	#P:0	Tube 1 End	7.00	15.57	9.27	280.85	280.85	0.00	19.6	65.00	65.00	195.42	195.42
P	#P:0	Tube 1 Ori	7.00	15.57	9.27	280.85	280.85	0.00	19.6	65.00	65.00	195.42	195.42
P	P:AL12	P:AL12 End	10.00	16.67	9.94	345.57	345.57	0.00	21.1	65.00	65.00	224.58	224.58
P	P:AL12	P:AL12 Ori	10.00	16.67	9.94	345.57	345.57	0.00	21.1	65.00	65.00	224.58	224.58
P	P:AT&T	P:AT&T End	14.00	18.14	10.82	446.37	446.37	0.00	23.2	65.00	65.00	266.60	266.60
P	P:AT&T	P:AT&T Ori	14.00	18.14	10.82	446.37	446.37	0.00	23.2	65.00	65.00	266.60	266.60
P	#P:1	Tube 2 End	17.00	19.24	11.49	533.64	533.64	0.00	24.8	65.00	65.00	300.49	300.49
P	#P:1	Tube 2 Ori	17.00	19.24	11.49	533.64	533.64	0.00	24.8	65.00	65.00	300.49	300.49
P	P:AL11	P:AL11 End	20.00	20.34	12.15	631.60	631.60	0.00	26.4	65.00	65.00	336.40	336.40
P	P:AL11	P:AL11 Ori	20.00	20.34	12.15	631.60	631.60	0.00	26.4	65.00	65.00	336.40	336.40
P	#P:2	SpliceT End	25.00	22.17	13.26	820.30	820.30	0.00	29.0	65.00	65.00	400.75	400.75
P	#P:2	SpliceT Ori	25.00	22.68	31.28	1980.68	1980.68	0.00	11.2	65.00	65.00	946.30	946.30
P	P:SW	P:SW End	26.31	23.16	31.96	2111.91	2111.91	0.00	11.5	65.00	65.00	988.04	988.04
P	P:SW	P:SW Ori	26.31	23.16	31.96	2111.91	2111.91	0.00	11.5	65.00	65.00	988.05	988.05
P	P:AL10	P:AL10 End	30.00	24.51	33.86	2512.44	2512.44	0.00	12.3	65.00	65.00	1110.49	1110.49
P	P:AL10	P:AL10 Ori	30.00	24.51	33.86	2512.44	2512.44	0.00	12.3	65.00	65.00	1110.49	1110.49
P	P:A1	P:A1 End	34.69	26.23	36.28	3090.70	3090.70	0.00	13.4	65.00	65.00	1276.44	1276.44
P	P:A1	P:A1 Ori	34.69	26.23	36.28	3090.70	3090.70	0.00	13.4	65.00	65.00	1276.44	1276.44
P	#P:3	Tube 3 End	37.35	27.21	37.66	3454.29	3454.29	0.00	14.0	65.00	65.00	1375.50	1375.50
P	#P:3	Tube 3 Ori	37.35	27.21	37.66	3454.29	3454.29	0.00	14.0	65.00	65.00	1375.50	1375.50
P	P:AL9	P:AL9 End	40.00	28.18	39.03	3845.34	3845.34	0.00	14.6	65.00	65.00	1478.27	1478.27
P	P:AL9	P:AL9 Ori	40.00	28.18	39.03	3845.34	3845.34	0.00	14.6	65.00	65.00	1478.27	1478.27
P	#P:4	Tube 3 End	43.41	29.43	40.78	4388.64	4388.64	0.00	15.3	65.00	65.00	1615.50	1615.50
P	#P:4	Tube 3 Ori	43.41	29.43	40.78	4388.64	4388.64	0.00	15.3	65.00	65.00	1615.50	1615.50
P	P:A2	P:A2 End	46.81	30.68	42.54	4980.84	4980.84	0.00	16.1	65.00	65.00	1758.81	1758.81
P	P:A2	P:A2 Ori	46.81	30.68	42.54	4980.85	4980.85	0.00	16.1	65.00	65.00	1758.81	1758.81
P	P:AL8	P:AL8 End	50.00	31.85	44.19	5581.91	5581.91	0.00	16.8	65.00	65.00	1898.60	1898.60
P	P:AL8	P:AL8 Ori	50.00	31.85	44.19	5581.91	5581.91	0.00	16.8	65.00	65.00	1898.60	1898.60
P	#P:5	Tube 3 End	54.35	33.44	46.43	6475.75	6475.75	0.00	17.8	65.00	65.00	2097.61	2097.61
P	#P:5	Tube 3 Ori	54.35	33.44	46.43	6475.75	6475.75	0.00	17.8	65.00	65.00	2097.61	2097.61
P	P:A3	P:A3 End	58.69	35.04	48.68	7460.26	7460.26	0.00	18.8	65.00	65.00	2306.54	2306.54
P	P:A3	P:A3 Ori	58.69	35.04	48.68	7460.26	7460.26	0.00	18.8	65.00	65.00	2306.54	2306.54
P	P:AL7	P:AL7 End	60.00	35.52	49.35	7775.54	7775.54	0.00	19.1	65.00	65.00	2371.48	2371.48
P	P:AL7	P:AL7 Ori	60.00	35.52	49.35	7775.54	7775.54	0.00	19.1	65.00	65.00	2371.48	2371.48
P	#P:6	Tube 3 End	65.00	37.35	51.93	9060.44	9060.44	0.00	20.2	65.00	65.00	2627.62	2627.62
P	#P:6	Tube 3 Ori	65.00	37.36	51.93	9060.44	9060.44	0.00	20.2	65.00	65.00	2627.62	2627.62
P	P:AL6	P:AL6 End	70.00	39.19	54.51	10479.64	10479.64	0.00	21.3	65.00	65.00	2896.89	2896.89
P	P:AL6	P:AL6 Ori	70.00	39.19	54.51	10479.64	10479.64	0.00	21.3	65.00	65.00	2896.89	2896.89
P	#P:7	SpliceT End	72.00	39.92	55.55	11086.41	11086.41	0.00	21.8	65.00	65.00	3008.28	3008.28
P	#P:7	SpliceT Ori	72.00	40.05	63.58	12730.90	12730.90	0.00	18.8	65.00	65.00	3443.73	3443.73
P	#P:8	Tube 4 End	76.00	41.52	65.94	14201.67	14201.67	0.00	19.6	65.00	65.00	3705.74	3705.74
P	#P:8	Tube 4 Ori	76.00	41.52	65.94	14201.68	14201.68	0.00	19.6	65.00	65.00	3705.74	3705.74
P	P:AL5	P:AL5 End	80.00	42.98	68.30	15781.58	15781.58	0.00	20.4	65.00	65.00	3977.36	3977.36
P	P:AL5	P:AL5 Ori	80.00	42.99	68.30	15781.58	15781.58	0.00	20.4	65.00	65.00	3977.36	3977.36
P	#P:9	Tube 4 End	85.00	44.82	71.25	17915.88	17915.88	0.00	21.3	65.00	65.00	4330.40	4330.40
P	#P:9	Tube 4 Ori	85.00	44.82	71.25	17915.88	17915.88	0.00	21.3	65.00	65.00	4330.40	4330.40
P	P:AL4	P:AL4 End	90.00	46.65	74.20	20234.43	20234.43	0.00	22.3	65.00	65.00	4698.45	4698.45
P	P:AL4	P:AL4 Ori	90.00	46.66	74.20	20234.43	20234.43	0.00	22.3	65.00	65.00	4698.45	4698.45
P	#P:10	Tube 4 End	95.00	48.49	77.15	22744.86	22744.86	0.00	23.3	65.00	65.00	5081.51	5081.51
P	#P:10	Tube 4 Ori	95.00	48.49	77.15	22744.86	22744.86	0.00	23.3	65.00	65.00	5081.51	5081.51
P	P:AL3	P:AL3 End	100.00	50.32	80.10	25454.79	25454.79	0.00	24.3	65.00	65.00	5479.58	5479.58
P	P:AL3	P:AL3 Ori	100.00	50.33	80.10	25454.80	25454.80	0.00	24.3	65.00	65.00	5479.58	5479.58

P	#P:11	Tube 4 End	105.00	52.16	83.05	28371.86	28371.86	0.00	25.3	65.00	65.00	5892.66	5892.66
P	#P:11	Tube 4 Ori	105.00	52.16	83.05	28371.87	28371.87	0.00	25.3	65.00	65.00	5892.67	5892.67
P	P:AL2	P:AL2 End	110.00	53.99	86.00	31503.70	31503.70	0.00	26.3	65.00	65.00	6320.76	6320.76
P	P:AL2	P:AL2 Ori	110.00	54.00	86.00	31503.70	31503.70	0.00	26.3	65.00	65.00	6320.76	6320.76
P	#P:12	Tube 4 End	115.00	55.83	88.95	34857.93	34857.93	0.00	27.2	65.00	65.00	6763.87	6763.87
P	#P:12	Tube 4 Ori	115.00	55.83	88.95	34857.93	34857.93	0.00	27.2	65.00	65.00	6763.87	6763.87
P	P:AL1	P:AL1 End	120.00	57.66	91.90	38442.18	38442.18	0.00	28.2	65.00	65.00	7221.99	7221.99
P	P:AL1	P:AL1 Ori	120.00	57.67	91.90	38442.18	38442.18	0.00	28.2	65.00	65.00	7221.99	7221.99
P	P:g	P:g End	125.00	59.50	94.85	42264.08	42264.08	0.00	29.2	65.00	65.00	7695.13	7695.13

Tubular Davit Properties:

Davit Property Label	Stock Number	Steel Shape	Thickness (in)	Base Diameter or Depth (in)	Tip Diameter or Depth (in)	Taper (in/ft)	Drag Coef.	Modulus of Elasticity (ksi)	Geometry Type	Strength Check	Vertical Capacity (lbs)	Tension Capacity (lbs)	Compres. Capacity (lbs)	Long. Capacity (lbs)	Yield Stress (ksi)	Weight Override At End (lbs/ft^3)	Steel Texture Density	Shape
9FT SW ARM-(I)		8F	0.375	13	7	0	1.3	29000	2 points	Calculated	0	0	0	0	65	0		
7.5FT COND ARM-(I)		8F	0.3125	14	7	0	1.3	29000	2 points	Calculated	0	0	0	0	65	0		
9FT COND ARM-(I)		8F	0.375	14	7	0	1.3	29000	2 points	Calculated	0	0	0	0	65	0		

Intermediate Joints for Davit Property "9FT SW ARM-(I)":

Joint Label	Horz. Offset (ft)	Vert. Offset (ft)
B	0.77	0
T	9.77	-0.814

Intermediate Joints for Davit Property "7.5FT COND ARM-(I)":

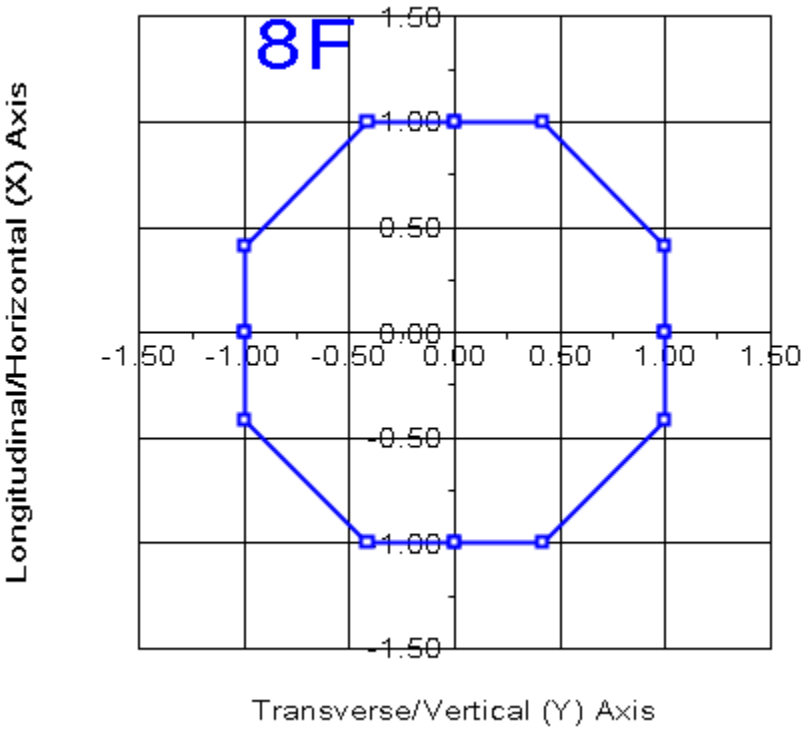
Joint Label	Horz. Offset (ft)	Vert. Offset (ft)
B	0.79	0
T	8.29	-0.691

Intermediate Joints for Davit Property "9FT COND ARM-(I)":

Joint Label	Horz. Offset (ft)	Vert. Offset (ft)
B	0.77	0
T	9.79	-0.816

Tubular Davit Arm Connectivity:

Davit Label	Attach Label	Davit Property Set	Azimuth (deg)
S1	P:SW	9FT SW ARM-(I)	180
S2	P:SW	9FT SW ARM-(I)	0
A1	P:A1	7.5FT COND ARM-(I)	180
A2	P:A2	9FT COND ARM-(I)	180
A3	P:A3	7.5FT COND ARM-(I)	180
A4	P:A1	7.5FT COND ARM-(I)	0
A5	P:A2	9FT COND ARM-(I)	0
A6	P:A3	7.5FT COND ARM-(I)	0



Tubular Davit Arm Steel Properties:

Element Label	Joint Label	Joint Position	Rel. Dist. (ft)	Outer Diam. (in)	Area (in^2)	V-Moment Inertia (in^4)	H-Moment Inertia (in^4)	D/t	W/t Max.	Fy (ksi)	Fa Min. (ksi)	V-Moment Capacity (ft-k)	H-Moment Capacity (ft-k)
S1	S1:O	Origin	0.00	13.00	15.69	330.74	330.74	0.00	10.2	65.00	65.00	275.61	275.61
S1	S1:B	End	0.77	12.53	15.10	295.10	295.10	0.00	9.7	65.00	65.00	255.16	255.16
S1	S1:B	Origin	0.77	12.53	15.10	295.10	295.10	0.00	9.7	65.00	65.00	255.16	255.16
S1	#S1:0	End	5.29	9.76	11.67	136.15	136.15	0.00	6.6	65.00	65.00	151.05	151.05

S1	#S1:0	Origin	5.29	9.76	11.67	136.15	136.15	0.00	6.6	65.00	65.00	151.05	151.05
S1	S1:T	End	9.81	7.00	8.23	47.90	47.90	0.00	3.6	65.00	65.00	74.13	74.13
S2	S2:O	Origin	0.00	13.00	15.69	330.74	330.74	0.00	10.2	65.00	65.00	275.61	275.61
S2	S2:B	End	0.77	12.53	15.10	295.10	295.10	0.00	9.7	65.00	65.00	255.16	255.16
S2	S2:B	Origin	0.77	12.53	15.10	295.10	295.10	0.00	9.7	65.00	65.00	255.16	255.16
S2	#S2:0	End	5.29	9.76	11.67	136.15	136.15	0.00	6.6	65.00	65.00	151.05	151.05
S2	#S2:0	Origin	5.29	9.76	11.67	136.15	136.15	0.00	6.6	65.00	65.00	151.05	151.05
S2	S2:T	End	9.81	7.00	8.23	47.90	47.90	0.00	3.6	65.00	65.00	74.13	74.13
A1	A1:O	Origin	0.00	14.00	14.17	351.09	351.09	0.00	14.4	65.00	65.00	271.68	271.68
A1	A1:B	End	0.79	13.34	13.49	302.42	302.42	0.00	13.5	65.00	65.00	245.67	245.67
A1	A1:B	Origin	0.79	13.34	13.49	302.42	302.42	0.00	13.5	65.00	65.00	245.67	245.67
A1	#A1:0	End	4.56	10.17	10.21	131.12	131.12	0.00	9.3	65.00	65.00	139.70	139.70
A1	#A1:0	Origin	4.56	10.17	10.21	131.12	131.12	0.00	9.3	65.00	65.00	139.70	139.70
A1	A1:T	End	8.32	7.00	6.93	41.02	41.02	0.00	5.1	65.00	65.00	63.48	63.48
A2	A2:O	Origin	0.00	14.00	16.93	415.66	415.66	0.00	11.3	65.00	65.00	321.64	321.64
A2	A2:B	End	0.77	13.45	16.25	367.48	367.48	0.00	10.7	65.00	65.00	295.96	295.96
A2	A2:B	Origin	0.77	13.45	16.25	367.48	367.48	0.00	10.7	65.00	65.00	295.96	295.96
A2	#A2:0	End	5.30	10.23	12.24	157.19	157.19	0.00	7.2	65.00	65.00	166.53	166.53
A2	#A2:0	Origin	5.30	10.23	12.24	157.19	157.19	0.00	7.2	65.00	65.00	166.53	166.53
A2	A2:T	End	9.83	7.00	8.23	47.90	47.90	0.00	3.6	65.00	65.00	74.13	74.13
A3	A3:O	Origin	0.00	14.00	14.17	351.09	351.09	0.00	14.4	65.00	65.00	271.68	271.68
A3	A3:B	End	0.79	13.34	13.49	302.42	302.42	0.00	13.5	65.00	65.00	245.67	245.67
A3	A3:B	Origin	0.79	13.34	13.49	302.42	302.42	0.00	13.5	65.00	65.00	245.67	245.67
A3	#A3:0	End	4.56	10.17	10.21	131.12	131.12	0.00	9.3	65.00	65.00	139.70	139.70
A3	#A3:0	Origin	4.56	10.17	10.21	131.12	131.12	0.00	9.3	65.00	65.00	139.70	139.70
A3	A3:T	End	8.32	7.00	6.93	41.02	41.02	0.00	5.1	65.00	65.00	63.48	63.48
A4	A4:O	Origin	0.00	14.00	14.17	351.09	351.09	0.00	14.4	65.00	65.00	271.68	271.68
A4	A4:B	End	0.79	13.34	13.49	302.42	302.42	0.00	13.5	65.00	65.00	245.67	245.67
A4	A4:B	Origin	0.79	13.34	13.49	302.42	302.42	0.00	13.5	65.00	65.00	245.67	245.67
A4	#A4:0	End	4.56	10.17	10.21	131.12	131.12	0.00	9.3	65.00	65.00	139.70	139.70
A4	#A4:0	Origin	4.56	10.17	10.21	131.12	131.12	0.00	9.3	65.00	65.00	139.70	139.70
A4	A4:T	End	8.32	7.00	6.93	41.02	41.02	0.00	5.1	65.00	65.00	63.48	63.48
A5	A5:O	Origin	0.00	14.00	16.93	415.66	415.66	0.00	11.3	65.00	65.00	321.64	321.64
A5	A5:B	End	0.77	13.45	16.25	367.48	367.48	0.00	10.7	65.00	65.00	295.96	295.96
A5	A5:B	Origin	0.77	13.45	16.25	367.48	367.48	0.00	10.7	65.00	65.00	295.96	295.96
A5	#A5:0	End	5.30	10.23	12.24	157.19	157.19	0.00	7.2	65.00	65.00	166.53	166.53
A5	#A5:0	Origin	5.30	10.23	12.24	157.19	157.19	0.00	7.2	65.00	65.00	166.53	166.53
A5	A5:T	End	9.83	7.00	8.23	47.90	47.90	0.00	3.6	65.00	65.00	74.13	74.13
A6	A6:O	Origin	0.00	14.00	14.17	351.09	351.09	0.00	14.4	65.00	65.00	271.68	271.68
A6	A6:B	End	0.79	13.34	13.49	302.42	302.42	0.00	13.5	65.00	65.00	245.67	245.67
A6	A6:B	Origin	0.79	13.34	13.49	302.42	302.42	0.00	13.5	65.00	65.00	245.67	245.67
A6	#A6:0	End	4.56	10.17	10.21	131.12	131.12	0.00	9.3	65.00	65.00	139.70	139.70
A6	#A6:0	Origin	4.56	10.17	10.21	131.12	131.12	0.00	9.3	65.00	65.00	139.70	139.70
A6	A6:T	End	8.32	7.00	6.93	41.02	41.02	0.00	5.1	65.00	65.00	63.48	63.48

*** Insulator Data

Clamp Properties:

Label	Stock Number	Holding Capacity (lbs)	Hardware Capacity (lbs)	Notes

CLAMP	1e+05	0

Clamp Insulator Connectivity:

Clamp Label	Structure And Tip Attach	Property Set	Min. Required Vertical Load (uplift) (lbs)
1	A1:T	CLAMP	No Limit
2	A2:T	CLAMP	No Limit
3	A3:T	CLAMP	No Limit
4	A4:T	CLAMP	No Limit
5	A5:T	CLAMP	No Limit
6	A6:T	CLAMP	No Limit
7	S1:T	CLAMP	No Limit
8	S2:T	CLAMP	No Limit
9	P:T-Mo	CLAMP	No Limit
10	P:AT&T	CLAMP	No Limit
13	P:AL1	CLAMP	No Limit
14	P:AL2	CLAMP	No Limit
15	P:AL3	CLAMP	No Limit
16	P:AL4	CLAMP	No Limit
17	P:AL5	CLAMP	No Limit
18	P:AL6	CLAMP	No Limit
19	P:AL7	CLAMP	No Limit
20	P:AL8	CLAMP	No Limit
21	P:AL9	CLAMP	No Limit
22	P:AL10	CLAMP	No Limit
23	P:AL11	CLAMP	No Limit
24	P:AL12	CLAMP	No Limit
25	P:t	CLAMP	No Limit
SW1	1	CLAMP	No Uplift
SW2	2	CLAMP	No Uplift

Suspension Properties:

Label	Stock Number	Length (ft)	Weight (lbs)	Wind Area (ft^2)	Tension Capacity (lbs)	Top Rect Width (ft)	Top Rect Height (ft)	Bot. Rect Width (ft)	Bot. Rect Height (ft)	Vert. Rect Width (ft)	Vert. Rect Height (ft)	Hardware Capacity (lbs)	Notes	Draw Rigid
115KV		5.5	50	2	3e+04	0	0	0	0	0	0	0	Sheds	No

Suspension Insulator Connectivity:

Suspension Label	Structure Attach	Tip Label	Property Set	Cond. 1 Minimum Swing (deg)	Cond. 1 Maximum Swing (deg)	Cond. 2 Minimum Swing (deg)	Cond. 2 Maximum Swing (deg)	Cond. 3 Minimum Swing (deg)	Cond. 3 Maximum Swing (deg)	Cond. 4 Minimum Swing (deg)	Cond. 4 Maximum Swing (deg)	Min. Required Vertical Load (uplift) (lbs)
S1	3	LP P1	115KV	-90.00	32.00	-90.00	36.00	-90.00	62.00	-90.00	76.00	No Uplift
S2	4	LP P2	115KV	-90.00	32.00	-90.00	36.00	-90.00	62.00	-90.00	77.00	No Uplift
S3	5	LP P3	115KV	-90.00	32.00	-90.00	36.00	-90.00	62.00	-90.00	76.00	No Uplift
S4	6	RP P1	115KV	-32.00	90.00	-36.00	90.00	-62.00	90.00	-76.00	90.00	No Uplift
S5	7	RP P2	115KV	-32.00	90.00	-36.00	90.00	-62.00	90.00	-77.00	90.00	No Uplift
S6	8	RP P3	115KV	-32.00	90.00	-36.00	90.00	-62.00	90.00	-76.00	90.00	No Uplift

PLS-CADD Link Cable Sets:

Insulator Label	Conductor Attach Label	Insulator Type	Set Number	Phase Number	Set Description	Dead End	Framing Source
1	A1:T	Clamp	0	0		No	
2	A2:T	Clamp	0	0		No	
3	A3:T	Clamp	0	0		No	
4	A4:T	Clamp	0	0		No	
5	A5:T	Clamp	0	0		No	
6	A6:T	Clamp	0	0		No	
7	S1:T	Clamp	0	0		No	
8	S2:T	Clamp	0	0		No	
9	P:T-Mo	Clamp	0	0		No	
10	P:AT&T	Clamp	0	0		No	
11	P:L3	Clamp	0	0		No	
12	P:L4	Clamp	0	0		No	
13	P:AL1	Clamp	0	0		No	
14	P:AL2	Clamp	0	0		No	
15	P:AL3	Clamp	0	0		No	
16	P:AL4	Clamp	0	0		No	
17	P:AL5	Clamp	0	0		No	
18	P:AL6	Clamp	0	0		No	
19	P:AL7	Clamp	0	0		No	
20	P:AL8	Clamp	0	0		No	
21	P:AL9	Clamp	0	0		No	
22	P:AL10	Clamp	0	0		No	
23	P:AL11	Clamp	0	0		No	
24	P:AL12	Clamp	0	0		No	
25	P:t	Clamp	0	0		No	
SW1	1	Clamp	1	1	LP SW	No	
SW2	2	Clamp	2	1	RP SW	No	
S1	LP P1	Suspension	11	1	LP P1	No	
S2	LP P2	Suspension	12	1	LP P2	No	
S3	LP P3	Suspension	13	1	LP P3	No	
S4	RP P1	Suspension	14	1	RP P1	No	
S5	RP P2	Suspension	15	1	RP P2	No	
S6	RP P3	Suspension	16	1	RP P3	No	

*** Loads Data

Loads from file: J:\Jobs\2200700.WI\08_CT5145\05_Structural\Tower Analysis\Backup Documentation\Rev (1)\Calcs\PLS-Pole\19725.lca

Insulator dead and wind loads are already included in the point loads printed below.

Loading Method Parameters:

Structure Height Summary (used for calculating wind/ice adjust with height):
  Z of ground for wind height adjust 0.00 (ft) and structure Z coordinate that will be put on the centerline ground profile in PLS-CADD.
  Ground elevation shift 1.38 (ft)
  Z of ground with shift -1.38 (ft)
  Z of structure top (highest joint) 125.00 (ft)
  Structure height 125.00 (ft)
  Structure height above ground 126.38 (ft)

Vector Load Cases:

Load Case Description	Dead Load Factor	Wind Area Factor	SF for Steel Poles and Towers	SF for Tubular Arms	SF for Wood Poles	SF for Conc. Poles % or (ft)	SF for Conc. Pole Ult. Check	SF for Guys First Crack	SF for Zero Tens. Cables	SF for and Tubular Arms	SF for Non Insuls.	SF For Braces Hardware	Point Loads Found.	Wind/Ice Loads	Trans. Longit. Wind Model	Ice Thick. (in)	Ice Density (lbs/ft^3)	Temperature (deg F)	Deflection Limit	Deflection Limit	Wind Pressure (psf)	Wind Pressure (psf)
RULE 250B	1.5000	2.5000	1.00000	0.6500	1.0000	0.0000	0.0000	0.9000	0.6500	0.6500	0.0000	0.0000	1.0000	22 loads	Wind on All	4	0.500	0.000	0.0	No Limit	0	
RULE 250C	1.0000	1.0000	1.00000	0.7500	1.0000	0.0000	0.0000	0.9000	0.7500	0.7500	0.0000	0.0000	1.0000	22 loads	NESC 2023	31	0.000	0.000	60.0	No Limit	0	
RULE 250D	1.0000	1.0000	1.00000	1.0000	1.0000	0.0000	0.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	22 loads	Wind on All	6.4	0.750	0.000	15.0	No Limit	0	

Point Loads for Load Case "RULE 250B":

Joint Label	Vertical Load (lbs)	Transverse Load (lbs)	Longitudinal Load (lbs)	Load Comment
S1:T	2512	1445	0	Shield Wire
S2:T	2512	1445	-6	Shield Wire
LP P1	6911	2716	0	Conductor
LP P2	6911	2716	0	Conductor
LP P3	6911	2716	0	Conductor
RP P1	6911	2716	0	Conductor
RP P2	6911	2716	0	Conductor
RP P3	6911	2716	0	Conductor
P:AT&T	6555	1174	0	AT&T Equipment
P:T-Mo	5685	1629	0	T-Mobile Equipment
P:AL1	1380	119	0	Cables
P:AL2	1380	119	0	Cables
P:AL3	1380	119	0	Cables
P:AL4	1380	119	0	Cables

P:AL5	1380	119	0	Cables
P:AL6	1380	119	0	Cables
P:AL7	1380	119	0	Cables
P:AL8	1380	119	0	Cables
P:AL9	1380	119	0	Cables
P:AL10	1380	119	0	Cables
P:AL11	1380	119	0	Cables
P:AL12	1380	119	0	Cables

Point Loads for Load Case "RULE 250C":

Joint Label	Vertical Load (lbs)	Transverse Load (lbs)	Longitudinal Load (lbs)	Load Comment
S1:T	673	1725	0	Shield Wire
S2:T	673	1725	-6	Shield Wire
LP P1	2954	3965	0	Conductor
LP P2	2954	3965	0	Conductor
LP P3	2954	3965	0	Conductor
RP P1	2954	3965	0	Conductor
RP P2	2954	3965	0	Conductor
RP P3	2954	3965	0	Conductor
P:AT&T	3571	4141	0	AT&T Equipment
P:T-Mo	2727	6191	0	T-Mobile Equipment
P:AL1	374	335	0	Cables
P:AL2	374	335	0	Cables
P:AL3	374	335	0	Cables
P:AL4	374	335	0	Cables
P:AL5	374	335	0	Cables
P:AL6	374	335	0	Cables
P:AL7	374	335	0	Cables
P:AL8	374	335	0	Cables
P:AL9	374	335	0	Cables
P:AL10	374	335	0	Cables
P:AL11	374	335	0	Cables
P:AL12	374	335	0	Cables

Detailed Pole Loading Data for Load Case "RULE 250C":

Notes: Does not include loads from equipment, arms, guys, braces, etc. or user input loads.
Wind load is calculated for the undeformed shape of a pole.

Pole Label	Top Joint	Bottom Joint	Section Top Z (ft)	Section Bottom Z (ft)	Section Average Elevation (ft)	Outer Diameter (in)	Reynolds Number	Drag Coef.	Adjusted Wind Pressure (psf)	Adjusted Ice Thickness (in)	Pole Vert. Load (lbs)	Pole Wind Load (lbs)	Pole Ice Vertical Load (lbs)	Pole Ice Wind Load (lbs)	Tran. Wind Load (lbs)	Long. Wind Load (lbs)
P	P:t	P:T-Mo	125.00	121.00	124.38	13.734	1.16e+06	1.000	31.77	0.00	111.16	145.43	0.00	0.00	145.43	0.00
P	P:T-Mo		121.00	118.00	120.88	15.019	1.27e+06	1.000	31.77	0.00	91.28	119.27	0.00	0.00	119.27	0.00
P		P:AL12	118.00	115.00	117.88	16.120	1.36e+06	1.000	31.77	0.00	98.05	128.02	0.00	0.00	128.02	0.00
P	P:AL12	P:AT&T	115.00	111.00	114.38	17.404	1.47e+06	1.000	31.77	0.00	141.28	184.29	0.00	0.00	184.29	0.00
P	P:AT&T		111.00	108.00	110.88	18.689	1.58e+06	1.000	31.77	0.00	113.86	148.42	0.00	0.00	148.42	0.00
P		P:AL11	108.00	105.00	107.88	19.790	1.67e+06	1.000	31.77	0.00	120.64	157.16	0.00	0.00	157.16	0.00
P	P:AL11		105.00	100.00	103.88	21.258	1.79e+06	1.000	31.77	0.00	216.16	281.37	0.00	0.00	281.37	0.00
P		P:SW	100.00	98.69	100.73	22.915	1.93e+06	1.000	31.77	0.00	140.95	79.47	0.00	0.00	79.47	0.00
P	P:SW	P:AL10	98.69	95.00	98.23	23.833	2.01e+06	1.000	31.77	0.00	413.24	232.81	0.00	0.00	232.81	0.00
P	P:AL10	P:A1	95.00	90.31	94.04	25.371	2.14e+06	1.000	31.77	0.00	559.75	314.99	0.00	0.00	314.99	0.00
P	P:A1		90.31	87.65	90.36	26.718	2.25e+06	1.000	31.77	0.00	334.00	187.79	0.00	0.00	187.79	0.00

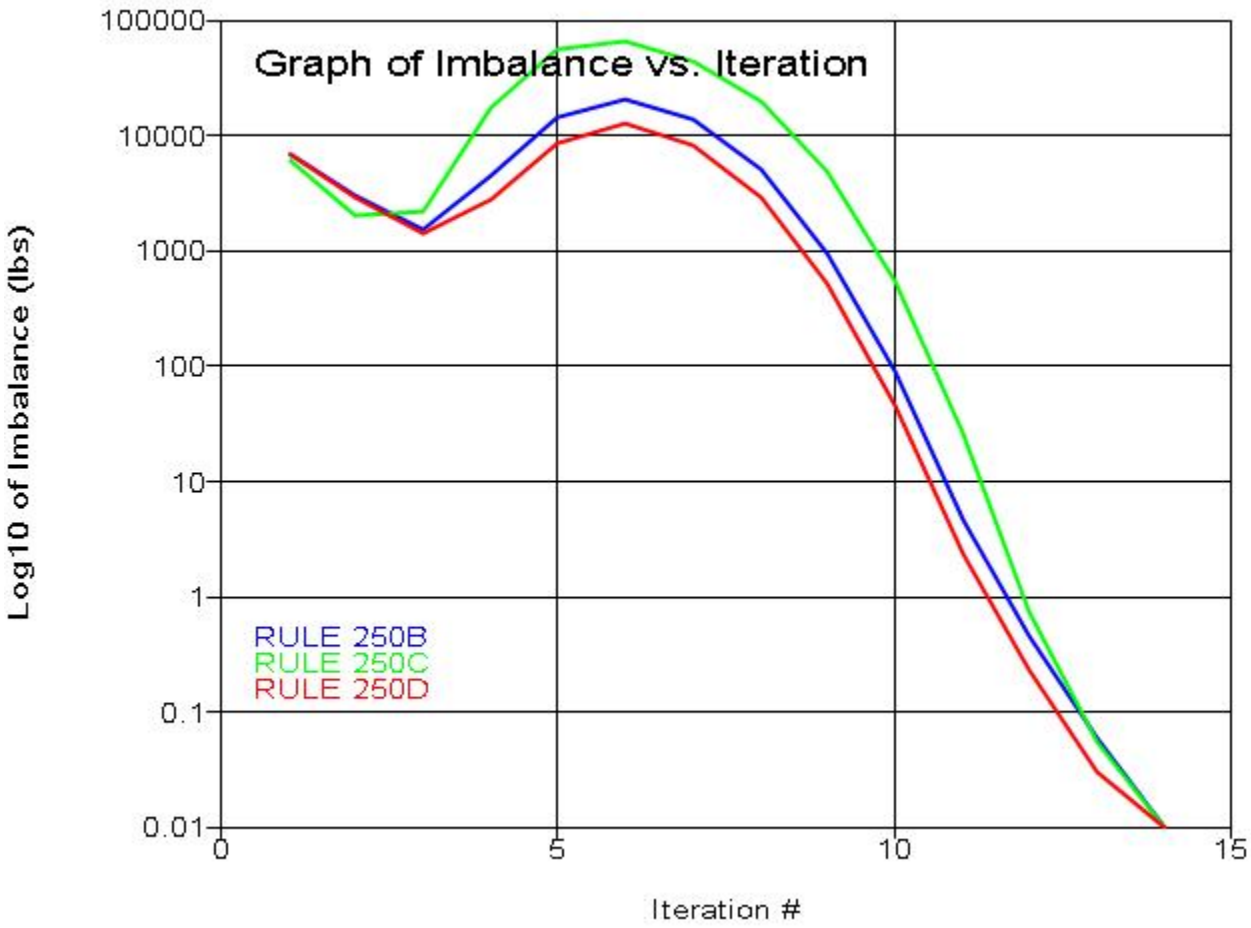
P	P:AL9	87.65	85.00	87.71	27.693	2.34e+06	1.000	31.77	0.00	346.39	194.64	0.00	0.00	194.64	0.00
P	P:AL9	85.00	81.59	84.68	28.805	2.43e+06	1.000	31.77	0.00	462.36	259.65	0.00	0.00	259.65	0.00
P	P:A2	81.59	78.19	81.27	30.054	2.54e+06	1.000	31.77	0.00	482.73	270.91	0.00	0.00	270.91	0.00
P	P:A2	P:AL8	78.19	75.00	77.98	31.265	2.64e+06	1.000	31.77	0.00	470.73	264.02	0.00	0.00	264.02	0.00
P	P:AL8	75.00	70.65	74.21	32.647	2.75e+06	1.000	31.77	0.00	669.92	375.52	0.00	0.00	375.52	0.00
P	P:A3	70.65	66.31	69.86	34.242	2.89e+06	1.000	31.77	0.00	703.09	393.86	0.00	0.00	393.86	0.00
P	P:A3	P:AL7	66.31	65.00	67.04	35.280	2.98e+06	1.000	31.77	0.00	218.48	122.35	0.00	0.00	122.35	0.00
P	P:AL7	65.00	60.00	63.88	36.438	3.07e+06	1.000	31.77	0.00	861.62	482.30	0.00	0.00	482.30	0.00
P	P:AL6	60.00	55.00	58.88	38.273	3.23e+06	1.000	31.77	0.00	905.54	506.59	0.00	0.00	506.59	0.00
P	P:AL6	55.00	53.00	55.38	39.557	3.34e+06	1.000	31.77	0.00	374.53	209.44	0.00	0.00	209.44	0.00
P		53.00	49.00	52.38	40.783	3.44e+06	1.000	31.77	0.00	881.47	431.85	0.00	0.00	431.85	0.00
P	P:AL5	49.00	45.00	48.38	42.251	3.57e+06	1.000	31.77	0.00	913.62	447.40	0.00	0.00	447.40	0.00
P	P:AL5	45.00	40.00	43.88	43.903	3.7e+06	1.000	31.77	0.00	1187.19	581.11	0.00	0.00	581.11	0.00
P	P:AL4	40.00	35.00	38.88	45.738	3.86e+06	1.000	31.77	0.00	1237.39	605.40	0.00	0.00	605.40	0.00
P	P:AL4	35.00	30.00	33.88	47.572	4.01e+06	1.000	31.77	0.00	1287.58	629.69	0.00	0.00	629.69	0.00
P	P:AL3	30.00	25.00	28.88	49.408	4.17e+06	1.000	31.77	0.00	1337.77	653.97	0.00	0.00	653.97	0.00
P	P:AL3	25.00	20.00	23.88	51.242	4.32e+06	1.000	31.77	0.00	1387.97	678.26	0.00	0.00	678.26	0.00
P	P:AL2	20.00	15.00	18.88	53.077	4.48e+06	1.000	31.77	0.00	1438.16	702.55	0.00	0.00	702.55	0.00
P	P:AL2	15.00	10.00	13.88	54.913	4.63e+06	1.000	31.77	0.00	1488.35	726.84	0.00	0.00	726.84	0.00
P	P:AL1	10.00	5.00	8.88	56.748	4.79e+06	1.000	31.77	0.00	1538.55	751.13	0.00	0.00	751.13	0.00
P	P:AL1	P:g	5.00	0.00	3.88	58.583	4.94e+06	1.000	31.77	0.00	1588.74	775.42	0.00	0.00	775.42	0.00

Point Loads for Load Case "RULE 250D":

Joint Label	Vertical Load (lbs)	Transverse Load (lbs)	Longitudinal Load (lbs)	Load Comment
S1:T	3484	1231	0	Shield Wire
S2:T	3484	1231	-7	Shield Wire
LP P1	7070	2250	0	Conductor
LP P2	7070	2250	0	Conductor
LP P3	7070	2250	0	Conductor
RP P1	7070	2250	0	Conductor
RP P2	7070	2250	0	Conductor
RP P3	7070	2250	0	Conductor
P:AT&T	4873	821	0	AT&T Equipment
P:T-Mo	4428	1104	0	T-Mobile Equipment
P:AL1	1275	80	0	Cables
P:AL2	1275	80	0	Cables
P:AL3	1275	80	0	Cables
P:AL4	1275	80	0	Cables
P:AL5	1275	80	0	Cables
P:AL6	1275	80	0	Cables
P:AL7	1275	80	0	Cables
P:AL8	1275	80	0	Cables
P:AL9	1275	80	0	Cables
P:AL10	1275	80	0	Cables
P:AL11	1275	80	0	Cables
P:AL12	1275	80	0	Cables

*** Analysis Results:

Maximum element usage is 88.66% for Base Plate "P" in load case "RULE 250C"
Maximum insulator usage is 24.73% for Suspension "S1" in load case "RULE 250D"



*** Analysis Results for Load Case No. 1 "RULE 250B" - Number of iterations in SAPS 14

Equilibrium Joint Positions and Rotations for Load Case "RULE 250B":

Joint Label	X-Displ (ft)	Y-Displ (ft)	Z-Displ (ft)	X-Rot (deg)	Y-Rot (deg)	Z-Rot (deg)	X-Pos (ft)	Y-Pos (ft)	Z-Pos (ft)
P:g	0	0	0	0.0000	0.0000	0.0000	0	0	0
P:t	0.006302	2.509	-0.03833	-2.0973	0.0052	0.0003	0.006302	2.509	125
P:T-Mo	0.00594	2.362	-0.03564	-2.0968	0.0052	0.0003	0.00594	2.362	121

P:AL12	0.005401	2.144	-0.03154	-2.0618	0.0051	0.0003	0.005401	2.144	115	
P:AT&T	0.005048	2.001	-0.0289	-2.0142	0.0050	0.0003	0.005048	2.001	111	
P:AL11	0.00454	1.795	-0.0251	-1.9119	0.0047	0.0003	0.00454	1.795	105	
P:SW	0.004042	1.591	-0.02157	-1.7940	0.0044	0.0003	0.004042	1.591	98.67	
P:AL10	0.003765	1.477	-0.0197	-1.7551	0.0043	0.0003	0.003765	1.477	94.98	
P:A1	0.003424	1.335	-0.01745	-1.6994	0.0041	0.0002	0.003424	1.335	90.29	
P:AL9	0.003052	1.181	-0.01501	-1.6245	0.0039	0.0002	0.003052	1.181	84.98	
P:A2	0.0026	0.9944	-0.0122	-1.5120	0.0037	0.0002	0.0026	0.9944	78.18	
P:AL8	0.002399	0.9116	-0.01098	-1.4541	0.0036	0.0001	0.002399	0.9116	74.99	
P:A3	0.001888	0.7036	-0.008082	-1.2804	0.0032	0.0001	0.001888	0.7036	66.3	
P:AL7	0.001816	0.6746	-0.007689	-1.2528	0.0031	0.0001	0.001816	0.6746	64.99	
P:AL6	0.001311	0.4744	-0.005146	-1.0299	0.0026	0.0001	0.001311	0.4744	54.99	
P:AL5	0.0008873	0.3127	-0.003371	-0.8228	0.0022	0.0000	0.0008873	0.3127	45	
P:AL4	0.0005427	0.186	-0.002129	-0.6244	0.0017	0.0000	0.0005427	0.186	35	
P:AL3	0.0002802	0.0933	-0.00127	-0.4336	0.0013	0.0000	0.0002802	0.0933	25	
P:AL2	0.0001026	0.03314	-0.0006671	-0.2524	0.0008	0.0000	0.0001026	0.03314	15	
P:AL1	1.207e-05	0.003737	-0.0002075	-0.0816	0.0003	0.0000	1.207e-05	0.003737	5	
S1:O	0.004049	1.592	0.008639	-1.7940	0.0044	0.0003	0.004049	0.6271	98.7	
S1:B	0.004055	1.592	0.03261	-1.7769	0.0044	0.0003	0.004055	-0.1425	98.72	
S1:T	0.004186	1.62	0.2946	-1.5980	0.0044	0.0003	0.004186	-9.115	99.8	
S2:O	0.004034	1.591	-0.05177	-1.7940	0.0044	0.0003	0.004034	2.556	98.64	
S2:B	0.004028	1.591	-0.07602	-1.8127	0.0044	0.0003	0.004028	3.325	98.61	
S2:T	0.003973	1.613	-0.3797	-2.0109	0.0043	0.0008	0.003973	12.35	99.12	
A1:O	0.003431	1.336	0.01496	-1.6994	0.0041	0.0002	0.003431	0.243	90.32	
A1:B	0.003435	1.336	0.03809	-1.6613	0.0041	0.0002	0.003435	-0.5467	90.35	
A1:T	0.003529	1.356	0.2274	-1.2875	0.0041	0.0002	0.003529	-8.027	91.23	
A2:O	0.002606	0.9948	0.02153	-1.5120	0.0037	0.0002	0.002606	-0.2835	78.21	
A2:B	0.002609	0.9951	0.04156	-1.4748	0.0037	0.0002	0.002609	-1.053	78.23	
A2:T	0.002699	1.015	0.2334	-1.0269	0.0037	0.0002	0.002699	-10.05	79.24	
A3:O	0.001892	0.7039	0.02454	-1.2804	0.0032	0.0001	0.001892	-0.756	66.33	
A3:B	0.001895	0.7041	0.04189	-1.2422	0.0032	0.0001	0.001895	-1.546	66.35	
A3:T	0.001954	0.7179	0.1764	-0.8670	0.0032	0.0001	0.001954	-9.032	67.18	
A4:O	0.003417	1.335	-0.04986	-1.6994	0.0041	0.0002	0.003417	2.428	90.26	
A4:B	0.003413	1.335	-0.0736	-1.7381	0.0041	0.0002	0.003413	3.218	90.24	
A4:T	0.003414	1.354	-0.3287	-2.0869	0.0041	0.0002	0.003414	10.74	90.67	
A5:O	0.002595	0.9939	-0.04593	-1.5120	0.0037	0.0002	0.002595	2.272	78.14	
A5:B	0.002592	0.9937	-0.06654	-1.5501	0.0037	0.0001	0.002592	3.042	78.12	
A5:T	0.002602	1.015	-0.3506	-1.9769	0.0037	0.0001	0.002602	12.08	78.66	
A6:O	0.001884	0.7032	-0.04071	-1.2804	0.0032	0.0001	0.001884	2.163	66.27	
A6:B	0.001881	0.703	-0.05867	-1.3192	0.0032	0.0001	0.001881	2.953	66.25	
A6:T	0.001896	0.7188	-0.2589	-1.6689	0.0032	0.0001	0.001896	10.47	66.74	
1	0.004145	1.605	0.2962	-1.5980	0.0044	0.0003	0.004145	-9.179	99.26	
2	0.003932	1.594	-0.381	-2.0109	0.0043	0.0008	0.003932	12.38	98.58	
3	0.00349	1.344	0.2287	-1.2875	0.0041	0.0002	0.00349	-8.089	90.69	
4	0.002664	1.005	0.2344	-1.0269	0.0037	0.0002	0.002664	-10.11	78.7	
5	0.001924	0.7097	0.1772	-0.8670	0.0032	0.0001	0.001924	-9.09	66.64	
6	0.003375	1.334	-0.3302	-2.0869	0.0041	0.0002	0.003375	10.77	90.13	
7	0.002568	0.9963	-0.352	-1.9769	0.0037	0.0001	0.002568	12.11	78.11	
8	0.001865	0.7031	-0.2601	-1.6689	0.0032	0.0001	0.001865	10.5	66.2	

Joint Support Reactions for Load Case "RULE 250B":

Joint Label	X Force (kips)	X Usage %	Y Force (kips)	Y Usage %	H-Shear Usage %	Z Force (kips)	Comp. Uplift Usage %	Result. Usage %	Result. Force (kips)	Result. Usage %	X Moment (ft-k)	X-M. Usage %	Y Moment (ft-k)	Y-M. Usage %	H-Bend-M Usage %	Z Moment (ft-k)	Z-M. Usage %	Max. Usage %
P:g	-0.15	0.0	-29.48	0.0	0.0	-115.65	0.0	0.0	119.35	0.0	2386.78	0.0	-7.6	0.0	0.0	-0.07	0.0	0.0

Detailed Steel Pole Usages for Load Case "RULE 250B":

	Element Label	Joint Label	Joint Position	Rel. Dist. (ft)	Trans. Defl. (in)	Long. Defl. (in)	Vert. Defl. (in)	Trans. Mom. (Local Mx) (ft-k)	Long. Mom. (Local My) (ft-k)	Tors. Mom. (ft-k)	Axial Force (kips)	Tran. Shear (kips)	Long. Shear (kips)	P/A (ksi)	M/S. (ksi)	V/Q. (ksi)	T/R. (ksi)	Res. (ksi)	Max. Usage %	At Pt.
P		P:t	Origin	0.00	30.10	0.08	-0.46	-0.00	0.00	0.0	-0.08	0.04	-0.00	-0.01	0.00	0.01	0.00	0.02	0.0	5
P		P:T-Mo	End	4.00	28.35	0.07	-0.43	0.16	-0.00	0.0	-0.08	0.04	-0.00	-0.01	0.06	0.00	0.00	0.07	0.1	2
P		P:T-Mo	Origin	4.00	28.35	0.07	-0.43	0.16	-0.00	-0.0	-5.86	1.95	-0.00	-0.68	0.00	0.46	0.00	1.05	1.6	5
P		Tube 1	End	7.00	27.03	0.07	-0.40	6.00	-0.01	-0.0	-5.86	1.95	-0.00	-0.63	2.00	0.11	0.00	2.64	4.1	2
P		Tube 1	Origin	7.00	27.03	0.07	-0.40	6.00	-0.01	0.0	-6.00	2.01	-0.00	-0.65	2.00	0.11	0.00	2.65	4.1	2
P		P:AL12	End	10.00	25.73	0.06	-0.38	12.04	-0.03	0.0	-6.00	2.01	-0.00	-0.60	3.49	0.11	0.00	4.09	6.3	2
P		P:AL12	Origin	10.00	25.73	0.06	-0.38	12.04	-0.03	0.0	-7.55	2.26	-0.01	-0.76	3.49	0.12	0.00	4.25	6.5	2
P		P:AT&T	End	14.00	24.02	0.06	-0.35	21.09	-0.06	0.0	-7.55	2.26	-0.01	-0.70	5.15	0.11	0.00	5.85	9.0	2
P		P:AT&T	Origin	14.00	24.02	0.06	-0.35	21.09	-0.06	-0.0	-14.26	3.75	-0.01	-1.32	5.15	0.18	0.00	6.47	10.0	2
P		Tube 2	End	17.00	22.76	0.06	-0.32	32.33	-0.09	-0.0	-14.26	3.75	-0.01	-1.24	7.00	0.17	0.00	8.25	12.7	2
P		Tube 2	Origin	17.00	22.76	0.06	-0.32	32.33	-0.09	0.0	-14.44	3.82	-0.01	-1.26	7.00	0.18	0.00	8.26	12.7	2
P		P:AL11	End	20.00	21.54	0.05	-0.30	43.78	-0.12	0.0	-14.44	3.82	-0.01	-1.19	8.47	0.17	0.00	9.66	14.9	2
P		P:AL11	Origin	20.00	21.54	0.05	-0.30	43.78	-0.12	0.0	-16.07	4.08	-0.01	-1.32	8.47	0.18	0.00	9.79	15.1	2
P		SpliceT	End	25.00	19.59	0.05	-0.27	64.18	-0.20	0.0	-16.07	4.08	-0.01	-1.21	10.42	0.16	0.00	11.63	17.9	2
P		SpliceT	Origin	25.00	19.59	0.05	-0.27	64.18	-0.20	-0.0	-16.34	4.16	-0.02	-0.52	4.41	0.07	0.00	4.94	7.6	2
P		P:SW	End	26.31	19.10	0.05	-0.26	69.64	-0.22	-0.0	-16.34	4.16	-0.02	-0.51	4.58	0.07	0.00	5.10	7.8	2
P		P:SW	Origin	26.31	19.10	0.05	-0.26	72.08	-0.21	0.1	-22.89	7.33	-0.01	-0.72	4.75	0.12	0.00	5.47	8.4	2
P		P:AL10	End	30.00	17.72	0.05	-0.24	99.12	-0.27	0.1	-22.89	7.33	-0.01	-0.68	5.81	0.12	0.00	6.48	10.0	2
P		P:AL10	Origin	30.00	17.72	0.05	-0.24	99.12	-0.27	0.1	-25.00	7.63	-0.02	-0.74	5.81	0.12	0.00	6.55	10.1	2
P		P:A1	End	34.69	16.03	0.04	-0.21	134.90	-0.35	0.1	-25.00	7.63	-0.02	-0.69	6.87	0.11	0.00	7.57	11.6	2
P		P:A1	Origin	34.69	16.03	0.04	-0.21	135.83	-0.35	0.1	-40.23	13.62	-0.02	-1.11	6.92	0.20	0.00	8.04	12.4	2
P		Tube 3	End	37.35	15.09	0.04	-0.19	171.98	-0.41	0.1	-40.23	13.62	-0.02	-1.07	8.13	0.19	0.00	9.21	14.2	2
P		Tube 3	Origin	37.35	15.09	0.04	-0.19	171.98	-0.41	0.1	-40.75	13.70	-0.03	-1.08	8.13	0.19	0.00	9.22	14.2	2
P		P:AL9	End	40.00	14.17	0.04	-0.18	208.36	-0.48	0.1	-40.75	13.70	-0.03	-1.04	9.17	0.19	0.00	10.22	15.7	2
P		P:AL9	Origin	40.00	14.17	0.04	-0.18	208.36	-0.48	0.1	-42.74	13.96	-0.03	-1.10	9.17	0.19	0.00	10.27	15.8	2
P		Tube 3	End	43.41	13.03	0.03	-0.16	255.89	-0.57	0.1	-42.74	13.96	-0.03	-1.05	10.30	0.18	0.00	11.35	17.5	2
P		Tube 3	Origin	43.41	13.03	0.03	-0.16	255.89	-0.57	0.1	-43.46	14.07	-0.03	-1.07	10.30	0.18	0.00	11.37	17.5	2
P		P:A2	End	46.81	11.93	0.03	-0.15	303.79	-0.68	0.1	-43.46	14.07	-0.03	-1.02	11.23	0.18	0.00	12.26	18.9	2
P		P:A2	Origin	46.81	11.93	0.03	-0.15	305.35	-0.68	0.1	-59.13	20.00	-0.04	-1.39	11.29	0.25	0.00	12.69	19.5	2
P		P:AL8	End	50.00	10.94	0.03	-0.13	369.14	-0.80	0.1	-59.13	20.00	-0.04	-1.34	12.65	0.24	0.00	13.99	21.5	2
P		P:AL8	Origin	50.00	10.94	0.03	-0.13	369.14	-0.80	0.1	-61.38	20.26	-0.04	-1.39	12.65	0.24	0.00	14.04	21.6	2
P		Tube 3	End	54.35	9.65	0.03	-0.11	457.18	-0.97	0.1	-61.38	20.26	-0.04	-1.32	14.17	0.23	0.00	15.50	23.8	2
P		Tube 3	Origin	54.35	9.65	0.03	-0.11	457.18	-0.97	0.1	-62.44	20.39	-0.05	-1.34	14.17	0.23	0.00	15.53	23.9	2
P		P:A3	End	58.69	8.44	0.02	-0.10	545.75	-1.17	0.1	-62.44	20.39	-0.05	-1.28	15.39	0.22	0.00	16.68	25.7	2
P		P:A3	Origin	58.69	8.44	0.02	-0.10	546.61	-1.17	0.1	-77.75	26.22	-0.05	-1.60	15.41	0.29	0.00	17.02	26.2	2
P		P:AL7	End	60.00	8.09	0.02	-0.09	580.97	-1.24	0.1	-77.75	26.22	-0.05	-1.58	15.93	0.28	0.00	17.52	26.9	2
P		P:AL7	Origin	60.00	8.09	0.02	-0.09	580.97	-1.24	0.1	-79.97	26.45	-0.05	-1.62	15.93	0.28	0.00	17.56	27.0	2
P		Tube 3	End	65.00	6.84	0.02	-0.08	713.21	-1.51	0.1	-79.97	26.45	-0.05	-1.54	17.65	0.27	0.00	19.20	29.5	2
P		Tube 3	Origin	65.00	6.84	0.02	-0.08	713.21	-1.51	0.1	-81.34	26.57	-0.06	-1.57	17.65	0.27	0.00	19.23	29.6	2
P		P:AL6	End	70.00	5.69	0.02	-0.06	846.05	-1.81	0.1	-81.34	26.57	-0.06	-1.49	18.99	0.26	0.00	20.49	31.5	2
P		P:AL6	Origin	70.00	5.69	0.02	-0.06	846.05	-1.81	0.1	-83.72	26.79	-0.06	-1.54	18.99	0.26	0.00	20.54	31.6	2
P		SpliceT	End	72.00	5.27	0.01	-0.06	899.64	-1.94	0.1	-83.72	26.79	-0.06	-1.51	19.45	0.26	0.00	20.96	32.2	2
P		SpliceT	Origin	72.00	5.27	0.01	-0.06	899.64	-1.94	0.1	-84.69	26.88	-0.07	-1.33	16.99	0.22	0.00	18.33	28.2	2
P		Tube 4	End	76.00	4.48	0.01	-0.05	1007.15	-2.21	0.1	-84.69	26.88	-0.07	-1.28	17.68	0.22	0.00	18.96	29.2	2
P		Tube 4	Origin	76.00	4.48	0.01	-0.05	1007.15	-2.21	0.1	-86.08	27.00	-0.07	-1.31	17.68	0.22	0.00	18.99	29.2	2
P		P:AL5	End	80.00	3.75	0.01	-0.04	1115.15	-2.51	0.1	-86.08	27.00	-0.07	-1.26	18.24	0.21	0.00	19.50	30.0	2
P		P:AL5	Origin	80.00	3.75	0.01	-0.04	1115.15	-2.51	0.1	-89.07	27.28	-0.08	-1.30	18.24	0.21	0.00	19.54	30.1	2
P		Tube 4	End	85.00	2.94	0.01	-0.03	1251.56	-2.91	0.1	-89.07	27.28	-0.08	-1.25	18.80	0.20	0.00	20.05	30.8	2
P		Tube 4	Origin	85.00	2.94	0.01	-0.03	1251.56	-2.91	0.1	-90.94	27.45	-0.09	-1.28	18.80	0.20	0.00	20.08	30.9	2
P		P:AL4	End	90.00	2.23	0.01	-0.03	1388.80	-3.36	0.1	-90.94	27.45	-0.09	-1.23	19.23	0.20	0.00	20.45	31.5	2
P		P:AL4	Origin	90.00	2.23	0.01	-0.03	1388.80	-3.36	0.1	-94.26	27.76	-0.10	-1.27	19.23	0.20	0.00	20.50	31.5	2
P		Tube 4	End	95.00	1.63	0.00	-0.02	1527.58	-3.84	0.1	-94.26	27.76	-0.10	-1.22	19.55	0.19	0.00	20.78	32.0	2
P		Tube 4	Origin	95.00	1.63	0.00	-0.02	1527.58	-3.84	0.1	-96.27	27.94	-0.10	-1.25	19.55	0.19	0.00	20.80	32.0	2

P	P:AL3	End	100.00	1.12	0.00	-0.02	1667.28	-4.36	0.1	-96.27	27.94	-0.10	-1.20	19.79	0.18	0.00	21.00	32.3	2
P	P:AL3	Origin	100.00	1.12	0.00	-0.02	1667.28	-4.36	0.1	-99.74	28.26	-0.11	-1.25	19.79	0.19	0.00	21.04	32.4	2
P	Tube 4	End	105.00	0.71	0.00	-0.01	1808.58	-4.92	0.1	-99.74	28.26	-0.11	-1.20	19.96	0.18	0.00	21.17	32.6	2
P	Tube 4	Origin	105.00	0.71	0.00	-0.01	1808.58	-4.92	0.1	-101.91	28.46	-0.12	-1.23	19.96	0.18	0.00	21.19	32.6	2
P	P:AL2	End	110.00	0.40	0.00	-0.01	1950.89	-5.53	0.1	-101.91	28.46	-0.12	-1.18	20.08	0.17	0.00	21.26	32.7	2
P	P:AL2	Origin	110.00	0.40	0.00	-0.01	1950.89	-5.53	0.1	-105.52	28.80	-0.13	-1.23	20.08	0.18	0.00	21.31	32.8	2
P	Tube 4	End	115.00	0.18	0.00	-0.01	2094.87	-6.18	0.1	-105.52	28.80	-0.13	-1.19	20.15	0.17	0.00	21.34	32.8	2
P	Tube 4	Origin	115.00	0.18	0.00	-0.01	2094.87	-6.18	0.1	-107.84	29.02	-0.14	-1.21	20.15	0.17	0.00	21.36	32.9	2
P	P:AL1	End	120.00	0.04	0.00	-0.00	2239.95	-6.88	0.1	-107.84	29.02	-0.14	-1.17	20.18	0.17	0.00	21.35	32.8	2
P	P:AL1	Origin	120.00	0.04	0.00	-0.00	2239.95	-6.88	0.1	-111.60	29.37	-0.15	-1.21	20.18	0.17	0.00	21.39	32.9	2
P	P:g	End	125.00	0.00	0.00	0.00	2386.78	-7.63	0.1	-111.60	29.37	-0.15	-1.18	20.18	0.16	0.00	21.36	32.9	2

Detailed Tubular Davit Arm Usages for Load Case "RULE 250B":

Element Label	Joint Label	Joint Position	Rel. Dist. (ft)	Trans. Defl. (in)	Long. Defl. (in)	Vert. Defl. (in)	Vert. Mom. (ft-k)	Horz. Mom. (ft-k)	Tors. Mom. (ft-k)	Axial Force (kips)	Vert. Shear (kips)	Horz. Shear (kips)	P/A (ksi)	M/S. (ksi)	V/Q. (ksi)	T/R. (ksi)	Res. (ksi)	Max. Usage %	At Pt.
S1	S1:O	Origin	0.00	19.10	0.05	0.10	-25.55	0.00	-0.0	-1.54	3.03	-0.00	-0.10	6.03	0.16	0.00	6.13	9.4	2
S1	S1:B	End	0.77	19.11	0.05	0.39	-23.21	0.00	-0.0	-1.54	3.03	-0.00	-0.10	5.91	0.16	0.00	6.02	9.3	2
S1	S1:B	Origin	0.77	19.11	0.05	0.39	-23.21	0.00	0.0	-1.78	2.70	-0.00	-0.12	5.91	0.14	0.00	6.04	9.3	2
S1	#S1:0	End	5.29	19.28	0.05	2.01	-11.01	0.00	0.0	-1.78	2.70	-0.00	-0.15	4.74	0.19	0.00	4.90	7.5	2
S1	#S1:0	Origin	5.29	19.28	0.05	2.01	-11.01	0.00	0.0	-1.75	2.44	-0.00	-0.15	4.74	0.17	0.00	4.90	7.5	2
S1	S1:T	End	9.81	19.44	0.05	3.54	-0.00	0.00	0.0	-1.75	2.44	-0.00	-0.21	0.00	0.62	0.00	1.10	1.7	4
S2	S2:O	Origin	0.00	19.09	0.05	-0.62	-27.99	0.06	-0.0	1.54	3.03	-0.01	0.10	6.61	0.16	0.00	6.71	10.3	2
S2	S2:B	End	0.77	19.09	0.05	-0.91	-25.65	0.05	-0.0	1.54	3.03	-0.01	0.10	6.54	0.16	0.00	6.65	10.2	2
S2	S2:B	Origin	0.77	19.09	0.05	-0.91	-25.65	0.05	-0.0	1.28	2.97	-0.01	0.08	6.54	0.16	0.00	6.63	10.2	2
S2	#S2:0	End	5.29	19.22	0.05	-2.68	-12.21	0.03	-0.0	1.28	2.97	-0.01	0.11	5.26	0.21	0.00	5.38	8.3	2
S2	#S2:0	Origin	5.29	19.22	0.05	-2.68	-12.21	0.03	-0.0	1.30	2.70	-0.01	0.11	5.26	0.19	0.00	5.38	8.3	2
S2	S2:T	End	9.81	19.36	0.05	-4.56	0.00	0.00	-0.0	1.30	2.70	-0.01	0.16	0.00	0.69	0.00	1.20	1.9	4
A1	A1:O	Origin	0.00	16.03	0.04	0.18	-58.18	0.01	-0.0	-2.93	7.25	-0.00	-0.21	13.92	0.41	0.00	14.15	21.8	2
A1	A1:B	End	0.79	16.04	0.04	0.46	-52.46	0.00	-0.0	-2.93	7.25	-0.00	-0.22	13.88	0.43	0.00	14.12	21.7	2
A1	A1:B	Origin	0.79	16.04	0.04	0.46	-52.46	0.00	0.0	-3.55	6.82	-0.00	-0.26	13.88	0.41	0.00	14.16	21.8	2
A1	#A1:0	End	4.56	16.16	0.04	1.67	-26.79	0.00	0.0	-3.55	6.82	-0.00	-0.35	12.47	0.54	0.00	12.85	19.8	2
A1	#A1:0	Origin	4.56	16.16	0.04	1.67	-26.79	0.00	0.0	-3.50	6.63	-0.00	-0.34	12.47	0.53	0.00	12.84	19.8	2
A1	A1:T	End	8.32	16.28	0.04	2.73	-1.81	0.00	0.0	-3.50	6.63	-0.00	-0.51	0.00	2.00	0.00	3.51	5.4	4
A2	A2:O	Origin	0.00	11.94	0.03	0.26	-69.32	0.01	-0.0	-2.91	7.43	-0.00	-0.17	14.01	0.35	0.00	14.20	21.8	2
A2	A2:B	End	0.77	11.94	0.03	0.50	-63.60	0.01	-0.0	-2.91	7.43	-0.00	-0.18	13.97	0.37	0.00	14.16	21.8	2
A2	A2:B	Origin	0.77	11.94	0.03	0.50	-63.60	0.01	0.0	-3.53	6.96	-0.00	-0.22	13.97	0.34	0.00	14.20	21.8	2
A2	#A2:0	End	5.30	12.07	0.03	1.76	-32.10	0.00	0.0	-3.53	6.96	-0.00	-0.29	12.53	0.46	0.00	12.84	19.8	2
A2	#A2:0	Origin	5.30	12.07	0.03	1.76	-32.10	0.00	0.0	-3.47	6.69	-0.00	-0.28	12.53	0.44	0.00	12.84	19.7	2
A2	A2:T	End	9.83	12.18	0.03	2.80	-1.80	0.00	0.0	-3.47	6.69	-0.00	-0.42	0.00	1.71	0.00	2.98	4.6	4
A3	A3:O	Origin	0.00	8.45	0.02	0.29	-58.39	0.00	-0.0	-2.88	7.27	-0.00	-0.20	13.97	0.41	0.00	14.19	21.8	2
A3	A3:B	End	0.79	8.45	0.02	0.50	-52.65	0.00	-0.0	-2.88	7.27	-0.00	-0.21	13.93	0.43	0.00	14.16	21.8	2
A3	A3:B	Origin	0.79	8.45	0.02	0.50	-52.65	0.00	0.0	-3.50	6.84	-0.00	-0.26	13.93	0.41	0.00	14.21	21.9	2
A3	#A3:0	End	4.56	8.54	0.02	1.39	-26.89	0.00	0.0	-3.50	6.84	-0.00	-0.34	12.51	0.54	0.00	12.89	19.8	2
A3	#A3:0	Origin	4.56	8.54	0.02	1.39	-26.89	0.00	0.0	-3.45	6.66	-0.00	-0.34	12.51	0.53	0.00	12.88	19.8	2
A3	A3:T	End	8.32	8.61	0.02	2.12	-1.81	0.00	0.0	-3.45	6.66	-0.00	-0.50	0.00	2.01	0.00	3.52	5.4	4
A4	A4:O	Origin	0.00	16.02	0.04	-0.60	-59.11	-0.00	0.0	2.94	7.25	0.00	0.21	14.14	0.41	0.00	14.37	22.1	2
A4	A4:B	End	0.79	16.02	0.04	-0.88	-53.38	-0.00	0.0	2.94	7.25	0.00	0.22	14.12	0.43	0.00	14.36	22.1	2
A4	A4:B	Origin	0.79	16.02	0.04	-0.88	-53.38	-0.00	-0.0	2.28	7.34	0.00	0.17	14.12	0.44	0.00	14.31	22.0	2
A4	#A4:0	End	4.56	16.13	0.04	-2.34	-25.75	-0.00	-0.0	2.28	7.34	0.00	0.22	11.98	0.58	0.00	12.25	18.8	2
A4	#A4:0	Origin	4.56	16.13	0.04	-2.34	-25.75	-0.00	0.0	2.32	7.13	0.00	0.23	11.98	0.56	0.00	12.25	18.8	2

A4	A4:T	End	8.32	16.25	0.04	-3.94	1.12	0.00	0.0	2.32	7.13	0.00	0.33	0.00	2.16	0.00	3.75	5.8	4
A5	A5:O	Origin	0.00	11.93	0.03	-0.55	-70.88	-0.01	0.0	2.92	7.43	0.00	0.17	14.32	0.35	0.00	14.51	22.3	2
A5	A5:B	End	0.77	11.92	0.03	-0.80	-65.15	-0.00	0.0	2.92	7.43	0.00	0.18	14.31	0.37	0.00	14.50	22.3	2
A5	A5:B	Origin	0.77	11.92	0.03	-0.80	-65.15	-0.00	-0.0	2.27	7.46	0.00	0.14	14.31	0.37	0.00	14.46	22.3	2
A5	#A5:0	End	5.30	12.04	0.03	-2.39	-31.35	-0.00	-0.0	2.27	7.46	0.00	0.19	12.24	0.50	0.00	12.45	19.2	2
A5	#A5:0	Origin	5.30	12.04	0.03	-2.39	-31.35	-0.00	0.0	2.31	7.17	0.00	0.19	12.24	0.48	0.00	12.45	19.2	2
A5	A5:T	End	9.83	12.18	0.03	-4.21	1.13	0.00	0.0	2.31	7.17	0.00	0.28	0.00	1.83	0.00	3.18	4.9	4
A6	A6:O	Origin	0.00	8.44	0.02	-0.49	-59.25	-0.00	0.0	2.88	7.27	0.00	0.20	14.18	0.41	0.00	14.40	22.1	2
A6	A6:B	End	0.79	8.44	0.02	-0.70	-53.51	-0.00	0.0	2.88	7.27	0.00	0.21	14.16	0.43	0.00	14.39	22.1	2
A6	A6:B	Origin	0.79	8.44	0.02	-0.70	-53.51	-0.00	-0.0	2.23	7.36	0.00	0.17	14.16	0.44	0.00	14.34	22.1	2
A6	#A6:0	End	4.56	8.53	0.02	-1.83	-25.81	-0.00	-0.0	2.23	7.36	0.00	0.22	12.01	0.58	0.00	12.27	18.9	2
A6	#A6:0	Origin	4.56	8.53	0.02	-1.83	-25.81	-0.00	0.0	2.27	7.15	0.00	0.22	12.01	0.57	0.00	12.27	18.9	2
A6	A6:T	End	8.32	8.63	0.02	-3.11	1.12	0.00	0.0	2.27	7.15	0.00	0.33	0.00	2.16	0.00	3.76	5.8	4

Summary of Clamp Capacities and Usages for Load Case "RULE 250B":

Clamp Label	Force (kips)	Input Holding Capacity (kips)	Factored Holding Capacity (kips)	Holding Usage %	Input Hardware Capacity (kips)	Factored Hardware Capacity (kips)	Hardware Usage %	Max. Usage %
1	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
7	2.898	100.00	0.00	0.00	0.00	0.00	0.00	0.00
8	2.898	100.00	0.00	0.00	0.00	0.00	0.00	0.00
9	5.914	100.00	0.00	0.00	0.00	0.00	0.00	0.00
10	6.659	100.00	0.00	0.00	0.00	0.00	0.00	0.00
13	1.385	100.00	0.00	0.00	0.00	0.00	0.00	0.00
14	1.385	100.00	0.00	0.00	0.00	0.00	0.00	0.00
15	1.385	100.00	0.00	0.00	0.00	0.00	0.00	0.00
16	1.385	100.00	0.00	0.00	0.00	0.00	0.00	0.00
17	1.385	100.00	0.00	0.00	0.00	0.00	0.00	0.00
18	1.385	100.00	0.00	0.00	0.00	0.00	0.00	0.00
19	1.385	100.00	0.00	0.00	0.00	0.00	0.00	0.00
20	1.385	100.00	0.00	0.00	0.00	0.00	0.00	0.00
21	1.385	100.00	0.00	0.00	0.00	0.00	0.00	0.00
22	1.385	100.00	0.00	0.00	0.00	0.00	0.00	0.00
23	1.385	100.00	0.00	0.00	0.00	0.00	0.00	0.00
24	1.385	100.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
SW1	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
SW2	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00

Summary of Suspension Capacities and Usages for Load Case "RULE 250B":

Suspension Label	Tension (kips)	Input Tension Capacity (kips)	Factored Tension Capacity (kips)	Tension Usage %	Input Hardware Capacity (kips)	Factored Hardware Capacity (kips)	Hardware Usage %	Max. Usage %
S1	7.426	30.00	0.00	0.00	0.00	0.00	0.00	0.00
S2	7.426	30.00	0.00	0.00	0.00	0.00	0.00	0.00

S3	7.426	30.00	0.00	0.00	0.00	0.00	0.00	0.00
S4	7.426	30.00	0.00	0.00	0.00	0.00	0.00	0.00
S5	7.426	30.00	0.00	0.00	0.00	0.00	0.00	0.00
S6	7.426	30.00	0.00	0.00	0.00	0.00	0.00	0.00

*** Analysis Results for Load Case No. 2 "RULE 250C" - Number of iterations in SAPS 14

Equilibrium Joint Positions and Rotations for Load Case "RULE 250C":

Joint Label	X-Displ (ft)	Y-Displ (ft)	Z-Displ (ft)	X-Rot (deg)	Y-Rot (deg)	Z-Rot (deg)	X-Pos (ft)	Y-Pos (ft)	Z-Pos (ft)
P:g	0	0	0	0.0000	0.0000	0.0000	0	0	0
P:t	0.0009978	4.96	-0.1385	-4.5807	0.0009	0.0003	0.0009978	4.96	124.9
P:T-Mo	0.00094	4.641	-0.1257	-4.5798	0.0008	0.0003	0.00094	4.641	120.9
P:AL12	0.0008542	4.165	-0.1068	-4.4630	0.0008	0.0003	0.0008542	4.165	114.9
P:AT&T	0.0007987	3.859	-0.09502	-4.3054	0.0008	0.0003	0.0007987	3.859	110.9
P:AL11	0.0007201	3.424	-0.07911	-3.9740	0.0007	0.0003	0.0007201	3.424	104.9
P:SW	0.0006458	3.008	-0.06528	-3.5985	0.0007	0.0003	0.0006458	3.008	98.62
P:AL10	0.0006074	2.78	-0.05818	-3.4836	0.0006	0.0003	0.0006074	2.78	94.94
P:A1	0.0005593	2.501	-0.04981	-3.3296	0.0006	0.0002	0.0005593	2.501	90.26
P:AL9	0.0005059	2.201	-0.04123	-3.1410	0.0006	0.0002	0.0005059	2.201	84.96
P:A2	0.0004391	1.842	-0.03169	-2.8809	0.0006	0.0001	0.0004391	1.842	78.16
P:AL8	0.0004085	1.685	-0.02775	-2.7538	0.0006	0.0001	0.0004085	1.685	74.97
P:A3	0.0003286	1.294	-0.01876	-2.3921	0.0005	0.0001	0.0003286	1.294	66.29
P:AL7	0.0003171	1.24	-0.0176	-2.3364	0.0005	0.0001	0.0003171	1.24	64.98
P:AL6	0.0002341	0.8686	-0.01046	-1.9008	0.0004	0.0001	0.0002341	0.8686	54.99
P:AL5	0.0001616	0.5711	-0.005811	-1.5093	0.0004	0.0000	0.0001616	0.5711	44.99
P:AL4	0.0001006	0.3391	-0.002908	-1.1412	0.0003	0.0000	0.0001006	0.3391	35
P:AL3	5.281e-05	0.17	-0.001266	-0.7907	0.0002	0.0000	5.281e-05	0.17	25
P:AL2	1.965e-05	0.06034	-0.0004566	-0.4597	0.0001	0.0000	1.965e-05	0.06034	15
P:AL1	2.358e-06	0.006801	-0.0001049	-0.1484	0.0000	0.0000	2.358e-06	0.006801	5
S1:O	0.0006516	3.01	-0.00472	-3.5985	0.0007	0.0003	0.0006516	2.045	98.69
S1:B	0.0006562	3.012	0.04358	-3.5947	0.0007	0.0003	0.0006562	1.277	98.73
S1:T	0.0007198	3.08	0.6028	-3.5580	0.0007	0.0003	0.0007198	-7.655	100.1
S2:O	0.00064	3.006	-0.1258	-3.5985	0.0007	0.0003	0.00064	3.971	98.56
S2:B	0.0006351	3.005	-0.1742	-3.6044	0.0007	0.0003	0.0006351	4.74	98.52
S2:T	0.0005437	3.038	-0.7473	-3.6640	0.0006	0.0008	0.0005437	13.77	98.76
A1:O	0.0005643	2.503	0.01367	-3.3296	0.0006	0.0002	0.0005643	1.41	90.32
A1:B	0.0005679	2.504	0.05943	-3.3145	0.0006	0.0002	0.0005679	0.621	90.37
A1:T	0.0006093	2.555	0.4804	-3.1508	0.0006	0.0002	0.0006093	-6.828	91.48
A2:O	0.000443	1.844	0.03256	-2.8809	0.0006	0.0001	0.000443	0.5655	78.22
A2:B	0.0004453	1.845	0.07115	-2.8661	0.0006	0.0001	0.0004453	-0.2035	78.26
A2:T	0.0004812	1.895	0.5046	-2.6722	0.0006	0.0002	0.0004812	-9.174	79.51
A3:O	0.0003316	1.295	0.04218	-2.3921	0.0005	0.0001	0.0003316	-0.1648	66.35
A3:B	0.0003333	1.296	0.07503	-2.3766	0.0005	0.0001	0.0003333	-0.9542	66.39
A3:T	0.0003551	1.329	0.3736	-2.2092	0.0005	0.0001	0.0003551	-8.421	67.37
A4:O	0.0005544	2.499	-0.1133	-3.3296	0.0006	0.0002	0.0005544	3.592	90.2
A4:B	0.0005508	2.498	-0.1593	-3.3457	0.0006	0.0002	0.0005508	4.381	90.15
A4:T	0.0005241	2.526	-0.6089	-3.4731	0.0006	0.0002	0.0005241	11.91	90.39
A5:O	0.0004352	1.841	-0.09594	-2.8809	0.0006	0.0001	0.0004352	3.119	78.09
A5:B	0.0004328	1.84	-0.1348	-2.8971	0.0006	0.0001	0.0004328	3.888	78.06
A5:T	0.0004132	1.87	-0.6078	-3.0608	0.0006	0.0001	0.0004132	12.94	78.4
A6:O	0.0003256	1.293	-0.07969	-2.3921	0.0005	0.0001	0.0003256	2.753	66.23
A6:B	0.000324	1.292	-0.1128	-2.4085	0.0005	0.0001	0.000324	3.542	66.2
A6:T	0.0003146	1.315	-0.4395	-2.5392	0.0005	0.0001	0.0003146	11.06	66.56
1	0.0007141	3.046	0.6069	-3.5580	0.0007	0.0003	0.0007141	-7.737	99.57
2	0.0005375	3.004	-0.7493	-3.6640	0.0006	0.0008	0.0005375	13.79	98.22
3	0.0006039	2.525	0.4839	-3.1508	0.0006	0.0002	0.0006039	-6.907	90.95
4	0.0004761	1.87	0.5075	-2.6722	0.0006	0.0002	0.0004761	-9.248	78.97
5	0.0003503	1.309	0.3759	-2.2092	0.0005	0.0001	0.0003503	-8.491	66.84
6	0.0005182	2.493	-0.6109	-3.4731	0.0006	0.0002	0.0005182	11.93	89.85

7	0.0004078	1.841	-0.6097	-3.0608	0.0006	0.0001	0.0004078	12.96 77.86
8	0.0003097	1.291	-0.4412	-2.5392	0.0005	0.0001	0.0003097	11.09 66.02

Joint Support Reactions for Load Case "RULE 250C":

Joint Label	X Force (kips)	X Usage %	Y Force (kips)	Y Usage %	H-Shear Usage %	Z Force (kips)	Comp. Usage %	Uplift Usage %	Result. Force (kips)	Result. Usage %	X Moment (ft-k)	X-M. Usage %	Y Moment (ft-k)	Y-M. Usage %	H-Bend-M Usage %	Z Moment (ft-k)	Z-M. Usage %	Max. Usage %
P:g	-0.04	0.0	-53.61	0.0	0.0	-57.99	0.0	0.0	78.98	0.0	4344.25	0.0	-1.5	0.0	0.0	-0.07	0.0	0.0

Detailed Steel Pole Usages for Load Case "RULE 250C":

Element Label	Joint Label	Joint Position	Rel. Dist. (ft)	Trans. Defl. (in)	Long. Defl. (in)	Vert. Defl. (in)	Trans. Mom. (Local Mx) (ft-k)	Long. Mom. (Local My) (ft-k)	Tors. Mom. (ft-k)	Axial Force (kips)	Tran. Shear (kips)	Long. Shear (kips)	P/A (ksi)	M/S. (ksi)	V/Q. (ksi)	T/R. (ksi)	Res. (ksi)	Max. Usage %	At Pt.
P	P:t	Origin	0.00	59.52	0.01	-1.66	-0.00	0.00	0.0	-0.06	0.08	-0.00	-0.01	0.00	0.02	0.00	0.04	0.1	5
P	P:T-Mo	End	4.00	55.69	0.01	-1.51	0.31	-0.00	0.0	-0.06	0.08	-0.00	-0.01	0.12	0.00	0.00	0.13	0.2	2
P	P:T-Mo	Origin	4.00	55.69	0.01	-1.51	0.31	-0.00	-0.0	-2.38	6.60	-0.00	-0.28	0.00	1.56	0.00	2.72	4.2	5
P	Tube 1	End	7.00	52.82	0.01	-1.39	20.12	-0.00	-0.0	-2.38	6.60	-0.00	-0.26	6.69	0.38	0.00	6.98	10.7	2
P	Tube 1	Origin	7.00	52.82	0.01	-1.39	20.12	-0.00	-0.0	-2.48	6.73	-0.00	-0.27	6.69	0.38	0.00	6.99	10.8	2
P	P:AL12	End	10.00	49.99	0.01	-1.28	40.32	-0.01	-0.0	-2.48	6.73	-0.00	-0.25	11.67	0.36	0.00	11.94	18.4	2
P	P:AL12	Origin	10.00	49.99	0.01	-1.28	40.32	-0.01	-0.0	-2.96	7.25	-0.00	-0.30	11.67	0.39	0.00	11.99	18.4	2
P	P:AT&T	End	14.00	46.31	0.01	-1.14	69.34	-0.01	-0.0	-2.96	7.25	-0.00	-0.27	16.91	0.35	0.00	17.19	26.4	2
P	P:AT&T	Origin	14.00	46.31	0.01	-1.14	69.34	-0.01	-0.0	-6.37	11.82	-0.00	-0.59	16.91	0.58	0.00	17.52	27.0	2
P	Tube 2	End	17.00	43.65	0.01	-1.04	104.78	-0.02	-0.0	-6.37	11.82	-0.00	-0.55	22.67	0.54	0.00	23.24	35.8	2
P	Tube 2	Origin	17.00	43.65	0.01	-1.04	104.78	-0.02	-0.0	-6.52	11.96	-0.00	-0.57	22.67	0.55	0.00	23.25	35.8	2
P	P:AL11	End	20.00	41.09	0.01	-0.95	140.65	-0.03	-0.0	-6.52	11.96	-0.00	-0.54	27.18	0.52	0.00	27.73	42.7	2
P	P:AL11	Origin	20.00	41.09	0.01	-0.95	140.65	-0.03	-0.0	-7.09	12.52	-0.00	-0.58	27.18	0.54	0.00	27.78	42.7	2
P	SpliceT	End	25.00	37.09	0.01	-0.81	203.24	-0.05	-0.0	-7.09	12.52	-0.00	-0.53	32.97	0.50	0.00	33.51	51.6	2
P	SpliceT	Origin	25.00	37.09	0.01	-0.81	203.24	-0.05	-0.0	-7.31	12.68	-0.00	-0.23	13.96	0.22	0.00	14.20	21.8	2
P	P:SW	End	26.31	36.10	0.01	-0.78	219.85	-0.05	-0.0	-7.31	12.68	-0.00	-0.23	14.46	0.21	0.00	14.70	22.6	2
P	P:SW	Origin	26.31	36.10	0.01	-0.78	222.76	-0.05	0.1	-9.52	16.42	0.00	-0.30	14.66	0.27	0.00	14.96	23.0	2
P	P:AL10	End	30.00	33.36	0.01	-0.70	283.36	-0.04	0.1	-9.52	16.42	0.00	-0.28	16.59	0.26	0.00	16.87	26.0	2
P	P:AL10	Origin	30.00	33.36	0.01	-0.70	283.36	-0.04	0.1	-10.40	17.06	0.00	-0.31	16.59	0.27	0.00	16.90	26.0	2
P	P:A1	End	34.69	30.01	0.01	-0.60	363.37	-0.04	0.1	-10.40	17.06	0.00	-0.29	18.50	0.25	0.00	18.80	28.9	2
P	P:A1	Origin	34.69	30.01	0.01	-0.60	364.73	-0.04	0.1	-16.92	25.60	-0.00	-0.47	18.57	0.38	0.00	19.05	29.3	2
P	Tube 3	End	37.35	28.18	0.01	-0.54	432.70	-0.05	0.1	-16.92	25.60	-0.00	-0.45	20.45	0.36	0.00	20.91	32.2	2
P	Tube 3	Origin	37.35	28.18	0.01	-0.54	432.70	-0.05	0.1	-17.30	25.78	-0.00	-0.46	20.45	0.36	0.00	20.92	32.2	2
P	P:AL9	End	40.00	26.41	0.01	-0.49	501.16	-0.05	0.1	-17.30	25.78	-0.00	-0.44	22.04	0.35	0.00	22.49	34.6	2
P	P:AL9	Origin	40.00	26.41	0.01	-0.49	501.16	-0.05	0.1	-18.11	26.35	-0.00	-0.46	22.04	0.36	0.00	22.51	34.6	2
P	Tube 3	End	43.41	24.21	0.01	-0.44	590.90	-0.06	0.1	-18.11	26.35	-0.00	-0.44	23.78	0.34	0.00	24.23	37.3	2
P	Tube 3	Origin	43.41	24.21	0.01	-0.44	590.90	-0.06	0.1	-18.64	26.60	-0.00	-0.46	23.78	0.35	0.00	24.24	37.3	2
P	P:A2	End	46.81	22.11	0.01	-0.38	681.47	-0.07	0.1	-18.64	26.60	-0.00	-0.44	25.19	0.33	0.00	25.63	39.4	2
P	P:A2	Origin	46.81	22.11	0.01	-0.38	683.80	-0.07	0.1	-25.52	35.10	-0.00	-0.60	25.27	0.44	0.00	25.88	39.8	2
P	P:AL8	End	50.00	20.22	0.00	-0.33	795.78	-0.08	0.1	-25.52	35.10	-0.00	-0.58	27.24	0.42	0.00	27.83	42.8	2
P	P:AL8	Origin	50.00	20.22	0.00	-0.33	795.78	-0.08	0.1	-26.54	35.73	-0.01	-0.60	27.24	0.43	0.00	27.86	42.9	2
P	Tube 3	End	54.35	17.79	0.00	-0.28	951.03	-0.11	0.1	-26.54	35.73	-0.01	-0.57	29.47	0.41	0.00	30.05	46.2	2
P	Tube 3	Origin	54.35	17.79	0.00	-0.28	951.03	-0.11	0.1	-27.34	36.06	-0.01	-0.59	29.47	0.41	0.00	30.07	46.3	2
P	P:A3	End	58.69	15.53	0.00	-0.23	1107.72	-0.14	0.1	-27.34	36.06	-0.01	-0.56	31.22	0.39	0.00	31.79	48.9	2
P	P:A3	Origin	58.69	15.53	0.00	-0.23	1109.01	-0.14	0.1	-34.05	44.47	-0.01	-0.70	31.25	0.48	0.00	31.96	49.2	2
P	P:AL7	End	60.00	14.88	0.00	-0.21	1167.27	-0.15	0.1	-34.05	44.47	-0.01	-0.69	31.99	0.48	0.00	32.70	50.3	2
P	P:AL7	Origin	60.00	14.88	0.00	-0.21	1167.27	-0.15	0.1	-35.05	45.07	-0.01	-0.71	31.99	0.48	0.00	32.72	50.3	2
P	Tube 3	End	65.00	12.54	0.00	-0.16	1392.60	-0.19	0.1	-35.05	45.07	-0.01	-0.67	34.45	0.46	0.00	35.13	54.1	2
P	Tube 3	Origin	65.00	12.54	0.00	-0.16	1392.60	-0.19	0.1	-36.11	45.46	-0.01	-0.70	34.45	0.46	0.00	35.15	54.1	2
P	P:AL6	End	70.00	10.42	0.00	-0.13	1619.89	-0.24	0.1	-36.11	45.46	-0.01	-0.66	36.35	0.44	0.00	37.02	57.0	2
P	P:AL6	Origin	70.00	10.42	0.00	-0.13	1619.89	-0.24	0.1	-37.23	46.08	-0.01	-0.68	36.35	0.45	0.00	37.04	57.0	2

P	SpliceT	End	72.00	9.64	0.00	-0.11	1712.06	-0.27	0.1	-37.23	46.08	-0.01	-0.67	36.99	0.44	0.00	37.67	58.0	2
P	SpliceT	Origin	72.00	9.64	0.00	-0.11	1712.06	-0.27	0.1	-37.96	46.35	-0.01	-0.60	32.32	0.39	0.00	32.92	50.6	2
P	Tube 4	End	76.00	8.18	0.00	-0.09	1897.44	-0.32	0.1	-37.96	46.35	-0.01	-0.58	33.28	0.37	0.00	33.87	52.1	2
P	Tube 4	Origin	76.00	8.18	0.00	-0.09	1897.44	-0.32	0.1	-38.98	46.71	-0.01	-0.59	33.28	0.38	0.00	33.88	52.1	2
P	P:AL5	End	80.00	6.85	0.00	-0.07	2084.27	-0.38	0.1	-38.98	46.71	-0.01	-0.57	34.06	0.36	0.00	34.64	53.3	2
P	P:AL5	Origin	80.00	6.85	0.00	-0.07	2084.27	-0.38	0.1	-40.53	47.48	-0.02	-0.59	34.06	0.37	0.00	34.66	53.3	2
P	Tube 4	End	85.00	5.36	0.00	-0.05	2321.66	-0.46	0.1	-40.53	47.48	-0.02	-0.57	34.85	0.35	0.00	35.42	54.5	2
P	Tube 4	Origin	85.00	5.36	0.00	-0.05	2321.66	-0.46	0.1	-41.90	47.97	-0.02	-0.59	34.85	0.36	0.00	35.44	54.5	2
P	P:AL4	End	90.00	4.07	0.00	-0.03	2561.50	-0.55	0.1	-41.90	47.97	-0.02	-0.56	35.44	0.34	0.00	36.01	55.4	2
P	P:AL4	Origin	90.00	4.07	0.00	-0.03	2561.50	-0.55	0.1	-43.68	48.82	-0.02	-0.59	35.44	0.35	0.00	36.03	55.4	2
P	Tube 4	End	95.00	2.96	0.00	-0.02	2805.58	-0.65	0.1	-43.68	48.82	-0.02	-0.57	35.89	0.33	0.00	36.46	56.1	2
P	Tube 4	Origin	95.00	2.96	0.00	-0.02	2805.58	-0.65	0.1	-45.14	49.35	-0.02	-0.59	35.89	0.34	0.00	36.48	56.1	2
P	P:AL3	End	100.00	2.04	0.00	-0.02	3052.31	-0.76	0.1	-45.14	49.35	-0.02	-0.56	36.21	0.33	0.00	36.78	56.6	2
P	P:AL3	Origin	100.00	2.04	0.00	-0.02	3052.31	-0.76	0.1	-47.02	50.23	-0.02	-0.59	36.21	0.33	0.00	36.80	56.6	2
P	Tube 4	End	105.00	1.30	0.00	-0.01	3303.47	-0.88	0.1	-47.02	50.23	-0.02	-0.57	36.44	0.32	0.00	37.01	56.9	2
P	Tube 4	Origin	105.00	1.30	0.00	-0.01	3303.47	-0.88	0.1	-48.58	50.80	-0.03	-0.58	36.44	0.32	0.00	37.03	57.0	2
P	P:AL2	End	110.00	0.72	0.00	-0.01	3557.47	-1.01	0.1	-48.58	50.80	-0.03	-0.56	36.59	0.31	0.00	37.16	57.2	2
P	P:AL2	Origin	110.00	0.72	0.00	-0.01	3557.47	-1.01	0.1	-50.56	51.73	-0.03	-0.59	36.59	0.32	0.00	37.18	57.2	2
P	Tube 4	End	115.00	0.32	0.00	-0.00	3816.10	-1.16	0.1	-50.56	51.73	-0.03	-0.57	36.68	0.31	0.00	37.25	57.3	2
P	Tube 4	Origin	115.00	0.32	0.00	-0.00	3816.10	-1.16	0.1	-52.22	52.33	-0.03	-0.59	36.68	0.31	0.00	37.27	57.3	2
P	P:AL1	End	120.00	0.08	0.00	-0.00	4077.77	-1.31	0.1	-52.22	52.33	-0.03	-0.57	36.70	0.30	0.00	37.28	57.3	2
P	P:AL1	Origin	120.00	0.08	0.00	-0.00	4077.77	-1.31	0.1	-54.29	53.30	-0.03	-0.59	36.70	0.31	0.00	37.30	57.4	2
P	P:g	End	125.00	0.00	0.00	0.00	4344.25	-1.48	0.1	-54.29	53.30	-0.03	-0.57	36.70	0.30	0.00	37.27	57.3	2

Detailed Tubular Davit Arm Usages for Load Case "RULE 250C":

Element Label	Joint Label	Joint Position	Rel. Dist. (ft)	Trans. Defl. (in)	Long. Defl. (in)	Vert. Defl. (in)	Vert. Mom. (ft-k)	Horz. Mom. (ft-k)	Tors. Mom. (ft-k)	Axial Force (kips)	Vert. Shear (kips)	Horz. Shear (kips)	P/A (ksi)	M/S. (ksi)	V/Q. (ksi)	T/R. (ksi)	Res. (ksi)	Max. Usage %	At Pt.
S1	S1:O	Origin	0.00	36.12	0.01	-0.06	-5.82	0.00	-0.0	-1.79	0.93	-0.00	-0.11	1.37	0.05	0.00	1.49	2.3	2
S1	S1:B	End	0.77	36.14	0.01	0.52	-5.10	0.00	-0.0	-1.79	0.93	-0.00	-0.12	1.30	0.05	0.00	1.42	2.2	2
S1	S1:B	Origin	0.77	36.14	0.01	0.52	-5.10	0.00	-0.0	-1.85	0.65	-0.00	-0.12	1.30	0.03	0.00	1.42	2.2	2
S1	#S1:0	End	5.29	36.55	0.01	3.89	-2.16	0.00	-0.0	-1.85	0.65	-0.00	-0.16	0.93	0.05	0.00	1.09	1.7	2
S1	#S1:0	Origin	5.29	36.55	0.01	3.89	-2.16	0.00	0.0	-1.82	0.48	-0.00	-0.16	0.93	0.03	0.00	1.09	1.7	2
S1	S1:T	End	9.81	36.96	0.01	7.23	-0.00	0.00	0.0	-1.82	0.48	-0.00	-0.22	0.00	0.12	0.00	0.31	0.5	4
S2	S2:O	Origin	0.00	36.07	0.01	-1.51	-8.72	0.06	-0.0	1.79	0.94	-0.01	0.11	2.06	0.05	0.00	2.18	3.4	2
S2	S2:B	End	0.77	36.06	0.01	-2.09	-8.00	0.05	-0.0	1.79	0.94	-0.01	0.12	2.04	0.05	0.00	2.16	3.3	2
S2	S2:B	Origin	0.77	36.06	0.01	-2.09	-8.00	0.05	0.0	1.70	0.98	-0.01	0.11	2.04	0.05	0.00	2.16	3.3	2
S2	#S2:0	End	5.29	36.26	0.01	-5.51	-3.59	0.03	0.0	1.70	0.98	-0.01	0.15	1.55	0.07	0.00	1.70	2.6	2
S2	#S2:0	Origin	5.29	36.26	0.01	-5.51	-3.59	0.03	-0.0	1.70	0.79	-0.01	0.15	1.55	0.06	0.00	1.70	2.6	2
S2	S2:T	End	9.81	36.46	0.01	-8.97	0.00	0.00	-0.0	1.70	0.79	-0.01	0.21	0.00	0.20	0.00	0.41	0.6	4
A1	A1:O	Origin	0.00	30.03	0.01	0.16	-23.12	0.00	-0.0	-4.15	2.99	-0.00	-0.29	5.53	0.17	0.00	5.83	9.0	2
A1	A1:B	End	0.79	30.05	0.01	0.71	-20.76	0.00	-0.0	-4.15	2.99	-0.00	-0.31	5.49	0.18	0.00	5.81	8.9	2
A1	A1:B	Origin	0.79	30.05	0.01	0.71	-20.76	0.00	0.0	-4.39	2.51	-0.00	-0.33	5.49	0.15	0.00	5.82	9.0	2
A1	#A1:0	End	4.56	30.36	0.01	3.27	-11.30	0.00	0.0	-4.39	2.51	-0.00	-0.43	5.26	0.20	0.00	5.70	8.8	2
A1	#A1:0	Origin	4.56	30.36	0.01	3.27	-11.30	0.00	0.0	-4.36	2.39	-0.00	-0.43	5.26	0.19	0.00	5.69	8.8	2
A1	A1:T	End	8.32	30.66	0.01	5.76	-2.29	0.00	0.0	-4.36	2.39	-0.00	-0.63	2.34	0.28	0.00	3.01	4.6	2
A2	A2:O	Origin	0.00	22.13	0.01	0.39	-27.78	0.00	-0.0	-4.13	3.14	-0.00	-0.24	5.61	0.15	0.00	5.86	9.0	2
A2	A2:B	End	0.77	22.14	0.01	0.85	-25.35	0.00	-0.0	-4.13	3.14	-0.00	-0.25	5.57	0.16	0.00	5.83	9.0	2
A2	A2:B	Origin	0.77	22.14	0.01	0.85	-25.35	0.00	0.0	-4.37	2.64	-0.00	-0.27	5.57	0.13	0.00	5.84	9.0	2
A2	#A2:0	End	5.30	22.44	0.01	3.50	-13.42	0.00	0.0	-4.37	2.64	-0.00	-0.36	5.24	0.17	0.00	5.60	8.6	2
A2	#A2:0	Origin	5.30	22.44	0.01	3.50	-13.42	0.00	0.0	-4.34	2.46	-0.00	-0.35	5.24	0.16	0.00	5.60	8.6	2
A2	A2:T	End	9.83	22.74	0.01	6.06	-2.28	0.00	0.0	-4.34	2.46	-0.00	-0.53	2.00	0.25	0.00	2.57	3.9	2

A3	A3:O	Origin	0.00	15.54	0.00	0.51	-23.72	0.00	-0.0	-4.10	3.06	-0.00	-0.29	5.67	0.17	0.00	5.97	9.2	2
A3	A3:B	End	0.79	15.55	0.00	0.90	-21.30	0.00	-0.0	-4.10	3.06	-0.00	-0.30	5.64	0.18	0.00	5.95	9.2	2
A3	A3:B	Origin	0.79	15.55	0.00	0.90	-21.30	0.00	0.0	-4.35	2.58	-0.00	-0.32	5.64	0.15	0.00	5.96	9.2	2
A3	#A3:0	End	4.56	15.76	0.00	2.73	-11.57	0.00	0.0	-4.35	2.58	-0.00	-0.43	5.38	0.20	0.00	5.82	9.0	2
A3	#A3:0	Origin	4.56	15.76	0.00	2.73	-11.57	0.00	0.0	-4.32	2.46	-0.00	-0.42	5.38	0.20	0.00	5.81	8.9	2
A3	A3:T	End	8.32	15.95	0.00	4.48	-2.29	0.00	0.0	-4.32	2.46	-0.00	-0.62	2.34	0.29	0.00	3.01	4.6	2
A4	A4:O	Origin	0.00	29.99	0.01	-1.36	-24.48	-0.00	0.0	4.15	3.00	0.00	0.29	5.86	0.17	0.00	6.16	9.5	2
A4	A4:B	End	0.79	29.97	0.01	-1.91	-22.11	-0.00	0.0	4.15	3.00	0.00	0.31	5.85	0.18	0.00	6.16	9.5	2
A4	A4:B	Origin	0.79	29.97	0.01	-1.91	-22.11	-0.00	-0.0	3.86	3.27	0.00	0.29	5.85	0.19	0.00	6.15	9.5	2
A4	#A4:0	End	4.56	30.14	0.01	-4.58	-9.80	-0.00	-0.0	3.86	3.27	0.00	0.38	4.56	0.26	0.00	4.96	7.6	2
A4	#A4:0	Origin	4.56	30.14	0.01	-4.58	-9.80	-0.00	-0.0	3.87	3.13	0.00	0.38	4.56	0.25	0.00	4.96	7.6	2
A4	A4:T	End	8.32	30.31	0.01	-7.31	1.99	0.00	-0.0	3.87	3.13	0.00	0.56	2.04	0.37	0.00	2.68	4.1	2
A5	A5:O	Origin	0.00	22.09	0.01	-1.15	-30.09	-0.00	0.0	4.13	3.15	0.00	0.24	6.08	0.15	0.00	6.33	9.7	2
A5	A5:B	End	0.77	22.07	0.01	-1.62	-27.67	-0.00	0.0	4.13	3.15	0.00	0.25	6.08	0.16	0.00	6.34	9.7	2
A5	A5:B	Origin	0.77	22.07	0.01	-1.62	-27.67	-0.00	-0.0	3.84	3.37	0.00	0.24	6.08	0.17	0.00	6.32	9.7	2
A5	#A5:0	End	5.30	22.26	0.01	-4.41	-12.40	-0.00	-0.0	3.84	3.37	0.00	0.31	4.84	0.22	0.00	5.17	7.9	2
A5	#A5:0	Origin	5.30	22.26	0.01	-4.41	-12.40	-0.00	-0.0	3.85	3.18	0.00	0.31	4.84	0.21	0.00	5.17	7.9	2
A5	A5:T	End	9.83	22.44	0.00	-7.29	1.99	0.00	-0.0	3.85	3.18	0.00	0.47	1.75	0.32	0.00	2.28	3.5	2
A6	A6:O	Origin	0.00	15.51	0.00	-0.96	-25.00	-0.00	0.0	4.10	3.07	0.00	0.29	5.98	0.17	0.00	6.28	9.7	2
A6	A6:B	End	0.79	15.50	0.00	-1.35	-22.58	-0.00	0.0	4.10	3.07	0.00	0.30	5.97	0.18	0.00	6.29	9.7	2
A6	A6:B	Origin	0.79	15.50	0.00	-1.35	-22.58	-0.00	-0.0	3.81	3.33	0.00	0.28	5.97	0.20	0.00	6.27	9.6	2
A6	#A6:0	End	4.56	15.64	0.00	-3.29	-10.04	-0.00	-0.0	3.81	3.33	0.00	0.37	4.67	0.26	0.00	5.06	7.8	2
A6	#A6:0	Origin	4.56	15.64	0.00	-3.29	-10.04	-0.00	-0.0	3.82	3.19	0.00	0.37	4.67	0.25	0.00	5.06	7.8	2
A6	A6:T	End	8.32	15.78	0.00	-5.27	1.99	0.00	-0.0	3.82	3.19	0.00	0.55	2.04	0.38	0.00	2.67	4.1	2

Summary of Clamp Capacities and Usages for Load Case "RULE 250C":

Clamp Label	Force (kips)	Input Holding Capacity (kips)	Factored Holding Capacity (kips)	Holding Usage %	Input Hardware Capacity (kips)	Factored Hardware Capacity (kips)	Hardware Usage %	Max. Usage %
1	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
7	1.852	100.00	0.00	0.00	0.00	0.00	0.00	0.00
8	1.852	100.00	0.00	0.00	0.00	0.00	0.00	0.00
9	6.765	100.00	0.00	0.00	0.00	0.00	0.00	0.00
10	5.468	100.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.502	100.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.502	100.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.502	100.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.502	100.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.502	100.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.502	100.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.502	100.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.502	100.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.502	100.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.502	100.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.502	100.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.502	100.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00

SW1	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
SW2	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00

Summary of Suspension Capacities and Usages for Load Case "RULE 250C":

Suspension Label	Tension (kips)	Input Tension Capacity (kips)	Factored Tension Capacity (kips)	Tension Usage %	Input Hardware Capacity (kips)	Factored Hardware Capacity (kips)	Hardware Usage %	Max. Usage %
S1	4.944	30.00	0.00	0.00	0.00	0.00	0.00	0.00
S2	4.944	30.00	0.00	0.00	0.00	0.00	0.00	0.00
S3	4.944	30.00	0.00	0.00	0.00	0.00	0.00	0.00
S4	4.944	30.00	0.00	0.00	0.00	0.00	0.00	0.00
S5	4.944	30.00	0.00	0.00	0.00	0.00	0.00	0.00
S6	4.944	30.00	0.00	0.00	0.00	0.00	0.00	0.00

*** Analysis Results for Load Case No. 3 "RULE 250D" - Number of iterations in SAPS 14

Equilibrium Joint Positions and Rotations for Load Case "RULE 250D":

Joint Label	X-Displ (ft)	Y-Displ (ft)	Z-Displ (ft)	X-Rot (deg)	Y-Rot (deg)	Z-Rot (deg)	X-Pos (ft)	Y-Pos (ft)	Z-Pos (ft)
P:g	0	0	0	0.0000	0.0000	0.0000	0	0	0
P:t	0.001902	1.922	-0.02386	-1.5724	0.0016	0.0003	0.001902	1.922	125
P:T-Mo	0.001792	1.812	-0.02235	-1.5721	0.0016	0.0003	0.001792	1.812	121
P:AL12	0.001628	1.648	-0.02001	-1.5489	0.0016	0.0003	0.001628	1.648	115
P:AT&T	0.001522	1.541	-0.01849	-1.5172	0.0015	0.0003	0.001522	1.541	111
P:AL11	0.00137	1.386	-0.01627	-1.4492	0.0014	0.0003	0.00137	1.386	105
P:SW	0.001224	1.23	-0.01418	-1.3705	0.0013	0.0003	0.001224	1.23	98.68
P:AL10	0.001145	1.143	-0.01306	-1.3439	0.0012	0.0003	0.001145	1.143	94.99
P:A1	0.001047	1.034	-0.0117	-1.3048	0.0012	0.0003	0.001047	1.034	90.3
P:AL9	0.0009395	0.9157	-0.01019	-1.2508	0.0011	0.0002	0.0009395	0.9157	84.99
P:A2	0.0008077	0.7717	-0.008437	-1.1676	0.0011	0.0002	0.0008077	0.7717	78.18
P:AL8	0.0007484	0.7077	-0.007656	-1.1242	0.0011	0.0001	0.0007484	0.7077	74.99
P:A3	0.0005956	0.5467	-0.005789	-0.9925	0.0010	0.0001	0.0005956	0.5467	66.3
P:AL7	0.0005738	0.5242	-0.005528	-0.9714	0.0009	0.0001	0.0005738	0.5242	64.99
P:AL6	0.0004191	0.3688	-0.003817	-0.8000	0.0008	0.0001	0.0004191	0.3688	55
P:AL5	0.0002867	0.2431	-0.002597	-0.6396	0.0007	0.0001	0.0002867	0.2431	45
P:AL4	0.0001771	0.1446	-0.00171	-0.4855	0.0006	0.0000	0.0001771	0.1446	35
P:AL3	9.229e-05	0.07253	-0.001063	-0.3371	0.0004	0.0000	9.229e-05	0.07253	25
P:AL2	3.41e-05	0.02576	-0.0005765	-0.1962	0.0003	0.0000	3.41e-05	0.02576	15
P:AL1	4.058e-06	0.002903	-0.0001821	-0.0634	0.0001	0.0000	4.058e-06	0.002903	5
S1:O	0.00123	1.231	0.008898	-1.3705	0.0013	0.0003	0.00123	0.2659	98.7
S1:B	0.001235	1.231	0.02714	-1.3474	0.0013	0.0003	0.001235	-0.5039	98.72
S1:T	0.001311	1.25	0.2156	-1.1001	0.0013	0.0003	0.001311	-9.485	99.72
S2:O	0.001218	1.23	-0.03726	-1.3705	0.0013	0.0003	0.001218	2.195	98.65
S2:B	0.001212	1.23	-0.05586	-1.3951	0.0013	0.0004	0.001212	2.965	98.63
S2:T	0.001117	1.249	-0.2998	-1.6588	0.0012	0.0009	0.001117	11.98	99.2
A1:O	0.001052	1.035	0.01319	-1.3048	0.0012	0.0003	0.001052	-0.0583	90.32
A1:B	0.001056	1.035	0.03087	-1.2660	0.0012	0.0003	0.001056	-0.8481	90.34
A1:T	0.001106	1.049	0.168	-0.8864	0.0012	0.0003	0.001106	-8.334	91.17
A2:O	0.0008119	0.7719	0.01761	-1.1676	0.0011	0.0002	0.0008119	-0.5064	78.21
A2:B	0.0008144	0.7721	0.03301	-1.1299	0.0011	0.0002	0.0008144	-1.276	78.22
A2:T	0.0008586	0.7857	0.17	-0.6755	0.0011	0.0002	0.0008586	-10.28	79.18
A3:O	0.0005988	0.5469	0.0195	-0.9925	0.0010	0.0001	0.0005988	-0.9131	66.33
A3:B	0.0006005	0.547	0.03287	-0.9536	0.0010	0.0001	0.0006005	-1.703	66.34
A3:T	0.0006281	0.5566	0.1291	-0.5732	0.0010	0.0001	0.0006281	-9.193	67.13
A4:O	0.001041	1.034	-0.03659	-1.3048	0.0012	0.0003	0.001041	2.127	90.27
A4:B	0.001038	1.034	-0.05489	-1.3442	0.0012	0.0003	0.001038	2.917	90.26
A4:T	0.001015	1.05	-0.259	-1.7029	0.0012	0.0002	0.001015	10.43	90.74
A5:O	0.0008036	0.7714	-0.03449	-1.1676	0.0011	0.0002	0.0008036	2.05	78.16
A5:B	0.000801	0.7713	-0.05047	-1.2061	0.0011	0.0002	0.000801	2.82	78.14
A5:T	0.0007864	0.7892	-0.281	-1.6428	0.0011	0.0002	0.0007864	11.86	78.72
A6:O	0.0005924	0.5465	-0.03108	-0.9925	0.0010	0.0001	0.0005924	2.006	66.28
A6:B	0.0005907	0.5463	-0.04508	-1.0319	0.0010	0.0001	0.0005907	2.796	66.26
A6:T	0.0005854	0.5596	-0.2082	-1.3911	0.0010	0.0001	0.0005854	10.31	66.79
1	0.0013	1.24	0.2167	-1.1001	0.0013	0.0003	0.0013	-9.544	99.18
2	0.001105	1.233	-0.301	-1.6588	0.0012	0.0009	0.001105	12.02	98.66
3	0.001095	1.041	0.1689	-0.8864	0.0012	0.0003	0.001095	-8.392	90.63
4	0.0008485	0.7793	0.1706	-0.6755	0.0011	0.0002	0.0008485	-10.34	78.64
5	0.0006192	0.5512	0.1297	-0.5732	0.0010	0.0001	0.0006192	-9.248	66.59
6	0.001004	1.034	-0.2602	-1.7029	0.0012	0.0002	0.001004	10.47	90.2

7	0.0007761	0.7737	-0.2822	-1.6428	0.0011	0.0002	0.0007761	11.89 78.18
8	0.0005762	0.5465	-0.2093	-1.3911	0.0010	0.0001	0.0005762	10.35 66.25

Joint Support Reactions for Load Case "RULE 250D":

Joint Label	X Force (kips)	X Usage %	Y Force (kips)	Y Usage %	H-Shear Usage %	Z Force (kips)	Comp. Usage %	Uplift Usage %	Result. Force (kips)	Result. Usage %	X Moment (ft-k)	X-M. Usage %	Y Moment (ft-k)	Y-M. Usage %	H-Bend-M Usage %	Z Moment (ft-k)	Z-M. Usage %	Max. Usage %
P:g	-0.06	0.0	-22.73	0.0	0.0	-101.83	0.0	0.0	104.33	0.0	1854.34	0.0	-2.6	0.0	0.0	-0.08	0.0	0.0

Detailed Steel Pole Usages for Load Case "RULE 250D":

Element Label	Joint Label	Joint Position	Rel. Dist. (ft)	Trans. Defl. (in)	Long. Defl. (in)	Vert. Defl. (in)	Trans. Mom. (Local Mx) (ft-k)	Long. Mom. (Local My) (ft-k)	Tors. Mom. (ft-k)	Axial Force (kips)	Tran. Shear (kips)	Long. Shear (kips)	P/A (ksi)	M/S. (ksi)	V/Q. (ksi)	T/R. (ksi)	Res. (ksi)	Max. Usage %	At Pt.
P	P:t	Origin	0.00	23.06	0.02	-0.29	-0.00	0.00	0.0	-0.06	0.02	-0.00	-0.01	0.00	0.01	0.00	0.01	0.0	5
P	P:T-Mo	End	4.00	21.75	0.02	-0.27	0.10	-0.00	0.0	-0.06	0.02	-0.00	-0.01	0.04	0.00	0.00	0.05	0.1	2
P	P:T-Mo	Origin	4.00	21.75	0.02	-0.27	0.10	-0.00	-0.0	-4.55	1.30	-0.00	-0.53	0.00	0.31	0.00	0.75	1.2	5
P	Tube 1	End	7.00	20.76	0.02	-0.25	3.99	-0.01	-0.0	-4.55	1.30	-0.00	-0.49	1.33	0.07	0.00	1.82	2.8	2
P	Tube 1	Origin	7.00	20.76	0.02	-0.25	3.99	-0.01	0.0	-4.65	1.34	-0.00	-0.50	1.33	0.08	0.00	1.83	2.8	2
P	P:AL12	End	10.00	19.78	0.02	-0.24	8.00	-0.01	0.0	-4.65	1.34	-0.00	-0.47	2.32	0.07	0.00	2.79	4.3	2
P	P:AL12	Origin	10.00	19.78	0.02	-0.24	8.00	-0.01	0.0	-6.04	1.50	-0.00	-0.61	2.32	0.08	0.00	2.93	4.5	2
P	P:AT&T	End	14.00	18.49	0.02	-0.22	14.01	-0.02	0.0	-6.04	1.50	-0.00	-0.56	3.42	0.07	0.00	3.98	6.1	2
P	P:AT&T	Origin	14.00	18.49	0.02	-0.22	14.01	-0.02	-0.0	-11.02	2.50	-0.00	-1.02	3.42	0.12	0.00	4.44	6.8	2
P	Tube 2	End	17.00	17.55	0.02	-0.21	21.52	-0.03	-0.0	-11.02	2.50	-0.00	-0.96	4.66	0.12	0.00	5.62	8.6	2
P	Tube 2	Origin	17.00	17.55	0.02	-0.21	21.52	-0.03	-0.0	-11.14	2.55	-0.00	-0.97	4.66	0.12	0.00	5.63	8.7	2
P	P:AL11	End	20.00	16.63	0.02	-0.20	29.17	-0.05	-0.0	-11.14	2.55	-0.00	-0.92	5.64	0.11	0.00	6.56	10.1	2
P	P:AL11	Origin	20.00	16.63	0.02	-0.20	29.17	-0.05	0.0	-12.58	2.73	-0.01	-1.04	5.64	0.12	0.00	6.68	10.3	2
P	SpliceT	End	25.00	15.14	0.02	-0.17	42.80	-0.07	0.0	-12.58	2.73	-0.01	-0.95	6.95	0.11	0.00	7.90	12.1	2
P	SpliceT	Origin	25.00	15.14	0.02	-0.17	42.80	-0.07	-0.0	-12.76	2.78	-0.01	-0.41	2.94	0.05	0.00	3.35	5.2	2
P	P:SW	End	26.31	14.77	0.01	-0.17	46.44	-0.08	-0.0	-12.76	2.78	-0.01	-0.40	3.06	0.05	0.00	3.46	5.3	2
P	P:SW	Origin	26.31	14.77	0.01	-0.17	48.52	-0.08	0.1	-20.74	5.48	-0.00	-0.65	3.19	0.09	0.00	3.85	5.9	2
P	P:AL10	End	30.00	13.72	0.01	-0.16	68.74	-0.08	0.1	-20.74	5.48	-0.00	-0.61	4.02	0.09	0.00	4.64	7.1	2
P	P:AL10	Origin	30.00	13.72	0.01	-0.16	68.74	-0.08	0.1	-22.51	5.68	-0.00	-0.66	4.02	0.09	0.00	4.69	7.2	2
P	P:A1	End	34.69	12.41	0.01	-0.14	95.36	-0.09	0.1	-22.51	5.68	-0.00	-0.62	4.86	0.08	0.00	5.48	8.4	2
P	P:A1	Origin	34.69	12.41	0.01	-0.14	96.11	-0.09	0.1	-37.59	10.59	-0.00	-1.04	4.90	0.16	0.00	5.94	9.1	2
P	Tube 3	End	37.35	11.69	0.01	-0.13	124.21	-0.10	0.1	-37.59	10.59	-0.00	-1.00	5.87	0.15	0.00	6.87	10.6	2
P	Tube 3	Origin	37.35	11.69	0.01	-0.13	124.21	-0.10	0.1	-37.93	10.64	-0.01	-1.01	5.87	0.15	0.00	6.88	10.6	2
P	P:AL9	End	40.00	10.99	0.01	-0.12	152.45	-0.12	0.1	-37.93	10.64	-0.01	-0.97	6.70	0.14	0.00	7.68	11.8	2
P	P:AL9	Origin	40.00	10.99	0.01	-0.12	152.45	-0.12	0.1	-39.62	10.80	-0.01	-1.02	6.70	0.15	0.00	7.72	11.9	2
P	Tube 3	End	43.41	10.11	0.01	-0.11	189.24	-0.14	0.1	-39.62	10.80	-0.01	-0.97	7.62	0.14	0.00	8.59	13.2	2
P	Tube 3	Origin	43.41	10.11	0.01	-0.11	189.24	-0.14	0.1	-40.10	10.87	-0.01	-0.98	7.62	0.14	0.00	8.60	13.2	2
P	P:A2	End	46.81	9.26	0.01	-0.10	226.25	-0.16	0.1	-40.10	10.87	-0.01	-0.94	8.36	0.14	0.00	9.31	14.3	2
P	P:A2	Origin	46.81	9.26	0.01	-0.10	227.52	-0.16	0.1	-55.47	15.74	-0.01	-1.30	8.41	0.20	0.00	9.72	15.0	2
P	P:AL8	End	50.00	8.49	0.01	-0.09	277.71	-0.19	0.1	-55.47	15.74	-0.01	-1.26	9.51	0.19	0.00	10.77	16.6	2
P	P:AL8	Origin	50.00	8.49	0.01	-0.09	277.71	-0.19	0.1	-57.33	15.90	-0.01	-1.30	9.51	0.19	0.00	10.81	16.6	2
P	Tube 3	End	54.35	7.50	0.01	-0.08	346.81	-0.24	0.1	-57.33	15.90	-0.01	-1.23	10.75	0.18	0.00	11.99	18.4	2
P	Tube 3	Origin	54.35	7.50	0.01	-0.08	346.81	-0.24	0.1	-58.03	15.97	-0.01	-1.25	10.75	0.18	0.00	12.00	18.5	2
P	P:A3	End	58.69	6.56	0.01	-0.07	416.20	-0.30	0.1	-58.03	15.97	-0.01	-1.19	11.73	0.17	0.00	12.93	19.9	2
P	P:A3	Origin	58.69	6.56	0.01	-0.07	416.90	-0.30	0.1	-73.16	20.77	-0.01	-1.50	11.75	0.23	0.00	13.26	20.4	2
P	P:AL7	End	60.00	6.29	0.01	-0.07	444.11	-0.32	0.1	-73.16	20.77	-0.01	-1.48	12.18	0.22	0.00	13.66	21.0	2
P	P:AL7	Origin	60.00	6.29	0.01	-0.07	444.11	-0.32	0.1	-75.00	20.91	-0.02	-1.52	12.18	0.22	0.00	13.70	21.1	2
P	Tube 3	End	65.00	5.31	0.01	-0.06	548.67	-0.40	0.1	-75.00	20.91	-0.02	-1.44	13.58	0.21	0.00	15.02	23.1	2
P	Tube 3	Origin	65.00	5.31	0.01	-0.06	548.67	-0.40	0.1	-75.91	20.97	-0.02	-1.46	13.58	0.21	0.00	15.04	23.1	2
P	P:AL6	End	70.00	4.43	0.01	-0.05	653.52	-0.50	0.1	-75.91	20.97	-0.02	-1.39	14.67	0.20	0.00	16.06	24.7	2
P	P:AL6	Origin	70.00	4.43	0.01	-0.05	653.52	-0.50	0.1	-77.85	21.11	-0.02	-1.43	14.67	0.20	0.00	16.10	24.8	2

P	SpliceT	End	72.00	4.10	0.00	-0.04	695.74	-0.54	0.1	-77.85	21.11	-0.02	-1.40	15.04	0.20	0.00	16.44	25.3	2
P	SpliceT	Origin	72.00	4.10	0.00	-0.04	695.74	-0.54	0.1	-78.49	21.16	-0.02	-1.23	13.13	0.18	0.00	14.37	22.1	2
P	Tube 4	End	76.00	3.48	0.00	-0.04	780.36	-0.63	0.1	-78.49	21.16	-0.02	-1.19	13.69	0.17	0.00	14.88	22.9	2
P	Tube 4	Origin	76.00	3.48	0.00	-0.04	780.36	-0.63	0.1	-79.41	21.22	-0.02	-1.20	13.69	0.17	0.00	14.90	22.9	2
P	P:AL5	End	80.00	2.92	0.00	-0.03	865.25	-0.73	0.1	-79.41	21.22	-0.02	-1.16	14.14	0.16	0.00	15.31	23.6	2
P	P:AL5	Origin	80.00	2.92	0.00	-0.03	865.25	-0.73	0.1	-81.76	21.40	-0.03	-1.20	14.14	0.17	0.00	15.34	23.6	2
P	Tube 4	End	85.00	2.29	0.00	-0.03	972.22	-0.87	0.1	-81.76	21.40	-0.03	-1.15	14.60	0.16	0.00	15.75	24.2	2
P	Tube 4	Origin	85.00	2.29	0.00	-0.03	972.22	-0.87	0.1	-83.01	21.49	-0.03	-1.16	14.60	0.16	0.00	15.76	24.3	2
P	P:AL4	End	90.00	1.74	0.00	-0.02	1079.66	-1.02	0.1	-83.01	21.49	-0.03	-1.12	14.94	0.15	0.00	16.06	24.7	2
P	P:AL4	Origin	90.00	1.74	0.00	-0.02	1079.66	-1.02	0.1	-85.57	21.68	-0.03	-1.15	14.94	0.15	0.00	16.10	24.8	2
P	Tube 4	End	95.00	1.26	0.00	-0.02	1188.04	-1.19	0.1	-85.57	21.68	-0.03	-1.11	15.20	0.15	0.00	16.31	25.1	2
P	Tube 4	Origin	95.00	1.26	0.00	-0.02	1188.04	-1.19	0.1	-86.91	21.78	-0.04	-1.13	15.20	0.15	0.00	16.33	25.1	2
P	P:AL3	End	100.00	0.87	0.00	-0.01	1296.94	-1.37	0.1	-86.91	21.78	-0.04	-1.08	15.39	0.14	0.00	16.48	25.3	2
P	P:AL3	Origin	100.00	0.87	0.00	-0.01	1296.94	-1.37	0.1	-89.58	21.98	-0.04	-1.12	15.39	0.15	0.00	16.51	25.4	2
P	Tube 4	End	105.00	0.55	0.00	-0.01	1406.84	-1.57	0.1	-89.58	21.98	-0.04	-1.08	15.52	0.14	0.00	16.60	25.5	2
P	Tube 4	Origin	105.00	0.55	0.00	-0.01	1406.84	-1.57	0.1	-91.02	22.10	-0.04	-1.10	15.52	0.14	0.00	16.62	25.6	2
P	P:AL2	End	110.00	0.31	0.00	-0.01	1517.32	-1.79	0.1	-91.02	22.10	-0.04	-1.06	15.61	0.14	0.00	16.67	25.6	2
P	P:AL2	Origin	110.00	0.31	0.00	-0.01	1517.32	-1.79	0.1	-93.78	22.31	-0.05	-1.09	15.61	0.14	0.00	16.70	25.7	2
P	Tube 4	End	115.00	0.14	0.00	-0.00	1628.85	-2.03	0.1	-93.78	22.31	-0.05	-1.05	15.66	0.13	0.00	16.71	25.7	2
P	Tube 4	Origin	115.00	0.14	0.00	-0.00	1628.85	-2.03	0.1	-95.32	22.44	-0.05	-1.07	15.66	0.13	0.00	16.73	25.7	2
P	P:AL1	End	120.00	0.03	0.00	-0.00	1741.05	-2.28	0.1	-95.32	22.44	-0.05	-1.04	15.68	0.13	0.00	16.71	25.7	2
P	P:AL1	Origin	120.00	0.03	0.00	-0.00	1741.05	-2.28	0.1	-98.18	22.66	-0.06	-1.07	15.68	0.13	0.00	16.75	25.8	2
P	P:g	End	125.00	0.00	0.00	0.00	1854.34	-2.56	0.1	-98.18	22.66	-0.06	-1.04	15.67	0.13	0.00	16.71	25.7	2

Detailed Tubular Davit Arm Usages for Load Case "RULE 250D":

Element Label	Joint Label	Joint Position	Rel. Dist. (ft)	Trans. Defl. (in)	Long. Defl. (in)	Vert. Defl. (in)	Vert. Mom. (ft-k)	Horz. Mom. (ft-k)	Tors. Mom. (ft-k)	Axial Force (kips)	Vert. Shear (kips)	Horz. Shear (kips)	P/A (ksi)	M/S. (ksi)	V/Q. (ksi)	T/R. (ksi)	Res. (ksi)	Max. Usage %	At Pt.
S1	S1:O	Origin	0.00	14.77	0.01	0.11	-34.50	0.00	-0.0	-1.32	3.83	-0.00	-0.08	8.14	0.20	0.00	8.23	12.7	2
S1	S1:B	End	0.77	14.77	0.01	0.33	-31.54	0.00	-0.0	-1.32	3.83	-0.00	-0.09	8.04	0.20	0.00	8.13	12.5	2
S1	S1:B	Origin	0.77	14.77	0.01	0.33	-31.54	0.00	0.0	-1.64	3.58	-0.00	-0.11	8.04	0.19	0.00	8.15	12.5	2
S1	#S1:0	End	5.29	14.89	0.02	1.52	-15.38	0.00	0.0	-1.64	3.58	-0.00	-0.14	6.62	0.25	0.00	6.77	10.4	2
S1	#S1:0	Origin	5.29	14.89	0.02	1.52	-15.38	0.00	0.0	-1.61	3.40	-0.00	-0.14	6.62	0.24	0.00	6.77	10.4	2
S1	S1:T	End	9.81	15.00	0.02	2.59	-0.00	0.00	0.0	-1.61	3.40	-0.00	-0.20	0.00	0.87	0.00	1.52	2.3	4
S2	S2:O	Origin	0.00	14.76	0.01	-0.45	-36.57	0.07	-0.0	1.32	3.83	-0.01	0.08	8.63	0.20	0.00	8.72	13.4	2
S2	S2:B	End	0.77	14.76	0.01	-0.67	-33.62	0.06	-0.0	1.32	3.83	-0.01	0.09	8.57	0.20	0.00	8.67	13.3	2
S2	S2:B	Origin	0.77	14.76	0.01	-0.67	-33.62	0.06	-0.0	0.99	3.81	-0.01	0.07	8.57	0.20	0.00	8.64	13.3	2
S2	#S2:0	End	5.29	14.87	0.01	-2.07	-16.40	0.03	-0.0	0.99	3.81	-0.01	0.08	7.06	0.27	0.00	7.16	11.0	2
S2	#S2:0	Origin	5.29	14.87	0.01	-2.07	-16.40	0.03	-0.0	1.01	3.63	-0.01	0.09	7.06	0.25	0.00	7.16	11.0	2
S2	S2:T	End	9.81	14.98	0.01	-3.60	0.00	0.00	-0.0	1.01	3.63	-0.01	0.12	0.00	0.93	0.00	1.61	2.5	4
A1	A1:O	Origin	0.00	12.42	0.01	0.16	-59.29	0.00	-0.0	-2.41	7.30	-0.00	-0.17	14.19	0.41	0.00	14.37	22.1	2
A1	A1:B	End	0.79	12.42	0.01	0.37	-53.53	0.00	-0.0	-2.41	7.30	-0.00	-0.18	14.16	0.43	0.00	14.36	22.1	2
A1	A1:B	Origin	0.79	12.42	0.01	0.37	-53.53	0.00	0.0	-3.05	6.96	-0.00	-0.23	14.16	0.41	0.00	14.41	22.2	2
A1	#A1:0	End	4.56	12.51	0.01	1.27	-27.32	0.00	0.0	-3.05	6.96	-0.00	-0.30	12.71	0.55	0.00	13.05	20.1	2
A1	#A1:0	Origin	4.56	12.51	0.01	1.27	-27.32	0.00	0.0	-3.01	6.84	-0.00	-0.29	12.71	0.54	0.00	13.04	20.1	2
A1	A1:T	End	8.32	12.59	0.01	2.02	-1.56	0.00	0.0	-3.01	6.84	-0.00	-0.43	0.00	2.07	0.00	3.61	5.5	4
A2	A2:O	Origin	0.00	9.26	0.01	0.21	-70.36	0.00	-0.0	-2.40	7.42	-0.00	-0.14	14.22	0.35	0.00	14.37	22.1	2
A2	A2:B	End	0.77	9.27	0.01	0.40	-64.65	0.00	-0.0	-2.40	7.42	-0.00	-0.15	14.20	0.37	0.00	14.36	22.1	2
A2	A2:B	Origin	0.77	9.27	0.01	0.40	-64.65	0.00	0.0	-3.02	7.05	-0.00	-0.19	14.20	0.35	0.00	14.40	22.1	2
A2	#A2:0	End	5.30	9.36	0.01	1.33	-32.71	0.00	0.0	-3.02	7.05	-0.00	-0.25	12.77	0.47	0.00	13.04	20.1	2
A2	#A2:0	Origin	5.30	9.36	0.01	1.33	-32.71	0.00	0.0	-2.97	6.88	-0.00	-0.24	12.77	0.46	0.00	13.03	20.1	2
A2	A2:T	End	9.83	9.43	0.01	2.04	-1.56	0.00	0.0	-2.97	6.88	-0.00	-0.36	0.00	1.75	0.00	3.06	4.7	4

A3	A3:O	Origin	0.00	6.56	0.01	0.23	-59.42	0.00	-0.0	-2.37	7.31	-0.00	-0.17	14.22	0.41	0.00	14.40	22.2	2
A3	A3:B	End	0.79	6.56	0.01	0.39	-53.65	0.00	-0.0	-2.37	7.31	-0.00	-0.18	14.19	0.43	0.00	14.39	22.1	2
A3	A3:B	Origin	0.79	6.56	0.01	0.39	-53.65	0.00	0.0	-3.01	6.97	-0.00	-0.22	14.19	0.41	0.00	14.44	22.2	2
A3	#A3:0	End	4.56	6.63	0.01	1.05	-27.38	0.00	0.0	-3.01	6.97	-0.00	-0.29	12.74	0.55	0.00	13.07	20.1	2
A3	#A3:0	Origin	4.56	6.63	0.01	1.05	-27.38	0.00	0.0	-2.97	6.86	-0.00	-0.29	12.74	0.54	0.00	13.07	20.1	2
A3	A3:T	End	8.32	6.68	0.01	1.55	-1.56	0.00	0.0	-2.97	6.86	-0.00	-0.43	0.00	2.07	0.00	3.61	5.6	4
A4	A4:O	Origin	0.00	12.41	0.01	-0.44	-60.04	-0.00	0.0	2.42	7.30	0.00	0.17	14.36	0.41	0.00	14.55	22.4	2
A4	A4:B	End	0.79	12.41	0.01	-0.66	-54.28	-0.00	0.0	2.42	7.30	0.00	0.18	14.36	0.43	0.00	14.56	22.4	2
A4	A4:B	Origin	0.79	12.41	0.01	-0.66	-54.28	-0.00	-0.0	1.76	7.39	0.00	0.13	14.36	0.44	0.00	14.51	22.3	2
A4	#A4:0	End	4.56	12.50	0.01	-1.81	-26.45	-0.00	-0.0	1.76	7.39	0.00	0.17	12.31	0.58	0.00	12.52	19.3	2
A4	#A4:0	Origin	4.56	12.50	0.01	-1.81	-26.45	-0.00	-0.0	1.80	7.25	0.00	0.18	12.31	0.57	0.00	12.52	19.3	2
A4	A4:T	End	8.32	12.60	0.01	-3.11	0.86	0.00	-0.0	1.80	7.25	0.00	0.26	0.00	2.19	0.00	3.80	5.9	4
A5	A5:O	Origin	0.00	9.26	0.01	-0.41	-71.63	-0.00	0.0	2.40	7.42	0.00	0.14	14.47	0.35	0.00	14.63	22.5	2
A5	A5:B	End	0.77	9.26	0.01	-0.61	-65.91	-0.00	0.0	2.40	7.42	0.00	0.15	14.48	0.37	0.00	14.64	22.5	2
A5	A5:B	Origin	0.77	9.26	0.01	-0.61	-65.91	-0.00	-0.0	1.76	7.47	0.00	0.11	14.48	0.37	0.00	14.60	22.5	2
A5	#A5:0	End	5.30	9.36	0.01	-1.88	-32.08	-0.00	-0.0	1.76	7.47	0.00	0.14	12.52	0.50	0.00	12.69	19.5	2
A5	#A5:0	Origin	5.30	9.36	0.01	-1.88	-32.08	-0.00	-0.0	1.80	7.28	0.00	0.15	12.52	0.48	0.00	12.70	19.5	2
A5	A5:T	End	9.83	9.47	0.01	-3.37	0.87	0.00	-0.0	1.80	7.28	0.00	0.22	0.00	1.86	0.00	3.22	5.0	4
A6	A6:O	Origin	0.00	6.56	0.01	-0.37	-60.12	-0.00	0.0	2.38	7.31	0.00	0.17	14.38	0.41	0.00	14.57	22.4	2
A6	A6:B	End	0.79	6.56	0.01	-0.54	-54.35	-0.00	0.0	2.38	7.31	0.00	0.18	14.38	0.43	0.00	14.58	22.4	2
A6	A6:B	Origin	0.79	6.56	0.01	-0.54	-54.35	-0.00	-0.0	1.72	7.40	0.00	0.13	14.38	0.44	0.00	14.53	22.3	2
A6	#A6:0	End	4.56	6.63	0.01	-1.44	-26.49	-0.00	-0.0	1.72	7.40	0.00	0.17	12.32	0.59	0.00	12.53	19.3	2
A6	#A6:0	Origin	4.56	6.63	0.01	-1.44	-26.49	-0.00	-0.0	1.76	7.26	0.00	0.17	12.32	0.57	0.00	12.54	19.3	2
A6	A6:T	End	8.32	6.72	0.01	-2.50	0.86	0.00	-0.0	1.76	7.26	0.00	0.25	0.00	2.19	0.00	3.81	5.9	4

Summary of Clamp Capacities and Usages for Load Case "RULE 250D":

Clamp Label	Force (kips)	Input Holding Capacity (kips)	Factored Holding Capacity (kips)	Holding Usage %	Input Hardware Capacity (kips)	Factored Hardware Capacity (kips)	Hardware Usage %	Max. Usage %
1	0.000	100.00	100.00	0.00	0.00	0.00	0.00	0.00
2	0.000	100.00	100.00	0.00	0.00	0.00	0.00	0.00
3	0.000	100.00	100.00	0.00	0.00	0.00	0.00	0.00
4	0.000	100.00	100.00	0.00	0.00	0.00	0.00	0.00
5	0.000	100.00	100.00	0.00	0.00	0.00	0.00	0.00
6	0.000	100.00	100.00	0.00	0.00	0.00	0.00	0.00
7	3.695	100.00	100.00	3.70	0.00	0.00	0.00	3.70
8	3.695	100.00	100.00	3.70	0.00	0.00	0.00	3.70
9	4.564	100.00	100.00	4.56	0.00	0.00	0.00	4.56
10	4.942	100.00	100.00	4.94	0.00	0.00	0.00	4.94
13	1.278	100.00	100.00	1.28	0.00	0.00	0.00	1.28
14	1.278	100.00	100.00	1.28	0.00	0.00	0.00	1.28
15	1.278	100.00	100.00	1.28	0.00	0.00	0.00	1.28
16	1.278	100.00	100.00	1.28	0.00	0.00	0.00	1.28
17	1.278	100.00	100.00	1.28	0.00	0.00	0.00	1.28
18	1.278	100.00	100.00	1.28	0.00	0.00	0.00	1.28
19	1.278	100.00	100.00	1.28	0.00	0.00	0.00	1.28
20	1.278	100.00	100.00	1.28	0.00	0.00	0.00	1.28
21	1.278	100.00	100.00	1.28	0.00	0.00	0.00	1.28
22	1.278	100.00	100.00	1.28	0.00	0.00	0.00	1.28
23	1.278	100.00	100.00	1.28	0.00	0.00	0.00	1.28
24	1.278	100.00	100.00	1.28	0.00	0.00	0.00	1.28
25	0.000	100.00	100.00	0.00	0.00	0.00	0.00	0.00

SW1	0.000	100.00	100.00	0.00	0.00	0.00	0.00	0.00
SW2	0.000	100.00	100.00	0.00	0.00	0.00	0.00	0.00

Summary of Suspension Capacities and Usages for Load Case "RULE 250D":

Suspension Label	Tension (kips)	Input Tension Capacity (kips)	Factored Tension Capacity (kips)	Tension Usage %	Input Hardware Capacity (kips)	Factored Hardware Capacity (kips)	Hardware Usage %	Max. Usage %
S1	7.419	30.00	30.00	24.73	0.00	0.00	0.00	24.73
S2	7.419	30.00	30.00	24.73	0.00	0.00	0.00	24.73
S3	7.419	30.00	30.00	24.73	0.00	0.00	0.00	24.73
S4	7.419	30.00	30.00	24.73	0.00	0.00	0.00	24.73
S5	7.419	30.00	30.00	24.73	0.00	0.00	0.00	24.73
S6	7.419	30.00	30.00	24.73	0.00	0.00	0.00	24.73

*** Overall summary for all load cases - Usage = Maximum Stress / Allowable Stress

Summary of Steel Pole Usages:

Steel Pole Label	Maximum Usage %	Load Case	Height AGL (ft)	Segment Number	Weight (lbs)
P	57.96	RULE 250C	52.6	21	24957.2

Base Plate Results by Bend Line:

Pole Label	Load Case	Bend Line #	Start X (ft)	Start Y (ft)	End X (ft)	End Y (ft)	Length (in)	Bending Stress (ksi)	Bolt Mom. Sum (ft-k)	# Bolts Acting	Bolt Max Load (kips)	Min Plate Thickness (in)	Actual Thickness (in)	Usage %	
P	RULE 250B	1	-0.664	2.479	-1.815	1.815	15.943	40.372	94.424	-3	112.298	2.920	3.250	80.74	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-19 6.4.2
P	RULE 250B	2	-1.815	1.815	-2.479	0.664	15.943	23.867	55.821	-3	77.894	2.245	3.250	47.73	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-19 6.4.2
P	RULE 250B	3	-2.479	-0.664	-1.815	-1.815	15.943	19.932	46.617	-3	-67.934	2.052	3.250	39.86	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-19 6.4.2
P	RULE 250B	4	-1.815	-1.815	-0.664	-2.479	15.943	36.542	85.467	-3	-102.654	2.778	3.250	73.08	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-19 6.4.2
P	RULE 250B	5	0.664	-2.479	1.815	-1.815	15.943	36.682	85.794	-3	-102.896	2.784	3.250	73.36	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-19 6.4.2
P	RULE 250B	6	1.815	-1.815	2.479	-0.664	15.943	20.177	47.192	-3	-68.492	2.065	3.250	40.35	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-19 6.4.2
P	RULE 250B	7	2.479	0.664	1.815	1.815	15.943	23.621	55.246	-3	77.336	2.234	3.250	47.24	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-19 6.4.2
P	RULE 250B	8	1.815	1.815	0.664	2.479	15.943	40.232	94.096	-3	112.056	2.915	3.250	80.46	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-19 6.4.2
P	RULE 250C	1	-0.664	2.479	-1.815	1.815	15.943	44.332	103.686	3	123.664	3.060	3.250	88.66	
P	RULE 250C	2	-1.815	1.815	-2.479	0.664	15.943	25.643	59.976	3	84.659	2.327	3.250	51.29	
P	RULE 250C	3	-2.479	-0.664	-1.815	-1.815	15.943	23.810	55.687	3	-79.995	2.243	3.250	47.62	
P	RULE 250C	4	-1.815	-1.815	-0.664	-2.479	15.943	42.511	99.428	3	-119.038	2.997	3.250	85.02	
P	RULE 250C	5	0.664	-2.479	1.815	-1.815	15.943	42.528	99.467	3	-119.067	2.997	3.250	85.06	
P	RULE 250C	6	1.815	-1.815	2.479	-0.664	15.943	23.839	55.757	3	-80.062	2.244	3.250	47.68	
P	RULE 250C	7	2.479	0.664	1.815	1.815	15.943	25.614	59.906	3	84.591	2.326	3.250	51.23	
P	RULE 250C	8	1.815	1.815	0.664	2.479	15.943	44.315	103.647	3	123.634	3.060	3.250	88.63	
P	RULE 250D	1	-0.664	2.479	-1.815	1.815	15.943	40.106	93.802	-3	111.653	2.911	3.250	80.21	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-19 6.4.2
P	RULE 250D	2	-1.815	1.815	-2.479	0.664	15.943	23.571	55.129	-3	77.159	2.231	3.250	47.14	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-19 6.4.2
P	RULE 250D	3	-2.479	-0.664	-1.815	-1.815	15.943	20.228	47.309	-3	-68.669	2.067	3.250	40.46	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-19 6.4.2
P	RULE 250D	4	-1.815	-1.815	-0.664	-2.479	15.943	36.808	86.089	-3	-103.299	2.789	3.250	73.62	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-19 6.4.2
P	RULE 250D	5	0.664	-2.479	1.815	-1.815	15.943	36.869	86.230	-3	-103.404	2.791	3.250	73.74	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-19 6.4.2
P	RULE 250D	6	1.815	-1.815	2.479	-0.664	15.943	20.334	47.558	-3	-68.910	2.073	3.250	40.67	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-19 6.4.2
P	RULE 250D	7	2.479	0.664	1.815	1.815	15.943	23.465	54.881	-3	76.918	2.226	3.250	46.93	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-19 6.4.2
P	RULE 250D	8	1.815	1.815	0.664	2.479	15.943	40.046	93.661	-3	111.549	2.909	3.250	80.09	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-19 6.4.2

Summary of Tubular Davit Usages:

Tubular Davit Label	Maximum Usage %	Load Case	Height AGL (ft)	Segment Number	Weight (lbs)
S1	12.66	RULE 250D	97.3	1	399.1
S2	13.42	RULE 250D	97.3	1	399.1
A1	22.16	RULE 250D	89.1	2	298.7
A2	22.15	RULE 250D	77.0	2	420.7
A3	22.21	RULE 250D	65.1	2	298.7
A4	22.40	RULE 250D	88.9	1	298.7
A5	22.52	RULE 250D	76.8	1	420.7
A6	22.42	RULE 250D	64.9	1	298.7

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Usage %	Element Label	Element Type
RULE 250B	80.74	P	Base Plate
RULE 250C	88.66	P	Base Plate
RULE 250D	80.21	P	Base Plate

Summary of Steel Pole Usages by Load Case:

Load Case	Maximum Usage %	Steel Pole Label	Height AGL (ft)	Segment Number
RULE 250B	32.91	P	1.1	32
RULE 250C	57.96	P	52.6	21
RULE 250D	25.76	P	1.1	32

Summary of Base Plate Usages by Load Case:

Load Case	Pole Label	Bend Line #	Length (in)	Vertical Load (kips)	X Moment (ft-k)	Y Moment (ft-k)	Bending Stress (ksi)	Bolt Moment Sum (ft-k)	# Bolts Acting On Bend Line	Max Bolt Load For Bend Line (kips)	Minimum Plate Thickness (in)	Usage %
RULE 250B	P	1	15.943	112.818	3847.545	-12.297	40.372	94.424	-3	112.298	2.920	80.74
RULE 250C	P	1	15.943	55.158	4344.248	-1.484	44.332	103.686	3	123.664	3.060	88.66
RULE 250D	P	1	15.943	98.992	3847.561	-5.308	40.106	93.802	-3	111.653	2.911	80.21

Summary of Tubular Davit Usages by Load Case:

Load Case	Maximum Usage %	Tubular Davit Label	Height AGL (ft)	Segment Number
RULE 250B	22.32	A5	76.8	1
RULE 250C	9.75	A5	76.8	1
RULE 250D	22.52	A5	76.8	1

Summary of Insulator Usages:

Insulator Label	Insulator Type	Maximum Usage %	Load Case	Weight (lbs)
1	Clamp	0.00	RULE 250B	0.0
2	Clamp	0.00	RULE 250B	0.0
3	Clamp	0.00	RULE 250B	0.0
4	Clamp	0.00	RULE 250B	0.0
5	Clamp	0.00	RULE 250B	0.0
6	Clamp	0.00	RULE 250B	0.0
7	Clamp	3.70	RULE 250D	0.0
8	Clamp	3.70	RULE 250D	0.0
9	Clamp	4.56	RULE 250D	0.0
10	Clamp	4.94	RULE 250D	0.0
13	Clamp	1.28	RULE 250D	0.0
14	Clamp	1.28	RULE 250D	0.0
15	Clamp	1.28	RULE 250D	0.0
16	Clamp	1.28	RULE 250D	0.0
17	Clamp	1.28	RULE 250D	0.0
18	Clamp	1.28	RULE 250D	0.0
19	Clamp	1.28	RULE 250D	0.0
20	Clamp	1.28	RULE 250D	0.0
21	Clamp	1.28	RULE 250D	0.0
22	Clamp	1.28	RULE 250D	0.0
23	Clamp	1.28	RULE 250D	0.0
24	Clamp	1.28	RULE 250D	0.0
25	Clamp	0.00	RULE 250B	0.0
SW1	Clamp	0.00	RULE 250B	0.0
SW2	Clamp	0.00	RULE 250B	0.0
S1	Suspension	24.73	RULE 250D	50.0
S2	Suspension	24.73	RULE 250D	50.0
S3	Suspension	24.73	RULE 250D	50.0
S4	Suspension	24.73	RULE 250D	50.0
S5	Suspension	24.73	RULE 250D	50.0
S6	Suspension	24.73	RULE 250D	50.0

Loads At Insulator Attachments For All Load Cases:

Load Case	Insulator Label	Insulator Type	Structure Attach Label	Structure Attach Load X (kips)	Structure Attach Load Y (kips)	Structure Attach Load Z (kips)	Structure Attach Load Res. (kips)
RULE 250B	1	Clamp	A1:T	0.000	0.000	-0.000	0.000
RULE 250B	2	Clamp	A2:T	0.000	0.000	-0.000	0.000
RULE 250B	3	Clamp	A3:T	0.000	0.000	-0.000	0.000
RULE 250B	4	Clamp	A4:T	0.000	0.000	-0.000	0.000
RULE 250B	5	Clamp	A5:T	0.000	0.000	-0.000	0.000
RULE 250B	6	Clamp	A6:T	0.000	0.000	-0.000	0.000
RULE 250B	7	Clamp	S1:T	0.000	1.445	2.512	2.898
RULE 250B	8	Clamp	S2:T	-0.006	1.445	2.512	2.898
RULE 250B	9	Clamp	P:T-Mo	0.000	1.629	5.685	5.914
RULE 250B	10	Clamp	P:AT&T	0.000	1.174	6.555	6.659
RULE 250B	13	Clamp	P:AL1	0.000	0.119	1.380	1.385
RULE 250B	14	Clamp	P:AL2	0.000	0.119	1.380	1.385
RULE 250B	15	Clamp	P:AL3	0.000	0.119	1.380	1.385
RULE 250B	16	Clamp	P:AL4	0.000	0.119	1.380	1.385
RULE 250B	17	Clamp	P:AL5	0.000	0.119	1.380	1.385
RULE 250B	18	Clamp	P:AL6	0.000	0.119	1.380	1.385

RULE 250B	19	Clamp	P:AL7	0.000	0.119	1.380	1.385
RULE 250B	20	Clamp	P:AL8	0.000	0.119	1.380	1.385
RULE 250B	21	Clamp	P:AL9	0.000	0.119	1.380	1.385
RULE 250B	22	Clamp	P:AL10	0.000	0.119	1.380	1.385
RULE 250B	23	Clamp	P:AL11	0.000	0.119	1.380	1.385
RULE 250B	24	Clamp	P:AL12	0.000	0.119	1.380	1.385
RULE 250B	25	Clamp	P:t	0.000	0.000	-0.000	0.000
RULE 250B	SW1	Clamp	1	0.000	0.000	-0.000	0.000
RULE 250B	SW2	Clamp	2	0.000	0.000	-0.000	0.000
RULE 250B	S1	Suspension	3	0.000	2.716	6.911	7.426
RULE 250B	S2	Suspension	4	0.000	2.716	6.911	7.426
RULE 250B	S3	Suspension	5	0.000	2.716	6.911	7.426
RULE 250B	S4	Suspension	6	0.000	2.716	6.911	7.426
RULE 250B	S5	Suspension	7	0.000	2.716	6.911	7.426
RULE 250B	S6	Suspension	8	0.000	2.716	6.911	7.426
RULE 250C	1	Clamp	A1:T	0.000	0.000	-0.000	0.000
RULE 250C	2	Clamp	A2:T	0.000	0.000	-0.000	0.000
RULE 250C	3	Clamp	A3:T	0.000	0.000	-0.000	0.000
RULE 250C	4	Clamp	A4:T	0.000	0.000	-0.000	0.000
RULE 250C	5	Clamp	A5:T	0.000	0.000	-0.000	0.000
RULE 250C	6	Clamp	A6:T	0.000	0.000	-0.000	0.000
RULE 250C	7	Clamp	S1:T	0.000	1.725	0.673	1.852
RULE 250C	8	Clamp	S2:T	-0.006	1.725	0.673	1.852
RULE 250C	9	Clamp	P:T-Mo	0.000	6.191	2.727	6.765
RULE 250C	10	Clamp	P:AT&T	0.000	4.141	3.571	5.468
RULE 250C	13	Clamp	P:AL1	0.000	0.335	0.374	0.502
RULE 250C	14	Clamp	P:AL2	0.000	0.335	0.374	0.502
RULE 250C	15	Clamp	P:AL3	0.000	0.335	0.374	0.502
RULE 250C	16	Clamp	P:AL4	0.000	0.335	0.374	0.502
RULE 250C	17	Clamp	P:AL5	0.000	0.335	0.374	0.502
RULE 250C	18	Clamp	P:AL6	0.000	0.335	0.374	0.502
RULE 250C	19	Clamp	P:AL7	0.000	0.335	0.374	0.502
RULE 250C	20	Clamp	P:AL8	0.000	0.335	0.374	0.502
RULE 250C	21	Clamp	P:AL9	0.000	0.335	0.374	0.502
RULE 250C	22	Clamp	P:AL10	0.000	0.335	0.374	0.502
RULE 250C	23	Clamp	P:AL11	0.000	0.335	0.374	0.502
RULE 250C	24	Clamp	P:AL12	0.000	0.335	0.374	0.502
RULE 250C	25	Clamp	P:t	0.000	0.000	-0.000	0.000
RULE 250C	SW1	Clamp	1	0.000	0.000	-0.000	0.000
RULE 250C	SW2	Clamp	2	0.000	0.000	-0.000	0.000
RULE 250C	S1	Suspension	3	0.000	3.965	2.954	4.944
RULE 250C	S2	Suspension	4	0.000	3.965	2.954	4.944
RULE 250C	S3	Suspension	5	0.000	3.965	2.954	4.944
RULE 250C	S4	Suspension	6	0.000	3.965	2.954	4.944
RULE 250C	S5	Suspension	7	0.000	3.965	2.954	4.944
RULE 250C	S6	Suspension	8	0.000	3.965	2.954	4.944
RULE 250D	1	Clamp	A1:T	0.000	0.000	-0.000	0.000
RULE 250D	2	Clamp	A2:T	0.000	0.000	-0.000	0.000
RULE 250D	3	Clamp	A3:T	0.000	0.000	-0.000	0.000
RULE 250D	4	Clamp	A4:T	0.000	0.000	-0.000	0.000
RULE 250D	5	Clamp	A5:T	0.000	0.000	-0.000	0.000
RULE 250D	6	Clamp	A6:T	0.000	0.000	-0.000	0.000
RULE 250D	7	Clamp	S1:T	0.000	1.231	3.484	3.695
RULE 250D	8	Clamp	S2:T	-0.007	1.231	3.484	3.695
RULE 250D	9	Clamp	P:T-Mo	0.000	1.104	4.428	4.564
RULE 250D	10	Clamp	P:AT&T	0.000	0.821	4.873	4.942
RULE 250D	13	Clamp	P:AL1	0.000	0.080	1.275	1.278
RULE 250D	14	Clamp	P:AL2	0.000	0.080	1.275	1.278
RULE 250D	15	Clamp	P:AL3	0.000	0.080	1.275	1.278

RULE 250D	16	Clamp	P:AL4	0.000	0.080	1.275	1.278
RULE 250D	17	Clamp	P:AL5	0.000	0.080	1.275	1.278
RULE 250D	18	Clamp	P:AL6	0.000	0.080	1.275	1.278
RULE 250D	19	Clamp	P:AL7	0.000	0.080	1.275	1.278
RULE 250D	20	Clamp	P:AL8	0.000	0.080	1.275	1.278
RULE 250D	21	Clamp	P:AL9	0.000	0.080	1.275	1.278
RULE 250D	22	Clamp	P:AL10	0.000	0.080	1.275	1.278
RULE 250D	23	Clamp	P:AL11	0.000	0.080	1.275	1.278
RULE 250D	24	Clamp	P:AL12	0.000	0.080	1.275	1.278
RULE 250D	25	Clamp	P:t	0.000	0.000	-0.000	0.000
RULE 250D	SW1	Clamp	1	0.000	0.000	-0.000	0.000
RULE 250D	SW2	Clamp	2	0.000	0.000	-0.000	0.000
RULE 250D	S1	Suspension	3	0.000	2.250	7.070	7.419
RULE 250D	S2	Suspension	4	0.000	2.250	7.070	7.419
RULE 250D	S3	Suspension	5	0.000	2.250	7.070	7.419
RULE 250D	S4	Suspension	6	0.000	2.250	7.070	7.419
RULE 250D	S5	Suspension	7	0.000	2.250	7.070	7.419
RULE 250D	S6	Suspension	8	0.000	2.250	7.070	7.419

Overturning Moments For User Input Concentrated Loads:

Moments are static equivalents based on central axis of 0,0 (i.e. a single pole).

Load Case	Total Tran. Load (kips)	Total Long. Load (kips)	Total Vert. Load (kips)	Transverse Overturning Moment (ft-k)	Longitudinal Overturning Moment (ft-k)	Torsional Moment (ft-k)
RULE 250B	23.417	-0.006	75.290	1979.307	0.597	-0.064
RULE 250C	41.592	-0.006	29.856	3659.892	0.597	-0.064
RULE 250D	18.847	-0.007	73.989	1586.548	0.697	-0.075

*** Weight of structure (lbs):

Weight of Tubular Davit Arms:	2834.6
Weight of Steel Poles:	24957.2
Weight of Suspensions:	300.0
Total:	28091.8

*** End of Report

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Subject: Anchor Bolt Analysis Pole #19725

Location: Fairfield, CT

Rev. 1: 5/23/23

Prepared by: T.J.L. Checked by: C.F.C.
Job No. 22007.08

Anchor Bolt Analysis:

Input Data:

Bolt Force:

Maximum Tensile Force = $T_{Max} := 124 \cdot kips$ (User Input from PLS-Pole)

Maximum Shear Force at Base = $V_{base} := 54 \cdot kips$ (User Input from PLS-Pole)

Anchor Bolt Data:

Use AST MA615 Grade 75

Number of Anchor Bolts = $N := 24$ (User Input)

Bolt "Column" Distance = $l := 3.0 \cdot in$ (User Input)

Bolt Ultimate Strength = $F_u := 100 \cdot ksi$ (User Input)

Bolt Yeild Strength= $F_y := 75 \cdot ksi$ (User Input)

Bolt Modulus = $E := 29000 \cdot ksi$ (User Input)

Diameter of Anchor Bolts = $D := 2.25 \cdot in$ (User Input)

Threads per Inch = $n := 4.5$ (User Input)

Anchor Bolt Analysis:

Stress Area of Bolt = $A_s := \frac{\pi}{4} \cdot \left(D - \frac{0.9743 \cdot in}{n}\right)^2 = 3.248 \cdot in^2$

Maximum Shear Force per Bolt = $V_{Max} := \frac{V_{base}}{N} = 2.3 \times 10^3 lbf$

Shear Stress per Bolt = $f_v := \frac{V_{Max}}{A_s} = 692.8 psi$

Tensile Stress Permitted = $F_t := 0.75 \cdot F_u = 75 \cdot ksi$

Shear Stress Permitted = $F_v := 0.35 F_u = 35 \cdot ksi$

Permitted Axial Tensile Stress in Conjuction with Shear = $F_{tv} := F_t \cdot \sqrt{1 - \left(\frac{f_v}{F_v}\right)^2} = 74.99 \cdot ksi$

Bolt Tension % of Capacity = $\frac{T_{Max}}{F_{tv} \cdot A_s} = 50.92 \cdot \%$

Condition1 = $Condition1 := if\left(\frac{T_{Max}}{F_{tv} \cdot A_s} \le 1.00, "OK", "Overstressed"\right)$

Condition1 = "OK"

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Subject:	Flange Bolts and Flangeplate Analysis
Location:	Structure 19725 Fairfield, CT
Rev. 1: 5/23/23	Prepared by: T.J.L. Checked by: C.F.C. Job No. 22007.08

Flange Bolt and Flange Plate Analysis:

Input Data:

Flange @ 115-ft

Tower Reactions:

Overturning Moment =	OM := 41·ft·kips	(User Input)
Shear Force =	Shear := 7·kips	(User Input)
Axial Force =	Axial := 3·kips	(User Input)

Flange Bolt Data:

Use AST MA325

Number of Flange Bolts =	N := 8	(User Input)
Diameter of Bolt Circle =	D_{bc} := 20·in	(User Input)
Bolt Minimum Tensile Strength =	F_{ub} := 120·ksi	(User Input)
Bolt Modulus =	E := 29000·ksi	(User Input)
Diameter of Flange Bolts =	D := 1.00·in	(User Input)
Threads per Inch =	n := 8	(User Input)

Flange Plate Data:

Use AST MA871 Grade 65

Plate Yield Strength =	Fy_{bp} := 65·ksi	(User Input)
Flange Plate Thickness =	t_{bp} := 1·in	(User Input)
Flange Plate Diameter =	D_{bp} := 22.75·in	(User Input)
Outer Pole Diameter =	D_{pole} := 16.67·in	(User Input)

Geometric Layout Data:

Distance from Bolts to Centroid of Pole:

Radius of Bolt Circle =: $R_{bc} := \frac{D_{bc}}{2} = 10 \cdot in$

Distance to Bolts = $i := 1 .. N$

$d_i := \left| \theta \leftarrow 2 \cdot \pi \cdot \left(\frac{i}{N} \right) \right.$
$\left. d \leftarrow R_{bc} \cdot \sin(\theta) \right.$

$d_1 = 7.07 \cdot in$ $d_7 = -7.07 \cdot in$

$d_2 = 10.00 \cdot in$ $d_8 = -0.00 \cdot in$

$d_3 = 7.07 \cdot in$ $d_9 = \blacksquare \cdot in$

$d_4 = 0.00 \cdot in$ $d_{10} = \blacksquare \cdot in$

$d_5 = -7.07 \cdot in$ $d_{11} = \blacksquare \cdot in$

$d_6 = -10.00 \cdot in$ $d_{12} = \blacksquare \cdot in$

Critical Distances For Bending in Plate:

Outer Pole Radius = $R_{pole} := \frac{D_{pole}}{2} = 8.335 \cdot in$

Moment Arms of Bolts about Neutral Axis = $MA_i := if\left(d_i \geq R_{pole}, d_i - R_{pole}, 0in\right)$

$MA_1 = 0.00 \cdot in$ $MA_7 = 0.00 \cdot in$

$MA_2 = 1.66 \cdot in$ $MA_8 = 0.00 \cdot in$

$MA_3 = 0.00 \cdot in$ $MA_9 = \blacksquare \cdot in$

$MA_4 = 0.00 \cdot in$ $MA_{10} = \blacksquare \cdot in$

$MA_5 = 0.00 \cdot in$ $MA_{11} = \blacksquare \cdot in$

$MA_6 = 0.00 \cdot in$ $MA_{12} = \blacksquare \cdot in$

Effective Width of Flangeplate for Bending = $B_{eff} := .8 \cdot 2 \cdot \sqrt{\left(\frac{D_{bp}}{2}\right)^2 - \left(\frac{D_{pole}}{2}\right)^2} = 12.4 \cdot in$

Flange Bolt Analysis:

Calculated Flange Bolt Properties:

Polar Moment of Inertia = $I_p := \sum_i \left(d_i\right)^2 = 400 \cdot in^2$

Gross Area of Bolt = $A_g := \frac{\pi}{4} \cdot D^2 = 0.785 \cdot in^2$

Net Area of Bolt = $A_n := \frac{\pi}{4} \cdot \left(D - \frac{0.9743 \cdot in}{n}\right)^2 = 0.606 \cdot in^2$

Check Flange Bolts:

Maximum Shear Stress = $V_{Max} := \frac{Shear}{N \cdot A_g} = 1.1 \cdot ksi$

Permitted Shear Stress = $F_v := \left(0.35 \cdot F_{ub}\right) = 42 \cdot ksi$

Condition1 = $Condition1 := if\left(V_{Max} \le F_v, "OK", "Overstressed"\right)$ $\frac{V_{Max}}{F_v} = 2.65 \cdot \%$

Condition1 = "OK"

Maximum Tensile Stress = $T_{Max} := \frac{\left(OM \cdot \frac{R_{bc}}{I_p} - \frac{Axial}{N}\right)}{A_n} = 19.7 \cdot ksi$

Permitted Tensile Stress = $F_t := \left(0.75 \cdot F_{ub}\right) = 90 \cdot ksi$

Condition2 = $Condition2 := if\left(\frac{T_{Max}}{F_t} \le 1.00, "OK", "Overstressed"\right)$ $\frac{T_{Max}}{F_t} = 21.87 \cdot \%$

Condition2 = "OK"

Permitted Tensile Stress with Shear = $F_{t.v} := F_t \cdot \sqrt{1 - \left(\frac{V_{Max}}{F_v}\right)^2} = 90 \cdot ksi$

Condition3 = $Condition3 := if\left(\frac{T_{Max}}{F_{t.v}} \le 1.00, "OK", "Overstressed"\right)$ $\frac{T_{Max}}{F_{t.v}} = 21.88 \cdot \%$

Condition3 = "OK"

Flange Plate Analysis:

Force from Bolts = $C_i := \frac{OM \cdot d_i}{I_p} + \frac{Axial}{N}$

$C_1 = 9.1 \cdot kips$ $C_7 = -8.3 \cdot kips$

$C_2 = 12.7 \cdot kips$ $C_8 = 0.4 \cdot kips$

$C_3 = 9.1 \cdot kips$ $C_9 = \blacksquare \cdot kips$

$C_4 = 0.4 \cdot kips$ $C_{10} = \blacksquare \cdot kips$

$C_5 = -8.3 \cdot kips$ $C_{11} = \blacksquare \cdot kips$

$C_6 = -11.9 \cdot kips$ $C_{12} = \blacksquare \cdot kips$

Maximum Bending Stress in Plate =

$$f_{bp} := \sum_i \frac{6 \cdot C_i \cdot MA_i}{\left(B_{eff} \, t_{bp}^{\,2}\right)} = 10.2 \cdot ksi$$

Allowable Bending Stress in Plate = $F_{bp} := 0.9 \cdot Fy_{bp} = 58.5 \cdot ksi$

Plate Bending Stress % of Capacity = $\frac{f_{bp}}{F_{bp}} = 17.5 \cdot \%$

Condition1 = $Condition1 := if\left(\frac{f_{bp}}{F_{bp}} < 1.00, "Ok", "Overstressed"\right)$

Condition1 = "Ok"

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Subject:	Flange Bolts and Flangeplate Analysis
Location:	Structure 19725 Fairfield, CT
Rev. 1: 5/23/23	Prepared by: T.J.L. Checked by: C.F.C. Job No. 22007.08

Flange Bolt and Flange Plate Analysis:

Input Data:

Flange @ 100-ft

Tower Reactions:

Overturning Moment =	OM := 203·ft·kips	(User Input)
Shear Force =	Shear := 13·kips	(User Input)
Axial Force =	Axial := 7.5·kips	(User Input)

Flange Bolt Data:

Use AST MA325

Number of Flange Bolts =	N := 12	(User Input)
Diameter of Bolt Circle =	D_{bc} := 26.75·in	(User Input)
Bolt Minimum Tensile Strength =	F_{ub} := 120·ksi	(User Input)
Bolt Modulus =	E := 29000·ksi	(User Input)
Diameter of Flange Bolts =	D := 1.00·in	(User Input)
Threads per Inch =	n := 8	(User Input)

Flange Plate Data:

Use AST MA871 Grade 65

Plate Yield Strength =	Fy_{bp} := 65·ksi	(User Input)
Flange Plate Thickness =	t_{bp} := 1.25·in	(User Input)
Flange Plate Diameter =	D_{bp} := 29.5·in	(User Input)
Outer Pole Diameter =	D_{pole} := 22.17·in	(User Input)

Geometric Layout Data:

Distance from Bolts to Centroid of Pole:

Radius of Bolt Circle =: $R_{bc} := \frac{D_{bc}}{2} = 13.375 \cdot in$

Distance to Bolts = $i := 1 .. N$

$d_i := \left| \theta \leftarrow 2 \cdot \pi \cdot \left(\frac{i}{N} \right) \right.$
$\left. d \leftarrow R_{bc} \cdot \sin(\theta) \right.$

$d_1 = 6.69 \cdot in$	$d_7 = -6.69 \cdot in$
$d_2 = 11.58 \cdot in$	$d_8 = -11.58 \cdot in$
$d_3 = 13.38 \cdot in$	$d_9 = -13.38 \cdot in$
$d_4 = 11.58 \cdot in$	$d_{10} = -11.58 \cdot in$
$d_5 = 6.69 \cdot in$	$d_{11} = -6.69 \cdot in$
$d_6 = 0.00 \cdot in$	$d_{12} = -0.00 \cdot in$

Critical Distances For Bending in Plate:

Outer Pole Radius = $R_{pole} := \frac{D_{pole}}{2} = 11.085 \cdot in$

Moment Arms of Bolts about Neutral Axis = $MA_i := if\left(d_i \geq R_{pole}, d_i - R_{pole}, 0in\right)$

$MA_1 = 0.00 \cdot in$	$MA_7 = 0.00 \cdot in$
$MA_2 = 0.50 \cdot in$	$MA_8 = 0.00 \cdot in$
$MA_3 = 2.29 \cdot in$	$MA_9 = 0.00 \cdot in$
$MA_4 = 0.50 \cdot in$	$MA_{10} = 0.00 \cdot in$
$MA_5 = 0.00 \cdot in$	$MA_{11} = 0.00 \cdot in$
$MA_6 = 0.00 \cdot in$	$MA_{12} = 0.00 \cdot in$

Effective Width of Flangeplate for Bending = $B_{eff} := .8 \cdot 2 \cdot \sqrt{\left(\frac{D_{bp}}{2}\right)^2 - \left(\frac{D_{pole}}{2}\right)^2} = 15.6 \cdot in$

Flange Bolt Analysis:

Calculated Flange Bolt Properties:

Polar Moment of Inertia = $I_p := \sum_i \left(d_i\right)^2 = 1.073 \times 10^3 \cdot in^2$

Gross Area of Bolt = $A_g := \frac{\pi}{4} \cdot D^2 = 0.785 \cdot in^2$

Net Area of Bolt = $A_n := \frac{\pi}{4} \cdot \left(D - \frac{0.9743 \cdot in}{n}\right)^2 = 0.606 \cdot in^2$

Check Flange Bolts:

Maximum Shear Stress = $V_{Max} := \frac{Shear}{N \cdot A_g} = 1.4 \cdot ksi$

Permitted Shear Stress = $F_v := \left(0.35 \cdot F_{ub}\right) = 42 \cdot ksi$

Condition1 = $Condition1 := if\left(V_{Max} \le F_v, "OK", "Overstressed"\right)$ $\frac{V_{Max}}{F_v} = 3.28 \cdot \%$

Condition1 = "OK"

Maximum Tensile Stress = $T_{Max} := \frac{\left(OM \cdot \frac{R_{bc}}{I_p} - \frac{Axial}{N}\right)}{A_n} = 49.1 \cdot ksi$

Permitted Tensile Stress = $F_t := \left(0.75 \cdot F_{ub}\right) = 90 \cdot ksi$

Condition2 = $Condition2 := if\left(\frac{T_{Max}}{F_t} \le 1.00, "OK", "Overstressed"\right)$ $\frac{T_{Max}}{F_t} = 54.53 \cdot \%$

Condition2 = "OK"

Permitted Tensile Stress with Shear = $F_{t.v} := F_t \cdot \sqrt{1 - \left(\frac{V_{Max}}{F_v}\right)^2} = 90 \cdot ksi$

Condition3 = $Condition3 := if\left(\frac{T_{Max}}{F_{t.v}} \le 1.00, "OK", "Overstressed"\right)$ $\frac{T_{Max}}{F_{t.v}} = 54.56 \cdot \%$

Condition3 = "OK"

Flange Plate Analysis:

Force from Bolts =

$$C_i := \frac{OM \cdot d_i}{I_p} + \frac{Axial}{N}$$

$C_1 = 15.8 \cdot kips$ $C_7 = -14.6 \cdot kips$

$C_2 = 26.9 \cdot kips$ $C_8 = -25.7 \cdot kips$

$C_3 = 31.0 \cdot kips$ $C_9 = -29.7 \cdot kips$

$C_4 = 26.9 \cdot kips$ $C_{10} = -25.7 \cdot kips$

$C_5 = 15.8 \cdot kips$ $C_{11} = -14.6 \cdot kips$

$C_6 = 0.6 \cdot kips$ $C_{12} = 0.6 \cdot kips$

Maximum Bending Stress in Plate =

$$f_{bp} := \sum_i \frac{6 \cdot C_i \cdot MA_i}{\left(B_{eff} \cdot t_{bp}^2\right)} = 24.1 \cdot ksi$$

Allowable Bending Stress in Plate =

$$F_{bp} := 0.9 \cdot Fy_{bp} = 58.5 \cdot ksi$$

Plate Bending Stress % of Capacity =

$$\frac{f_{bp}}{F_{bp}} = 41.2 \cdot \%$$

Condition1 =

$$Condition1 := if\left(\frac{f_{bp}}{F_{bp}} < 1.00, "Ok", "Overstressed"\right)$$

Condition1 = "Ok"

Flange Bolt and Flange Plate Analysis:

Input Data:

Flange @ 53-ft

Tower Reactions:

Overturning Moment =	OM := 1712·ft·kips	(User Input)
Shear Force =	Shear := 46·kips	(User Input)
Axial Force =	Axial := 38·kips	(User Input)

Flange Bolt Data:

Use AST MA325

Number of Flange Bolts =	N := 40	(User Input)
Diameter of Bolt Circle =	D_{bc} := 45.5·in	(User Input)
Bolt Minimum Tensile Strength =	F_{ub} := 120·ksi	(User Input)
Bolt Modulus =	E := 29000·ksi	(User Input)
Diameter of Flange Bolts =	D := 1.25·in	(User Input)
Threads per Inch =	n := 7	(User Input)

Flange Plate Data:

Use AST MA588 Grade 50

Plate Yield Strength =	Fy_{bp} := 50·ksi	(User Input)
Flange Plate Thickness =	t_{bp} := 2.5·in	(User Input)
Flange Plate Diameter =	D_{bp} := 48.875·in	(User Input)
Outer Pole Diameter =	D_{pole} := 39.92·in	(User Input)

Geometric Layout Data:

Distance from Bolts to Centroid of Pole:

Radius of Bolt Circle =: $R_{bc} := \frac{D_{bc}}{2} = 22.75 \cdot in$

Distance to Bolts = $i := 1 .. N$

$d_i := \left| \theta \leftarrow 2 \cdot \pi \cdot \left(\frac{i}{N} \right) \right.$
$\left. d \leftarrow R_{bc} \cdot \sin(\theta) \right.$

$d_1 = 3.56 \cdot in$	$d_7 = 20.27 \cdot in$
$d_2 = 7.03 \cdot in$	$d_8 = 21.64 \cdot in$
$d_3 = 10.33 \cdot in$	$d_9 = 22.47 \cdot in$
$d_4 = 13.37 \cdot in$	$d_{10} = 22.75 \cdot in$
$d_5 = 16.09 \cdot in$	$d_{11} = 22.47 \cdot in$
$d_6 = 18.41 \cdot in$	$d_{12} = 21.64 \cdot in$

Critical Distances For Bending in Plate:

Outer Pole Radius = $R_{pole} := \frac{D_{pole}}{2} = 19.96 \cdot in$

Moment Arms of Bolts about Neutral Axis = $MA_i := if\left(d_i \geq R_{pole}, d_i - R_{pole}, 0in\right)$

$MA_1 = 0.00 \cdot in$	$MA_7 = 0.31 \cdot in$
$MA_2 = 0.00 \cdot in$	$MA_8 = 1.68 \cdot in$
$MA_3 = 0.00 \cdot in$	$MA_9 = 2.51 \cdot in$
$MA_4 = 0.00 \cdot in$	$MA_{10} = 2.79 \cdot in$
$MA_5 = 0.00 \cdot in$	$MA_{11} = 2.51 \cdot in$
$MA_6 = 0.00 \cdot in$	$MA_{12} = 1.68 \cdot in$

Effective Width of Flangeplate for Bending = $B_{eff} := .8 \cdot 2 \cdot \sqrt{\left(\frac{D_{bp}}{2}\right)^2 - \left(\frac{D_{pole}}{2}\right)^2} = 22.6 \cdot in$

Flange Bolt Analysis:

Calculated Flange Bolt Properties:

Polar Moment of Inertia = $I_p := \sum_i \left(d_i\right)^2 = 1.035 \times 10^4 \cdot in^2$

Gross Area of Bolt = $A_g := \frac{\pi}{4} \cdot D^2 = 1.227 \cdot in^2$

Net Area of Bolt = $A_n := \frac{\pi}{4} \cdot \left(D - \frac{0.9743 \cdot in}{n}\right)^2 = 0.969 \cdot in^2$

Check Flange Bolts:

Maximum Shear Stress = $V_{Max} := \frac{Shear}{N \cdot A_g} = 0.9 \cdot ksi$

Permitted Shear Stress = $F_v := \left(0.35 \cdot F_{ub}\right) = 42 \cdot ksi$

Condition1 = $Condition1 := if\left(V_{Max} \le F_v, "OK", "Overstressed"\right)$ $\frac{V_{Max}}{F_v} = 2.23 \cdot \%$

Condition1 = "OK"

Maximum Tensile Stress = $T_{Max} := \frac{\left(OM \cdot \frac{R_{bc}}{I_p} - \frac{Axial}{N}\right)}{A_n} = 45.6 \cdot ksi$

Permitted Tensile Stress = $F_t := \left(0.75 \cdot F_{ub}\right) = 90 \cdot ksi$

Condition2 = $Condition2 := if\left(\frac{T_{Max}}{F_t} \le 1.00, "OK", "Overstressed"\right)$ $\frac{T_{Max}}{F_t} = 50.68 \cdot \%$

Condition2 = "OK"

Permitted Tensile Stress with Shear = $F_{t.v} := F_t \cdot \sqrt{1 - \left(\frac{V_{Max}}{F_v}\right)^2} = 90 \cdot ksi$

Condition3 = $Condition3 := if\left(\frac{T_{Max}}{F_{t.v}} \le 1.00, "OK", "Overstressed"\right)$ $\frac{T_{Max}}{F_{t.v}} = 50.69 \cdot \%$

Condition3 = "OK"

Flange Plate Analysis:

Force from Bolts = $C_i := \frac{OM \cdot d_i}{I_p} + \frac{Axial}{N}$

$C_1 = 8.0 \cdot kips$ $C_7 = 41.2 \cdot kips$

$C_2 = 14.9 \cdot kips$ $C_8 = 43.9 \cdot kips$

$C_3 = 21.4 \cdot kips$ $C_9 = 45.5 \cdot kips$

$C_4 = 27.5 \cdot kips$ $C_{10} = 46.1 \cdot kips$

$C_5 = 32.9 \cdot kips$ $C_{11} = 45.5 \cdot kips$

$C_6 = 37.5 \cdot kips$ $C_{12} = 43.9 \cdot kips$

Maximum Bending Stress in Plate =

$$f_{bp} := \sum_i \frac{6 \cdot C_i \cdot MA_i}{\left(B_{eff} \, t_{bp}^{\,2}\right)} = 22.6 \cdot ksi$$

Allowable Bending Stress in Plate = $F_{bp} := 0.9 \cdot Fy_{bp} = 45 \cdot ksi$

Plate Bending Stress % of Capacity = $\frac{f_{bp}}{F_{bp}} = 50.1 \cdot \%$

Condition1 = $Condition1 := if\left(\frac{f_{bp}}{F_{bp}} < 1.00, "Ok", "Overstressed"\right)$

Condition1 = "Ok"

Section 1 - RFDS GENERAL INFORMATION

RFDS NAME:	CT5145	DATE:	9/21/2021	RF DESIGN ENG:	Mohammad M Hussain	RF PERF ENG:	
ISSUE:	Bronze Standard	Approved? (Y/N):	Yes	RF DESIGN PHONE:	510-493-3024	RF PERF PHONE:	
REVISION:	Final	RF MANAGER:	John Benedetto	RF DESIGN EMAIL:	mh705r@att.com	RF PERF EMAIL:	
INITIATIVE PROJECT	10/17/2022: LTE 3C WCS SOW is on Hold and removed. Cell Site RF MOD and 5G NR SOW					ADDITIONAL WORKFLOW NOTIFICATIONS:	
						RFDS VERSION:	7.00
						UMTS FREQUENCY:	
						LTE FREQUENCY:	700,1900,WCS
						5G FREQUENCY:	850
						IPLAN JOB # 1:	ER_-RCTB-21-06476
						IPLAN JOB # 2:	ER_-RCTB-21-06460
						IPLAN JOB # 3:	
						IPLAN JOB # 4:	
						IPLAN JOB # 5:	
						IPLAN JOB # 6:	
						IPLAN JOB # 7:	
						IPLAN JOB # 8:	
						IPLAN JOB # 9:	
						IPLAN JOB #10:	
						IPLAN JOB # 11:	
						IPLAN JOB # 12:	
						IPLAN JOB # 13:	
						IPLAN JOB # 14:	
						IPLAN JOB # 15:	
						IPLAN JOB # 16:	

RFDS PROGRAM TYPE:	2021 LTE Next Carrier
RFDS TECHNOLOGY:	LTE
STATE/STATUS:	Final/Approved
RFDS ID:	4753776
Created By:	mh705r
Updated By:	mh705r
Created:	9/20/2021
Updated:	3/24/2023
Estimated SQIN:	4,647
Expiration:	
RER Initiative:	
Calculation ID:	20230324150226381O
PRD || SUB GRP #1	Cell Site RF Modifications || 5G NR Upgrade
PRD || SUB GRP #2	5G NR Radio || 5G NR 1SR
PRD || SUB GRP #3	
PRD || SUB GRP #4	
PRD || SUB GRP #5	
PRD || SUB GRP #6	
PRD || SUB GRP #7	
PRD || SUB GRP #8	
PRD || SUB GRP #9	
PRD || SUB GRP #10	
PRD || SUB GRP #11	
PRD || SUB GRP #12	
PRD || SUB GRP #13	
PRD || SUB GRP #14	
PRD || SUB GRP #15	
PRD || SUB GRP #16	

Section 2 - LOCATION INFORMATION

USID:	26706	FA LOCATION CODE:	10071095	LOCATION NAME:	LOWER SCORT HILL	ORACLE PRJT # 1:	2051A11Y95
REGION:	NORTHEAST	MARKET CLUSTER:	NEW ENGLAND	MARKET:	CONNECTICUT	ORACLE PRJT # 2:	2051A11Y8B
ADDRESS:	280 MOREHOUSE DRIVE	CITY:	FAIRFIELD	STATE:	CT	ORACLE PRJT # 3:	
ZIP CODE:	06825	COUNTY:	FAIRFIELD	LONG (DEC. DEG.):	-73.2610989	ORACLE PRJT # 4:	
LATITUDE (D-M-S):	41d 12m38.13084s	LONGITUDE (D-M-S):	-73d -15m-39.95604s	LAT (DEC. DEG.):	41.2105919	ORACLE PRJT # 5:	
DIRECTIONS, ACCESS AND EQUIPMENT LOCATION:	UPDATED 4/04 CT-045/145 LOWER SCORT HILL TAKE RT. 17 NORTH TO GARDEN STATE PARKWAY NORTH TO I-87 SOUTH. GO ACROSS TAPPAN ZEE BRIDGE; FOLLOW SIGNS TO I-287 EAST; ONCE ON I-287 YOU WILL GET OFF EXIT 9N FOR THE HUTCHINSON AND MERRITT PARKWAY YOU NEED TO GO N					ORACLE PRJT # 6:	
						ORACLE PRJT # 7:	
						ORACLE PRJT # 8:	
						ORACLE PRJT # 9:	
						ORACLE PRJT # 10:	
						ORACLE PRJT # 11:	
						ORACLE PRJT # 12:	
						ORACLE PRJT # 13:	
						ORACLE PRJT # 14:	
						ORACLE PRJT # 15:	
						ORACLE PRJT # 16:	
						BORDER CELL WITH CONTOUR COORD:	
						AM STUDY REQ'D (Y/N):	No
						FREQ COORD:	
						RF DISTRICT:	TBD
						RF ZONE:	TBD
						PARENT NAME(UMTS):	BRPTCT04CRBR06

PACE JOB #1:	MRCTB056927
PACE JOB #2:	MRCTB057011
PACE JOB #3:	
PACE JOB #4:	
PACE JOB #5:	
PACE JOB #6:	
PACE JOB #7:	
PACE JOB #8:	
PACE JOB #9:	
PACE JOB #10:	
PACE JOB #11:	
PACE JOB #12:	
PACE JOB #13:	
PACE JOB #14:	
PACE JOB #15:	
PACE JOB #16:	
SEARCH RING NAME:	
SEARCH RING ID:	
BTA:	MSA / RSA:
LAC(UMTS):	05989
RNC(UMTS):	BRIDGEPORT RNC06 ERICSSON 3820
MME POOL ID(LTE):	FF01

Section 3 - LICENSE COVERAGE/FILING INFORMATION

CGSA - NO FILING TRIGGERED (Yes/No):	No	CGSA LOSS:		PCS REDUCED - UPS ZIP:		CGSA CALL SIGNS:	
CGSA - MINOR FILING NEEDED (Yes/No):	No	CGSA EXT AGMT NEEDED:		PCS POPS REDUCED:			
CGSA - MAJOR FILING NEEDED (Yes/No):	Yes	CGSA SCORECARD UPDATED:					

Section 4 - TOWER/REGULATORY INFORMATION

STRUCTURE AT&T OWNED?:	No	GROUND ELEVATION (ft):	187	STRUCTURE TYPE:	UTILITY	MARKET LOCATION 700 MHz Band:	
ADDITIONAL REGULATORY?:	Yes	HEIGHT OVERALL (ft):	107	FCC ASR NUMBER:		MARKET LOCATION 850 MHz Band:	
SUB-LEASE RIGHTS?:	No	STRUCTURE HEIGHT (ft):	104.00			MARKET LOCATION 1900 MHz Band:	
LIGHTING TYPE:	NOT REQUIRED					MARKET LOCATION AWS Band:	
						MARKET LOCATION WCS Band:	
						MARKET LOCATION Future Band:	

Section 5 - E-911 INFORMATION - existing

	PSAP NAME:	PSAP ID:	E911 PHASE:	MPC SVC PROVIDER:	LMU REQUIRED:	ESRN:	DATE LIVE PH1:	DATE LIVE PH2:
SECTOR A E-911				INTRADO		0		
SECTOR B				INTRADO		0		
SECTOR C				INTRADO		0		
SECTOR D								
SECTOR E								
SECTOR F								
OMNI								

Section 5 - E-911 INFORMATION - final

	PSAP NAME:	PSAP ID:	E911 PHASE:	MPC SVC PROVIDER:	LMU REQUIRED:	ESRN:	DATE LIVE PH1:	DATE LIVE PH2:
SECTOR A E-911				INTRADO		0		
SECTOR B				INTRADO		0		
SECTOR C				INTRADO		0		
SECTOR D								
SECTOR E								
SECTOR F								
OMNI								

Section 6/7 - BBU INFORMATION - existing

	BBU 1	BBU 2	BBU 3
BBU ID:	172494	305218	456079
TECHNOLOGY:	UMTS	UMTS	LTE
BBU NAME:	CTU5145	CTV5145	CTL05145
BBU USID:	26706	26706	26706
CELL ID / BCF:	CTU5145	CTU5145	CTL05145
BTA/TID:	321V	321W	321L
4-9 DIGIT SITE ID:	5145	9145	5145
COW OR TOY?:	No	No	No
CELL SITE TYPE:	SECTORIZED	SECTORIZED	SECTORIZED
SITE TYPE:	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL
BTS LOCATION ID:	GROUND	INTERNAL	GROUND
BASE STATION TYPE:	BASE	OVERLAY	BASE
EQUIPMENT NAME:	LOWER SCORT HILL	LOWERSCORT HILL	LOWER SCORT HILL LTE
DISASTER PRIORITY:	2	0	0
EQUIPMENT VENDOR:	ERICSSON	ERICSSON	ERICSSON
EQUIPMENT TYPE (Model):			6601 INDOOR MU
BASEBAND CONFIGURATION :			
MARKET STATE CODE:			CT
NODE B NUMBER:	0	0	5145
SIDEHAUL SWITCH VENDOR:			
SIDEHAUL SWITCH MODEL:			
SIDEHAUL SWITCH NAME:			
SIDEHAUL SWITCH ADDITIONAL CARDS:			
UL-CoMP:			
CSS - CTS COMMON ID:	CTU5145	CTV5145	CTL05145
CSS - SECONDARY FUNCTION ID:			

Section 6/7 - BBU INFORMATION - final

	BBU 1	BBU 2
BBU ID:	456079	0
TECHNOLOGY:	LTE	5G
BBU NAME:	CTL05145	CTCN005145
BBU USID:	26706	26706
CELL ID / BCF:	CTL05145	CTCN005145
BTA/TID:	321L	
4-9 DIGIT SITE ID:	5145	14005145
COW OR TOY?:	No	No
CELL SITE TYPE:	SECTORIZED	SECTORIZED
SITE TYPE:	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL
BTS LOCATION ID:	GROUND	INTERNAL
BASE STATION TYPE:	BASE	BASE
EQUIPMENT NAME:	LOWER SCORT HILL LTE	LOWER SCORT HILL LTE
DISASTER PRIORITY:	0	0
EQUIPMENT VENDOR:	ERICSSON	ERICSSON
EQUIPMENT TYPE (Model):	BASEBAND 6630	RAN PROCESSOR 6651
BASEBAND CONFIGURATION :	1x6601 / 1x6630 / 1xXMU	xxxxx / 1x6651 / xxxxx + IDLe
MARKET STATE CODE:	CT	CTC
NODE B NUMBER:	5145	5145
SIDEHAUL SWITCH VENDOR:		
SIDEHAUL SWITCH MODEL:		
SIDEHAUL SWITCH NAME:		
SIDEHAUL SWITCH ADDITIONAL CARDS:		
UL-CoMP:		
CSS - CTS COMMON ID:	CTL05145	
CSS - SECONDARY FUNCTION ID:		

Section 7b - Radio INFORMATION - existing

Section 7b - Radio INFORMATION - final

Section 8 - RBS/SECTOR ASSOCIATION - existing

	BBU 1	BBU 2	BBU 3
CTS Common ID	CTU5145	CTV5145	CTL05145
Soft Sector IDs	CTU51454	CTV51451	CTL05145_7A_1
	CTU51455	CTV51452	CTL05145_7B_1
	CTU51456	CTV51453	CTL05145_7C_1
	CTU51457		CTL05145_9A_1
	CTU51458		CTL05145_9A_2
	CTU51459		CTL05145_9B_1
			CTL05145_9B_2
			CTL05145_9C_1
			CTL05145_9C_2

Section 8 - RBS/SECTOR ASSOCIATION - final

	BBU 1	BBU 2
CTS Common ID	CTL05145	CTCN005145
Soft Sector IDs	CTL05145_7A_1	CTCN005145_N002A_1
	CTL05145_7B_1	CTCN005145_N002B_1
	CTL05145_7C_1	CTCN005145_N002C_1
	CTL05145_9A_1	CTCN005145_N005A_1
	CTL05145_9A_2	CTCN005145_N005B_1
	CTL05145_9B_1	CTCN005145_N005C_1
	CTL05145_9B_2	
	CTL05145_9C_1	
	CTL05145_9C_2	

Section 9 - SOFT SECTOR ID - existing

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 1900	LTE 1ST 700	LTE 1ST 1900	LTE 2ND 1900	5G 1ST 850	5G 1ST 1900
USEID (excluding Hard Sector)	26706.850.3G.2	26706.1900.3G.1	26706.1900.3G.2					
SECTOR A SOFT SECTOR ID	CTV51451	CTU51457	CTU51454	CTL05145_7A_1	CTL05145_9A_1	CTL05145_9A_2		
SECTOR_B	CTV51452	CTU51458	CTU51455	CTL05145_7B_1	CTL05145_9B_1	CTL05145_9B_2		
SECTOR_C	CTV51453	CTU51459	CTU51456	CTL05145_7C_1	CTL05145_9C_1	CTL05145_9C_2		
SECTOR_D								
SECTOR_E								
SECTOR_F								
OMNI								

Section 9 - SOFT SECTOR ID - final

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 1900	LTE 1ST 700	LTE 1ST 1900	LTE 2ND 1900	5G 1ST 850	5G 1ST 1900
USEID (excluding Hard Sector)								
SECTOR A SOFT SECTOR ID				CTL05145_7A_1	CTL05145_9A_1	CTL05145_9A_2	CTCN005145_N005A	CTCN005145_N002A_1
SECTOR_B				CTL05145_7B_1	CTL05145_9B_1	CTL05145_9B_2	CTCN005145_N005B	CTCN005145_N002B_1
SECTOR_C				CTL05145_7C_1	CTL05145_9C_1	CTL05145_9C_2	CTCN005145_N005C	CTCN005145_N002C_1
SECTOR_D								
SECTOR_E								
SECTOR_F								
OMNI								

Section 9 - Cell Number - existing

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 1900	LTE 1ST 700	LTE 1ST 1900	LTE 2ND 1900	5G 1ST 850	5G 1ST 1900
USEID (excluding Hard Sector)	26706.850.3G.2	26706.1900.3G.1	26706.1900.3G.2					
SECTOR A CELL NUMBER				15	8	178		
SECTOR_B				16	9	179		
SECTOR_C				17	10	180		
SECTOR_D								
SECTOR_E								
SECTOR_F								
OMNI								

Section 9 - Cell Number - final

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 1900	LTE 1ST 700	LTE 1ST 1900	LTE 2ND 1900	5G 1ST 850	5G 1ST 1900
USEID (excluding Hard Sector)								
SECTOR A CELL NUMBER				15	8	178	25	26
SECTOR_B				16	9	179	49	50
SECTOR_C				17	10	180	73	74
SECTOR_D								
SECTOR_E								
SECTOR_F								
OMNI								

Section 10 - CID/SAC - existing

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 1900	LTE 1ST 700	LTE 1ST 1900	LTE 2ND 1900	5G 1ST 850	5G 1ST 1900
SECTOR A CID/SAC	51451	51457	51454					
SECTOR_B	51452	51458	51455					
SECTOR_C	51453	51459	51456					
SECTOR_D								
SECTOR_E								
SECTOR_F								
OMNI								

Section 10 - CID/SAC - final

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 1900	LTE 1ST 700	LTE 1ST 1900	LTE 2ND 1900	5G 1ST 850	5G 1ST 1900
SECTOR A CID/SAC								
SECTOR_B								
SECTOR_C								
SECTOR_D								
SECTOR_E								
SECTOR_F								
OMNI								

Section 11 - CURRENT RADIO COUNTS existing

Section 12 - CURRENT T1 COUNTS existing

Section 13 - NEW/PROPOSED RADIO COUNTS

Section 14 - NEW/PROPOSED T1 COUNTS

Section 15A - CURRENT TOWER CONFIGURATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	QS46512-2						
ANTENNA VENDOR	Quintel						
ANTENNA SIZE (H x W x D)	52X12X10.8						
ANTENNA WEIGHT	75						
AZIMUTH	0						
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	85						
ANTENNA TIP HEIGHT							
MECHANICAL DOWNTILT	0						
FEEDER AMOUNT	4						
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Built In						
SURGE ARRESTOR (QTY/MODEL)	4 APTDC-BDFDM-DB						
DIPLEXER (QTY/MODEL)	4 SPX-0726						
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	2 TMA2117F00V1-1						
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2 782 11055						
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)	1 RRUS-11 B12						
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)	1 RRUS-12 B2						
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)	2 782 11055						
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1							
Local Market Note 2							
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	PORT 1			CTL05145_7A_1	CTL05145_7A_1		LTE 700	2_776MHz_02DT	13	0	2	BOTTOM	1 5/8" ANDREW AVA7-50_700 MHz	112.028675						1475.7065		1	
	PORT 3			CTU51457	CTU51457		UMTS 1900	2_1930MHz_02DT	15.7	0	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						633.86		2	
	PORT 4			CTL05145_9A_1	CTL05145_9A_1		LTE 1900	2_1930MHz_02DT	15.7	0	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						3664.3757		2	
	PORT 7			CTL05145_9A_2	CTL05145_9A_2		LTE 1900	2_1930MHz_02DT	15.7	0	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						3664.3757		2	

Section 15B - CURRENT TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	QS46512-2						
ANTENNA VENDOR	Quintel						
ANTENNA SIZE (H x W x D)	52X12X10.8						
ANTENNA WEIGHT	75						
AZIMUTH	120						
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	85						
ANTENNA TIP HEIGHT							
MECHANICAL DOWNTILT	0						
FEEDER AMOUNT	4						
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Built In						
SURGE ARRESTOR (QTY/MODEL)	4 APTDC-BDFDM-DB						
DIPLEXER (QTY/MODEL)	4 SPX-0726						
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	2 TMA2117F00V1-1						
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2 782 11055						
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)	1 RRUS-11 B12						
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)	1 RRUS-12 B2						
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)	2 782 11055						
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1							
Local Market Note 2							
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	PORT 1			CTL05145_7B_1	CTL05145_7B_1		LTE 700	2_776MHz_02DT	13	120	2	BOTTOM	1 5/8" ANDREW AVA7-50_700 MHz	112.028675						1475.7065		9	
	PORT 3			CTU51458	CTU51458		UMTS 1900	2_1930MHz_02DT	15.7	120	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						633.86		10	
	PORT 4			CTL05145_9B_1	CTL05145_9B_1		LTE 1900	2_1930MHz_02DT	15.7	120	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						3664.3757		10	
	PORT 7			CTL05145_9B_2	CTL05145_9B_2		LTE 1900	2_1930MHz_02DT	15.7	120	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						3664.3757		10	

Section 15C - CURRENT TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	QS46512-2						
ANTENNA VENDOR	Quintel						
ANTENNA SIZE (H x W x D)	52X12X10.8						
ANTENNA WEIGHT	75						
AZIMUTH	240						
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	85						
ANTENNA TIP HEIGHT							
MECHANICAL DOWNTILT	0						
FEEDER AMOUNT	4						
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Built In						
SURGE ARRESTOR (QTY/MODEL)	4 APTDC-BDFDM-DB						
DIPLEXER (QTY/MODEL)	4 SPX-0726						
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	2 TMA2117F00V1-1						
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2 782 11055						
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)	1 RRUS-11 B12						
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)	1 RRUS-12 B2						
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)	2 782 11055						
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1							
Local Market Note 2							
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	PORT 1			CTL05145_7C_1	CTL05145_7C_1		LTE 700	2_776MHz_02DT	13	240	2	BOTTOM	1 5/8" ANDREW AVA7-50 700 MHz	112.028675						1475.7065		17	
	PORT 3			CTU51459	CTU51459		UMTS 1900	2_1930MHz_02DT	15.7	240	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						633.86		18	
	PORT 4			CTL05145_9C_1	CTL05145_9C_1		LTE 1900	2_1930MHz_02DT	15.7	240	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						3664.3757		18	
	PORT 7			CTL05145_9C_2	CTL05145_9C_2		LTE 1900	2_1930MHz_02DT	15.7	240	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						3664.3757		18	

Section 16A - PLANNED/PROPOSED TOWER CONFIGURATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?							
ANTENNA MAKE - MODEL				TPA-65R-BU4DA			
ANTENNA VENDOR				CCI			
ANTENNA SIZE (H x W x D)				48X20.7X7.7			
ANTENNA WEIGHT				52.6			
AZIMUTH				0			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)				85			
ANTENNA TIP HEIGHT							
MECHANICAL DOWNTILT				0			
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)				Built In			
SURGE ARRESTOR (QTY/MODEL)			8	TSXDC-4310FM			
DIPLEXER (QTY/MODEL)			4	CQX8192123T-DS-43			
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)			2	TMAT192123B6831			
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)			1	4449 B5/B12			
RRH - 850 band (QTY/MODEL)				with another band			
RRH - 1900 band (QTY/MODEL)			1	4415 B25			
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	-Follow Antennas/RRHs positions as per PDs. -Replace/Add RRHs.						
Local Market Note 2							
Local Market Note 3	1x6630+1x0MU+1x6651+Xcede Cable.						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RX/AIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 4	PORT 1			CTL05145_7A_1	CTL05145_7A_1		LTE 700	BU4DA_776MHz_02DT	13	0	2	BOTTOM	1 5/8" ANDREW AVA7-50_700 MHz	112.028675						1475.7065		1	
	PORT 2			CTCN005145_N005A_1	CTCN005145_N005A_1		5G 850	BU4DA_776MHz_02DT	13	0	2	BOTTOM	1 5/8" ANDREW AVA7-50_700 MHz	112.028675						1475.7065		1	
	PORT 4			CTL05145_9A_1	CTL05145_9A_1		LTE 1900	BU4DA_1930MHz_02DT	15.7	0	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						3664.3757		2	
	PORT 7			CTL05145_9A_2	CTL05145_9A_2		LTE 1900	BU4DA_1930MHz_02DT	15.7	0	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						3664.3757		2	
	PORT 11			CTCN005145_N002A_1	CTCN005145_N002A_1		5G 1900	BU4DA_776MHz_02DT	13	0	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						1475.7065		2	

Section 16B - PLANNED/PROPOSED TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?							
ANTENNA MAKE - MODEL				TPA-65R-BU4DA			
ANTENNA VENDOR				CCI			
ANTENNA SIZE (H x W x D)				48X20.7X7.7			
ANTENNA WEIGHT				52.6			
AZIMUTH				120			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)				85			
ANTENNA TIP HEIGHT							
MECHANICAL DOWNTILT				0			
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)				Built In			
SURGE ARRESTOR (QTY/MODEL)			8	TSXDC-4310FM			
DIPLEXER (QTY/MODEL)			4	CQX8192123T-DS-43			
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)			2	TMAT192123B6831			
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)			1	4449 B5/B12			
RRH - 850 band (QTY/MODEL)				with another band			
RRH - 1900 band (QTY/MODEL)			1	4415 B25			
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	-Follow Antennas/RRHs positions as per PDs. -Replace/Add RRHs.						
Local Market Note 2							
Local Market Note 3	1x6630+1x0MU+1x6651+Xcede Cable.						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RX/AIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 4	PORT 1			CTL05145_7B_1	CTL05145_7B_1		LTE 700	BU4DA_776MHz_02DT	13	120	2	BOTTOM	1 5/8" ANDREW AVA7-50_700 MHz	112.028675						1475.7065		9	
	PORT 2			CTCN005145_N005B_1	CTCN005145_N005B_1		5G 850	BU4DA_776MHz_02DT	13	120	2	BOTTOM	1 5/8" ANDREW AVA7-50_700 MHz	112.028675						1475.7065		9	
	PORT 4			CTL05145_9B_1	CTL05145_9B_1		LTE 1900	BU4DA_1930MHz_02DT	15.7	120	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						3664.3757		10	
	PORT 7			CTL05145_9B_2	CTL05145_9B_2		LTE 1900	BU4DA_1930MHz_02DT	15.7	120	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						3664.3757		10	
	PORT 11			CTCN005145_N002B_1	CTCN005145_N002B_1		5G 1900	BU4DA_776MHz_02DT	13	120	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						1475.7065		10	

Section 16C - PLANNED/PROPOSED TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?							
ANTENNA MAKE - MODEL				TPA-65R-BU4DA			
ANTENNA VENDOR				CCI			
ANTENNA SIZE (H x W x D)				48X20.7X7.7			
ANTENNA WEIGHT				52.6			
AZIMUTH				240			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)				85			
ANTENNA TIP HEIGHT							
MECHANICAL DOWNTILT				0			
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)				Built In			
SURGE ARRESTOR (QTY/MODEL)			8	TSXDC-4310FM			
DIPLEXER (QTY/MODEL)			4	CQX8192123T-DS-43			
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)			2	TMAT192123B6831			
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)			1	4449 B5/B12			
RRH - 850 band (QTY/MODEL)				with another band			
RRH - 1900 band (QTY/MODEL)			1	4415 B25			
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	-Follow Antennas/RRHs positions as per PDs. -Replace/Add RRHs.						
Local Market Note 2							
Local Market Note 3	1x6630+1x0MU+1x6651+Xcede Cable.						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RX/AIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 4	PORT 1			CTL05145_7C_1	CTL05145_7C_1		LTE 700	BU4DA_776MHz_02DT	13	240	2	BOTTOM	1 5/8" ANDREW AVA7-50_700 MHz	112.028675						1475.7065		17	
	PORT 2			CTCN005145_N005C_1	CTCN005145_N005C_1		5G 850	BU4DA_776MHz_02DT	13	240	2	BOTTOM	1 5/8" ANDREW AVA7-50_700 MHz	112.028675						1475.7065		17	
	PORT 4			CTL05145_9C_1	CTL05145_9C_1		LTE 1900	BU4DA_1930MHz_02DT	15.7	240	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						3664.3757		18	
	PORT 7			CTL05145_9C_2	CTL05145_9C_2		LTE 1900	BU4DA_1930MHz_02DT	15.7	240	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						3664.3757		18	
	PORT 11			CTCN005145_N002C_1	CTCN005145_N002C_1		5G 1900	BU4DA_776MHz_02DT	13	240	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						1475.7065		18	

Section 16.5A - SCOPING TOWER CONFIGURATION - SECTOR A (OR OMNI)

Section 17A - FINAL TOWER CONFIGURATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL				TPA-65R-BU4DA			
ANTENNA VENDOR				CCI			
ANTENNA SIZE (H x W x D)				48X20.7X7.7			
ANTENNA WEIGHT				52.6			
AZIMUTH				0			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)				85			
ANTENNA TIP HEIGHT							
MECHANICAL DOWNTILT				0			
FEEDER AMOUNT				4			
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)				Built In			
SURGE ARRESTOR (QTY/MODEL)			8	TSXDC-4310FM			
DIPLEXER (QTY/MODEL)			4	CQX8192123T-DS-43			
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)			2	TMAT192123B6831			
CURRENT INJECTORS FOR TMA (QTY/MODEL)			2	782 11055			
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)			1	4449 B5/B12			
RRH - 850 band (QTY/MODEL)				with another band			
RRH - 1900 band (QTY/MODEL)			1	4415 B25			
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)			2	782 11055			
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	-Follow Antennas/RRHs positions as per PDs. -Replace/Add RRHs.						
Local Market Note 2							
Local Market Note 3	1x6630+1x0MU+1x6651+Xcede Cable.						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RX/AIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 4	PORT 1	26706.A.700.4G.1		CTL05145_7A_1	CTL05145_7A_1		LTE 700	BU4DA_776MHz_02DT	13	0	2	BOTTOM	1 5/8" ANDREW AVA7-50_700 MHz	112.028675						1475.7065		1	
	PORT 2	26706.A.850.5G.tmp1		CTCN005145_N005A_1	CTCN005145_N005A_1		5G 850	BU4DA_776MHz_02DT	13	0	2	BOTTOM	1 5/8" ANDREW AVA7-50_700 MHz	112.028675						1475.7065		1	
	PORT 4	26706.A.1900.4G.1		CTL05145_9A_1	CTL05145_9A_1		LTE 1900	BU4DA_1930MHz_02DT	15.7	0	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						3664.3757		2	
	PORT 7	26706.A.1900.4G.4		CTL05145_9A_2	CTL05145_9A_2		LTE 1900	BU4DA_1930MHz_02DT	15.7	0	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						3664.3757		2	
	PORT 11	26706.A.1900.5G.tmp1		CTCN005145_N002A_1	CTCN005145_N002A_1		5G 1900	BU4DA_776MHz_02DT	13	0	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						1475.7065		2	

Section 17B - FINAL TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL				TPA-65R-BU4DA			
ANTENNA VENDOR				CCI			
ANTENNA SIZE (H x W x D)				48X20.7X7.7			
ANTENNA WEIGHT				52.6			
AZIMUTH				120			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)				85			
ANTENNA TIP HEIGHT							
MECHANICAL DOWNTILT				0			
FEEDER AMOUNT				4			
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)				Built In			
SURGE ARRESTOR (QTY/MODEL)				8 TSXDC-4310FM			
DIPLEXER (QTY/MODEL)				4 CQXB192123T-DS-43			
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)				2 TMAT192123B6831			
CURRENT INJECTORS FOR TMA (QTY/MODEL)				2 782 11055			
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)				1 4449 B5/B12			
RRH - 850 band (QTY/MODEL)				with another band			
RRH - 1900 band (QTY/MODEL)				1 4415 B25			
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)				2 782 11055			
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	-Follow Antennas/RRHs positions as per PDs. -Replace/Add RRHs.						
Local Market Note 2							
Local Market Note 3	1x6630+1x0MU+1x6651+Xcede Cable.						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 4	PORT 1	26706.B.700.4G.1		CTL05145_7B_1	CTL05145_7B_1		LTE 700	BU4DA_776MHz_02DT	13	120	2	BOTTOM	1 5/8" ANDREW AVA7-50_700 MHz	112.028675						1475.7065		9	
	PORT 2	26706.B.850.5G.tmp1		CTCN005145_N005B_1	CTCN005145_N005B_1		5G 850	BU4DA_776MHz_02DT	13	120	2	BOTTOM	1 5/8" ANDREW AVA7-50_700 MHz	112.028675						1475.7065		9	
	PORT 4	26706.B.1900.4G.1		CTL05145_9B_1	CTL05145_9B_1		LTE 1900	BU4DA_1930MHz_02DT	15.7	120	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						3664.3757		10	
	PORT 7	26706.B.1900.4G.4		CTL05145_9B_2	CTL05145_9B_2		LTE 1900	BU4DA_1930MHz_02DT	15.7	120	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						3664.3757		10	
	PORT 11	26706.B.1900.5G.tmp1		CTCN005145_N002B_1	CTCN005145_N002B_1		5G 1900	BU4DA_776MHz_02DT	13	120	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						1475.7065		10	

Section 17C - FINAL TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL				TPA-65R-BU4DA			
ANTENNA VENDOR				CCI			
ANTENNA SIZE (H x W x D)				48X20.7X7.7			
ANTENNA WEIGHT				52.6			
AZIMUTH				240			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)				85			
ANTENNA TIP HEIGHT							
MECHANICAL DOWNTILT				0			
FEEDER AMOUNT				4			
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)				Built In			
SURGE ARRESTOR (QTY/MODEL)			8	TSXDC-4310FM			
DIPLEXER (QTY/MODEL)			4	CQXB192123T-DS-43			
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)			2	TMAT192123B6831			
CURRENT INJECTORS FOR TMA (QTY/MODEL)			2	782 11055			
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)			1	4449 B5/B12			
RRH - 850 band (QTY/MODEL)				with another band			
RRH - 1900 band (QTY/MODEL)			1	4415 B25			
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)			2	782 11055			
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	-Follow Antennas/RRHs positions as per PDs. -Replace/Add RRHs.						
Local Market Note 2							
Local Market Note 3	1x6630+1x0MU+1x6651+Xcede Cable.						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 4	PORT 1	26706.C.700.4G.1		CTL05145_7C_1	CTL05145_7C_1		LTE 700	BU4DA_776MHz_02DT	13	240	2	BOTTOM	1 5/8" ANDREW AVA7-50_700 MHz	112.028675						1475.7065		17	
	PORT 2	26706.C.850.5G.tmp1		CTCN005145_N005C_1	CTCN005145_N005C_1		5G 850	BU4DA_776MHz_02DT	13	240	2	BOTTOM	1 5/8" ANDREW AVA7-50_700 MHz	112.028675						1475.7065		17	
	PORT 4	26706.C.1900.4G.1		CTL05145_9C_1	CTL05145_9C_1		LTE 1900	BU4DA_1930MHz_02DT	15.7	240	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						3664.3757		18	
	PORT 7	26706.C.1900.4G.4		CTL05145_9C_2	CTL05145_9C_2		LTE 1900	BU4DA_1930MHz_02DT	15.7	240	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						3664.3757		18	
	PORT 11	26706.C.1900.5G.tmp1		CTCN005145_N002C_1	CTCN005145_N002C_1		5G 1900	BU4DA_776MHz_02DT	13	240	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						1475.7065		18	

Antennas

MultiPort Series

DATA SHEET

Multi-Band Twelve-Port Antenna

TPA65R-BU4D

- Four foot (1.2 m) multiband, twelve port antenna with a 65° azimuth beamwidth covering 698-896 MHz and 1695-2400 MHz frequencies
- Eight high band ports covering 1695-2400 MHz and four low band ports covering 698-896 MHz in a single antenna enclosure
- Innovative Low and High Band Array configuration allows for 4T4R (4x4 MIMO) on Low Band and Dual 4T4R (4x4 MIMO) High Band Arrays, using full length arrays (non stacked), all in a 20.7" (525 mm) width enclosure, an Industry First
- Full Spectrum Compliance for WCS and AWS-3 frequencies and Band 14 Operations
- Array configuration allows for 4T4R (4X4 MIMO) on Low Band, essential for Band 14 Operations
- LTE Optimized FBR and SPR performance, providing for an efficient use of valuable radio capacity
- LTE Optimized Boresight and Sector XPD and USL performance, essential for LTE Performance
- Exceeds minimum PIM performance requirements
- Equipped with new 4.3-10 connector, which is 40% smaller than traditional 7/16 DIN connector
- Ordering options for External RET Controllers (Type 1) or Internally Integrated RET Controllers (Type 17)

Overview

The CCI 12-Port multiband array is a twelve port antenna, with eight wide band ports covering 1695-2400 MHz and four low band ports covering 698-896 MHz. The antenna provides the capability to deploy Dual 4×4 Multiple-input Multiple-output (MIMO) in the high band and 4X4 Multiple-input Multiple-output (MIMO) across low band ports. The CCI 12-Port allows independent tilt control between the low band ports and high band ports and independent tilt control between left and right antenna arrays.

In this three RET configuration, the 1st RET is dedicated for the four Low Band ports. The 2nd RET is dedicated for the four Left High Band ports and the 3th RET is dedicated for the four Right High Band ports. This RET arrangement allows for complete flexibility in coverage control between left and right antenna arrays.

CCI antennas are designed and produced to ISO 9001 certification standards for reliability and quality in our state-of-the-art manufacturing facilities.

Applications

- Dual 4×4 MIMO for the High Band and 4X4 MIMO Low Band ports
- Ready for Network Standardization on 4.3-10 DIN connectors
- With CCI's multiband antennas, wireless providers can connect multiple platforms to a single antenna, reducing tower load, lease expense, deployment time and installation costs

SPECIFICATIONS

Multi-Band Twelve-Port Antenna

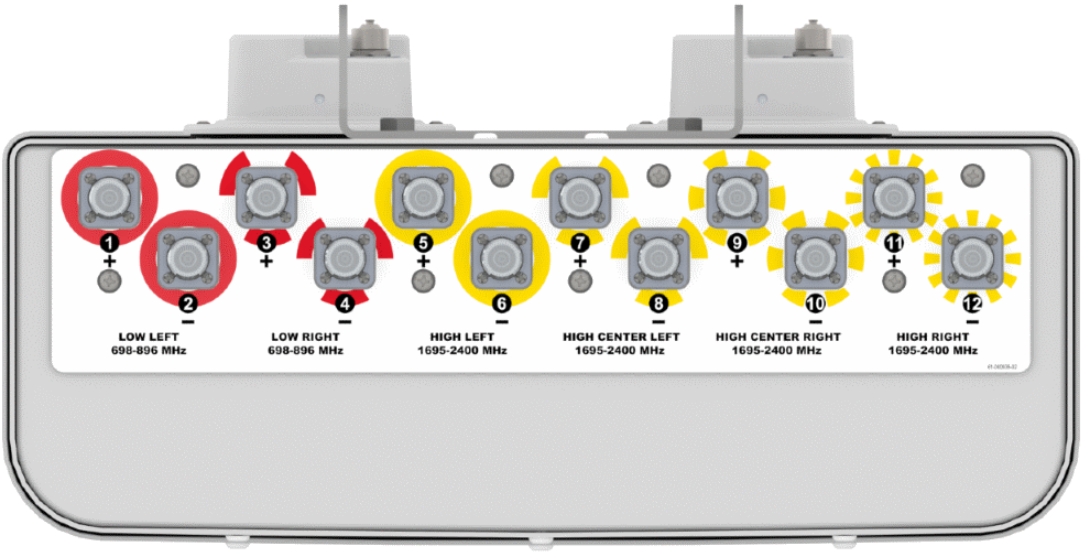
TPA65R-BU4D

Mechanical

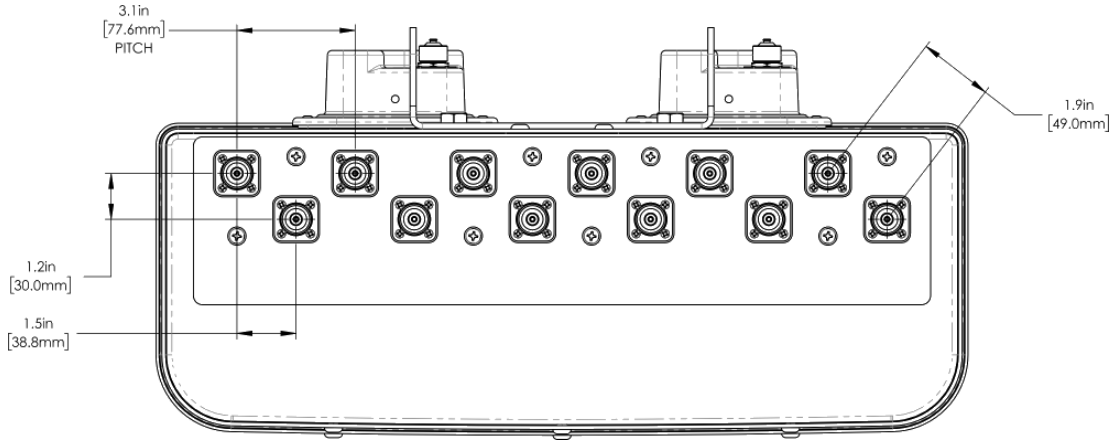
Dimensions (LxWxD)	48.0x20.7x7.7 in (1220x525x197 mm)
Survival Wind Speed	> 150 mph (> 241 kph)
Front Wind Load	212 lbs (943 N) @ 100 mph (161 kph)
Side Wind Load	90 lbs (402 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	8.3 ft^2 (0.8 m^2)
Weight *	52.2 lbs (23.7 kg)
Packaging Dimensions (LxWxD)	60.2x26.9x15.0 in (1530x683x381 mm)
Packaged Weight ~	86.0 lbs (39.0 kg)
Connector	12 x 4.3-10 female
Mounting Pole	2 to 5 in (5 to 12 cm)

** Weight excludes mounting*

Bottom View



Connector Spacing



TMAT192123B68-31 | E14R00P33

Tower Mounted Amplifier,Twin Configuration PCS/AWS 1–4 WCS, 617–894 MHz bypass 4.3-10

- New Triple-band TMA for PCS, AWS 1-4 and WCS in a compact twin form factor
- Low frequency bypass of 617-894 MHz covers Band 14 public safety operating frequencies
- Significantly reduces complexity of tower top architectures
- Also available in a quad configuration to support 4 x 4 requirements
- New 4.3-10 connectors for improved PIM performance and size reduction
- Support DC/AISG antenna Auto-forward

Product Classification

Product Type	1-BTS:3-ANT (Triplex) | Tower mounted amplifier

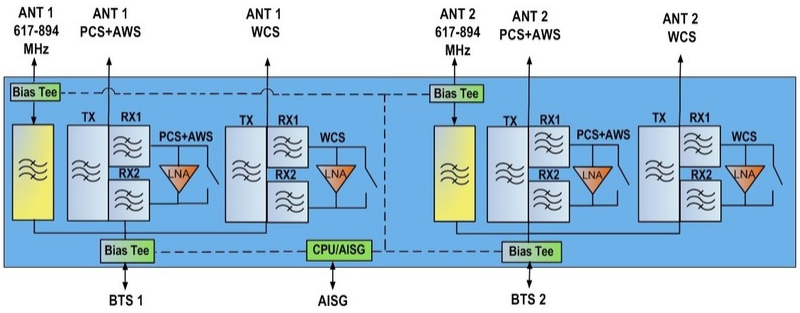
General Specifications

Color	Gray
Modularity	2-Twin
Mounting	Pole | Wall
Mounting Pipe Hardware	Band clamps (2)
RF Connector Interface	4.3-10 Female

Dimensions

Height	238 mm | 9.37 in
Width	283 mm | 11.142 in
Depth	97 mm | 3.819 in
Ground Screw Diameter	6 mm | 0.236 in
Mounting Pipe Diameter Range	40–160 mm

Block Diagram



Material Specifications

Finish	Painted

Environmental Specifications

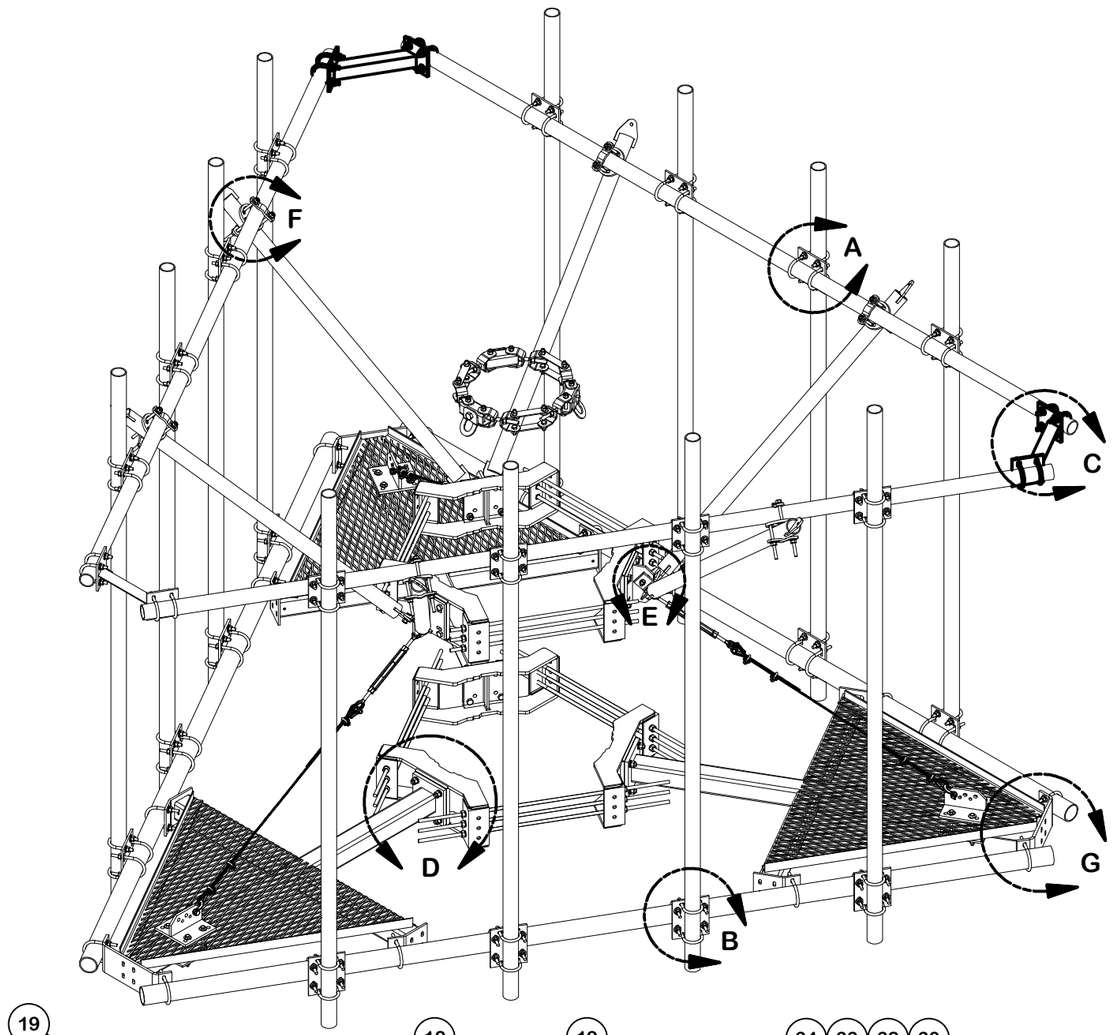
Operating Temperature	-40 °C to +65 °C (-40 °F to +149 °F)
Relative Humidity	Up to 100%
Corrosion Test Method	IEC 60068-2-11, 30 days
Ingress Protection Test Method	IEC 60529:2001, IP67

Packaging and Weights

Included	Mounting hardware
Mounting Hardware Weight	1 kg | 2.205 lb
Weight, without mounting hardware	9.4 kg | 20.723 lb

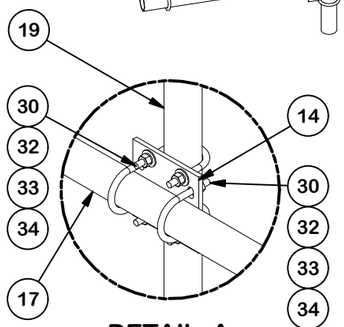
* Footnotes

License Band, Band Pass	License Bands that are to be passed through with no amplification
License Band, LNA	License Bands that have RxUplink amplification

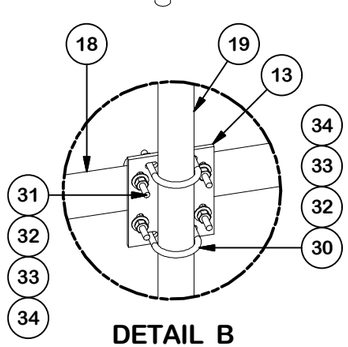


PARTS LIST

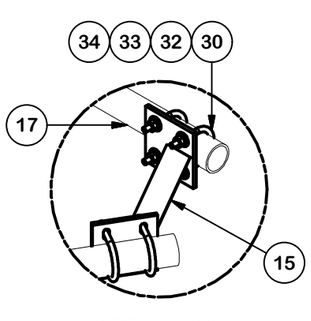
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	6	X-LWRM	RING MOUNT WELDMENT		68.81	412.85
2	3	X-SV196L	LONG PLATFORM WELDMENT		230.94	692.81
3	6	X-TBW	T-BRACKET WELDMENT		13.60	81.60
4	6	SHCM-T	CHAIN MOUNT TIGHTENER BRACKET	3 in	1.86	11.15
5	6	X-VSKL	LONG SUPPORT WELDMENT FOR VSK REINFORCEMENTS		37.05	222.33
6	6	X-127594	FLAT DISK CLAMP PLATE 4" CENTERS (GALV.)		2.51	15.04
7	12	X-100064	CLAMP (4" V-CLAMP) GALVANIZED		0.92	11.06
8	3	320751-I	1/2" CHAIN SHACKLE		0.76	2.29
9	3	320601-I	5/8" TURNBUCKLE		2.63	7.89
10	6	320777-I	5/16" THIMBLE		0.06	0.36
11	12	320152-I	5/16" WIRE ROPE CLIP		1.32	15.78
12	3	AC516-10	5/16" AIRECRAFT CABLE		1.25	3.76
13	15	SCX4	CROSSOVER PLATE	8 1/2 in	6.02	90.32
14	12	SCX2	CROSSOVER PLATE	7 in	4.80	57.56
15	3	X-AHCP	ANGLE HANDRAIL CORNER PLATE		12.92	38.76
17	3	P30174	2-7/8" O.D. x 174" SCH. 40 PIPE	174 in	84.20	252.59
18	3	P3174	3-1/2" X 174" SCH 40 GALVANIZED PIPE	174 in	109.97	329.90
19	12	P30120	2-7/8" x 120" (2-1/2" SCH. 40) GALVANIZED PIPE	120 in	58.07	696.79
20	18	G58R-48	5/8" x 48" THREADED ROD (HDG.)		4.18	75.27
20	18	G58R-24	5/8" x 24" THREADED ROD (HDG.)		2.09	37.63
21	12	A582114	5/8" x 2-1/4" HDG A325 HEX BOLT	2 1/4 in	0.31	3.75
22	12	A58234	5/8" x 2-3/4" HDG A325 HEX BOLT	2 3/4 in	0.36	4.27
23	12	A58FW	5/8" HDG A325 FLATWASHER		0.03	0.41
24	60	G58LW	5/8" HDG LOCKWASHER		0.03	1.57
25	60	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	7.79
26	6	G12112	1/2" x 1-1/2" HDG HEX BOLT GR5	1/2 in	0.15	0.89
27	3	G12212	1/2" x 2-1/2" HDG HEX BOLT GR5	2 1/2 in	0.20	0.61
28	12	G1204	1/2" x 4" HDG HEX BOLT GR5 FULL THREAD	4 in	0.27	3.24
29	24	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	5 1/2 in	0.41	9.83
30	84	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.67	56.19
31	36	X-UB1306	1/2" X 3-5/8" X 6" X 3" U-BOLT (HDG.)		0.83	29.82
32	288	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	9.82
33	285	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	3.96
34	285	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	20.41
35	1	HALO40	5,000 LB. MAINTENANCE TIE-OFF POINT		41.12	41.12
					TOTAL WT. #	3249.41



DETAIL A



DETAIL B



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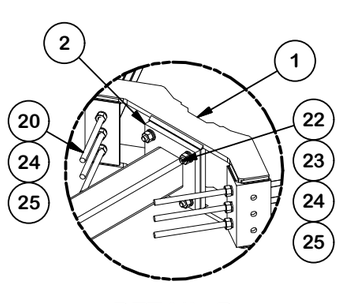

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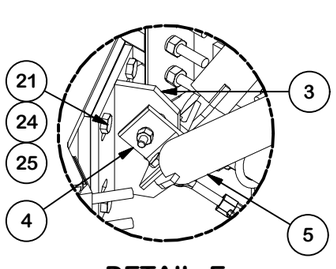
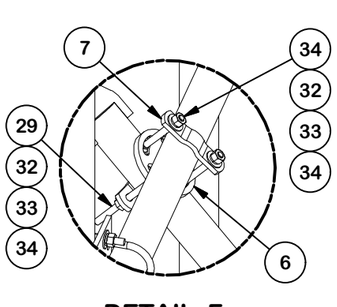
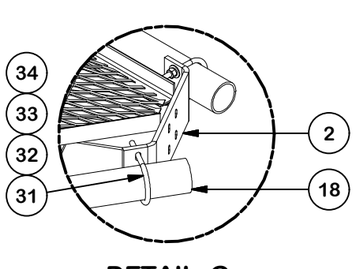


DETAIL E



DETAIL F



DETAIL G

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES (± 0.030")
DRILLED AND GAS CUT HOLES (± 0.030") - NO CONING OF HOLES
LASER CUT EDGES AND HOLES (± 0.010") - NO CONING OF HOLES
BENDS AND ANGLES ARE ± 1/2 DEGREE
ALL OTHER MACHINING (± 0.030")
ALL OTHER ASSEMBLY (± 0.060")

DESCRIPTION
14' 6" LOW PROFILE PLATFORM
WITH TWELVE 2-7/8" ANTENNA MOUTING
PIPES, REINFORCED HANDRAIL, AND CABLE

SITE PRO 1
A valmont COMPANY
Engineering Support Team: 1-888-753-7446
Locations:
New York, NY
Atlanta, GA
Los Angeles, CA
Plymouth, IN
Salem, OR
Dallas, TX
Tampa, FL

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
	CSL 10/17/2019	10/18/2019	RMQLP-4120-H10

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
87	02	CUSTOMER	BMC 10/18/2019	RMQLP-4120-H10

SITE PRO 1
A valmont COMPANY
1545 Pidco Drive
Plymouth, IN 46563
Phone: 574.936.4221
Fax: 574.936.8925
Email: SP1Engineering@valmont.com
www.sitepro1.com

June 5, 2020

Site Pro 1 / Valmont Mounting System:

Part Number = RMQLP-4120-H10
Part Description = 14' Low Pro-Platform with Handrail System

Mount EPA (no antenna pipes, walkway included (0.67*EPA)):

EPA_N	= 42.20(28.15) sq-Ft	$EPA_{N\ (0.5"\ Ice)}$	= 51.14(34.10) sq-Ft	$EPA_{N\ (1"\ Ice)}$	= 60.14(40.10) sq-Ft
EPA_T	= 39.62(26.41) sq-Ft	$EPA_{T\ (0.5"\ Ice)}$	= 48.52(32.35) sq-Ft	$EPA_{T(1"\ Ice)}$	= 57.81(38.54) sq-Ft
Weight	= 3265 lb	$Weight_{(0.5"\ Ice)}$	=3657 lb	$Weight_{(1"\ Ice)}$	= 4180 lb

Classification Rating:

Heavy 10

Design Standards

ANSI/TIA-222-G-2012
ANSI/TIA-222-H-2018
ASCE 7-16
ATT-002-291-373
International Building Code 2018
TIA-5053

Analysis and Modeling Technique

An elastic, three-dimensional, frame, truss model was developed to examine the structural behavior of the mount. All orientations in the engineering model correspond with the assembly drawing constraints. The mount was analyzed with twelve (12) mounting locations (antenna, mount pipe, radio, dish, and any other appurtenance) evenly spaced across the face of the mount, with a zero inch (0) vertical eccentricity on the mast pipe. Wind directions considered were perpendicular (normal) to the face of the frame and at 30 degree increments up to 90 degrees (tangential) to the face of the frame. Wind, dead weight and ice weight on the mount was also included in the model.

Modeling Software

Autodesk Inventor
RISA-3D

April 6, 2023

SAI Communications
12 Industrial Way
Salem NH, 03079

RE:		
	AT&T Site Number:	CT5145 (RF MODS)
	FA Number:	10071095
	PACE Number:	MRCTB057011
	PT Number:	2051A11Y8B
	TEP Project Number:	394286
	AT&T Site Name:	LOWER SCORT HILL
	Site Address:	280 Morehouse Drive Fairfield, CT 06825

To Whom It May Concern:

TEP Northeast (TEP NE) has been authorized by SAI Communications to perform a mount analysis on the proposed AT&T antenna/RRH mount to determine their capability of supporting the following loading:

- **(3) TPA65R-BU4DA Antennas (48.0"x20.7"x7.7" – Wt. = 53 lbs. /each)**
- **(6) TMAT192123B68-31 TMA's (11.1"x9.4"x3.8" – Wt. = 21 lbs. /each)**

**Proposed equipment shown in bold.*

Mount fabrication drawings prepared by SitePro1, P/N RMQLP-4120-H10, dated October 18, 2019 were used to perform this analysis.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-H, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2021 with 2022 Connecticut State Building Code, and AT&T Mount Technical Directive – R22.
- TEP NE considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-H and Appendix P of the Connecticut State Building Code, the max basic wind speed for this site is equal to 130 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 1.0 in. An escalated ice thickness of 1.26 in was used for this analysis.
- TEP NE considers this site to be exposure category C; tower is located near large, flat, open, terrain/grasslands.
- TEP NE considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- TEP NE considers this site to have a spectral response acceleration parameter at short periods, S_S, of 0.218 and a spectral response acceleration parameter at a period of 1 second, S_1, of 0.055.
- The mount has been analyzed with load combinations consisting of 500 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 4.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.
- The proposed mount is to be secured to the proposed monopole utility tower with rings mounts. TEP NE considers the threaded rods as the governing connection members.

Based on our evaluation, we have determined that the Proposed SitePro1 RMQLP-4120-H10 mount **IS CAPABLE** of supporting the proposed installation.

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Proposed (RF MODS) Mount Rating	45	LC2	37%	**PASS**

Reference Documents:

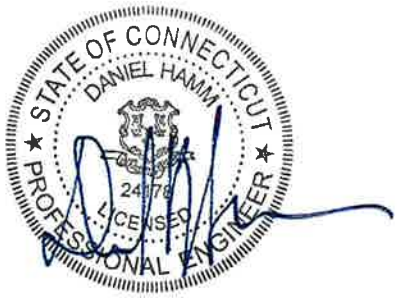
- Mount fabrication drawings prepared by SitePro1, P/N RMQLP-4120-H10, dated October 18, 2019.

This determination was based on the following limitations and assumptions:

1. TEP NE is not responsible for any modifications completed prior to and hereafter which TEP NE was not directly involved.
2. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.
3. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
4. The proposed mount is to be adequately secured to the tower structure per the mount manufacturer's specifications.
5. All components pertaining to AT&T's mount must be tightened and re-plumbed prior to the installation of new appurtenances.
6. TEP NE performed a localized analysis on the mount itself and not on the supporting tower structure.

Please feel free to contact our office should you have any questions.

Respectfully Submitted,
TEP Northeast



Michael Cabral
Director

Daniel P. Hamm, PE
Vice President

FIELD PHOTOS:
*Existing mount to be removed and replaced.






Wind & Ice
Calculations

Date: 4/6/2023
Project Name: LOWER SCORT HILL
Project No.: CT5145
Designed By: JC **Checked By:** MSC

2.6.5.2 Velocity Pressure Coeff:

$K_z = 2.01\,(z/z_g)^{2/\alpha}$

		z=	85 (ft)
		z_g=	900 (ft)
K_z=	**1.223**	α=	9.5

Kzmin ≤ Kz ≤ 2.01

Table 2-4

Exposure	Z_g	α	K_{zmin}	K_c
B	1200 ft	7.0	0.70	0.9
C	900 ft	9.5	0.85	1.0
D	700 ft	11.5	1.03	1.1

2.6.6.2 Topographic Factor:

Table 2-5

Topo. Category	K_t	f
2	0.43	1.25
3	0.53	2.0
4	0.72	1.5

$K_{zt} = [1+(K_c\,K_t/K_h)]^2$ $K_h = e^{(f*z/H)}$

K_{zt}=	**1**	K_h=	1
		K_c=	1.0 (from Table 2-4)
(If Category 1 then K_{zt}=1.0)		K_t=	0 (from Table 2-5)
		f=	0 (from Table 2-5)
Category=	1	z=	85
		z_s=	218 (Mean elevation of base of structure above sea level)
		H=	0 (Ht. of the crest above surrounding terrain)
		K_{zt}=	1.00 (from 2.6.6.2.1)
		K_e=	0.99 (from 2.6.8)

2.6.10 Design Ice Thickness

Max Ice Thickness =		t_i =	1.00 in
Importance Factor =		I=	1.15 (from Table 2-3)
		K_{iz} =	1.10 (from Sec. 2.6.10)

$t_{iz} = t_i * I * K_{iz} * (K_{zt})^{0.35}$ t_{iz} = 1.26 in

Date: 4/6/2023
Project Name: LOWER SCORT HILL
Project No.: CT5145
Designed By: JC Checked By: MSC

2.6.9 Gust Effect Factor

2.6.9.1 Self Supporting Lattice Structures

G_h = 1.0 Latticed Structures > 600 ft

G_h = 0.85 Latticed Structures 450 ft or less

G_h = 0.85 + 0.15 [h/150 - 3.0] h= ht. of structure

h=	86	G_h=	0.85

2.6.9.2 Guyed Masts	G_h=	0.85
2.6.9.3 Pole Structures	G_h=	1.1
2.6.9 Appurtenances	G_h=	1.0

2.6.9.4 Structures Supported on Other Structures

(Cantilivered tubular or latticed spines, pole, structures on buildings (ht. : width ratio > 5)

G_h=	1.35	**Gh=**	**1.00**

2.6.11.2 Design Wind Force on Appurtenances

$F = q_z * G_h * (EPA)_A$

$q_z = 0.00256 * K_z * K_{zt} * K_s * K_e * K_d * V_{max}^2$

		K_z=	1.223	(from 2.6.5.2)
		K_{zt}=	1.0	(from 2.6.6.2.1)
		K_s=	1.0	(from 2.6.7)
q_z=	**49.87**	K_e=	0.99	(from 2.6.8)
$q_{z\ (ice)}$=	**7.38**	K_d=	0.95	(from Table 2-2)
$q_{z\ (30)}$=	**2.66**	V_{max}=	130	mph (Ultimate Wind Speed)
		$V_{max\ (ice)}$=	50	mph
		V_{30}=	30	mph

Table 2-2

Structure Type	Wind Direction Probability Factor, Kd
Latticed structures with triangular, square or rectangular cross sections	0.85
Tubular pole structures, latticed structures with other cross sections, appurtenances	0.95
Tubular pole structures supporting antennas enclosed within a cylindrical shroud	1.00

Date: 4/6/2023
Project Name: LOWER SCORT HILL
Project No.: CT5145
Designed By: JC Checked By: MSC

Determine Ca:

Table 2-9

Force Coefficients (Ca) for Appurtenances				
Member Type		**Aspect Ratio ≤ 2.5**	**Aspect Ratio = 7**	**Aspect Ratio ≥ 25**
		Ca	**Ca**	**Ca**
Flat		1.2	1.4	2.0
Square/Rectangular HSS		1.2 - 2.8(r_s) ≥ 0.85	1.4 - 4.0(r_s) ≥ 0.90	2.0 - 6.0(r_s) ≥ 1.25
Round	**C < 39** (Subcritical)	0.7	0.8	1.2
	39 ≤ C ≤ 78 (Transitional)	$4.14/(C^{0.485})$	$3.66/(C^{0.415})$	$46.8/(C^{-1.0})$
	C > 78 (Supercritical)	0.5	0.6	0.6

Aspect Ratio is the overall length/width ratio in the plane normal to the wind direction.
(Aspect ratio is independent of the spacing between support points of a linear appurtenance,

Note: Linear interpolation may be used for aspect ratios other than those shown.

Ice Thickness = **1.26** **in** | **Angle =** **0 (deg)** | **Equivalent Angle =** **180 (deg)**

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
TPA65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.32	1.20	**413**	**72**	**22**
TMAT192123B68-31 TMA	11.1	3.8	9.4	0.29	2.92	1.22	**18**	**5**	**1**
2-1/2" Pipe	2.9	12.0		0.24	0.24	1.20	**14**		
3" Pipe	3.5	12.0		0.29	0.29	1.20	**17**		
2x2 Angle	2.0	12.0		0.17	0.17	2.00	**17**		
2-1/2x2-1/2 Angle	2.5	12.0		0.21	0.21	2.00	**21**		
PL 6x3/8	6.0	12.0		0.50	0.50	2.00	**50**		
HSS 4x4	4.0	12.0		0.33	0.33	1.25	**21**		

Date: 4/6/2023
Project Name: LOWER SCORT HILL
Project No.: CT5145
Designed By: JC Checked By: MSC

WIND LOADS

Angle =	30	(deg)	Ice Thickness =	1.26	in.	Equivalent Angle =	210	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
TPA65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	413	175	353
TMAT192123B68-31 TMA	11.1	3.8	9.4	0.29	0.72	2.92	1.18	1.22	1.20	18	43	24

WIND LOADS WITH ICE:

TPA65R-BU4DA Antenna	50.5	23.2	10.2	8.15	3.59	2.18	4.94	1.20	1.31	72	35	63
TMAT192123B68-31 TMA	13.6	6.3	11.9	0.60	1.13	2.15	1.14	1.20	1.20	5	10	6

WIND LOADS AT 30 MPH:

TPA65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	22	9	19
TMAT192123B68-31 TMA	11.1	3.8	9.4	0.29	0.72	2.92	1.18	1.22	1.20	1	2	1

Date: 4/6/2023
Project Name: LOWER SCORT HILL
Project No.: CT5145
Designed By: JC Checked By: MSC

WIND LOADS

Angle =	60	(deg)	Ice Thickness =	1.26	in.	Equivalent Angle =	240	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
TPA65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	**413**	**175**	**234**
TMAT192123B68-31 TMA	11.1	3.8	9.4	0.29	0.72	2.92	1.18	1.22	1.20	**18**	**43**	**37**

WIND LOADS WITH ICE:

TPA65R-BU4DA Antenna	50.5	23.2	10.2	8.15	3.59	2.18	4.94	1.20	1.31	**72**	**35**	**44**
TMAT192123B68-31 TMA	13.6	6.3	11.9	0.60	1.13	2.15	1.14	1.20	1.20	**5**	**10**	**9**

WIND LOADS AT 30 MPH:

TPA65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	**22**	**9**	**12**
TMAT192123B68-31 TMA	11.1	3.8	9.4	0.29	0.72	2.92	1.18	1.22	1.20	**1**	**2**	**2**

Date: 4/6/2023
Project Name: LOWER SCORT HILL
Project No.: CT5145
Designed By: JC Checked By: MSC

WIND LOADS

Angle =	90	(deg)	Ice Thickness =	1.26	in.	Equivalent Angle =	270	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
TPA65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	**413**	**175**	**175**
TMAT192123B68-31 TMA	11.1	3.8	9.4	0.29	0.72	2.92	1.18	1.22	1.20	**18**	**43**	**43**

WIND LOADS WITH ICE:

TPA65R-BU4DA Antenna	50.5	23.2	10.2	8.15	3.59	2.18	4.94	1.20	1.31	**72**	**35**	**35**
TMAT192123B68-31 TMA	13.6	6.3	11.9	0.60	1.13	2.15	1.14	1.20	1.20	**5**	**10**	**10**

WIND LOADS AT 30 MPH:

TPA65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	**22**	**9**	**9**
TMAT192123B68-31 TMA	11.1	3.8	9.4	0.29	0.72	2.92	1.18	1.22	1.20	**1**	**2**	**2**

Date: 4/6/2023
Project Name: LOWER SCORT HILL
Project No.: CT5145
Designed By: JC Checked By: MSC

WIND LOADS

Angle =	120	(deg)	Ice Thickness =	1.26	in.	Equivalent Angle =	300	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
TPA65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	413	175	234
TMAT192123B68-31 TMA	11.1	3.8	9.4	0.29	0.72	2.92	1.18	1.22	1.20	18	43	37

WIND LOADS WITH ICE:

TPA65R-BU4DA Antenna	50.5	23.2	10.2	8.15	3.59	2.18	4.94	1.20	1.31	72	35	44
TMAT192123B68-31 TMA	13.6	6.3	11.9	0.60	1.13	2.15	1.14	1.20	1.20	5	10	9

WIND LOADS AT 30 MPH:

TPA65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	22	9	12
TMAT192123B68-31 TMA	11.1	3.8	9.4	0.29	0.72	2.92	1.18	1.22	1.20	1	2	2

Date: 4/6/2023
Project Name: LOWER SCORT HILL
Project No.: CT5145
Designed By: JC Checked By: MSC

WIND LOADS

Angle =	150	(deg)	Ice Thickness =	1.26	in.	Equivalent Angle =	330	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
TPA65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	**413**	**175**	**353**
TMAT192123B68-31 TMA	11.1	3.8	9.4	0.29	0.72	2.92	1.18	1.22	1.20	**18**	**43**	**24**

WIND LOADS WITH ICE:

TPA65R-BU4DA Antenna	50.5	23.2	10.2	8.15	3.59	2.18	4.94	1.20	1.31	**72**	**35**	**63**
TMAT192123B68-31 TMA	13.6	6.3	11.9	0.60	1.13	2.15	1.14	1.20	1.20	**5**	**10**	**6**

WIND LOADS AT 30 MPH:

TPA65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	**22**	**9**	**19**
TMAT192123B68-31 TMA	11.1	3.8	9.4	0.29	0.72	2.92	1.18	1.22	1.20	**1**	**2**	**1**

Date: 4/6/2023
Project Name: LOWER SCORT HILL
Project No.: CT5145
Designed By: JC **Checked By:** MSC

ICE WEIGHT CALCULATIONS

Thickness of ice: 1.26 in.
Density of ice: 56 pcf

TPA65R-BU4DA Antenna

Weight of ice based on total radial SF area:

Height (in):	48.0	
Width (in):	20.7	
Depth (in):	7.7	
Total weight of ice on object:		144 lbs
Weight of object:	53.0 lbs	
Combined weight of ice and object:		197 lbs

TMAT192123B68-31 TMA

Weight of ice based on total radial SF area:

Height (in):	11.1	
Width (in):	3.8	
Depth (in):	9.4	
Total weight of ice on object:		16 lbs
Weight of object:	21.0 lbs	
Combined weight of ice and object:		37 lbs

2-1/2" Pipe

Per foot weight of ice:

diameter (in):	2.88	
Per foot weight of ice on object:		6 plf

3" Pipe

Per foot weight of ice:

diameter (in):	3.5	
Per foot weight of ice on object:		7 plf

L 2x2 Angles

Weight of ice based on total radial SF area:

Height (in):	2	
Width (in):	2	
Per foot weight of ice on object:		6 plf

L 2-1/2x2-1/2 Angles

Weight of ice based on total radial SF area:

Height (in):	2.5	
Width (in):	2.5	
Per foot weight of ice on object:		7 plf

HSS 4x4

Weight of ice based on total radial SF area:

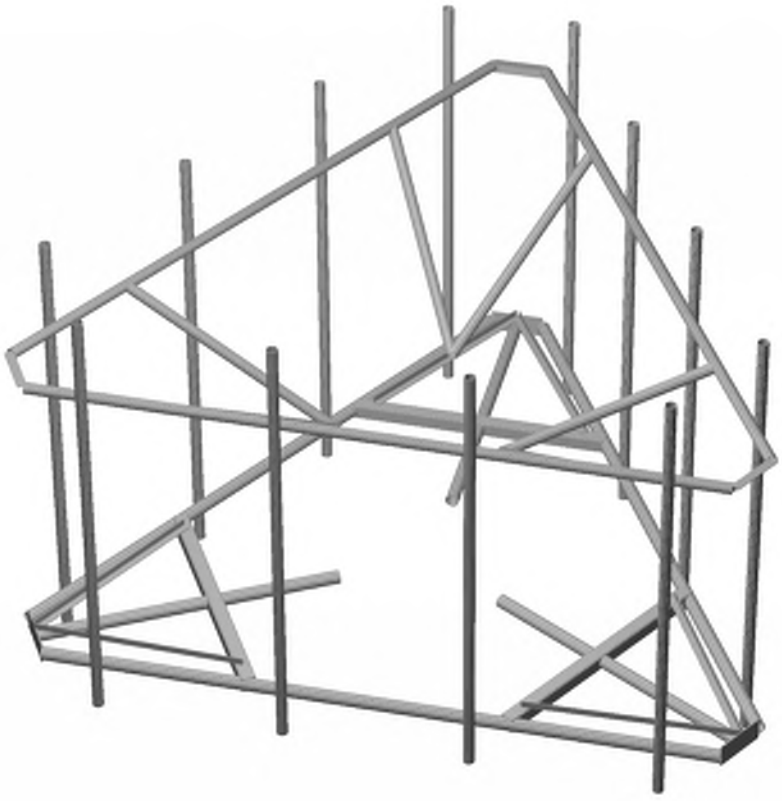
Height (in):	4	
Width (in):	4	
Per foot weight of ice on object:		11 plf

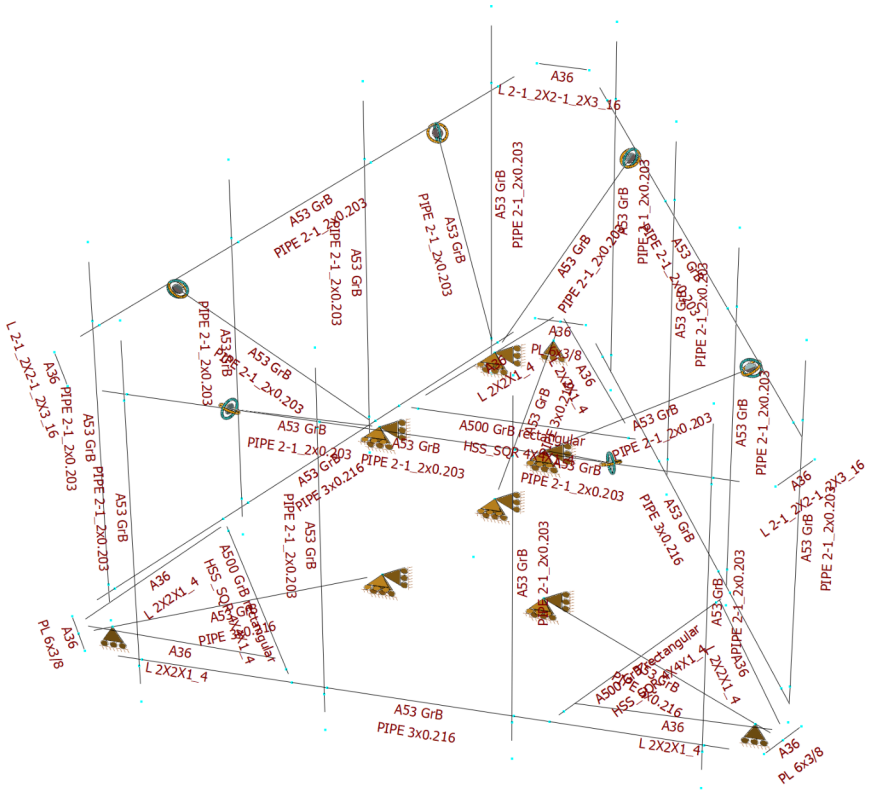
PL 6x3/8

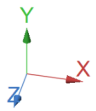
Weight of ice based on total radial SF area:

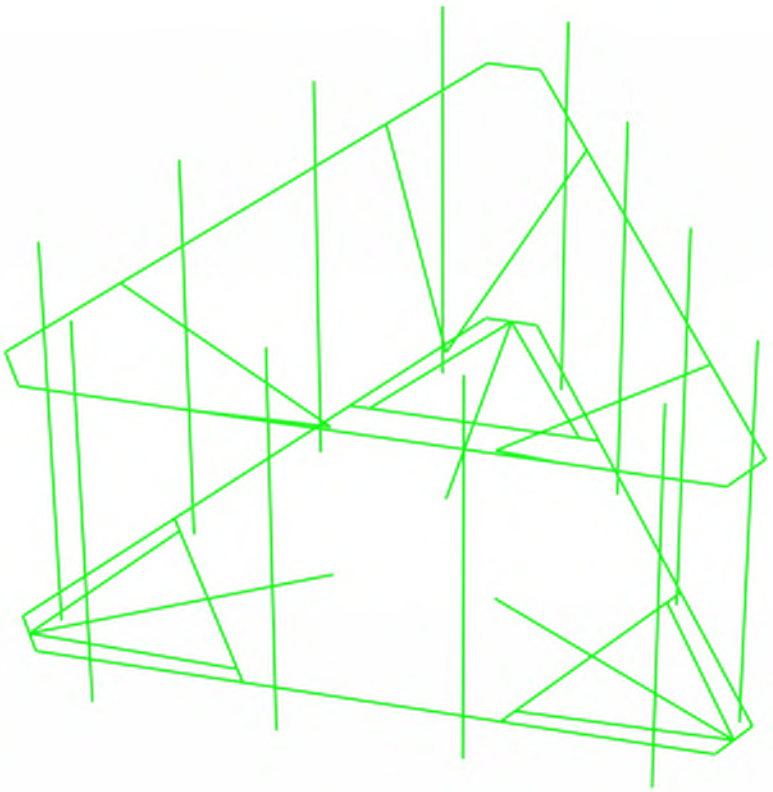
Height (in):	6	
Width (in):	0.375	
Per foot weight of ice on object:		11 plf

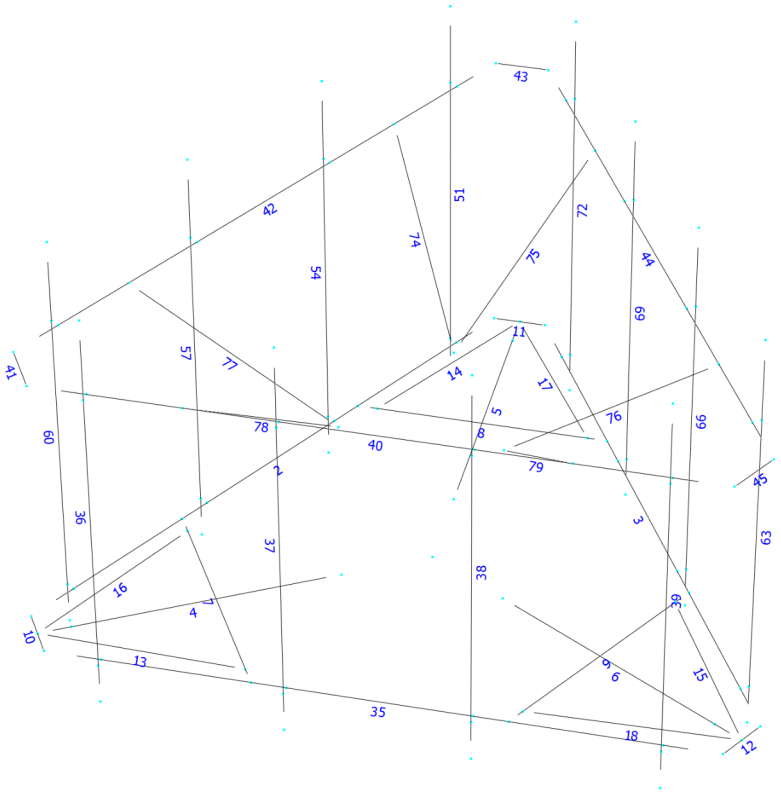
Mount Calculations
(Proposed Conditions)


Y
X
Z


A36
L 2-1_2X2-1_2X3_16
A53 GrB
PIPE 2-1_2x0.203
A500 GrB Rectangular
HSS_SQR 4X4X1_4
PIPE 3x0.216
A36
L 2X2X1_4
PL 6x3/8
A36
PL 6x3/8


Y
X
Z


Design status
Not designed
Error on design
Design O.K.
With warnings
Y
X
Z


43
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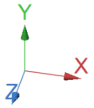
18
12


Y
X
Z

RAM Elements
CONNECT Edition

Current Date: 4/7/2023 11:26 AM
Units system: English

Load data

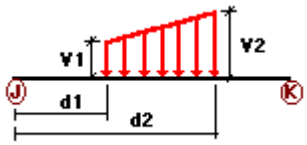
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
DL	Dead Load	No	DL
W0	Wind Load 0/60/120 deg	No	WIND
W30	Wind Load 30/90/150 deg	No	WIND
Di	Ice Load	No	LL
Wi0	Ice Wind Load 0/60/120 deg	No	WIND
Wi30	Ice Wind Load 30/90/150 deg	No	WIND
WL0	WL 30 mph 0/60/120 deg	No	WIND
WL30	WL 30 mph 30/90/150 deg	No	WIND
LL1	250 lb Live Load Center of Mount	No	LL
LL2	250 lb Live Load End of Mount	No	LL
LLa1	500 lb Live Load Antenna 1	No	LL
LLa2	500 lb Live Load Antenna 2	No	LL
LLa3	500 lb Live Load Antenna 3	No	LL
LLa4	500 lb Live Load Antenna 4	No	LL

Distributed force on members

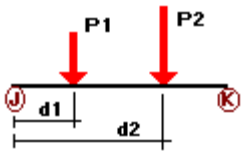


Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
DL	4	y	-0.01	-0.01	0.00	No	3.90	No
	5	y	-0.01	-0.01	0.00	No	3.90	No
	6	y	-0.01	-0.01	0.00	No	3.90	No
	7	y	-0.01	0.00	0.00	No	0.00	No
	8	y	-0.01	0.00	0.00	No	0.00	No
	9	y	-0.01	0.00	0.00	No	0.00	No
	13	y	-0.01	0.00	0.00	No	0.00	No
	14	y	-0.01	0.00	0.00	No	0.00	No
	15	y	-0.01	0.00	0.00	No	0.00	No
	16	y	-0.01	0.00	0.00	No	0.00	No
	17	y	-0.01	0.00	0.00	No	0.00	No
	18	y	-0.01	0.00	0.00	No	0.00	No
W0	2	z	-0.017	0.00	0.00	No	0.00	No
	3	z	-0.017	0.00	0.00	No	0.00	No
	4	z	-0.017	0.00	0.00	No	0.00	No
	6	z	-0.017	0.00	0.00	No	0.00	No

	7	z	-0.021	0.00	0.00	No	0.00	No
	8	z	-0.021	0.00	0.00	No	0.00	No
	9	z	-0.021	0.00	0.00	No	0.00	No
	10	z	-0.05	0.00	0.00	No	0.00	No
	11	z	-0.05	0.00	0.00	No	0.00	No
	12	z	-0.05	0.00	0.00	No	0.00	No
	13	z	-0.017	0.00	0.00	No	0.00	No
	14	z	-0.017	0.00	0.00	No	0.00	No
	15	z	-0.017	0.00	0.00	No	0.00	No
	16	z	-0.017	0.00	0.00	No	0.00	No
	17	z	-0.017	0.00	0.00	No	0.00	No
	18	z	-0.017	0.00	0.00	No	0.00	No
	35	z	-0.017	0.00	0.00	No	0.00	No
	36	z	-0.014	-0.014	0.00	No	3.00	No
		z	-0.014	-0.014	7.00	No	10.00	No
	37	z	-0.014	0.00	0.00	No	0.00	No
	38	z	-0.014	0.00	0.00	No	0.00	No
	39	z	-0.014	0.00	0.00	No	0.00	No
	40	z	-0.014	0.00	0.00	No	0.00	No
	41	z	-0.021	0.00	0.00	No	0.00	No
	42	z	-0.014	0.00	0.00	No	0.00	No
	43	z	-0.021	0.00	0.00	No	0.00	No
	44	z	-0.014	0.00	0.00	No	0.00	No
	45	z	-0.021	0.00	0.00	No	0.00	No
	51	z	-0.014	0.00	0.00	No	0.00	No
	54	z	-0.014	0.00	0.00	No	0.00	No
	57	z	-0.014	0.00	0.00	No	0.00	No
	60	z	-0.014	0.00	0.00	No	0.00	No
	63	z	-0.014	0.00	0.00	No	0.00	No
	66	z	-0.014	0.00	0.00	No	0.00	No
	69	z	-0.014	0.00	0.00	No	0.00	No
	72	z	-0.014	0.00	0.00	No	0.00	No
	74	z	-0.014	0.00	0.00	No	0.00	No
	75	z	-0.014	0.00	0.00	No	0.00	No
	76	z	-0.014	0.00	0.00	No	0.00	No
	77	z	-0.014	0.00	0.00	No	0.00	No
	78	z	-0.014	0.00	0.00	No	0.00	No
	79	z	-0.014	0.00	0.00	No	0.00	No
W30	2	x	-0.017	0.00	0.00	No	0.00	No
	3	x	-0.017	0.00	0.00	No	0.00	No
	4	x	-0.017	0.00	0.00	No	0.00	No
	5	x	-0.017	0.00	0.00	No	0.00	No
	6	x	-0.017	0.00	0.00	No	0.00	No
	7	x	-0.021	0.00	0.00	No	0.00	No
	9	x	-0.021	0.00	0.00	No	0.00	No
	10	x	-0.05	0.00	0.00	No	0.00	No
	12	x	-0.05	0.00	0.00	No	0.00	No
	14	x	-0.017	0.00	0.00	No	0.00	No
	15	x	-0.017	0.00	0.00	No	0.00	No
	16	x	-0.017	0.00	0.00	No	0.00	No
	17	x	-0.017	0.00	0.00	No	0.00	No
	36	x	-0.014	0.00	0.00	No	0.00	No
	37	x	-0.014	0.00	0.00	No	0.00	No
	38	x	-0.014	0.00	0.00	No	0.00	No
	39	x	-0.014	0.00	0.00	No	0.00	No
	40	x	-0.014	0.00	0.00	No	0.00	No
	41	x	-0.021	0.00	0.00	No	0.00	No
	42	x	-0.014	0.00	0.00	No	0.00	No
	44	x	-0.014	0.00	0.00	No	0.00	No
	45	x	-0.021	0.00	0.00	No	0.00	No

	51	x	-0.014	0.00	0.00	No	0.00	No
	54	x	-0.014	0.00	0.00	No	0.00	No
	57	x	-0.014	0.00	0.00	No	0.00	No
	60	x	-0.014	0.00	0.00	No	0.00	No
	63	x	-0.014	-0.014	0.00	No	3.00	No
		x	-0.014	-0.014	7.00	No	10.00	No
	66	x	-0.014	0.00	0.00	No	0.00	No
	69	x	-0.014	0.00	0.00	No	0.00	No
	72	x	-0.014	0.00	0.00	No	0.00	No
	74	x	-0.014	0.00	0.00	No	0.00	No
	75	x	-0.014	0.00	0.00	No	0.00	No
	76	x	-0.014	0.00	0.00	No	0.00	No
	77	x	-0.014	0.00	0.00	No	0.00	No
	78	x	-0.014	0.00	0.00	No	0.00	No
	79	x	-0.014	0.00	0.00	No	0.00	No
Di	2	y	-0.007	0.00	0.00	No	0.00	No
	3	y	-0.007	0.00	0.00	No	0.00	No
	4	y	-0.007	0.00	0.00	No	0.00	No
	5	y	-0.007	0.00	0.00	No	0.00	No
	6	y	-0.007	0.00	0.00	No	0.00	No
	7	y	-0.011	0.00	0.00	No	0.00	No
	8	y	-0.011	0.00	0.00	No	0.00	No
	9	y	-0.011	0.00	0.00	No	0.00	No
	10	y	-0.011	0.00	0.00	No	0.00	No
	11	y	-0.011	0.00	0.00	No	0.00	No
	12	y	-0.011	0.00	0.00	No	0.00	No
	13	y	-0.006	0.00	0.00	No	0.00	No
	14	y	-0.006	0.00	0.00	No	0.00	No
	15	y	-0.006	0.00	0.00	No	0.00	No
	16	y	-0.006	0.00	0.00	No	0.00	No
	17	y	-0.006	0.00	0.00	No	0.00	No
	18	y	-0.006	0.00	0.00	No	0.00	No
	35	y	-0.007	0.00	0.00	No	0.00	No
	36	y	-0.006	0.00	0.00	No	0.00	No
	37	y	-0.006	0.00	0.00	No	0.00	No
	38	y	-0.006	0.00	0.00	No	0.00	No
	39	y	-0.006	0.00	0.00	No	0.00	No
	40	y	-0.006	0.00	0.00	No	0.00	No
	41	y	-0.007	0.00	0.00	No	0.00	No
	42	y	-0.006	0.00	0.00	No	0.00	No
	43	y	-0.007	0.00	0.00	No	0.00	No
	44	y	-0.006	0.00	0.00	No	0.00	No
	45	y	-0.007	0.00	0.00	No	0.00	No
	51	y	-0.006	0.00	0.00	No	0.00	No
	54	y	-0.006	0.00	0.00	No	0.00	No
	57	y	-0.006	0.00	0.00	No	0.00	No
	60	y	-0.006	0.00	0.00	No	0.00	No
	63	y	-0.006	0.00	0.00	No	0.00	No
	66	y	-0.006	0.00	0.00	No	0.00	No
	69	y	-0.006	0.00	0.00	No	0.00	No
	72	y	-0.006	0.00	0.00	No	0.00	No
	74	y	-0.006	0.00	0.00	No	0.00	No
	75	y	-0.006	0.00	0.00	No	0.00	No
	76	y	-0.006	0.00	0.00	No	0.00	No
	77	y	-0.006	0.00	0.00	No	0.00	No
	78	y	-0.006	0.00	0.00	No	0.00	No
	79	y	-0.006	0.00	0.00	No	0.00	No

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	36	y	-0.027	3.00	No
		y	-0.027	7.00	No
		y	-0.021	5.00	No
		y	-0.021	5.00	No
	51	y	-0.027	3.00	No
		y	-0.027	7.00	No
		y	-0.021	5.00	No
		y	-0.021	5.00	No
	63	y	-0.027	3.00	No
		y	-0.027	7.00	No
		y	-0.021	5.00	No
		y	-0.021	5.00	No
W0	36	z	-0.207	3.00	No
		z	-0.207	7.00	No
	51	z	-0.118	3.00	No
		z	-0.118	7.00	No
		z	-0.037	5.00	No
	63	z	-0.118	3.00	No
		z	-0.118	7.00	No
		z	-0.037	5.00	No
W30	36	x	-0.088	3.00	No
		x	-0.088	7.00	No
		x	-0.043	5.00	No
	51	x	-0.177	3.00	No
		x	-0.177	7.00	No
		x	-0.024	5.00	No
	63	x	-0.177	3.00	No
		x	-0.177	7.00	No
Di	36	y	-0.072	3.00	No
		y	-0.072	7.00	No
		y	-0.016	5.00	No
		y	-0.016	5.00	No
	51	y	-0.072	3.00	No
		y	-0.072	7.00	No
		y	-0.016	5.00	No
		y	-0.016	5.00	No
	63	y	-0.072	3.00	No
		y	-0.072	7.00	No
		y	-0.016	5.00	No
		y	-0.016	5.00	No
Wi0	36	z	-0.037	3.00	No
		z	-0.037	7.00	No
	51	z	-0.023	3.00	No
		z	-0.023	7.00	No
		z	-0.009	5.00	No
	63	z	-0.023	3.00	No
		z	-0.023	7.00	No
		z	-0.009	5.00	No
Wi30	36	x	-0.018	3.00	No
		x	-0.018	7.00	No
		x	-0.01	5.00	No
	51	x	-0.032	3.00	No
		x	-0.032	7.00	No
		x	-0.006	5.00	No

	63	x	-0.032	3.00	No
		x	-0.032	7.00	No
WL0	36	z	-0.011	3.00	No
		z	-0.011	7.00	No
	51	z	-0.007	3.00	No
		z	-0.007	7.00	No
		z	-0.002	5.00	No
	63	z	-0.007	3.00	No
		z	-0.007	7.00	No
		z	-0.002	5.00	No
WL30	36	x	-0.005	3.00	No
		x	-0.005	7.00	No
		x	-0.002	5.00	No
	51	x	-0.01	3.00	No
		x	-0.01	7.00	No
		x	-0.001	5.00	No
	63	x	-0.01	3.00	No
		x	-0.01	7.00	No
LL1	35	y	-0.25	50.00	Yes
LL2	35	y	-0.25	0.00	Yes
LLa1	39	y	-0.50	5.00	No
LLa2	38	y	-0.50	5.00	No
LLa3	37	y	-0.50	5.00	No
LLa4	36	y	-0.50	5.00	No

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	-1.00	0.00
W0	Wind Load 0/60/120 deg	No	0.00	0.00	0.00
W30	Wind Load 30/90/150 deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
Wi0	Ice Wind Load 0/60/120 deg	No	0.00	0.00	0.00
Wi30	Ice Wind Load 30/90/150 deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0/60/120 deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30/90/150 deg	No	0.00	0.00	0.00
LL1	250 lb Live Load Center of Mount	No	0.00	0.00	0.00
LL2	250 lb Live Load End of Mount	No	0.00	0.00	0.00
LLa1	500 lb Live Load Antenna 1	No	0.00	0.00	0.00
LLa2	500 lb Live Load Antenna 2	No	0.00	0.00	0.00
LLa3	500 lb Live Load Antenna 3	No	0.00	0.00	0.00
LLa4	500 lb Live Load Antenna 4	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
W0	0.00	0.00	0.00
W30	0.00	0.00	0.00
Di	0.00	0.00	0.00
Wi0	0.00	0.00	0.00
Wi30	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LLa1	0.00	0.00	0.00
LLa2	0.00	0.00	0.00
LLa3	0.00	0.00	0.00
LLa4	0.00	0.00	0.00

RAM Elements
CONNECT Edition

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Units system: English

Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2DL+W0
LC2=1.2DL+W30
LC3=1.2DL-W0
LC4=1.2DL-W30
LC5=0.9DL+W0
LC6=0.9DL+W30
LC7=0.9DL-W0
LC8=0.9DL-W30
LC9=1.2DL+Di+Wi0
LC10=1.2DL+Di+Wi30
LC11=1.2DL+Di-Wi0
LC12=1.2DL+Di-Wi30
LC13=1.4DL
LC14=1.2DL+1.6LL1
LC15=1.2DL+1.6LL2
LC16=1.2DL+WL0+1.6LLa1
LC17=1.2DL+WL30+1.6LLa1
LC18=1.2DL-WL0+1.6LLa1
LC19=1.2DL-WL30+1.6LLa1
LC20=1.2DL+WL0+1.6LLa2
LC21=1.2DL+WL30+1.6LLa2
LC22=1.2DL-WL0+1.6LLa2
LC23=1.2DL-WL30+1.6LLa2
LC24=1.2DL+WL0+1.6LLa3
LC25=1.2DL+WL30+1.6LLa3
LC26=1.2DL-WL0+1.6LLa3
LC27=1.2DL-WL30+1.6LLa3
LC28=1.2DL+WL0+1.6LLa4
LC29=1.2DL+WL30+1.6LLa4
LC30=1.2DL-WL0+1.6LLa4
LC31=1.2DL-WL30+1.6LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	HSS_SQR 4X4X1_4	**7**	LC2 at 48.44%	0.09	OK	
		8	LC1 at 50.00%	**0.09**	**OK**	
		9	LC4 at 50.00%	0.09	OK	
	L 2-1_2X2-1_2X3_16	**41**	LC4 at 100.00%	0.36	OK	
		43	LC3 at 0.00%	0.34	OK	
		45	LC2 at 100.00%	**0.37**	**OK**	
	L 2X2X1_4	**13**	LC3 at 100.00%	0.17	OK	
		14	LC1 at 100.00%	0.18	OK	
		15	LC4 at 100.00%	**0.19**	**OK**	
		16	LC2 at 0.00%	0.19	OK	
		17	LC1 at 0.00%	0.18	OK	
		18	LC3 at 0.00%	0.17	OK	
	PIPE 2-1_2x0.203	**36**	LC2 at 89.58%	0.11	OK	
		37	LC25 at 89.58%	0.07	OK	
		38	LC22 at 89.58%	0.08	OK	
		39	LC23 at 89.58%	0.10	OK	

	40	LC4 at 77.68%	**0.25**	**OK**
	42	LC3 at 77.68%	0.22	OK
	44	LC3 at 22.32%	0.23	OK
	51	LC1 at 89.58%	0.15	OK
	54	LC1 at 89.58%	0.09	OK
	57	LC2 at 89.58%	0.08	OK
	60	LC2 at 89.58%	0.12	OK
	63	LC4 at 89.58%	0.16	OK
	66	LC4 at 89.58%	0.07	OK
	69	LC1 at 89.58%	0.09	OK
	72	LC1 at 89.58%	0.10	OK
	74	LC3 at 0.00%	0.10	OK
	75	LC3 at 0.00%	0.11	OK
	76	LC2 at 0.00%	0.08	OK
	77	LC4 at 0.00%	0.09	OK
	78	LC4 at 0.00%	0.10	OK
	79	LC2 at 0.00%	0.10	OK
PIPE 3x0.216	**2**	LC2 at 35.71%	0.11	OK
	3	LC4 at 64.29%	0.13	OK
	4	LC3 at 60.42%	0.26	OK
	5	LC4 at 60.42%	**0.35**	**OK**
	6	LC4 at 60.42%	0.23	OK
	35	LC25 at 64.29%	0.14	OK
PL 6x3/8	**10**	LC2 at 50.00%	0.13	OK
	11	LC1 at 50.00%	**0.16**	**OK**
	12	LC4 at 46.88%	0.13	OK

RAM Elements
CONNECT Edition

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Geometry data

GLOSSARY

Cb22, Cb33	: Moment gradient coefficients
Cm22, Cm33	: Coefficients applied to bending term in interaction formula
d0	: Tapered member section depth at J end of member
DJX	: Rigid end offset distance measured from J node in axis X
DJY	: Rigid end offset distance measured from J node in axis Y
DJZ	: Rigid end offset distance measured from J node in axis Z
DKX	: Rigid end offset distance measured from K node in axis X
DKY	: Rigid end offset distance measured from K node in axis Y
DKZ	: Rigid end offset distance measured from K node in axis Z
dL	: Tapered member section depth at K end of member
Ig factor	: Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members
K22	: Effective length factor about axis 2
K33	: Effective length factor about axis 3
L22	: Member length for calculation of axial capacity
L33	: Member length for calculation of axial capacity
LB pos	: Lateral unbraced length of the compression flange in the positive side of local axis 2
LB neg	: Lateral unbraced length of the compression flange in the negative side of local axis 2
RX	: Rotation about X
RY	: Rotation about Y
RZ	: Rotation about Z
TO	: 1 = Tension only member 0 = Normal member
TX	: Translation in X
TY	: Translation in Y
TZ	: Translation in Z

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
1	0.00	-4.00	0.00	0
3	0.596	-4.00	-8.7157	0
4	7.846	-4.00	3.8417	0
9	-7.846	-4.00	3.8417	0
10	-0.596	-4.00	-8.7157	0
12	7.25	-4.00	4.874	0
13	-7.25	-4.00	4.874	0
14	7.548	-4.00	4.3578	0
15	1.7716	-4.00	1.0228	0
18	-7.548	-4.00	4.3578	0
19	-1.7716	-4.00	1.0228	0
20	0.00	-4.00	-8.7157	0
21	0.00	-4.00	-2.0457	0
22	2.846	-4.00	-4.8186	0
23	5.596	-4.00	-0.0554	0
26	-2.846	-4.00	-4.8186	0
27	-5.596	-4.00	-0.0554	0
28	-2.75	-4.00	4.874	0
29	2.75	-4.00	4.874	0
30	5.3725	-4.00	0.3317	0
31	2.9735	-4.00	4.4869	0
34	-2.9735	-4.00	4.4869	0
35	-5.3725	-4.00	0.3317	0

36	-2.399	-4.00	-4.8186	0
37	2.399	-4.00	-4.8186	0
86	6.00	-4.00	4.874	0
87	6.00	-4.00	5.074	0
90	2.00	-4.00	4.874	0
91	2.00	-4.00	5.074	0
94	-2.00	-4.00	4.874	0
95	-2.00	-4.00	5.074	0
98	-6.00	-4.00	4.874	0
99	-6.00	-4.00	5.074	0
100	6.00	5.00	5.074	0
101	2.00	5.00	5.074	0
102	-2.00	5.00	5.074	0
103	-6.00	5.00	5.074	0
104	6.00	-5.00	5.074	0
105	2.00	-5.00	5.074	0
106	-2.00	-5.00	5.074	0
107	-6.00	-5.00	5.074	0
108	-7.25	3.00	4.874	0
109	-7.846	3.00	3.8417	0
110	-0.596	3.00	-8.7157	0
111	0.596	3.00	-8.7157	0
112	7.25	3.00	4.874	0
113	7.846	3.00	3.8417	0
114	-1.7716	0.00	1.0228	0
115	0.00	0.00	-2.0457	0
116	1.7716	0.00	1.0228	0
117	-6.00	3.00	4.874	0
118	-6.00	3.00	5.074	0
119	-2.00	3.00	4.874	0
120	-2.00	3.00	5.074	0
121	2.00	3.00	4.874	0
122	2.00	3.00	5.074	0
123	6.00	3.00	4.874	0
124	6.00	3.00	5.074	0
125	-1.221	-4.00	-7.6332	0
126	-1.3942	-4.00	-7.7332	0
127	-1.3942	5.00	-7.7332	0
128	-1.3942	-5.00	-7.7332	0
129	-1.221	3.00	-7.6332	0
130	-1.3942	3.00	-7.7332	0
131	-3.221	-4.00	-4.1691	0
132	-3.3942	-4.00	-4.2691	0
133	-3.3942	5.00	-4.2691	0
134	-3.3942	-5.00	-4.2691	0
135	-3.221	3.00	-4.1691	0
136	-3.3942	3.00	-4.2691	0
137	-5.221	-4.00	-0.7049	0
138	-5.3942	-4.00	-0.8049	0
139	-5.3942	5.00	-0.8049	0
140	-5.3942	-5.00	-0.8049	0
141	-5.221	3.00	-0.7049	0
142	-5.3942	3.00	-0.8049	0
143	-7.221	-4.00	2.7592	0
144	-7.3942	-4.00	2.6592	0
145	-7.3942	5.00	2.6592	0
146	-7.3942	-5.00	2.6592	0
147	-7.221	3.00	2.7592	0
148	-7.3942	3.00	2.6592	0
149	7.221	-4.00	2.7592	0

150	7.3942	-4.00	2.6592	0
151	7.3942	5.00	2.6592	0
152	7.3942	-5.00	2.6592	0
153	7.221	3.00	2.7592	0
154	7.3942	3.00	2.6592	0
155	5.221	-4.00	-0.7049	0
156	5.3942	-4.00	-0.8049	0
157	5.3942	5.00	-0.8049	0
158	5.3942	-5.00	-0.8049	0
159	5.221	3.00	-0.7049	0
160	5.3942	3.00	-0.8049	0
161	3.221	-4.00	-4.1691	0
162	3.3942	-4.00	-4.2691	0
163	3.3942	5.00	-4.2691	0
164	3.3942	-5.00	-4.2691	0
165	3.221	3.00	-4.1691	0
166	3.3942	3.00	-4.2691	0
167	1.221	-4.00	-7.6332	0
168	1.3942	-4.00	-7.7332	0
169	1.3942	5.00	-7.7332	0
170	1.3942	-5.00	-7.7332	0
171	1.221	3.00	-7.6332	0
172	1.3942	3.00	-7.7332	0
173	6.221	3.00	1.0271	0
174	-4.00	3.00	4.874	0
175	-2.221	3.00	-5.9011	0
176	4.00	3.00	4.874	0
177	-6.221	3.00	1.0271	0
178	2.221	3.00	-5.9011	0
179	0.00	-4.00	-7.9746	0
180	6.9062	-4.00	3.9873	0
181	-6.9062	-4.00	3.9873	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
15	1	1	1	0	0	0
19	1	1	1	0	0	0
21	1	1	1	0	0	0
114	1	1	1	0	0	0
115	1	1	1	0	0	0
116	1	1	1	0	0	0
179	0	1	0	0	0	0
180	0	1	0	0	0	0
181	0	1	0	0	0	0

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
2	9	10		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
3	3	4		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
4	18	19		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
5	20	21		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
6	14	15		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
7	28	27		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
8	26	22		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
9	23	29		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
10	13	9		PL 6x3/8	A36	0.00	0.00	0.00
11	10	3		PL 6x3/8	A36	0.00	0.00	0.00
12	12	4		PL 6x3/8	A36	0.00	0.00	0.00
13	34	18		L 2X2X1_4	A36	0.00	0.00	0.00
14	36	20		L 2X2X1_4	A36	0.00	0.00	0.00
15	30	14		L 2X2X1_4	A36	0.00	0.00	0.00
16	18	35		L 2X2X1_4	A36	0.00	0.00	0.00
17	20	37		L 2X2X1_4	A36	0.00	0.00	0.00
18	14	31		L 2X2X1_4	A36	0.00	0.00	0.00
35	12	13		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
36	103	107		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
37	102	106		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
38	101	105		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
39	100	104		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
40	112	108		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
41	108	109		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
42	109	110		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
43	110	111		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
44	111	113		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
45	112	113		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
51	127	128		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
54	133	134		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
57	139	140		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
60	145	146		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
63	151	152		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
66	157	158		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
69	163	164		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
72	169	170		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
74	115	175		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
75	115	178		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
76	116	173		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
77	114	177		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
78	114	174		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
79	116	176		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00

Orientation of local axes

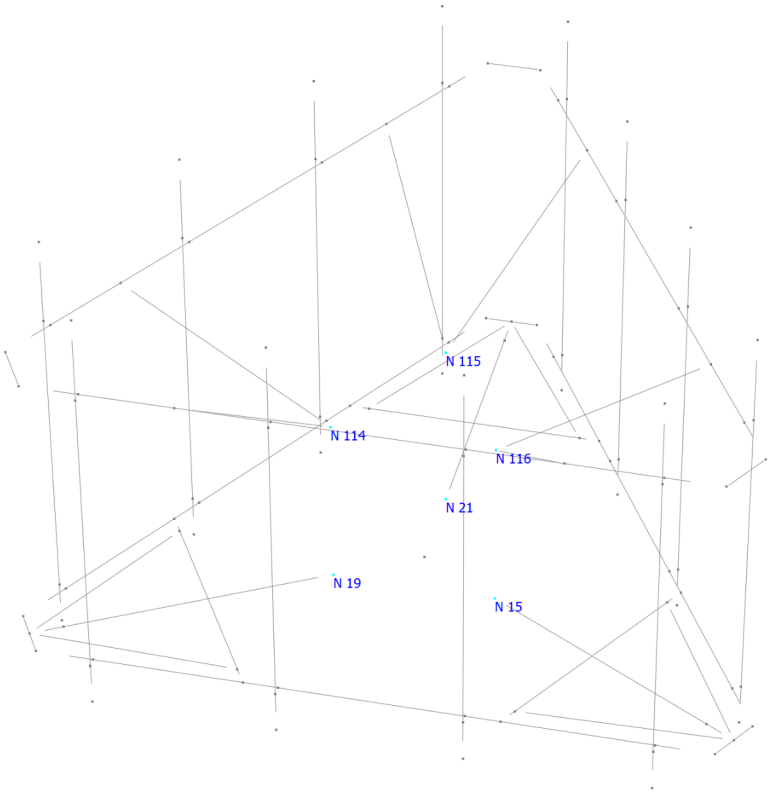
Member	Rotation [Deg]	Axes23	NX	NY	NZ
41	180.00	0	0.00	0.00	0.00
43	180.00	0	0.00	0.00	0.00
45	90.00	0	0.00	0.00	0.00

Rigid end offsets

Member	DJX [in]	DJY [in]	DJZ [in]	DKX [in]	DKY [in]	DKZ [in]
13	0.00	3.00	0.00	0.00	3.00	0.00
14	0.00	3.00	0.00	0.00	3.00	0.00
15	0.00	3.00	0.00	0.00	3.00	0.00
16	0.00	3.00	0.00	0.00	3.00	0.00
17	0.00	3.00	0.00	0.00	3.00	0.00
18	0.00	3.00	0.00	0.00	3.00	0.00

Hinges

	Node-J				Node-K						
Member	M33	M22	V3	V2	M33	M22	V3	V2	TOR	AXL	Axial rigidity
74	0	0	0	0	1	1	0	0	0	0	Full
75	0	0	0	0	1	1	0	0	0	0	Full
76	0	0	0	0	1	1	0	0	0	0	Full
77	0	0	0	0	1	1	0	0	0	0	Full
78	0	0	0	0	1	1	0	0	0	0	Full
79	0	0	0	0	1	1	0	0	0	0	Full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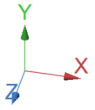
N 114
N 116
N 21
N 19
N 15


Y
X
Z

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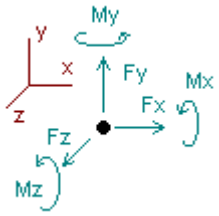
Analysis result

Reactions



Direction of positive forces and moments

	Forces [Kip]			Moments [Kip*ft]		
Node	**FX**	**FY**	**FZ**	**MX**	**MY**	**MZ**
Condition **LC1=1.2DL+W0**						
19	-0.48307	0.11924	0.64516	0.00000	0.00000	0.00000
15	0.52507	0.10298	0.52108	0.00000	0.00000	0.00000
21	-0.03827	0.35118	1.56626	0.00000	0.00000	0.00000
114	-0.43718	0.54830	0.60526	0.00000	0.00000	0.00000
115	0.00449	-0.63161	0.92103	0.00000	0.00000	0.00000
116	0.42897	0.49961	0.49942	0.00000	0.00000	0.00000
SUM	0.00000	0.98969	4.75820	0.00000	0.00000	0.00000
Condition **LC2=1.2DL+W30**						
19	1.02797	0.33606	-0.81564	0.00000	0.00000	0.00000
15	0.96439	0.06276	0.73467	0.00000	0.00000	0.00000
21	0.59740	0.18729	0.07908	0.00000	0.00000	0.00000
114	0.65643	-0.50825	-0.38005	0.00000	0.00000	0.00000
115	0.43988	0.08504	-0.05766	0.00000	0.00000	0.00000
116	0.87475	0.76612	0.43961	0.00000	0.00000	0.00000
SUM	4.56082	0.92903	0.00000	0.00000	0.00000	0.00000
Condition **LC3=1.2DL-W0**						
19	0.58187	0.27088	-0.70592	0.00000	0.00000	0.00000
15	-0.62263	0.28669	-0.57537	0.00000	0.00000	0.00000
21	0.03761	0.03959	-1.45217	0.00000	0.00000	0.00000
114	0.27724	-0.31860	-0.51188	0.00000	0.00000	0.00000
115	-0.00761	0.86313	-1.10583	0.00000	0.00000	0.00000
116	-0.26648	-0.26867	-0.40704	0.00000	0.00000	0.00000
SUM	0.00000	0.87302	-4.75820	0.00000	0.00000	0.00000
Condition **LC4=1.2DL-W30**						
19	-0.94252	0.05364	0.75339	0.00000	0.00000	0.00000
15	-1.05205	0.32690	-0.79401	0.00000	0.00000	0.00000
21	-0.59523	0.20375	0.04638	0.00000	0.00000	0.00000
114	-0.82297	0.74224	0.47110	0.00000	0.00000	0.00000
115	-0.44076	0.13940	-0.12450	0.00000	0.00000	0.00000
116	-0.70730	-0.53245	-0.35236	0.00000	0.00000	0.00000
SUM	-4.56082	0.93346	0.00000	0.00000	0.00000	0.00000

Condition **LC5=0.9DL+W0**

19	-0.49534	0.07068	0.65249	0.00000	0.00000	0.00000
15	0.53759	0.05441	0.52806	0.00000	0.00000	0.00000
21	-0.03849	0.30221	1.55218	0.00000	0.00000	0.00000
114	-0.41705	0.51971	0.59337	0.00000	0.00000	0.00000
115	0.00467	-0.66019	0.94418	0.00000	0.00000	0.00000
116	0.40862	0.47103	0.48793	0.00000	0.00000	0.00000
SUM	0.00000	0.75784	4.75820	0.00000	0.00000	0.00000

Condition **LC6=0.9DL+W30**

19	1.01592	0.28714	-0.80833	0.00000	0.00000	0.00000
15	0.97696	0.01429	0.74158	0.00000	0.00000	0.00000
21	0.59710	0.13859	0.06483	0.00000	0.00000	0.00000
114	0.67639	-0.53684	-0.39187	0.00000	0.00000	0.00000
115	0.44015	0.05645	-0.03436	0.00000	0.00000	0.00000
116	0.85431	0.73753	0.42815	0.00000	0.00000	0.00000
SUM	4.56082	0.69714	0.00000	0.00000	0.00000	0.00000

Condition **LC7=0.9DL-W0**

19	0.56971	0.22204	-0.69863	0.00000	0.00000	0.00000
15	-0.61027	0.23786	-0.56851	0.00000	0.00000	0.00000
21	0.03738	-0.00884	-1.46655	0.00000	0.00000	0.00000
114	0.29725	-0.34719	-0.52367	0.00000	0.00000	0.00000
115	-0.00735	0.83454	-1.08238	0.00000	0.00000	0.00000
116	-0.28671	-0.29726	-0.41846	0.00000	0.00000	0.00000
SUM	0.00000	0.64114	-4.75820	0.00000	0.00000	0.00000

Condition **LC8=0.9DL-W30**

19	-0.95490	0.00516	0.76070	0.00000	0.00000	0.00000
15	-1.03974	0.27797	-0.78707	0.00000	0.00000	0.00000
21	-0.59538	0.15505	0.03217	0.00000	0.00000	0.00000
114	-0.80279	0.71365	0.45923	0.00000	0.00000	0.00000
115	-0.44058	0.11082	-0.10120	0.00000	0.00000	0.00000
116	-0.72743	-0.56103	-0.36383	0.00000	0.00000	0.00000
SUM	-4.56082	0.70162	0.00000	0.00000	0.00000	0.00000

Condition **LC9=1.2DL+Di+Wi0**

19	0.02584	0.28491	0.00563	0.00000	0.00000	0.00000
15	-0.01855	0.28155	-0.01840	0.00000	0.00000	0.00000
21	-0.00660	0.29409	0.11037	0.00000	0.00000	0.00000
114	-0.14217	0.20769	0.10203	0.00000	0.00000	0.00000
115	-0.00150	0.14279	-0.09144	0.00000	0.00000	0.00000
116	0.14298	0.19763	0.07582	0.00000	0.00000	0.00000
SUM	0.00000	1.40867	0.18400	0.00000	0.00000	0.00000

Condition **LC10=1.2DL+Di+Wi30**

19	0.07776	0.29410	-0.06591	0.00000	0.00000	0.00000
15	-0.00706	0.28168	0.00978	0.00000	0.00000	0.00000
21	0.02473	0.28513	0.05544	0.00000	0.00000	0.00000
114	-0.09148	0.15115	0.04555	0.00000	0.00000	0.00000
115	0.01092	0.17648	-0.13476	0.00000	0.00000	0.00000
116	0.16513	0.21842	0.08989	0.00000	0.00000	0.00000
SUM	0.18000	1.40697	0.00000	0.00000	0.00000	0.00000

Condition **LC11=1.2DL+Di-Wi0**

19	0.06189	0.28894	-0.06150	0.00000	0.00000	0.00000
15	-0.07366	0.29230	-0.02963	0.00000	0.00000	0.00000
21	0.01108	0.27976	-0.00648	0.00000	0.00000	0.00000
114	-0.10076	0.15630	0.04336	0.00000	0.00000	0.00000
115	-0.00297	0.22121	-0.19164	0.00000	0.00000	0.00000
116	0.10442	0.16638	0.06187	0.00000	0.00000	0.00000
SUM	0.00000	1.40487	-0.18400	0.00000	0.00000	0.00000

Condition **LC12=1.2DL+Di-Wi30**

19	0.00993	0.27974	0.01005	0.00000	0.00000	0.00000
15	-0.08514	0.29216	-0.05783	0.00000	0.00000	0.00000
21	-0.02021	0.28872	0.04848	0.00000	0.00000	0.00000
114	-0.15147	0.21286	0.09984	0.00000	0.00000	0.00000
115	-0.01537	0.18750	-0.14831	0.00000	0.00000	0.00000
116	0.08227	0.14559	0.04777	0.00000	0.00000	0.00000
SUM	-0.18000	1.40657	0.00000	0.00000	0.00000	0.00000

Condition **LC13=1.4DL**

19	0.05701	0.22724	-0.03412	0.00000	0.00000	0.00000
15	-0.05805	0.22724	-0.03231	0.00000	0.00000	0.00000
21	0.00104	0.22724	0.06643	0.00000	0.00000	0.00000
114	-0.09367	0.13346	0.05527	0.00000	0.00000	0.00000
115	-0.00103	0.13346	-0.10875	0.00000	0.00000	0.00000
116	0.09470	0.13346	0.05348	0.00000	0.00000	0.00000
SUM	0.00000	1.08209	0.00000	0.00000	0.00000	0.00000

Condition **LC14=1.2DL+1.6LL1**

19	0.04087	0.29074	-0.01956	0.00000	0.00000	0.00000
15	-0.04176	0.29074	-0.01801	0.00000	0.00000	0.00000
21	0.00090	0.15541	0.05440	0.00000	0.00000	0.00000
114	-0.09132	0.13034	0.05863	0.00000	0.00000	0.00000
115	-0.00089	0.14316	-0.13257	0.00000	0.00000	0.00000
116	0.09222	0.13035	0.05711	0.00000	0.00000	0.00000
SUM	0.00000	1.14074	0.00000	0.00000	0.00000	0.00000

Condition **LC15=1.2DL+1.6LL2**

19	-0.02076	0.19923	0.00927	0.00000	0.00000	0.00000
15	0.02429	0.17770	0.01877	0.00000	0.00000	0.00000
21	-0.00365	0.18317	-0.01430	0.00000	0.00000	0.00000
114	-0.07522	0.10986	0.04356	0.00000	0.00000	0.00000
115	-0.00061	0.11821	-0.09873	0.00000	0.00000	0.00000
116	0.07594	0.10833	0.04144	0.00000	0.00000	0.00000
SUM	0.00000	0.89650	0.00000	0.00000	0.00000	0.00000

Condition **LC16=1.2DL+WL0+1.6LLa1**

19	-0.01451	0.23445	0.02202	0.00000	0.00000	0.00000
15	0.00332	0.22303	0.01022	0.00000	0.00000	0.00000
21	-0.01080	0.15813	0.04049	0.00000	0.00000	0.00000
114	-0.07325	0.11049	0.04312	0.00000	0.00000	0.00000
115	0.00020	0.12935	-0.11474	0.00000	0.00000	0.00000
116	0.09504	0.12685	0.05290	0.00000	0.00000	0.00000
SUM	0.00000	0.98230	0.05400	0.00000	0.00000	0.00000

Condition **LC17=1.2DL+WL30+1.6LLa1**

19	0.00012	0.23719	-0.00008	0.00000	0.00000	0.00000
15	0.00608	0.22308	0.01948	0.00000	0.00000	0.00000
21	-0.00031	0.15547	0.02448	0.00000	0.00000	0.00000
114	-0.05875	0.09400	0.02615	0.00000	0.00000	0.00000
115	0.00442	0.13916	-0.12735	0.00000	0.00000	0.00000
116	0.10144	0.13300	0.05732	0.00000	0.00000	0.00000
SUM	0.05300	0.98189	0.00000	0.00000	0.00000	0.00000

Condition **LC18=1.2DL-WL0+1.6LLa1**

19	-0.00422	0.23563	0.00181	0.00000	0.00000	0.00000
15	-0.01312	0.22620	0.00741	0.00000	0.00000	0.00000
21	-0.00505	0.15392	0.00622	0.00000	0.00000	0.00000
114	-0.06125	0.09539	0.02561	0.00000	0.00000	0.00000
115	0.00001	0.15231	-0.14407	0.00000	0.00000	0.00000
116	0.08362	0.11769	0.04901	0.00000	0.00000	0.00000
SUM	0.00000	0.98114	-0.05400	0.00000	0.00000	0.00000

Condition **LC19=1.2DL-WL30+1.6LLa1**

19	-0.01886	0.23289	0.02391	0.00000	0.00000	0.00000
15	-0.01588	0.22616	-0.00185	0.00000	0.00000	0.00000
21	-0.01553	0.15657	0.02223	0.00000	0.00000	0.00000
114	-0.07576	0.11189	0.04258	0.00000	0.00000	0.00000
115	-0.00420	0.14250	-0.13146	0.00000	0.00000	0.00000
116	0.07722	0.11154	0.04460	0.00000	0.00000	0.00000
SUM	-0.05300	0.98155	0.00000	0.00000	0.00000	0.00000

Condition **LC20=1.2DL+WL0+1.6LLa2**

19	0.04509	0.33977	-0.00030	0.00000	0.00000	0.00000
15	-0.06577	0.38787	-0.03150	0.00000	0.00000	0.00000
21	-0.01029	0.12029	0.10598	0.00000	0.00000	0.00000
114	-0.08745	0.12794	0.05180	0.00000	0.00000	0.00000
115	0.00044	0.15614	-0.15164	0.00000	0.00000	0.00000
116	0.11799	0.16049	0.07965	0.00000	0.00000	0.00000
SUM	0.00000	1.29251	0.05400	0.00000	0.00000	0.00000

Condition **LC21=1.2DL+WL30+1.6LLa2**

19	0.05972	0.34253	-0.02239	0.00000	0.00000	0.00000
15	-0.06302	0.38791	-0.02224	0.00000	0.00000	0.00000
21	0.00019	0.11764	0.08998	0.00000	0.00000	0.00000
114	-0.07295	0.11146	0.03482	0.00000	0.00000	0.00000
115	0.00465	0.16596	-0.16424	0.00000	0.00000	0.00000
116	0.12440	0.16664	0.08407	0.00000	0.00000	0.00000
SUM	0.05300	1.29213	0.00000	0.00000	0.00000	0.00000

Condition **LC22=1.2DL-WL0+1.6LLa2**

19	0.05538	0.34097	-0.02050	0.00000	0.00000	0.00000
15	-0.08222	0.39105	-0.03431	0.00000	0.00000	0.00000
21	-0.00454	0.11609	0.07171	0.00000	0.00000	0.00000
114	-0.07545	0.11286	0.03429	0.00000	0.00000	0.00000
115	0.00025	0.17911	-0.18095	0.00000	0.00000	0.00000
116	0.10658	0.15133	0.07577	0.00000	0.00000	0.00000
SUM	0.00000	1.29141	-0.05400	0.00000	0.00000	0.00000

Condition **LC23=1.2DL-WL30+1.6LLa2**

19	0.04074	0.33821	0.00159	0.00000	0.00000	0.00000
15	-0.08496	0.39100	-0.04357	0.00000	0.00000	0.00000
21	-0.01502	0.11874	0.08772	0.00000	0.00000	0.00000
114	-0.08996	0.12934	0.05126	0.00000	0.00000	0.00000
115	-0.00396	0.16930	-0.16835	0.00000	0.00000	0.00000
116	0.10017	0.14519	0.07135	0.00000	0.00000	0.00000
SUM	-0.05300	1.29179	0.00000	0.00000	0.00000	0.00000

Condition **LC24=1.2DL+WL0+1.6LLa3**

19	0.06796	0.38886	-0.02434	0.00000	0.00000	0.00000
15	-0.04290	0.33879	-0.00744	0.00000	0.00000	0.00000
21	0.00633	0.12029	0.10599	0.00000	0.00000	0.00000
114	-0.11740	0.16343	0.08798	0.00000	0.00000	0.00000
115	-0.00203	0.15615	-0.15164	0.00000	0.00000	0.00000
116	0.08803	0.12498	0.04346	0.00000	0.00000	0.00000
SUM	0.00000	1.29249	0.05400	0.00000	0.00000	0.00000

Condition **LC25=1.2DL+WL30+1.6LLa3**

19	0.08258	0.39162	-0.04644	0.00000	0.00000	0.00000
15	-0.04013	0.33883	0.00182	0.00000	0.00000	0.00000
21	0.01682	0.11764	0.08999	0.00000	0.00000	0.00000
114	-0.10289	0.14696	0.07100	0.00000	0.00000	0.00000
115	0.00218	0.16596	-0.16425	0.00000	0.00000	0.00000
116	0.09444	0.13113	0.04788	0.00000	0.00000	0.00000
SUM	0.05300	1.29213	0.00000	0.00000	0.00000	0.00000

Condition **LC26=1.2DL-WL0+1.6LLa3**

19	0.07825	0.39007	-0.04456	0.00000	0.00000	0.00000
15	-0.05933	0.34196	-0.01025	0.00000	0.00000	0.00000
21	0.01209	0.11609	0.07172	0.00000	0.00000	0.00000
114	-0.10539	0.14836	0.07046	0.00000	0.00000	0.00000
115	-0.00223	0.17912	-0.18097	0.00000	0.00000	0.00000
116	0.07662	0.11582	0.03958	0.00000	0.00000	0.00000
SUM	0.00000	1.29142	-0.05400	0.00000	0.00000	0.00000

Condition **LC27=1.2DL-WL30+1.6LLa3**

19	0.06362	0.38731	-0.02246	0.00000	0.00000	0.00000
15	-0.06210	0.34192	-0.01951	0.00000	0.00000	0.00000
21	0.00160	0.11874	0.08773	0.00000	0.00000	0.00000
114	-0.11990	0.16483	0.08744	0.00000	0.00000	0.00000
115	-0.00644	0.16931	-0.16836	0.00000	0.00000	0.00000
116	0.07021	0.10967	0.03516	0.00000	0.00000	0.00000
SUM	-0.05300	1.29178	0.00000	0.00000	0.00000	0.00000

Condition **LC28=1.2DL+WL0+1.6LLa4**

19	-0.00113	0.22403	0.01739	0.00000	0.00000	0.00000
15	0.01671	0.23347	0.01487	0.00000	0.00000	0.00000
21	0.00683	0.15812	0.04051	0.00000	0.00000	0.00000
114	-0.09444	0.12980	0.06123	0.00000	0.00000	0.00000
115	-0.00179	0.12937	-0.11477	0.00000	0.00000	0.00000
116	0.07382	0.10751	0.03477	0.00000	0.00000	0.00000
SUM	0.00000	0.98229	0.05400	0.00000	0.00000	0.00000

Condition **LC29=1.2DL+WL30+1.6LLa4**

19	0.01350	0.22677	-0.00470	0.00000	0.00000	0.00000
15	0.01948	0.23350	0.02413	0.00000	0.00000	0.00000
21	0.01731	0.15547	0.02451	0.00000	0.00000	0.00000
114	-0.07994	0.11332	0.04425	0.00000	0.00000	0.00000
115	0.00243	0.13918	-0.12738	0.00000	0.00000	0.00000
116	0.08023	0.11366	0.03919	0.00000	0.00000	0.00000
SUM	0.05300	0.98189	0.00000	0.00000	0.00000	0.00000

Condition **LC30=1.2DL-WL0+1.6LLa4**

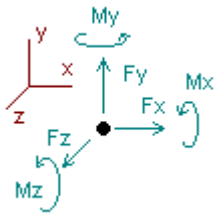
19	0.00916	0.22521	-0.00282	0.00000	0.00000	0.00000
15	0.00028	0.23662	0.01206	0.00000	0.00000	0.00000
21	0.01257	0.15391	0.00625	0.00000	0.00000	0.00000
114	-0.08244	0.11471	0.04371	0.00000	0.00000	0.00000
115	-0.00199	0.15233	-0.14410	0.00000	0.00000	0.00000
116	0.06241	0.09835	0.03090	0.00000	0.00000	0.00000
SUM	0.00000	0.98115	-0.05400	0.00000	0.00000	0.00000

Condition **LC31=1.2DL-WL30+1.6LLa4**

19	-0.00547	0.22247	0.01928	0.00000	0.00000	0.00000
15	-0.00248	0.23659	0.00280	0.00000	0.00000	0.00000
21	0.00209	0.15657	0.02225	0.00000	0.00000	0.00000
114	-0.09694	0.13120	0.06069	0.00000	0.00000	0.00000
115	-0.00620	0.14252	-0.13149	0.00000	0.00000	0.00000
116	0.05600	0.09220	0.02647	0.00000	0.00000	0.00000
SUM	-0.05300	0.98155	0.00000	0.00000	0.00000	0.00000

Envelope for nodal reactions

Note.- **Ic** is the controlling load condition



Direction of positive forces and moments

Envelope of nodal reactions for :

LC1=1.2DL+W0
LC2=1.2DL+W30
LC3=1.2DL-W0
LC4=1.2DL-W30
LC5=0.9DL+W0
LC6=0.9DL+W30
LC7=0.9DL-W0
LC8=0.9DL-W30
LC9=1.2DL+Di+Wi0
LC10=1.2DL+Di+Wi30
LC11=1.2DL+Di-Wi0
LC12=1.2DL+Di-Wi30
LC13=1.4DL

LC14=1.2DL+1.6LL1
LC15=1.2DL+1.6LL2
LC16=1.2DL+WL0+1.6LLa1
LC17=1.2DL+WL30+1.6LLa1
LC18=1.2DL-WL0+1.6LLa1
LC19=1.2DL-WL30+1.6LLa1
LC20=1.2DL+WL0+1.6LLa2
LC21=1.2DL+WL30+1.6LLa2
LC22=1.2DL-WL0+1.6LLa2
LC23=1.2DL-WL30+1.6LLa2
LC24=1.2DL+WL0+1.6LLa3
LC25=1.2DL+WL30+1.6LLa3
LC26=1.2DL-WL0+1.6LLa3
LC27=1.2DL-WL30+1.6LLa3
LC28=1.2DL+WL0+1.6LLa4
LC29=1.2DL+WL30+1.6LLa4
LC30=1.2DL-WL0+1.6LLa4
LC31=1.2DL-WL30+1.6LLa4

		Forces						Moments					
Node		**Fx** [Kip]	**lc**	**Fy** [Kip]	**lc**	**Fz** [Kip]	**lc**	**Mx** [Kip*ft]	**lc**	**My** [Kip*ft]	**lc**	**Mz** [Kip*ft]	**lc**
19	Max	1.028	LC2	0.392	LC25	0.761	LC8	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.955	LC8	0.005	LC8	-0.816	LC2	0.00000	LC1	0.00000	LC1	0.00000	LC1
15	Max	0.977	LC6	0.391	LC22	0.742	LC6	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-1.052	LC4	0.014	LC6	-0.794	LC4	0.00000	LC1	0.00000	LC1	0.00000	LC1
21	Max	0.597	LC2	0.351	LC1	1.566	LC1	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.595	LC8	-0.009	LC7	-1.467	LC7	0.00000	LC1	0.00000	LC1	0.00000	LC1
114	Max	0.676	LC6	0.742	LC4	0.605	LC1	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.823	LC4	-0.537	LC6	-0.524	LC7	0.00000	LC1	0.00000	LC1	0.00000	LC1
115	Max	0.440	LC6	0.863	LC3	0.944	LC5	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.441	LC4	-0.660	LC5	-1.106	LC3	0.00000	LC1	0.00000	LC1	0.00000	LC1
116	Max	0.875	LC2	0.766	LC2	0.499	LC1	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.727	LC8	-0.561	LC8	-0.418	LC7	0.00000	LC1	0.00000	LC1	0.00000	LC1

Connection Check

Date: 4/7/2023
Project Name: LOWER SCORT HILL
Project No.: CT5145
Designed By: JC **Checked By:** MSC

CHECK CONNECTION CAPACITY (Worst Case)

Reference: AISC Steel Construction Manual 14th Edition (ASD)

Bolt Type = A36 5/8" Threaded Rod

Allowable Tensile Load =

F_{Tall} = 6673 lbs.

Allowable Shear Load =

F_{Vall} = 4004 lbs.

TENSILE FORCES

Reaction **F =** 1106 lbs. (See Bentley Output)

SHEAR FORCES

Reactions in X direction: 440 lbs. (See Bentley Output)
Reactions in Y direction: 863 lbs. (See Bentley Output)

Resultant: 969 lbs.

No. of Supports = 1
No. of Bolts / Support = 3

Tension Design Load /Bolts =

f_t= 368.67 lbs. < 6673 lbs. **Therefore, OK !**

Shear Design Load / Bolts=

f_v= 322.90 lbs. < 4004 lbs. **Therefore, OK !**

CHECK COMBINED TENSION AND SHEAR

f_t / F_T	+	f_v / F_V	≤	1.0			
0.055	+	0.081	=	0.136	<	1.0	**Therefore, OK !**

Property Location 280 MOREHOUSE DRIVE | Map ID 51/ 51/ / / | Bldg Name | State Use 1010
Vision ID 5101 | Account # 17416 | Bldg # 1 | Sec # 1 of 1 | Card # 1 of 1 | Print Date 2/9/2023 1:18:20 PM

CURRENT OWNER

ZHANG CHIJIAN & HU YUZHI (SV)

280 MOREHOUSE DRIVE

FAIRFIELD CT 06824-2374

TOPO	UTILITIES	STRT / ROAD	LOCATION
4 Rolling	2 Public Water	1 Paved	4 Bus. District
	6 Septic		X
			P

SUPPLEMENTAL DATA

Alt Prcl ID	00051 00051 00000	Legal	B TOWN B
Assoc.		Descrip	LDRS
Lots		Descrip	
I&E SuppF		Record Ma	
Notice		Multi Fam	
Census			
GIS ID	0510510000	Assoc Pid#	

CURRENT ASSESSMENT

Description	Code	Appraised	Assessed
RES LAND	1-1	332,600	232,820
DWELLING	1-3	211,600	148,120
Total		544,200	380,940

6051

FAIRFIELD, CT

VISION

RECORD OF OWNERSHIP

	BK-VOL/PAGE		SALE DATE	Q/U	V/I	SALE PRICE	VC
ZHANG CHIJIAN & HU YUZHI (SV)	2095	0192	03-06-2000	U	I	300,000	07
FLEET BANK,N.A.	2060	0112	11-10-1999	U	I	0	
STONE WILLIAM & SANDRA	0620	0360	08-06-1976			0	

PREVIOUS ASSESSMENTS (HISTORY)

Year	Code	Assessed	Year	Code	Assessed V	Year	Code	Assessed
2022	1-1	232,820	2021	1-1	232,820	2020	1-1	232,820
	1-3	148,120		1-3	148,120		1-3	148,120
	Total	380,940		Total	380,940		Total	380,940

EXEMPTIONS

Year	Code	Description	Amount
		Total	0.00

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm Int

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

Nbhd	Sub	Nbhd Name	B	Tracing	Batch
0085	A				

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	207,200
Appraised Xf (B) Value (Bldg)	4,400
Appraised Ob (B) Value (Bldg)	0
Appraised Land Value (Bldg)	332,600
Special Land Value	0
Total Appraised Parcel Value	544,200
Valuation Method	C
Total Appraised Parcel Value	544,200

NOTES

IA W/O BSMT
=PERSONAL PROPERTY
GLASS/SUNPORCH=BAS AREA
2002-AT&T COMM EQUIP ADDED TO TOWER
ECO=POWER LINES
RAISED W/O BSM; EXTERIOR GOOD
REF V2586 P251 8/27/02
1999-101' SPRINT PCS TELECOMM TOWER
INSIDE CL&P ELECTRICTRANSMISSION TOWER

BUILDING PERMIT RECORD

Permit Id	Issue Date	Type	Description	Amount	Insp Date	% Comp	Date Comp	Comments
B-22-0061	01-13-2022	CP		32,500		100	10-01-2022	**T MOBILE**REPL 3 ANTEN
160120	12-30-2019	CC		25,000	10-01-2020	100	10-01-2010	**SPRINT**REPLACE 3 PANE
155632	06-08-2017	CM	Commercial	25,000	10-01-2018	100	10-01-2018	REPL ANTENNA AT&t SWAP
155338	04-19-2017	CM	Commercial	60,000	10-01-2018	100	10-01-2018	REPL ANTENNA tmobile repl
149293	06-05-2013	CM	Commercial	5,000	07-19-2013	100	07-19-2013	REL ANTENNA T MOBILE
149292	06-05-2013	CM	Commercial	25,000	07-19-2013	100	07-19-2013	REPL 3 ANTENNAS AT&T
33321	10-18-2001	CM	Commercial	14,000	01-31-2002	100	01-31-2002	AT&T COMM EQUIP

VISIT / CHANGE HISTORY

Date	Id	Type	Is	Cd	Purpost/Result
11-19-2014	ES			01	Measur+1Visit
07-19-2013	PJ			99	VBPI - View by Physical In
05-04-2002	DR			40	No change
05-29-2001	DR			43	Change - Reinspection/Rer
02-19-1992	JS	X		00	Measur+Listed

LAND LINE VALUATION SECTION

B	Use Code	Description	Zone	Land Type	Land Units		Unit Price	Size Adj	Site Index	Cond.	Nbhd.	Nbhd. Adj	Notes	Location Adjustment		Adj Unit P	Land Value
1	1010	Single Fam MDL	R3		34,419	SF	8.95	1.00000	5	0.85	0085	1.270	ESMT/POWERLINES		1.0000		332,600
		Total Card Land Units			34,419	SF	Parcel Total Land Area			0.79						Total Land Value	332,600

Property Location	280 MOREHOUSE DRIVE	Map ID	51/ 51/ / /	Bldg Name	State Use 1010
Vision ID 5101	Account # 17416	Bldg # 1	Sec # 1 of 1	Card # 1 of 1	Print Date 2/9/2023 1:18:20 PM

CONSTRUCTION DETAIL

Element	Cd	Description
Style:	03	Colonial
Model	01	Residential
Grade:	04	
Stories:	2	2 Stories
Occupancy	1	
Exterior Wall 1	25	Vinyl Siding
Exterior Wall 2		
Roof Structure:	03	Gable/Hip
Roof Cover	03	Asphalt
Interior Wall 1	05	Drywall
Interior Wall 2		
Interior Flr 1	06	Linoleum
Interior Flr 2	12	Hardwood
Heat Fuel	03	Gas
Heat Type:	05	Hot Water
AC Type:	03	Central
Total Bedrooms	04	4 Bedrooms
Total Bthrms:	2	
Total Half Baths	1	
Total Xtra Fixtrs		
Total Rooms:	9	9 Rooms
Bath Style:	02	Average
Kitchen Style:	02	Average
FCPZ		

CONSTRUCTION DETAIL (CONTINUED)

Element	Cd	Description

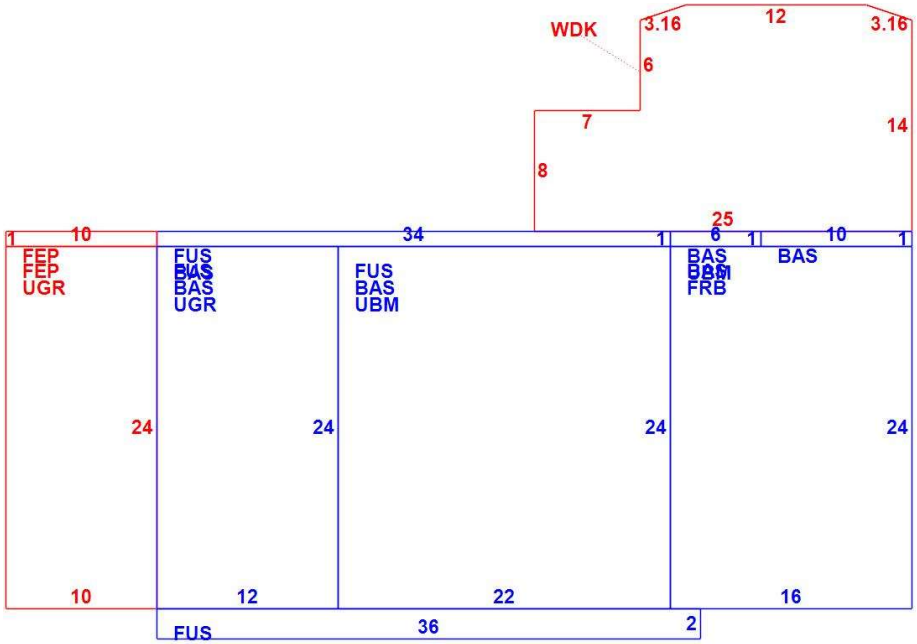
CONDO DATA

Parcel Id		C		Owne	0.0
		B		S	

Adjust Type	Code	Description	Factor%
Condo Flr			
Condo Unit			

COST / MARKET VALUATION

Building Value New	357,258
Year Built	1976
Effective Year Built	
Depreciation Code	4
Remodel Rating	
Year Remodeled	
Depreciation %	27
Functional Obsol	0
External Obsol	15
Trend Factor	1
Condition	
Condition %	
Percent Good	58
Cns Sect RcnId	207,200
Dep % Ovr	
Dep Ovr Comment	
Misc Imp Ovr	
Misc Imp Ovr Comment	
Cost to Cure Ovr	
Cost to Cure Ovr Comment	



OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)

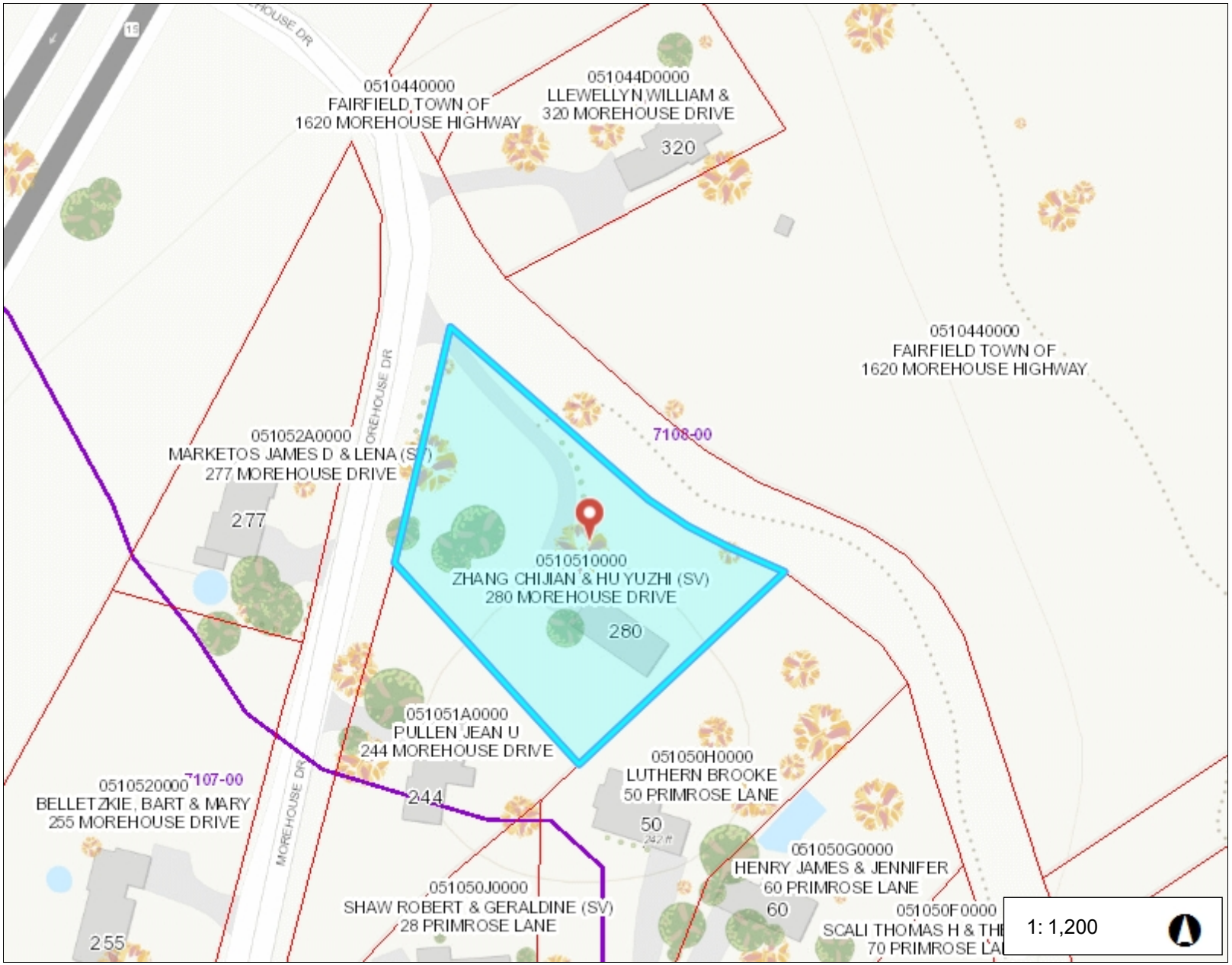
Code	Descript	Sub	Sub Ty	L/B	Units	Unit Pric	Yr Blt	Cond. C	% Gd	Grade	Grade A	Appr. V
FPL3	2.0 STO			B	1	7500.00	1993		58		0.00	4,400

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Floor Area		Unit Cost	Undeprec Value
BAS	First Floor	1,250	1,250		122.90	153,620
FEP	Porch, Enclosed, Finished	0	250		73.74	18,434
FRB	Finished Raised Bsmt	0	384		92.17	35,394
FUS	Upper Story, Finished	922	922		122.90	113,310
UBM	Basement, Unfinished	0	534		24.63	13,150
UGR	Garage, Under	0	528		36.78	19,418
WDK	Deck, Wood	0	323		12.18	3,933
	Ttl Gross Liv / Lease Area	2,172	4,191	2,907		357,259

Town of Fairfield

280 Morehouse Drive



Legend

- Parcels
- Local Basin Boundary
  - Major
  - Regional
  - Subregional
  - Local
- Local Basin Area

200.0 0 100.00 200.0 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere
Created by Greater Bridgeport Regional Council

METROCOG
Connecticut Metropolitan Council of Governments

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square
New Britain, Connecticut 06051
Phone: (860) 827-2935
Fax: (860) 827-2950

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

September 14, 2001

Christopher B. Fisher, Esq.
Cuddy & Feder & Worby
90 Maple Avenue
White Plains, New York 10601

RE: **PETITION NO. 525** - AT&T Wireless PCS, LLC d/b/a AT&T Wireless petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed modifications to an existing Connecticut Light and Power electric transmission facility located on Morehouse Road, Fairfield, Connecticut.

Dear Attorney Fisher:

At a public meeting held on September 12, 2001, the Connecticut Siting Council (Council) considered and ruled that this proposal would not have a substantial adverse environmental effect, and pursuant to General Statutes § 16-50k would not require a Certificate of Environmental Compatibility and Public Need. This ruling is conditioned on a requirement that the new extended fence be of similar design as the existing fence and that existing vegetative plantings removed be replaced.

This decision is under the exclusive jurisdiction of the Council and is not applicable to any other modification or construction. All work is to be implemented as conditioned here and as specified in the petition, dated August 27, 2001.

Enclosed for your information is a copy of the staff report on this project.

Very truly yours,

Mortimer A. Gelston
Chairman

MAG/FOC/laf

Enclosure: Staff Report dated September 12, 2001

c: Honorable John G. Metsopoulos, First Selectman, Town of Fairfield
Joseph E. Devonshuk, Town Planner, Town of Fairfield

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square
New Britain, Connecticut 06051
Phone: (860) 827-2935
Fax: (860) 827-2950

Petition No. 525
AT&T Wireless PCS, Inc.
Fairfield, Connecticut
Staff Report
September 12, 2001

On August 31, 2001, Connecticut Siting Council (Council) member Edward S. Wilensky and Fred Cunliffe of Council staff met John Fuller of Tectonic Engineering for AT&T Wireless PCS, Inc., (AT&T) for inspection of a Connecticut Light & Power Company (CL&P) electric transmission line structure (no. 876) located off Morehouse Drive, Fairfield. AT&T, with the agreement of CL&P and the underlying landowner, propose to modify the transmission structure for telecommunications use and is petitioning the Council for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need (Certificate) is required for the modification.

This site consists of an existing installed Fort Worth Powermount™ installed by Sprint Spectrum L.P. within the 84-foot high CL&P transmission line support structure, approved by the Council on December 18, 1997 (Petition No. 383). Sprint's antennas are mounted to a platform with a centerline height of 104 feet above ground level. Also, Voicestream Wireless received Council approval on August 31, 2000 to attach a platform with three antennas, at a centerline height of 95 feet, to the existing Fort Worth Powermount™.

AT&T proposes to attach three panel antennas at the 84-foot level of the CL&P structure. AT&T would place associated equipment cabinets on a 9-foot by 10-foot steel platform supported by concrete piers south of the structure's footprint and within the CL&P right-of-way. AT&T would move the existing fence approximately 10 feet to the south and west to enclose its equipment. Clearing of vegetation is necessary for the proposed installation. AT&T would construct a fence to match the existing shadow box wood fence and replace existing vegetation with coniferous vegetation. Electric and telephone utilities exist at the site compound.

Inspection of this site revealed that the gate was open to the site, overgrown vegetation inside the site compound, dead vegetation outside the fenced compound, decomposing staked haybales, and landscaping that appears to have little or no upkeep uncharacteristic to the neighborhood. There are three homes approximately 150 feet; one each located north, east, and south, of the transmission structure.

A structural analysis concludes that bracing members near the top of the structure would need reinforcement. The tower foundation, which was reinforced in 1998, is adequate for the proposed loads.

The worst case power density for Voicestream, Sprint, and AT&T telecommunications operations at the site has been calculated to be less than 14% of the applicable standard for uncontrolled environments.

AT&T contends that the proposed installation will not cause a substantial adverse environmental effect, and for this reason would not require a Certificate.

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MELANIE BACHMAN EXECUTIVE DIRECTOR
CT SITING COUNCIL
10 FRANKLIN SQ
NEW BRITAIN CT 06051-2655

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Founded: July 1, 1971, Washington, D.C.

Headquarters: Washington, D.C.

Agency executives: Louis DeJoy, Postmaster General; Douglas Tulino, Deputy Postmaster General;

Employees: 635,350 (516,750 career personnel, 118,600 non-career personnel) as of 2022

Key document: Postal Clause of the United States Constitution

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