March 31, 2022

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 CT2838
490 Jefferson Avenue (Bates Woods Park), New London, CT 06320 (the "Property")
Latitude: 41.357902N Longitude: 72.123988W

Dear Ms. Bachman:

AT&T currently maintains (12) antennas at the 111' level on the existing 115' monopole ballfield light pole ("Tower") at Bates Woods Park, 490 Jefferson Avenue, New London, CT. The Tower is owned by SBA Towers and property is owned by the City of New London. AT&T intends to modify its facility by removing (9) antennas and adding (3) AIR6449 B77 antennas at the 110'8" level, (3) QD8616-7 antennas at the 111' level, and (3) AIR6419 B77G antennas at the 114'4"' level of the Tower. The AIR6419 B77G & AIR6649 B77D antennas are stacked one on top of the other. The height of AT&Ts existing antennas is 111' and the proposed antennas is 110'8", 111' and 114'4" level on the Tower.

This modification includes B2, B5, and B12 hardware that is both 4G (LTE) and 5GNR capable through remote software configuration and either or both services may be turned on or off at various times.

The facility received Connecticut Siting Council approval under Docket 439 on October 31, 2013. The approval included a condition indicating the tower shall not exceed 115' above ground level. The tower height will not exceed 115' as a result of the modifications and is in compliance with the CSC condition.

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 R.C.S.A §16-50j-73, a copy of this letter is being sent to the Honorable Michael Passero, Mayor & property owner, City of New London, Mr. Felix J. Reyes, Director of the Office of Development & Planning, City of New London and SBA Towers, the tower 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 modification will not result in an increase in the height of the existing structure.

2. The proposed modification 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 modification to the above referenced telecommunication facility constitute an exempt modification pursuant to R.C.S.A §16-50j-72(b)(2).

Please contact me at 860-834-6964 if you should have any questions regarding this matter. Thank you for your time & consideration.

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: The Honorable Michael Passero, Mayor & property owner, City of New London
Mr. Felix J. Reyes, Director of the Office of Development & Planning, City of New London
SBA Towers as tower owner

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

Calculated Radio Frequency Exposure

CT2838

490 Jefferson Avenue, New London, CT

March 29, 2022

Table of Contents

List of Tables

List of Figures

1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed modification of the AT&T antenna arrays on an existing tower located at 490 Jefferson Avenue, New London, CT. The coordinates of the proposed tower are 41° 21' 28.44" N, 72° 07' 26.36" W.

AT&T is proposing the following:

1) Install twelve (12) multi-band antennas (four (4) per sector) to support its commercial wireless network and the FirstNet National Public Safety Broadband Network ("NPSBN").

This report considers the planned antenna configuration for AT&T[1] to derive the resulting % Maximum Permissible Exposure 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 B 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 B 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 1/14/2022.

3. RF Exposure Calculation Methods

The power density calculation results were generated using the following formula as outlined in FCC bulletin OET 65, and Connecticut Siting Council recommendations:

$$\text{Power Density} = \left(\frac{1.6^2 \times 1.64 \times \text{ERP}}{4\pi \times R^2}\right) \text{X Off Beam Loss}$$

Where:

ERP = Effective Radiated Power

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

H = Horizontal Distance from antenna

V = Vertical Distance from radiation center of antenna

Ground reflection factor of 1.6

Off Beam Loss is determined by the selected antenna pattern

These calculations assume that the antennas are operating at 100 percent capacity and power, and that all antenna channels are transmitting simultaneously. 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 consider 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. Calculation Results

Table 1 below outlines the cumulative power density information for the AT&T modification on the existing tower at the site. The proposed antennas are directional in nature; therefore, the majority of the RF power is focused out towards the horizon. As a result, there will be less RF power directed below the antennas relative to the horizon, and consequently lower power density levels around the base of the tower. Please refer to Attachment C for the vertical pattern of the proposed AT&T antennas. The calculated results for AT&T in Table 1 include a nominal 10 dB off-beam pattern loss to account for the lower relative gain below the antennas.

Carrier	Antenna Height (Feet)	Operating Frequency (MHz)	Number of Trans.	ERP Per Transmitter (Watts)	Power Density (mw/cm^2)	Limit	% MPE
AT&T	111	739	2	3229	0.0211	0.4927	4.28%
AT&T	111	763	1	3623	0.0118	0.5087	2.32%
AT&T	111	885	1	4257	0.0139	0.5900	2.35%
AT&T	111	1900	3	5118	0.0501	1.0000	5.01%
AT&T	111	2100	3	8226	0.0805	1.0000	8.05%
AT&T	111	2300	1	6297	0.0205	1.0000	2.05%
AT&T	114.33	3500	1	24286	0.0744	1.0000	7.44%
AT&T	110.67	3500	1	24286	0.0797	1.0000	7.97%
						Total	**39.49%**

Table 1: Carrier Information[2]

[2] The existing record in the CSC Power Density Table for AT&T should be removed and replaced with the updated AT&T technologies and values provided in Table 1. Please note that % MPE values listed are rounded to two decimal points and the total % MPE listed is a summation of each unrounded contribution. Therefore, summing each rounded value may not identically match the total value reflected in the table.

5. Conclusion

The above analysis concludes that RF exposure at ground level from the proposed site will be below the maximum power density levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Using conservative calculation methods, the highest expected percent of Maximum Permissible Exposure at ground level is **39.49% of the FCC General Population/Uncontrolled limit**.

As noted previously, the calculated % MPE levels are more conservative (higher) than the actual signal levels will be from the finished modifications.

6. 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 FCC OET Bulletin 65 Edition 97-01, ANSI/IEEE Std. C95.1 and ANSI/IEEE Std. C95.3.

March 29, 2022
Date

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

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[3]

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[4]

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 2: FCC Limits for Maximum Permissible Exposure (MPE)

[3] 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

[4] 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

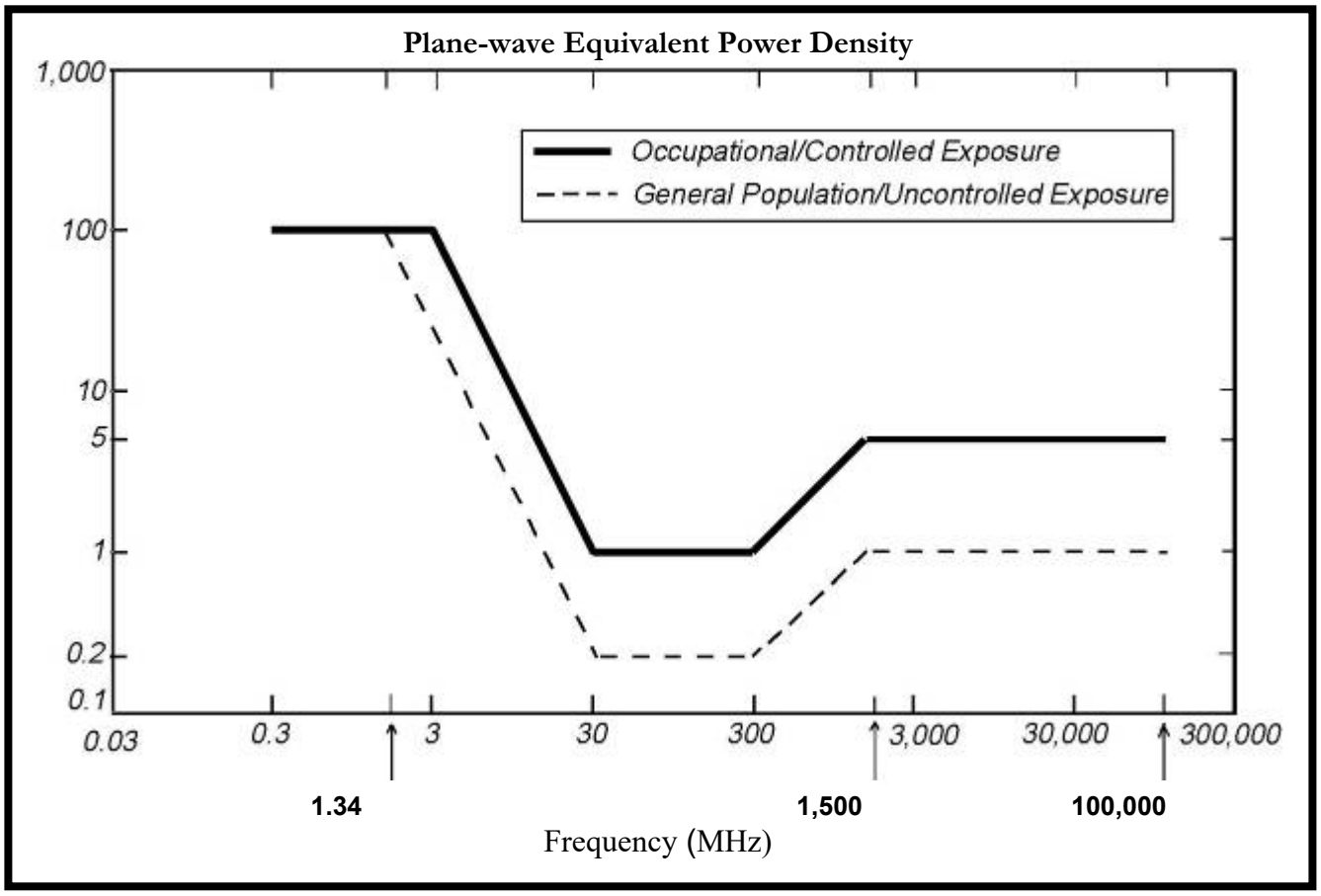
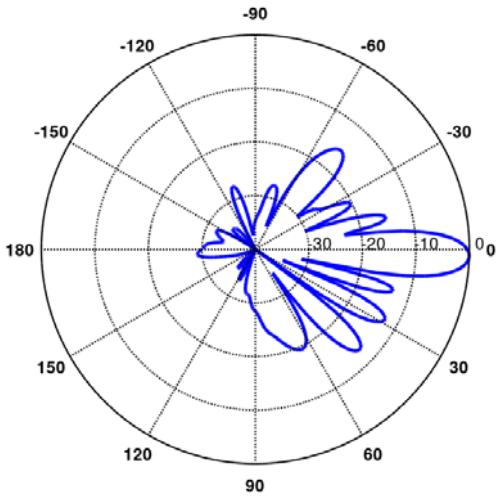
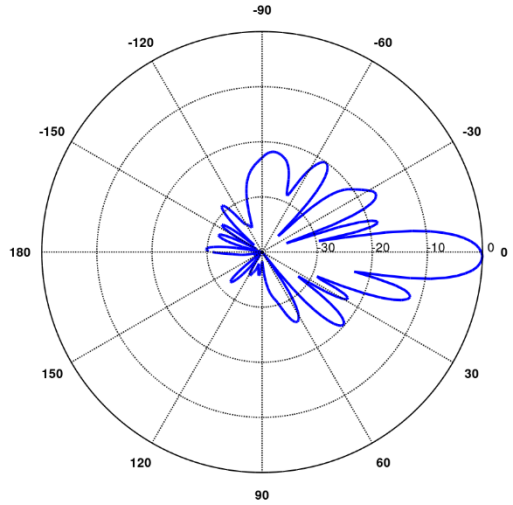
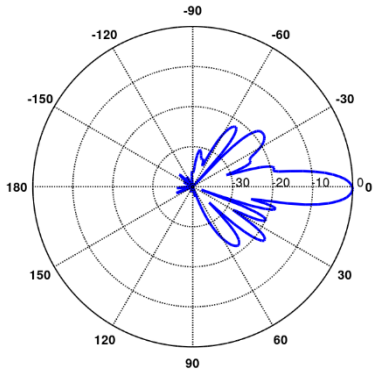


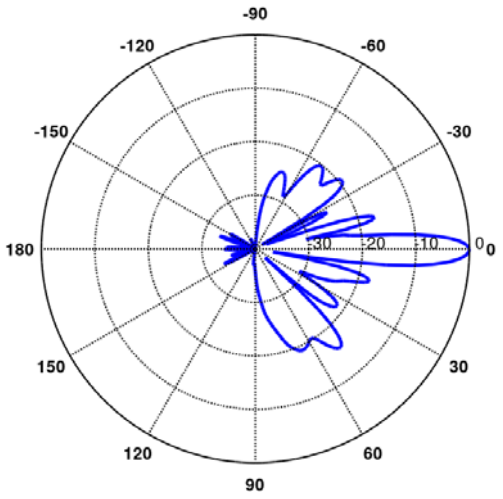
Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

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

700 MHz Manufacturer: Quintel Model #: QD8616-7 Frequency Band: 698-798 MHz Gain: 14.9 dBi Vertical Beamwidth: 9.7° Horizontal Beamwidth: 72° Polarization: Dual Linear 45° Size L x W x D: 96.0” x 22.0” x 9.6”	
700 MHz Manufacturer: Kathrein Model #: 800-10966 Frequency Band: 698 - 806MHz Gain: 15.7 dBi Vertical Beamwidth: 9.7° Horizontal Beamwidth: 66° Polarization: Dual Linear 45° Size L x W x D: 96.0” x 2.0” x 6.9”	
885 MHz Manufacturer: Kathrein Model #: 800-10966 Frequency Band: 824 - 896 MHz Gain: 16.4 dBi Vertical Beamwidth: 8.7° Horizontal Beamwidth: 65° Polarization: Dual Linear 45° Size L x W x D: 96.0” x 2.0” x 6.9”	

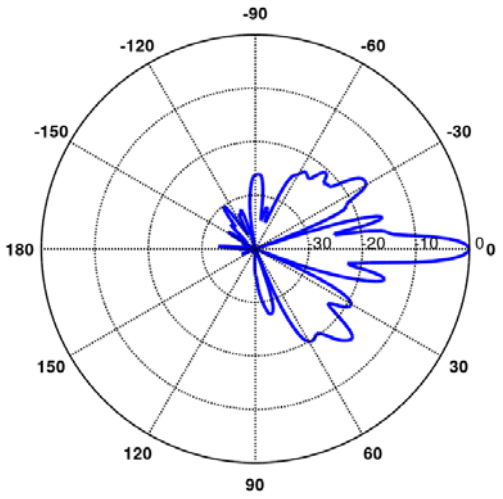
1900 MHz

Manufacturer:	Quintel
Model #:	QD8616-7
Frequency Band:	1920-1990 MHz
Gain:	17.2 dBi
Vertical Beamwidth:	6.2°
Horizontal Beamwidth:	62°
Polarization:	Dual Linear 45°
Size L x W x D:	96.0” x 22.0” x 9.6”



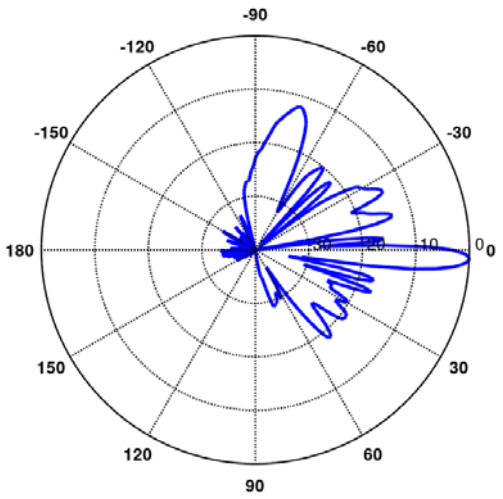
2100 MHz

Manufacturer:	Quintel
Model #:	QD8616-7
Frequency Band:	1920-2180 MHz
Gain:	17.5 dBi
Vertical Beamwidth:	5.5°
Horizontal Beamwidth:	62°
Polarization:	Dual Linear 45°
Size L x W x D:	96.0” x 22.0” x 9.6”



2300 MHz

Manufacturer:	Kathrein
Model #:	800-10966
Frequency Band:	2300-2400 MHz
Gain:	18.1 dBi
Vertical Beamwidth:	4.8°
Horizontal Beamwidth:	61°
Polarization:	Dual Linear 45°
Size L x W x D:	96.0” x 2.0” x 6.9”



PROJECT INFORMATION

SCOPE OF WORK:

ITEMS TO BE MOUNTED ON THE EXISTING MONOPOLE:
- NEW AT&T ANTENNAS: AIR6419 B77G (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T ANTENNAS: AIR6449 B77 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T ANTENNAS: QD8616-7 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T ANTENNAS: 800-10966 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- RELOCATED AT&T RRUS: 4478 B14 (TYP. OF 1 PER SECTOR, TOTAL OF 3). (TO BE RELOCATED TO POS. 2).
- RELOCATED AT&T RRUS: 4426 B66 (TYP. OF 1 PER SECTOR, TOTAL OF 3). (TO BE RELOCATED TO POS. 2).
- RELOCATED AT&T RRUS: RRUS-32 B30 (TYP. OF 1 PER SECTOR, TOTAL OF 3). (TO BE RELOCATED TO POS. 4).
- ADD (3) Y-CABLES.

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:
- ADD (1) 6648 + XCEDE CABLE.
- ADD (2) RECTIFIERS.

ITEMS TO BE REMOVED:
- EXISTING AT&T ANTENNAS: HPA-65R-BUU-H8 (TYP. OF 3 PER SECTOR, TOTAL OF 9).
- EXISTING AT&T RRUS: RRUS-11 B5 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T TMA'S: LGP21401 (TYP. OF 2 PER SECTOR, TOTAL OF 6).

ITEMS TO REMAIN:
- (3) ANTENNAS, (18) RRU'S, (4) SURGE ARRESTOR, (8) DC POWER & (3) FIBER.

SITE ADDRESS:	490 JEFFERSON AVENUE NEW LONDON, CT 06320
LATITUDE:	41.357902° N, 41° 21' 28.44" N
LONGITUDE:	72.123988° W, 72° 7' 26.36" W
TYPE OF SITE:	MONOPOLE / OUTDOOR
STRUCTURE HEIGHT:	115'-0"± 114'-4" DoD
RAD CENTER:	111'-0" LTE 110'-8" C-BAND
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
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A-2	ANTENNA LAYOUTS & ELEVATION	1
A-3	DETAILS	1
G-1	GROUNDING DETAILS	1
RF-1	RF PLUMBING DIAGRAM	1

SBA SITE NAME: NEW LONDON JEFFERSON AVENUE
SBA SITE #: CT22093

SITE NUMBER: CT2838

SITE NAME: NEW LONDON JEFFERSON AVENUE

FA CODE: 10152339

PACE ID: MRCTB056163, MRCTB056539, MRCTB054458

PROJECT: 5G NR 1SR C-BAND_BBU RECONFIGURATION UPGRADE

VICINITY MAP

DIRECTIONS TO SITE:

MERGE ONTO I-91 N. CONTINUE ON I-91 N TO EAST HARTFORD. TAKE EXIT 3 FROM CT-2 W MERGE ONTO I-91 N. TAKE EXIT 29 TO MERGE ONTO CT-15 N/US-5 N TOWARD I-84 E/E HARTFORD/BOSTON. CONTINUE ONTO CT-15 N. TAKE EXIT 90 TOWARD CT-2 W. KEEP RIGHT TO STAY ON EXIT 90, FOLLOW SIGNS FOR CT-2 W/E RIVER DR AND MERGE ONTO CT-2 W. TAKE EXIT 3 FOR PITKIN ST. CONTINUE ON PITKIN ST TO YOUR DESTINATION. TURN LEFT ONTO PITKIN ST. TURN RIGHT ONTO DARLIN ST. TURN LEFT ONTO E RIVER DR. TURN RIGHT. TURN RIGHT. DESTINATION WILL BE ON THE LEFT. 99 E RIVER DR EAST HARTFORD, CT 06108

GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T MOBILITY REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
4. CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN.

72 HOURS

CALL
BEFORE YOU DIG
CALL TOLL FREE 1-800-922-4455
OR CALL 811

UNDERGROUND SERVICE ALERT

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

12 INDUSTRIAL WAY
SALEM, NH 03079

500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

SITE NUMBER: CT2838
SITE NAME: NEW LONDON JEFFERSON AVENUE
SBA SITE: CT22093

490 JEFFERSON AVENUE
NEW LONDON, CT 06320
NEW LONDON COUNTY

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	03/09/22	ISSUED FOR CONSTRUCTION	JC	HC	DPH
A	01/24/22	ISSUED FOR REVIEW	JC	HC	DPH

SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: JC

STATE OF CONNECTICUT · DANIEL P. HAMM · No. 24178 · LICENSED PROFESSIONAL ENGINEER

AT&T

TITLE SHEET

5GNR 1SR C-BAND_BBU RECONFIGURATION UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT2838	T-1	1

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81 STANDARDS) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS AND #2 AWG STRANDED COPPER FOR OUTDOOR BTS.

6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

   CONTRACTOR – SAI
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T MOBILITY

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL 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 CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."

17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

20. **APPLICABLE BUILDING CODES:**
    SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

    BUILDING CODE: IBC 2015 WITH 2018 CT STATE BUILDING CODE AMENDMENTS
    ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE (NFPA 70-2017)

    SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

    AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;

    AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;

    TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-H, STRUCTURAL STANDARDS FOR STEEL

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BTCW	BARE TINNED SOLID COPPER WIRE	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BGR	BURIED GROUND RING	MIN	MINIMUM	TBRR	TO BE REMOVED AND REPLACED
BTS	BASE TRANSCEIVER STATION	P	PROPOSED	TYP	TYPICAL
E	EXISTING	NTS	NOT TO SCALE	UG	UNDER GROUND
EGB	EQUIPMENT GROUND BAR	RAD CL	RADIATION CENTER LINE (ANTENNAS)	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		

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SITE NUMBER: CT2838
SITE NAME: NEW LONDON JEFFERSON AVENUE
SBA SITE: CT22093

490 JEFFERSON AVENUE
NEW LONDON, CT 06320
NEW LONDON COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	03/09/22	ISSUED FOR CONSTRUCTION	JC	DPH	
A	01/24/22	ISSUED FOR REVIEW	JC	DPH	

SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: JC

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

GENERAL NOTES

SCORE TSR C-BAND_BBU RECONFIGURATION UPGRADE

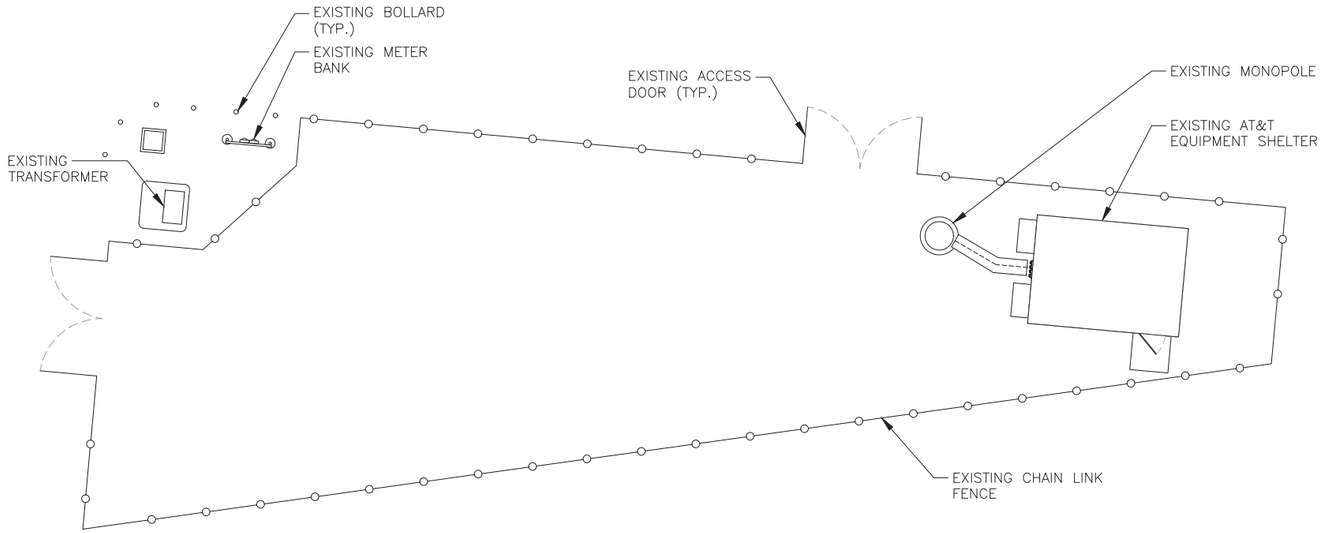
ISSUE NUMBER	DRAWING NUMBER	REV
CT2838	GN-1	1

NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

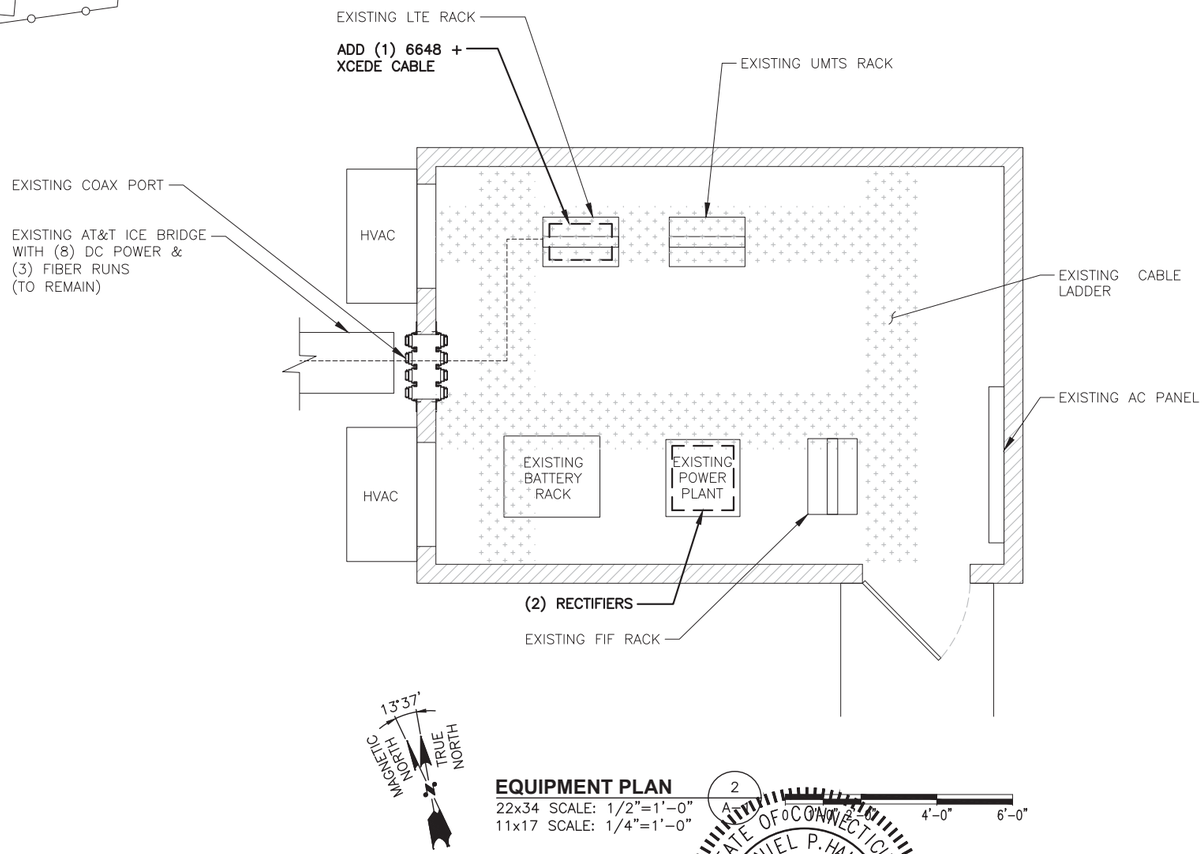


COMPOUND PLAN

22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"

1 / A-1

0 4'-0" 8'-0" 16'-0" 24'-0"



EQUIPMENT PLAN

22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"

2 / A-1

0 2'-0" 4'-0" 6'-0"

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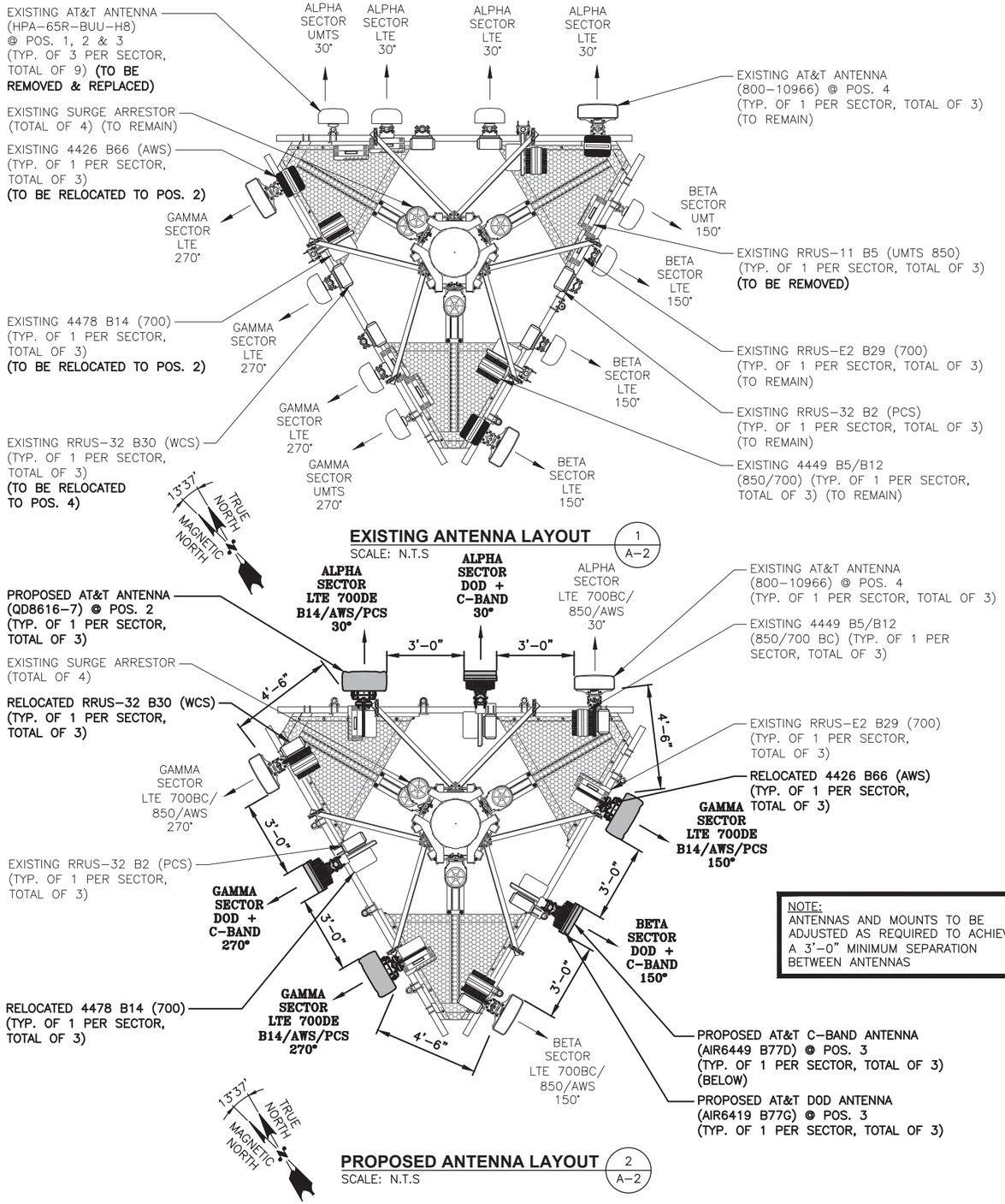
STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

COMPOUND & EQUIPMENT PLANS

BB CNR TSR C-BAND_BBU RECONFIGURATION UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT2838	A-1	1



EXISTING ANTENNA LAYOUT

SCALE: N.T.S

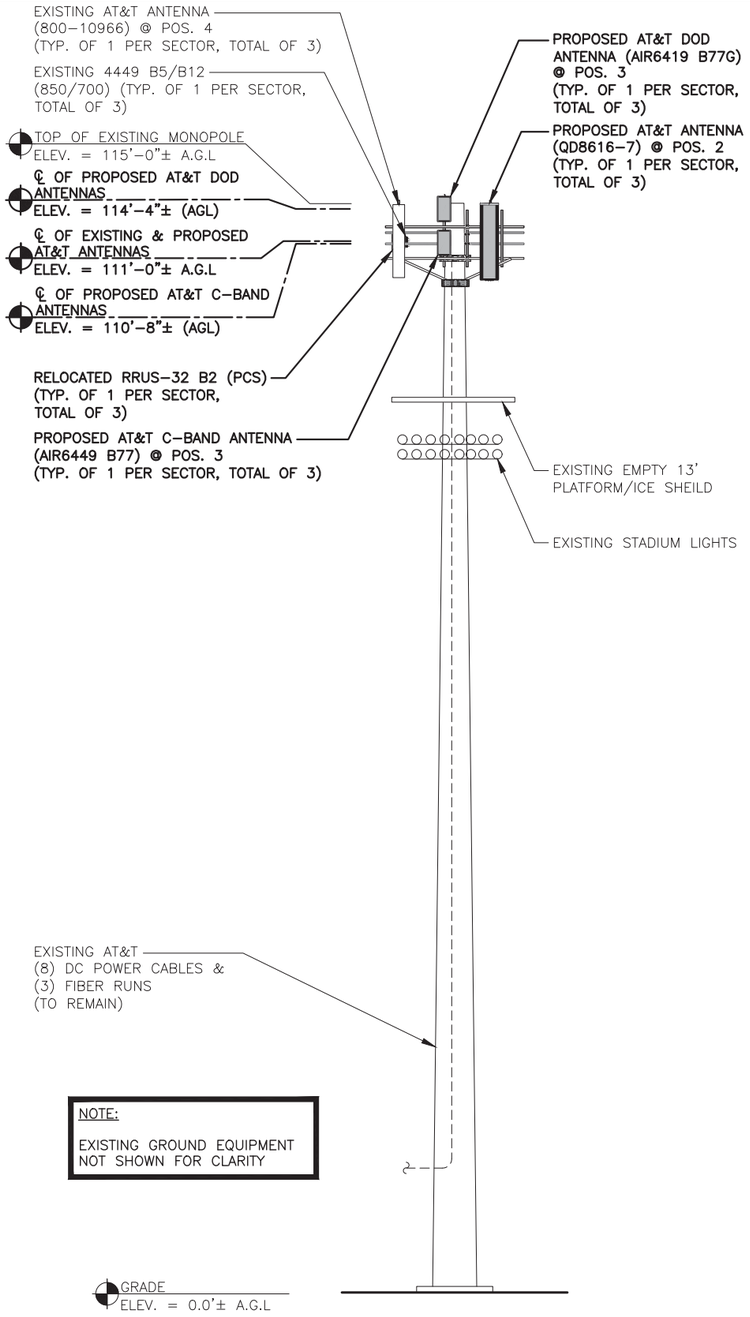
(1 / A-2)

NOTE:
ANTENNAS AND MOUNTS TO BE ADJUSTED AS REQUIRED TO ACHIEVE A 3'-0" MINIMUM SEPARATION BETWEEN ANTENNAS

PROPOSED ANTENNA LAYOUT

SCALE: N.T.S

(2 / A-2)



NOTE:
EXISTING GROUND EQUIPMENT NOT SHOWN FOR CLARITY

ELEVATION

22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"

(3 / A-2)

NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC DATED: JANUARY 14, 2022.

HUDSON Design Group LLC
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SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: JC

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

ANTENNA LAYOUTS & ELEVATION

5GCNR TSR C-BAND_BBU RECONFIGURATION UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT2838	A-2	1

ANTENNA SCHEDULE

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	FREQUENCY	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	–	–	–	–	–	–	–	–	–	–	–	(E) (1) RAYCAP DC6-48-60-18-8F
A2	**PROPOSED**	**LTE 700 B14/AWS/PCS**	**QD8616-7**	**96"x22"x9.6"**	**111'-0"±**	**30°**	**–**	(E)(1) RRUS-32 B2 (PCS) (E)(1) B14 4478 (700) (E)(1) 4426 B66 (AWS) (E)(1) E2 B29 (700)	–	–	(2) DC POWER (1) FIBER	
A4	**PROPOSED**	**DOD C-BAND**	**AIR6419 B77G AIR6449 B77 (STACKED)**	**31.1"x16.1"x7.3" 30.6"x15.9"x10.6"**	**114'-4"± 110'-8"±**	**30°**	–	–	–	–	–	
A4	EXISTING	LTE 700 B14/AWS/PCS	800-10966	96"x20"x6.9"	111'-0"±	30°	–	(E)(1) 4449 B5/B12 (850/700) (E)(1) RRUS-32 B30 (WCS)	–	–	–	
B1	–	–	–	–	–	–	–	–	–	–	–	(E) (1) RAYCAP DC6-48-60-18-8F
B2	**PROPOSED**	**LTE 700 B14/AWS/PCS**	**QD8616-7**	**96"x22"x9.6"**	**111'-0"±**	**150°**	–	(E)(1) RRUS-32 B2 (PCS) (E)(1) B14 4478 (700) (E)(1) 4426 B66 (AWS) (E)(1) E2 B29 (700)	–	–	(2) DC POWER (1) FIBER	
B3	**PROPOSED**	**DOD C-BAND**	**AIR6419 B77G AIR6449 B77 (STACKED)**	**31.1"x16.1"x7.3" 30.6"x15.9"x10.6"**	**114'-4"± 110'-8"±**	**150°**	–	–	–	–	–	
B4	EXISTING	LTE 700 B14/AWS/PCS	800-10966	96"x20"x6.9"	111'-0"±	150°	–	(E)(1) 4449 B5/B12 (850/700) (E)(1) RRUS-32 B30 (WCS)	–	–	–	
C1	–	–	–	–	–	–	–	–	–	–	–	(E) (1) RAYCAP DC6-48-60-18-8F (E) (1) RAYCAP DC6-48-60-0-8F
C2	**PROPOSED**	**LTE 700 B14/AWS/PCS**	**QD8616-7**	**96"x22"x9.6"**	**111'-0"±**	**270°**	–	(E)(1) RRUS-32 B2 (PCS) (E)(1) B14 4478 (700) (E)(1) 4426 B66 (AWS) (E)(1) E2 B29 (700)	–	–	(4) DC POWER (1) FIBER	
C3	**PROPOSED**	**DOD C-BAND**	**AIR6419 B77G AIR6449 B77 (STACKED)**	**31.1"x16.1"x7.3" 30.6"x15.9"x10.6"**	**114'-4"± 110'-8"±**	**270°**	–	–	–	–	–	
C4	EXISTING	LTE 700 B14/AWS/PCS	800-10966	96"x20"x6.9"	111'-0"±	270°	–	(E)(1) 4449 B5/B12 (850/700) (E)(1) RRUS-32 B30 (WCS)	–	–	–	

RRU CHART

QUANTITY	MODEL	SIZE (L x W x D)
E(3)	4426 B66 (AWS)	14.9"x13.2"x5.8"
E(3)	4478 B14 (700)	18.1"x13.4"x8.3"
E(3)	4449 (850/700)	17.9"x13.2"x10.4"
E(3)	RRUS-32 B30 (WCS)	27.2"x12.1"x7.0"
E(3)	RRUS-32 B2 (PCS)	27.2"x12.1"x7.0"
E(3)	RRUS-E2 B29 (700)	20.4"x18.5"x7.5"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

NOTE:

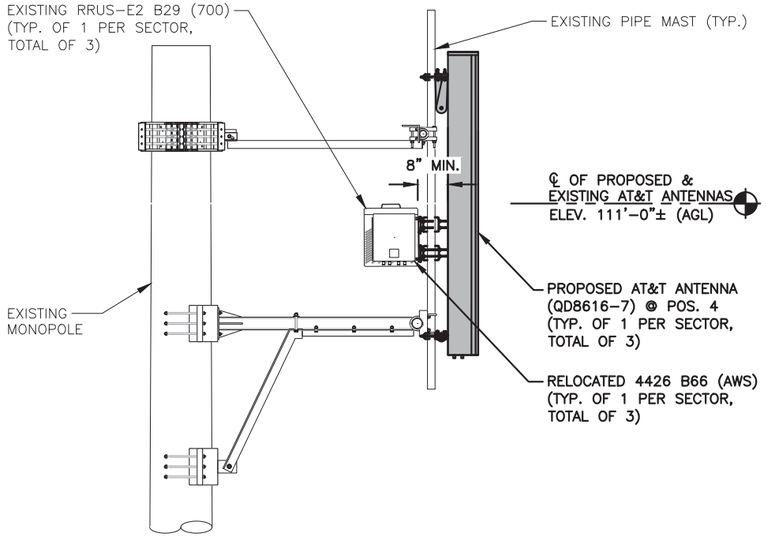
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

NOTE:

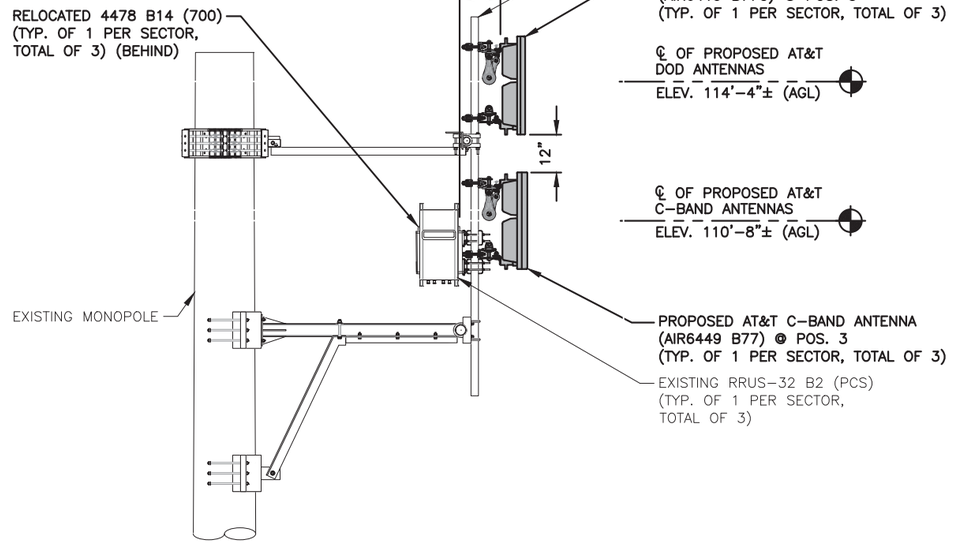
AN ANALYSIS FOR THE CAPACITY OF EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:
HUDSON DESIGN GROUP, LLC
DATED: JANUARY 14, 2022.



FINAL ANTENNA SCHEDULE (1 / A-3)
SCALE: N.T.S

PROPOSED LTE ANTENNA MOUNTING DETAIL (2 / A-3)
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"

0 1'-0" 2'-0" 4'-0" 6'-0"



PROPOSED C-BAND ANTENNA MOUNTING DETAIL (3 / A-3)
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"

0 1'-0" 2'-0" 4'-0" 6'-0"

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SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: JC

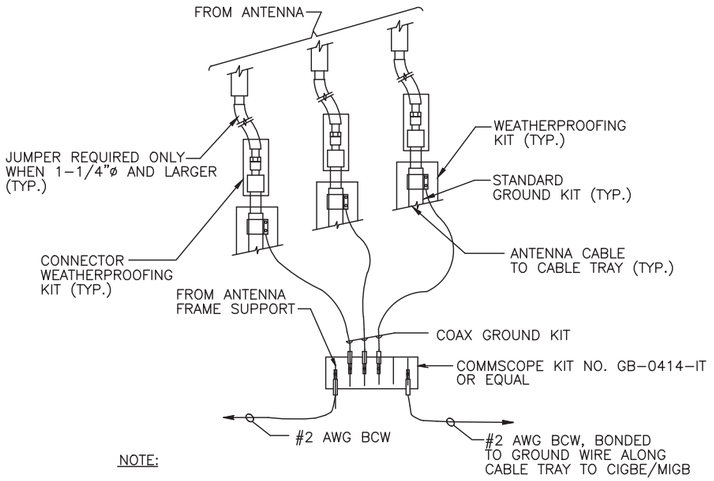
STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

DETAILS

SCENIC TSR C-BAND_BBU RECONFIGURATION UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT2838	A-3	1



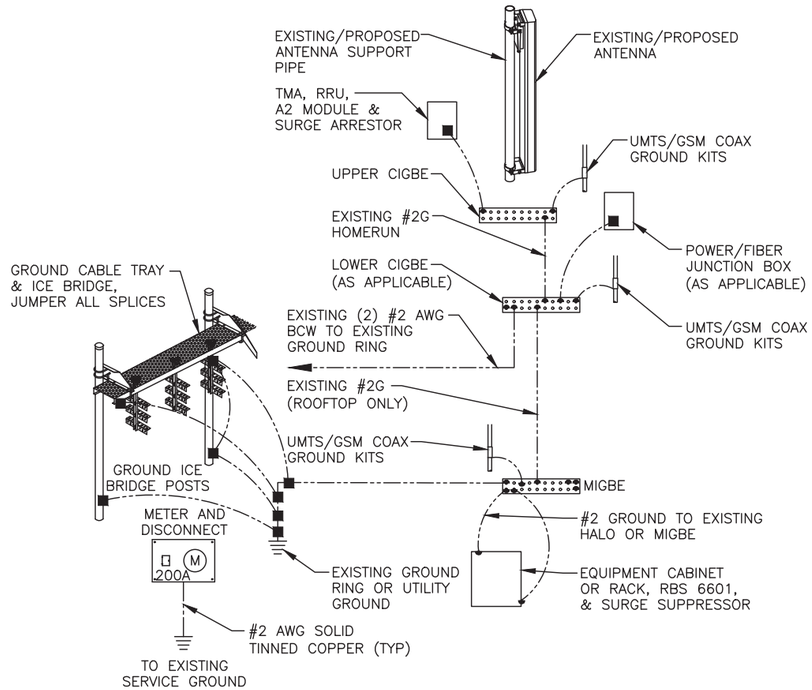
NOTE:

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

GROUND WIRE TO GROUND BAR CONNECTION DETAIL

1 / G-1

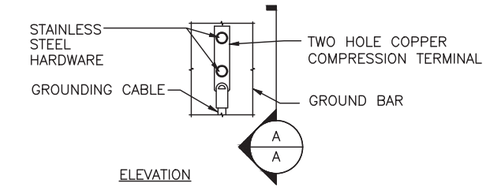
SCALE: N.T.S



GROUNDING RISER DIAGRAM

2 / G-1

SCALE: N.T.S



NOTES:

1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATION.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB

TYPICAL GROUND BAR CONNECTION DETAIL

3 / G-1

SCALE: N.T.S

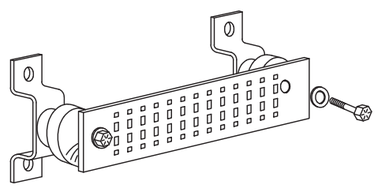
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" – SURGE PRODUCERS

CABLE ENTRY PORTS (HATCH PLATES) (#2 AWG)
GENERATOR FRAMEWORK (IF AVAILABLE) (#2 AWG)
TELCO GROUND BAR
COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2 AWG)
+24V POWER SUPPLY RETURN BAR (#2 AWG)
-48V POWER SUPPLY RETURN BAR (#2 AWG)
RECTIFIER FRAMES.

SECTION "A" – SURGE ABSORBERS

INTERIOR GROUND RING (#2 AWG)
EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2 AWG)
METALLIC COLD WATER PIPE (IF AVAILABLE) (#2 AWG)
BUILDING STEEL (IF AVAILABLE) (#2 AWG)



GROUND BAR - DETAIL (AS REQUIRED)

SCALE: N.T.S

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SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: JC

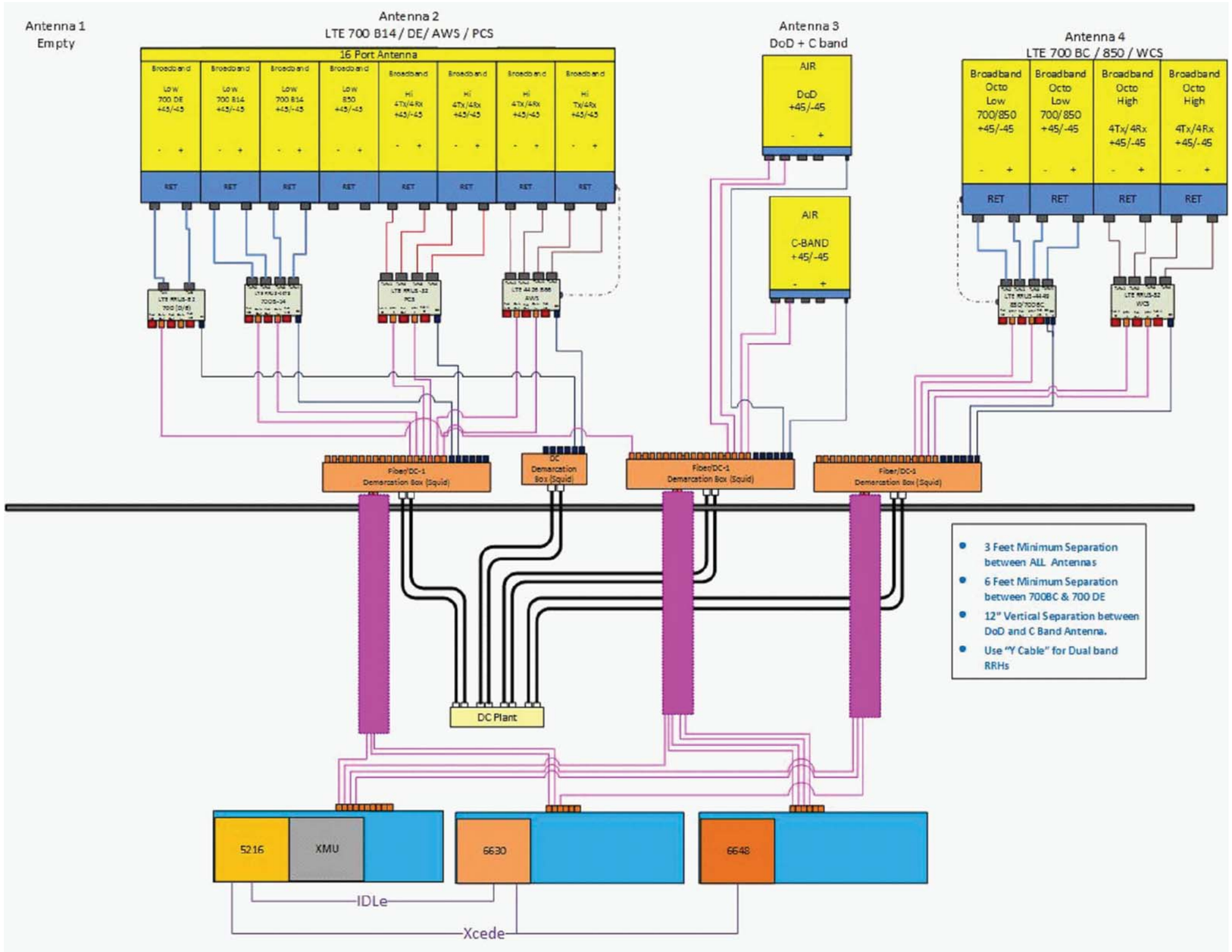
STATE OF CONNECTICUT · DANIEL P. HAMM · No. 21178 · LICENSED PROFESSIONAL ENGINEER

AT&T

GROUNDING DETAILS

5G-NR TSR C-BAND_BBU RECONFIGURATION UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT2838	G-1	1



RF PLUMBING DIAGRAM (1 / RF–1)
SCALE: N.T.S

NOTE:
1. CONTRACTOR TO CONFIRM ALL PARTS.
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS

NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

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RF PLUMBING DIAGRAM
5G NR 1SR C–BAND_BBU RECONFIGURATION UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT2838	RF–1	1

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Structural Analysis Report

Existing 114 ft Valmont Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT22093-A

Customer Site Name: New London (Bates Wood)

Carrier Name: AT&T (App#: 186285-1)

Carrier Site ID / Name: CT2838 / New London Offload for CT2080

Site Location: 490 Jefferson Avenue

New London, Connecticut

NEW LONDON County

Latitude: 41.356100

Longitude: -72.124200

Analysis Result:

Max Structural Usage: 34.2% [Pass]

Max Foundation Usage: 28% [Pass]

Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By: Suvash Chapain

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Structural Analysis Report

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Introduction

The purpose of this report is to summarize the analysis results on the 114 ft Valmont Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Valmont, file id 22890903, on November 19, 2013.
Foundation Drawing	Valmont, dwg #B-138201, on January 14, 2014.
Geotechnical Report	Terracon, project #J2135212, on Nobember 26, 2013.
Modification Drawings	N/A
Mount Analysis	Hudson Design Group, FA# 10152339, dated January 14, 2022

Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the TIA-222-G-2**.** In accordance with this standard, the structure was analyzed using **TESPoles,** a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} =135.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 105.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.161, S_1 = 0.058

This structural analysis is based upon the tower being classified as a Structure Class II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run.

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	111.0	3	Kathrein 800 10966 - Panel	Platform w/ Handrails, Kicker Kit, (3) Sector Frame Stabilizer Kit (Site Pro 1 SFS-H) & (6) Reinforcing Angles	(3) 1/2" Fiber; (8) 3/4" DC Power; (3) 5/16" RET Line (1) 2" Conduit*	AT&T
-		9	Cci HPA-65R-BUU-H8 - Panel			
2		3	Ericsson RRUS 32 B30 RRU's			
3		3	Ericsson RRUS 4478 B14 RRU's			
4		3	Ericsson RRUS 4449 B5, B12 RRU's			
5		3	Ericsson RRUS E2 B29 RRU's			
6		3	Ericsson RRUS 32 RRU's			
7		3	Ericsson RRUS 4426 B66 RRU's			
8		3	Ericsson RRUS-11 RRU's			
9		3	Ericsson RRU A2 RRU's			
10		4	Raycap DC6-48-60-18-8F DC Surge			
11		1	GPS			
12	94.0	1	Ice Shield	Direct	-	-
13	90.0	1	10 Sport Lights	Direct	-	-
14	89.0	1	Light support	Direct	-	-
15	88.0	1	10 Sport Lights	Direct	-	-

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	113.0	3	Ericsson Air6419 B77D-Panel	Low Profile Platform with (3) Sector Frame Stabilizer Kit, (SitePro1 P/N SFS-H) & (6) Reinforcing Angles	(3) 1/2" Fiber; (8) 3/4" DC Power; (3) 5/16" RET Line (1) 2" Conduit*	AT&T
2	111.0	3	Kathrein 800 10966 - Panel			
3		3	Quintel QD8616-7 - Panel			
4		3	Ericsson RRUS 32 B30			
5		3	Ericsson RRUS 4478 B14			
6		3	Ericsson RRUS 4449 B5, B12			
7		3	Ericsson RRUS E2 B29			
8		3	Ericsson RRUS 32			
9		3	Ericsson RRUS 4426 B66			
10		3	Ericsson RRUS-11			
11		3	Ericsson RRU A2			
12		4	Raycap DC6-48-60-18-8F-OVP			
13		1	GPS			
14	109.0	3	Ericsson Air6449 B77G-Panel			

* 2" Conduit housing (2) DC lines.

All transmission lines are considered running inside of the pole shafts.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**33.7%**	**34.2%**	**19.3%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	2978.3	37.0	45.7

The foundation has been investigated using the supplied documents and soils report and was found adequate. Therefore, no modification to the foundation will be required.

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 0.2696 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the TIA-222 Standard under the design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC.** Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.

2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.

3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the ANSI/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.

4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.

5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.

6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Usage Diagram - Max Ratio 33.69% at 0.0ft

Structure:	CT22093-A-SBA	**Code:**	EIA/TIA-222-G	2/14/2022
Site Name:	New London (Bates Wood)	**Exposure:**	C	
Height:	114.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

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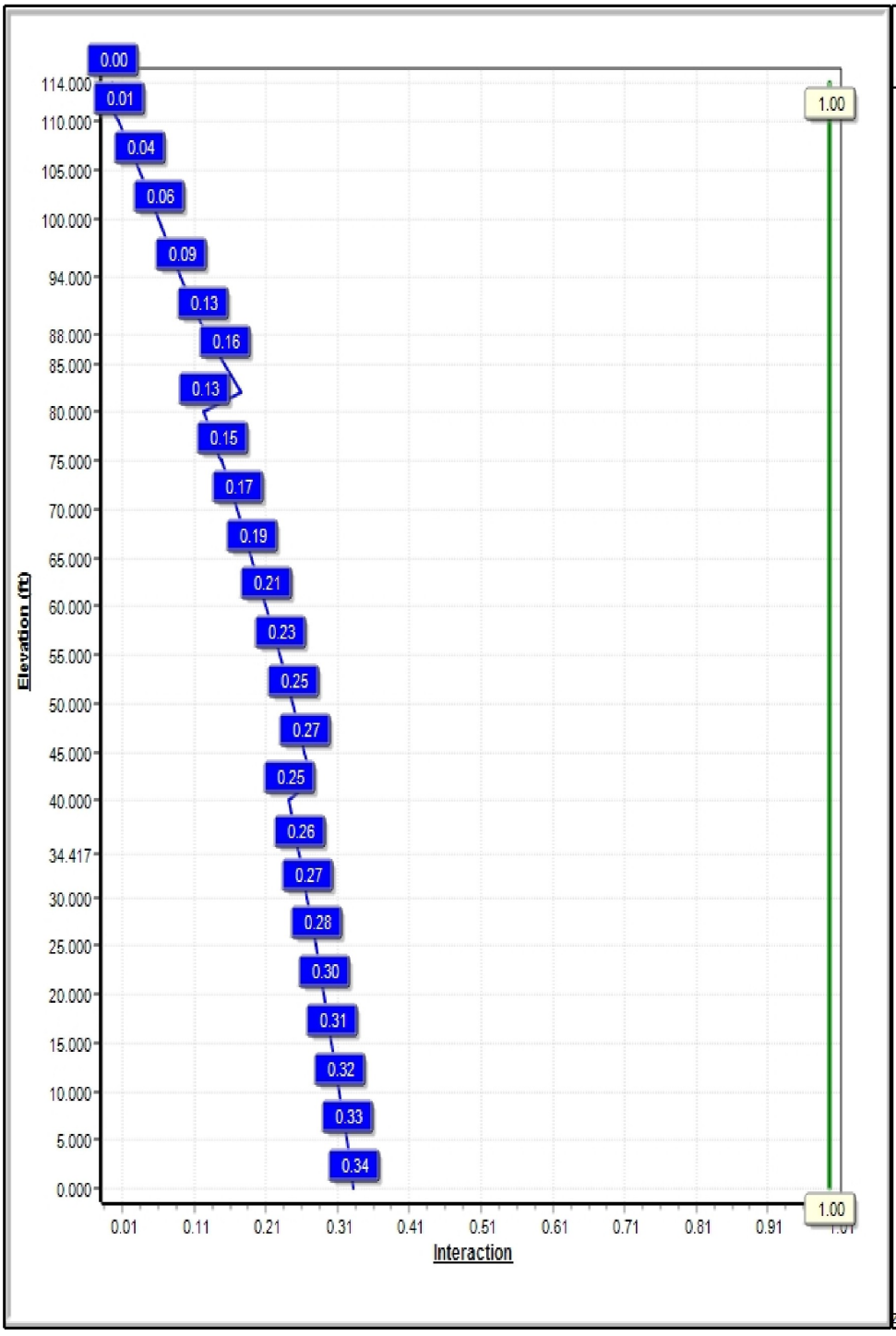
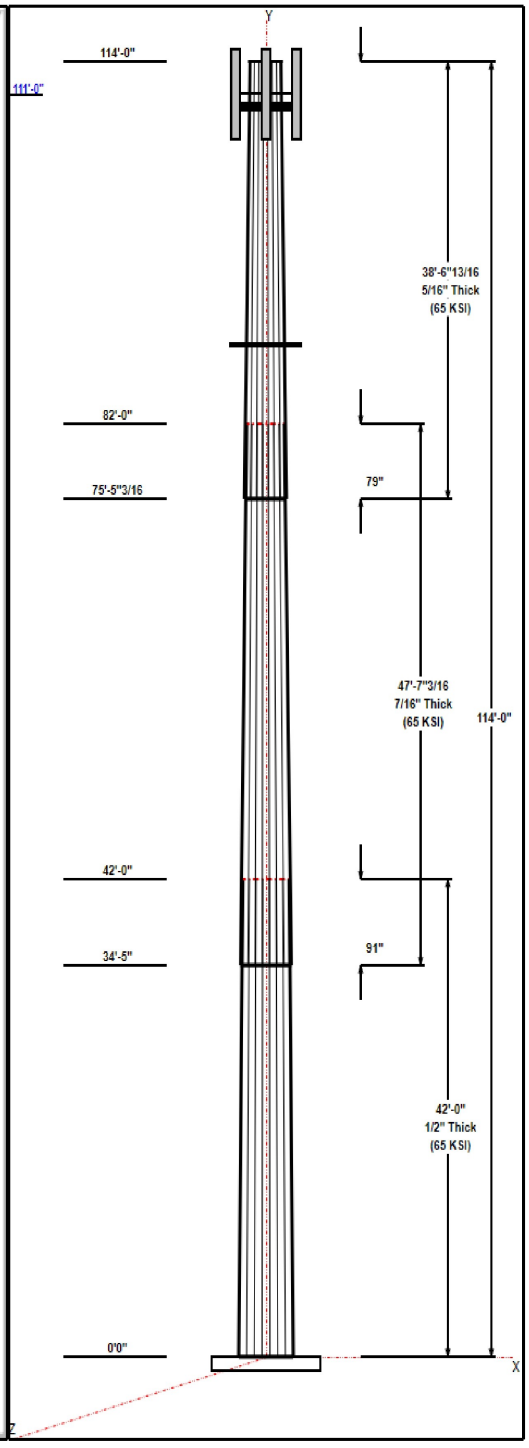
Dead Load Factor:	1.20	**Iterations:**	16
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 105 mph Wind





Structure: CT22093-A-SBA

Type: Tapered
Site Name: New London (Bates Wood)
Height: 114.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 16 Sided
Taper: 0.26503

2/14/2022

Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	42.00	53.12	64.25	0.500		0.26503	65
2	47.60	43.39	56.00	0.438	Slip	0.26503	65
3	38.57	35.54	45.76	0.313	Slip	0.26503	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
114.00	117.50	1	Lightning Rod	AT&T
111.00	111.00	6	Reinforcing Angles	AT&T
111.00	111.00	3	QD8616-7	AT&T
111.00	113.00	3	Air6419 B77D	AT&T
111.00	109.00	3	AIR 6419 B77G	AT&T
111.00	111.00	1	Kicker Kit	AT&T
111.00	113.50	1	Sector Frame Stabilizer Kit	AT&T
111.00	111.00	3	Kathrein 800 10966	AT&T
111.00	111.00	3	Ericsson RRUS 32 B30	AT&T
111.00	111.00	3	Ericsson RRUS 4478 B14	AT&T
111.00	111.00	3	Ericsson RRUS 4449 B5,	AT&T
111.00	111.00	3	Ericsson RRUS E2 B29	AT&T
111.00	111.00	3	Ericsson RRUS 32 RRU's	AT&T
111.00	111.00	3	Ericsson RRUS 4426 B66	AT&T
111.00	111.00	3	Ericsson RRUS-11 RRU's	AT&T
111.00	111.00	3	Ericsson RRU A2 RRU's	AT&T
111.00	111.00	4	Raycap DC6-48-60-18-8F	AT&T
111.00	111.00	1	GPS	AT&T
111.00	111.00	1	Platform w/ Handrails	AT&T
94.00	94.00	1	Ice shield	
90.00	90.00	1	Sport Lights	
89.00	89.00	1	Light support	
88.00	88.00	1	Sport Lights	

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
7.00	111.00	Inside	1/2" Fiber	AT&T
7.00	111.00	Inside	2" Conduit	AT&T
7.00	111.00	Inside	3/4" DC Power	AT&T
7.00	111.00	Inside	5/16" RET Line	AT&T

Anchor Bolts

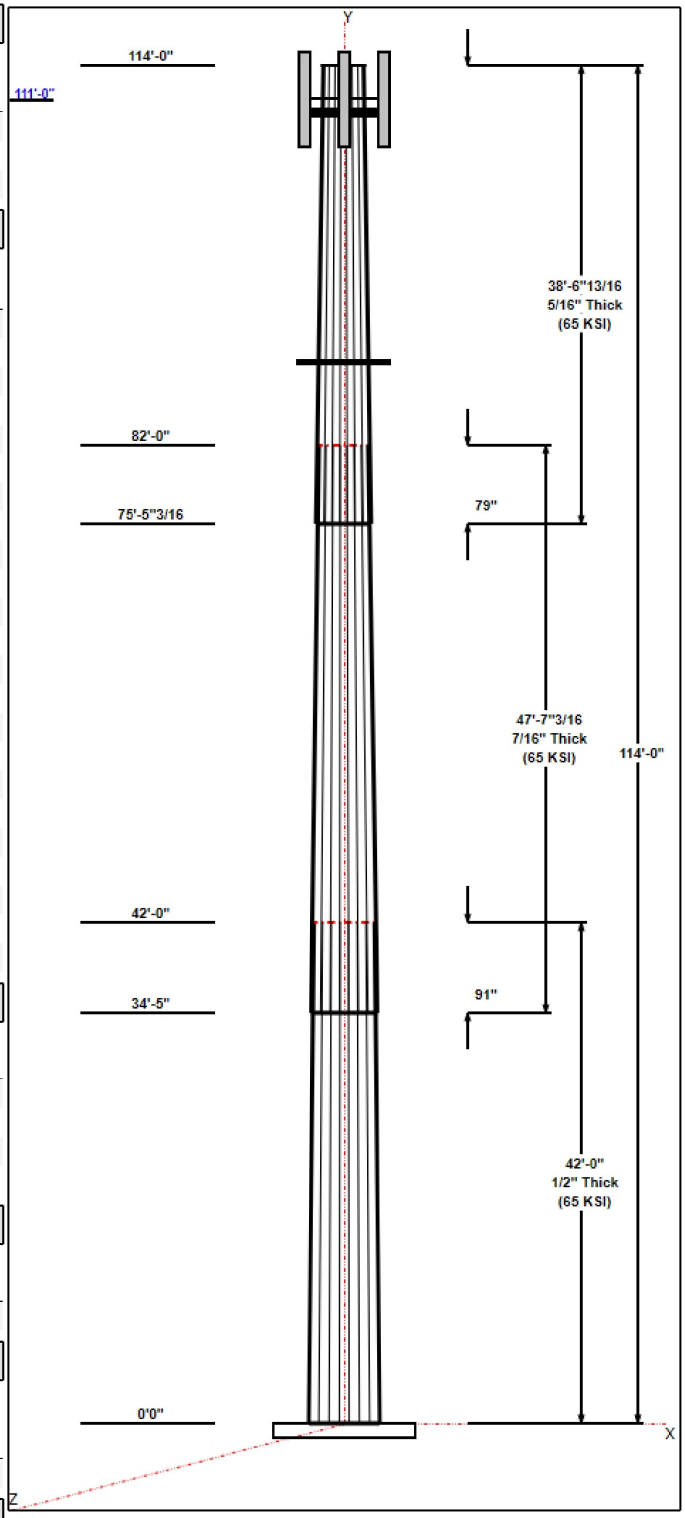
Qty	Specifications	Grade (ksi)	Arrangement
24	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
3.5000	78.9	50.0	Polygon

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 105 mph Wind	2978.3	37.0	45.7
0.9D + 1.6W 105 mph Wind	2971.0	37.0	34.2



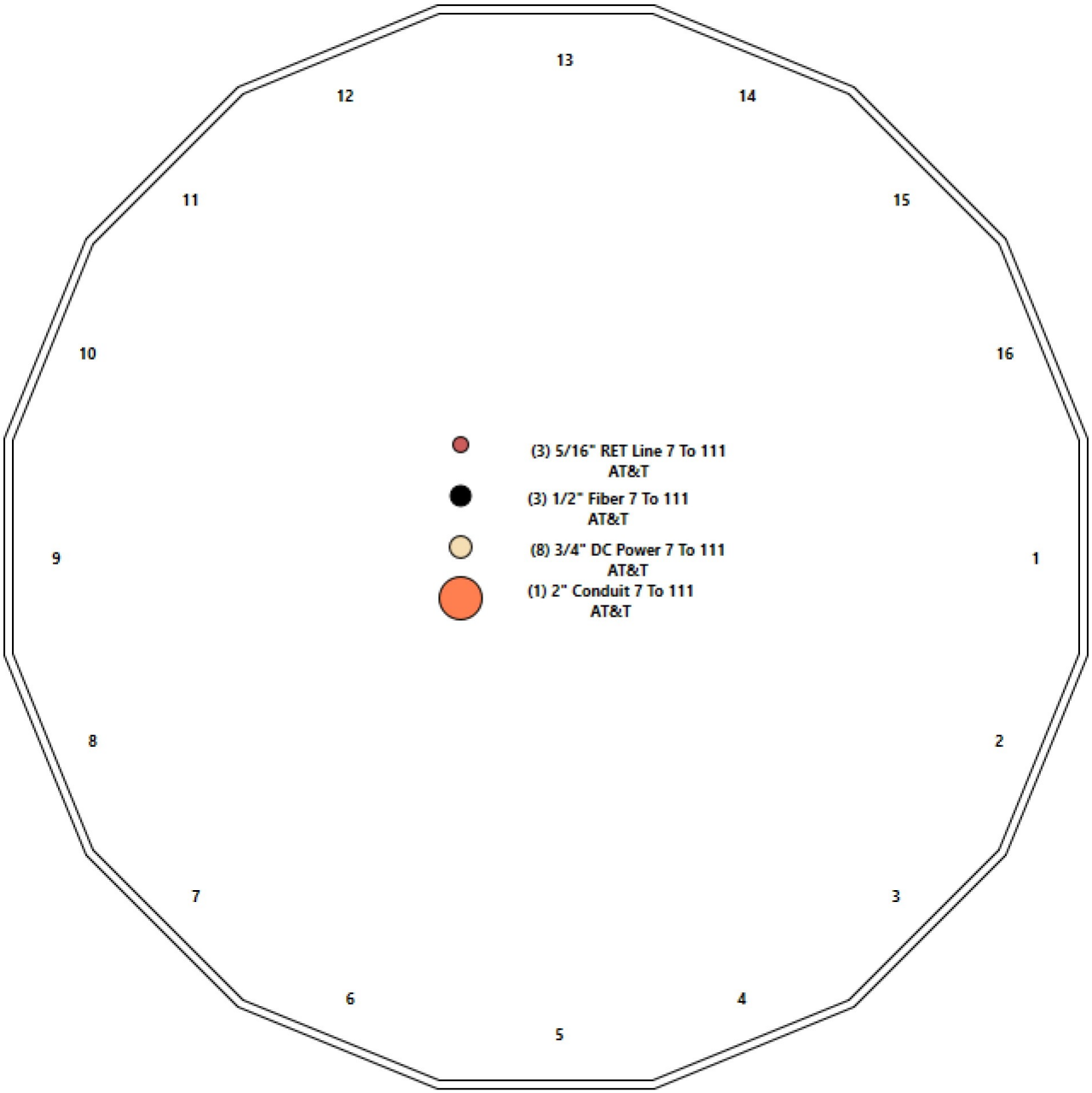
1.2D + 1.0Di + 1.0Wi 50 mph Wind	726.9	9.0	66.7
1.2D + 1.0E	190.0	2.0	45.7
0.9D + 1.0E	189.5	2.0	34.3
1.0D + 1.0W 60 mph Wind	606.8	7.5	38.1

Structure: CT22093-A-SBA - Coax Line Placement

Type: Monopole
Site Name: New London (Bates Wood)
Height: 114.00 (ft)

2/14/2022

Tower Engineering Solutions



Shaft Properties

Structure:	CT22093-A-SBA	**Code:**	TIA-222-G	2/14/2022	
Site Name:	New London (Bates Wood)	**Exposure:**	C		
Height:	114.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 5	

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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	16	42.000	0.5000	65		0.00	13,263
2	16	47.600	0.4380	65	Slip	91.00	11,148
3	16	38.567	0.3130	65	Slip	79.00	5,285
					Total Shaft Weight:		**29,697**

	Bottom						Top						
Sec. No.	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Taper**
1	64.25	0.00	101.6	52205.42	23.97	128.50	53.12	42.00	83.93	29356.3	19.54	106.2	0.265025
2	56.00	34.42	77.64	30284.70	23.84	127.86	43.39	82.02	60.01	13986.6	18.11	99.06	0.265025
3	45.76	75.43	45.38	11840.57	27.49	146.20	35.54	114.00	35.17	5513.71	20.99	113.5	0.265025

Load Summary

Structure:	CT22093-A-SBA	**Code:**	TIA-222-G	2/14/2022	
Site Name:	New London (Bates Wood)	**Exposure:**	C		
Height:	114.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

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Discrete Appurtenances

				No Ice			Ice				
No.	Elev (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
1	114.00	Lightning Rod	1	35.00	1.05	1.00	65.56	3.359	1.00	0.00	3.50
2	111.00	Reinforcing Angles	6	65.00	1.50	1.00	191.59	4.803	1.00	0.00	0.00
3	111.00	QD8616-7	3	98.00	13.47	0.92	383.22	13.072	0.92	0.00	0.00
4	111.00	Air6419 B77D	3	66.10	3.80	0.76	159.46	4.572	0.76	0.00	2.00
5	111.00	AIR 6419 B77G	3	66.10	3.80	0.76	159.46	4.572	0.76	0.00	-2.00
6	111.00	Kicker Kit	1	464.91	9.50	1.00	779.83	19.153	1.00	0.00	0.00
7	111.00	Sector Frame Stabilizer Kit (Site Pro	1	197.00	6.30	1.00	463.89	12.701	1.00	0.00	2.50
8	111.00	Kathrein 800 10966	3	114.60	17.36	0.72	460.14	19.112	0.72	0.00	0.00
9	111.00	Ericsson RRUS 32 B30 RRU's	3	60.00	2.74	0.67	144.79	3.446	0.67	0.00	0.00
10	111.00	Ericsson RRUS 4478 B14 RRU's	3	59.40	2.02	0.67	99.64	2.636	0.67	0.00	0.00
11	111.00	Ericsson RRUS 4449 B5, B12 RRU's	3	71.00	1.97	0.67	145.34	2.537	0.67	0.00	0.00
12	111.00	Ericsson RRUS E2 B29 RRU's	3	60.00	3.15	0.67	123.40	3.833	0.67	0.00	0.00
13	111.00	Ericsson RRUS 32 RRU's	3	77.00	1.65	0.67	123.59	2.211	0.67	0.00	0.00
14	111.00	Ericsson RRUS 4426 B66 RRU's	3	48.40	1.65	0.67	101.98	2.170	0.67	0.00	0.00
15	111.00	Ericsson RRUS-11 RRU's	3	55.00	2.52	0.67	130.63	3.135	0.67	0.00	0.00
16	111.00	Ericsson RRU A2 RRU's	3	15.00	1.57	0.67	57.98	2.076	0.67	0.00	0.00
17	111.00	Raycap DC6-48-60-18-8F DC Surge	4	32.80	3.70	0.67	94.68	5.409	0.67	0.00	0.00
18	111.00	GPS	1	10.00	1.00	0.60	38.45	1.691	0.60	0.00	0.00
19	111.00	Platform w/ Handrails	1	1600.00	32.00	1.00	3637.56	59.095	1.00	0.00	0.00
20	94.00	Ice shield	1	500.00	40.00	1.00	999.66	79.973	1.00	0.00	0.00
21	90.00	Sport Lights	1	800.00	40.00	1.00	1595.99	79.799	1.00	0.00	0.00
22	89.00	Light support	1	500.00	28.00	1.00	996.94	55.828	1.00	0.00	0.00
23	88.00	Sport Lights	1	800.00	40.00	1.00	1594.20	79.710	1.00	0.00	0.00
		Totals:	**55**	**7,799.91**			**17,969.16**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
7.00	111.00	(3) 1/2" Fiber	0.00	Inside
7.00	111.00	(1) 2" Conduit	0.00	Inside
7.00	111.00	(8) 3/4" DC Power	0.00	Inside
7.00	111.00	(3) 5/16" RET Line	0.00	Inside

Shaft Section Properties

Structure:	CT22093-A-SBA	**Code:**	TIA-222-G	2/14/2022	
Site Name:	New London (Bates Wood)	**Exposure:**	C		
Height:	114.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 7	

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.5000	64.250	101.681	52205.4	23.97	128.50	75.5	1593.	0.0
5.00		0.5000	62.925	99.568	49017.2	23.44	125.85	76.0	1528.	1712.0
10.00		0.5000	61.600	97.454	45961.4	22.91	123.20	76.6	1463.	1676.1
15.00		0.5000	60.275	95.341	43035.4	22.39	120.55	77.2	1400.	1640.1
20.00		0.5000	58.949	93.227	40236.2	21.86	117.90	77.8	1338.	1604.1
25.00		0.5000	57.624	91.113	37561.2	21.33	115.25	78.4	1278.	1568.2
30.00		0.5000	56.299	89.000	35007.4	20.81	112.60	79.0	1219.	1532.2
34.42	Bot - Section 2	0.5000	55.129	87.133	32850.2	20.34	110.26	79.6	1168.	1323.5
35.00		0.5000	54.974	86.886	32572.1	20.28	109.95	79.6	1162.	326.6
40.00		0.5000	53.649	84.773	30252.4	19.75	107.30	80.2	1106.	2761.8
42.00	Top - Section 1	0.4380	53.995	74.831	27116.0	22.93	123.28	0.0	0.0	1085.8
45.00		0.4380	53.200	73.720	25926.2	22.57	121.46	77.0	955.9	758.2
50.00		0.4380	51.875	71.868	24021.5	21.97	118.44	77.7	908.3	1238.5
55.00		0.4380	50.550	70.017	22212.3	21.37	115.41	78.4	861.9	1207.0
60.00		0.4380	49.224	68.165	20496.4	20.76	112.38	79.1	816.8	1175.5
65.00		0.4380	47.899	66.314	18871.2	20.16	109.36	79.8	772.8	1144.0
70.00		0.4380	46.574	64.462	17334.3	19.56	106.33	80.4	730.1	1112.5
75.00		0.4380	45.249	62.611	15883.1	18.96	103.31	81.1	688.5	1081.0
75.43	Bot - Section 3	0.4380	45.134	62.451	15761.3	18.91	103.05	81.2	685.0	92.2
80.00		0.4380	43.924	60.759	14515.3	18.36	100.28	81.8	648.2	1653.1
82.02	Top - Section 2	0.3130	44.016	43.636	10528.5	26.38	140.62	0.0	0.0	715.7
85.00		0.3130	43.225	42.846	9967.4	25.88	138.10	73.3	452.3	439.0
88.00		0.3130	42.430	42.052	9423.6	25.37	135.56	73.9	435.7	433.3
89.00		0.3130	42.165	41.788	9246.8	25.20	134.71	74.1	430.2	142.6
90.00		0.3130	41.900	41.523	9072.2	25.04	133.86	74.2	424.7	141.7
94.00		0.3130	40.840	40.465	8396.0	24.36	130.48	75.0	403.3	558.0
95.00		0.3130	40.575	40.200	8232.3	24.19	129.63	75.2	398.0	137.2
100.00		0.3130	39.249	38.877	7445.9	23.35	125.40	76.1	372.1	672.7
105.00		0.3130	37.924	37.554	6711.3	22.51	121.16	77.1	347.1	650.2
110.00		0.3130	36.599	36.231	6026.6	21.67	116.93	78.1	323.0	627.7
111.00		0.3130	36.334	35.966	5895.5	21.50	116.08	78.2	318.3	122.8
114.00		0.3130	35.539	35.172	5513.7	20.99	113.54	78.8	304.3	363.1
										29696.6

Wind Loading - Shaft

Structure:	CT22093-A-SBA	**Code:**	TIA-222-G	2/14/2022	
Site Name:	New London (Bates Wood)	**Exposure:**	C		
Height:	114.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

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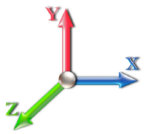
Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 16

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	22.791	25.07	528.47	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	22.791	25.07	517.57	0.750	0.000	5.00	27.014	20.26	812.7	0.0	2054.4
10.00		1.00	0.85	22.791	25.07	506.67	0.750	0.000	5.00	26.451	19.84	795.7	0.0	2011.3
15.00		1.00	0.85	22.791	25.07	495.77	0.750	0.000	5.00	25.888	19.42	778.8	0.0	1968.1
20.00		1.00	0.90	24.182	26.60	499.45	0.750	0.000	5.00	25.325	18.99	808.4	0.0	1925.0
25.00		1.00	0.95	25.345	27.88	499.82	0.750	0.000	5.00	24.762	18.57	828.4	0.0	1881.8
30.00		1.00	0.98	26.337	28.97	497.79	0.750	0.000	5.00	24.199	18.15	841.3	0.0	1838.7
34.42	Bot - Section 2	1.00	1.01	27.110	29.82	494.54	0.750	0.000	4.42	20.908	15.68	748.2	0.0	1588.3
35.00		1.00	1.01	27.206	29.93	494.03	0.750	0.000	0.58	2.772	2.08	99.5	0.0	391.9
40.00		1.00	1.04	27.981	30.78	488.94	0.750	0.000	5.00	23.445	17.58	866.0	0.0	3314.2
42.00	Top - Section 1	1.00	1.05	28.270	31.10	486.61	0.750	0.000	2.00	9.220	6.92	344.1	0.0	1303.0
45.00		1.00	1.07	28.684	31.55	490.90	0.750	0.000	3.00	13.662	10.25	517.3	0.0	909.9
50.00		1.00	1.09	29.327	32.26	484.01	0.750	0.000	5.00	22.319	16.74	864.0	0.0	1486.2
55.00		1.00	1.12	29.922	32.91	476.40	0.750	0.000	5.00	21.756	16.32	859.3	0.0	1448.4
60.00		1.00	1.14	30.475	33.52	468.18	0.750	0.000	5.00	21.193	15.90	852.5	0.0	1410.6
65.00		1.00	1.16	30.993	34.09	459.43	0.750	0.000	5.00	20.631	15.47	844.0	0.0	1372.8
70.00		1.00	1.17	31.480	34.63	450.22	0.750	0.000	5.00	20.068	15.05	833.9	0.0	1335.0
75.00		1.00	1.19	31.941	35.13	440.60	0.750	0.000	5.00	19.505	14.63	822.3	0.0	1297.2
75.43	Bot - Section 3	1.00	1.19	31.979	35.18	439.75	0.750	0.000	0.43	1.664	1.25	70.2	0.0	110.6
80.00		1.00	1.21	32.377	35.62	430.61	0.750	0.000	4.57	17.521	13.14	748.8	0.0	1983.7
82.02	Top - Section 2	1.00	1.21	32.548	35.80	426.49	0.750	0.000	2.02	7.588	5.69	326.0	0.0	858.8
85.00		1.00	1.22	32.793	36.07	426.47	0.750	0.000	2.98	11.057	8.29	478.6	0.0	526.8
88.00	Appurtenance(s)	1.00	1.23	33.034	36.34	420.16	0.750	0.000	3.00	10.917	8.19	476.0	0.0	520.0
89.00	Appurtenance(s)	1.00	1.23	33.112	36.42	418.03	0.750	0.000	1.00	3.594	2.70	157.1	0.0	171.2
90.00	Appurtenance(s)	1.00	1.24	33.190	36.51	415.89	0.750	0.000	1.00	3.571	2.68	156.5	0.0	170.1
94.00	Appurtenance(s)	1.00	1.25	33.496	36.85	407.23	0.750	0.000	4.00	14.060	10.55	621.7	0.0	669.6
95.00		1.00	1.25	33.570	36.93	405.04	0.750	0.000	1.00	3.459	2.59	153.3	0.0	164.7
100.00		1.00	1.27	33.935	37.33	393.93	0.750	0.000	5.00	16.956	12.72	759.5	0.0	807.2
105.00		1.00	1.28	34.285	37.71	382.59	0.750	0.000	5.00	16.393	12.29	741.9	0.0	780.2
110.00		1.00	1.29	34.623	38.08	371.03	0.750	0.000	5.00	15.830	11.87	723.5	0.0	753.2
111.00	Appurtenance(s)	1.00	1.29	34.689	38.16	368.70	0.750	0.000	1.00	3.098	2.32	141.9	0.0	147.4
114.00	Appurtenance(s)	1.00	1.30	34.884	38.37	361.64	0.750	0.000	3.00	9.160	6.87	421.8	0.0	435.7
								Totals:	**114.00**			**18,493.1**		**35,635.9**

Discrete Appurtenance Forces

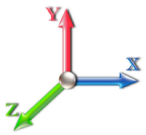
Structure:	CT22093-A-SBA	**Code:**	TIA-222-G	2/14/2022	
Site Name:	New London (Bates Wood)	**Exposure:**	C		
Height:	114.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 9	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 16

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	114.00	Lightning Rod	1	35.107	38.617	1.00	1.00	1.05	42.00	0.000	3.500	64.88	0.00	227.07
2	111.00	Ericsson RRUS 4426 B66	3	34.689	38.157	0.50	0.75	2.49	174.24	0.000	0.000	151.86	0.00	0.00
3	111.00	Ericsson RRUS 4478 B14	3	34.689	38.157	0.50	0.75	3.05	213.84	0.000	0.000	185.91	0.00	0.00
4	111.00	Ericsson RRUS 4449 B5,	3	34.689	38.157	0.50	0.75	2.97	255.60	0.000	0.000	181.31	0.00	0.00
5	111.00	Ericsson RRUS E2 B29	3	34.689	38.157	0.50	0.75	4.75	216.00	0.000	0.000	289.91	0.00	0.00
6	111.00	Ericsson RRUS 32 RRU's	3	34.689	38.157	0.50	0.75	2.49	277.20	0.000	0.000	151.86	0.00	0.00
7	111.00	Ericsson RRUS-11 RRU's	3	34.689	38.157	0.50	0.75	3.80	198.00	0.000	0.000	231.93	0.00	0.00
8	111.00	Ericsson RRU A2 RRU's	3	34.689	38.157	0.50	0.75	2.37	54.00	0.000	0.000	144.50	0.00	0.00
9	111.00	Raycap DC6-48-60-18-8F	4	34.689	38.157	0.50	0.75	7.44	157.44	0.000	0.000	454.04	0.00	0.00
10	111.00	GPS	1	34.689	38.157	0.45	0.75	0.45	12.00	0.000	0.000	27.47	0.00	0.00
11	111.00	Platform w/ Handrails	1	34.689	38.157	1.00	1.00	32.00	1920.00	0.000	0.000	1953.66	0.00	0.00
12	111.00	Ericsson RRUS 32 B30	3	34.689	38.157	0.50	0.75	4.13	216.00	0.000	0.000	252.18	0.00	0.00
13	111.00	Air6419 B77D	3	34.819	38.301	0.57	0.75	6.50	237.96	0.000	2.000	398.21	0.00	796.42
14	111.00	Reinforcing Angles	6	34.689	38.157	1.00	1.00	9.00	468.00	0.000	0.000	549.47	0.00	0.00
15	111.00	QD8616-7	3	34.689	38.157	0.69	0.75	27.88	352.80	0.000	0.000	1702.30	0.00	0.00
16	111.00	Kathrein 800 10966	3	34.689	38.157	0.54	0.75	28.12	412.56	0.000	0.000	1716.98	0.00	0.00
17	111.00	AIR 6419 B77G	3	34.556	38.012	0.57	0.75	6.50	237.96	0.000	-2.000	395.20	0.00	-790.40
18	111.00	Kicker Kit	1	34.689	38.157	1.00	1.00	9.50	557.89	0.000	0.000	579.99	0.00	0.00
19	111.00	Sector Frame Stabilizer Kit	1	34.852	38.337	1.00	1.00	6.30	236.40	0.000	2.500	386.43	0.00	966.09
20	94.00	Ice shield	1	33.496	36.845	1.00	1.00	40.00	600.00	0.000	0.000	2358.09	0.00	0.00
21	90.00	Sport Lights	1	33.190	36.509	1.00	1.00	40.00	960.00	0.000	0.000	2336.60	0.00	0.00
22	89.00	Light support	1	33.112	36.424	1.00	1.00	28.00	600.00	0.000	0.000	1631.78	0.00	0.00
23	88.00	Sport Lights	1	33.034	36.337	1.00	1.00	40.00	960.00	0.000	0.000	2325.57	0.00	0.00
							Totals:		**9,359.89**			**18,470.14**		

Total Applied Force Summary

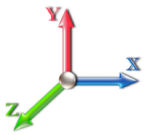
Structure:	CT22093-A-SBA		**Code:**	TIA-222-G	2/14/2022
Site Name:	New London (Bates Wood)		**Exposure:**	C	
Height:	114.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 10

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 16

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		812.68	2054.42	0.00	0.00
10.00		795.75	2031.06	0.00	0.00
15.00		778.81	2001.11	0.00	0.00
20.00		808.38	1957.96	0.00	0.00
25.00		828.43	1914.81	0.00	0.00
30.00		841.27	1871.66	0.00	0.00
34.42		748.17	1617.40	0.00	0.00
35.00		99.55	395.78	0.00	0.00
40.00		865.96	3347.17	0.00	0.00
42.00		344.08	1316.20	0.00	0.00
45.00		517.27	929.67	0.00	0.00
50.00		864.03	1519.21	0.00	0.00
55.00		859.30	1481.41	0.00	0.00
60.00		852.54	1443.61	0.00	0.00
65.00		844.00	1405.81	0.00	0.00
70.00		833.88	1368.01	0.00	0.00
75.00		822.34	1330.21	0.00	0.00
75.43		70.24	113.50	0.00	0.00
80.00		748.80	2013.80	0.00	0.00
82.02		325.99	872.10	0.00	0.00
85.00		478.62	546.45	0.00	0.00
88.00	(1) attachments	2801.58	1499.80	0.00	0.00
89.00	(1) attachments	1788.86	777.77	0.00	0.00
90.00	(1) attachments	2493.06	1136.69	0.00	0.00
94.00	(1) attachments	2979.74	1295.97	0.00	0.00
95.00		153.27	171.29	0.00	0.00
100.00		759.52	840.24	0.00	0.00
105.00		741.88	813.23	0.00	0.00
110.00		723.46	786.22	0.00	0.00
111.00	(50) attachments	9895.10	6351.89	0.00	972.11
114.00	(1) attachments	486.67	477.72	0.00	227.07
	Totals:	**36,963.25**	**45,682.19**	**0.00**	**1,199.18**

Calculated Forces

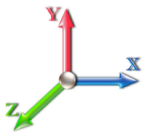
Structure:	CT22093-A-SBA	**Code:**	TIA-222-G		2/14/2022
Site Name:	New London (Bates Wood)	**Exposure:**	C		
Height:	114.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 11

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 16

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-45.66	-37.00	0.00	-2978.3	0.00	2978.30	6904.70	3452.35	18167.7	9019.23	0.00	0.000	0.000	0.337
5.00	-43.55	-36.24	0.00	-2793.3	0.00	2793.32	6814.63	3407.32	17555.1	8715.10	0.04	-0.079	0.000	0.327
10.00	-41.47	-35.50	0.00	-2612.1	0.00	2612.12	6722.29	3361.14	16946.7	8413.06	0.17	-0.157	0.000	0.317
15.00	-39.43	-34.77	0.00	-2434.6	0.00	2434.63	6627.68	3313.84	16342.8	8113.30	0.38	-0.235	0.000	0.306
20.00	-37.43	-34.00	0.00	-2260.8	0.00	2260.81	6530.79	3265.40	15744.0	7816.00	0.66	-0.313	0.000	0.295
25.00	-35.47	-33.21	0.00	-2090.8	0.00	2090.82	6431.64	3215.82	15150.5	7521.35	1.03	-0.390	0.000	0.284
30.00	-33.57	-32.39	0.00	-1924.7	0.00	1924.79	6330.22	3165.11	14562.6	7229.53	1.48	-0.466	0.000	0.272
34.42	-31.94	-31.65	0.00	-1781.7	0.00	1781.73	6238.75	3119.37	14048.5	6974.27	1.95	-0.532	0.000	0.261
35.00	-31.52	-31.57	0.00	-1763.2	0.00	1763.27	6226.54	3113.27	13980.9	6940.74	2.01	-0.541	0.000	0.259
40.00	-28.15	-30.70	0.00	-1605.4	0.00	1605.42	6120.58	3060.29	13405.6	6655.15	2.62	-0.615	0.000	0.246
42.00	-26.82	-30.35	0.00	-1544.0	0.00	1544.03	5160.60	2580.30	11403.7	5661.29	2.89	-0.644	0.000	0.278
45.00	-25.87	-29.85	0.00	-1452.9	0.00	1452.97	5111.09	2555.54	11125.3	5523.07	3.30	-0.688	0.000	0.268
50.00	-24.32	-29.00	0.00	-1303.7	0.00	1303.70	5026.76	2513.38	10664.6	5294.40	4.07	-0.764	0.000	0.251
55.00	-22.82	-28.15	0.00	-1158.7	0.00	1158.70	4940.17	2470.09	10208.6	5068.02	4.91	-0.836	0.000	0.233
60.00	-21.36	-27.30	0.00	-1017.9	0.00	1017.95	4851.31	2425.65	9757.65	4844.11	5.82	-0.906	0.000	0.215
65.00	-19.93	-26.46	0.00	-881.44	0.00	881.44	4760.17	2380.09	9311.98	4622.86	6.81	-0.972	0.000	0.195
70.00	-18.55	-25.62	0.00	-749.16	0.00	749.16	4666.77	2333.39	8872.04	4404.46	7.86	-1.034	0.000	0.174
75.00	-17.23	-24.78	0.00	-621.08	0.00	621.08	4571.10	2285.55	8438.22	4189.09	8.98	-1.090	0.000	0.152
75.43	-17.10	-24.72	0.00	-610.34	0.00	610.34	4562.70	2281.35	8400.92	4170.57	9.07	-1.095	0.000	0.150
80.00	-15.09	-23.94	0.00	-497.47	0.00	497.47	4473.16	2236.58	8010.87	3976.93	10.15	-1.140	0.000	0.129
82.02	-14.22	-23.60	0.00	-449.20	0.00	449.20	2855.93	1427.97	5154.94	2559.13	10.63	-1.159	0.000	0.181
85.00	-13.67	-23.11	0.00	-378.81	0.00	378.81	2826.19	1413.09	5008.30	2486.33	11.36	-1.184	0.000	0.157
88.00	-12.22	-20.29	0.00	-309.46	0.00	309.46	2795.46	1397.73	4861.39	2413.40	12.12	-1.214	0.000	0.133
89.00	-11.48	-18.48	0.00	-289.18	0.00	289.18	2785.03	1392.52	4812.57	2389.16	12.37	-1.223	0.000	0.125
90.00	-10.39	-15.97	0.00	-270.69	0.00	270.69	2774.52	1387.26	4763.81	2364.96	12.63	-1.231	0.000	0.118
94.00	-9.16	-12.97	0.00	-206.82	0.00	206.82	2731.55	1365.78	4569.59	2268.54	13.68	-1.261	0.000	0.095
95.00	-8.98	-12.81	0.00	-193.85	0.00	193.85	2720.58	1360.29	4521.25	2244.54	13.94	-1.268	0.000	0.090
100.00	-8.16	-12.04	0.00	-129.80	0.00	129.80	2664.38	1332.19	4280.99	2125.26	15.29	-1.296	0.000	0.064
105.00	-7.36	-11.28	0.00	-69.62	0.00	69.62	2605.91	1302.95	4043.40	2007.32	16.66	-1.315	0.000	0.038
110.00	-6.59	-10.54	0.00	-13.23	0.00	13.23	2545.16	1272.58	3808.87	1890.88	18.04	-1.324	0.000	0.010
111.00	-0.47	-0.50	0.00	-1.72	0.00	1.72	2532.74	1266.37	3762.36	1867.79	18.32	-1.324	0.000	0.001
114.00	0.00	-0.49	0.00	-0.23	0.00	0.23	2494.94	1247.47	3623.69	1798.95	19.15	-1.324	0.000	0.000

Wind Loading - Shaft

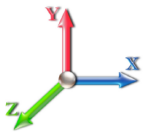
Structure:	CT22093-A-SBA	**Code:**	TIA-222-G	2/14/2022	
Site Name:	New London (Bates Wood)	**Exposure:**	C		
Height:	114.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 12	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 16

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	22.791	25.07	528.47	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	22.791	25.07	517.57	0.750	0.000	5.00	27.014	20.26	812.7	0.0	1540.8
10.00		1.00	0.85	22.791	25.07	506.67	0.750	0.000	5.00	26.451	19.84	795.7	0.0	1508.4
15.00		1.00	0.85	22.791	25.07	495.77	0.750	0.000	5.00	25.888	19.42	778.8	0.0	1476.1
20.00		1.00	0.90	24.182	26.60	499.45	0.750	0.000	5.00	25.325	18.99	808.4	0.0	1443.7
25.00		1.00	0.95	25.345	27.88	499.82	0.750	0.000	5.00	24.762	18.57	828.4	0.0	1411.4
30.00		1.00	0.98	26.337	28.97	497.79	0.750	0.000	5.00	24.199	18.15	841.3	0.0	1379.0
34.42	Bot - Section 2	1.00	1.01	27.110	29.82	494.54	0.750	0.000	4.42	20.908	15.68	748.2	0.0	1191.2
35.00		1.00	1.01	27.206	29.93	494.03	0.750	0.000	0.58	2.772	2.08	99.5	0.0	293.9
40.00		1.00	1.04	27.981	30.78	488.94	0.750	0.000	5.00	23.445	17.58	866.0	0.0	2485.6
42.00	Top - Section 1	1.00	1.05	28.270	31.10	486.61	0.750	0.000	2.00	9.220	6.92	344.1	0.0	977.3
45.00		1.00	1.07	28.684	31.55	490.90	0.750	0.000	3.00	13.662	10.25	517.3	0.0	682.4
50.00		1.00	1.09	29.327	32.26	484.01	0.750	0.000	5.00	22.319	16.74	864.0	0.0	1114.7
55.00		1.00	1.12	29.922	32.91	476.40	0.750	0.000	5.00	21.756	16.32	859.3	0.0	1086.3
60.00		1.00	1.14	30.475	33.52	468.18	0.750	0.000	5.00	21.193	15.90	852.5	0.0	1058.0
65.00		1.00	1.16	30.993	34.09	459.43	0.750	0.000	5.00	20.631	15.47	844.0	0.0	1029.6
70.00		1.00	1.17	31.480	34.63	450.22	0.750	0.000	5.00	20.068	15.05	833.9	0.0	1001.3
75.00		1.00	1.19	31.941	35.13	440.60	0.750	0.000	5.00	19.505	14.63	822.3	0.0	972.9
75.43	Bot - Section 3	1.00	1.19	31.979	35.18	439.75	0.750	0.000	0.43	1.664	1.25	70.2	0.0	83.0
80.00		1.00	1.21	32.377	35.62	430.61	0.750	0.000	4.57	17.521	13.14	748.8	0.0	1487.7
82.02	Top - Section 2	1.00	1.21	32.548	35.80	426.49	0.750	0.000	2.02	7.588	5.69	326.0	0.0	644.1
85.00		1.00	1.22	32.793	36.07	426.47	0.750	0.000	2.98	11.057	8.29	478.6	0.0	395.1
88.00	Appurtenance(s)	1.00	1.23	33.034	36.34	420.16	0.750	0.000	3.00	10.917	8.19	476.0	0.0	390.0
89.00	Appurtenance(s)	1.00	1.23	33.112	36.42	418.03	0.750	0.000	1.00	3.594	2.70	157.1	0.0	128.4
90.00	Appurtenance(s)	1.00	1.24	33.190	36.51	415.89	0.750	0.000	1.00	3.571	2.68	156.5	0.0	127.6
94.00	Appurtenance(s)	1.00	1.25	33.496	36.85	407.23	0.750	0.000	4.00	14.060	10.55	621.7	0.0	502.2
95.00		1.00	1.25	33.570	36.93	405.04	0.750	0.000	1.00	3.459	2.59	153.3	0.0	123.5
100.00		1.00	1.27	33.935	37.33	393.93	0.750	0.000	5.00	16.956	12.72	759.5	0.0	605.4
105.00		1.00	1.28	34.285	37.71	382.59	0.750	0.000	5.00	16.393	12.29	741.9	0.0	585.2
110.00		1.00	1.29	34.623	38.08	371.03	0.750	0.000	5.00	15.830	11.87	723.5	0.0	564.9
111.00	Appurtenance(s)	1.00	1.29	34.689	38.16	368.70	0.750	0.000	1.00	3.098	2.32	141.9	0.0	110.6
114.00	Appurtenance(s)	1.00	1.30	34.884	38.37	361.64	0.750	0.000	3.00	9.160	6.87	421.8	0.0	326.8
								Totals:	**114.00**			**18,493.1**		**26,726.9**

Discrete Appurtenance Forces

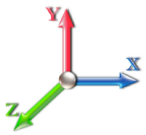
Structure:	CT22093-A-SBA	**Code:**	TIA-222-G	2/14/2022	
Site Name:	New London (Bates Wood)	**Exposure:**	C		
Height:	114.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 13	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 16

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	114.00	Lightning Rod	1	35.107	38.617	1.00	1.00	1.05	31.50	0.000	3.500	64.88	0.00	227.07
2	111.00	Ericsson RRUS 4426 B66	3	34.689	38.157	0.50	0.75	2.49	130.68	0.000	0.000	151.86	0.00	0.00
3	111.00	Ericsson RRUS 4478 B14	3	34.689	38.157	0.50	0.75	3.05	160.38	0.000	0.000	185.91	0.00	0.00
4	111.00	Ericsson RRUS 4449 B5,	3	34.689	38.157	0.50	0.75	2.97	191.70	0.000	0.000	181.31	0.00	0.00
5	111.00	Ericsson RRUS E2 B29	3	34.689	38.157	0.50	0.75	4.75	162.00	0.000	0.000	289.91	0.00	0.00
6	111.00	Ericsson RRUS 32 RRU's	3	34.689	38.157	0.50	0.75	2.49	207.90	0.000	0.000	151.86	0.00	0.00
7	111.00	Ericsson RRUS-11 RRU's	3	34.689	38.157	0.50	0.75	3.80	148.50	0.000	0.000	231.93	0.00	0.00
8	111.00	Ericsson RRU A2 RRU's	3	34.689	38.157	0.50	0.75	2.37	40.50	0.000	0.000	144.50	0.00	0.00
9	111.00	Raycap DC6-48-60-18-8F	4	34.689	38.157	0.50	0.75	7.44	118.08	0.000	0.000	454.04	0.00	0.00
10	111.00	GPS	1	34.689	38.157	0.45	0.75	0.45	9.00	0.000	0.000	27.47	0.00	0.00
11	111.00	Platform w/ Handrails	1	34.689	38.157	1.00	1.00	32.00	1440.00	0.000	0.000	1953.66	0.00	0.00
12	111.00	Ericsson RRUS 32 B30	3	34.689	38.157	0.50	0.75	4.13	162.00	0.000	0.000	252.18	0.00	0.00
13	111.00	Air6419 B77D	3	34.819	38.301	0.57	0.75	6.50	178.47	0.000	2.000	398.21	0.00	796.42
14	111.00	Reinforcing Angles	6	34.689	38.157	1.00	1.00	9.00	351.00	0.000	0.000	549.47	0.00	0.00
15	111.00	QD8616-7	3	34.689	38.157	0.69	0.75	27.88	264.60	0.000	0.000	1702.30	0.00	0.00
16	111.00	Kathrein 800 10966	3	34.689	38.157	0.54	0.75	28.12	309.42	0.000	0.000	1716.98	0.00	0.00
17	111.00	AIR 6419 B77G	3	34.556	38.012	0.57	0.75	6.50	178.47	0.000	-2.000	395.20	0.00	-790.40
18	111.00	Kicker Kit	1	34.689	38.157	1.00	1.00	9.50	418.42	0.000	0.000	579.99	0.00	0.00
19	111.00	Sector Frame Stabilizer Kit	1	34.852	38.337	1.00	1.00	6.30	177.30	0.000	2.500	386.43	0.00	966.09
20	94.00	Ice shield	1	33.496	36.845	1.00	1.00	40.00	450.00	0.000	0.000	2358.09	0.00	0.00
21	90.00	Sport Lights	1	33.190	36.509	1.00	1.00	40.00	720.00	0.000	0.000	2336.60	0.00	0.00
22	89.00	Light support	1	33.112	36.424	1.00	1.00	28.00	450.00	0.000	0.000	1631.78	0.00	0.00
23	88.00	Sport Lights	1	33.034	36.337	1.00	1.00	40.00	720.00	0.000	0.000	2325.57	0.00	0.00
							Totals:		**7,019.92**			**18,470.14**		

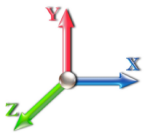
Total Applied Force Summary

Structure:	CT22093-A-SBA	**Code:**	TIA-222-G	2/14/2022	
Site Name:	New London (Bates Wood)	**Exposure:**	C		
Height:	114.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 14	

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 16

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		812.68	1540.81	0.00	0.00
10.00		795.75	1523.30	0.00	0.00
15.00		778.81	1500.83	0.00	0.00
20.00		808.38	1468.47	0.00	0.00
25.00		828.43	1436.11	0.00	0.00
30.00		841.27	1403.74	0.00	0.00
34.42		748.17	1213.05	0.00	0.00
35.00		99.55	296.83	0.00	0.00
40.00		865.96	2510.38	0.00	0.00
42.00		344.08	987.15	0.00	0.00
45.00		517.27	697.26	0.00	0.00
50.00		864.03	1139.41	0.00	0.00
55.00		859.30	1111.06	0.00	0.00
60.00		852.54	1082.71	0.00	0.00
65.00		844.00	1054.36	0.00	0.00
70.00		833.88	1026.01	0.00	0.00
75.00		822.34	997.66	0.00	0.00
75.43		70.24	85.13	0.00	0.00
80.00		748.80	1510.35	0.00	0.00
82.02		325.99	654.07	0.00	0.00
85.00		478.62	409.84	0.00	0.00
88.00	(1) attachments	2801.58	1124.85	0.00	0.00
89.00	(1) attachments	1788.86	583.33	0.00	0.00
90.00	(1) attachments	2493.06	852.52	0.00	0.00
94.00	(1) attachments	2979.74	971.97	0.00	0.00
95.00		153.27	128.47	0.00	0.00
100.00		759.52	630.18	0.00	0.00
105.00		741.88	609.92	0.00	0.00
110.00		723.46	589.66	0.00	0.00
111.00	(50) attachments	9895.10	4763.92	0.00	972.11
114.00	(1) attachments	486.67	358.29	0.00	227.07
	Totals:	**36,963.25**	**34,261.64**	**0.00**	**1,199.18**

Calculated Forces

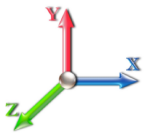
Structure:	CT22093-A-SBA	**Code:**	TIA-222-G	2/14/2022	
Site Name:	New London (Bates Wood)	**Exposure:**	C		
Height:	114.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 15	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 16

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-34.24	-36.99	0.00	-2971.0	0.00	2971.03	6904.70	3452.35	18167.7	9019.23	0.00	0.000	0.000	0.334
5.00	-32.65	-36.22	0.00	-2786.1	0.00	2786.10	6814.63	3407.32	17555.1	8715.10	0.04	-0.078	0.000	0.325
10.00	-31.08	-35.46	0.00	-2605.0	0.00	2605.01	6722.29	3361.14	16946.7	8413.06	0.17	-0.157	0.000	0.314
15.00	-29.53	-34.72	0.00	-2427.7	0.00	2427.70	6627.68	3313.84	16342.8	8113.30	0.37	-0.235	0.000	0.304
20.00	-28.02	-33.94	0.00	-2254.1	0.00	2254.12	6530.79	3265.40	15744.0	7816.00	0.66	-0.312	0.000	0.293
25.00	-26.55	-33.14	0.00	-2084.4	0.00	2084.42	6431.64	3215.82	15150.5	7521.35	1.03	-0.389	0.000	0.281
30.00	-25.11	-32.32	0.00	-1918.7	0.00	1918.73	6330.22	3165.11	14562.6	7229.53	1.48	-0.464	0.000	0.269
34.42	-23.88	-31.57	0.00	-1776.0	0.00	1776.00	6238.75	3119.37	14048.5	6974.27	1.94	-0.531	0.000	0.259
35.00	-23.56	-31.49	0.00	-1757.5	0.00	1757.58	6226.54	3113.27	13980.9	6940.74	2.01	-0.540	0.000	0.257
40.00	-21.03	-30.62	0.00	-1600.1	0.00	1600.13	6120.58	3060.29	13405.6	6655.15	2.61	-0.613	0.000	0.244
42.00	-20.03	-30.27	0.00	-1538.9	0.00	1538.90	5160.60	2580.30	11403.7	5661.29	2.88	-0.642	0.000	0.276
45.00	-19.31	-29.77	0.00	-1448.0	0.00	1448.08	5111.09	2555.54	11125.3	5523.07	3.30	-0.686	0.000	0.266
50.00	-18.14	-28.91	0.00	-1299.2	0.00	1299.23	5026.76	2513.38	10664.6	5294.40	4.06	-0.761	0.000	0.249
55.00	-17.01	-28.06	0.00	-1154.6	0.00	1154.66	4940.17	2470.09	10208.6	5068.02	4.89	-0.834	0.000	0.231
60.00	-15.91	-27.21	0.00	-1014.3	0.00	1014.36	4851.31	2425.65	9757.65	4844.11	5.81	-0.903	0.000	0.213
65.00	-14.84	-26.37	0.00	-878.31	0.00	878.31	4760.17	2380.09	9311.98	4622.86	6.79	-0.969	0.000	0.193
70.00	-13.80	-25.53	0.00	-746.48	0.00	746.48	4666.77	2333.39	8872.04	4404.46	7.84	-1.030	0.000	0.173
75.00	-12.80	-24.69	0.00	-618.84	0.00	618.84	4571.10	2285.55	8438.22	4189.09	8.95	-1.086	0.000	0.151
75.43	-12.71	-24.63	0.00	-608.14	0.00	608.14	4562.70	2281.35	8400.92	4170.57	9.05	-1.091	0.000	0.149
80.00	-11.20	-23.86	0.00	-495.67	0.00	495.67	4473.16	2236.58	8010.87	3976.93	10.11	-1.137	0.000	0.127
82.02	-10.55	-23.52	0.00	-447.56	0.00	447.56	2855.93	1427.97	5154.94	2559.13	10.60	-1.155	0.000	0.179
85.00	-10.13	-23.04	0.00	-377.39	0.00	377.39	2826.19	1413.09	5008.30	2486.33	11.33	-1.180	0.000	0.156
88.00	-9.06	-20.22	0.00	-308.27	0.00	308.27	2795.46	1397.73	4861.39	2413.40	12.08	-1.210	0.000	0.131
89.00	-8.51	-18.42	0.00	-288.05	0.00	288.05	2785.03	1392.52	4812.57	2389.16	12.34	-1.219	0.000	0.124
90.00	-7.71	-15.91	0.00	-269.63	0.00	269.63	2774.52	1387.26	4763.81	2364.96	12.59	-1.227	0.000	0.117
94.00	-6.80	-12.91	0.00	-205.99	0.00	205.99	2731.55	1365.78	4569.59	2268.54	13.64	-1.257	0.000	0.093
95.00	-6.67	-12.76	0.00	-193.08	0.00	193.08	2720.58	1360.29	4521.25	2244.54	13.90	-1.264	0.000	0.089
100.00	-6.05	-11.99	0.00	-129.29	0.00	129.29	2664.38	1332.19	4280.99	2125.26	15.24	-1.292	0.000	0.063
105.00	-5.46	-11.23	0.00	-69.35	0.00	69.35	2605.91	1302.95	4043.40	2007.32	16.61	-1.311	0.000	0.037
110.00	-4.88	-10.50	0.00	-13.18	0.00	13.18	2545.16	1272.58	3808.87	1890.88	17.98	-1.319	0.000	0.009
111.00	-0.35	-0.49	0.00	-1.71	0.00	1.71	2532.74	1266.37	3762.36	1867.79	18.26	-1.320	0.000	0.001
114.00	0.00	-0.49	0.00	-0.23	0.00	0.23	2494.94	1247.47	3623.69	1798.95	19.09	-1.320	0.000	0.000

Wind Loading - Shaft

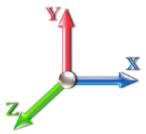
Structure:	CT22093-A-SBA	**Code:**	TIA-222-G	2/14/2022	
Site Name:	New London (Bates Wood)	**Exposure:**	C		
Height:	114.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

IES Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 15

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.242	5.00	28.049	33.66	191.3	503.8	2558.3
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	27.560	33.07	188.0	529.6	2540.9
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	27.043	32.45	184.5	540.4	2508.5
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	26.514	31.82	191.9	544.5	2469.5
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	25.978	31.17	197.1	544.9	2426.7
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	25.437	30.52	200.5	542.7	2381.4
34.42	Bot - Section 2	1.00	1.01	6.147	6.76	0.00	1.200	1.506	4.42	22.016	26.42	178.7	476.3	2064.6
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	0.58	2.919	3.50	23.8	63.8	455.8
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	5.00	24.720	29.66	207.0	541.8	3856.0
42.00	Top - Section 1	1.00	1.05	6.410	7.05	0.00	1.200	1.537	2.00	9.733	11.68	82.4	215.7	1518.7
45.00		1.00	1.07	6.504	7.15	0.00	1.200	1.547	3.00	14.435	17.32	123.9	321.3	1231.1
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	5.00	23.622	28.35	207.4	528.2	2014.4
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	5.00	23.072	27.69	206.6	520.1	1968.5
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	22.521	27.02	205.4	511.5	1922.1
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	5.00	21.968	26.36	203.8	502.2	1875.1
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	5.00	21.415	25.70	201.8	492.6	1827.6
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	20.862	25.03	199.4	482.4	1779.6
75.43	Bot - Section 3	1.00	1.19	7.252	7.98	0.00	1.200	1.629	0.43	1.782	2.14	17.1	41.7	152.4
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	4.57	18.768	22.52	181.9	436.9	2420.6
82.02	Top - Section 2	1.00	1.21	7.380	8.12	0.00	1.200	1.643	2.02	8.140	9.77	79.3	191.2	1050.0
85.00		1.00	1.22	7.436	8.18	0.00	1.200	1.649	2.98	11.877	14.25	116.6	279.0	805.8
88.00	Appurtenance(s)	1.00	1.23	7.491	8.24	0.00	1.200	1.655	3.00	11.744	14.09	116.1	276.6	796.6
89.00	Appurtenance(s)	1.00	1.23	7.508	8.26	0.00	1.200	1.656	1.00	3.870	4.64	38.4	91.7	262.9
90.00	Appurtenance(s)	1.00	1.24	7.526	8.28	0.00	1.200	1.658	1.00	3.848	4.62	38.2	91.3	261.4
94.00	Appurtenance(s)	1.00	1.25	7.595	8.35	0.00	1.200	1.666	4.00	15.170	18.20	152.1	357.9	1027.5
95.00		1.00	1.25	7.612	8.37	0.00	1.200	1.667	1.00	3.737	4.48	37.5	89.0	253.7
100.00		1.00	1.27	7.695	8.46	0.00	1.200	1.676	5.00	18.352	22.02	186.4	433.4	1240.7
105.00		1.00	1.28	7.774	8.55	0.00	1.200	1.684	5.00	17.796	21.36	182.6	421.5	1201.7
110.00		1.00	1.29	7.851	8.64	0.00	1.200	1.692	5.00	17.240	20.69	178.7	409.4	1162.6
111.00	Appurtenance(s)	1.00	1.29	7.866	8.65	0.00	1.200	1.693	1.00	3.381	4.06	35.1	81.4	228.8
114.00	Appurtenance(s)	1.00	1.30	7.910	8.70	0.00	1.200	1.698	3.00	10.009	12.01	104.5	239.7	675.4
								Totals:	**114.00**			**4,458.0**		**46,938.6**

Discrete Appurtenance Forces

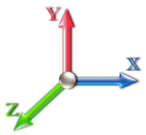
Structure:	CT22093-A-SBA	**Code:**	TIA-222-G	2/14/2022	
Site Name:	New London (Bates Wood)	**Exposure:**	C		
Height:	114.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 17	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 15

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	114.00	Lightning Rod	1	7.961	8.757	1.00	1.00	3.36	63.56	0.000	3.500	29.42	0.00	102.96
2	111.00	Ericsson RRUS 4426 B66	3	7.866	8.652	0.50	0.75	3.27	334.99	0.000	0.000	28.31	0.00	0.00
3	111.00	Ericsson RRUS 4478 B14	3	7.866	8.652	0.50	0.75	3.97	306.35	0.000	0.000	34.38	0.00	0.00
4	111.00	Ericsson RRUS 4449 B5,	3	7.866	8.652	0.50	0.75	3.82	478.61	0.000	0.000	33.09	0.00	0.00
5	111.00	Ericsson RRUS E2 B29	3	7.866	8.652	0.50	0.75	5.78	354.91	0.000	0.000	49.99	0.00	0.00
6	111.00	Ericsson RRUS 32 RRU's	3	7.866	8.652	0.50	0.75	3.33	416.97	0.000	0.000	28.84	0.00	0.00
7	111.00	Ericsson RRUS-11 RRU's	3	7.866	8.652	0.50	0.75	4.73	388.89	0.000	0.000	40.89	0.00	0.00
8	111.00	Ericsson RRU A2 RRU's	3	7.866	8.652	0.50	0.75	3.13	182.95	0.000	0.000	27.09	0.00	0.00
9	111.00	Raycap DC6-48-60-18-8F	4	7.866	8.652	0.50	0.75	10.87	338.15	0.000	0.000	94.08	0.00	0.00
10	111.00	GPS	1	7.866	8.652	0.45	0.75	0.76	32.45	0.000	0.000	6.58	0.00	0.00
11	111.00	Platform w/ Handrails	1	7.866	8.652	1.00	1.00	59.10	3357.56	0.000	0.000	511.32	0.00	0.00
12	111.00	Ericsson RRUS 32 B30	3	7.866	8.652	0.50	0.75	5.19	470.37	0.000	0.000	44.94	0.00	0.00
13	111.00	Air6419 B77D	3	7.896	8.685	0.57	0.75	7.82	449.93	0.000	2.000	67.90	0.00	135.81
14	111.00	Reinforcing Angles	6	7.866	8.652	1.00	1.00	28.82	1239.51	0.000	0.000	249.36	0.00	0.00
15	111.00	QD8616-7	3	7.866	8.652	0.69	0.75	27.06	1208.46	0.000	0.000	234.13	0.00	0.00
16	111.00	Kathrein 800 10966	3	7.866	8.652	0.54	0.75	30.96	1449.18	0.000	0.000	267.89	0.00	0.00
17	111.00	AIR 6419 B77G	3	7.836	8.619	0.57	0.75	7.82	449.93	0.000	-2.000	67.39	0.00	-134.78
18	111.00	Kicker Kit	1	7.866	8.652	1.00	1.00	19.15	777.72	0.000	0.000	165.72	0.00	0.00
19	111.00	Sector Frame Stabilizer Kit	1	7.903	8.693	1.00	1.00	12.70	416.29	0.000	2.500	110.41	0.00	276.03
20	94.00	Ice shield	1	7.595	8.355	1.00	1.00	79.97	599.66	0.000	0.000	668.17	0.00	0.00
21	90.00	Sport Lights	1	7.526	8.279	1.00	1.00	79.80	2555.99	0.000	0.000	660.64	0.00	0.00
22	89.00	Light support	1	7.508	8.259	1.00	1.00	55.83	600.00	0.000	0.000	461.10	0.00	0.00
23	88.00	Sport Lights	1	7.491	8.240	1.00	1.00	79.71	2554.20	0.000	0.000	656.79	0.00	0.00
							Totals:		**19,026.62**			**4,538.41**		

Total Applied Force Summary

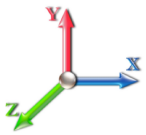
Structure:	CT22093-A-SBA	**Code:**	TIA-222-G	2/14/2022	
Site Name:	New London (Bates Wood)	**Exposure:**	C		
Height:	114.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 18	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 15

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		191.34	2558.26	0.00	0.00
10.00		188.01	2560.65	0.00	0.00
15.00		184.48	2541.47	0.00	0.00
20.00		191.91	2502.49	0.00	0.00
25.00		197.08	2459.69	0.00	0.00
30.00		200.53	2414.36	0.00	0.00
34.42		178.65	2093.74	0.00	0.00
35.00		23.77	459.60	0.00	0.00
40.00		207.04	3888.97	0.00	0.00
42.00		82.36	1531.95	0.00	0.00
45.00		123.94	1250.93	0.00	0.00
50.00		207.36	2047.37	0.00	0.00
55.00		206.64	2001.54	0.00	0.00
60.00		205.43	1955.07	0.00	0.00
65.00		203.79	1908.06	0.00	0.00
70.00		201.79	1860.56	0.00	0.00
75.00		199.45	1812.64	0.00	0.00
75.43		17.05	155.24	0.00	0.00
80.00		181.89	2450.75	0.00	0.00
82.02		79.30	1063.31	0.00	0.00
85.00		116.58	825.45	0.00	0.00
88.00	(1) attachments	772.91	3370.58	0.00	0.00
89.00	(1) attachments	499.46	869.52	0.00	0.00
90.00	(1) attachments	698.87	2823.98	0.00	0.00
94.00	(1) attachments	820.26	1653.53	0.00	0.00
95.00		37.55	260.31	0.00	0.00
100.00		186.41	1273.66	0.00	0.00
105.00		182.63	1234.74	0.00	0.00
110.00		178.66	1195.59	0.00	0.00
111.00	(50) attachments	2097.40	12888.60	0.00	277.06
114.00	(1) attachments	133.93	739.00	0.00	102.96
	Totals:	**8,996.43**	**66,651.61**	**0.00**	**380.02**

Calculated Forces

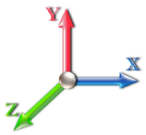
Structure:	CT22093-A-SBA	**Code:**	TIA-222-G	2/14/2022	
Site Name:	New London (Bates Wood)	**Exposure:**	C		
Height:	114.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 15

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-66.65	-9.01	0.00	-726.92	0.00	726.92	6904.70	3452.35	18167.7	9019.23	0.00	0.000	0.000	0.090
5.00	-64.09	-8.84	0.00	-681.88	0.00	681.88	6814.63	3407.32	17555.1	8715.10	0.01	-0.019	0.000	0.088
10.00	-61.53	-8.67	0.00	-637.70	0.00	637.70	6722.29	3361.14	16946.7	8413.06	0.04	-0.038	0.000	0.085
15.00	-58.98	-8.50	0.00	-594.36	0.00	594.36	6627.68	3313.84	16342.8	8113.30	0.09	-0.057	0.000	0.082
20.00	-56.48	-8.32	0.00	-551.86	0.00	551.86	6530.79	3265.40	15744.0	7816.00	0.16	-0.076	0.000	0.079
25.00	-54.01	-8.14	0.00	-510.23	0.00	510.23	6431.64	3215.82	15150.5	7521.35	0.25	-0.095	0.000	0.076
30.00	-51.60	-7.95	0.00	-469.53	0.00	469.53	6330.22	3165.11	14562.6	7229.53	0.36	-0.114	0.000	0.073
34.42	-49.50	-7.78	0.00	-434.40	0.00	434.40	6238.75	3119.37	14048.5	6974.27	0.48	-0.130	0.000	0.070
35.00	-49.04	-7.76	0.00	-429.87	0.00	429.87	6226.54	3113.27	13980.9	6940.74	0.49	-0.132	0.000	0.070
40.00	-45.15	-7.55	0.00	-391.06	0.00	391.06	6120.58	3060.29	13405.6	6655.15	0.64	-0.150	0.000	0.066
42.00	-43.62	-7.47	0.00	-375.96	0.00	375.96	5160.60	2580.30	11403.7	5661.29	0.70	-0.157	0.000	0.075
45.00	-42.37	-7.36	0.00	-353.53	0.00	353.53	5111.09	2555.54	11125.3	5523.07	0.81	-0.168	0.000	0.072
50.00	-40.32	-7.16	0.00	-316.74	0.00	316.74	5026.76	2513.38	10664.6	5294.40	0.99	-0.186	0.000	0.068
55.00	-38.32	-6.95	0.00	-280.96	0.00	280.96	4940.17	2470.09	10208.6	5068.02	1.20	-0.204	0.000	0.063
60.00	-36.36	-6.75	0.00	-246.19	0.00	246.19	4851.31	2425.65	9757.65	4844.11	1.42	-0.221	0.000	0.058
65.00	-34.45	-6.55	0.00	-212.42	0.00	212.42	4760.17	2380.09	9311.98	4622.86	1.66	-0.237	0.000	0.053
70.00	-32.59	-6.35	0.00	-179.67	0.00	179.67	4666.77	2333.39	8872.04	4404.46	1.92	-0.251	0.000	0.048
75.00	-30.78	-6.15	0.00	-147.93	0.00	147.93	4571.10	2285.55	8438.22	4189.09	2.19	-0.265	0.000	0.042
75.43	-30.62	-6.13	0.00	-145.27	0.00	145.27	4562.70	2281.35	8400.92	4170.57	2.21	-0.266	0.000	0.042
80.00	-28.17	-5.94	0.00	-117.27	0.00	117.27	4473.16	2236.58	8010.87	3976.93	2.47	-0.277	0.000	0.036
82.02	-27.11	-5.86	0.00	-105.29	0.00	105.29	2855.93	1427.97	5154.94	2559.13	2.59	-0.281	0.000	0.051
85.00	-26.28	-5.74	0.00	-87.81	0.00	87.81	2826.19	1413.09	5008.30	2486.33	2.77	-0.287	0.000	0.045
88.00	-22.91	-4.95	0.00	-70.59	0.00	70.59	2795.46	1397.73	4861.39	2413.40	2.95	-0.294	0.000	0.037
89.00	-22.05	-4.45	0.00	-65.64	0.00	65.64	2785.03	1392.52	4812.57	2389.16	3.01	-0.296	0.000	0.035
90.00	-19.23	-3.74	0.00	-61.19	0.00	61.19	2774.52	1387.26	4763.81	2364.96	3.08	-0.298	0.000	0.033
94.00	-17.58	-2.91	0.00	-46.24	0.00	46.24	2731.55	1365.78	4569.59	2268.54	3.33	-0.305	0.000	0.027
95.00	-17.32	-2.87	0.00	-43.33	0.00	43.33	2720.58	1360.29	4521.25	2244.54	3.39	-0.306	0.000	0.026
100.00	-16.04	-2.68	0.00	-28.96	0.00	28.96	2664.38	1332.19	4280.99	2125.26	3.72	-0.312	0.000	0.020
105.00	-14.81	-2.49	0.00	-15.56	0.00	15.56	2605.91	1302.95	4043.40	2007.32	4.05	-0.317	0.000	0.013
110.00	-13.61	-2.31	0.00	-3.10	0.00	3.10	2545.16	1272.58	3808.87	1890.88	4.38	-0.319	0.000	0.007
111.00	-0.74	-0.14	0.00	-0.52	0.00	0.52	2532.74	1266.37	3762.36	1867.79	4.45	-0.319	0.000	0.001
114.00	0.00	-0.13	0.00	-0.10	0.00	0.10	2494.94	1247.47	3623.69	1798.95	4.65	-0.319	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT22093-A-SBA	**Code:**	TIA-222-G	2/14/2022	
Site Name:	New London (Bates Wood)	**Exposure:**	C		
Height:	114.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	15
Gust Response Factor	1.10				**Sds**	0.17		**Ss**	0.16
Dead Load Factor	1.20	**Seismic Load Factor**		1.00	**Sd1**	0.09		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**		0.80	**SA**	0.07	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1712.0	0.00	0.04	0.02	17.37	
10.00		1676.0	0.01	0.06	0.04	25.52	
15.00		1640.0	0.03	0.07	0.04	29.41	
20.00		1604.1	0.06	0.07	0.04	31.61	
25.00		1568.1	0.09	0.07	0.04	33.35	
30.00		1532.2	0.13	0.07	0.03	35.05	
34.42	Bot - Section 2	1323.5	0.17	0.07	0.03	32.12	
35.00		326.61	0.18	0.07	0.03	7.98	
40.00		2761.8	0.23	0.06	0.02	70.81	
42.00	Top - Section 1	1085.8	0.26	0.05	0.02	28.15	
45.00		758.23	0.29	0.05	0.01	19.74	
50.00		1238.5	0.36	0.03	0.01	31.19	
55.00		1207.0	0.44	0.01	0.01	27.55	
60.00		1175.5	0.52	-0.02	0.01	22.40	
65.00		1144.0	0.61	-0.06	0.02	16.64	
70.00		1112.5	0.71	-0.09	0.03	11.77	
75.00		1081.0	0.82	-0.11	0.06	9.68	
75.43	Bot - Section 3	92.20	0.83	-0.12	0.06	0.83	
80.00		1653.0	0.93	-0.12	0.10	19.18	
82.02	Top - Section 2	715.66	0.98	-0.11	0.12	10.23	
85.00		438.97	1.05	-0.09	0.16	8.89	
88.00	Appurtenance(s)	1233.3	1.13	-0.05	0.20	35.63	
89.00	Appurtenance(s)	642.64	1.15	-0.04	0.22	20.81	
90.00	Appurtenance(s)	941.74	1.18	-0.02	0.24	34.09	
94.00	Appurtenance(s)	1057.9	1.29	0.10	0.32	57.94	
95.00		137.24	1.31	0.14	0.35	8.27	
100.00		672.70	1.45	0.39	0.49	62.50	
105.00		650.19	1.60	0.79	0.67	87.40	
110.00		627.68	1.76	1.36	0.91	116.11	
111.00	Appurtenance(s)	5287.7	1.79	1.50	0.96	1037.37	
114.00	Appurtenance(s)	398.10	1.89	1.98	1.14	92.37	
	Totals:	**37,496.5**				**2,041.9**	**Total Wind:** **36,963.3**

Calculated Forces

Structure:	CT22093-A-SBA	**Code:**	TIA-222-G	2/14/2022	
Site Name:	New London (Bates Wood)	**Exposure:**	C		
Height:	114.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 21	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	15
Gust Response Factor	1.10			**Sds**	0.17			**Ss**	0.16
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.09			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.80	**SA**	0.07	**Seismic Importance Factor**			1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-45.68	-2.04	0.00	-189.95	0.00	189.95	6904.70	3452.35	18167.7	9019.23		0.00	0.00	0.028
5.00	-43.63	-2.03	0.00	-179.73	0.00	179.73	6814.63	3407.32	17555.1	8715.10		0.00	-0.01	0.027
10.00	-41.60	-2.01	0.00	-169.58	0.00	169.58	6722.29	3361.14	16946.7	8413.06		0.01	-0.01	0.026
15.00	-39.59	-1.98	0.00	-159.54	0.00	159.54	6627.68	3313.84	16342.8	8113.30		0.02	-0.02	0.026
20.00	-37.64	-1.95	0.00	-149.64	0.00	149.64	6530.79	3265.40	15744.0	7816.00		0.04	-0.02	0.025
25.00	-35.72	-1.92	0.00	-139.87	0.00	139.87	6431.64	3215.82	15150.5	7521.35		0.07	-0.03	0.024
30.00	-33.85	-1.89	0.00	-130.26	0.00	130.26	6330.22	3165.11	14562.6	7229.53		0.10	-0.03	0.023
34.42	-32.23	-1.86	0.00	-121.92	0.00	121.92	6238.75	3119.37	14048.5	6974.27		0.13	-0.04	0.023
35.00	-31.84	-1.85	0.00	-120.84	0.00	120.84	6226.54	3113.27	13980.9	6940.74		0.13	-0.04	0.023
40.00	-28.49	-1.78	0.00	-111.58	0.00	111.58	6120.58	3060.29	13405.6	6655.15		0.17	-0.04	0.021
42.00	-27.17	-1.75	0.00	-108.02	0.00	108.02	5160.60	2580.30	11403.7	5661.29		0.19	-0.04	0.024
45.00	-26.24	-1.73	0.00	-102.77	0.00	102.77	5111.09	2555.54	11125.3	5523.07		0.22	-0.05	0.024
50.00	-24.72	-1.70	0.00	-94.11	0.00	94.11	5026.76	2513.38	10664.6	5294.40		0.27	-0.05	0.023
55.00	-23.24	-1.68	0.00	-85.59	0.00	85.59	4940.17	2470.09	10208.6	5068.02		0.32	-0.06	0.022
60.00	-21.80	-1.65	0.00	-77.21	0.00	77.21	4851.31	2425.65	9757.65	4844.11		0.39	-0.06	0.020
65.00	-20.39	-1.64	0.00	-68.94	0.00	68.94	4760.17	2380.09	9311.98	4622.86		0.45	-0.07	0.019
70.00	-19.02	-1.63	0.00	-60.75	0.00	60.75	4666.77	2333.39	8872.04	4404.46		0.53	-0.07	0.018
75.00	-17.69	-1.62	0.00	-52.63	0.00	52.63	4571.10	2285.55	8438.22	4189.09		0.60	-0.08	0.016
75.43	-17.58	-1.61	0.00	-51.93	0.00	51.93	4562.70	2281.35	8400.92	4170.57		0.61	-0.08	0.016
80.00	-15.57	-1.59	0.00	-44.55	0.00	44.55	4473.16	2236.58	8010.87	3976.93		0.69	-0.08	0.015
82.02	-14.69	-1.58	0.00	-41.34	0.00	41.34	2855.93	1427.97	5154.94	2559.13		0.72	-0.08	0.021
85.00	-14.15	-1.57	0.00	-36.62	0.00	36.62	2826.19	1413.09	5008.30	2486.33		0.77	-0.08	0.020
88.00	-12.65	-1.54	0.00	-31.90	0.00	31.90	2795.46	1397.73	4861.39	2413.40		0.83	-0.09	0.018
89.00	-11.87	-1.51	0.00	-30.36	0.00	30.36	2785.03	1392.52	4812.57	2389.16		0.85	-0.09	0.017
90.00	-10.73	-1.48	0.00	-28.84	0.00	28.84	2774.52	1387.26	4763.81	2364.96		0.87	-0.09	0.016
94.00	-9.44	-1.42	0.00	-22.93	0.00	22.93	2731.55	1365.78	4569.59	2268.54		0.94	-0.09	0.014
95.00	-9.27	-1.41	0.00	-21.51	0.00	21.51	2720.58	1360.29	4521.25	2244.54		0.96	-0.09	0.013
100.00	-8.43	-1.35	0.00	-14.45	0.00	14.45	2664.38	1332.19	4280.99	2125.26		1.06	-0.10	0.010
105.00	-7.61	-1.26	0.00	-7.72	0.00	7.72	2605.91	1302.95	4043.40	2007.32		1.16	-0.10	0.007
110.00	-6.83	-1.14	0.00	-1.42	0.00	1.42	2545.16	1272.58	3808.87	1890.88		1.27	-0.10	0.003
111.00	-0.48	-0.09	0.00	-0.28	0.00	0.28	2532.74	1266.37	3762.36	1867.79		1.29	-0.10	0.000
114.00	0.00	-0.09	0.00	0.00	0.00	0.00	2494.94	1247.47	3623.69	1798.95		1.35	-0.10	0.000

Seismic Segment Forces (Factored)

Structure:	CT22093-A-SBA	**Code:**	TIA-222-G	2/14/2022	
Site Name:	New London (Bates Wood)	**Exposure:**	C		
Height:	114.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 22	

Tower Engineering Solutions

Load Case:	0.9D + 1.0E							**Iterations**	15
Gust Response Factor	1.10				**Sds**	0.17		**Ss**	0.16
Dead Load Factor	0.90	**Seismic Load Factor**	1.00		**Sd1**	0.09		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.80		**SA**	0.07	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1712.0	0.00	0.04	0.02	17.37	
10.00		1676.0	0.01	0.06	0.04	25.52	
15.00		1640.0	0.03	0.07	0.04	29.41	
20.00		1604.1	0.06	0.07	0.04	31.61	
25.00		1568.1	0.09	0.07	0.04	33.35	
30.00		1532.2	0.13	0.07	0.03	35.05	
34.42	Bot - Section 2	1323.5	0.17	0.07	0.03	32.12	
35.00		326.61	0.18	0.07	0.03	7.98	
40.00		2761.8	0.23	0.06	0.02	70.81	
42.00	Top - Section 1	1085.8	0.26	0.05	0.02	28.15	
45.00		758.23	0.29	0.05	0.01	19.74	
50.00		1238.5	0.36	0.03	0.01	31.19	
55.00		1207.0	0.44	0.01	0.01	27.55	
60.00		1175.5	0.52	-0.02	0.01	22.40	
65.00		1144.0	0.61	-0.06	0.02	16.64	
70.00		1112.5	0.71	-0.09	0.03	11.77	
75.00		1081.0	0.82	-0.11	0.06	9.68	
75.43	Bot - Section 3	92.20	0.83	-0.12	0.06	0.83	
80.00		1653.0	0.93	-0.12	0.10	19.18	
82.02	Top - Section 2	715.66	0.98	-0.11	0.12	10.23	
85.00		438.97	1.05	-0.09	0.16	8.89	
88.00	Appurtenance(s)	1233.3	1.13	-0.05	0.20	35.63	
89.00	Appurtenance(s)	642.64	1.15	-0.04	0.22	20.81	
90.00	Appurtenance(s)	941.74	1.18	-0.02	0.24	34.09	
94.00	Appurtenance(s)	1057.9	1.29	0.10	0.32	57.94	
95.00		137.24	1.31	0.14	0.35	8.27	
100.00		672.70	1.45	0.39	0.49	62.50	
105.00		650.19	1.60	0.79	0.67	87.40	
110.00		627.68	1.76	1.36	0.91	116.11	
111.00	Appurtenance(s)	5287.7	1.79	1.50	0.96	1037.37	
114.00	Appurtenance(s)	398.10	1.89	1.98	1.14	92.37	
	Totals:	**37,496.5**				**2,041.9**	**Total Wind:** **36,963.3**

Calculated Forces

Structure:	CT22093-A-SBA	**Code:**	TIA-222-G	2/14/2022	
Site Name:	New London (Bates Wood)	**Exposure:**	C		
Height:	114.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

Tower Engineering Solutions

Load Case:	0.9D + 1.0E							**Iterations**	15
Gust Response Factor	1.10			**Sds**	0.17			**Ss**	0.16
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.09			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.80	**SA**	0.07			**Seismic Importance Factor**	1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-34.26	-2.04	0.00	-189.45	0.00	189.45	6904.70	3452.35	18167.7	9019.23		0.00	0.00	0.026
5.00	-32.72	-2.03	0.00	-179.24	0.00	179.24	6814.63	3407.32	17555.1	8715.10		0.00	-0.01	0.025
10.00	-31.20	-2.01	0.00	-169.09	0.00	169.09	6722.29	3361.14	16946.7	8413.06		0.01	-0.01	0.025
15.00	-29.70	-1.98	0.00	-159.07	0.00	159.07	6627.68	3313.84	16342.8	8113.30		0.02	-0.02	0.024
20.00	-28.23	-1.95	0.00	-149.17	0.00	149.17	6530.79	3265.40	15744.0	7816.00		0.04	-0.02	0.023
25.00	-26.79	-1.92	0.00	-139.43	0.00	139.43	6431.64	3215.82	15150.5	7521.35		0.07	-0.03	0.023
30.00	-25.39	-1.88	0.00	-129.84	0.00	129.84	6330.22	3165.11	14562.6	7229.53		0.10	-0.03	0.022
34.42	-24.17	-1.85	0.00	-121.52	0.00	121.52	6238.75	3119.37	14048.5	6974.27		0.13	-0.03	0.021
35.00	-23.88	-1.85	0.00	-120.44	0.00	120.44	6226.54	3113.27	13980.9	6940.74		0.13	-0.04	0.021
40.00	-21.37	-1.77	0.00	-111.21	0.00	111.21	6120.58	3060.29	13405.6	6655.15		0.17	-0.04	0.020
42.00	-20.38	-1.75	0.00	-107.66	0.00	107.66	5160.60	2580.30	11403.7	5661.29		0.19	-0.04	0.023
45.00	-19.68	-1.73	0.00	-102.43	0.00	102.43	5111.09	2555.54	11125.3	5523.07		0.22	-0.05	0.022
50.00	-18.54	-1.70	0.00	-93.79	0.00	93.79	5026.76	2513.38	10664.6	5294.40		0.27	-0.05	0.021
55.00	-17.43	-1.67	0.00	-85.31	0.00	85.31	4940.17	2470.09	10208.6	5068.02		0.32	-0.06	0.020
60.00	-16.35	-1.65	0.00	-76.96	0.00	76.96	4851.31	2425.65	9757.65	4844.11		0.39	-0.06	0.019
65.00	-15.29	-1.63	0.00	-68.72	0.00	68.72	4760.17	2380.09	9311.98	4622.86		0.45	-0.07	0.018
70.00	-14.27	-1.62	0.00	-60.56	0.00	60.56	4666.77	2333.39	8872.04	4404.46		0.53	-0.07	0.017
75.00	-13.27	-1.61	0.00	-52.46	0.00	52.46	4571.10	2285.55	8438.22	4189.09		0.60	-0.08	0.015
75.43	-13.19	-1.61	0.00	-51.77	0.00	51.77	4562.70	2281.35	8400.92	4170.57		0.61	-0.08	0.015
80.00	-11.67	-1.59	0.00	-44.42	0.00	44.42	4473.16	2236.58	8010.87	3976.93		0.68	-0.08	0.014
82.02	-11.02	-1.58	0.00	-41.22	0.00	41.22	2855.93	1427.97	5154.94	2559.13		0.72	-0.08	0.020
85.00	-10.61	-1.57	0.00	-36.51	0.00	36.51	2826.19	1413.09	5008.30	2486.33		0.77	-0.08	0.018
88.00	-9.49	-1.53	0.00	-31.81	0.00	31.81	2795.46	1397.73	4861.39	2413.40		0.83	-0.09	0.017
89.00	-8.90	-1.51	0.00	-30.28	0.00	30.28	2785.03	1392.52	4812.57	2389.16		0.84	-0.09	0.016
90.00	-8.05	-1.47	0.00	-28.77	0.00	28.77	2774.52	1387.26	4763.81	2364.96		0.86	-0.09	0.015
94.00	-7.08	-1.42	0.00	-22.87	0.00	22.87	2731.55	1365.78	4569.59	2268.54		0.94	-0.09	0.013
95.00	-6.95	-1.41	0.00	-21.45	0.00	21.45	2720.58	1360.29	4521.25	2244.54		0.96	-0.09	0.012
100.00	-6.32	-1.34	0.00	-14.42	0.00	14.42	2664.38	1332.19	4280.99	2125.26		1.06	-0.10	0.009
105.00	-5.71	-1.26	0.00	-7.70	0.00	7.70	2605.91	1302.95	4043.40	2007.32		1.16	-0.10	0.006
110.00	-5.12	-1.14	0.00	-1.42	0.00	1.42	2545.16	1272.58	3808.87	1890.88		1.26	-0.10	0.003
111.00	-0.36	-0.09	0.00	-0.28	0.00	0.28	2532.74	1266.37	3762.36	1867.79		1.29	-0.10	0.000
114.00	0.00	-0.09	0.00	0.00	0.00	0.00	2494.94	1247.47	3623.69	1798.95		1.35	-0.10	0.000

Wind Loading - Shaft

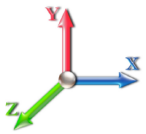
Structure:	CT22093-A-SBA	**Code:**	TIA-222-G	2/14/2022	
Site Name:	New London (Bates Wood)	**Exposure:**	C		
Height:	114.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

IES Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 15

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	301.98	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	295.75	0.750	0.000	5.00	27.014	20.26	165.9	0.0	1712.0
10.00		1.00	0.85	7.442	8.19	289.52	0.750	0.000	5.00	26.451	19.84	162.4	0.0	1676.1
15.00		1.00	0.85	7.442	8.19	283.30	0.750	0.000	5.00	25.888	19.42	158.9	0.0	1640.1
20.00		1.00	0.90	7.896	8.69	285.40	0.750	0.000	5.00	25.325	18.99	165.0	0.0	1604.1
25.00		1.00	0.95	8.276	9.10	285.61	0.750	0.000	5.00	24.762	18.57	169.1	0.0	1568.2
30.00		1.00	0.98	8.600	9.46	284.45	0.750	0.000	5.00	24.199	18.15	171.7	0.0	1532.2
34.42	Bot - Section 2	1.00	1.01	8.852	9.74	282.59	0.750	0.000	4.42	20.908	15.68	152.7	0.0	1323.5
35.00		1.00	1.01	8.883	9.77	282.30	0.750	0.000	0.58	2.772	2.08	20.3	0.0	326.6
40.00		1.00	1.04	9.137	10.05	279.40	0.750	0.000	5.00	23.445	17.58	176.7	0.0	2761.8
42.00	Top - Section 1	1.00	1.05	9.231	10.15	278.06	0.750	0.000	2.00	9.220	6.92	70.2	0.0	1085.8
45.00		1.00	1.07	9.366	10.30	280.51	0.750	0.000	3.00	13.662	10.25	105.6	0.0	758.2
50.00		1.00	1.09	9.576	10.53	276.58	0.750	0.000	5.00	22.319	16.74	176.3	0.0	1238.5
55.00		1.00	1.12	9.770	10.75	272.23	0.750	0.000	5.00	21.756	16.32	175.4	0.0	1207.0
60.00		1.00	1.14	9.951	10.95	267.53	0.750	0.000	5.00	21.193	15.90	174.0	0.0	1175.5
65.00		1.00	1.16	10.120	11.13	262.53	0.750	0.000	5.00	20.631	15.47	172.2	0.0	1144.0
70.00		1.00	1.17	10.279	11.31	257.27	0.750	0.000	5.00	20.068	15.05	170.2	0.0	1112.5
75.00		1.00	1.19	10.430	11.47	251.77	0.750	0.000	5.00	19.505	14.63	167.8	0.0	1081.0
75.43	Bot - Section 3	1.00	1.19	10.442	11.49	251.28	0.750	0.000	0.43	1.664	1.25	14.3	0.0	92.2
80.00		1.00	1.21	10.572	11.63	246.06	0.750	0.000	4.57	17.521	13.14	152.8	0.0	1653.1
82.02	Top - Section 2	1.00	1.21	10.628	11.69	243.71	0.750	0.000	2.02	7.588	5.69	66.5	0.0	715.7
85.00		1.00	1.22	10.708	11.78	243.70	0.750	0.000	2.98	11.057	8.29	97.7	0.0	439.0
88.00	Appurtenance(s)	1.00	1.23	10.787	11.87	240.09	0.750	0.000	3.00	10.917	8.19	97.1	0.0	433.3
89.00	Appurtenance(s)	1.00	1.23	10.812	11.89	238.87	0.750	0.000	1.00	3.594	2.70	32.1	0.0	142.6
90.00	Appurtenance(s)	1.00	1.24	10.838	11.92	237.65	0.750	0.000	1.00	3.571	2.68	31.9	0.0	141.7
94.00	Appurtenance(s)	1.00	1.25	10.937	12.03	232.70	0.750	0.000	4.00	14.060	10.55	126.9	0.0	558.0
95.00		1.00	1.25	10.962	12.06	231.45	0.750	0.000	1.00	3.459	2.59	31.3	0.0	137.2
100.00		1.00	1.27	11.081	12.19	225.10	0.750	0.000	5.00	16.956	12.72	155.0	0.0	672.7
105.00		1.00	1.28	11.195	12.31	218.62	0.750	0.000	5.00	16.393	12.29	151.4	0.0	650.2
110.00		1.00	1.29	11.305	12.44	212.02	0.750	0.000	5.00	15.830	11.87	147.6	0.0	627.7
111.00	Appurtenance(s)	1.00	1.29	11.327	12.46	210.69	0.750	0.000	1.00	3.098	2.32	29.0	0.0	122.8
114.00	Appurtenance(s)	1.00	1.30	11.391	12.53	206.65	0.750	0.000	3.00	9.160	6.87	86.1	0.0	363.1
								Totals:	**114.00**			**3,774.1**		**29,696.6**

Discrete Appurtenance Forces

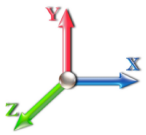
Structure:	CT22093-A-SBA	**Code:**	TIA-222-G	2/14/2022	
Site Name:	New London (Bates Wood)	**Exposure:**	C		
Height:	114.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 25	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 15

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	114.00	Lightning Rod	1	11.463	12.610	1.00	1.00	1.05	35.00	0.000	3.500	13.24	0.00	46.34
2	111.00	Ericsson RRUS 4426 B66	3	11.327	12.460	0.50	0.75	2.49	145.20	0.000	0.000	30.99	0.00	0.00
3	111.00	Ericsson RRUS 4478 B14	3	11.327	12.460	0.50	0.75	3.05	178.20	0.000	0.000	37.94	0.00	0.00
4	111.00	Ericsson RRUS 4449 B5,	3	11.327	12.460	0.50	0.75	2.97	213.00	0.000	0.000	37.00	0.00	0.00
5	111.00	Ericsson RRUS E2 B29	3	11.327	12.460	0.50	0.75	4.75	180.00	0.000	0.000	59.17	0.00	0.00
6	111.00	Ericsson RRUS 32 RRU's	3	11.327	12.460	0.50	0.75	2.49	231.00	0.000	0.000	30.99	0.00	0.00
7	111.00	Ericsson RRUS-11 RRU's	3	11.327	12.460	0.50	0.75	3.80	165.00	0.000	0.000	47.33	0.00	0.00
8	111.00	Ericsson RRU A2 RRU's	3	11.327	12.460	0.50	0.75	2.37	45.00	0.000	0.000	29.49	0.00	0.00
9	111.00	Raycap DC6-48-60-18-8F	4	11.327	12.460	0.50	0.75	7.44	131.20	0.000	0.000	92.66	0.00	0.00
10	111.00	GPS	1	11.327	12.460	0.45	0.75	0.45	10.00	0.000	0.000	5.61	0.00	0.00
11	111.00	Platform w/ Handrails	1	11.327	12.460	1.00	1.00	32.00	1600.00	0.000	0.000	398.71	0.00	0.00
12	111.00	Ericsson RRUS 32 B30	3	11.327	12.460	0.50	0.75	4.13	180.00	0.000	0.000	51.46	0.00	0.00
13	111.00	Air6419 B77D	3	11.370	12.507	0.57	0.75	6.50	198.30	0.000	2.000	81.27	0.00	162.53
14	111.00	Reinforcing Angles	6	11.327	12.460	1.00	1.00	9.00	390.00	0.000	0.000	112.14	0.00	0.00
15	111.00	QD8616-7	3	11.327	12.460	0.69	0.75	27.88	294.00	0.000	0.000	347.41	0.00	0.00
16	111.00	Kathrein 800 10966	3	11.327	12.460	0.54	0.75	28.12	343.80	0.000	0.000	350.40	0.00	0.00
17	111.00	AIR 6419 B77G	3	11.284	12.412	0.57	0.75	6.50	198.30	0.000	-2.000	80.65	0.00	-161.31
18	111.00	Kicker Kit	1	11.327	12.460	1.00	1.00	9.50	464.91	0.000	0.000	118.37	0.00	0.00
19	111.00	Sector Frame Stabilizer Kit	1	11.380	12.518	1.00	1.00	6.30	197.00	0.000	2.500	78.86	0.00	197.16
20	94.00	Ice shield	1	10.937	12.031	1.00	1.00	40.00	500.00	0.000	0.000	481.24	0.00	0.00
21	90.00	Sport Lights	1	10.838	11.921	1.00	1.00	40.00	800.00	0.000	0.000	476.86	0.00	0.00
22	89.00	Light support	1	10.812	11.893	1.00	1.00	28.00	500.00	0.000	0.000	333.02	0.00	0.00
23	88.00	Sport Lights	1	10.787	11.865	1.00	1.00	40.00	800.00	0.000	0.000	474.61	0.00	0.00
							Totals:		**7,799.91**			**3,769.42**		

Total Applied Force Summary

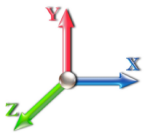
Structure:	CT22093-A-SBA	**Code:**	TIA-222-G	2/14/2022	
Site Name:	New London (Bates Wood)	**Exposure:**	C		
Height:	114.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 15

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		165.85	1712.01	0.00	0.00
10.00		162.40	1692.55	0.00	0.00
15.00		158.94	1667.59	0.00	0.00
20.00		164.98	1631.63	0.00	0.00
25.00		169.07	1595.67	0.00	0.00
30.00		171.69	1559.71	0.00	0.00
34.42		152.69	1347.83	0.00	0.00
35.00		20.32	329.81	0.00	0.00
40.00		176.73	2789.31	0.00	0.00
42.00		70.22	1096.83	0.00	0.00
45.00		105.57	774.73	0.00	0.00
50.00		176.33	1266.01	0.00	0.00
55.00		175.37	1234.51	0.00	0.00
60.00		173.99	1203.01	0.00	0.00
65.00		172.25	1171.51	0.00	0.00
70.00		170.18	1140.01	0.00	0.00
75.00		167.83	1108.51	0.00	0.00
75.43		14.33	94.59	0.00	0.00
80.00		152.82	1678.17	0.00	0.00
82.02		66.53	726.75	0.00	0.00
85.00		97.68	455.37	0.00	0.00
88.00	(1) attachments	571.75	1249.84	0.00	0.00
89.00	(1) attachments	365.07	648.14	0.00	0.00
90.00	(1) attachments	508.79	947.24	0.00	0.00
94.00	(1) attachments	608.11	1079.97	0.00	0.00
95.00		31.28	142.74	0.00	0.00
100.00		155.00	700.20	0.00	0.00
105.00		151.40	677.69	0.00	0.00
110.00		147.64	655.18	0.00	0.00
111.00	(50) attachments	2019.41	5293.24	0.00	198.39
114.00	(1) attachments	99.32	398.10	0.00	46.34
	Totals:	**7,543.52**	**38,068.49**	**0.00**	**244.73**

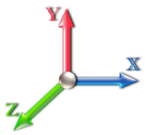
Calculated Forces

Structure:	CT22093-A-SBA	**Code:**	TIA-222-G	2/14/2022	
Site Name:	New London (Bates Wood)	**Exposure:**	C		
Height:	114.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 27	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 15

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-38.07	-7.55	0.00	-606.82	0.00	606.82	6904.70	3452.35	18167.7	9019.23	0.00	0.000	0.000	0.073
5.00	-36.35	-7.39	0.00	-569.08	0.00	569.08	6814.63	3407.32	17555.1	8715.10	0.01	-0.016	0.000	0.071
10.00	-34.66	-7.24	0.00	-532.12	0.00	532.12	6722.29	3361.14	16946.7	8413.06	0.03	-0.032	0.000	0.068
15.00	-32.99	-7.09	0.00	-495.93	0.00	495.93	6627.68	3313.84	16342.8	8113.30	0.08	-0.048	0.000	0.066
20.00	-31.36	-6.93	0.00	-460.49	0.00	460.49	6530.79	3265.40	15744.0	7816.00	0.14	-0.064	0.000	0.064
25.00	-29.76	-6.77	0.00	-425.84	0.00	425.84	6431.64	3215.82	15150.5	7521.35	0.21	-0.079	0.000	0.061
30.00	-28.20	-6.60	0.00	-392.00	0.00	392.00	6330.22	3165.11	14562.6	7229.53	0.30	-0.095	0.000	0.059
34.42	-26.85	-6.45	0.00	-362.85	0.00	362.85	6238.75	3119.37	14048.5	6974.27	0.40	-0.108	0.000	0.056
35.00	-26.52	-6.43	0.00	-359.09	0.00	359.09	6226.54	3113.27	13980.9	6940.74	0.41	-0.110	0.000	0.056
40.00	-23.73	-6.25	0.00	-326.93	0.00	326.93	6120.58	3060.29	13405.6	6655.15	0.53	-0.125	0.000	0.053
42.00	-22.63	-6.18	0.00	-314.43	0.00	314.43	5160.60	2580.30	11403.7	5661.29	0.59	-0.131	0.000	0.060
45.00	-21.86	-6.08	0.00	-295.88	0.00	295.88	5111.09	2555.54	11125.3	5523.07	0.67	-0.140	0.000	0.058
50.00	-20.59	-5.91	0.00	-265.47	0.00	265.47	5026.76	2513.38	10664.6	5294.40	0.83	-0.156	0.000	0.054
55.00	-19.35	-5.73	0.00	-235.94	0.00	235.94	4940.17	2470.09	10208.6	5068.02	1.00	-0.170	0.000	0.050
60.00	-18.15	-5.56	0.00	-207.27	0.00	207.27	4851.31	2425.65	9757.65	4844.11	1.19	-0.185	0.000	0.047
65.00	-16.98	-5.39	0.00	-179.48	0.00	179.48	4760.17	2380.09	9311.98	4622.86	1.39	-0.198	0.000	0.042
70.00	-15.84	-5.22	0.00	-152.54	0.00	152.54	4666.77	2333.39	8872.04	4404.46	1.60	-0.210	0.000	0.038
75.00	-14.73	-5.05	0.00	-126.46	0.00	126.46	4571.10	2285.55	8438.22	4189.09	1.83	-0.222	0.000	0.033
75.43	-14.63	-5.03	0.00	-124.27	0.00	124.27	4562.70	2281.35	8400.92	4170.57	1.85	-0.223	0.000	0.033
80.00	-12.95	-4.87	0.00	-101.29	0.00	101.29	4473.16	2236.58	8010.87	3976.93	2.07	-0.232	0.000	0.028
82.02	-12.23	-4.81	0.00	-91.46	0.00	91.46	2855.93	1427.97	5154.94	2559.13	2.17	-0.236	0.000	0.040
85.00	-11.77	-4.71	0.00	-77.13	0.00	77.13	2826.19	1413.09	5008.30	2486.33	2.31	-0.241	0.000	0.035
88.00	-10.52	-4.13	0.00	-63.00	0.00	63.00	2795.46	1397.73	4861.39	2413.40	2.47	-0.247	0.000	0.030
89.00	-9.88	-3.76	0.00	-58.87	0.00	58.87	2785.03	1392.52	4812.57	2389.16	2.52	-0.249	0.000	0.028
90.00	-8.93	-3.25	0.00	-55.11	0.00	55.11	2774.52	1387.26	4763.81	2364.96	2.57	-0.251	0.000	0.027
94.00	-7.86	-2.64	0.00	-42.10	0.00	42.10	2731.55	1365.78	4569.59	2268.54	2.79	-0.257	0.000	0.021
95.00	-7.71	-2.61	0.00	-39.46	0.00	39.46	2720.58	1360.29	4521.25	2244.54	2.84	-0.258	0.000	0.020
100.00	-7.01	-2.45	0.00	-26.42	0.00	26.42	2664.38	1332.19	4280.99	2125.26	3.11	-0.264	0.000	0.015
105.00	-6.34	-2.30	0.00	-14.17	0.00	14.17	2605.91	1302.95	4043.40	2007.32	3.39	-0.268	0.000	0.009
110.00	-5.68	-2.15	0.00	-2.69	0.00	2.69	2545.16	1272.58	3808.87	1890.88	3.67	-0.270	0.000	0.004
111.00	-0.40	-0.10	0.00	-0.35	0.00	0.35	2532.74	1266.37	3762.36	1867.79	3.73	-0.270	0.000	0.000
114.00	0.00	-0.10	0.00	-0.05	0.00	0.05	2494.94	1247.47	3623.69	1798.95	3.90	-0.270	0.000	0.000

Final Analysis Summary

Structure:	CT22093-A-SBA	**Code:**	TIA-222-G	2/14/2022	
Site Name:	New London (Bates Wood)	**Exposure:**	C		
Height:	114.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

Tower Engineering Solutions

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 105 mph Wind	37.0	0.00	45.66	0.00	0.00	2978.30
0.9D + 1.6W 105 mph Wind	37.0	0.00	34.24	0.00	0.00	2971.03
1.2D + 1.0Di + 1.0Wi 50 mph Wind	9.0	0.00	66.65	0.00	0.00	726.92
1.2D + 1.0E	2.0	0.00	45.68	0.00	0.00	189.95
0.9D + 1.0E	2.0	0.00	34.26	0.00	0.00	189.45
1.0D + 1.0W 60 mph Wind	7.5	0.00	38.07	0.00	0.00	606.82

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 105 mph Wind	-45.66	-37.00	0.00	-2978.3	0.00	-2978.3	6904.70	3452.3	18167.7	9019.23	0.00	0.337
0.9D + 1.6W 105 mph Wind	-34.24	-36.99	0.00	-2971.0	0.00	-2971.0	6904.70	3452.3	18167.7	9019.23	0.00	0.334
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-66.65	-9.01	0.00	-726.92	0.00	-726.92	6904.70	3452.3	18167.7	9019.23	0.00	0.090
1.2D + 1.0E	-45.68	-2.04	0.00	-189.95	0.00	-189.95	6904.70	3452.3	18167.7	9019.23	0.00	0.028
0.9D + 1.0E	-34.26	-2.04	0.00	-189.45	0.00	-189.45	6904.70	3452.3	18167.7	9019.23	0.00	0.026
1.0D + 1.0W 60 mph Wind	-38.07	-7.55	0.00	-606.82	0.00	-606.82	6904.70	3452.3	18167.7	9019.23	0.00	0.073

Base Plate Summary

Structure:	CT22093-A-SB		**Code:**	TIA-222-G	2/14/2022
Site Name:	New London (Bates Wood)		**Exposure:**	C	
Height:	114.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 29

Tower Engineering Solutions

Reactions	
Original Design	
Moment (kip-ft):	5051.00
Axial (kip):	55.30
Shear (kip):	47.20
Analysis (1.2D + 1.6W)	
Moment (kip-ft):	2978.30
Axial (kip):	45.66
Shear (kip):	37.00

Base Plate	
Yield (ksi):	50.00
Width (in):	78.94
Style:	Polygon
Polygon Sides:	16.00
Clip Length (in):	0.00
Effective Len (in):	12.05
Moment (kip-in):	321.35
Allow Stress (ksi):	67.50
Applied Stress (ksi):	12.82
Stress Ratio:	0.19

Anchor Bolts	
Bolt Circle:	71.74
Number Bolts:	24.00
Bolt Type:	2.25" 18J
Bolt Diameter (in):	2.25
Yield (ksi):	75.00
Ultimate (ksi):	100.00
Arrangement:	Radial
Cluster Dist (in):	0.00
Start Angle (deg):	0.00
Compression	
Force (kip):	85.81
Allowable (kip):	260.00
Ratio:	0.34
Tension	
Force (kip):	80.25
Allowable (kip):	260.00
Ratio:	0.32

Monopole Mat Foundation Design

				Date
				2/14/2022
	Customer Name:	AT&T	**EIA/TIA Standard:**	TIA-222-G
	Site Name:		**Structure Height (Ft.):**	114
	Site Number:	CT22093-A-SBA	**Engineer Name:**	J. Tibbetts
	Engr. Number:	124166	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

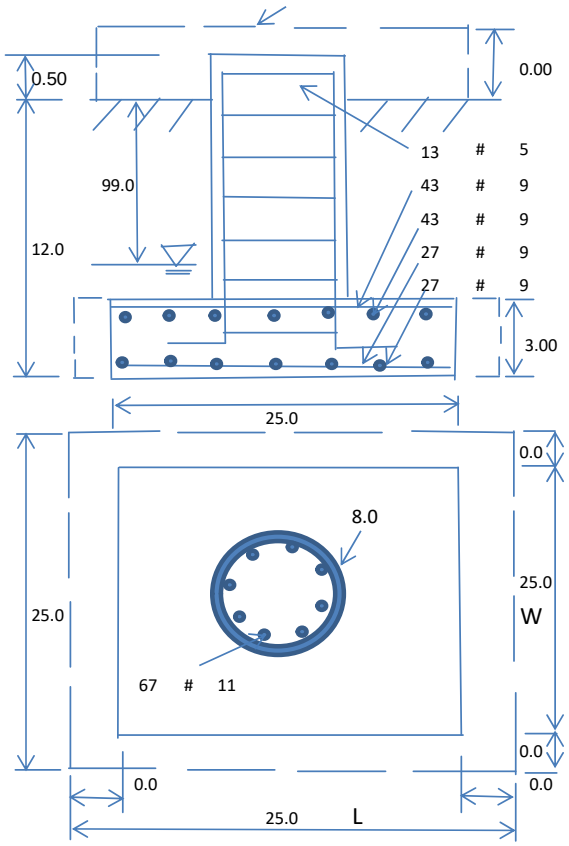
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	45.7	Shear Force (Kips):	37.0
Uplift Force (Kips):	0.0	Moment (Kips-ft):	2978.3
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	8.0	Depth of Base BG (ft.):	12.0
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft):	3.00
Length of Pad (ft.):	25	Width of Pad (ft.):	25
Final Length of pad (ft)	25.0	Final width of pad (ft):	25.0



Material Properties and Reabr Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	11	Tie / Stirrup Size #:	5	
Qty. of Vertical Rebars:	67	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	9	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	27	Qty. of Rebar in Pad (W):	27	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	43	Qty. of Rebar in Pad (W):	43	
Apply 1.35 factor for e/w Per G:	1.35			

Soil Design Parameters:

Soil Unit Weight (pcf):	125.0	Soil Buoyant Weight:	37.6	Pcf		
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	20000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	Yes	Reduction factor on the maximum soil bearing pressure:			1.00	

Foundation Analysis and Design: Uplift Strength Reduction Factor: 0.75 — Compression Strength Reduction Factor: 0.75

Total Dry Soil Volume (cu. Ft.):	5172.61	Total Dry Soil Weight (Kips):	646.58
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	646.58	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	2352.52	Total Dry Concrete Weight (Kips):	352.88
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	352.88	Total Vertical Load on Base (Kips):	1045.15

Check Soil Capacities:

					Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	2112	<	Allowable Factored Soil Bearing (psf):	15000	0.14	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	11815.1	>	Design Factored Momont (kips-ft):	2583	0.22	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	4.57	OK!				

Check the capacities of Reinforceing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75			
Strength reduction factor (Axial compresion):	0.65	Wind Load Factor on Concrete Design:	1.00			
					Load/ Capacity Ratio	
(1) Concrete Pier:						
Vertical Steel Rebar Area (sq. in./each):	1.56		Tie / Stirrup Area (sq. in./each):	0.31		
Calculated Moment Capacity (Mn,Kips-Ft):	18154.7	>	Design Factored Moment (Mu, Kips-F	3329.8	0.18	OK!
Calculated Shear Capacity (Kips):	832.8	>	Design Factored Shear (Kips):	37.0	0.04	OK!
Calculated Tension Capacity (Tn, Kips):	5644.1	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	9459.3	>	Design Factored Axial Load (Pu Kips):	45.7	0.00	OK!
Moment & Axial Strength Combination:	0.18	OK!	Check Tie Spacing (Design/Required):		1	OK!
Pier Reinforcement Ratio:	0.014		Reinforcement Ratio is satisfied per ACI			
(2).Concrete Pad:						
One-Way Design Shear Capacity (L-Direction, Kips):	799.5	>	One-Way Factored Shear (L-D. Kips):	193.3	0.24	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	799.5	>	One-Way Factored Shear (W-D., Kips)	193.3	0.24	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	701.9	>	One-Way Factored Shear (C-C, Kips):	164.4	0.23	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0028	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0028		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	3812.5	>	Moment at Bottom (L-Dir. K-Ft):	1048.3	0.27	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	3812.5	>	Moment at Bottom (W-Dir. K-Ft):	1048.3	0.27	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	5338.5	>	Moment at Bottom (C-C Dir. K-Ft):	1482.5	0.28	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0044	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0044		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	5950.4	>	Moment at the top (L-Dir K-Ft):	373.2	0.06	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	5950.4	>	Moment at the top (W-Dir K-Ft):	373.2	0.06	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	8280.1	>	Moment at the top (C-C Dir. K-Ft):	352.5	0.04	OK!
(3).Check Punching Shear Capacity due to Moment in the Pier:						
Moment transferred by punching shear:	1191.3	k-ft.	Max. factored shear stress v_{u_CD}:		1.5	Psi
Max. factored shear stress v_{u_AB}:	7.1	Psi	Factored shear Strength ϕv_n:		164.3	Psi
Max. factored shear stress v_u:	7.1	Psi	Check Usage of Punching Shear Capacity:		0.04	OK!

January 14, 2022

SAI Communications
12 Industrial Way
Salem NH, 03079

RE:		
	Site Number:	CT2838
	FA Number:	10152339
	PACE Number:	MRCTB056163
	PT Number:	2051A11LTT
	Site Name:	NEW LONDON JEFFERSON AVENUE
	Site Address:	490 Jefferson Avenue New London, CT 06320

To Whom It May Concern:

Hudson Design Group LLC (HDG) has been authorized by SAI Communications to perform a mount analysis on the existing AT&T antenna/RRH mounts to determine their capability of supporting the following additional loading:

- (3) 800-10966 Antennas (96.0"x20.0"x6.9"– Wt. = 115 lbs. /each)
- (3) B14 4478 RRH's (18.1"x13.4"x8.3" – Wt. = 60 lbs. /each)
- (3) RRUS-32 B2 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (3) 4426 B66 RRH's (14.9"x13.2"x5.8" – Wt. = 49 lbs. /each)
- (3) RRUS-E2 B29 RRH's (20.4"x18.5"x7.5" – Wt. = 53 lbs. /each)
- (3) B5/B12 4449 RRH's (17.9"x13.2"x9.4" – Wt. = 73 lbs. /each)
- (3) RRUS-32 B30 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (4) Squid Surge Arrestor (24.0"x9.7" Ø – Wt. = 33 lbs.) (Tower Mounted)
- **(3) QD8616-7 Antennas (96.0"x22.0"x9.6" – Wt. = 150 lbs. /each)**
- **(3) AIR6449 Antennas (30.4"x15.9"x8.1" – Wt. = 82 lbs. /each)**
- **(3) AIR6419 Antennas (28.0"x15.7"x6.7" – Wt. = 66 lbs. /each)**

**Proposed equipment shown in bold.*

No original structural design documents or fabrication drawings were available for the existing mounts. Industrial Communication conducted a survey climb and mapping of the existing AT&T antenna mounts on December 20, 2018. HDG conducted a ground audit of the existing AT&T antenna mounts on December 20, 2021.

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 2015 with 2018 Connecticut State Building Code, and AT&T Mount Technical Directive – R16.
- HDG 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 N of the Connecticut State Building Code, the max basic wind speed for this site is equal to 135 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 1.13 in was used for this analysis.
- HDG considers this site to be exposure category B; tower is located in an urban/suburban or wooded area with numerous closely spaced obstructions.
- HDG considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- HDG considers this site to have a spectral response acceleration parameter at short periods, S_S, of 0.161 and a spectral response acceleration parameter at a period of 1 second, S_1, of 0.058.
- 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 1.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.
- The existing mount is secured to the existing monopole with HSS members secured to ring mounts. The ring mounts are secured around the monopole using threaded rods. HDG considers the threaded rods to be the governing connection member.

Based on our evaluation, we have determined that the existing mount **IS CAPABLE** of supporting the proposed installation.

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing Mount Rating	110	LC2	88%	**PASS**

Reference Documents:

- Mount mapping report prepared by ProVertic LLC.

This determination was based on the following limitations and assumptions:

1. HDG is not responsible for any modifications completed prior to and hereafter which HDG 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 existing mount has been adequately secured to the tower structure per the mount manufacturer's specifications.
5. All components pertaining to AT&T's mounts must be tightened and re-plumbed prior to the installation of new appurtenances.
6. HDG 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.

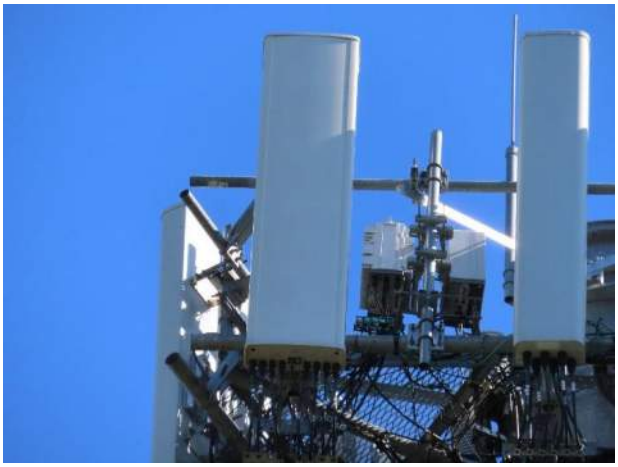
Respectfully Submitted,
Hudson Design Group LLC

Michael Cabral
Vice President

Daniel P. Hamm, PE
Principal

FIELD PHOTOS:






HUDSON
Design Group LLC

Wind & Ice
Calculations

Date: 1/14/2022
Project Name: NEW LONDON JEFFERSON AVENUE
Project No.: CT2838
Designed By: KM **Checked By:** MSC

HUDSON Design Group LLC

2.6.5.2 Velocity Pressure Coeff:

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

z=	111	(ft)
z_g=	1200	(ft)
α=	7.0	
K_z=	**1.018**	

$K_{zmin} \le K_z \le 2.01$

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

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

K_{zt}= **1**

(If Category 1 then K_{zt}=1.0)

Category= **1**

K_h=	1	
K_c=	0.9	(from Table 2-4)
K_t=	0	(from Table 2-5)
f=	0	(from Table 2-5)
z=	111	
z_s=	130	(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=	1.00	(from 2.6.8)

2.6.10 Design Ice Thickness

Max Ice Thickness = t_i = 1.00 in
Importance Factor = I= 1.0 (from Table 2-3)
K_{iz} = 1.13 (from Sec. 2.6.10)

$t_{iz} = t_i * I * K_{iz} * (K_{zt})^{0.35}$ $\qquad t_{iz}$ = 1.13 in

Date: 1/14/2022
Project Name: NEW LONDON JEFFERSON AVENUE
Project No.: CT2838
Designed By: KM Checked By: MSC

HUDSON Design Group LLC

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=	115	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=	1.018	(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=	**44.92**	K_e=	1.00	(from 2.6.8)
$q_{z\ (ice)}$=	**6.16**	K_d=	0.95	(from Table 2-2)
$q_{z\ (30)}$=	**2.22**	V_{max}=	135	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: 1/14/2022
Project Name: NEW LONDON JEFFERSON AVENUE
Project No.: CT2838
Designed By: KM Checked By: MSC

HUDSON Design Group LLC

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 = **1.13** 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)
QD8616-7 Antenna	96.0	22.0	9.6	14.67	4.36	1.28	**845**	**131**	**42**
AIR6449 Antenna	30.4	15.9	8.1	3.36	1.91	1.20	**181**	**30**	**9**
AIR6419 Antenna	28.0	15.7	6.7	3.05	1.78	1.20	**165**	**28**	**8**
800-10966 Antenna	96.0	20.0	6.9	13.33	4.80	1.30	**780**	**122**	**39**
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	2.25	1.20	**123**	**22**	**6**
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	2.25	1.20	**123**	**22**	**6**
RRUS-32 B30 RRH (Shielded)	27.2	6.1	7.0	1.14	4.50	1.29	**66**	**13**	**3**
4426 B66 RRH	14.9	13.2	5.8	1.37	1.13	1.20	**74**	**14**	**4**
4426 B66 RRH (Side)	14.9	5.8	13.2	0.60	2.57	1.20	**32**	**7**	**2**
B14 4478 RRH	18.1	13.4	8.3	1.68	1.35	1.20	**91**	**16**	**4**
B14 4478 RRH (Side)	18.1	8.3	13.4	1.04	2.18	1.20	**56**	**11**	**3**
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.10	1.20	**141**	**24**	**7**
RRUS-E2 B29 RRH (Shielded)	20.4	0.0	7.5	0.00	0.00	1.20	**0**	**3**	**0**
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.36	1.20	**88**	**16**	**4**
B5/B12 4449 RRH (Shielded)	17.9	0.0	9.4	0.00	0.00	1.20	**0**	**2**	**0**
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	**51**	**9**	**3**
PL 6x3/8	0.5	12.0	-	0.04	0.04	2.00	**4**		
C 3x2	3.0	12.0	-	0.25	0.25	1.25	**14**		
L 3x3 Angle	3.0	12.0	-	0.25	0.25	1.25	**14**		
L 2x2 Angle	2.0	12.0	-	0.17	0.17	1.25	**9**		
P1000 Unistrut	1.7	12.0	-	0.14	0.14	1.25	**8**		
3" Pipe	3.5	12.0	-	0.29	0.29	1.20	**16**		
2" Pipe	2.4	12.0	-	0.20	0.20	1.20	**11**		

Date: 1/14/2022
Project Name: NEW LONDON JEFFERSON AVENUE
Project No.: CT2838
Designed By: KM Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle = 30 (deg) | Ice Thickness = 1.13 in. | Equivalent Angle = 210 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio (normal)	Aspect Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
QD8616-7 Antenna	96.0	22.0	9.6	14.67	6.40	4.36	10.00	1.28	1.50	845	431	742
AIR6449 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	181	96	160
AIR6419 Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	165	75	142
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	780	337	669
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	123	75	111
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	123	75	111
RRUS-32 B30 RRH (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	66	75	68
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	74	32	63
4426 B66 RRH (Side)	14.9	6.6	13.2	0.68	1.37	2.26	1.13	1.20	1.20	37	74	46
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	91	56	82
B14 4478 RRH (Side)	18.1	6.7	13.4	0.84	1.68	2.70	1.35	1.21	1.20	46	91	57
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	141	58	120
RRUS-E2 B29 RRH (Shielded)	20.4	9.3	7.5	1.31	1.06	2.21	2.72	1.20	1.21	71	58	67
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	88	63	82
B5/B12 4449 RRH (Shielded)	17.9	6.6	9.4	0.82	1.17	2.71	1.90	1.21	1.20	45	63	49

WIND LOADS WITH ICE:

QD8616-7 Antenna	98.3	24.3	11.9	16.55	8.09	4.05	8.29	1.27	1.44	129	72	115
AIR6449 Antenna	32.7	18.2	10.4	4.12	2.35	1.80	3.15	1.20	1.23	30	18	27
AIR6419 Antenna	30.3	18.0	9.0	3.77	1.88	1.68	3.38	1.20	1.24	28	14	25
800-10966 Antenna	98.3	22.3	9.2	15.19	6.25	4.41	10.73	1.29	1.52	120	59	105
RRUS-32 B2 RRH	29.5	14.4	9.3	2.94	1.89	2.05	3.18	1.20	1.23	22	14	20
RRUS-32 B30 RRH	29.5	14.4	9.3	2.94	1.89	2.05	3.18	1.20	1.23	22	14	20
RRUS-32 B30 RRH (Shielded)	29.5	7.2	9.3	1.47	1.89	4.10	3.18	1.27	1.23	12	14	12
4426 B66 RRH	17.2	15.5	8.1	1.84	0.96	1.11	2.13	1.20	1.20	14	7	12
4426 B66 RRH (Side)	17.2	7.7	15.5	0.92	1.84	2.22	1.11	1.20	1.20	7	14	9
B14 4478 RRH	20.4	15.7	10.6	2.21	1.49	1.30	1.93	1.20	1.20	16	11	15
B14 4478 RRH (Side)	20.4	7.8	15.7	1.11	2.21	2.60	1.30	1.20	1.20	8	16	10
RRUS-E2 B29 RRH	22.7	20.8	9.8	3.27	1.54	1.09	2.32	1.20	1.20	24	11	21
RRUS-E2 B29 RRH (Shielded)	22.7	10.4	9.8	1.63	1.54	2.18	2.32	1.20	1.20	12	11	12
B5/B12 4449 RRH	20.2	15.5	11.7	2.16	1.63	1.30	1.73	1.20	1.20	16	12	15
B5/B12 4449 RRH (Shielded)	20.2	7.7	11.7	1.08	1.63	2.61	1.73	1.20	1.20	8	12	9

WIND LOADS AT 30 MPH:

QD8616-7 Antenna	96.0	22.0	9.6	14.67	6.40	4.36	10.00	1.28	1.50	42	21	37
AIR6449 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	9	5	8
AIR6419 Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	8	4	7
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	39	17	33
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	5
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	5
RRUS-32 B30 RRH (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	3	4	3
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	4	2	3
4426 B66 RRH (Side)	14.9	6.6	13.2	0.68	1.37	2.26	1.13	1.20	1.20	2	4	2
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	4	3	4
B14 4478 RRH (Side)	18.1	6.7	13.4	0.84	1.68	2.70	1.35	1.21	1.20	2	4	3
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	7	3	6
RRUS-E2 B29 RRH (Shielded)	20.4	9.3	7.5	1.31	1.06	2.21	2.72	1.20	1.21	3	3	3
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	4	3	4
B5/B12 4449 RRH (Shielded)	17.9	6.6	9.4	0.82	1.17	2.71	1.90	1.21	1.20	2	3	2

Date: 1/14/2022
Project Name: NEW LONDON JEFFERSON AVENUE
Project No.: CT2838
Designed By: KM Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	60	(deg)	Ice Thickness =	1.13	in.	Equivalent Angle =	240	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio (normal)	Aspect Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
QD8616-7 Antenna	96.0	22.0	9.6	14.67	6.40	4.36	10.00	1.28	1.50	845	431	535
AIR6449 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	181	96	118
AIR6419 Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	165	75	97
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	780	337	448
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	123	75	87
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	123	75	87
RRUS-32 B30 RRH (Shielded)	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	94	75	80
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	74	32	43
4426 B66 RRH (Side)	14.9	9.9	13.2	1.02	1.37	1.51	1.13	1.20	1.20	55	74	69
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	91	56	65
B14 4478 RRH (Side)	18.1	10.1	13.4	1.26	1.68	1.80	1.35	1.20	1.20	68	91	85
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	141	58	79
RRUS-E2 B29 RRH (Shielded)	20.4	13.9	7.5	1.97	1.06	1.47	2.72	1.20	1.21	106	58	70
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	88	63	69
B5/B12 4449 RRH (Shielded)	17.9	9.9	9.4	1.23	1.17	1.81	1.90	1.20	1.20	66	63	64

WIND LOADS WITH ICE:

QD8616-7 Antenna	98.3	24.3	11.9	16.55	8.09	4.05	8.29	1.27	1.44	129	72	86
AIR6449 Antenna	32.7	18.2	10.4	4.12	2.35	1.80	3.15	1.20	1.23	30	18	21
AIR6419 Antenna	30.3	18.0	9.0	3.77	1.88	1.68	3.38	1.20	1.24	28	14	18
800-10966 Antenna	98.3	22.3	9.2	15.19	6.25	4.41	10.73	1.29	1.52	120	59	74
RRUS-32 B2 RRH	29.5	14.4	9.3	2.94	1.89	2.05	3.18	1.20	1.23	22	14	16
RRUS-32 B30 RRH	29.5	14.4	9.3	2.94	1.89	2.05	3.18	1.20	1.23	22	14	16
RRUS-32 B30 RRH (Shielded)	29.5	10.8	9.3	2.20	1.89	2.74	3.18	1.21	1.23	16	14	15
4426 B66 RRH	17.2	15.5	8.1	1.84	0.96	1.11	2.13	1.20	1.20	14	7	9
4426 B66 RRH (Side)	17.2	11.6	15.5	1.38	1.84	1.48	1.11	1.20	1.20	10	14	13
B14 4478 RRH	20.4	15.7	10.6	2.21	1.49	1.30	1.93	1.20	1.20	16	11	12
B14 4478 RRH (Side)	20.4	11.7	15.7	1.66	2.21	1.73	1.30	1.20	1.20	12	16	15
RRUS-E2 B29 RRH	22.7	20.8	9.8	3.27	1.54	1.09	2.32	1.20	1.20	24	11	15
RRUS-E2 B29 RRH (Shielded)	22.7	15.6	9.8	2.45	1.54	1.46	2.32	1.20	1.20	18	11	13
B5/B12 4449 RRH	20.2	15.5	11.7	2.16	1.63	1.30	1.73	1.20	1.20	16	12	13
B5/B12 4449 RRH (Shielded)	20.2	11.6	11.7	1.62	1.63	1.74	1.73	1.20	1.20	12	12	12

WIND LOADS AT 30 MPH:

QD8616-7 Antenna	96.0	22.0	9.6	14.67	6.40	4.36	10.00	1.28	1.50	42	21	26
AIR6449 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	9	5	6
AIR6419 Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	8	4	5
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	39	17	22
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	4
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	4
RRUS-32 B30 RRH (Shielded)	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	5	4	4
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	4	2	2
4426 B66 RRH (Side)	14.9	9.9	13.2	1.02	1.37	1.51	1.13	1.20	1.20	3	4	3
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	4	3	3
B14 4478 RRH (Side)	18.1	10.1	13.4	1.26	1.68	1.80	1.35	1.20	1.20	3	4	4
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	7	3	4
RRUS-E2 B29 RRH (Shielded)	20.4	13.9	7.5	1.97	1.06	1.47	2.72	1.20	1.21	5	3	3
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	4	3	3
B5/B12 4449 RRH (Shielded)	17.9	9.9	9.4	1.23	1.17	1.81	1.90	1.20	1.20	3	3	3

Date: 1/14/2022
Project Name: NEW LONDON JEFFERSON AVENUE
Project No.: CT2838
Designed By: KM Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle = 90 (deg)

Ice Thickness = 1.13 in.

Equivalent Angle = 270 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio (normal)	Aspect Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
QD8616-7 Antenna	96.0	22.0	9.6	14.67	6.40	4.36	10.00	1.28	1.50	845	431	431
AIR6449 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	181	96	96
AIR6419 Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	165	75	75
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	780	337	337
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	123	75	75
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	123	75	75
RRUS-32 B30 RRH (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	66	75	75
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	74	32	32
4426 B66 RRH (Side)	14.9	5.8	13.2	0.60	1.37	2.57	1.13	1.20	1.20	32	74	74
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	91	56	56
B14 4478 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	56	91	91
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	141	58	58
RRUS-E2 B29 RRH (Shielded)	20.4	0.0	7.5	0.00	1.06	0.00	2.72	1.20	1.21	0	58	58
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	88	63	63
B5/B12 4449 RRH (Shielded)	17.9	0.0	9.4	0.00	1.17	0.00	1.90	1.20	1.20	0	63	63

WIND LOADS WITH ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio (normal)	Aspect Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
QD8616-7 Antenna	98.3	24.3	11.9	16.55	8.09	4.05	8.29	1.27	1.44	129	72	72
AIR6449 Antenna	32.7	18.2	10.4	4.12	2.35	1.80	3.15	1.20	1.23	30	18	18
AIR6419 Antenna	30.3	18.0	9.0	3.77	1.88	1.68	3.38	1.20	1.24	28	14	14
800-10966 Antenna	98.3	22.3	9.2	15.19	6.25	4.41	10.73	1.29	1.52	120	59	59
RRUS-32 B2 RRH	29.5	14.4	9.3	2.94	1.89	2.05	3.18	1.20	1.23	22	14	14
RRUS-32 B30 RRH	29.5	14.4	9.3	2.94	1.89	2.05	3.18	1.20	1.23	22	14	14
RRUS-32 B30 RRH (Shielded)	29.5	8.3	9.3	1.70	1.89	3.55	3.18	1.25	1.23	13	14	14
4426 B66 RRH	17.2	15.5	8.1	1.84	0.96	1.11	2.13	1.20	1.20	14	7	7
4426 B66 RRH (Side)	17.2	8.1	15.5	0.96	1.84	2.13	1.11	1.20	1.20	7	14	14
B14 4478 RRH	20.4	15.7	10.6	2.21	1.49	1.30	1.93	1.20	1.20	16	11	11
B14 4478 RRH (Side)	20.4	10.6	15.7	1.49	2.21	1.93	1.30	1.20	1.20	11	16	16
RRUS-E2 B29 RRH	22.7	20.8	9.8	3.27	1.54	1.09	2.32	1.20	1.20	24	11	11
RRUS-E2 B29 RRH (Shielded)	22.7	2.3	9.8	0.36	1.54	10.03	2.32	1.50	1.20	3	11	11
B5/B12 4449 RRH	20.2	15.5	11.7	2.16	1.63	1.30	1.73	1.20	1.20	16	12	12
B5/B12 4449 RRH (Shielded)	20.2	2.3	11.7	0.32	1.63	8.93	1.73	1.46	1.20	3	12	12

WIND LOADS AT 30 MPH:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio (normal)	Aspect Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
QD8616-7 Antenna	96.0	22.0	9.6	14.67	6.40	4.36	10.00	1.28	1.50	42	21	21
AIR6449 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	9	5	5
AIR6419 Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	8	4	4
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	39	17	17
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	4
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	4
RRUS-32 B30 RRH (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	3	4	4
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	4	2	2
4426 B66 RRH (Side)	14.9	5.8	13.2	0.60	1.37	2.57	1.13	1.20	1.20	2	4	4
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	4	3	3
B14 4478 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	4	4
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	7	3	3
RRUS-E2 B29 RRH (Shielded)	20.4	0.0	7.5	0.00	1.06	0.00	2.72	1.20	1.21	0	3	3
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	4	3	3
B5/B12 4449 RRH (Shielded)	17.9	0.0	9.4	0.00	1.17	0.00	1.90	1.20	1.20	0	3	3

Date: 1/14/2022
Project Name: NEW LONDON JEFFERSON AVENUE
Project No.: CT2838
Designed By: KM Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	120	(deg)	Ice Thickness =	1.13	in.	Equivalent Angle =	300	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio (normal)	Aspect Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
QD8616-7 Antenna	96.0	22.0	9.6	14.67	6.40	4.36	10.00	1.28	1.50	845	431	535
AIR6449 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	181	96	118
AIR6419 Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	165	75	97
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	780	337	448
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	123	75	87
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	123	75	87
RRUS-32 B30 RRH (Shielded)	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	94	75	80
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	74	32	43
4426 B66 RRH (Side)	14.9	9.9	13.2	1.02	1.37	1.51	1.13	1.20	1.20	55	74	69
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	91	56	65
B14 4478 RRH (Side)	18.1	10.1	13.4	1.26	1.68	1.80	1.35	1.20	1.20	68	91	85
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	141	58	79
RRUS-E2 B29 RRH (Shielded)	20.4	13.9	7.5	1.97	1.06	1.47	2.72	1.20	1.21	106	58	70
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	88	63	69
B5/B12 4449 RRH (Shielded)	17.9	9.9	9.4	1.23	1.17	1.81	1.90	1.20	1.20	66	63	64

WIND LOADS WITH ICE:

QD8616-7 Antenna	98.3	24.3	11.9	16.55	8.09	4.05	8.29	1.27	1.44	129	72	86
AIR6449 Antenna	32.7	18.2	10.4	4.12	2.35	1.80	3.15	1.20	1.23	30	18	21
AIR6419 Antenna	30.3	18.0	9.0	3.77	1.88	1.68	3.38	1.20	1.24	28	14	18
800-10966 Antenna	98.3	22.3	9.2	15.19	6.25	4.41	10.73	1.29	1.52	120	59	74
RRUS-32 B2 RRH	29.5	14.4	9.3	2.94	1.89	2.05	3.18	1.20	1.23	22	14	16
RRUS-32 B30 RRH	29.5	14.4	9.3	2.94	1.89	2.05	3.18	1.20	1.23	22	14	16
RRUS-32 B30 RRH (Shielded)	29.5	10.8	9.3	2.20	1.89	2.74	3.18	1.21	1.23	16	14	15
4426 B66 RRH	17.2	15.5	8.1	1.84	0.96	1.11	2.13	1.20	1.20	14	7	9
4426 B66 RRH (Side)	17.2	11.6	15.5	1.38	1.84	1.48	1.11	1.20	1.20	10	14	13
B14 4478 RRH	20.4	15.7	10.6	2.21	1.49	1.30	1.93	1.20	1.20	16	11	12
B14 4478 RRH (Side)	20.4	11.7	15.7	1.66	2.21	1.73	1.30	1.20	1.20	12	16	15
RRUS-E2 B29 RRH	22.7	20.8	9.8	3.27	1.54	1.09	2.32	1.20	1.20	24	11	15
RRUS-E2 B29 RRH (Shielded)	22.7	15.6	9.8	2.45	1.54	1.46	2.32	1.20	1.20	18	11	13
B5/B12 4449 RRH	20.2	15.5	11.7	2.16	1.63	1.30	1.73	1.20	1.20	16	12	13
B5/B12 4449 RRH (Shielded)	20.2	11.6	11.7	1.62	1.63	1.74	1.73	1.20	1.20	12	12	12

WIND LOADS AT 30 MPH:

QD8616-7 Antenna	96.0	22.0	9.6	14.67	6.40	4.36	10.00	1.28	1.50	42	21	26
AIR6449 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	9	5	6
AIR6419 Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	8	4	5
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	39	17	22
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	4
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	4
RRUS-32 B30 RRH (Shielded)	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	5	4	4
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	4	2	2
4426 B66 RRH (Side)	14.9	9.9	13.2	1.02	1.37	1.51	1.13	1.20	1.20	3	4	3
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	4	3	3
B14 4478 RRH (Side)	18.1	10.1	13.4	1.26	1.68	1.80	1.35	1.20	1.20	3	4	4
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	7	3	4
RRUS-E2 B29 RRH (Shielded)	20.4	13.9	7.5	1.97	1.06	1.47	2.72	1.20	1.21	5	3	3
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	4	3	3
B5/B12 4449 RRH (Shielded)	17.9	9.9	9.4	1.23	1.17	1.81	1.90	1.20	1.20	3	3	3

Date: 1/14/2022
Project Name: NEW LONDON JEFFERSON AVENUE
Project No.: CT2838
Designed By: KM Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle = 150 (deg)

Ice Thickness = 1.13 in.

Equivalent Angle = 330 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio (normal)	Aspect Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
QD8616-7 Antenna	96.0	22.0	9.6	14.67	6.40	4.36	10.00	1.28	1.50	845	431	742
AIR6449 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	181	96	160
AIR6419 Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	165	75	142
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	780	337	669
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	123	75	111
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	123	75	111
RRUS-32 B30 RRH (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	66	75	68
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	74	32	63
4426 B66 RRH (Side)	14.9	6.6	13.2	0.68	1.37	2.26	1.13	1.20	1.20	37	74	46
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	91	56	82
B14 4478 RRH (Side)	18.1	6.7	13.4	0.84	1.68	2.70	1.35	1.21	1.20	46	91	57
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	141	58	120
RRUS-E2 B29 RRH (Shielded)	20.4	9.3	7.5	1.31	1.06	2.21	2.72	1.20	1.21	71	58	67
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	88	63	82
B5/B12 4449 RRH (Shielded)	17.9	6.6	9.4	0.82	1.17	2.71	1.90	1.21	1.20	45	63	49

WIND LOADS WITH ICE:

QD8616-7 Antenna	98.3	24.3	11.9	16.55	8.09	4.05	8.29	1.27	1.44	129	72	115
AIR6449 Antenna	32.7	18.2	10.4	4.12	2.35	1.80	3.15	1.20	1.23	30	18	27
AIR6419 Antenna	30.3	18.0	9.0	3.77	1.88	1.68	3.38	1.20	1.24	28	14	25
800-10966 Antenna	98.3	22.3	9.2	15.19	6.25	4.41	10.73	1.29	1.52	120	59	105
RRUS-32 B2 RRH	29.5	14.4	9.3	2.94	1.89	2.05	3.18	1.20	1.23	22	14	20
RRUS-32 B30 RRH	29.5	14.4	9.3	2.94	1.89	2.05	3.18	1.20	1.23	22	14	20
RRUS-32 B30 RRH (Shielded)	29.5	7.2	9.3	1.47	1.89	4.10	3.18	1.27	1.23	12	14	12
4426 B66 RRH	17.2	15.5	8.1	1.84	0.96	1.11	2.13	1.20	1.20	14	7	12
4426 B66 RRH (Side)	17.2	7.7	15.5	0.92	1.84	2.22	1.11	1.20	1.20	7	14	9
B14 4478 RRH	20.4	15.7	10.6	2.21	1.49	1.30	1.93	1.20	1.20	16	11	15
B14 4478 RRH (Side)	20.4	7.8	15.7	1.11	2.21	2.60	1.30	1.20	1.20	8	16	10
RRUS-E2 B29 RRH	22.7	20.8	9.8	3.27	1.54	1.09	2.32	1.20	1.20	24	11	21
RRUS-E2 B29 RRH (Shielded)	22.7	10.4	9.8	1.63	1.54	2.18	2.32	1.20	1.20	12	11	12
B5/B12 4449 RRH	20.2	15.5	11.7	2.16	1.63	1.30	1.73	1.20	1.20	16	12	15
B5/B12 4449 RRH (Shielded)	20.2	7.7	11.7	1.08	1.63	2.61	1.73	1.20	1.20	8	12	9

WIND LOADS AT 30 MPH:

QD8616-7 Antenna	96.0	22.0	9.6	14.67	6.40	4.36	10.00	1.28	1.50	42	21	37
AIR6449 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	9	5	8
AIR6419 Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	8	4	7
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	39	17	33
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	5
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	5
RRUS-32 B30 RRH (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	3	4	3
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	4	2	3
4426 B66 RRH (Side)	14.9	6.6	13.2	0.68	1.37	2.26	1.13	1.20	1.20	2	4	2
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	4	3	4
B14 4478 RRH (Side)	18.1	6.7	13.4	0.84	1.68	2.70	1.35	1.21	1.20	2	4	3
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	7	3	6
RRUS-E2 B29 RRH (Shielded)	20.4	9.3	7.5	1.31	1.06	2.21	2.72	1.20	1.21	3	3	3
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	4	3	4
B5/B12 4449 RRH (Shielded)	17.9	6.6	9.4	0.82	1.17	2.71	1.90	1.21	1.20	2	3	2

Date: 1/14/2022
Project Name: NEW LONDON JEFFERSON AVENUE
Project No.: CT2838
Designed By: KM **Checked By:** MSC

HUDSON Design Group LLC

ICE WEIGHT CALCULATIONS

Thickness of ice: 1.13 in.
Density of ice: 56 pcf

QD8616-7 Antenna
Weight of ice based on total radial SF area:
Height (in): 96.0
Width (in): 22.0
Depth (in): 9.6
Total weight of ice on object: 278 lbs
Weight of object: 150.0 lbs
Combined weight of ice and object: 428 lbs

AIR6449 Antenna
Weight of ice based on total radial SF area:
Height (in): 30.4
Width (in): 15.9
Depth (in): 8.1
Total weight of ice on object: 66 lbs
Weight of object: 82.0 lbs
Combined weight of ice and object: 148 lbs

AIR6419 Antenna
Weight of ice based on total radial SF area:
Height (in): 28.0
Width (in): 15.7
Depth (in): 6.7
Total weight of ice on object: 59 lbs
Weight of object: 66.0 lbs
Combined weight of ice and object: 125 lbs

800-10966 Antenna
Weight of ice based on total radial SF area:
Height (in): 96.0
Width (in): 20.0
Depth (in): 6.9
Total weight of ice on object: 246 lbs
Weight of object: 115.0 lbs
Combined weight of ice and object: 361 lbs

B14 4478 RRH
Weight of ice based on total radial SF area:
Height (in): 18.1
Width (in): 13.4
Depth (in): 8.3
Total weight of ice on object: 35 lbs
Weight of object: 60.0 lbs
Combined weight of ice and object: 95 lbs

RRUS-32 B2 RRH
Weight of ice based on total radial SF area:
Height (in): 27.2
Width (in): 12.1
Depth (in): 7.0
Total weight of ice on object: 47 lbs
Weight of object: 60.0 lbs
Combined weight of ice and object: 107 lbs

4426 B66 RRH
Weight of ice based on total radial SF area:
Height (in): 14.9
Width (in): 13.2
Depth (in): 5.8
Total weight of ice on object: 27 lbs
Weight of object: 49.0 lbs
Combined weight of ice and object: 76 lbs

RRUS-32 B30 RRH
Weight of ice based on total radial SF area:
Height (in): 27.2
Width (in): 12.1
Depth (in): 7.0
Total weight of ice on object: 47 lbs
Weight of object: 60.0 lbs
Combined weight of ice and object: 107 lbs

RRUS-E2 B29 RRH
Weight of ice based on total radial SF area:
Height (in): 20.4
Width (in): 18.5
Depth (in): 7.5
Total weight of ice on object: 50 lbs
Weight of object: 53.0 lbs
Combined weight of ice and object: 103 lbs

B5/B12 4449 RRH
Weight of ice based on total radial SF area:
Height (in): 17.9
Width (in): 13.2
Depth (in): 9.4
Total weight of ice on object: 36 lbs
Weight of object: 73.0 lbs
Combined weight of ice and object: 109 lbs

Squid Surge Arrestor
Weight of ice based on total radial SF area:
Depth (in): 24.0
Diameter(in): 9.7
Total weight of ice on object: 30 lbs
Weight of object: 33 lbs
Combined weight of ice and object: 63 lbs

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: 10 plf

C 3x2
Weight of ice based on total radial SF area:
Height (in): 3
Width (in): 2
Per foot weight of ice on object: 7 plf

L 3x3 Angles
Weight of ice based on total radial SF area:
Height (in): 3
Width (in): 3
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: 5 plf

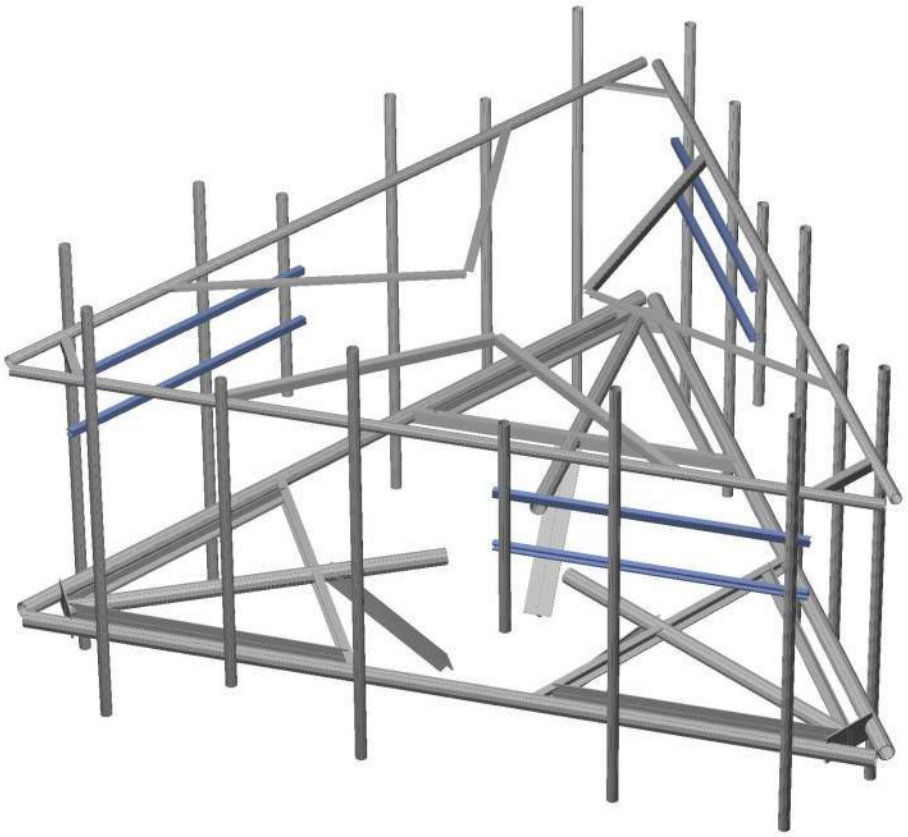
P1000 Unistrut
Per foot weight of ice:
diameter (in): 1.66
Per foot weight of ice on object: 4 plf

3" Pipe
Per foot weight of ice:
diameter (in): 3.5
Per foot weight of ice on object: 6 plf

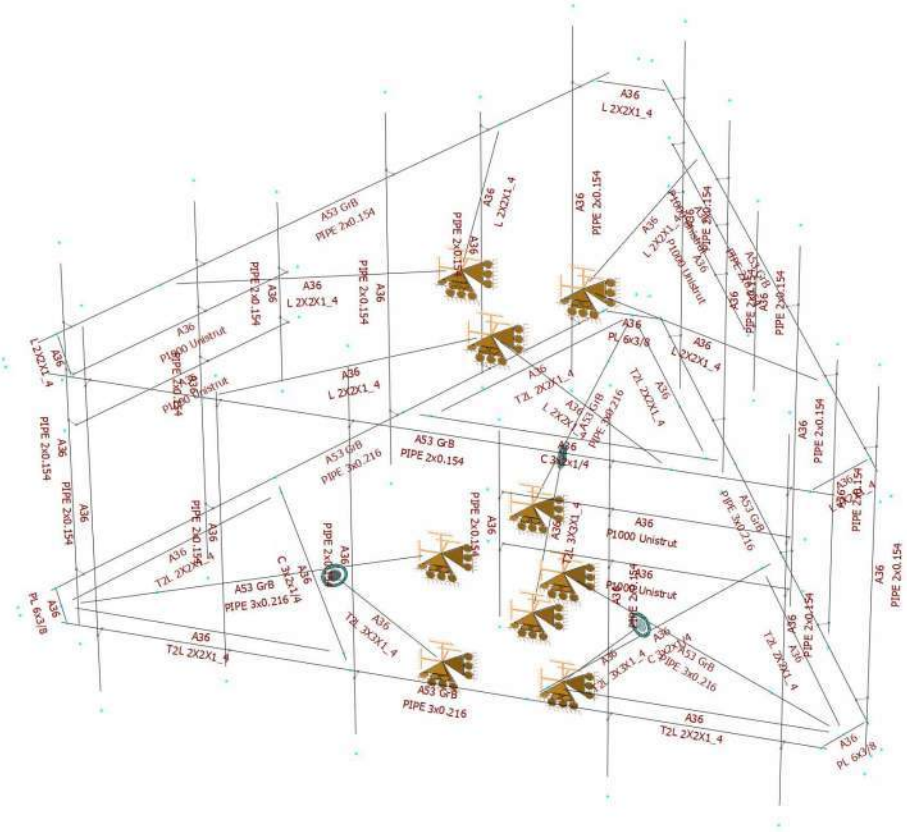
2" pipe
Per foot weight of ice:
diameter (in): 2.38
Per foot weight of ice on object: 5 plf

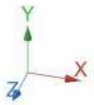
HUDSON
Design Group LLC

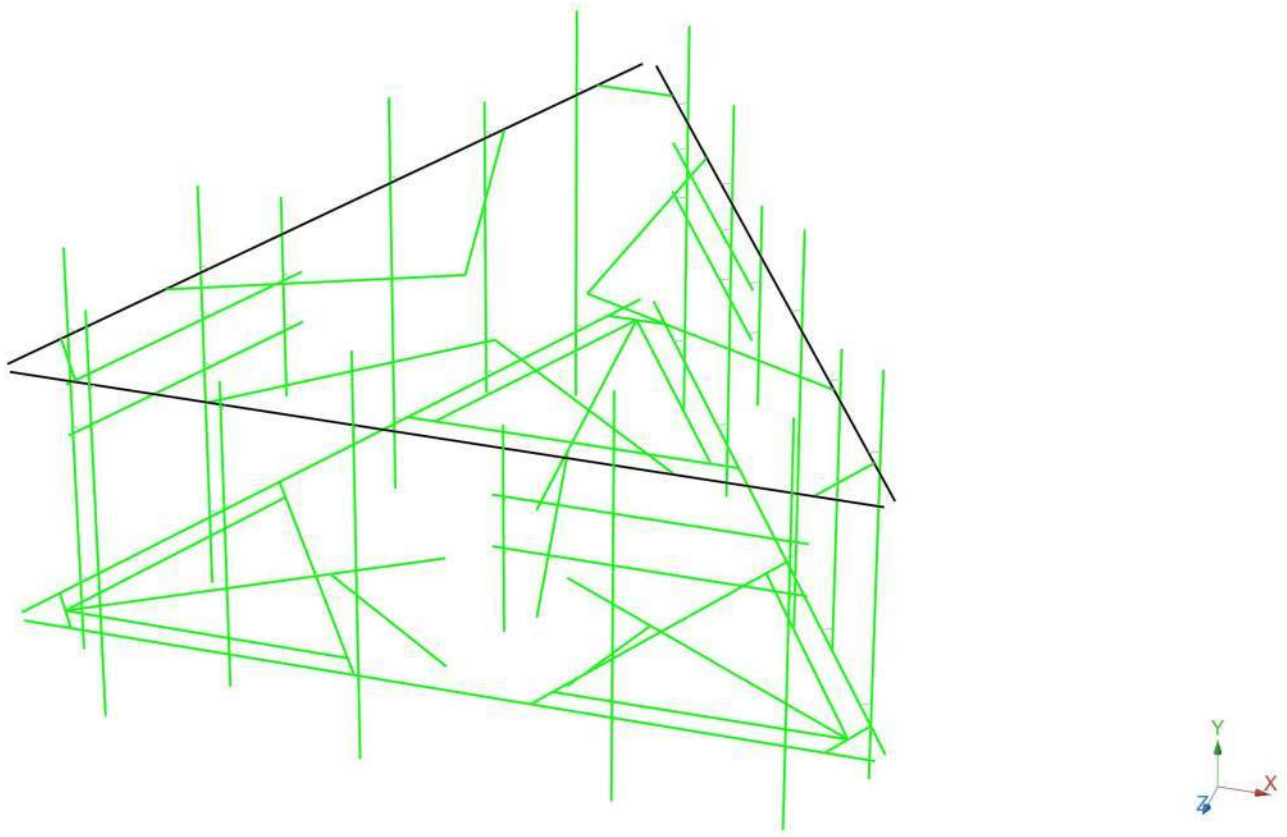
Mount Calculations
(Existing Conditions)


Y
X
Z

Current Date: 1/14/2022 10:00 AM
Units system: English






Design status
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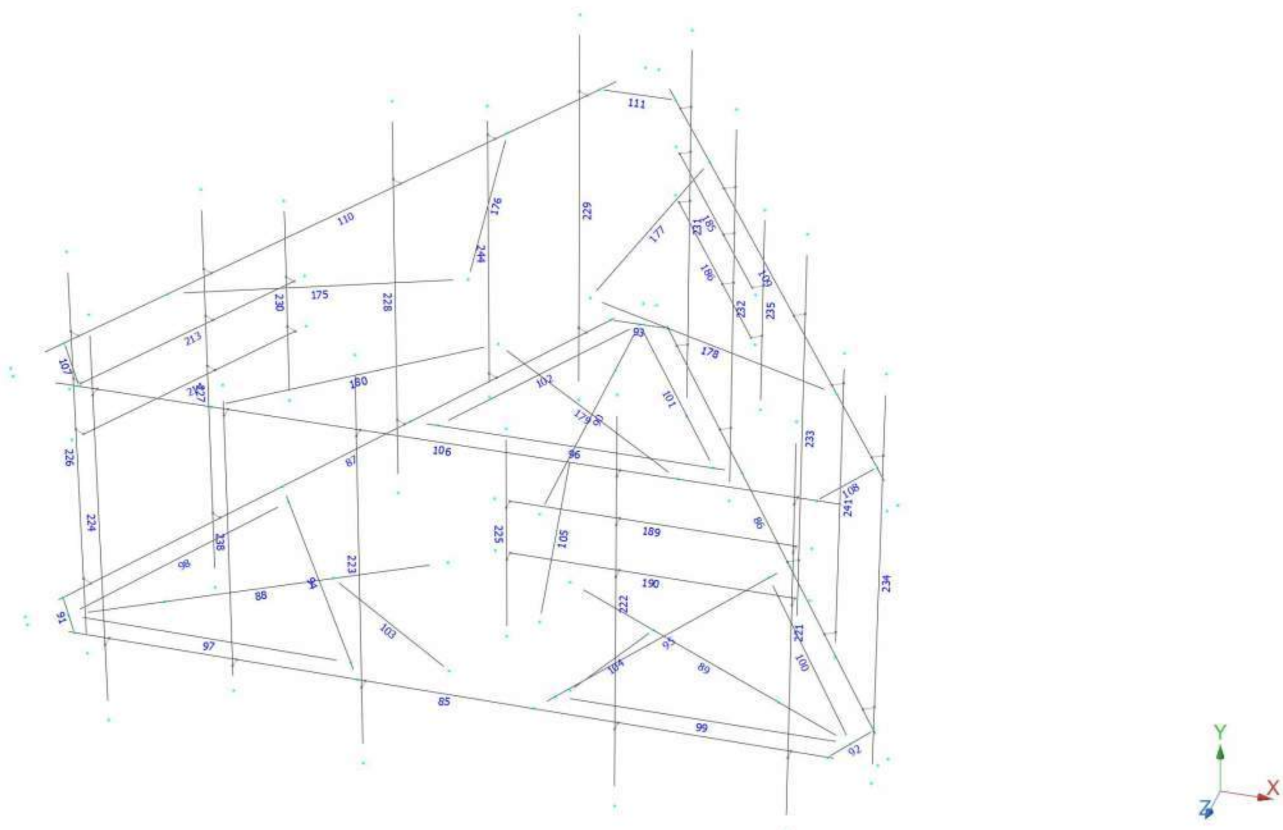
Error on design
Design O.K.
With warnings
Y
X
Z



Current Date: 1/14/2022 10:01 AM
Units system: English

Load data

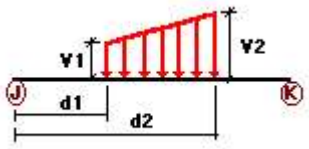
GLOSSARY

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



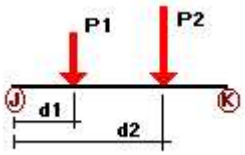
Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
DL	94	y	-0.01	-0.01	10.00	Yes	90.00	Yes
	95	y	-0.01	-0.01	10.00	Yes	90.00	Yes
	96	y	-0.01	-0.01	10.00	Yes	90.00	Yes
	97	y	-0.01	-0.01	0.00	Yes	100.00	Yes
	98	y	-0.01	-0.01	0.00	Yes	100.00	Yes
	99	y	-0.01	-0.01	0.00	Yes	100.00	Yes
	100	y	-0.01	-0.01	0.00	Yes	100.00	Yes
	101	y	-0.01	-0.01	0.00	Yes	100.00	Yes
	102	y	-0.01	-0.01	0.00	Yes	100.00	Yes
W0	85	z	-0.016	-0.016	0.00	No	100.00	Yes
	86	z	-0.016	-0.016	0.00	No	100.00	Yes
	87	z	-0.016	-0.016	0.00	No	100.00	Yes
	88	z	-0.016	-0.016	0.00	No	100.00	Yes
	89	z	-0.016	-0.016	0.00	No	100.00	Yes
	91	z	-0.004	-0.004	0.00	No	100.00	Yes
	92	z	-0.004	-0.004	0.00	No	100.00	Yes

	93	z	-0.004	-0.004	0.00	No	100.00	Yes
	94	z	-0.014	-0.014	0.00	No	100.00	Yes
	95	z	-0.014	-0.014	0.00	No	100.00	Yes
	96	z	-0.014	-0.014	0.00	No	100.00	Yes
	97	z	-0.009	-0.009	0.00	No	100.00	Yes
	98	z	-0.009	-0.009	0.00	No	100.00	Yes
	99	z	-0.009	-0.009	0.00	No	100.00	Yes
	100	z	-0.009	-0.009	0.00	No	100.00	Yes
	101	z	-0.009	-0.009	0.00	No	100.00	Yes
	102	z	-0.009	-0.009	0.00	No	100.00	Yes
	103	z	-0.014	-0.014	0.00	No	100.00	Yes
	104	z	-0.014	-0.014	0.00	No	100.00	Yes
	106	z	-0.011	-0.011	0.00	No	100.00	Yes
	107	z	-0.015	-0.015	0.00	No	100.00	Yes
	108	z	-0.015	-0.015	0.00	No	100.00	Yes
	109	z	-0.011	-0.011	0.00	No	100.00	Yes
	110	z	-0.011	-0.011	0.00	No	100.00	Yes
	111	z	-0.015	-0.015	0.00	No	100.00	Yes
	175	z	-0.009	-0.009	0.00	No	100.00	Yes
	176	z	-0.009	-0.009	0.00	No	100.00	Yes
	177	z	-0.009	-0.009	0.00	No	100.00	Yes
	178	z	-0.009	-0.009	0.00	No	100.00	Yes
	179	z	-0.009	-0.009	0.00	No	100.00	Yes
	180	z	-0.009	-0.009	0.00	No	100.00	Yes
	185	z	-0.008	-0.008	0.00	No	100.00	Yes
	186	z	-0.008	-0.008	0.00	No	100.00	Yes
	189	z	-0.008	-0.008	0.00	No	100.00	Yes
	190	z	-0.008	-0.008	0.00	No	100.00	Yes
	213	z	-0.008	-0.008	0.00	No	100.00	Yes
	214	z	-0.008	-0.008	0.00	No	100.00	Yes
	221	z	-0.011	-0.011	0.00	No	100.00	Yes
	225	z	-0.011	-0.011	0.00	No	100.00	Yes
	226	z	-0.011	-0.011	0.00	No	100.00	Yes
	227	z	-0.011	-0.011	0.00	No	100.00	Yes
	228	z	-0.011	-0.011	0.00	No	100.00	Yes
	229	z	-0.011	-0.011	0.00	No	100.00	Yes
	230	z	-0.011	-0.011	0.00	No	100.00	Yes
	231	z	-0.011	-0.011	0.00	No	100.00	Yes
	232	z	-0.011	-0.011	0.00	No	100.00	Yes
	233	z	-0.011	-0.011	0.00	No	100.00	Yes
	234	z	-0.011	-0.011	0.00	No	100.00	Yes
	235	z	-0.011	-0.011	0.00	No	100.00	Yes
	238	z	-0.011	-0.011	0.00	No	100.00	Yes
	241	z	-0.011	-0.011	0.00	No	100.00	Yes
	244	z	-0.011	-0.011	0.00	No	100.00	Yes
W30	86	x	-0.016	-0.016	0.00	No	100.00	Yes
	87	x	-0.016	-0.016	0.00	No	100.00	Yes
	88	x	-0.016	-0.016	0.00	No	100.00	Yes
	89	x	-0.016	-0.016	0.00	No	100.00	Yes
	90	x	-0.016	-0.016	0.00	No	100.00	Yes
	91	x	-0.004	-0.004	0.00	No	100.00	Yes
	92	x	-0.004	-0.004	0.00	No	100.00	Yes
	94	x	-0.014	-0.014	0.00	No	100.00	Yes
	95	x	-0.014	-0.014	0.00	No	100.00	Yes
	98	x	-0.009	-0.009	0.00	No	100.00	Yes
	100	x	-0.009	-0.009	0.00	No	100.00	Yes
	101	x	-0.009	-0.009	0.00	No	100.00	Yes
	102	x	-0.009	-0.009	0.00	No	100.00	Yes
	103	x	-0.014	-0.014	0.00	No	100.00	Yes
	104	x	-0.014	-0.014	0.00	No	100.00	Yes

	105	x	-0.014	-0.014	0.00	No	100.00	Yes
	107	x	-0.015	-0.015	0.00	No	100.00	Yes
	108	x	-0.015	-0.015	0.00	No	100.00	Yes
	109	x	-0.011	-0.011	0.00	No	100.00	Yes
	110	x	-0.011	-0.011	0.00	No	100.00	Yes
	175	x	-0.009	-0.009	0.00	No	100.00	Yes
	176	x	-0.009	-0.009	0.00	No	100.00	Yes
	177	x	-0.009	-0.009	0.00	No	100.00	Yes
	178	x	-0.009	-0.009	0.00	No	100.00	Yes
	179	x	-0.009	-0.009	0.00	No	100.00	Yes
	180	x	-0.009	-0.009	0.00	No	100.00	Yes
	185	x	-0.008	-0.008	0.00	No	100.00	Yes
	186	x	-0.008	-0.008	0.00	No	100.00	Yes
	213	x	-0.008	-0.008	0.00	No	100.00	Yes
	214	x	-0.008	-0.008	0.00	No	100.00	Yes
	221	x	-0.011	-0.011	0.00	No	100.00	Yes
	222	x	-0.011	-0.011	0.00	No	100.00	Yes
	223	x	-0.011	-0.011	0.00	No	100.00	Yes
	224	x	-0.011	-0.011	0.00	No	100.00	Yes
	225	x	-0.011	-0.011	0.00	No	100.00	Yes
	226	x	-0.011	-0.011	0.00	No	100.00	Yes
	227	x	-0.011	-0.011	0.00	No	100.00	Yes
	228	x	-0.011	-0.011	0.00	No	100.00	Yes
	229	x	-0.011	-0.011	0.00	No	100.00	Yes
	230	x	-0.011	-0.011	0.00	No	100.00	Yes
	235	x	-0.011	-0.011	0.00	No	100.00	Yes
	238	x	-0.011	-0.011	0.00	No	100.00	Yes
	241	x	-0.011	-0.011	0.00	No	100.00	Yes
	244	x	-0.011	-0.011	0.00	No	100.00	Yes
Di	85	y	-0.006	-0.006	0.00	No	100.00	Yes
	86	y	-0.006	-0.006	0.00	No	100.00	Yes
	87	y	-0.006	-0.006	0.00	No	100.00	Yes
	88	y	-0.006	-0.006	0.00	No	100.00	Yes
	89	y	-0.006	-0.006	0.00	No	100.00	Yes
	90	y	-0.006	-0.006	0.00	No	100.00	Yes
	91	y	-0.01	-0.01	0.00	No	100.00	Yes
	92	y	-0.01	-0.01	0.00	No	100.00	Yes
	93	y	-0.01	-0.01	0.00	No	100.00	Yes
	94	y	-0.007	-0.007	0.00	No	100.00	Yes
	95	y	-0.007	-0.007	0.00	No	100.00	Yes
	96	y	-0.007	-0.007	0.00	No	100.00	Yes
	97	y	-0.005	-0.005	0.00	No	100.00	Yes
	98	y	-0.005	-0.005	0.00	No	100.00	Yes
	99	y	-0.005	-0.005	0.00	No	100.00	Yes
	100	y	-0.005	-0.005	0.00	No	100.00	Yes
	101	y	-0.005	-0.005	0.00	No	100.00	Yes
	102	y	-0.005	-0.005	0.00	No	100.00	Yes
	103	y	-0.007	-0.007	0.00	No	100.00	Yes
	104	y	-0.007	-0.007	0.00	No	100.00	Yes
	105	y	-0.007	-0.007	0.00	No	100.00	Yes
	106	y	-0.005	-0.005	0.00	No	100.00	Yes
	107	y	-0.005	-0.005	0.00	No	100.00	Yes
	108	y	-0.005	-0.005	0.00	No	100.00	Yes
	109	y	-0.005	-0.005	0.00	No	100.00	Yes
	110	y	-0.005	-0.005	0.00	No	100.00	Yes
	111	y	-0.005	-0.005	0.00	No	100.00	Yes
	175	y	-0.005	-0.005	0.00	No	100.00	Yes
	176	y	-0.005	-0.005	0.00	No	100.00	Yes
	177	y	-0.005	-0.005	0.00	No	100.00	Yes
	178	y	-0.005	-0.005	0.00	No	100.00	Yes

179	y	-0.005	-0.005	0.00	No	100.00	Yes
180	y	-0.005	-0.005	0.00	No	100.00	Yes
185	y	-0.004	-0.004	0.00	No	100.00	Yes
186	y	-0.004	-0.004	0.00	No	100.00	Yes
189	y	-0.004	-0.004	0.00	No	100.00	Yes
190	y	-0.004	-0.004	0.00	No	100.00	Yes
213	y	-0.004	-0.004	0.00	No	100.00	Yes
214	y	-0.004	-0.004	0.00	No	100.00	Yes
221	y	-0.005	-0.005	0.00	No	100.00	Yes
222	y	-0.005	-0.005	0.00	No	100.00	Yes
223	y	-0.005	-0.005	0.00	No	100.00	Yes
224	y	-0.005	-0.005	0.00	No	100.00	Yes
225	y	-0.005	-0.005	0.00	No	100.00	Yes
226	y	-0.005	-0.005	0.00	No	100.00	Yes
227	y	-0.005	-0.005	0.00	No	100.00	Yes
228	y	-0.005	-0.005	0.00	No	100.00	Yes
229	y	-0.005	-0.005	0.00	No	100.00	Yes
230	y	-0.005	-0.005	0.00	No	100.00	Yes
231	y	-0.005	-0.005	0.00	No	100.00	Yes
232	y	-0.005	-0.005	0.00	No	100.00	Yes
233	y	-0.005	-0.005	0.00	No	100.00	Yes
234	y	-0.005	-0.005	0.00	No	100.00	Yes
235	y	-0.005	-0.005	0.00	No	100.00	Yes
238	y	-0.005	-0.005	0.00	No	100.00	Yes
241	y	-0.005	-0.005	0.00	No	100.00	Yes
244	y	-0.005	-0.005	0.00	No	100.00	Yes

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	222	y	-0.075	0.50	No
		y	-0.075	7.50	No
		y	-0.053	3.00	No
	223	y	-0.041	1.00	No
		y	-0.041	3.00	No
		y	-0.033	5.00	No
		y	-0.033	7.00	No
		y	-0.06	4.00	No
	224	y	-0.058	0.50	No
		y	-0.058	7.50	No
		y	-0.073	4.00	No
	225	y	-0.06	2.00	No
	227	y	-0.075	0.50	No
		y	-0.075	7.50	No
		y	-0.053	3.00	No
	228	y	-0.041	1.00	No
		y	-0.041	3.00	No
		y	-0.033	5.00	No
		y	-0.033	7.00	No

		y	-0.06	4.00	No
	229	y	-0.058	0.50	No
		y	-0.058	7.50	No
		y	-0.073	4.00	No
	230	y	-0.06	2.00	No
	232	y	-0.075	0.50	No
		y	-0.075	7.50	No
		y	-0.053	3.00	No
	233	y	-0.041	1.00	No
		y	-0.041	3.00	No
		y	-0.033	5.00	No
		y	-0.033	7.00	No
		y	-0.06	4.00	No
	234	y	-0.058	0.50	No
		y	-0.058	7.50	No
		y	-0.073	4.00	No
	235	y	-0.06	2.00	No
	238	y	-0.06	3.00	No
		y	-0.049	3.00	No
	241	y	-0.06	3.00	No
		y	-0.049	3.00	No
	244	y	-0.06	3.00	No
		y	-0.049	3.00	No
W0	222	z	-0.423	0.50	No
		z	-0.423	7.50	No
	223	z	-0.091	1.00	No
		z	-0.091	3.00	No
		z	-0.083	5.00	No
		z	-0.083	7.00	No
		z	-0.066	4.00	No
	224	z	-0.39	0.50	No
		z	-0.39	7.50	No
	225	z	-0.123	2.00	No
	227	z	-0.268	0.50	No
		z	-0.268	7.50	No
		z	-0.07	3.00	No
	228	z	-0.059	1.00	No
		z	-0.059	3.00	No
		z	-0.049	5.00	No
		z	-0.049	7.00	No
		z	-0.08	4.00	No
	229	z	-0.224	0.50	No
		z	-0.224	7.50	No
		z	-0.064	4.00	No
	230	z	-0.087	2.00	No
	232	z	-0.268	0.50	No
		z	-0.268	7.50	No
		z	-0.07	3.00	No
	233	z	-0.059	1.00	No
		z	-0.059	3.00	No
		z	-0.049	5.00	No
		z	-0.049	7.00	No
		z	-0.08	4.00	No
	234	z	-0.224	0.50	No
		z	-0.224	7.50	No
		z	-0.064	4.00	No
	235	z	-0.087	2.00	No
	238	z	-0.032	3.00	No
		z	-0.056	3.00	No
	241	z	-0.085	3.00	No

	244	z	-0.085	3.00	No
W30	222	x	-0.216	0.50	No
		x	-0.216	7.50	No
		x	-0.058	3.00	No
	223	x	-0.048	1.00	No
		x	-0.048	3.00	No
		x	-0.038	5.00	No
		x	-0.038	7.00	No
		x	-0.075	4.00	No
	224	x	-0.169	0.50	No
		x	-0.169	7.50	No
		x	-0.063	4.00	No
	225	x	-0.075	2.00	No
	227	x	-0.371	0.50	No
		x	-0.371	7.50	No
		x	-0.067	3.00	No
	228	x	-0.08	1.00	No
		x	-0.08	3.00	No
		x	-0.071	5.00	No
		x	-0.071	7.00	No
		x	-0.068	4.00	No
	229	x	-0.335	0.50	No
		x	-0.335	7.50	No
		x	-0.049	4.00	No
	230	x	-0.111	2.00	No
	232	x	-0.371	0.50	No
		x	-0.371	7.50	No
		x	-0.067	3.00	No
	233	x	-0.08	1.00	No
		x	-0.08	3.00	No
		x	-0.071	5.00	No
		x	-0.071	7.00	No
		x	-0.068	4.00	No
	234	x	-0.335	0.50	No
		x	-0.335	7.50	No
		x	-0.049	4.00	No
	235	x	-0.111	2.00	No
	238	x	-0.091	3.00	No
	241	x	-0.057	3.00	No
	244	x	-0.057	3.00	No
Di	222	y	-0.139	0.50	No
		y	-0.139	7.50	No
		y	-0.05	3.00	No
	223	y	-0.033	1.00	No
		y	-0.033	3.00	No
		y	-0.03	5.00	No
		y	-0.03	7.00	No
		y	-0.047	4.00	No
	224	y	-0.123	0.50	No
		y	-0.123	7.50	No
		y	-0.036	4.00	No
	225	y	-0.047	2.00	No
	227	y	-0.139	0.50	No
		y	-0.139	7.50	No
		y	-0.05	3.00	No
	228	y	-0.033	1.00	No
		y	-0.033	3.00	No
		y	-0.03	5.00	No
		y	-0.03	7.00	No
		y	-0.047	4.00	No

	229	y	-0.123	0.50	No
		y	-0.123	7.50	No
		y	-0.036	4.00	No
	230	y	-0.047	2.00	No
	232	y	-0.139	0.50	No
		y	-0.139	7.50	No
		y	-0.05	3.00	No
	233	y	-0.033	1.00	No
		y	-0.033	3.00	No
		y	-0.03	5.00	No
		y	-0.03	7.00	No
		y	-0.047	4.00	No
	234	y	-0.123	0.50	No
		y	-0.123	7.50	No
		y	-0.036	4.00	No
	235	y	-0.047	2.00	No
	238	y	-0.035	3.00	No
		y	-0.027	3.00	No
	241	y	-0.035	3.00	No
		y	-0.027	3.00	No
	244	y	-0.035	3.00	No
		y	-0.027	3.00	No
Wi0	222	z	-0.066	0.50	No
		z	-0.066	7.50	No
		y	-0.003	3.00	No
	223	z	-0.015	1.00	No
		z	-0.015	3.00	No
		z	-0.014	5.00	No
		z	-0.014	7.00	No
		z	-0.013	4.00	No
	224	z	-0.061	0.50	No
		z	-0.061	7.50	No
		z	-0.002	4.00	No
	225	z	-0.022	2.00	No
	227	z	-0.043	0.50	No
		z	-0.043	7.50	No
		z	-0.013	3.00	No
	228	z	-0.011	1.00	No
		z	-0.011	3.00	No
		z	-0.009	5.00	No
		z	-0.009	7.00	No
		z	-0.015	4.00	No
	229	z	-0.037	0.50	No
		z	-0.037	7.50	No
		z	-0.012	4.00	No
	230	z	-0.016	2.00	No
	232	z	-0.043	0.50	No
		z	-0.043	7.50	No
		z	-0.013	3.00	No
	233	z	-0.011	1.00	No
		z	-0.011	3.00	No
		z	-0.009	5.00	No
		z	-0.009	7.00	No
		z	-0.015	4.00	No
	234	z	-0.037	0.50	No
		z	-0.037	7.50	No
		z	-0.012	4.00	No
	235	z	-0.016	2.00	No
	238	z	-0.007	3.00	No
		z	-0.011	3.00	No

	241	z	-0.015	3.00	No
	244	z	-0.015	3.00	No
Wi30	222	x	-0.036	0.50	No
		x	-0.036	7.50	No
		x	-0.011	3.00	No
	223	x	-0.009	1.00	No
		x	-0.009	3.00	No
		x	-0.007	5.00	No
		x	-0.007	7.00	No
		x	-0.014	4.00	No
	224	x	-0.03	0.50	No
		x	-0.03	7.50	No
		x	-0.012	4.00	No
	225	x	-0.014	2.00	No
	227	x	-0.058	0.50	No
		x	-0.058	7.50	No
		x	-0.012	3.00	No
	228	x	-0.014	1.00	No
		x	-0.014	3.00	No
		x	-0.013	5.00	No
		x	-0.013	7.00	No
		x	-0.012	4.00	No
	229	x	-0.053	0.50	No
		x	-0.053	7.50	No
		x	-0.009	4.00	No
	230	x	-0.02	2.00	No
	232	x	-0.058	0.50	No
		x	-0.058	7.50	No
		x	-0.012	3.00	No
	233	x	-0.014	1.00	No
		x	-0.014	3.00	No
		x	-0.013	5.00	No
		x	-0.013	7.00	No
		x	-0.012	4.00	No
	234	x	-0.053	0.50	No
		x	-0.053	7.50	No
		x	-0.009	4.00	No
	235	x	-0.02	2.00	No
	238	x	-0.016	3.00	No
	241	x	-0.01	3.00	No
	244	x	-0.01	3.00	No
WL0	222	z	-0.021	0.50	No
		z	-0.021	7.50	No
	223	z	-0.005	1.00	No
		z	-0.005	3.00	No
		z	-0.004	5.00	No
		z	-0.004	7.00	No
		z	-0.003	4.00	No
	224	z	-0.02	0.50	No
		z	-0.02	7.50	No
	225	z	-0.006	2.00	No
	227	z	-0.013	0.50	No
		z	-0.013	7.50	No
		z	-0.003	3.00	No
	228	z	-0.003	1.00	No
		z	-0.003	3.00	No
		z	-0.003	5.00	No
		z	-0.003	7.00	No
		z	-0.004	4.00	No
	229	z	-0.011	0.50	No

		z	-0.011	7.50	No
		z	-0.003	4.00	No
	230	z	-0.004	2.00	No
	232	z	-0.013	0.50	No
		z	-0.013	7.50	No
		z	-0.003	3.00	No
	233	z	-0.003	1.00	No
		z	-0.003	3.00	No
		z	-0.003	5.00	No
		z	-0.003	7.00	No
		z	-0.004	4.00	No
	234	z	-0.011	0.50	No
		z	-0.011	7.50	No
		z	-0.003	4.00	No
	235	z	-0.004	2.00	No
	238	z	-0.002	3.00	No
		z	-0.003	3.00	No
	241	z	-0.004	3.00	No
	244	z	-0.004	3.00	No
WL30	222	x	-0.011	0.50	No
		x	-0.011	7.50	No
		x	-0.003	3.00	No
	223	x	-0.003	1.00	No
		x	-0.003	3.00	No
		x	-0.002	5.00	No
		x	-0.002	7.00	No
		x	-0.004	4.00	No
	224	x	-0.009	0.50	No
		x	-0.009	7.50	No
		x	-0.003	4.00	No
	225	x	-0.004	2.00	No
	227	x	-0.019	0.50	No
		x	-0.019	7.50	No
		x	-0.003	3.00	No
	228	x	-0.004	1.00	No
		x	-0.004	3.00	No
		x	-0.004	5.00	No
		x	-0.004	7.00	No
		x	-0.003	4.00	No
	229	x	-0.017	0.50	No
		x	-0.017	7.50	No
		x	-0.002	4.00	No
	230	x	-0.005	2.00	No
	232	x	-0.019	0.50	No
		x	-0.019	7.50	No
		x	-0.003	3.00	No
	233	x	-0.004	1.00	No
		x	-0.004	3.00	No
		x	-0.004	5.00	No
		x	-0.004	7.00	No
		x	-0.003	4.00	No
	234	x	-0.017	0.50	No
		x	-0.017	7.50	No
		x	-0.002	4.00	No
	235	x	-0.005	2.00	No
	238	x	-0.004	3.00	No
	241	x	-0.003	3.00	No
	244	x	-0.003	3.00	No
LL1	85	y	-0.25	50.00	Yes
LL2	85	y	-0.25	0.00	Yes

LLa1	221	y	-0.50	50.00	Yes
LLa2	222	y	-0.50	50.00	Yes
LLa3	223	y	-0.50	50.00	Yes
LLa4	224	y	-0.50	50.00	Yes

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

Current Date: 1/14/2022 10:01 AM
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
	C 3x2x1/4	**94**	LC12 at 50.00%	0.74	OK	Eq. H1-1b
		95	LC11 at 50.00%	0.76	OK	Eq. H1-1b
		96	LC12 at 50.00%	**0.76**	**OK**	Eq. H1-1b
	L 2X2X1_4	**107**	LC1 at 0.00%	0.53	OK	Eq. H2-1
		108	LC2 at 0.00%	0.50	OK	Eq. H2-1
		111	LC1 at 0.00%	0.49	OK	Sec. F1
		175	LC9 at 0.00%	0.57	OK	Sec. F1
		176	LC11 at 0.00%	0.57	OK	Sec. F1
		177	LC12 at 0.00%	0.58	OK	Sec. F1
		178	LC10 at 0.00%	**0.58**	**OK**	Sec. F1
		179	LC9 at 0.00%	0.57	OK	Sec. F1
		180	LC12 at 0.00%	0.56	OK	Sec. F1
	P1000 Unistrut	**185**	LC4 at 39.06%	0.65	OK	Sec. C5.2
		186	LC2 at 39.06%	0.61	OK	Sec. C5.2
		189	LC3 at 60.94%	**0.74**	**OK**	Sec. C5.1
		190	LC1 at 39.06%	0.74	OK	Sec. C5.2
		213	LC2 at 39.06%	0.67	OK	Sec. C5.2

	214	LC4 at 39.06%	0.63	OK	Sec. C5.1
PIPE 2x0.154	**106**	LC3 at 23.75%	0.83	With warnings	Eq. H1-1a
	109	LC4 at 23.75%	0.79	With warnings	Eq. H1-1a
	110	LC2 at 76.25%	**0.88**	**With warnings**	Eq. H1-1a
	221	LC18 at 80.00%	0.38	OK	Eq. H1-1b
	222	LC16 at 80.00%	0.50	OK	Eq. H1-1b
	223	LC9 at 79.17%	0.39	OK	Eq. H1-1b
	224	LC31 at 79.17%	0.39	OK	Eq. H1-1b
	225	LC10 at 37.50%	0.05	OK	Eq. H1-1b
	226	LC28 at 80.00%	0.35	OK	Eq. H1-1b
	227	LC3 at 80.00%	0.40	OK	Eq. H1-1b
	228	LC12 at 79.17%	0.46	OK	Eq. H1-1b
	229	LC2 at 18.75%	0.28	OK	Eq. H1-1b
	230	LC9 at 37.50%	0.05	OK	Eq. H1-1b
	231	LC10 at 80.00%	0.20	OK	Eq. H1-1b
	232	LC10 at 80.00%	0.48	OK	Eq. H1-1b
	233	LC11 at 79.17%	0.41	OK	Eq. H1-1b
	234	LC17 at 79.17%	0.34	OK	Eq. H1-1b
	235	LC11 at 37.50%	0.06	OK	Eq. H1-1b
	238	LC31 at 89.58%	0.42	OK	Eq. H1-1b
	241	LC17 at 89.58%	0.35	OK	Eq. H1-1b
	244	LC12 at 89.58%	0.33	OK	Eq. H1-1b
PIPE 3x0.216	**85**	LC9 at 60.63%	0.30	OK	Eq. H1-1b
	86	LC10 at 60.63%	0.30	OK	Eq. H1-1b
	87	LC12 at 60.63%	0.30	OK	Eq. H1-1b
	88	LC9 at 68.75%	0.62	OK	Eq. H1-1b
	89	LC9 at 68.75%	0.62	OK	Eq. H1-1b
	90	LC10 at 68.75%	**0.62**	**OK**	Eq. H1-1b
PL 6x3/8	**91**	LC4 at 50.00%	0.20	OK	Eq. H1-1b
	92	LC2 at 0.00%	0.19	OK	Eq. H1-1b
	93	LC3 at 50.00%	**0.20**	**OK**	Eq. H1-1b
T2L 2X2X1_4	**97**	LC3 at 100.00%	0.27	OK	Eq. H2-1
	98	LC2 at 0.00%	0.27	OK	Eq. H2-1
	99	LC3 at 0.00%	0.26	OK	Eq. H2-1
	100	LC4 at 100.00%	**0.27**	**OK**	Eq. H2-1
	101	LC10 at 0.00%	0.25	OK	Eq. H2-1
	102	LC1 at 100.00%	0.25	OK	Eq. H2-1
T2L 3X3X1_4	**103**	LC11 at 100.00%	0.60	OK	Eq. H2-1
	104	LC9 at 100.00%	0.60	OK	Eq. H2-1
	105	LC10 at 100.00%	**0.60**	**OK**	Eq. H2-1

Current Date: 1/14/2022 10:02 AM
Units system: English

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
223	-1.5208	0.00	4.3782	0
224	-1.7734	0.00	3.9407	0
225	-1.0825	0.00	0.625	0
226	0.00	0.00	-1.25	0
227	-6.50	0.00	4.3782	0
228	-7.3333	0.00	4.3782	0
229	-7.4583	0.00	4.1617	0
230	-7.0417	0.00	3.44	0
231	-4.2995	0.00	-0.4345	0
232	-4.5521	0.00	-0.872	0
233	-2.526	0.00	-3.5062	0
235	-0.5417	0.00	-7.8183	0
236	-0.125	0.00	-8.54	0
237	1.5208	0.00	4.3782	0
238	1.7734	0.00	3.9407	0
239	1.0825	0.00	0.625	0
240	6.50	0.00	4.3782	0
241	7.3333	0.00	4.3782	0
242	7.4583	0.00	4.1617	0
243	7.0417	0.00	3.44	0
244	4.2995	0.00	-0.4345	0
245	4.5521	0.00	-0.872	0
246	2.526	0.00	-3.5062	0

247	3.0312	0.00	-3.5062	0
248	0.5417	0.00	-7.8183	0
249	0.125	0.00	-8.54	0
250	-6.7709	0.00	3.9091	0
251	6.7709	0.00	3.9091	0
252	0.00	0.00	-7.8183	0
253	2.8199	0.00	1.6281	0
254	0.00	0.00	-3.2562	0
255	-2.8199	0.00	1.6281	0
256	-1.0825	-2.25	0.625	0
257	0.00	-2.25	-1.25	0
258	1.0825	-2.25	0.625	0
259	-7.3333	4.92	4.3782	0
260	7.3333	4.92	4.3782	0
261	-6.8869	4.92	3.172	0
262	-6.1905	4.92	4.3782	0
263	6.1905	4.92	4.3782	0
264	6.8869	4.92	3.172	0
265	7.4583	4.92	4.1617	0
266	0.125	4.92	-8.54	0
267	-0.125	4.92	-8.54	0
268	-7.4583	4.92	4.1617	0
269	0.6964	4.92	-7.5502	0
270	-0.6964	4.92	-7.5502	0
386	6.9053	6.46	2.804	0
387	6.9053	-1.54	2.804	0
388	4.6553	6.46	-1.0932	0
389	4.6553	-1.54	-1.0932	0
390	2.4827	6.46	-4.8562	0
391	2.4827	-1.54	-4.8562	0
392	1.0244	6.46	-7.3822	0
393	1.0244	-1.54	-7.3822	0
404	5.3488	0.00	3.0881	0
405	-5.3488	0.00	3.0881	0
406	0.00	0.00	-6.1762	0
407	3.9206	4.92	4.3782	0
408	5.7519	4.92	1.2063	0
409	1.8313	4.92	-5.5845	0
410	-1.8313	4.92	-5.5845	0
411	-5.7519	4.92	1.2063	0
412	-3.9206	4.92	4.3782	0
413	0.01	4.92	1.2327	0
414	1.0725	4.92	-0.6077	0
415	-1.0625	4.92	-0.625	0
425	3.3512	4.00	-2.952	0
426	0.7262	4.00	-7.4987	0
427	3.3512	3.00	-2.952	0
428	0.7262	3.00	-7.4987	0
433	3.3994	5.50	-3.2685	0
434	3.3994	1.50	-3.2685	0
451	-1.0244	6.46	-7.3822	0
452	-1.0244	-1.54	-7.3822	0
453	-3.2744	6.46	-3.485	0
454	-3.2744	-1.54	-3.485	0
455	-5.447	6.46	0.278	0
456	-5.447	-1.54	0.278	0
457	-6.9053	6.46	2.804	0
458	-6.9053	-1.54	2.804	0
467	-4.2321	4.00	-1.4262	0
468	-6.8571	4.00	3.1205	0

469	-4.2321	3.00	-1.4262	0
470	-6.8571	3.00	3.1205	0
475	-4.5303	5.50	-1.3097	0
476	-4.5303	1.50	-1.3097	0
493	-5.881	6.46	4.5782	0
494	-5.881	-1.54	4.5782	0
495	-1.381	6.46	4.5782	0
496	-1.381	-1.54	4.5782	0
497	2.9643	6.46	4.5782	0
498	2.9643	-1.54	4.5782	0
499	5.881	6.46	4.5782	0
500	5.881	-1.54	4.5782	0
509	0.8809	4.00	4.3782	0
510	6.131	4.00	4.3782	0
511	0.8809	3.00	4.3782	0
512	6.131	3.00	4.3782	0
517	1.1309	5.50	4.5782	0
518	1.1309	1.50	4.5782	0
523	5.7803	-0.50	0.8554	0
524	5.7803	5.50	0.8554	0
529	-2.1494	-0.50	-5.4336	0
530	-2.1494	5.50	-5.4336	0
535	-3.631	-0.50	4.5782	0
536	-3.631	5.50	4.5782	0
234	-3.0312	0.00	-3.5062	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
225	1	1	1	1	1	1
226	1	1	1	1	1	1
239	1	1	1	1	1	1
256	1	1	1	1	1	1
257	1	1	1	1	1	1
258	1	1	1	1	1	1
413	1	1	1	1	1	1
414	1	1	1	1	1	1
415	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
85	228	241		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
86	242	249		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
87	236	229		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
88	250	225		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
89	251	239		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
90	252	226		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
91	230	227		PL 6x3/8	A36	0.00	0.00	0.00
92	240	243		PL 6x3/8	A36	0.00	0.00	0.00

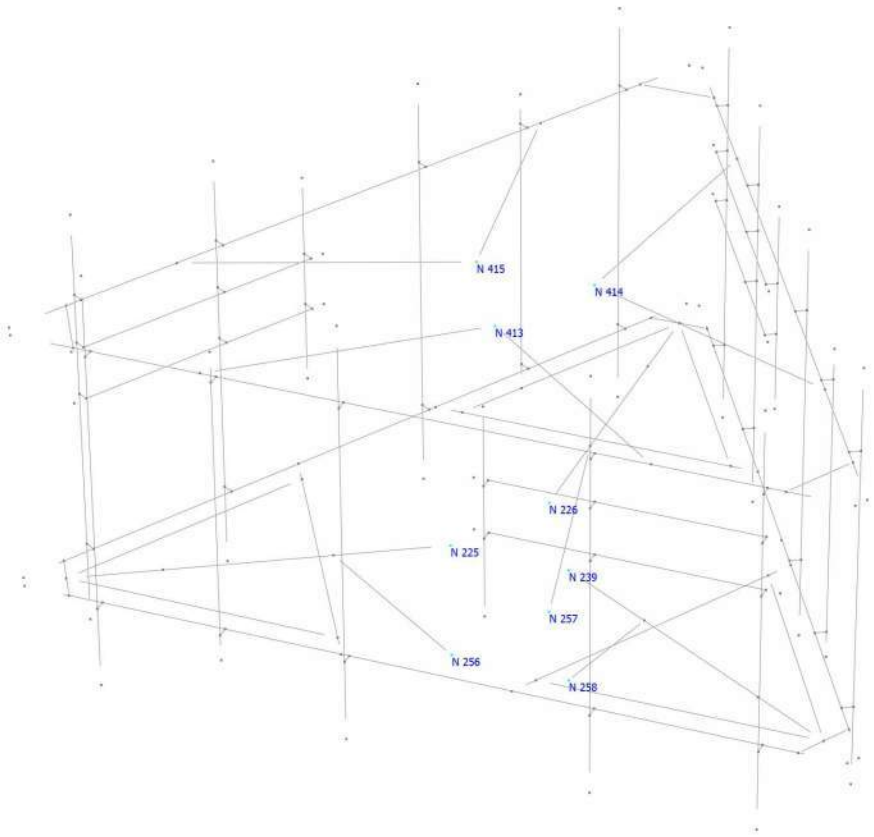
93	248	235	PL 6x3/8	A36	0.00	0.00	0.00
94	223	232	C 3x2x1/4	A36	0.00	0.00	0.00
95	245	237	C 3x2x1/4	A36	0.00	0.00	0.00
96	234	247	C 3x2x1/4	A36	0.00	0.00	0.00
97	224	250	T2L 2X2X1_4	A36	0.00	0.00	0.00
98	250	231	T2L 2X2X1_4	A36	0.00	0.00	0.00
99	251	238	T2L 2X2X1_4	A36	0.00	0.00	0.00
100	244	251	T2L 2X2X1_4	A36	0.00	0.00	0.00
101	252	246	T2L 2X2X1_4	A36	0.00	0.00	0.00
102	233	252	T2L 2X2X1_4	A36	0.00	0.00	0.00
103	256	255	T2L 3X3X1_4	A36	0.00	0.00	0.00
104	258	253	T2L 3X3X1_4	A36	0.00	0.00	0.00
105	257	254	T2L 3X3X1_4	A36	0.00	0.00	0.00
106	259	260	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
107	262	261	L 2X2X1_4	A36	0.00	0.00	0.00
108	264	263	L 2X2X1_4	A36	0.00	0.00	0.00
109	265	266	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
110	267	268	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
111	270	269	L 2X2X1_4	A36	0.00	0.00	0.00
175	415	411	L 2X2X1_4	A36	0.00	0.00	0.00
176	415	410	L 2X2X1_4	A36	0.00	0.00	0.00
177	414	409	L 2X2X1_4	A36	0.00	0.00	0.00
178	414	408	L 2X2X1_4	A36	0.00	0.00	0.00
179	413	407	L 2X2X1_4	A36	0.00	0.00	0.00
180	413	412	L 2X2X1_4	A36	0.00	0.00	0.00
185	425	426	P1000 Unistrut	A36	0.00	0.00	0.00
186	427	428	P1000 Unistrut	A36	0.00	0.00	0.00
189	510	509	P1000 Unistrut	A36	0.00	0.00	0.00
190	511	512	P1000 Unistrut	A36	0.00	0.00	0.00
213	467	468	P1000 Unistrut	A36	0.00	0.00	0.00
214	469	470	P1000 Unistrut	A36	0.00	0.00	0.00
221	499	500	PIPE 2x0.154	A36	0.00	0.00	0.00
222	497	498	PIPE 2x0.154	A36	0.00	0.00	0.00
223	495	496	PIPE 2x0.154	A36	0.00	0.00	0.00
224	493	494	PIPE 2x0.154	A36	0.00	0.00	0.00
225	517	518	PIPE 2x0.154	A36	0.00	0.00	0.00
226	457	458	PIPE 2x0.154	A36	0.00	0.00	0.00
227	455	456	PIPE 2x0.154	A36	0.00	0.00	0.00
228	453	454	PIPE 2x0.154	A36	0.00	0.00	0.00
229	451	452	PIPE 2x0.154	A36	0.00	0.00	0.00
230	475	476	PIPE 2x0.154	A36	0.00	0.00	0.00
231	392	393	PIPE 2x0.154	A36	0.00	0.00	0.00
232	390	391	PIPE 2x0.154	A36	0.00	0.00	0.00
233	388	389	PIPE 2x0.154	A36	0.00	0.00	0.00
234	386	387	PIPE 2x0.154	A36	0.00	0.00	0.00
235	433	434	PIPE 2x0.154	A36	0.00	0.00	0.00
238	536	535	PIPE 2x0.154	A36	0.00	0.00	0.00
241	524	523	PIPE 2x0.154	A36	0.00	0.00	0.00
244	530	529	PIPE 2x0.154	A36	0.00	0.00	0.00

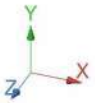
Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
94	180.00	0	0.00	0.00	0.00
95	180.00	0	0.00	0.00	0.00
96	180.00	0	0.00	0.00	0.00
97	270.00	0	0.00	0.00	0.00
98	270.00	0	0.00	0.00	0.00
99	270.00	0	0.00	0.00	0.00
100	270.00	0	0.00	0.00	0.00
101	270.00	0	0.00	0.00	0.00
102	270.00	0	0.00	0.00	0.00
107	90.00	0	0.00	0.00	0.00
108	90.00	0	0.00	0.00	0.00
111	90.00	0	0.00	0.00	0.00
175	180.00	0	0.00	0.00	0.00
176	90.00	0	0.00	0.00	0.00
177	180.00	0	0.00	0.00	0.00
178	90.00	0	0.00	0.00	0.00
179	180.00	0	0.00	0.00	0.00
180	90.00	0	0.00	0.00	0.00

Hinges

	Node-J				Node-K						
Member	**M33**	**M22**	**V3**	**V2**	**M33**	**M22**	**V3**	**V2**	**TOR**	**AXL**	**Axial rigidity**
103	0	0	0	0	1	0	0	0	0	0	Full
104	0	0	0	0	1	0	0	0	0	0	Full
105	0	0	0	0	1	0	0	0	0	0	Full

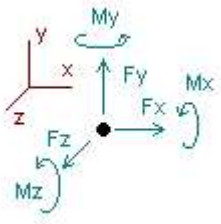

N 415
N 414
N 413
N 226
N 225
N 239
N 257
N 256
N 258


Y
X
Z

Current Date: 1/14/2022 10:02 AM
Units system: English

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**						
225	0.99109	-0.50421	0.07479	0.12827	0.78041	0.23413
226	-0.08120	-0.55275	4.13139	-0.26454	0.11944	0.01304
239	-1.07390	-0.56667	0.02753	0.16982	-0.74011	-0.25100
256	-1.78588	2.06146	1.22766	0.41406	0.31073	0.02311
257	-0.02357	2.27805	-2.37536	-0.22972	0.04789	0.05357
258	1.91469	2.17676	1.28596	0.40056	-0.28249	-0.06216
413	0.07311	0.12822	1.63117	-0.20606	-0.10687	-0.01586
414	-0.37656	0.13592	1.14651	0.05140	-0.17606	0.21792
415	0.36222	0.13434	1.18572	0.02792	0.26464	-0.22174
SUM	0.00000	5.29112	8.33537	0.49172	0.21759	-0.00899
Condition **LC2=1.2DL+W30**						
225	3.35943	-0.52767	-1.78554	0.13184	0.01103	0.21620
226	0.89065	-0.57724	2.05489	-0.29782	-1.36732	-0.01842
239	-0.16601	-0.51471	-0.09988	0.15918	-0.15134	-0.22997
256	-1.99003	2.21669	1.13367	0.06453	-0.04473	0.21051
257	0.30560	2.24626	-2.36042	-0.24993	-0.57839	-0.64579
258	1.85721	2.05793	1.11972	0.21584	-0.10122	-0.14837
413	0.74765	0.12790	-0.15358	-0.19895	0.08165	0.02306
414	1.36218	0.12450	-0.18050	-0.00138	-0.36605	0.23539
415	1.78142	0.13746	0.27166	0.17349	-0.17999	-0.14621
SUM	8.14810	5.29112	0.00000	-0.00321	-2.69637	-0.50360
Condition **LC3=1.2DL-W0**						
225	2.47867	-0.56573	-2.06765	0.13697	-0.77507	0.24496
226	0.07067	-0.51662	-0.13084	-0.28269	-0.11511	-0.02248
239	-2.38481	-0.50303	-2.03698	0.11202	0.74351	-0.21841
256	-2.14087	2.27900	1.03926	-0.18309	-0.31133	0.37837
257	0.02428	2.06082	-2.15699	-0.23325	-0.04926	-0.05513
258	2.01013	2.16205	0.98104	-0.16719	0.28063	-0.33782
413	-0.05433	0.12918	-1.94086	-0.20105	0.07095	0.00618
414	0.10003	0.12196	-1.00715	0.14199	0.13799	0.13964
415	-0.10377	0.12349	-1.01518	0.18490	-0.30049	-0.12441
SUM	0.00000	5.29112	-8.33537	-0.49140	-0.31818	0.01091

Condition **LC4=1.2DL-W30**

225	0.10953	-0.54206	-0.20623	0.13350	-0.00709	0.26275
226	-0.90067	-0.49281	1.94767	-0.24976	1.37174	0.00917
239	-3.29166	-0.55465	-1.90896	0.12285	0.15573	-0.23910
256	-1.93620	2.12286	1.13233	0.16567	0.04336	0.19134
257	-0.30523	2.09391	-2.17342	-0.21327	0.57719	0.64441
258	2.06741	2.28072	1.14702	0.01707	0.09978	-0.25175
413	-0.72893	0.12973	-0.15398	-0.20721	-0.11761	-0.03309
414	-1.64121	0.13303	0.31861	0.19507	0.33310	0.12220
415	-1.52115	0.12039	-0.10305	0.03969	0.13881	-0.20061
SUM	-8.14810	5.29112	0.00000	0.00361	2.59502	0.50533

Condition **LC5=0.9DL+W0**

225	0.55576	-0.36982	0.32403	0.09569	0.77955	0.17350
226	-0.07987	-0.42006	3.63337	-0.19672	0.11884	0.01424
239	-0.64000	-0.43218	0.27896	0.13516	-0.74047	-0.19151
256	-1.29323	1.51727	0.94378	0.38512	0.31090	-0.02741
257	-0.02371	1.73840	-1.81181	-0.17218	0.04805	0.05375
258	1.42227	1.63281	1.00202	0.37132	-0.28239	-0.01175
413	0.07078	0.09747	1.67002	-0.15533	-0.10247	-0.01461
414	-0.34202	0.10302	1.12980	0.02713	-0.17139	0.17322
415	0.33003	0.10143	1.16520	0.00116	0.26933	-0.17844
SUM	0.00000	3.96834	8.33537	0.49135	0.22996	-0.00901

Condition **LC6=0.9DL+W30**

225	2.92720	-0.39487	-1.53752	0.09943	0.01028	0.15653
226	0.89112	-0.44336	1.55467	-0.22933	-1.36770	-0.01828
239	0.26818	-0.38000	0.15229	0.12324	-0.15215	-0.17107
256	-1.50162	1.67663	0.85163	0.03578	-0.04470	0.16063
257	0.30637	1.70387	-1.79376	-0.19190	-0.57845	-0.64586
258	1.36409	1.51311	0.83518	0.18667	-0.10123	-0.09783
413	0.74597	0.09564	-0.11522	-0.14813	0.08613	0.02436
414	1.39705	0.09343	-0.19775	-0.02561	-0.36145	0.19077
415	1.74974	0.10390	0.25047	0.14690	-0.17528	-0.10277
SUM	8.14810	3.96834	0.00000	-0.00295	-2.68456	-0.50352

Condition **LC7=0.9DL-W0**

225	2.04610	-0.43246	-1.81878	0.10317	-0.77543	0.18579
226	0.07194	-0.38170	-0.63327	-0.21360	-0.11579	-0.02134
239	-1.95365	-0.36995	-1.78602	0.07618	0.74264	-0.16054
256	-1.65170	1.73805	0.75643	-0.21190	-0.31124	0.32828
257	0.02431	1.51556	-1.58717	-0.17481	-0.04919	-0.05505
258	1.52120	1.62125	0.69827	-0.19619	0.28077	-0.28794
413	-0.05668	0.09542	-1.90289	-0.15015	0.07549	0.00742
414	0.13433	0.09032	-1.02503	0.11789	0.14261	0.09489
415	-0.13584	0.09184	-1.03690	0.15837	-0.29587	-0.08107
SUM	0.00000	3.96834	-8.33537	-0.49102	-0.30600	0.01044

Condition **LC8=0.9DL-W30**

225	-0.32613	-0.40720	0.04386	0.09952	-0.00755	0.20263
226	-0.89853	-0.35908	1.44742	-0.18134	1.37084	0.01137
239	-2.86081	-0.42179	-1.65874	0.08828	0.15531	-0.18064
256	-1.44280	1.57780	0.84767	0.13668	0.04359	0.14062
257	-0.30612	1.55139	-1.60670	-0.15531	0.57748	0.64474
258	1.57919	1.74079	0.86484	-0.01199	0.10004	-0.20200
413	-0.73192	0.09745	-0.11552	-0.15640	-0.11316	-0.03189

414	-1.60724	0.09957	0.30127	0.17092	0.33780	0.07736
415	-1.55375	0.08942	-0.12410	0.01299	0.14340	-0.15743
SUM	-8.14810	3.96834	0.00000	0.00333	2.60776	0.50476

Condition **LC9=1.2DL+Di+Wi0**

225	2.96292	-0.94678	-1.62982	0.25229	0.09331	0.41634
226	-0.02041	-0.95203	3.71967	-0.48661	0.02382	0.01397
239	-2.96575	-0.95665	-1.65679	0.23694	-0.06802	-0.43170
256	-3.41739	3.77244	1.99250	0.23984	0.03455	0.33807
257	-0.00378	3.79424	-3.97861	-0.41347	0.00768	0.00870
258	3.43681	3.78836	1.99914	0.23407	-0.02653	-0.34632
413	0.02506	0.24052	-0.05473	-0.36954	-0.03010	0.00333
414	-0.27358	0.24111	0.23772	0.18060	-0.03456	0.32191
415	0.25611	0.24068	0.27992	0.17295	0.01072	-0.32469
SUM	0.00000	9.22190	0.90900	0.04706	0.01087	-0.00039

Condition **LC10=1.2DL+Di+Wi30**

225	3.20463	-0.94920	-1.82807	0.25359	0.00004	0.41390
226	0.08942	-0.95720	3.51103	-0.49156	-0.14733	0.01018
239	-2.86007	-0.94801	-1.65769	0.23667	-0.01633	-0.42704
256	-3.44205	3.78896	1.98264	0.19835	-0.00825	0.36165
257	0.03107	3.79448	-3.98178	-0.41668	-0.06372	-0.07103
258	3.42065	3.76934	1.98260	0.21996	-0.01375	-0.35054
413	0.10642	0.23999	-0.27284	-0.36718	-0.01060	0.00602
414	-0.05574	0.23980	0.08756	0.17373	-0.06413	0.32540
415	0.41467	0.24074	0.17655	0.19022	-0.03704	-0.31510
SUM	0.90900	9.21890	0.00000	-0.00290	-0.36111	-0.04656

Condition **LC11=1.2DL+Di-Wi0**

225	3.10746	-0.95534	-1.86143	0.25528	-0.09499	0.41778
226	0.00843	-0.94970	3.28163	-0.48933	-0.02507	0.00896
239	-3.09088	-0.94476	-1.85349	0.23139	0.06641	-0.42466
256	-3.45886	3.79634	1.97398	0.16833	-0.04081	0.38245
257	0.00671	3.77302	-3.95794	-0.41442	-0.01379	-0.01530
258	3.43390	3.77764	1.97106	0.18565	0.02029	-0.36717
413	0.01269	0.23981	-0.48746	-0.36619	-0.01361	0.00091
414	-0.21460	0.23920	0.00227	0.18894	-0.01169	0.31422
415	0.19515	0.23970	0.02239	0.19325	-0.05703	-0.31347
SUM	0.00000	9.21590	-0.90900	-0.04710	-0.17029	0.00374

Condition **LC12=1.2DL+Di-Wi30**

225	2.86574	-0.95292	-1.66317	0.25398	-0.00174	0.42022
226	-0.10138	-0.94454	3.49030	-0.48438	0.14607	0.01275
239	-3.19654	-0.95339	-1.85258	0.23167	0.01471	-0.42931
256	-3.43419	3.77981	1.98383	0.20981	0.00199	0.35887
257	-0.02815	3.77279	-3.95479	-0.41121	0.05761	0.06443
258	3.45005	3.79665	1.98760	0.19976	0.00751	-0.36295
413	-0.06866	0.24035	-0.26932	-0.36854	-0.03310	-0.00178
414	-0.43248	0.24051	0.15241	0.19581	0.01794	0.31074
415	0.03661	0.23964	0.12572	0.17599	-0.00935	-0.32307
SUM	-0.90900	9.21890	0.00000	0.00288	0.20166	0.04992

Condition **LC13=1.4DL**

225	2.02497	-0.62425	-1.16225	0.15486	0.00274	0.27944
226	-0.00604	-0.62412	2.33432	-0.31936	0.00289	-0.00546
239	-2.01837	-0.62403	-1.17217	0.16448	0.00278	-0.27375
256	-2.29080	2.53199	1.32221	0.13452	-0.00063	0.23445
257	0.00029	2.53148	-2.64443	-0.27024	-0.00058	-0.00067
258	2.28968	2.53110	1.32228	0.13572	-0.00062	-0.23364
413	0.01092	0.15025	-0.17923	-0.23698	-0.02084	-0.00582
414	-0.16061	0.15027	0.08068	0.11279	-0.02167	0.20855
415	0.14996	0.15029	0.09858	0.12424	-0.02170	-0.20197
SUM	0.00000	6.17297	0.00000	0.00002	-0.05762	0.00113

Condition **LC14=1.2DL+1.6LL1**

225	1.92502	-0.56967	-1.08713	0.04924	0.02351	0.30478
226	-0.00341	-0.52596	1.96131	-0.26980	-0.00017	-0.00474
239	-1.93208	-0.57853	-1.10624	0.06186	-0.01591	-0.30352
256	-2.17765	2.42316	1.26137	0.13032	0.00765	0.21018
257	0.00078	2.10361	-2.20137	-0.22745	-0.00157	-0.00177
258	2.18553	2.42765	1.26610	0.13253	-0.00795	-0.21324
413	0.01194	0.15996	-0.20364	-0.25062	-0.02017	-0.00661
414	-0.13547	0.12546	0.04803	0.09659	-0.01280	0.17362
415	0.12534	0.12544	0.06157	0.10683	-0.02586	-0.16718
SUM	0.00000	5.69112	0.00000	-0.17050	-0.05326	-0.00848

Condition **LC15=1.2DL+1.6LL2**

225	2.24157	-0.78927	-1.28023	0.21642	0.01250	0.35101
226	-0.01192	-0.53019	2.03210	-0.27101	0.01270	-0.01989
239	-1.73349	-0.53020	-0.99878	0.13634	-0.00708	-0.23484
256	-2.62541	2.85198	1.51773	0.17460	0.00343	0.29455
257	-0.00181	2.14612	-2.24239	-0.22921	0.00375	0.00406
258	1.92981	2.13190	1.11651	0.11864	-0.00415	-0.19624
413	0.10405	0.13846	-0.21025	-0.22648	-0.02756	-0.02811
414	-0.11530	0.12878	0.05223	0.09399	-0.02358	0.17894
415	0.21251	0.14354	0.01307	0.10357	-0.02382	-0.21103
SUM	0.00000	5.69112	0.00000	0.11686	-0.05380	0.13845

Condition **LC16=1.2DL+WL0+1.6LLa1**

225	1.76595	-0.53338	-0.96874	0.09185	0.05869	0.26170
226	-0.00422	-0.51857	2.05313	-0.26504	0.00250	-0.00261
239	-2.64433	-0.95032	-1.49570	0.16036	-0.03981	-0.48110
256	-1.96212	2.17651	1.14518	0.13635	0.02194	0.18788
257	0.00004	2.07377	-2.17004	-0.22364	-0.00007	-0.00009
258	3.13766	3.40528	1.82056	0.22176	-0.01642	-0.34892
413	-0.14170	0.16703	-0.19850	-0.27799	0.00393	0.05307
414	-0.25117	0.14265	-0.00603	0.08718	-0.01445	0.22253
415	0.09989	0.12815	0.09013	0.10204	-0.00784	-0.17187
SUM	0.00000	6.09112	0.27000	0.03287	0.00848	-0.27941

Condition **LC17=1.2DL+WL30+1.6LLa1**

225	1.83917	-0.53407	-1.02955	0.09212	0.02837	0.26099
226	0.03081	-0.52028	1.99086	-0.26662	-0.05290	-0.00384
239	-2.61360	-0.94789	-1.49457	0.16014	-0.02771	-0.47988
256	-1.97015	2.18187	1.14180	0.12266	0.00782	0.19565
257	0.01152	2.07388	-2.17112	-0.22467	-0.02341	-0.02615
258	3.13305	3.40027	1.81665	0.21915	-0.01422	-0.34934
413	-0.11795	0.16668	-0.26555	-0.27718	0.00928	0.05375

414	-0.18567	0.14274	-0.04864	0.08506	-0.02454	0.22407
415	0.14882	0.12792	0.06012	0.10742	-0.02259	-0.16865
SUM	0.27600	6.09112	0.00000	0.01808	-0.11989	-0.29340

Condition **LC18=1.2DL-WL0+1.6LLa1**

225	1.80887	-0.53595	-1.03868	0.09247	0.00010	0.26229
226	0.00616	-0.51788	1.92253	-0.26585	-0.01559	-0.00413
239	-2.68460	-0.94705	-1.55489	0.15839	-0.00219	-0.47931
256	-1.97511	2.18395	1.13916	0.11375	-0.00186	0.20186
257	0.00401	2.06706	-2.16354	-0.22392	-0.00814	-0.00910
258	3.13810	3.40396	1.81365	0.20862	-0.00373	-0.35453
413	-0.14621	0.16648	-0.33171	-0.27679	0.00835	0.05225
414	-0.23423	0.14240	-0.07221	0.08942	-0.00891	0.22063
415	0.08301	0.12815	0.01569	0.10835	-0.02841	-0.16859
SUM	0.00000	6.09112	-0.27000	0.00443	-0.06038	-0.27864

Condition **LC19=1.2DL-WL30+1.6LLa1**

225	1.73565	-0.53526	-0.97787	0.09219	0.03042	0.26300
226	-0.02886	-0.51617	1.98480	-0.26428	0.03981	-0.00290
239	-2.71534	-0.94948	-1.55602	0.15861	-0.01429	-0.48053
256	-1.96708	2.17859	1.14253	0.12744	0.01226	0.19409
257	-0.00748	2.06695	-2.16246	-0.22289	0.01520	0.01695
258	3.14271	3.40897	1.81756	0.21123	-0.00593	-0.35410
413	-0.16996	0.16683	-0.26465	-0.27760	0.00300	0.05157
414	-0.29974	0.14231	-0.02959	0.09155	0.00119	0.21909
415	0.03409	0.12838	0.04569	0.10297	-0.01367	-0.17181
SUM	-0.27600	6.09112	0.00000	0.01922	0.06799	-0.26465

Condition **LC20=1.2DL+WL0+1.6LLa2**

225	1.81586	-0.55468	-0.99790	0.04943	0.05407	0.29743
226	-0.00692	-0.51579	2.00676	-0.26421	0.00363	-0.01468
239	-2.45934	-0.76681	-1.36218	0.00697	-0.07387	-0.44833
256	-2.09338	2.32904	1.21920	0.13818	0.01906	0.19825
257	0.00022	2.04804	-2.14509	-0.22249	-0.00041	-0.00054
258	2.80660	3.10504	1.63717	0.19486	-0.03050	-0.27255
413	-0.01686	0.19291	-0.20354	-0.30680	0.03394	0.06563
414	-0.17049	0.12768	0.02854	0.09426	-0.00174	0.18417
415	0.12430	0.12570	0.08703	0.10171	-0.00901	-0.16905
SUM	0.00000	6.09112	0.27000	-0.20807	-0.00482	-0.15966

Condition **LC21=1.2DL+WL30+1.6LLa2**

225	1.88906	-0.55536	-1.05871	0.04970	0.02374	0.29672
226	0.02811	-0.51748	1.94444	-0.26577	-0.05177	-0.01593
239	-2.42857	-0.76436	-1.36102	0.00672	-0.06178	-0.44711
256	-2.10139	2.33438	1.21582	0.12449	0.00494	0.20602
257	0.01171	2.04810	-2.14611	-0.22351	-0.02375	-0.02660
258	2.80194	3.09998	1.63323	0.19224	-0.02830	-0.27296
413	0.00689	0.19258	-0.27060	-0.30598	0.03931	0.06629
414	-0.10498	0.12781	-0.01407	0.09212	-0.01183	0.18573
415	0.17323	0.12547	0.05702	0.10709	-0.02376	-0.16583
SUM	0.27600	6.09112	0.00000	-0.22290	-0.13321	-0.17367

Condition **LC22=1.2DL-WL0+1.6LLa2**

225	1.85876	-0.55723	-1.06784	0.05003	-0.00453	0.29803
226	0.00346	-0.51508	1.87613	-0.26501	-0.01447	-0.01621
239	-2.49960	-0.76354	-1.42135	0.00497	-0.03626	-0.44655
256	-2.10634	2.33646	1.21318	0.11557	-0.00474	0.21223
257	0.00420	2.04129	-2.13854	-0.22277	-0.00848	-0.00956
258	2.80703	3.10370	1.63024	0.18171	-0.01782	-0.27816
413	-0.02138	0.19239	-0.33676	-0.30558	0.03838	0.06477
414	-0.15355	0.12743	-0.03764	0.09650	0.00380	0.18227
415	0.10741	0.12570	0.01259	0.10802	-0.02958	-0.16577
SUM	0.00000	6.09112	-0.27000	-0.23654	-0.07370	-0.15895

Condition **LC23=1.2DL-WL30+1.6LLa2**

225	1.78556	-0.55656	-1.00703	0.04977	0.02580	0.29874
226	-0.03156	-0.51339	1.93845	-0.26344	0.04094	-0.01496
239	-2.53037	-0.76599	-1.42251	0.00522	-0.04835	-0.44777
256	-2.09832	2.33111	1.21656	0.12927	0.00938	0.20446
257	-0.00729	2.04124	-2.13753	-0.22175	0.01486	0.01650
258	2.81169	3.10876	1.63418	0.18433	-0.02001	-0.27775
413	-0.04513	0.19273	-0.26969	-0.30640	0.03302	0.06410
414	-0.21907	0.12729	0.00497	0.09864	0.01390	0.18071
415	0.05849	0.12593	0.04259	0.10265	-0.01484	-0.16899
SUM	-0.27600	6.09112	0.00000	-0.22171	0.05469	-0.14495

Condition **LC24=1.2DL+WL0+1.6LLa3**

225	2.25733	-0.65509	-1.22281	-0.05106	0.09310	0.41014
226	-0.00583	-0.51818	2.00335	-0.26579	0.00617	0.00393
239	-1.96322	-0.59472	-1.09453	0.02269	-0.04774	-0.33576
256	-2.56430	2.86934	1.50006	0.17534	0.03547	0.22804
257	-0.00087	2.04343	-2.14229	-0.22350	0.00176	0.00200
258	2.25089	2.50396	1.31008	0.14672	-0.01913	-0.21354
413	0.02756	0.19568	-0.21068	-0.30529	-0.05629	-0.04469
414	-0.14039	0.12393	0.06576	0.09430	-0.01693	0.17215
415	0.13883	0.12276	0.06105	0.10443	-0.02945	-0.16542
SUM	0.00000	6.09112	0.27000	-0.30214	-0.03303	0.05685

Condition **LC25=1.2DL+WL30+1.6LLa3**

225	2.33053	-0.65574	-1.28363	-0.05082	0.06278	0.40942
226	0.02919	-0.51987	1.94101	-0.26736	-0.04923	0.00268
239	-1.93237	-0.59224	-1.09333	0.02242	-0.03565	-0.33454
256	-2.57230	2.87470	1.49670	0.16165	0.02136	0.23579
257	0.01062	2.04346	-2.14329	-0.22452	-0.02158	-0.02406
258	2.24615	2.49882	1.30610	0.14410	-0.01694	-0.21394
413	0.05130	0.19536	-0.27775	-0.30446	-0.05093	-0.04407
414	-0.07488	0.12408	0.02315	0.09216	-0.02701	0.17372
415	0.18776	0.12253	0.03105	0.10980	-0.04420	-0.16220
SUM	0.27600	6.09112	0.00000	-0.31702	-0.16141	0.04280

Condition **LC26=1.2DL-WL0+1.6LLa3**

225	2.30027	-0.65762	-1.29279	-0.05050	0.03452	0.41073
226	0.00455	-0.51747	1.87271	-0.26659	-0.01192	0.00240
239	-2.00343	-0.59146	-1.15365	0.02069	-0.01013	-0.33400
256	-2.57728	2.87683	1.49409	0.15275	0.01169	0.24200
257	0.00310	2.03667	-2.13573	-0.22377	-0.00632	-0.00702
258	2.25131	2.50259	1.30312	0.13357	-0.00644	-0.21915
413	0.02300	0.19513	-0.34394	-0.30406	-0.05187	-0.04564

414	-0.12346	0.12368	-0.00042	0.09654	-0.01139	0.17026
415	0.12193	0.12276	-0.01339	0.11073	-0.05001	-0.16213
SUM	0.00000	6.09112	-0.27000	-0.33064	-0.10187	0.05745

Condition **LC27=1.2DL-WL30+1.6LLa3**

225	2.22707	-0.65697	-1.23196	-0.05074	0.06484	0.41145
226	-0.03047	-0.51578	1.93506	-0.26503	0.04348	0.00366
239	-2.03427	-0.59393	-1.15486	0.02095	-0.02222	-0.33522
256	-2.56928	2.87147	1.49745	0.16644	0.02580	0.23425
257	-0.00839	2.03664	-2.13474	-0.22275	0.01703	0.01904
258	2.25604	2.50772	1.30710	0.13619	-0.00864	-0.21875
413	-0.00074	0.19545	-0.27687	-0.30488	-0.05722	-0.04626
414	-0.18897	0.12353	0.04220	0.09869	-0.00130	0.16869
415	0.07301	0.12299	0.01662	0.10536	-0.03526	-0.16536
SUM	-0.27600	6.09112	0.00000	-0.31576	0.02651	0.07149

Condition **LC28=1.2DL+WL0+1.6LLa4**

225	2.64161	-0.94160	-1.46286	0.18357	0.07420	0.46196
226	-0.01805	-0.52296	2.09741	-0.26692	0.02482	-0.01798
239	-1.74025	-0.53859	-0.97573	0.11448	-0.03528	-0.25275
256	-3.12111	3.39357	1.81790	0.23179	0.02851	0.33883
257	-0.00465	2.09752	-2.19413	-0.22547	0.00951	0.01049
258	1.95767	2.16499	1.13800	0.12970	-0.01376	-0.19430
413	0.14962	0.16236	-0.20940	-0.26948	-0.06017	-0.06524
414	-0.11354	0.12825	0.06714	0.09055	-0.03117	0.17938
415	0.24871	0.14756	-0.00833	0.10068	-0.02913	-0.22364
SUM	0.00000	6.09112	0.27000	0.08890	-0.03249	0.23675

Condition **LC29=1.2DL+WL30+1.6LLa4**

225	2.71477	-0.94222	-1.52368	0.18381	0.04387	0.46122
226	0.01697	-0.52465	2.03506	-0.26848	-0.03058	-0.01921
239	-1.70940	-0.53613	-0.97452	0.11424	-0.02319	-0.25153
256	-3.12904	3.39887	1.81452	0.21810	0.01440	0.34657
257	0.00684	2.09754	-2.19512	-0.22649	-0.01383	-0.01556
258	1.95294	2.15986	1.13402	0.12707	-0.01156	-0.19471
413	0.17334	0.16205	-0.27645	-0.26867	-0.05482	-0.06465
414	-0.04804	0.12841	0.02451	0.08841	-0.04124	0.18095
415	0.29763	0.14740	-0.03834	0.10603	-0.04389	-0.22044
SUM	0.27600	6.09112	0.00000	0.07402	-0.16084	0.22263

Condition **LC30=1.2DL-WL0+1.6LLa4**

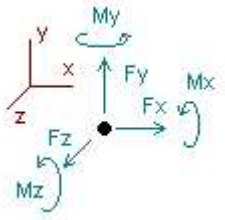
225	2.68456	-0.94414	-1.53289	0.18419	0.01559	0.46253
226	-0.00768	-0.52227	1.96686	-0.26773	0.00674	-0.01952
239	-1.78049	-0.53537	-1.03485	0.11251	0.00232	-0.25100
256	-3.13409	3.40106	1.81197	0.20920	0.00473	0.35279
257	-0.00068	2.09085	-2.18767	-0.22575	0.00144	0.00148
258	1.95812	2.16364	1.13105	0.11655	-0.00106	-0.19994
413	0.14504	0.16179	-0.34263	-0.26827	-0.05576	-0.06624
414	-0.09661	0.12801	0.00094	0.09279	-0.02562	0.17749
415	0.23183	0.14756	-0.08277	0.10699	-0.04968	-0.22035
SUM	0.00000	6.09112	-0.27000	0.06048	-0.10130	0.23723

Condition **LC31=1.2DL-WL30+1.6LLa4**

225	2.61140	-0.94352	-1.47207	0.18394	0.04592	0.46327
226	-0.04270	-0.52059	2.02921	-0.26616	0.06214	-0.01829
239	-1.81133	-0.53783	-1.03606	0.11276	-0.00977	-0.25222
256	-3.12616	3.39577	1.81535	0.22289	0.01883	0.34505
257	-0.01216	2.09083	-2.18668	-0.22473	0.02478	0.02754
258	1.96285	2.16878	1.13503	0.11917	-0.00326	-0.19953
413	0.12132	0.16210	-0.27558	-0.26908	-0.06111	-0.06683
414	-0.16211	0.12785	0.04357	0.09493	-0.01554	0.17592
415	0.18291	0.14772	-0.05276	0.10164	-0.03494	-0.22355
SUM	-0.27600	6.09112	0.00000	0.07536	0.02705	0.25135

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

Node		Forces						Moments					
		Fx [Kip]	**Ic**	**Fy** [Kip]	**Ic**	**Fz** [Kip]	**Ic**	**Mx** [Kip*ft]	**Ic**	**My** [Kip*ft]	**Ic**	**Mz** [Kip*ft]	**Ic**
225	Max	3.359	LC2	-0.370	LC5	0.324	LC5	0.25528	LC11	0.78041	LC1	0.46327	LC31
	Min	-0.326	LC8	-0.955	LC11	-2.068	LC3	-0.05106	LC24	-0.77543	LC7	0.15653	LC6
226	Max	0.891	LC6	-0.359	LC8	4.131	LC1	-0.18134	LC8	1.37174	LC4	0.01424	LC5
	Min	-0.901	LC4	-0.957	LC10	-0.633	LC7	-0.49156	LC10	-1.36770	LC6	-0.02248	LC3
239	Max	0.268	LC6	-0.370	LC7	0.279	LC5	0.23694	LC9	0.74351	LC3	-0.16054	LC7
	Min	-3.292	LC4	-0.957	LC9	-2.037	LC3	0.00497	LC22	-0.74047	LC5	-0.48110	LC16
256	Max	-1.293	LC5	3.796	LC11	1.992	LC9	0.41406	LC1	0.31090	LC5	0.38245	LC11
	Min	-3.459	LC11	1.517	LC5	0.756	LC7	-0.21190	LC7	-0.31133	LC3	-0.02741	LC5
257	Max	0.306	LC6	3.794	LC10	-1.587	LC7	-0.15531	LC8	0.57748	LC8	0.64474	LC8
	Min	-0.306	LC8	1.516	LC7	-3.982	LC10	-0.41668	LC10	-0.57845	LC6	-0.64586	LC6
258	Max	3.450	LC12	3.797	LC12	1.999	LC9	0.40056	LC1	0.28077	LC7	-0.01175	LC5
	Min	1.364	LC6	1.513	LC6	0.698	LC7	-0.19619	LC7	-0.28249	LC1	-0.36717	LC11
413	Max	0.748	LC2	0.241	LC9	1.670	LC5	-0.14813	LC6	0.08613	LC6	0.06629	LC21
	Min	-0.732	LC8	0.095	LC7	-1.941	LC3	-0.36954	LC9	-0.11761	LC4	-0.06683	LC31
414	Max	1.397	LC6	0.241	LC9	1.147	LC1	0.19581	LC12	0.33780	LC8	0.32540	LC10
	Min	-1.641	LC4	0.090	LC7	-1.025	LC7	-0.02561	LC6	-0.36605	LC2	0.07736	LC8
415	Max	1.781	LC2	0.241	LC10	1.186	LC1	0.19325	LC11	0.26933	LC5	-0.08107	LC7
	Min	-1.554	LC8	0.089	LC8	-1.037	LC7	0.00116	LC5	-0.30049	LC3	-0.32469	LC9

Date: 1/14/2022
Project Name: NEW LONDON JEFFERSON AVENUE
Project No.: CT2838
Designed By: KM Checked By: MSC

HUDSON Design Group LLC

CHECK CONNECTION CAPACITY (Worst Case) → EXISTING RING MOUNT

Reference: AISC Steel Construction Manual 14th Edition (ASD)

Bolt Type = A36 3/4" Threaded Rod

Allowable Tensile Load =

F_{Tall} = 9609 lbs.

Allowable Shear Load =

F_{Vall}= 5765 lbs.

TENSILE FORCES

Reaction **F =** 4131 lbs. (See Bentley Output)

SHEAR FORCES

Reactions in X direction: 901 lbs. (See Bentley Output)
Reactions in Y direction: 957 lbs. (See Bentley Output)

Resultant: 1314 lbs.

No. of Supports = 1
No. of Bolts / Support = 3

Tension Design Load /Bolts =

f_t= 1377.00 lbs. < 9609 lbs. **Therefore, OK !**

Shear Design Load / Bolts=

f_v= 438.13 lbs. < 5765 lbs. **Therefore, OK !**

CHECK COMBINED TENSION AND SHEAR

f_t / F_T	+	f_v / F_V	≤	1.0			
0.143	+	0.076	=	0.219	<	1.0	**Therefore, OK !**

Date: 1/14/2022
Project Name: NEW LONDON JEFFERSON AVENUE
Project No.: CT2838
Designed By: KM Checked By: MSC

HUDSON Design Group LLC

CHECK CONNECTION CAPACITY (Worst Case) → EXISTING SUPPORT RING MOUNT

Reference: AISC Steel Construction Manual 14th Edition (ASD)

Bolt Type = A36 1/2" Threaded Rod

Allowable Tensile Load =

F_{Tall} = 4271 lbs.

Allowable Shear Load =

F_{Vall}= 2562 lbs.

TENSILE FORCES

Reaction **F =** 1186 lbs. (See Bentley Output)

SHEAR FORCES

Reactions in X direction: 1781 lbs. (See Bentley Output)
Reactions in Y direction: 241 lbs. (See Bentley Output)

Resultant: 1797 lbs.

No. of Supports = 1
No. of Bolts / Support = 4

Tension Design Load /Bolts =

f_t= 296.50 lbs. < 4271 lbs. **Therefore, OK !**

Shear Design Load / Bolts=

f_v= 449.31 lbs. < 2562 lbs. **Therefore, OK !**

CHECK COMBINED TENSION AND SHEAR

f_t / F_T	+	f_v / F_V	≤	1.0			
0.069	+	0.175	=	0.245	<	1.0	**Therefore, OK !**

Date: 1/14/2022
Project Name: NEW LONDON JEFFERSON AVENUE
Project No.: CT2838
Designed By: KM Checked By: MSC

HUDSON Design Group LLC

CHECK CONNECTION CAPACITY (Worst Case) → EXISTING SUPPORT RING MOUNT

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 =** 1992 lbs. (See Bentley Output)

SHEAR FORCES

Reactions in X direction: 3796 lbs. (See Bentley Output)
Reactions in Y direction: 3459 lbs. (See Bentley Output)

Resultant: 5136 lbs.

No. of Supports = 1
No. of Bolts / Support = 3

Tension Design Load /Bolts =

f_t= 664.00 lbs. < 6673 lbs. **Therefore, OK !**

Shear Design Load / Bolts=

f_v= 1711.86 lbs. < 4004 lbs. **Therefore, OK !**

CHECK COMBINED TENSION AND SHEAR

f_t / F_T	+	f_v / F_V	≤	1.0			
0.100	+	0.428	=	0.527	<	1.0	**Therefore, OK !**

490 JEFFERSON AVE

Location	490 JEFFERSON AVE	**City, State, Zip**	,
Mblu	B11/ 220/ 1/ /	**Acct#**	B11 0220 0001
Owner	NEW LONDON CITY OF	**Assessment**	$35,826,630
Appraisal	$51,180,900	**PID**	5464
Building Count	6		

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$40,308,800	$10,872,100	$51,180,900

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$28,216,160	$7,610,470	$35,826,630

Owner of Record

Owner	NEW LONDON CITY OF	**Sale Price**	$0
Co-Owner	HIGH SCHOOL	**Certificate**	
Address	490 JEFFERSON AVE NEW LONDON, CT 06320	**Book & Page**	0323/0008
		Sale Date	01/01/1900
		Instrument	

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
NEW LONDON CITY OF	$0		0323/0008		01/01/1900

Building Information

Building 1 : Section 1

Year Built:	1960
Living Area:	1,825
Replacement Cost:	$449,578
Building Percent Good:	63

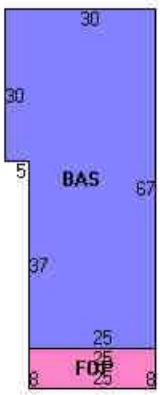
Replacement Cost
Less Depreciation: $283,200

Building Attributes	
Field	**Description**
STYLE	Schools-Public
MODEL	Commercial
Grade	Good
Stories:	1
Occupancy	1.00
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Coal or Wood
Heating Type	None
AC Type	None
Struct Class	
Bldg Use	MUNICIPAL MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
Conv Type	
Usrfld 219	
1st Floor Use:	903I
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & MIN WL
Rooms/Prtns	AVERAGE
Wall Height	9.00
% Comn Wall	0.00

Building Photo

(http://images.vgsi.com/photos/NewLondonCTPhotos//\00\01\02\56.jpg)

Building Layout



(http://images.vgsi.com/photos/NewLondonCTPhotos//Sketches/5464_553

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	1,825	1,825
FOP	Porch, Open, Finished	200	0
		2,025	1,825

Building 2 : Section 1

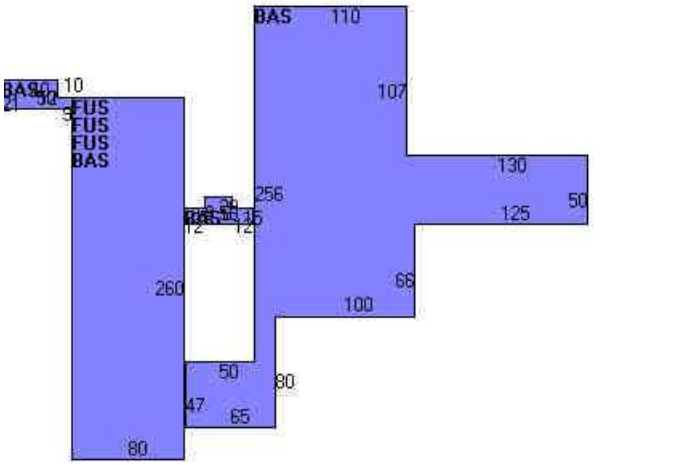
Year Built: 1972
Living Area: 119,800
Replacement Cost: $25,519,806
Building Percent Good: 50
Replacement Cost
Less Depreciation: $12,759,900

Building Attributes : Bldg 2 of 6	
Field	**Description**
STYLE	Schools-Public
MODEL	Commercial
Grade	Good
Stories:	4
Occupancy	1.00
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Vinyl/Asphalt
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	MUNICIPAL MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
Conv Type	
Usrfld 219	
1st Floor Use:	903C
Heat/AC	HEAT/AC PKGS
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	10.00
% Comn Wall	20.00

Building Photo

(http://images.vgsi.com/photos/NewLondonCTPhotos//default.jpg)

Building Layout



(http://images.vgsi.com/photos/NewLondonCTPhotos//Sketches/5464_100

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
FUS	Upper Story, Finished	62,400	62,400
BAS	First Floor	57,400	57,400
		119,800	119,800

Building 3 : Section 1

Year Built: 1972
Living Area: 17,600
Replacement Cost: $1,648,020
Building Percent Good: 93
Replacement Cost Less Depreciation: $1,532,700

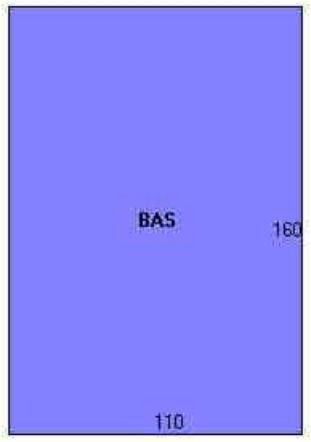
Building Attributes : Bldg 3 of 6

Field	Description
STYLE	Commercial
MODEL	Commercial
Grade	Ave/Good
Stories:	1
Occupancy	1.00
Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Vinyl/Asphalt
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	MUNICIPAL MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
Conv Type	
Usrfld 219	
1st Floor Use:	903C
Heat/AC	HEAT/AC PKGS
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	20.00
% Comn Wall	2.00

Building Photo

(http://images.vgsi.com/photos/NewLondonCTPhotos//default.jpg)

Building Layout



(http://images.vgsi.com/photos/NewLondonCTPhotos//Sketches/5464_100

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	17,600	17,600
		17,600	17,600

Building 4 : Section 1

Year Built: 1972
Living Area: 14,980
Replacement Cost: $3,945,328
Building Percent Good: 50
Replacement Cost Less Depreciation: $1,972,700

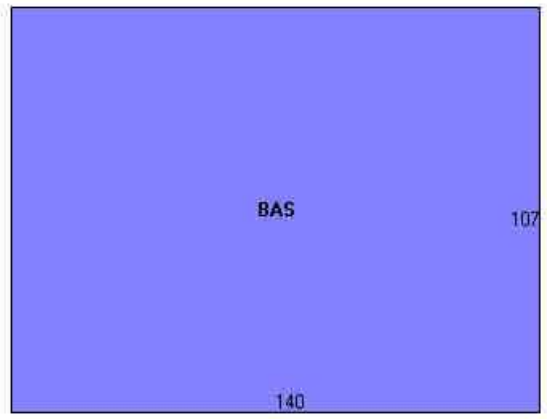
Building Attributes : Bldg 4 of 6	
Field	Description

STYLE	Schools-Public
MODEL	Commercial
Grade	Good
Stories:	1
Occupancy	1.00
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Hardwood
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	MUNICIPAL MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
Conv Type	
Usrfld 219	
1st Floor Use:	903C
Heat/AC	HEAT/AC PKGS
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	20.00
% Comn Wall	50.00

Building Photo

(http://images.vgsi.com/photos/NewLondonCTPhotos//default.jpg)

Building Layout



(http://images.vgsi.com/photos/NewLondonCTPhotos//Sketches/5464_100

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	14,980	14,980
		14,980	14,980

Building 5 : Section 1

Year Built: 1972
Living Area: 11,408
Replacement Cost: $3,733,017
Building Percent Good: 50
Replacement Cost Less Depreciation: $1,866,500

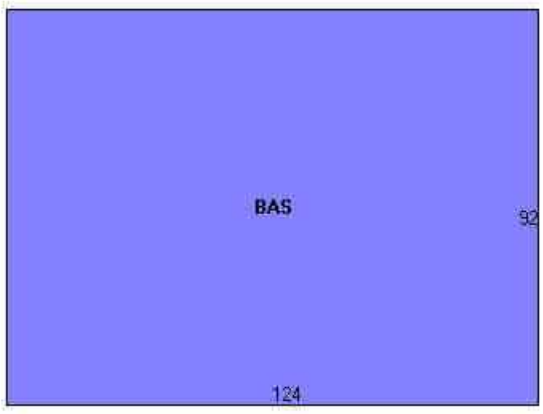
Building Attributes : Bldg 5 of 6	
Field	Description
STYLE	Schools-Public

MODEL	Commercial
Grade	Excellent
Stories:	1
Occupancy	
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Vinyl/Asphalt
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	MUNICIPAL MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
Conv Type	
Usrfld 219	
1st Floor Use:	903C
Heat/AC	HEAT/AC PKGS
Frame Type	FIREPRF STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	20.00
% Comn Wall	40.00

Building Photo

(http://images.vgsi.com/photos/NewLondonCTPhotos//default.jpg)

Building Layout



(http://images.vgsi.com/photos/NewLondonCTPhotos//Sketches/5464_100

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	11,408	11,408
		11,408	11,408

Building 6 : Section 1

Year Built: 2005
Living Area: 135,000
Replacement Cost: $22,331,943
Building Percent Good: 89
Replacement Cost Less Depreciation: $19,875,400

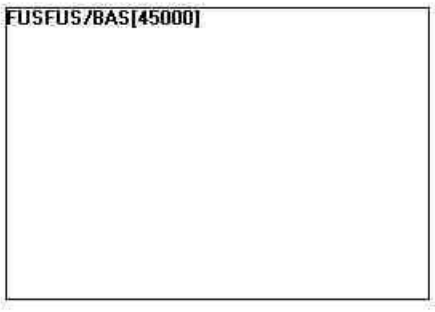
Building Attributes : Bldg 6 of 6	
Field	Description
STYLE	School/College
MODEL	Commercial

Grade	Custom
Stories:	2
Occupancy	1.00
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	Pre-finsh Metl
Roof Structure	Flat
Roof Cover	Rolled Compos
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Average
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	CNTY EDUC
Total Rooms	
Total Bedrms	
Total Baths	
Conv Type	
Usrfld 219	
1st Floor Use:	
Heat/AC	HEAT/AC PKGS
Frame Type	FIREPRF STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	10.00
% Comn Wall	0.00

Building Photo

(http://images.vgsi.com/photos/NewLondonCTPhotos//default.jpg)

Building Layout



(http://images.vgsi.com/photos/NewLondonCTPhotos//Sketches/5464_101

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
FUS	Upper Story, Finished	90,000	90,000
BAS	First Floor	45,000	45,000
		135,000	135,000

Extra Features

Extra Features				Legend
Code	Description	Size	Value	Bldg #
GEN1	GEN BACKUP 36K W+	0.00 UNITS	$0	3
SPR1	SPRINKLERS-WET	90000.00 S.F.	$80,100	6
CNP1	CANOPY-AVE	3600.00 SF	$113,400	1
ELV1	Elevator, Pass	2.00 UNITS	$80,000	2
ELS1	Pass Stops	7.00 UNITS	$13,100	2

Land

Land Use

Use Code	903C
Description	MUNICIPAL MDL-94
Zone	R-3
Neighborhood	JEF1
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	49.32
Frontage	0
Depth	0
Assessed Value	$7,610,470
Appraised Value	$10,872,100

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
FN4	FENCE-8' CHAIN			600.00 L.F.	$4,800	1
GRN2	COMM GLASS			600.00 S.F	$6,300	6
PAV1	PAVING-ASPHALT			40000.00 S.F.	$60,000	2
TEN	TENNIS COURT			1.00 UNIT	$35,800	3
LT1	LIGHTS-IN W/PL			12.00 UNITS	$6,500	2
SHD1	SHED FRAME			280.00 S.F.	$2,200	1
BHS2	CMM BTH HSE GD			4200.00 S.F.	$168,000	6
LT2	W/DOUBLE LIGHT			6.00 UNITS	$5,000	2
SHD1	SHED FRAME			160.00 S.F.	$1,300	1
FN1	FENCE-4' CHAIN			400.00 L.F.	$2,000	1
LT12	W/FOUR LIGHTS			8.00 UNITS	$22,200	2
GRN2	COMM GLASS			600.00 S.F	$100,000	1
FF	FOOTBALL NAT			57600.00 S.F.	$149,800	1
FF1	FOOTBALL ARTIFIC			57600.00 S.F.	$374,400	1
TRK	ART TRACK			45000.00 S.F.	$810,000	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$40,308,800	$10,872,100	$51,180,900
2019	$40,308,800	$10,872,100	$51,180,900
2018	$40,262,400	$10,872,100	$51,134,500

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$28,216,160	$7,610,470	$35,826,630
2019	$28,216,160	$7,610,470	$35,826,630
2018	$28,183,680	$7,610,470	$35,794,150

490 Jefferson Ave, New London

Property Information

Property ID	95-B11-220-1
Location	490 JEFFERSON AVE
Owner	NEW LONDON CITY OF

SCCOG

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

SCCOG makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 05/31/2017
Data updated 05/04/2021

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

DOCKET NO. 439 – Message Center Management, Inc. and New Cingular Wireless PCS, LLC application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a telecommunications facility located at Bates Woods Park, New London, Connecticut.	}	Connecticut Siting Council October 31, 2013

Decision and Order

Pursuant to Connecticut General Statutes §16-50p and the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, maintenance, and operation of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes **§** 16-50k, be issued to Message Center Management, Inc., hereinafter referred to as the Certificate Holder, for a telecommunications facility at Bates Woods Park, New London, Connecticut.

Unless otherwise approved by the Council, the facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of New Cingular Wireless PCS, LLC and other entities, both public and private, but such tower shall not exceed a height of 115 feet above ground level.

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the City of New London for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
    a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line, emergency backup power, and landscaping; and
    b) construction plans for site clearing, grading, landscaping, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.
    c) determination of the final tower finish, upon consultation with the City of New London.

3. Prior to the commencement of operation, the Certificate Holder shall provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

4. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

6. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed with at least one fully operational wireless telecommunications carrier providing wireless service within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The Certificate Holder shall provide written notice to the Executive Director of any schedule changes as soon as is practicable.

7. Any request for extension of the time period referred to in Condition 6 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the City of New London. Any proposed modifications to this Decision and Order shall likewise be so served.

8. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

9. Any nonfunctioning antenna, and associated antenna mounting equipment, on this facility shall be removed within 60 days of the date the antenna ceased to function.

10. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction, and the commencement of site operation.

11. The Certificate Holder shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v.

12. This Certificate may be transferred in accordance with Conn. Gen. Stat. §16-50k(b), provided both the Certificate Holder/transferor and the transferee are current with payments to the Council for their respective annual assessments and invoices under Conn. Gen. Stat. §16-50v. In addition, both the Certificate Holder/transferor and the transferee shall provide the Council a written agreement as to the entity responsible for any quarterly assessment charges under Conn. Gen. Stat. §16-50v(b)(2) that may be associated with this facility.

13. The Certificate Holder shall maintain the facility and associated equipment, including but not limited to, the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line and landscaping in a reasonable physical and operational condition that is consistent with this Decision and Order and a Development and Management Plan to be approved by the Council.

14. If the Certificate Holder is a wholly-owned subsidiary of a corporation or other entity and is sold/transferred to another corporation or other entity, the Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the Certificate Holder within 30 days of the sale and/or transfer.

15. This Certificate may be surrendered by the Certificate Holder upon written notification and approval by the Council.

We hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed in the Service List, dated June 24, 2013, and notice of issuance published in The Day.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

SBA Communications Corporation
8051 Congress Avenue
Boca Raton, FL 33487-1307

T + 561.995.7670
F + 561.995.7626

sbasite.com

LETTER OF AUTHORIZATION

SBA Site ID: CT22093-A, New London (Bates Wood)

Property Located at: 490 Jefferson Avenue, New London, CT, 06320

THE CITY/COUNTY OF: New London / New London

APPLICATION FOR ZONING/USE/BUILDING PERMIT

This letter authorizes AT&T and its authorized agents to file for all necessary zoning, planning and building permits (local, state and federal) for the purposes of installing, operating and maintaining a telecommunications facility on the existing tower on the property referenced above on behalf of City of New London, CT.

All approval conditions that may be granted to AT&T in connection with above referenced facility relating to this specific application are the sole responsibility of AT&T.

SBA Towers IX, LLC

Jason Silberstein

Executive VP, Site Leasing

Date: 3/24/2022

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Ref#: CT2838
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NEW LONDON CITY HALL
181 STATE ST
NEW LONDON CT 06320-6302

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Expected Delivery Date: 04/04/22
Ref#: CT2838
0006

C006

SHIP TO: MELANIE BACHMAN EXECUTIVE DIRECTOR
CT SITING COUNCIL
10 FRANKLIN SQ
NEW BRITAIN CT 06051-2655

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Tracking Number: 9405503699300207417266

Feedback

Expected Delivery by

MONDAY

4 APRIL 2022 ⓘ

by

9:00pm ⓘ

USPS Tracking Plus® Available ⌄

Arrived at USPS Regional Origin Facility

March 31, 2022 at 10:47 pm
SPRINGFIELD MA NETWORK DISTRIBUTION CENTER

Change Delivery Instructions ⌄

Text & Email Updates ⌄

Hollis Redding

From: auto-reply@usps.com
Sent: Thursday, March 31, 2022 1:04 PM
To: Hollis Redding
Subject: USPS® Expected Delivery by Friday, April 1, 2022 arriving by 9:00pm 9405503699300207417259

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Hello **HOLLIS M REDDING**,

Your item was accepted at 12:46 pm on March 31, 2022 in MERIDEN, CT 06450.

Tracking Number: **9405503699300207417259**

Expected Delivery By

Fri
1
Apr

By 9:00pm

Tracking & Delivery Options

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