July 7, 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 CT2820
1294 Pleasant Valley Road North, Groton, CT 06340 (the "Property")
Latitude: 41.399927 N Longitude: 72.079222 W

Dear Ms. Bachman:

AT&T currently maintains (12) antennas at the 127-foot level on the existing 150'3" monopole tower ("Tower") at 1294 Pleasant Valley Road North, Groton, CT. The property is owned by JFM Enterprises LLC, and the Tower is owned by SBA Towers LLC. AT&T intends to modify its facility by removing all (12) antennas and adding (3) AIR6449 B77 antennas at the 126'2" level, (3) DMP65R-BU8DA, & (3) QD8616-7 antennas at the 127' level, and (3) AIR6419 B77G antennas at the 129'8" level of the tower. The AIR6449 B77 & AIR6419 B77G antennas are stacked one on top of the other. AT&T also intends on replacing (9) RRUs with (3) 4449 B5/B12, (3) 2012 B29, & (3) 4415 B25 RRUs. The height of AT&Ts existing antennas is 127' and the proposed antennas is 126'2", 127' and 129'8" level on the Tower. The height of the existing & proposed RRUs is 127'.

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

The CT Siting Council ("CSC") approved the Tower on June 7, 2007, under Docket 330. AT&T received CSC approval under TS-AT&T-059T-131115 on December 12, 2013 and amended on May 15, 2014. These approvals contained no conditions that could feasibly be violated by this modification. AT&Ts modification complies with the above-mentioned approvals.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies ("R.C.S.A") §16-50j-73 for construction that constitutes an exempt modification pursuant to R.C.S.A §16-50j-72(b)(2). In accordance with to R.C.S.A §16-50j-73, a copy of this letter is being sent to Mr. John Burt, Town Manager, Town of Groton, as chief town official, Mr. Jonathan J. Reiner, AICP, Director of Planning, Town of Groton, JFM Enterprises LLC, the property owner 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 modifications will not result in an increase in the height of the existing structure.

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

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

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

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

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

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

Sincerely,

Hollis M. Redding

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

Enclosures

Cc:
Mr. John Burt, Town Manager, Town of Groton, chief town official
Mr. Jonathan J. Reiner, Director of Planning, Town of Groton
JFM Enterprises LLC, the property owner
SBA Towers LLC, the tower owner

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

Calculated Radio Frequency Exposure

CT2820

1294 Pleasant Valley Road North, Groton, CT

June 21, 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 AT&T antenna arrays on the existing monopole located at 1294 Pleasant Valley Road North in Groton, CT. The coordinates of the existing monopole are 41-23-59.73 N, 72-4-45.19 W

AT&T is proposing the following:

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

This report considers the planned antenna configuration for AT&T[1] 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 05/18/22.

3. RF Exposure Calculation Methods

The power density calculation results were generated using the following formula as outlined in FCC bulletin OET 65:

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

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 to the existing monopole facility 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
T-Mobile	140	1900	4	1028	0.0824	1.0000	0.82%
T-Mobile	140	1900	2	2057	0.0824	1.0000	0.82%
T-Mobile	140	2100	2	2308	0.0924	1.0000	0.92%
T-Mobile	140	600	2	592	0.0237	0.4000	0.59%
T-Mobile	140	600	1	1578	0.0316	0.4000	0.79%
T-Mobile	140	700	2	649	0.0260	0.4667	0.56%
T-Mobile	140	1900	2	1102	0.0441	1.0000	0.44%
T-Mobile	140	1900	2	2204	0.0883	1.0000	0.88%
T-Mobile	140	2500	1	19239	0.3853	1.0000	3.85%
T-Mobile	140	2500	1	19239	0.3853	1.0000	3.85%
Dish	117	600	4	224	0.0262	0.4000	0.65%
Dish	117	21900	4	543	0.0634	1.0000	0.63%
Dish	117	2190	4	543	0.0634	1.0000	0.63%
Verizon	149	869	9	291	0.0461	0.5793	0.80%
Verizon	149	1970	1	3177	0.0559	1.0000	0.56%
Verizon	149	746	1	1656	0.0291	0.4973	0.59%
Verizon	149	2145	1	6907	0.1215	1.0000	1.21%
AT&T	127	739	2	2878	0.0141	0.4927	2.87%
AT&T	127	763	2	2878	0.0141	0.5087	2.78%
AT&T	127	885	1	3156	0.0078	0.5900	1.31%
AT&T	127	1900	3	5118	0.0377	1.0000	3.77%
AT&T	127	2100	3	8614	0.0635	1.0000	6.35%
AT&T	127	2300	1	7677	0.0189	1.0000	1.89%
AT&T	129.8	3500	1	24286	0.0570	1.0000	5.70%
AT&T	126.2	3500	1	24286	0.0605	1.0000	6.05%
						Total	**49.34%**

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. The power density information for T-Mobile, Dish, and Verizon was taken directly from the CSC database dated 01/21/2022. 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 facility 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 for AT&T's equipment is **49.34% 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.

June 21, 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

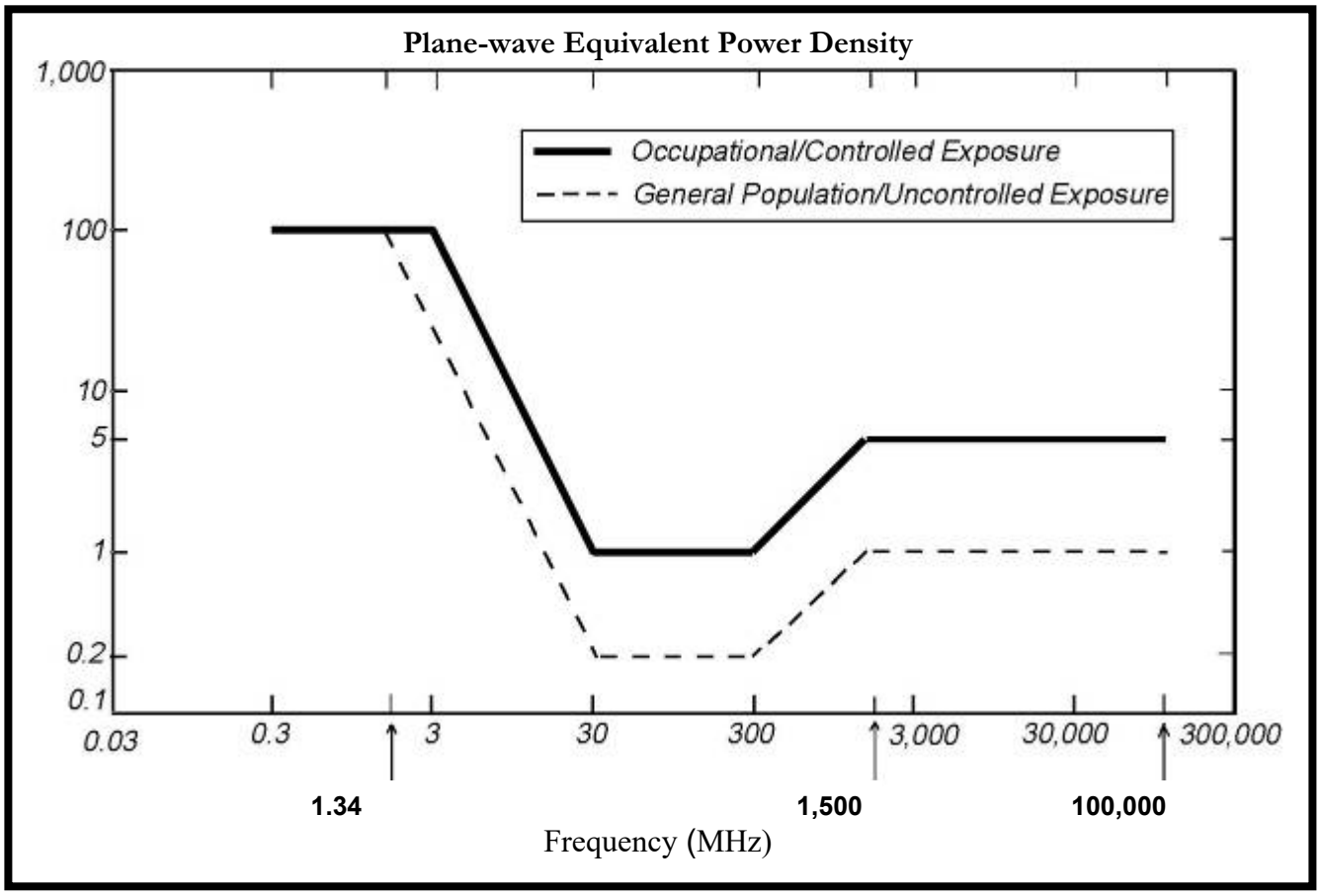
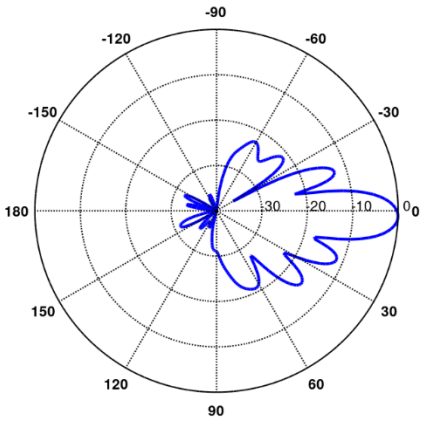
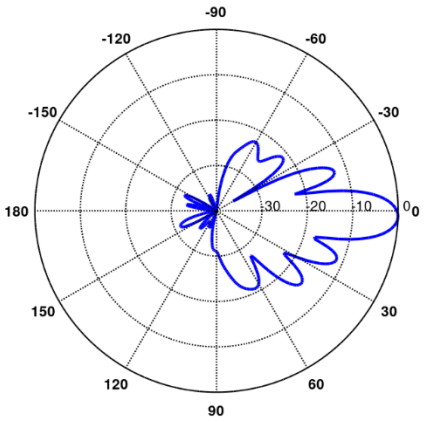
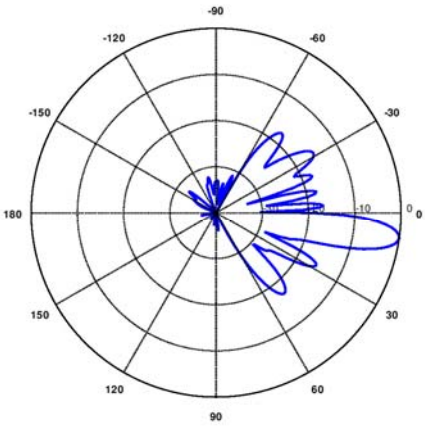
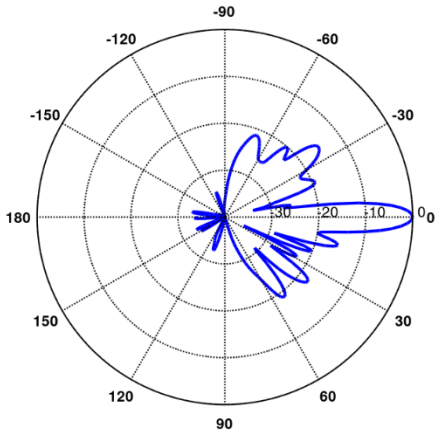
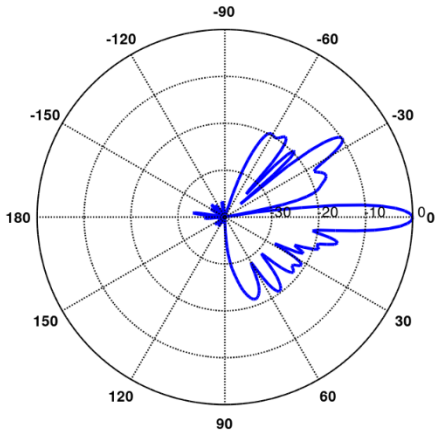
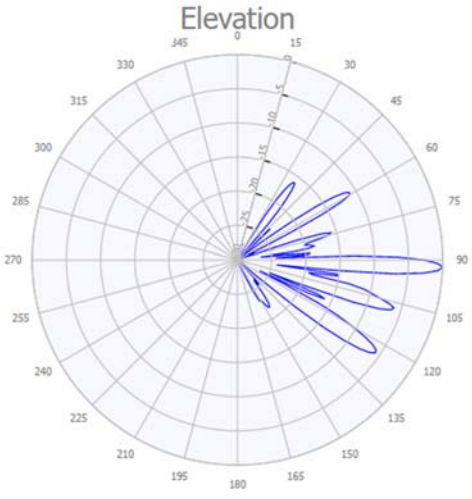


Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

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

700 MHz Manufacturer: Quintel Model #: QD8616-7 Frequency Band: 698-728 MHz Gain: 14.9 dBi Vertical Beamwidth: 9.7° Horizontal Beamwidth: 72° Polarization: 45° Size L x W x D: 96” x 22” x 9.6”	
700 MHz Manufacturer: Quintel Model #: QD8616-7 Frequency Band: 758-798 MHz Gain: 15.2 dBi Vertical Beamwidth: 9.1° Horizontal Beamwidth: 67° Polarization: 45° Size L x W x D: 96” x 22” x 9.6”	
885 MHz Manufacturer: CCI Products Model #: DMP65R-BU8D Frequency Band: 824 - 896 MHz Gain: 16 dBi Vertical Beamwidth: 8° Horizontal Beamwidth: 64° Polarization: Dual Linear 45° Size L x W x D: 96” x 20.7” x 7.7”	

1900 MHz Manufacturer: Quintel Model #: QD8616-7 Frequency Band: 185-1990 MHz Gain: 17.2 dBi Vertical Beamwidth: 6.2° Horizontal Beamwidth: 62° Polarization: 45° Size L x W x D: 96” x 22” x 9.6”	
2100 MHz Manufacturer: Quintel Model #: QD8616-7 Frequency Band: 2110-2180 MHz Gain: 17.5 dBi Vertical Beamwidth: 5.5° Horizontal Beamwidth: 62° Polarization: 45° Size L x W x D: 96” x 22” x 9.6”	
2300 MHz Manufacturer: CCI Products Model #: DMP65R-BU8D Frequency Band: 2300-2400 MHz Gain: 18.1 dBi Vertical Beamwidth: 4.1° Horizontal Beamwidth: 54° Polarization: Dual Linear 45° Size L x W x D: 96” x 20.7” x 7.7”	

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 B77D (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T ANTENNAS: QD8616-7 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T ANTENNAS: DMP65R-BU8DA (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: 4449 B5/B12 (850/700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: 2012 B29 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRU'S: 4415 B25 (PCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- EXISTING AT&T RRU'S: 4426 B66 (AWS) (TYP. OF 1 PER SECTOR, TOTAL OF 3) (TO BE RELOCATED TO POS. 2).
- EXISTING AT&T RRU'S: 4478 B14 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3) (TO BE RELOCATED TO POS. 2).
- NEW (3) Y-CABLES.
- NEW AT&T (1) 6AWG6 DC TRUNK (TO REPLACE EXISTING).

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:
- ADD 6648 + XCEDE CABLE.
- ADD (4) RECTIFIERS.

ITEMS TO BE REMOVED:
- EXISTING AT&T ANTENNAS: HPA-65R-BUU-H8 (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- EXISTING AT&T ANTENNAS: HPA65R-BU8A (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- EXISTING AT&T RRUS: RRUS-11 B5 (850) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T RRUS: RRUS-11 B12 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T RRUS: 4478 B5 (850) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T DIPLEXER: DBCT108F1V92-1 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T (1) 8AWG6 DC TRUNK.

ITEMS TO REMAIN:
- (9) RRU'S, (4) SURGE ARRESTOR, (7) DC POWER & (3) FIBER.

SITE ADDRESS:	1294 PLEASANT VALLEY ROAD NORTH GROTON, CT 06340
LATITUDE:	41.399927° N, 41° 23' 59.73" N
LONGITUDE:	72.079222° W, 72° 04' 45.19" W
TYPE OF SITE:	MONOPOLE / INDOOR EQUIPMENT
STRUCTURE HEIGHT:	150'-3"±
RAD CENTER:	127'-0"± (LTE), 129'-8"± (DoD) & 126'-2"± (C-BAND)
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
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GN-1	GENERAL NOTES	1
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A-2	ANTENNA LAYOUTS & ELEVATION	1
A-3	DETAILS	1
A-4	DETAILS	1
SN-1	STRUCTURAL NOTES	1
S-1	MOUNT MODIFICATION DESIGN	1
G-1	GROUNDING DETAILS	1
RF-1	RF PLUMBING DIAGRAM	1

SITE NUMBER: CTL02820

SITE NAME: GROTON PLEASANT VALLEY ROAD NORTH S2820A

FA CODE: 10577793

PACE ID: MRCTB054392, MRCTB055753, MRCTB054385, MRCTB060908, MRCTB060907, MRCTB060984, MRCTB062306

PROJECT: 5G NR 1SR CBAND_4TXRX ANTENNA RETROFIT_ 5G NR UPGRADE_LTE 7C ADD_UPGRADE

VICINITY MAP

DIRECTIONS TO SITE:

DEPART ENTERPRISE DR TOWARD CAPITOL BLVD. 0.1 MI. TURN LEFT ONTO CAPITOL BLVD. 0.3 MI. TURN LEFT ONTO WEST ST. 0.3 MI. TAKE RAMP LEFT FOR I-91 S. 1.4 MI. AT EXIT 22S, TAKE RAMP LEFT FOR CT-9 SOUTH TOWARD MIDDLETOWN / OLD SAYBROOK. 6.3 MI. KEEP STRAIGHT ONTO CT-9 S. 22.9 MI. TAKE RAMP LEFT FOR I-95 NORTH / US-1 NORTH TOWARD NEW LONDON / PROVIDENCE. 17.2 MI. AT EXIT 86, TAKE RAMP LEFT FOR CT-184 TOWARD GALES FERRY / U.S. SUB BASE. 0.3 MI. TAKE RAMP RIGHT FOR US-1 SOUTH TOWARD NEW LONDON. 0.2 MI. TURN RIGHT ONTO US-1 / CT-12. 358 FT. KEEP STRAIGHT ONTO CT-12. 2.1 MI. TURN RIGHT ONTO OHIO AVE. 499 FT. TURN LEFT ONTO PLEASANT VALLEY RD N. 0.3 MI. ARRIVE AT SITE ON THE LEFT.

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

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL02820
SITE NAME: GROTON PLEASANT VALLEY ROAD NORTH S2820A
1294 PLEASANT VALLEY ROAD NORTH
GROTON, CT 06340
NEW LONDON COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	06/01/22	ISSUED FOR CONSTRUCTION	PM	HC	DPL
A	04/29/22	ISSUED FOR REVIEW	PM	HC	DPL

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

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

AT&T

TITLE SHEET
5G NR 1SR CBAND_4TXRX ANTENNA RETROFIT_
5G NR UPGRADE_LTE 7C ADD UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02820	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	RADIATION CENTER LINE	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		

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SALEM, NH 03079

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

SITE NUMBER: CTL02820
SITE NAME: GROTON PLEASANT VALLEY ROAD NORTH S2820A

1294 PLEASANT VALLEY ROAD NORTH
GROTON, CT 06340
NEW LONDON COUNTY

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	06/01/22	ISSUED FOR CONSTRUCTION	PM	HC	DPL
A	04/29/22	ISSUED FOR REVIEW	PM	HC	DPL

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

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

AT&T

GENERAL NOTES
5G NR 1SR CBAND_4TXRX ANTENNA RETROFIT_
5G NR UPGRADE_LTE 7C ADD UPGRADE

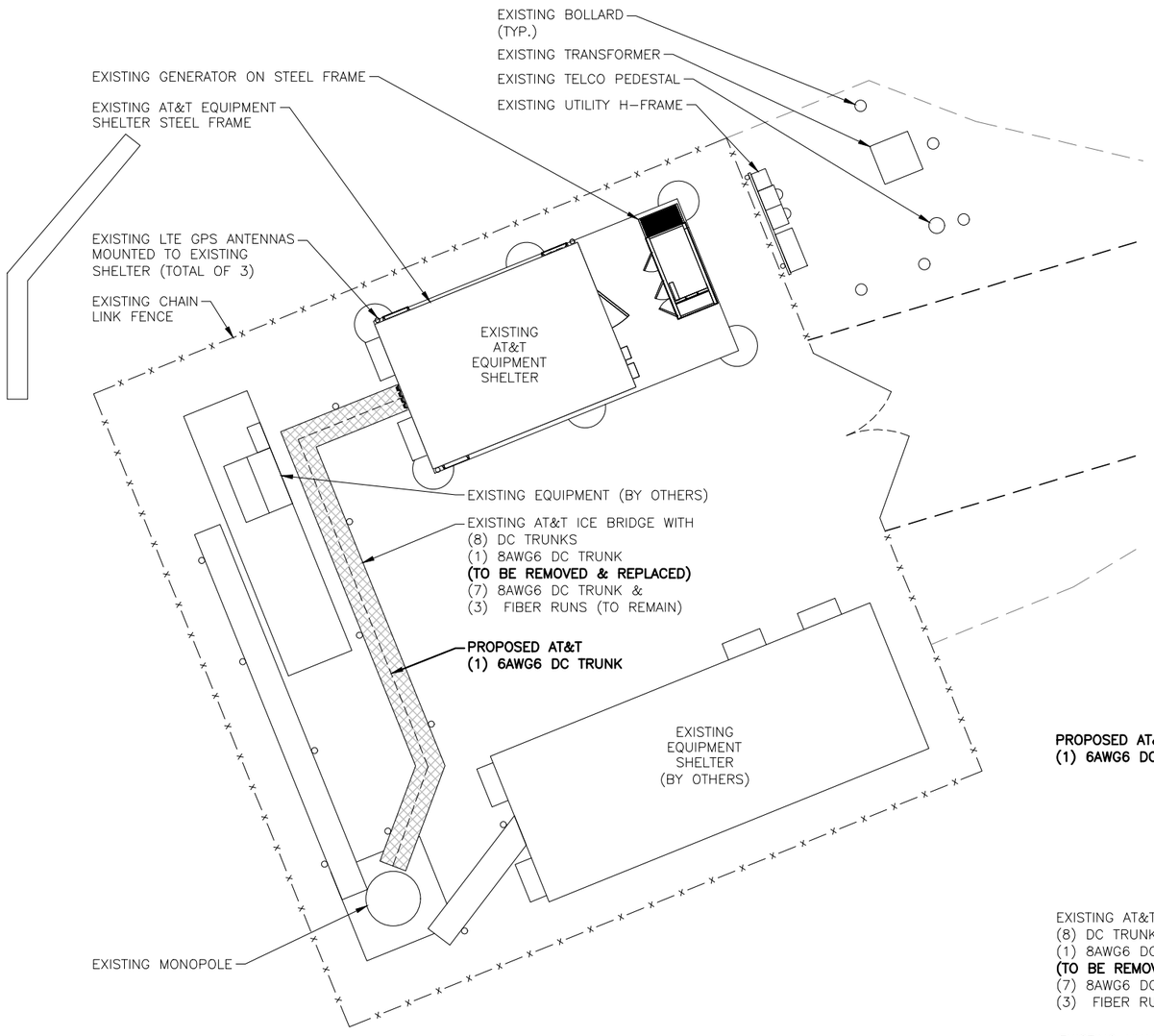
SITE NUMBER	DRAWING NUMBER	REV
CTL02820	GN-1	1

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.

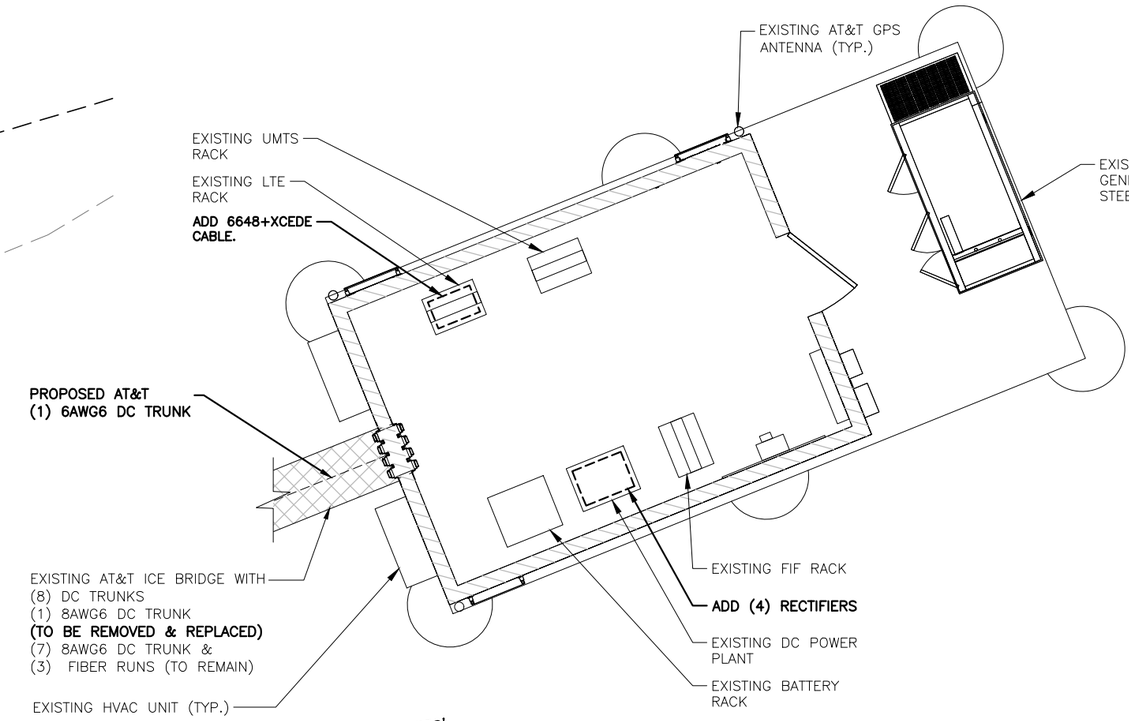


COMPOUND PLAN

1 A-1

22x34 SCALE: 3/16"=1'-0"
11x17 SCALE: 3/32"=1'-0"

0 2'-8" 5'-4" 10'-8" 16'-0"



EQUIPMENT PLAN

2 A-1

22x34 SCALE: 3/8"=1'-0"
11x17 SCALE: 3/16"=1'-0"

0 2'-8" 5'-4" 8'-0"

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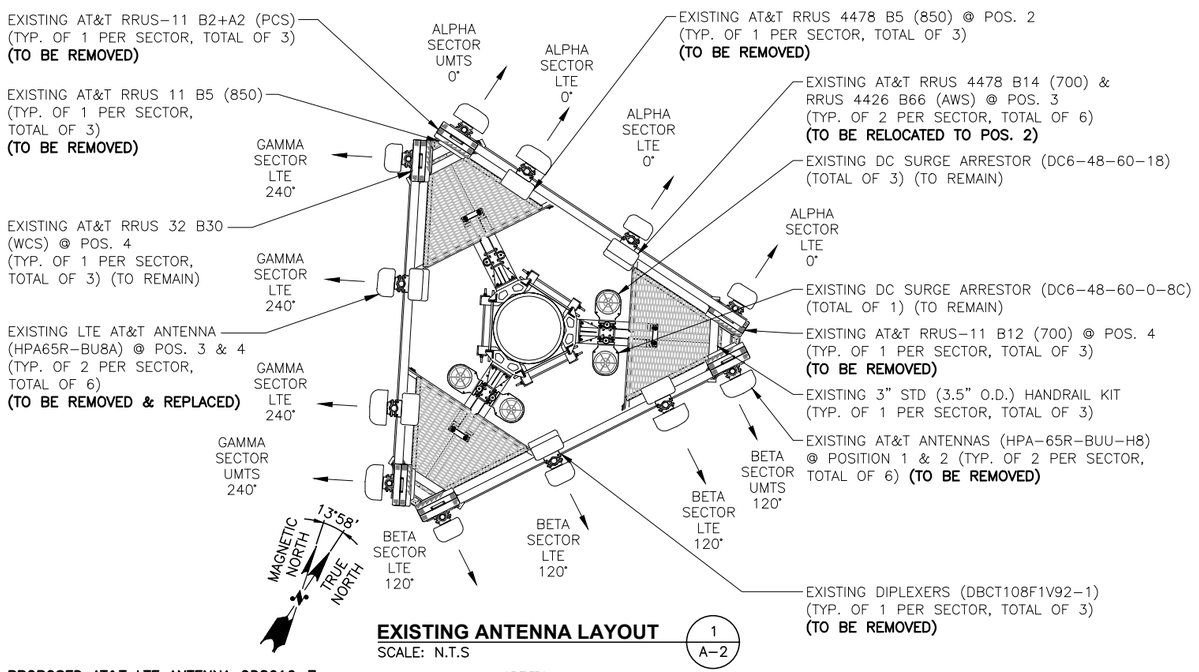
SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: PM

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

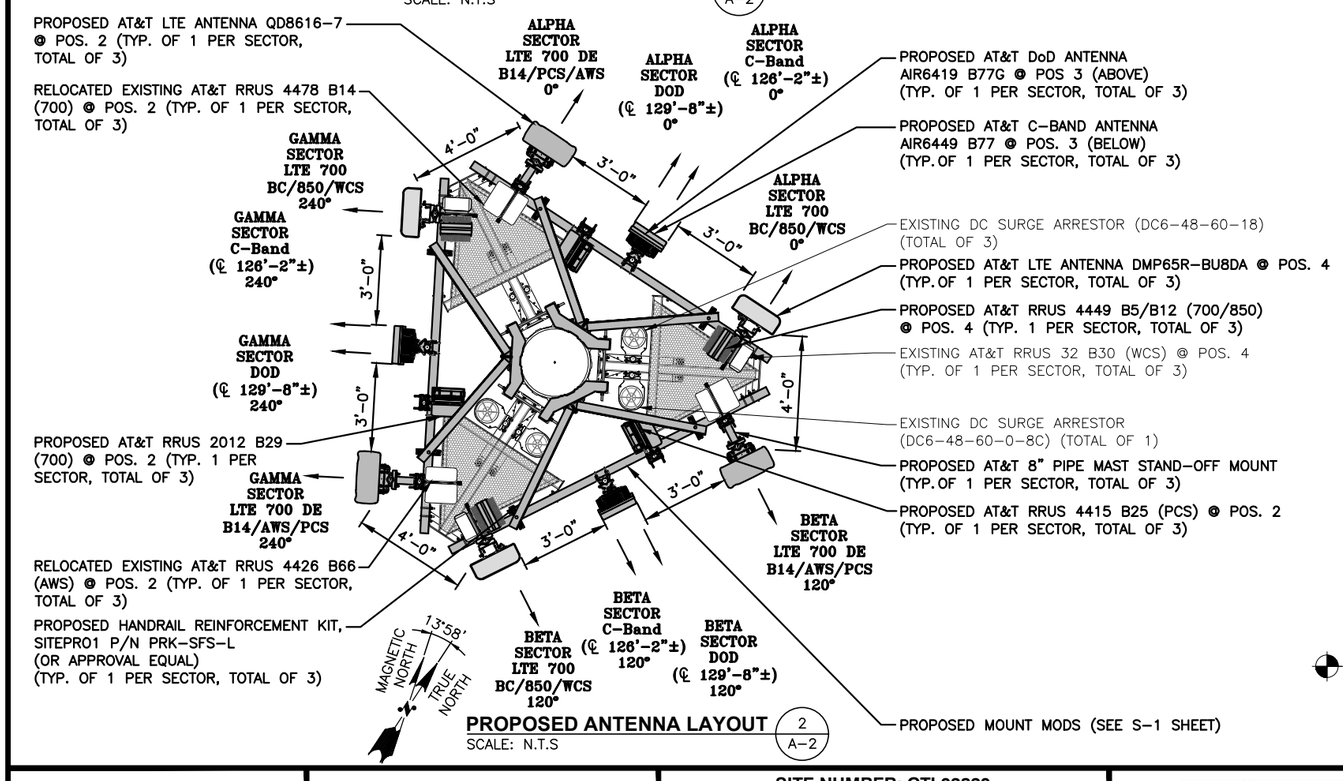
AT&T

COMPOUND & EQUIPMENT PLANS
5G NR 1SR CBAND_4TXRX ANTENNA RETROFIT_
5G NR UPGRADE_LTE 7C ADD UPGRADE

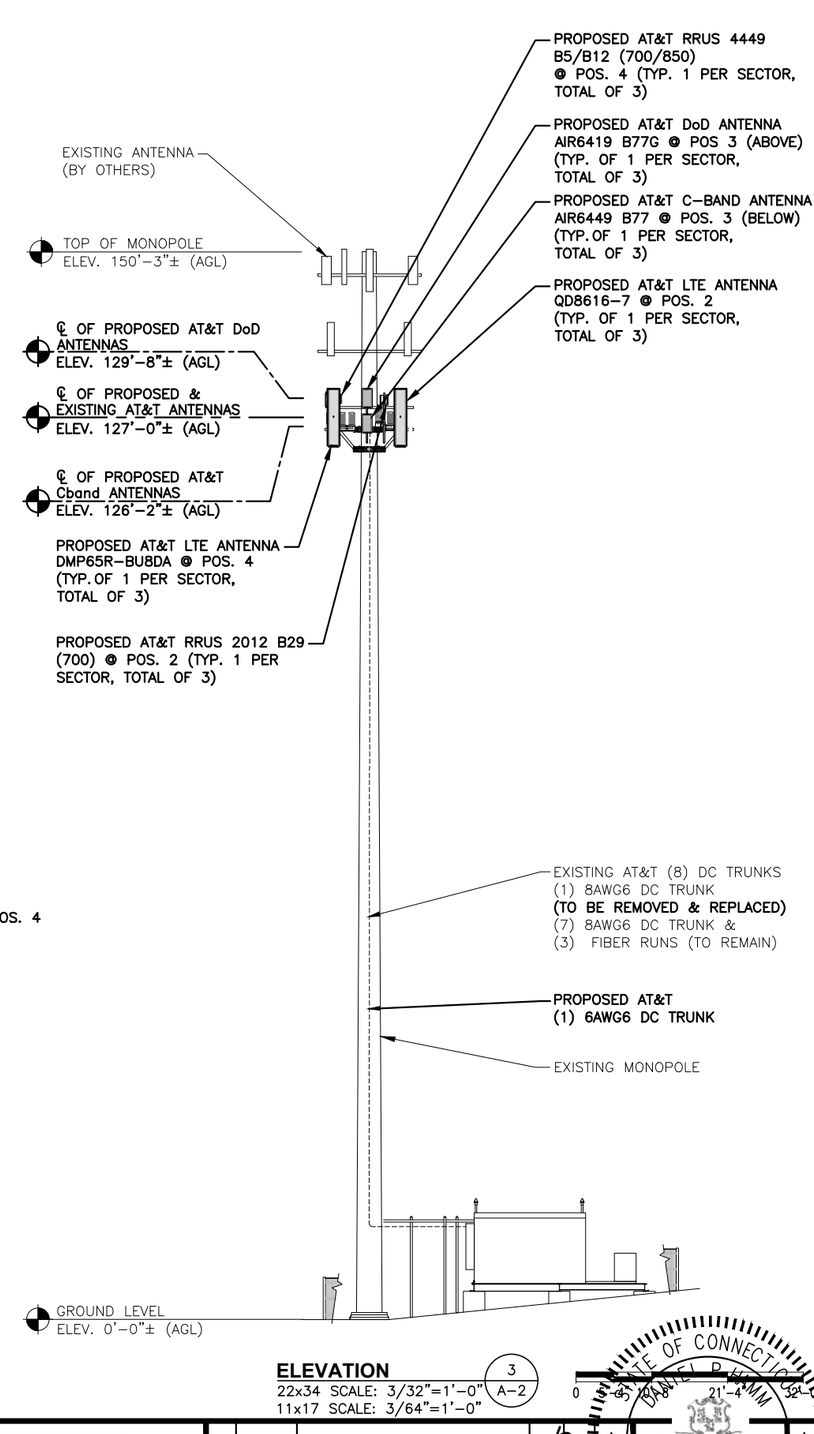
SITE NUMBER	DRAWING NUMBER	REV
CTL02820	A-1	1



EXISTING ANTENNA LAYOUT (1 / A-2)
SCALE: N.T.S



PROPOSED ANTENNA LAYOUT (2 / A-2)
SCALE: N.T.S



ELEVATION (3 / A-2)
22x34 SCALE: 3/32"=1'-0"
11x17 SCALE: 3/64"=1'-0"

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

NOTE:
AN ANALYSIS FOR THE CAPACITY OF PROPOSED **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED
BY: HUDSON DESIGN GROUP, LLC.
DATED: MAY 3, 2022 (Rev.3).

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

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

STATE OF CONNECTICUT DANIEL R. LAMM No. 24178 LICENSED PROFESSIONAL ENGINEER

AT&T

ANTENNA LAYOUTS & ELEVATION
5G NR 1SR CBAND_4TXRX ANTENNA RETROFIT_
5G NR UPGRADE_LTE 7C ADD UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02820	A-2	1

ANTENNA SCHEDULE

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	ANTENNA TIP HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	–	–	–	–	–	–	–	–	–	–	–	(E) (1) RAYCAP DC6-48-60-18 (E) (1) RAYCAP DC6-48-60-0-8C
A2	**PROPOSED**	**LTE 700 DE/ B14/PCS/WCS**	**QD8616-7**	**96X22X9.6**	**127'-0"±**	**131'-0"±**	**0°**	–	(E)(1) 4478 B14 (700) **(P)(1) 4415 B25 (PCS)** (E)(1) 4426 B66 (AWS) **(P)(1) 2012 B29 (700)**	– **16.5X13.4X5.9** – **17x13x5**	(E)(4) DC POWER & (E)(1) FIBER	
A3	**PROPOSED**	**DOD C-BAND**	**AIR6419 B77G AIR6449 B77 (STACKED)**	**31.1X16.1X7.3 30.6X15.9X10.6**	**129'-8"± 126'-2"±**	**130'-11"± 127'-5"±**	**0°**	–	–	– –	–	
A4	**PROPOSED**	**LTE 700 BC/850/WCS**	**DMP65R-BU8DA**	**96.0X20.7X7.7**	**127'-0"±**	**131'-0"±**	**0°**	–	**(P)(1) 4449 B5/B12 (850/700)** (E)(1) RRUS-32 B30 (WCS)	**17.9x13.2x10.4** –	**(P)(1) Y-CABLE**	
B1	–	–	–	–	–	–	–	–	–	–	–	(E) (1) RAYCAP DC6-48-60-18
B2	**PROPOSED**	**LTE 700 DE/ B14/PCS/WCS**	**QD8616-7**	**96X22X9.6**	**127'-0"±**	**131'-0"±**	**120°**	–	(E)(1) 4478 B14 (700) **(P)(1) 4415 B25 (PCS)** (E)(1) 4426 B66 (AWS) **(P)(1) 2012 B29 (700)**	– **16.5X13.4X5.9** – **17x13x5**	(E)(1) DC POWER & (E)(1) FIBER **(P)(1) DC POWER**	
B3	**PROPOSED**	**DOD C-BAND**	**AIR6419 B77G AIR6449 B77 (STACKED)**	**31.1X16.1X7.3 30.6X15.9X10.6**	**129'-8"± 126'-2"±**	**130'-11"± 127'-5"±**	**120°**	–	–	– –	–	
B4	**PROPOSED**	**LTE 700 BC/850/WCS**	**DMP65R-BU8DA**	**96.0X20.7X7.7**	**127'-0"±**	**131'-0"±**	**120°**	–	**(P)(1) 4449 B5/B12 (850/700)** (E)(1) RRUS-32 B30 (WCS)	**17.9x13.2x10.4** –	**(P)(1) Y-CABLE**	
C1	–	–	–	–	–	–	–	–	–	–	–	(E) (1) RAYCAP DC6-48-60-18
C2	**PROPOSED**	**LTE 700 DE/ B14/PCS/WCS**	**QD8616-7**	**96X22X9.6**	**127'-0"±**	**131'-0"±**	**240°**	–	(E)(1) 4478 B14 (700) **(P)(1) 4415 B25 (PCS)** (E)(1) 4426 B66 (AWS) **(P)(1) 2012 B29 (700)**	– **16.5X13.4X5.9** – **17x13x5**	(E)(2) DC POWER & (E)(1) FIBER	
C3	**PROPOSED**	**DOD C-BAND**	**AIR6419 B77G AIR6449 B77 (STACKED)**	**31.1X16.1X7.3 30.6X15.9X10.6**	**129'-8"± 126'-2"±**	**130'-11"± 127'-5"±**	**240°**	–	–	– –	–	
C4	**PROPOSED**	**LTE 700 BC/850/WCS**	**DMP65R-BU8DA**	**96.0X20.7X7.7**	**127'-0"±**	**131'-0"±**	**240°**	–	**(P)(1) 4449 B5/B12 (850/700)** (E)(1) RRUS-32 B30 (WCS)	**17.9x13.2x10.4** –	**(P)(1) Y-CABLE**	

NOTE:

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

NOTE:

AN ANALYSIS FOR THE CAPACITY OF PROPOSED **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED
BY: HUDSON DESIGN GROUP, LLC.
DATED: MAY 3, 2022 (Rev.3).

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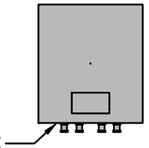
RRU CHART

QUANTITY	MODEL	SIZE (L x W x D)
P(3)	**4449 (850/700)**	**17.9"x13.2"x10.4"**
E(3)	4478 B14 (700)	18.1"x13.4"x8.3"
P(3)	**4415**	**16.5"x13.4"x5.9"**
E(3)	4426	14.9"x13.2"x5.8"
E(3)	RRUS-32 (WCS)	27.2"x12.1"x7.0"
P(3)	**2012 B29 (700)**	**17"x13"x5"**

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

NOTE:

SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

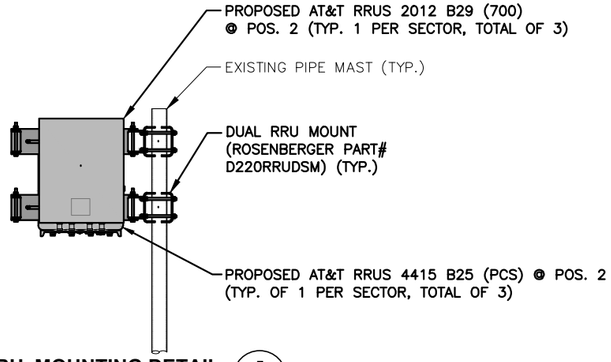


PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

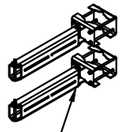
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

PROPOSED RRUS DETAIL (2 / A-3)
SCALE: N.T.S

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



RRH MOUNTING DETAIL (3 / A-3)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"
0 0'-6" 1'-0" 2'-0" 3'-0"



DUAL RRU MOUNT DETAIL (4 / A-3)
SCALE: N.T.S

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

AT&T

DETAILS
5G NR 1SR CBAND_4TXRX ANTENNA RETROFIT_
5G NR UPGRADE_LTE 7C ADD UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02820	A-3	1

NOTE:

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

NOTE:

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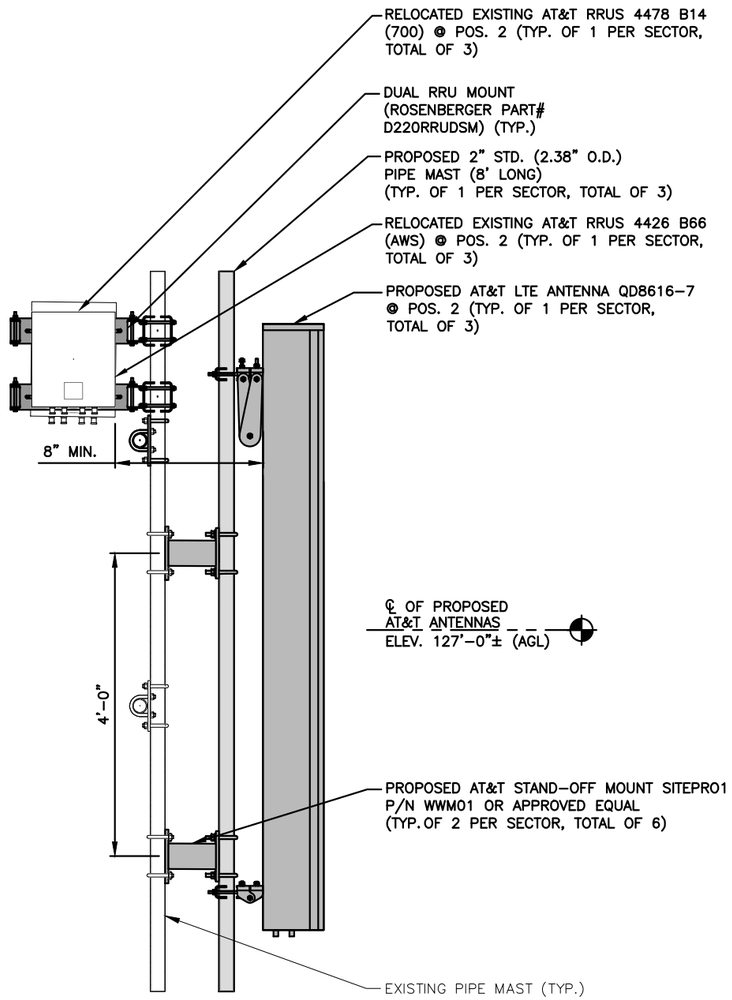
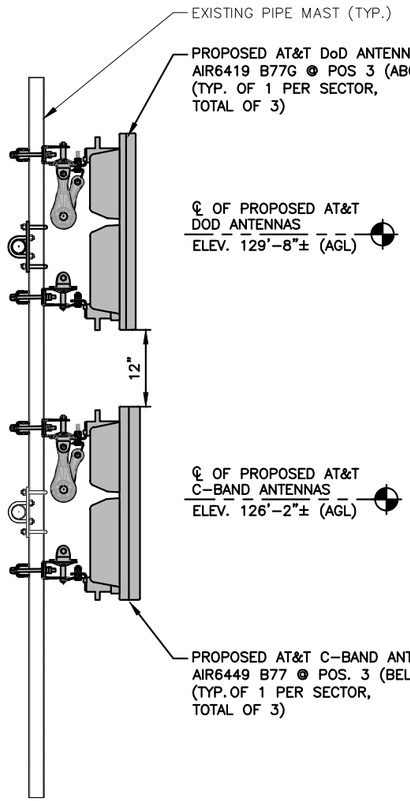
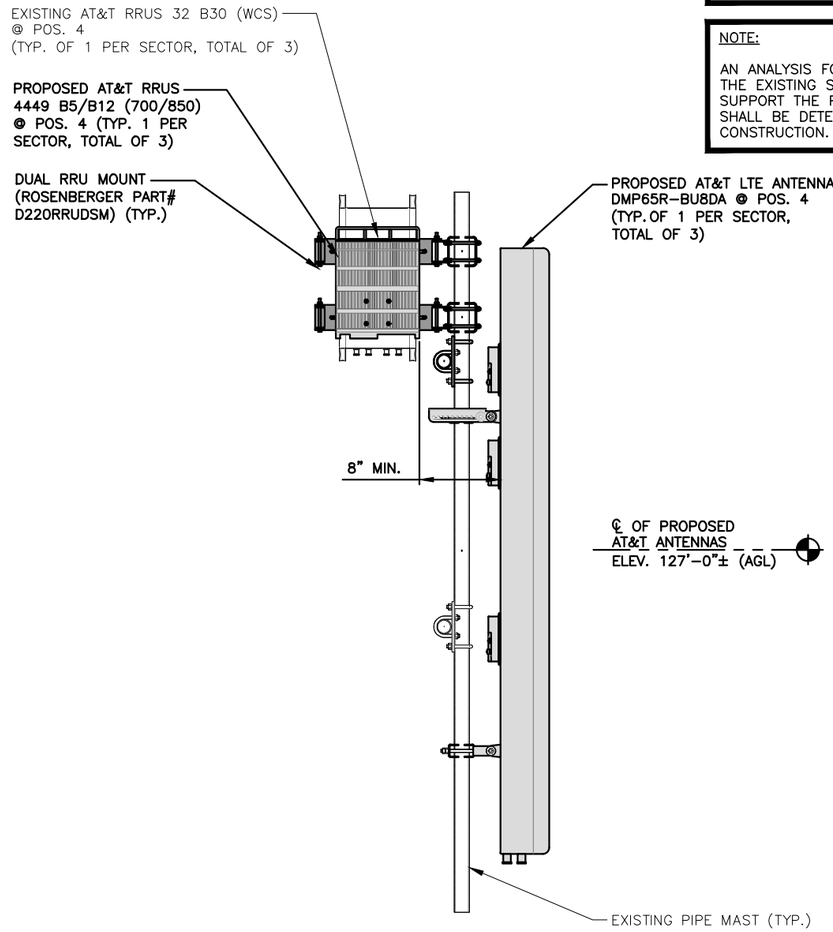


PROPOSED LTE ANTENNA MOUNTING DETAIL (1 / A-4)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"
0 0'-6" 1'-0" 2'-0" 3'-0"



PROPOSED DoD + C-BAND ANTENNA MOUNTING DETAIL (2 / A-4)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"
0 0'-6" 1'-0" 2'-0" 3'-0"



PROPOSED LTE ANTENNA MOUNTING DETAIL (3 / A-4)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"
0 0'-6" 1'-0" 2'-0" 3'-0"

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

SITE NUMBER: CTL02820
SITE NAME: GROTON PLEASANT VALLEY ROAD NORTH S2820A

1294 PLEASANT VALLEY ROAD NORTH
GROTON, CT 06340
NEW LONDON COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	06/01/22	ISSUED FOR CONSTRUCTION	PM	HC	DPH
A	04/29/22	ISSUED FOR REVIEW	PM	HC	DPH

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

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

AT&T

DETAILS
5G NR 1SR CBAND_4TXRX ANTENNA RETROFIT_
5G NR UPGRADE_LTE 7C ADD UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02820	A-4	1

STRUCTURAL NOTES:

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-H STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
3. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
4. STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
5. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
6. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
7. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
8. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
9. FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
10. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND DI.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL". 14TH EDITION.
11. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
12. UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
13. EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-270 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
15. LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
16. WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
17. ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
18. NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
19. SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

GENERAL: WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE INSPECTION CHECKLIST ABOVE.

THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTOR FOR THE WORK DESIGNED BY THEM, PROVIDED THOSE PERSONNEL MEET THE QUALIFICATION REQUIREMENTS.

STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 107.1 AS A CONDITION FOR ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1705.

REPORT REQUIREMENT: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS SHALL BE SUBMITTED.

SPECIAL INSPECTION CHECKLIST	
BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
N/A	ENGINEER OF RECORD APPROVED SHOP DRAWINGS [1]
N/A	MATERIAL SPECIFICATIONS REPORT [2]
N/A	FABRICATOR NDE INSPECTION
REQUIRED	PACKING SLIPS [3]
ADDITIONAL TESTING AND INSPECTIONS:	
DURING CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS [4]
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION [5]
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT
ADDITIONAL TESTING AND INSPECTIONS:	
AFTER CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS [6]
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
REQUIRED	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

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at&t
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SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: PM

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

AT&T

STRUCTURAL NOTES
5G NR 1SR CBAND_4TXRX ANTENNA RETROFIT_
5G NR UPGRADE_LTE 7C ADD UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02820	SN-1	1

NOTE:

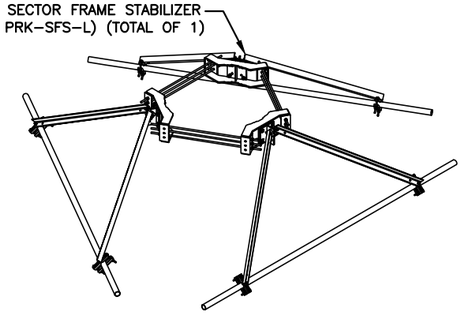
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

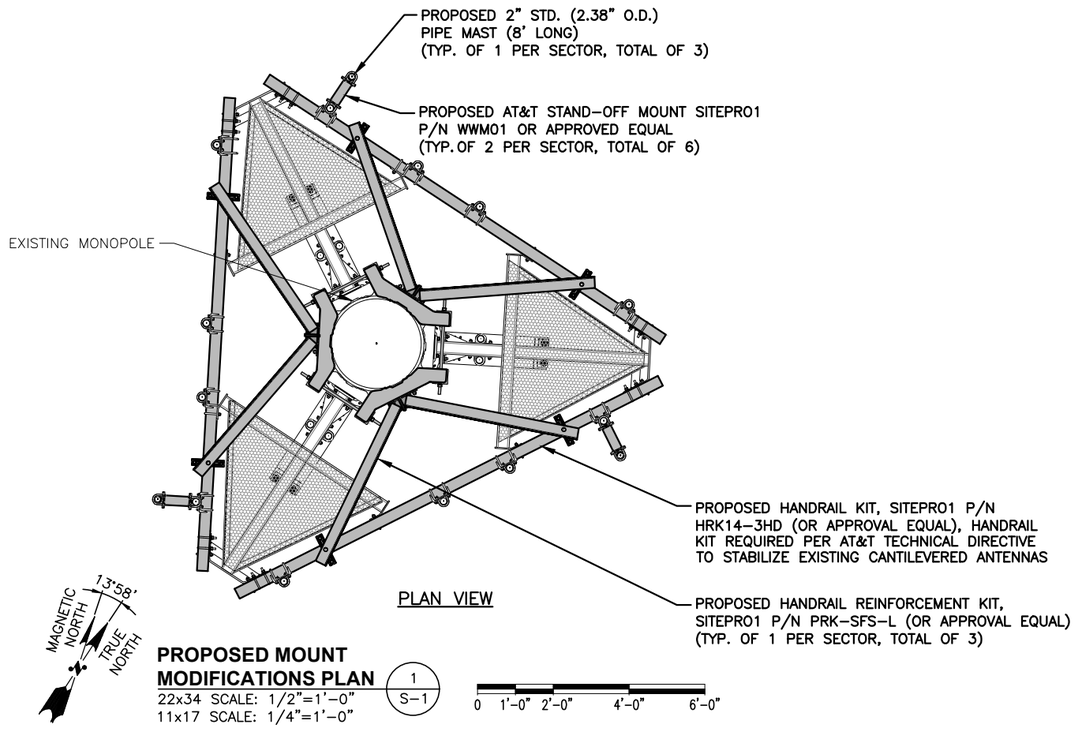
AN ANALYSIS FOR THE CAPACITY OF PROPOSED **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED
BY: HUDSON DESIGN GROUP, LLC.
DATED: MAY 3, 2022 (Rev.3).

NOTE:

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



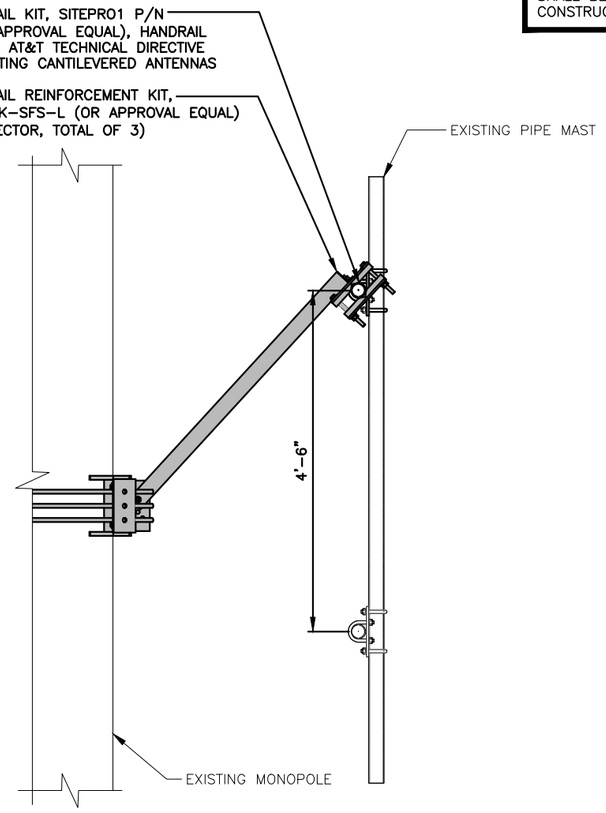
HANDRAIL REINFORCEMENT KIT DETAIL (3 / S-1)
SCALE: N.T.S



PLAN VIEW

PROPOSED MOUNT MODIFICATIONS PLAN (1 / S-1)
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"

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



PROPOSED MOUNT MODIFICATIONS ELEVATION (2 / S-1)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

0 0'-6" 1'-0" 2'-0" 3'-0"

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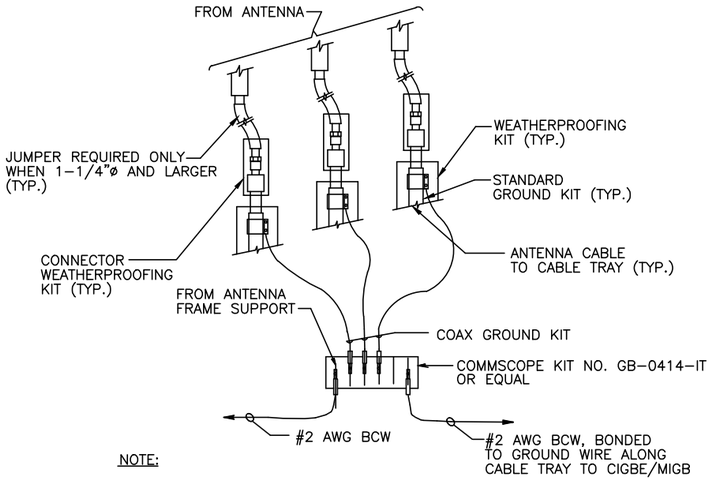
STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

MOUNT MODIFICATION DESIGN
5G NR 1SR CBAND_4TXRX ANTENNA RETROFIT_
5G NR UPGRADE_LTE 7C ADD UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02820	S-1	1



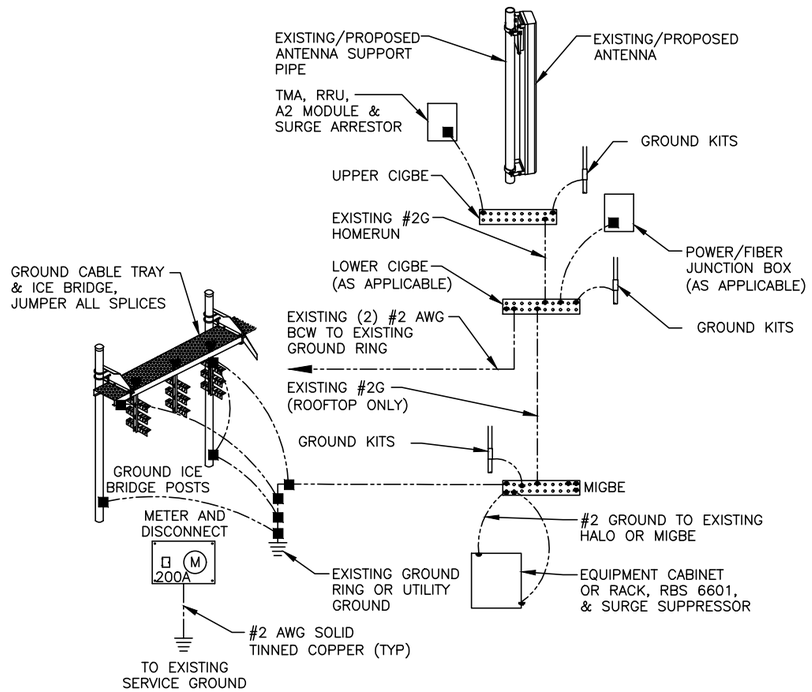
NOTE:

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

SCALE: N.T.S

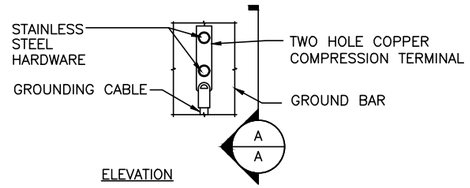
1 / G-1



GROUNDING RISER DIAGRAM

SCALE: N.T.S

2 / G-1



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

SCALE: N.T.S

3 / G-1

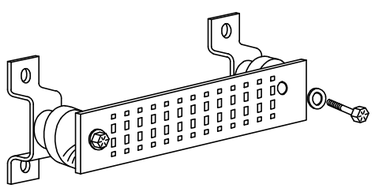
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

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

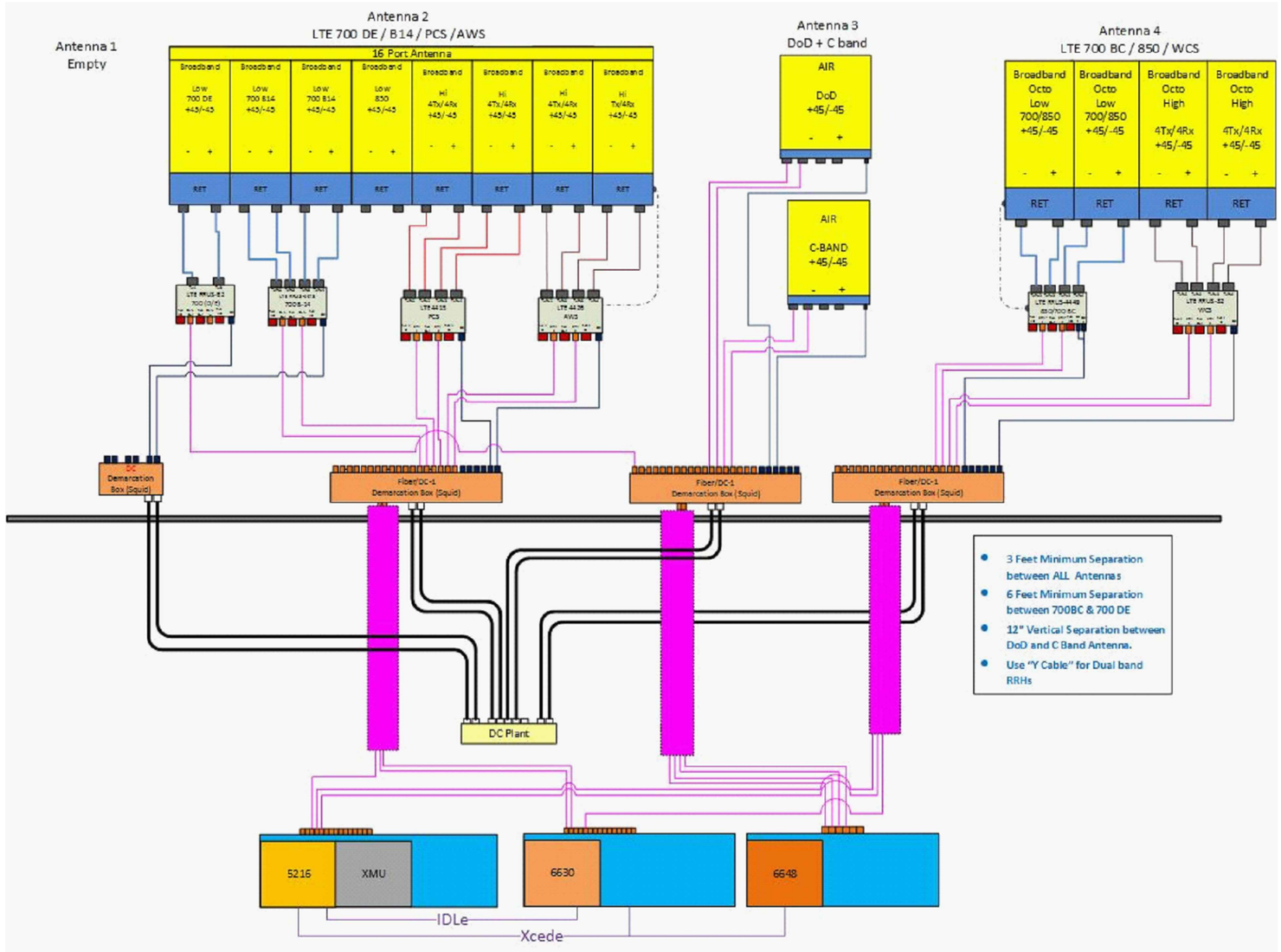
AT&T

GROUNDING DETAILS
5G NR 1SR CBAND_4TXRX ANTENNA RETROFIT_
5G NR UPGRADE_LTE 7C ADD UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02820	G-1	1

NOTE:

REV: 5
DATED: 05/18/2022
RFDS ID: 4788764



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.
3. RFDS USED FOR REFERENCE.

NOTE:

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

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RF PLUMBING DIAGRAM
5G NR 1SR CBAND_4TXRX ANTENNA RETROFIT_
5G NR UPGRADE_LTE 7C ADD UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02820	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 149 ft SABRE Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT13075-A

Customer Site Name: New London

Carrier Name: AT&T (App#: 198611-1)

Carrier Site ID / Name: CT2820 / GROTON PLEASANT VALLEY ROAD NORTH S2820A

Site Location: 1294 Pleasant Valley Road North

Groton, Connecticut

New London County

Latitude: 41.399972

Longitude: -72.079222

Analysis Result:

Max Structural Usage: 90.2% [Pass]

Max Foundation Usage: 99.0% [Pass]

Additional Usage Caused by Mount Modification: +1.8%

Report Prepared By: Bishal Pandit

Tower Engineering Solutions
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1320 Greenway Drive, Suite 600, Irving, Texas 75038

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Additional Usage Caused by Mount Modification: +1.8%

Report Prepared By: Bishal Pandit

Introduction

The purpose of this report is to summarize the analysis results on the 149 ft SABRE 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	Tower Design prepared by Sabre, job # 08-07173, dated 08/09/2007
Foundation Drawing	Foundation Design prepared by Sabre, job # 08-07173-E, dated 08/09/2007
Geotechnical Report	Geotechnical Report prepared by Gemini Geotechnical Associates, job # 07079CT, dated 07/20/2007
Modification Drawings	N/A
Mount Analysis	Hudson Design Group, Project# 2051A146BE, dated 05/03/2022

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 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 = 0.16, 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	150.5	3	Antel - BXA-80063/4CF ___ 5° - Panel	Low Profile Platform + Modification [VZWSMART-PLK 1+PLK-5+ PLK7]	(6) 1 5/8" (2) 1 5/8" Hybrid Fiber	Verizon
2	149.5	2	RFS DB-T1-6Z-8AB-0Z			
3		3	JMA Wireless MX06FRO660-02 - Panel			
4		3	JMA Wireless MX10FRO660 - Panel			
5		3	Samsung MT6407-77A - Panel			
6		3	Samsung B2/B66A RRH-BR049 (RFV01U-D1A)			
7		3	SamsungB5/B13 RRH-BR04C (RFV01U-D2A)			
8		3	Samsung CBRS RRH-RT4401-48A			
9	137.0	3	RFS APXVAARR24_43-U-NA20	(1) Low Profile Platform (1) Support Rail Kit w/ TARM (MS-P-TARM_6) (1) Heavy collar mount (MS-H1436) + (3) 2"PST Antenna mount pipe	(10) 1 5/8" (4) 1 5/8" Fiber	T-Mobile
10		3	Ericsson AIR32 KRD901146-1_B66A_B2A (Octo)			
11		3	Ericsson AIR6449 B41			
12		3	Ericsson KRY 112 144/1			
13		3	Ericsson 4449 B71+B85			
14		3	Ericsson 4415 B25			
-	127.0	6	Cci HPA65R-BU8A - Panel	MTC3607 Platform + HR & Kicker	(4) 1/2" Fiber (8) 3/4" DC (3) 3/8" RET	AT&T
-		3	Kaelus DBCT108F1V92-1 Diplexer			
-		3	Ericsson RRUS 4426 B66 RRU			
-		3	Ericsson RRUS 4415 B25 RRU			
-		3	Ericsson RRUS 4478 B5 RRU			
-		3	Ericsson RRUS 4478 B14 RRU			
-		6	Cci HPA-65R-BUU-H8 - Panel			
-		6	Ericsson RRUS-11 RRU			
-		3	Ericsson RRUS 32 RRU			
-		4	Raycap DC6-48-60-18-8F -SP			
29	117.0	3	JMA Wireless MX08FRO665-21 - Panel	CommScope MC-PK8-DSH	(1) 1.6" Hybrid	Dish Wireless
30		3	Fujitsu TA08025-B605			
31		3	Fujitsu TA08025-B604			
32		1	Raycap RDIDC-9181-PF-48			

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
15	129.0	3	AIR 6419 B77G - Panel	Commscope MTC3607 Platform w/ Handrail & Kicker + Sitepro PRK-SFS-L (Handrail Reinforcement Kit)	(4) 1/2" Fiber (8) 3/4" DC (3) 3/8" RET	AT&T
16	127.0	3	Quintel QD8616-7 - Panel			
17		3	CCI - DMP65R-BU8DA - Panel			
18		3	Kaelus DBCT108F1V92-1 Diplexer			
19		3	Ericsson RRUS 4478 B14 RRU			
20		3	Ericsson RRUS 4478 B5 RRU			
21		3	Ericsson RRUS 4415 B25 RRU			
22		3	Ericsson RRUS 32 RRU			
23		3	Ericsson RRUS 4426 B66 RRU			
24		3	Ericsson RRUS 4449 B5/B12 RRU			
25		3	Ericsson 2012 B29 RRU			
26		3	Raycap DC6-48-60-18-8F OVP			
27		1	Raycap DC6-48-60-18-8C-EV OVP			
28	125.0	3	Ericsson AIR 6449 B77D - Panel			

See the attached coax layout for the line placement considered in the analysis.

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:	**90.2%**	**83.2%**	**76.8%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	5603.4	48.6	53.4

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 1.4272 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 90.19% at 100.8ft

Structure:	CT13075-A-SBA	**Code:**	EIA/TIA-222-G	6/24/2022
Site Name:	New London	**Exposure:**	C	
Height:	149.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

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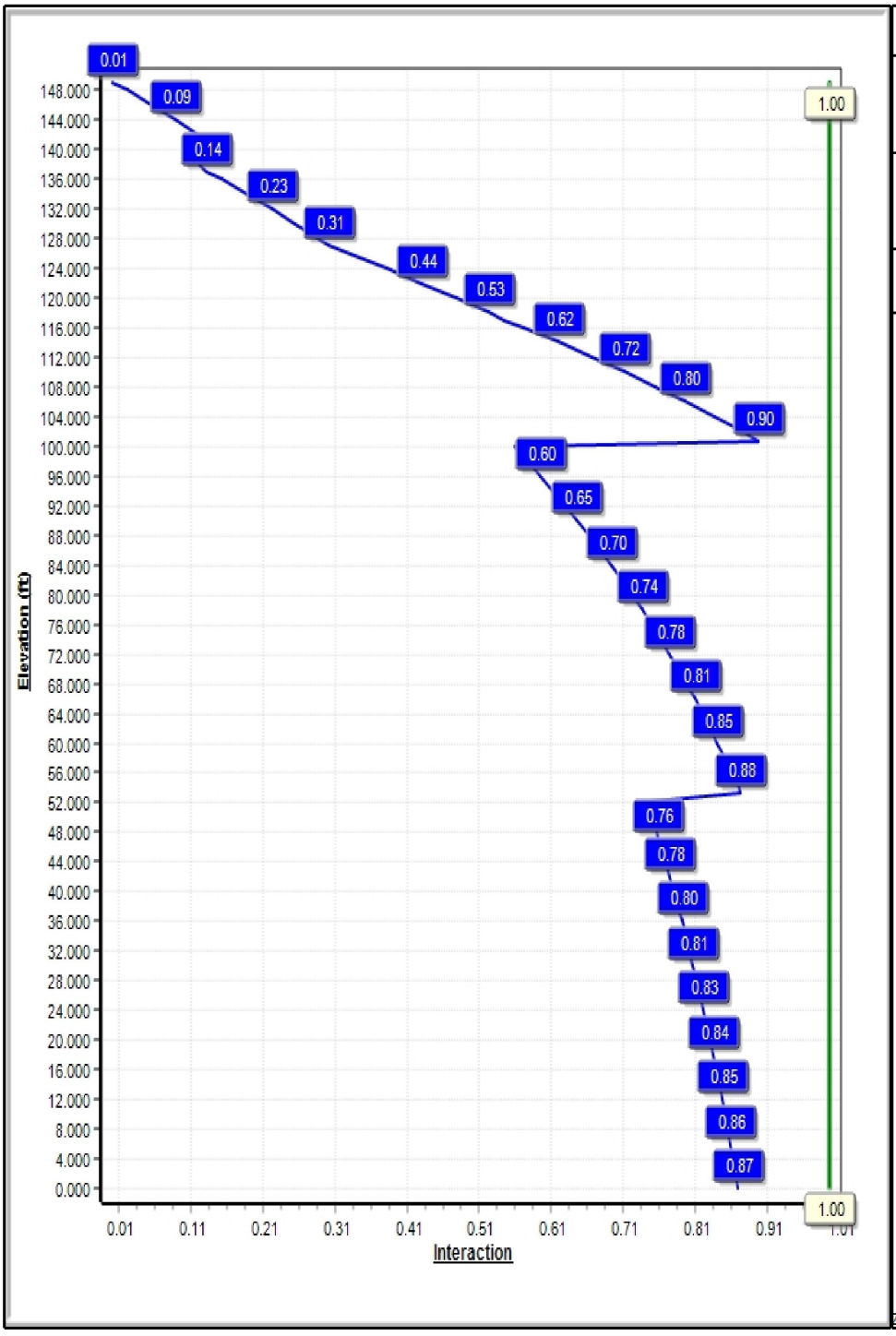
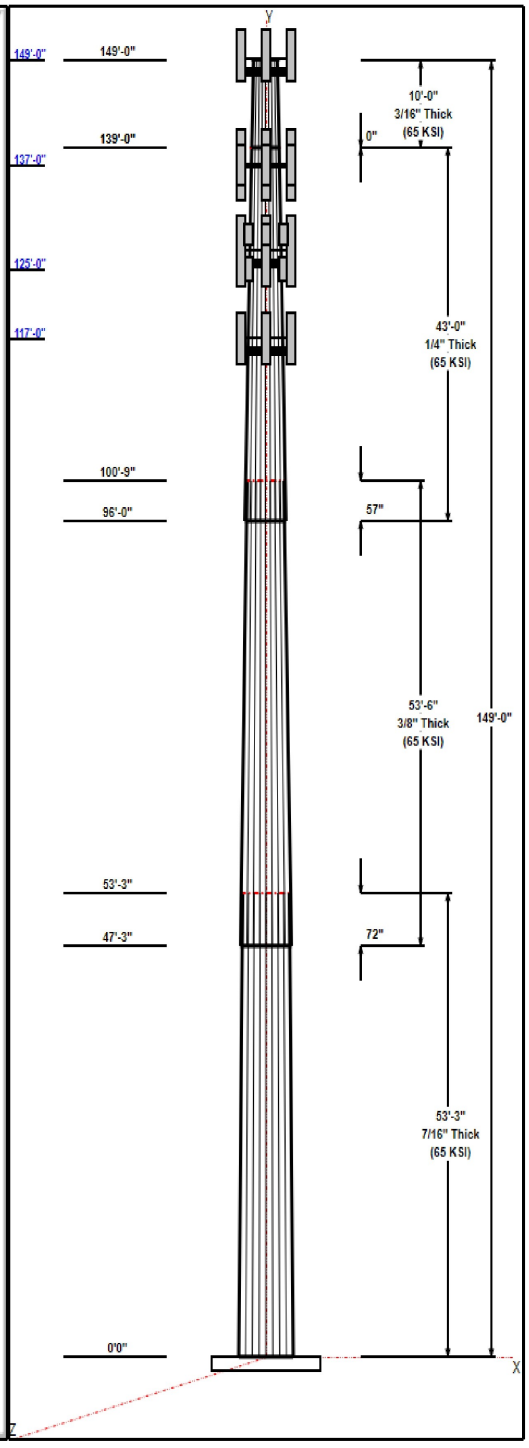
Dead Load Factor:	1.20
Wind Load Factor:	1.60

Load Case : 1.2D + 1.6W 105 mph Wind

Iterations: 27





Structure: CT13075-A-SBA

Type: Tapered
Site Name: New London
Height: 149.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.23597

6/24/2022

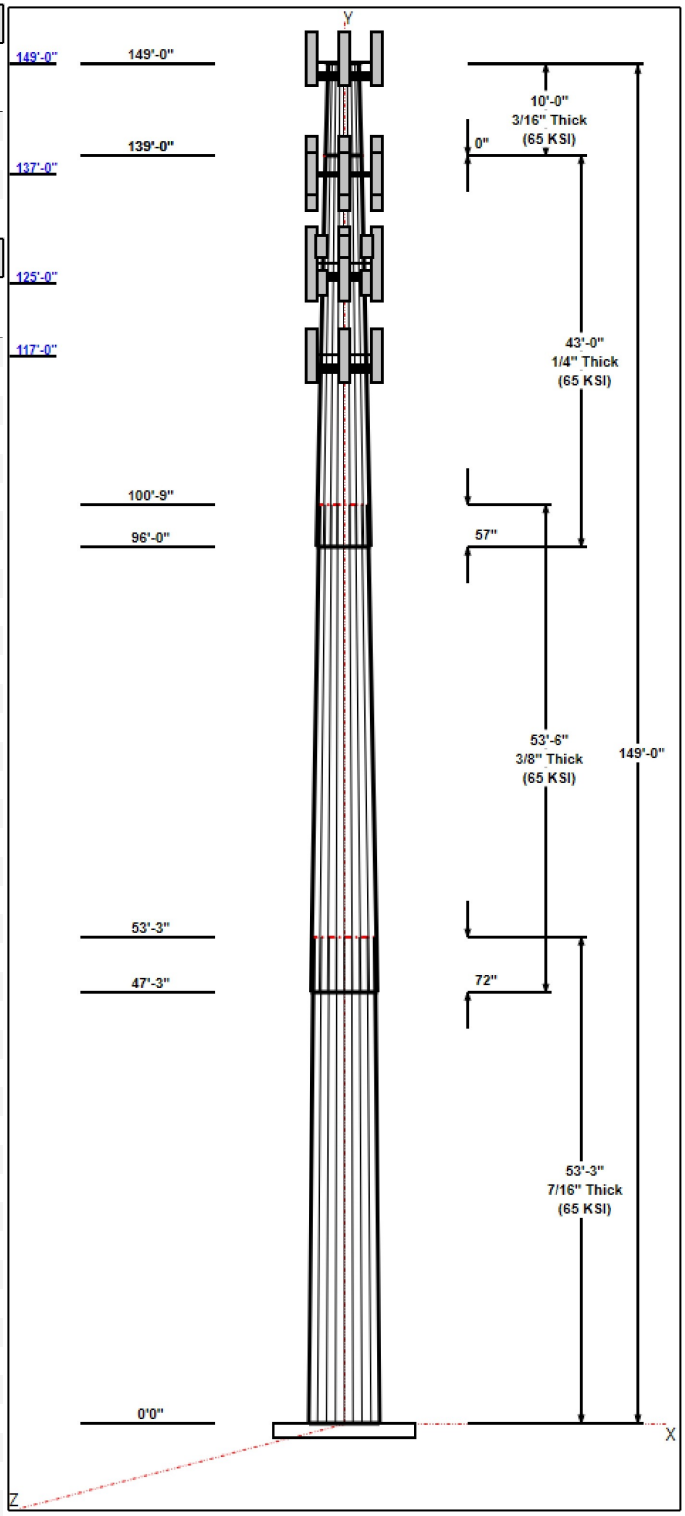
Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	53.25	45.69	58.26	0.438		0.23597	65
2	53.50	35.24	47.86	0.375	Slip	0.23597	65
3	43.00	26.71	36.86	0.250	Slip	0.23597	65
4	10.00	24.35	26.71	0.188	Butt	0.23597	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
149.00	150.50	3	Antel BXA-80063/4CF	Verizon
149.00	149.50	1	RFS DB-T1-6Z-8AB-0Z	Verizon
149.00	149.50	1	RFS DB-T1-6Z-8AB-0Z	Verizon
149.00	149.00	1	Low Profile	Verizon
149.00	149.50	3	MX06FRO660-02	Verizon
149.00	149.50	3	MX10FRO660	Verizon
149.00	149.50	3	MT6407-77A	Verizon
149.00	149.50	3	B2/B66A RRH-BR049	Verizon
149.00	149.50	3	B5/B13 RRH-BR04C	Verizon
149.00	149.50	3	RT4401-48A (RRH only)	Verizon
149.00	149.00	1	HRK12 (Handrail Kit)	Verizon
149.00	149.00	1	PRK-1245 (kicker kit)	Verizon
149.00	149.00	12	Mount pipe	Verizon
137.00	137.00	3	AIR6449 B41	T-Mobile
137.00	137.00	3	KRD 9011461-B66A-B2A	T-Mobile
137.00	137.00	3	APXVAARR24_43-U-NA20	T-Mobile
137.00	137.00	3	KRY 112 144/1	T-Mobile
137.00	137.00	3	4449 B71 + B12	T-Mobile
137.00	137.00	1	Support rail kit - Mods	T-Mobile
137.00	137.00	9	Mount pipe	T-Mobile
137.00	137.00	3	RRUS 4415 B25	T-Mobile
137.00	137.00	1	Low Profile Platform	T-Mobile
129.00	129.00	3	AIR 6419 B77G	AT&T
127.00	127.00	3	QD8616-7	AT&T
127.00	127.00	3	DMP65R-BU8DA	AT&T
127.00	127.00	3	RRUS 4449 B5/B12	AT&T
127.00	127.00	3	Erisson 2012 B29	AT&T
127.00	127.00	1	DC6-48-60-18-8C-EV	AT&T
127.00	127.00	1	Collar Mount - Mod	AT&T
127.00	127.00	1	Handrail Reinforcement -	AT&T
127.00	127.00	3	Kaelus DBCT108F1V92-1	AT&T
127.00	127.00	3	Ericsson RRUS 4426 B66	AT&T
127.00	127.00	3	Ericsson RRUS 4415 B25	AT&T
127.00	127.00	3	Ericsson RRUS 4478 B5	AT&T
127.00	127.00	3	Ericsson RRUS 4478 B14	AT&T
127.00	127.00	3	Ericsson RRUS 32 RRU	AT&T
127.00	127.00	3	Raycap DC6-48-60-18-8F	AT&T
127.00	127.00	1	MTC3607 Platform + HR &	AT&T
125.00	125.00	3	AIR 6449 B77D	AT&T
117.00	117.00	3	MX08FRO665-21	Dish Wireless
117.00	117.00	3	TA08025-B605	Dish Wireless
117.00	117.00	3	TA08025-B604	Dish Wireless
117.00	117.00	1	RDIDC-9181-OF-48	Dish Wireless
117.00	117.00	1	MC-PK8-DSH	Dish Wireless



Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	149.00	Inside	1 5/8" Coax	Verizon
0.00	149.00	Inside	1 5/8" Hybriflex Fiber	Verizon
0.00	149.00	Outside	Safety Cable	
0.00	149.00	Outside	Step bolts (ladder)	
0.00	137.00	Inside	1 5/8" Coax	T-Mobile
0.00	137.00	Inside	1 5/8" Fiber	T-Mobile
0.00	127.00	Inside	1/2" Fiber	AT&T
0.00	127.00	Inside	3/4" DC	AT&T
0.00	127.00	Inside	3/8" RET	AT&T
0.00	117.00	Inside	1.6" Hybrid	Dish Wireless

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
20	2.25" 18J	75.0	Cluster

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.7500	65.4	60.0	Clipped

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 105 mph Wind	5603.4	48.6	53.4
0.9D + 1.6W 105 mph Wind	5543.6	48.6	40.0
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1362.9	11.7	86.0
1.2D + 1.0E	271.5	2.2	53.4
0.9D + 1.0E	268.4	2.2	40.1
1.0D + 1.0W 60 mph Wind	1137.9	9.9	44.5

Structure: CT13075-A-SBA - Coax Line Placement

Type: Monopole
Site Name: New London
Height: 149.00 (ft)

6/24/2022

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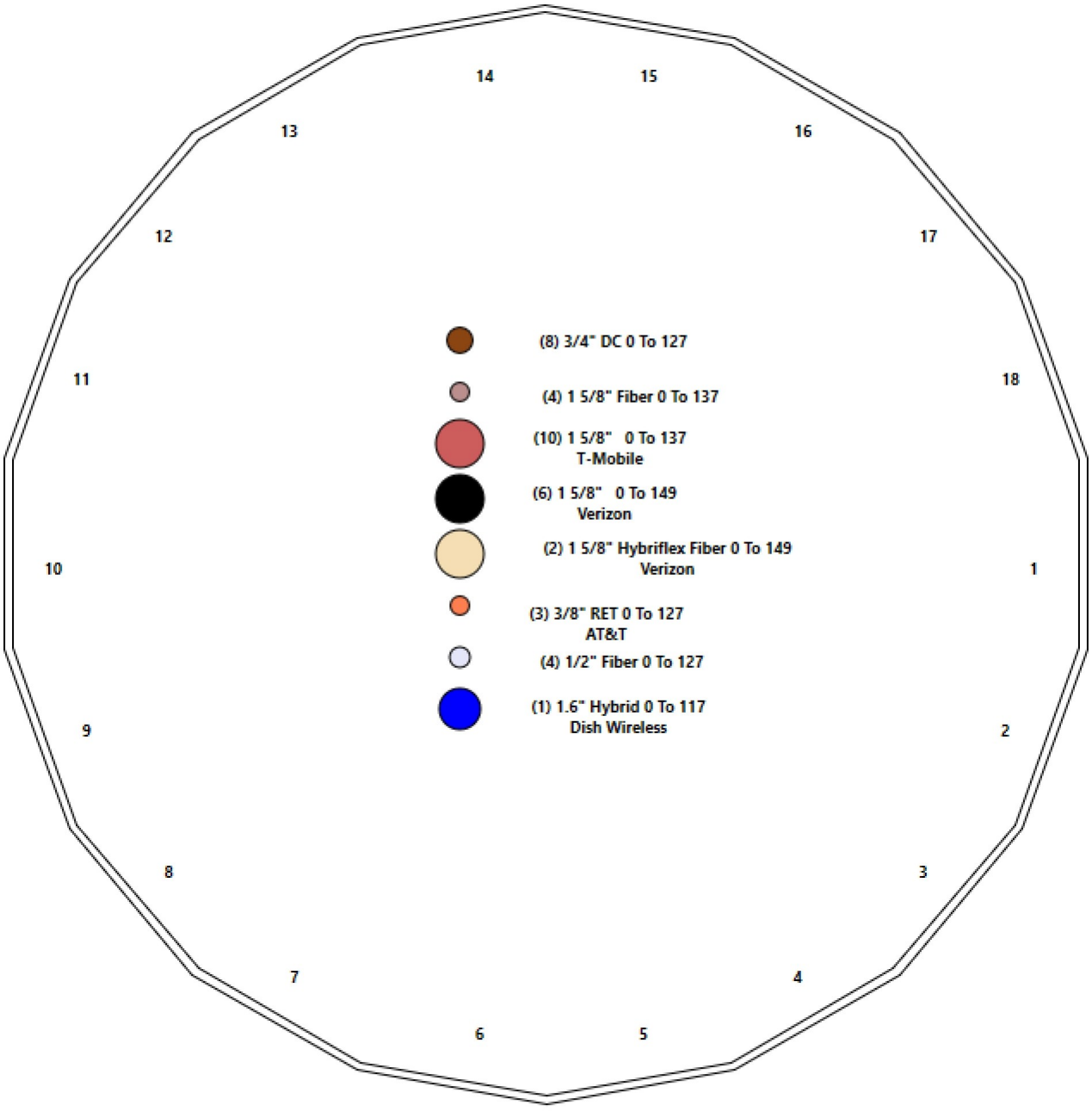

Shaft Properties

Structure:	CT13075-A-SBA		**Code:**	TIA-222-G	6/24/2022
Site Name:	New London		**Exposure:**	C	
Height:	149.00 (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	18	53.250	0.4375	65		0.00	12,968
2	18	53.500	0.3750	65	Slip	72.00	8,921
3	18	43.000	0.2500	65	Slip	57.00	3,661
4	18	10.000	0.1875	65	Flange	0.00	513
					Total Shaft Weight:		**26,063**

	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	58.26	0.00	80.29	33916.66	22.07	133.17	45.69	53.25	62.84	16262.1	17.01	104.4	0.235973
2	47.86	47.25	56.52	16100.98	21.09	127.63	35.24	100.75	41.49	6370.66	15.16	93.96	0.235973
3	36.86	96.00	29.05	4917.70	24.58	147.43	26.71	139.00	21.00	1857.12	17.43	106.8	0.235973
4	26.71	139.0	15.78	1402.74	23.71	142.45	24.35	149.00	14.38	1060.65	21.49	129.8	0.235973

Load Summary

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (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	

Tower Engineering Solutions

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	149.00	Antel BXA-80063/4CF	3	9.90	4.72	0.72	110.33	6.567	0.72	0.00	1.50
2	149.00	RFS DB-T1-6Z-8AB-0Z	1	18.90	4.80	0.67	162.51	5.673	0.67	0.00	0.50
3	149.00	RFS DB-T1-6Z-8AB-0Z	1	18.90	4.80	0.67	162.51	5.673	0.67	0.00	0.50
4	149.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	2808.04	39.650	1.00	0.00	0.00
5	149.00	MX06FRO660-02	3	46.00	9.87	0.87	314.77	11.245	0.90	0.00	0.50
6	149.00	MX10FRO660	3	46.00	9.87	0.87	314.77	11.245	0.90	0.00	0.50
7	149.00	MT6407-77A	3	79.40	4.69	0.70	198.84	5.636	0.75	0.00	0.50
8	149.00	B2/B66A RRH-BR049	3	84.40	1.87	0.67	160.89	2.443	0.75	0.00	0.50
9	149.00	B5/B13 RRH-BR04C (RFV01U-D2A)	3	70.30	1.87	0.67	139.60	2.443	0.75	0.00	0.50
10	149.00	RT4401-48A (RRH only)	3	18.60	0.99	0.67	46.28	1.411	0.75	0.00	0.50
11	149.00	HRK12 (Handrail Kit)	1	504.00	8.20	1.00	1101.72	16.209	1.00	0.00	0.00
12	149.00	PRK-1245 (kicker kit)	1	440.00	11.40	1.00	746.95	23.329	1.00	0.00	0.00
13	149.00	Mount pipe	12	29.20	1.90	1.00	90.11	4.365	1.00	0.00	0.00
14	137.00	AIR6449 B41	3	103.00	5.65	0.71	238.88	6.592	0.71	0.00	0.00
15	137.00	KRD 9011461-B66A-B2A	3	132.20	6.51	0.87	313.48	7.621	0.87	0.00	0.00
16	137.00	APXVAARR24_43-U-NA20	3	128.00	20.24	0.75	541.69	22.122	0.80	0.00	0.00
17	137.00	KRY 112 144/1	3	15.40	0.71	0.75	35.05	1.328	0.80	0.00	0.00
18	137.00	4449 B71 + B12	3	73.20	1.97	0.67	130.42	2.534	0.67	0.00	0.00
19	137.00	Support rail kit - Mods	1	500.00	16.50	1.00	1088.02	32.480	1.00	0.00	0.00
20	137.00	Mount pipe	9	29.20	1.90	1.00	89.60	4.345	1.00	0.00	0.00
21	137.00	RRUS 4415 B25	3	46.00	1.64	0.67	86.73	2.151	0.67	0.00	0.00
22	137.00	Low Profile Platform	1	1500.00	22.00	1.00	2797.10	39.502	1.00	0.00	0.00
23	129.00	AIR 6419 B77G	3	66.10	3.80	0.76	160.87	4.584	0.76	0.00	0.00
24	127.00	QD8616-7	3	68.20	18.80	0.92	479.22	20.636	0.92	0.00	0.00
25	127.00	DMP65R-BU8DA	3	95.70	17.87	0.73	486.31	19.637	0.73	0.00	0.00
26	127.00	RRUS 4449 B5/B12	3	71.00	1.97	0.67	123.50	2.508	0.67	0.00	0.00
27	127.00	Erisson 2012 B29	3	59.40	3.15	0.67	123.02	3.842	0.67	0.00	0.00
28	127.00	DC6-48-60-18-8C-EV	1	16.00	4.78	1.00	137.69	5.650	1.00	0.00	0.00
29	127.00	Collar Mount - Mod	1	150.60	2.50	1.00	357.39	5.075	1.00	0.00	0.00
30	127.00	Handrail Reinforcement - Mod	1	329.00	10.00	1.00	780.76	20.298	1.00	0.00	0.00
31	127.00	Kaelus DBCT108F1V92-1 Diplexer	3	19.80	0.70	0.50	44.04	0.953	0.50	0.00	0.00
32	127.00	Ericsson RRUS 4426 B66 RRU	3	48.50	1.15	0.67	86.77	1.616	0.67	0.00	0.00
33	127.00	Ericsson RRUS 4415 B25 RRU	3	44.10	1.86	0.67	90.76	2.423	0.67	0.00	0.00
34	127.00	Ericsson RRUS 4478 B5 RRU	3	59.90	1.84	0.67	107.98	2.379	0.67	0.00	0.00
35	127.00	Ericsson RRUS 4478 B14 RRU	3	59.40	1.65	0.67	100.18	2.160	0.67	0.00	0.00
36	127.00	Ericsson RRUS 32 RRU	3	77.00	3.31	0.67	124.43	2.219	0.67	0.00	0.00
37	127.00	Raycap DC6-48-60-18-8F	3	31.80	2.20	1.00	92.60	3.230	1.00	0.00	0.00
38	127.00	MTC3607 Platform + HR & Kicker	1	2246.00	51.70	1.00	5330.04	89.325	1.00	0.00	0.00
39	125.00	AIR 6449 B77D	3	88.00	4.13	0.85	222.61	4.971	0.85	0.00	0.00
40	117.00	MX08FRO665-21	3	64.50	12.49	0.74	348.23	13.919	0.75	0.00	0.00
41	117.00	TA08025-B605	3	75.00	1.96	0.67	126.02	2.507	0.67	0.00	0.00
42	117.00	TA08025-B604	3	63.90	1.96	0.67	113.29	2.507	0.67	0.00	0.00
43	117.00	RDIDC-9181-OF-48	1	21.90	2.01	1.00	73.84	2.564	1.00	0.00	0.00
44	117.00	MC-PK8-DSH	1	1727.00	37.59	1.00	3373.41	83.665	1.00	0.00	0.00
		Totals:	**121**	**15,119.60**			**37,192.34**				

Linear Appurtenances

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	No Ice CaAa Factor	Ice Weight (lb)	Ice CaAa (sf)	Ice CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
Bottom Elev. (ft)	**Top Elev. (ft)**	**Description**		**Exposed Width**	**Exposed**						
0.00	149.00	(6) 1 5/8" Coax		0.00	Inside						
0.00	149.00	(2) 1 5/8" Hybriflex Fiber		0.00	Inside						
0.00	149.00	(1) Safety Cable		0.38	Outside						
0.00	149.00	(0) Step bolts (ladder)		0.63	Outside						
0.00	137.00	(10) 1 5/8" Coax		0.00	Inside						
0.00	137.00	(4) 1 5/8" Fiber		0.00	Inside						
0.00	127.00	(4) 1/2" Fiber		0.00	Inside						
0.00	127.00	(8) 3/4" DC		0.00	Inside						
0.00	127.00	(3) 3/8" RET		0.00	Inside						
0.00	117.00	(1) 1.6" Hybrid		0.00	Inside						

Shaft Section Properties

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (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	

Increment Length: **2 (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		0.4375	58.260	80.291	33916.7	22.07	133.17	75.4	1146.	0.0
2.00		0.4375	57.788	79.636	33092.9	21.88	132.09	75.7	1127.	544.2
4.00		0.4375	57.316	78.980	32282.7	21.69	131.01	75.9	1109.	539.7
6.00		0.4375	56.844	78.325	31485.7	21.50	129.93	76.1	1091.	535.3
8.00		0.4375	56.372	77.670	30702.0	21.31	128.85	76.3	1072.	530.8
10.00		0.4375	55.900	77.014	29931.4	21.12	127.77	76.6	1054.	526.4
12.00		0.4375	55.428	76.359	29173.8	20.93	126.69	76.8	1036.	521.9
14.00		0.4375	54.956	75.704	28429.1	20.74	125.61	77.0	1018.	517.4
16.00		0.4375	54.484	75.048	27697.2	20.55	124.54	77.2	1001.	513.0
18.00		0.4375	54.012	74.393	26977.9	20.36	123.46	77.5	983.8	508.5
20.00		0.4375	53.541	73.738	26271.2	20.17	122.38	77.7	966.4	504.1
22.00		0.4375	53.069	73.082	25577.0	19.98	121.30	77.9	949.3	499.6
24.00		0.4375	52.597	72.427	24895.1	19.79	120.22	78.1	932.3	495.1
26.00		0.4375	52.125	71.772	24225.4	19.60	119.14	78.4	915.4	490.7
28.00		0.4375	51.653	71.116	23567.9	19.41	118.06	78.6	898.7	486.2
30.00		0.4375	51.181	70.461	22922.3	19.22	116.98	78.8	882.1	481.8
32.00		0.4375	50.709	69.806	22288.7	19.03	115.91	79.0	865.7	477.3
34.00		0.4375	50.237	69.150	21666.8	18.84	114.83	79.2	849.5	472.8
36.00		0.4375	49.765	68.495	21056.6	18.65	113.75	79.5	833.4	468.4
38.00		0.4375	49.293	67.840	20458.0	18.46	112.67	79.7	817.4	463.9
40.00		0.4375	48.821	67.184	19870.8	18.27	111.59	79.9	801.7	459.5
42.00		0.4375	48.349	66.529	19295.0	18.08	110.51	80.1	786.0	455.0
44.00		0.4375	47.877	65.874	18730.4	17.89	109.43	80.4	770.5	450.5
46.00		0.4375	47.405	65.218	18177.0	17.70	108.35	80.6	755.2	446.1
47.25	Bot - Section 2	0.4375	47.110	64.809	17836.6	17.58	107.68	80.7	745.7	276.5
48.00		0.4375	46.933	64.563	17634.5	17.51	107.28	80.8	740.1	309.1
50.00		0.4375	46.461	63.908	17103.0	17.31	106.20	81.0	725.0	818.4
52.00		0.4375	45.989	63.252	16582.2	17.12	105.12	81.3	710.2	810.2
53.25	Top - Section 1	0.3750	46.444	54.832	14703.3	20.43	123.85	0.0	0.0	502.1
54.00		0.3750	46.267	54.622	14534.5	20.34	123.38	77.5	618.7	139.7
56.00		0.3750	45.796	54.060	14090.7	20.12	122.12	77.7	606.0	369.8
58.00		0.3750	45.324	53.498	13656.0	19.90	120.86	78.0	593.4	366.0
60.00		0.3750	44.852	52.936	13230.3	19.68	119.60	78.3	581.0	362.2
62.00		0.3750	44.380	52.375	12813.6	19.46	118.35	78.5	568.7	358.4
64.00		0.3750	43.908	51.813	12405.7	19.24	117.09	78.8	556.5	354.5
66.00		0.3750	43.436	51.251	12006.6	19.01	115.83	79.0	544.4	350.7
68.00		0.3750	42.964	50.690	11616.2	18.79	114.57	79.3	532.5	346.9
70.00		0.3750	42.492	50.128	11234.3	18.57	113.31	79.6	520.7	343.1
72.00		0.3750	42.020	49.566	10860.8	18.35	112.05	79.8	509.1	339.2
74.00		0.3750	41.548	49.004	10495.7	18.13	110.79	80.1	497.6	335.4
76.00		0.3750	41.076	48.443	10138.9	17.90	109.54	80.3	486.2	331.6
78.00		0.3750	40.604	47.881	9790.3	17.68	108.28	80.6	474.9	327.8
80.00		0.3750	40.132	47.319	9449.8	17.46	107.02	80.9	463.8	323.9
82.00		0.3750	39.660	46.758	9117.2	17.24	105.76	81.1	452.8	320.1
84.00		0.3750	39.188	46.196	8792.6	17.02	104.50	81.4	441.9	316.3
86.00		0.3750	38.716	45.634	8475.7	16.79	103.24	81.6	431.2	312.5
88.00		0.3750	38.244	45.072	8166.6	16.57	101.98	81.9	420.6	308.7
90.00		0.3750	37.772	44.511	7865.0	16.35	100.73	82.2	410.1	304.8
92.00		0.3750	37.300	43.949	7571.0	16.13	99.47	82.4	399.8	301.0
94.00		0.3750	36.829	43.387	7284.4	15.91	98.21	82.5	389.6	297.2

Increment Length: **2 (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)
96.00	Bot - Section 3	0.3750	36.357	42.826	7005.1	15.68	96.95	82.5	379.5	293.4
98.00		0.3750	35.885	42.264	6733.1	15.46	95.69	82.5	369.6	485.9
100.00		0.3750	35.413	41.702	6468.2	15.24	94.43	82.5	359.8	479.6
100.75	Top - Section 2	0.2500	35.736	28.157	4479.7	23.79	142.94	0.0	0.0	178.2
102.00		0.2500	35.441	27.923	4368.9	23.59	141.76	73.7	242.8	119.3
104.00		0.2500	34.969	27.548	4195.4	23.25	139.88	74.1	236.3	188.8
106.00		0.2500	34.497	27.174	4026.7	22.92	137.99	74.4	229.9	186.2
108.00		0.2500	34.025	26.799	3862.5	22.59	136.10	74.8	223.6	183.7
110.00		0.2500	33.553	26.425	3702.8	22.25	134.21	75.2	217.4	181.1
112.00		0.2500	33.081	26.050	3547.6	21.92	132.32	75.6	211.2	178.6
114.00		0.2500	32.609	25.676	3396.8	21.59	130.44	76.0	205.2	176.0
116.00		0.2500	32.137	25.302	3250.3	21.26	128.55	76.4	199.2	173.5
117.00		0.2500	31.901	25.114	3178.7	21.09	127.60	76.6	196.3	85.8
118.00		0.2500	31.665	24.927	3108.2	20.92	126.66	76.8	193.3	85.1
120.00		0.2500	31.193	24.553	2970.2	20.59	124.77	77.2	187.5	168.4
122.00		0.2500	30.721	24.178	2836.3	20.26	122.89	77.6	181.8	165.8
124.00		0.2500	30.249	23.804	2706.6	19.92	121.00	78.0	176.2	163.3
125.00		0.2500	30.013	23.616	2643.2	19.76	120.05	78.2	173.5	80.7
126.00		0.2500	29.777	23.429	2580.8	19.59	119.11	78.4	170.7	80.0
127.00		0.2500	29.541	23.242	2519.4	19.43	118.17	78.6	168.0	79.4
128.00		0.2500	29.305	23.055	2459.0	19.26	117.22	78.7	165.3	78.8
129.00		0.2500	29.069	22.867	2399.6	19.09	116.28	78.9	162.6	78.1
130.00		0.2500	28.833	22.680	2341.2	18.93	115.33	79.1	159.9	77.5
132.00		0.2500	28.362	22.306	2227.1	18.59	113.45	79.5	154.7	153.1
134.00		0.2500	27.890	21.931	2116.8	18.26	111.56	79.9	149.5	150.5
136.00		0.2500	27.418	21.557	2010.2	17.93	109.67	80.3	144.4	148.0
137.00		0.2500	27.182	21.370	1958.3	17.76	108.73	80.5	141.9	73.0
138.00		0.2500	26.946	21.182	1907.3	17.59	107.78	80.7	139.4	72.4
139.00	Top - Section 3	0.2500	26.710	20.995	1857.1	17.43	106.84	80.9	136.9	71.8
139.00	Bot - Section 4	0.1875	26.710	15.783	1402.7	23.24	142.45	73.5	103.4	
140.00		0.1875	26.474	15.643	1365.6	23.49	141.19	73.8	101.6	53.5
142.00		0.1875	26.002	15.362	1293.4	23.04	138.68	74.3	98.0	105.5
144.00		0.1875	25.530	15.081	1223.7	22.60	136.16	74.8	94.4	103.6
146.00		0.1875	25.058	14.800	1156.6	22.15	133.64	75.3	90.9	101.7
148.00		0.1875	24.586	14.520	1092.0	21.71	131.13	75.9	87.5	99.8
149.00		0.1875	24.350	14.379	1060.6	21.49	129.87	76.1	85.8	49.2
										26063.1

Wind Loading - Shaft

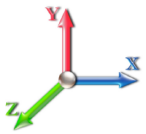
Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 10	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

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	477.24	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.85	22.791	25.07	473.37	0.650	0.000	2.00	9.820	6.38	256.0	0.0	653.0
4.00		1.00	0.85	22.791	25.07	469.51	0.650	0.000	2.00	9.740	6.33	253.9	0.0	647.7
6.00		1.00	0.85	22.791	25.07	465.64	0.650	0.000	2.00	9.660	6.28	251.9	0.0	642.3
8.00		1.00	0.85	22.791	25.07	461.78	0.650	0.000	2.00	9.580	6.23	249.8	0.0	637.0
10.00		1.00	0.85	22.791	25.07	457.91	0.650	0.000	2.00	9.500	6.18	247.7	0.0	631.6
12.00		1.00	0.85	22.791	25.07	454.04	0.650	0.000	2.00	9.421	6.12	245.6	0.0	626.3
14.00		1.00	0.85	22.791	25.07	450.18	0.650	0.000	2.00	9.341	6.07	243.5	0.0	620.9
16.00		1.00	0.86	23.072	25.38	449.06	0.650	0.000	2.00	9.261	6.02	244.4	0.0	615.6
18.00		1.00	0.88	23.652	26.02	450.72	0.650	0.000	2.00	9.181	5.97	248.4	0.0	610.2
20.00		1.00	0.90	24.182	26.60	451.77	0.650	0.000	2.00	9.101	5.92	251.8	0.0	604.9
22.00		1.00	0.92	24.672	27.14	452.30	0.650	0.000	2.00	9.021	5.86	254.6	0.0	599.5
24.00		1.00	0.94	25.128	27.64	452.40	0.650	0.000	2.00	8.941	5.81	257.0	0.0	594.2
26.00		1.00	0.95	25.555	28.11	452.14	0.650	0.000	2.00	8.861	5.76	259.1	0.0	588.8
28.00		1.00	0.97	25.957	28.55	451.55	0.650	0.000	2.00	8.782	5.71	260.8	0.0	583.5
30.00		1.00	0.98	26.337	28.97	450.69	0.650	0.000	2.00	8.702	5.66	262.2	0.0	578.1
32.00		1.00	1.00	26.697	29.37	449.58	0.650	0.000	2.00	8.622	5.60	263.3	0.0	572.8
34.00		1.00	1.01	27.040	29.74	448.24	0.650	0.000	2.00	8.542	5.55	264.2	0.0	567.4
36.00		1.00	1.02	27.367	30.10	446.71	0.650	0.000	2.00	8.462	5.50	264.9	0.0	562.1
38.00		1.00	1.03	27.681	30.45	445.00	0.650	0.000	2.00	8.382	5.45	265.4	0.0	556.7
40.00		1.00	1.04	27.981	30.78	443.13	0.650	0.000	2.00	8.302	5.40	265.8	0.0	551.3
42.00		1.00	1.05	28.270	31.10	441.10	0.650	0.000	2.00	8.222	5.34	265.9	0.0	546.0
44.00		1.00	1.06	28.548	31.40	438.94	0.650	0.000	2.00	8.143	5.29	265.9	0.0	540.6
46.00		1.00	1.07	28.817	31.70	436.65	0.650	0.000	2.00	8.063	5.24	265.8	0.0	535.3
47.25	Bot - Section 2	1.00	1.08	28.980	31.88	435.16	0.650	0.000	1.25	4.999	3.25	165.7	0.0	331.8
48.00		1.00	1.08	29.076	31.98	434.25	0.650	0.000	0.75	3.032	1.97	100.8	0.0	370.9
50.00		1.00	1.09	29.327	32.26	431.73	0.650	0.000	2.00	8.030	5.22	269.4	0.0	982.1
52.00		1.00	1.10	29.570	32.53	429.11	0.650	0.000	2.00	7.950	5.17	268.9	0.0	972.2
53.25	Top - Section 1	1.00	1.11	29.719	32.69	427.43	0.650	0.000	1.25	4.928	3.20	167.5	0.0	602.6
54.00		1.00	1.11	29.806	32.79	433.43	0.650	0.000	0.75	2.942	1.91	100.3	0.0	167.6
56.00		1.00	1.12	30.035	33.04	430.65	0.650	0.000	2.00	7.790	5.06	267.7	0.0	443.8
58.00		1.00	1.13	30.258	33.28	427.79	0.650	0.000	2.00	7.710	5.01	266.9	0.0	439.2
60.00		1.00	1.14	30.475	33.52	424.85	0.650	0.000	2.00	7.631	4.96	266.0	0.0	434.6
62.00		1.00	1.14	30.686	33.75	421.83	0.650	0.000	2.00	7.551	4.91	265.1	0.0	430.0
64.00		1.00	1.15	30.892	33.98	418.74	0.650	0.000	2.00	7.471	4.86	264.0	0.0	425.4
66.00		1.00	1.16	31.092	34.20	415.59	0.650	0.000	2.00	7.391	4.80	262.9	0.0	420.8
68.00		1.00	1.17	31.288	34.42	412.36	0.650	0.000	2.00	7.311	4.75	261.7	0.0	416.3
70.00		1.00	1.17	31.480	34.63	409.08	0.650	0.000	2.00	7.231	4.70	260.4	0.0	411.7
72.00		1.00	1.18	31.667	34.83	405.74	0.650	0.000	2.00	7.151	4.65	259.1	0.0	407.1
74.00		1.00	1.19	31.850	35.04	402.34	0.650	0.000	2.00	7.071	4.60	257.7	0.0	402.5
76.00		1.00	1.19	32.030	35.23	398.89	0.650	0.000	2.00	6.992	4.54	256.2	0.0	397.9
78.00		1.00	1.20	32.205	35.43	395.38	0.650	0.000	2.00	6.912	4.49	254.6	0.0	393.3
80.00		1.00	1.21	32.377	35.62	391.83	0.650	0.000	2.00	6.832	4.44	253.0	0.0	388.7
82.00		1.00	1.21	32.546	35.80	388.23	0.650	0.000	2.00	6.752	4.39	251.4	0.0	384.1
84.00		1.00	1.22	32.712	35.98	384.59	0.650	0.000	2.00	6.672	4.34	249.7	0.0	379.6
86.00		1.00	1.23	32.874	36.16	380.90	0.650	0.000	2.00	6.592	4.28	247.9	0.0	375.0
88.00		1.00	1.23	33.034	36.34	377.17	0.650	0.000	2.00	6.512	4.23	246.1	0.0	370.4

Wind Loading - Shaft

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (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	

90.00		1.00	1.24	33.190	36.51	373.39	0.650	0.000	2.00	6.432	4.18	244.2	0.0	365.8
92.00		1.00	1.24	33.344	36.68	369.58	0.650	0.000	2.00	6.353	4.13	242.3	0.0	361.2
94.00		1.00	1.25	33.496	36.85	365.73	0.650	0.000	2.00	6.273	4.08	240.4	0.0	356.6
96.00	Bot - Section 3	1.00	1.25	33.644	37.01	361.85	0.650	0.000	2.00	6.193	4.03	238.4	0.0	352.0
98.00		1.00	1.26	33.791	37.17	357.93	0.650	0.000	2.00	6.198	4.03	239.6	0.0	583.1
100.00		1.00	1.27	33.935	37.33	353.97	0.650	0.000	2.00	6.118	3.98	237.5	0.0	575.5
100.75	Top - Section 2	1.00	1.27	33.988	37.39	352.48	0.650	0.000	0.75	2.274	1.48	88.4	0.0	213.8
102.00		1.00	1.27	34.077	37.48	354.99	0.650	0.000	1.25	3.764	2.45	146.7	0.0	143.1
104.00		1.00	1.28	34.216	37.64	350.98	0.650	0.000	2.00	5.958	3.87	233.2	0.0	226.5
106.00		1.00	1.28	34.354	37.79	346.94	0.650	0.000	2.00	5.878	3.82	231.0	0.0	223.4
108.00		1.00	1.29	34.489	37.94	342.87	0.650	0.000	2.00	5.798	3.77	228.8	0.0	220.4
110.00		1.00	1.29	34.623	38.08	338.76	0.650	0.000	2.00	5.718	3.72	226.5	0.0	217.3
112.00		1.00	1.30	34.754	38.23	334.63	0.650	0.000	2.00	5.638	3.67	224.2	0.0	214.3
114.00		1.00	1.30	34.884	38.37	330.47	0.650	0.000	2.00	5.559	3.61	221.8	0.0	211.2
116.00		1.00	1.31	35.012	38.51	326.29	0.650	0.000	2.00	5.479	3.56	219.4	0.0	208.2
117.00	Appurtenance(s)	1.00	1.31	35.075	38.58	324.18	0.650	0.000	1.00	2.709	1.76	108.7	0.0	102.9
118.00		1.00	1.31	35.138	38.65	322.07	0.650	0.000	1.00	2.689	1.75	108.1	0.0	102.2
120.00		1.00	1.32	35.263	38.79	317.84	0.650	0.000	2.00	5.319	3.46	214.6	0.0	202.0
122.00		1.00	1.32	35.386	38.92	313.57	0.650	0.000	2.00	5.239	3.41	212.1	0.0	199.0
124.00		1.00	1.32	35.507	39.06	309.28	0.650	0.000	2.00	5.159	3.35	209.6	0.0	195.9
125.00	Appurtenance(s)	1.00	1.33	35.567	39.12	307.13	0.650	0.000	1.00	2.550	1.66	103.7	0.0	96.8
126.00		1.00	1.33	35.627	39.19	304.97	0.650	0.000	1.00	2.530	1.64	103.1	0.0	96.1
127.00	Appurtenance(s)	1.00	1.33	35.686	39.25	302.81	0.650	0.000	1.00	2.510	1.63	102.5	0.0	95.3
128.00		1.00	1.33	35.745	39.32	300.64	0.650	0.000	1.00	2.490	1.62	101.8	0.0	94.5
129.00	Appurtenance(s)	1.00	1.34	35.804	39.38	298.46	0.650	0.000	1.00	2.470	1.61	101.2	0.0	93.8
130.00		1.00	1.34	35.862	39.45	296.28	0.650	0.000	1.00	2.450	1.59	100.5	0.0	93.0
132.00		1.00	1.34	35.977	39.58	291.90	0.650	0.000	2.00	4.840	3.15	199.2	0.0	183.7
134.00		1.00	1.35	36.091	39.70	287.49	0.650	0.000	2.00	4.760	3.09	196.5	0.0	180.6
136.00		1.00	1.35	36.204	39.82	283.07	0.650	0.000	2.00	4.680	3.04	193.8	0.0	177.6
137.00	Appurtenance(s)	1.00	1.35	36.260	39.89	280.85	0.650	0.000	1.00	2.310	1.50	95.8	0.0	87.6
138.00		1.00	1.35	36.316	39.95	278.63	0.650	0.000	1.00	2.290	1.49	95.1	0.0	86.9
139.00	Top - Section 3	1.00	1.36	36.371	40.01	276.40	0.650	0.000	1.00	2.270	1.48	94.5	0.0	86.1
140.00		1.00	1.36	36.426	40.07	274.16	0.650	0.000	1.00	2.250	1.46	93.8	0.0	64.2
142.00		1.00	1.36	36.535	40.19	269.68	0.650	0.000	2.00	4.440	2.89	185.6	0.0	126.6
144.00		1.00	1.37	36.642	40.31	265.17	0.650	0.000	2.00	4.361	2.83	182.8	0.0	124.3
146.00		1.00	1.37	36.749	40.42	260.65	0.650	0.000	2.00	4.281	2.78	180.0	0.0	122.0
148.00		1.00	1.37	36.854	40.54	256.10	0.650	0.000	2.00	4.201	2.73	177.1	0.0	119.7
149.00	Appurtenance(s)	1.00	1.38	36.907	40.60	253.83	0.650	0.000	1.00	2.070	1.35	87.4	0.0	59.0
								Totals:	**149.00**			**17,881.2**		**31,275.7**

Discrete Appurtenance Forces

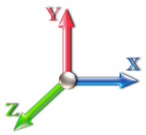
Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 12	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

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	149.00	MX10FRO660	3	36.933	40.626	0.65	0.75	19.32	165.60	0.000	0.500	1255.87	0.00	627.93
2	149.00	Antel BXA-80063/4CF	3	36.985	40.683	0.54	0.75	7.65	35.64	0.000	1.500	497.73	0.00	746.59
3	149.00	RFS DB-T1-6Z-8AB-0Z	1	36.933	40.626	0.50	0.75	2.41	22.68	0.000	0.500	156.78	0.00	78.39
4	149.00	RFS DB-T1-6Z-8AB-0Z	1	36.933	40.626	0.50	0.75	2.41	22.68	0.000	0.500	156.78	0.00	78.39
5	149.00	Low Profile	1	36.907	40.597	1.00	1.00	22.00	1800.00	0.000	0.000	1429.03	0.00	0.00
6	149.00	MX06FRO660-02	3	36.933	40.626	0.65	0.75	19.32	165.60	0.000	0.500	1255.87	0.00	627.93
7	149.00	Mount pipe	12	36.907	40.597	0.75	0.75	17.10	420.48	0.000	0.000	1110.74	0.00	0.00
8	149.00	B2/B66A RRH-BR049	3	36.933	40.626	0.50	0.75	2.82	303.84	0.000	0.500	183.24	0.00	91.62
9	149.00	B5/B13 RRH-BR04C	3	36.933	40.626	0.50	0.75	2.82	253.08	0.000	0.500	183.24	0.00	91.62
10	149.00	RT4401-48A (RRH only)	3	36.933	40.626	0.50	0.75	1.49	66.96	0.000	0.500	97.01	0.00	48.51
11	149.00	HRK12 (Handrail Kit)	1	36.907	40.597	1.00	1.00	8.20	604.80	0.000	0.000	532.64	0.00	0.00
12	149.00	PRK-1245 (kicker kit)	1	36.907	40.597	1.00	1.00	11.40	528.00	0.000	0.000	740.50	0.00	0.00
13	149.00	MT6407-77A	3	36.933	40.626	0.52	0.75	7.39	285.84	0.000	0.500	480.15	0.00	240.08
14	137.00	KRY 112 144/1	3	36.260	39.886	0.56	0.75	1.20	55.44	0.000	0.000	76.46	0.00	0.00
15	137.00	AIR6449 B41	3	36.260	39.886	0.53	0.75	9.03	370.80	0.000	0.000	576.01	0.00	0.00
16	137.00	KRD 9011461-B66A-B2A	3	36.260	39.886	0.65	0.75	12.74	475.92	0.000	0.000	813.25	0.00	0.00
17	137.00	APXVAARR24_43-U-NA2	3	36.260	39.886	0.56	0.75	34.16	460.80	0.000	0.000	2179.69	0.00	0.00
18	137.00	RRUS 4415 B25	3	36.260	39.886	0.50	0.75	2.47	165.60	0.000	0.000	157.78	0.00	0.00
19	137.00	4449 B71 + B12	3	36.260	39.886	0.50	0.75	2.97	263.52	0.000	0.000	189.52	0.00	0.00
20	137.00	Support rail kit - Mods	1	36.260	39.886	1.00	1.00	16.50	600.00	0.000	0.000	1052.99	0.00	0.00
21	137.00	Mount pipe	9	36.260	39.886	0.75	0.75	12.82	315.36	0.000	0.000	818.46	0.00	0.00
22	137.00	Low Profile Platform	1	36.260	39.886	1.00	1.00	22.00	1800.00	0.000	0.000	1403.99	0.00	0.00
23	129.00	AIR 6419 B77G	3	35.804	39.384	0.57	0.75	6.50	237.96	0.000	0.000	409.47	0.00	0.00
24	127.00	Handrail Reinforcement -	1	35.686	39.255	1.00	1.00	10.00	394.80	0.000	0.000	628.07	0.00	0.00
25	127.00	QD8616-7	3	35.686	39.255	0.69	0.75	38.92	245.52	0.000	0.000	2444.21	0.00	0.00
26	127.00	DMP65R-BU8DA	3	35.686	39.255	0.55	0.75	29.35	344.52	0.000	0.000	1843.49	0.00	0.00
27	127.00	RRUS 4449 B5/B12	3	35.686	39.255	0.50	0.75	2.97	255.60	0.000	0.000	186.52	0.00	0.00
28	127.00	Erisson 2012 B29	3	35.686	39.255	0.50	0.75	4.75	213.84	0.000	0.000	298.25	0.00	0.00
29	127.00	DC6-48-60-18-8C-EV	1	35.686	39.255	0.75	0.75	3.58	19.20	0.000	0.000	225.16	0.00	0.00
30	127.00	Collar Mount - Mod	1	35.686	39.255	1.00	1.00	2.50	180.72	0.000	0.000	157.02	0.00	0.00
31	127.00	MTC3607 Platform + HR &	1	35.686	39.255	1.00	1.00	51.70	2695.20	0.000	0.000	3247.15	0.00	0.00
32	127.00	Ericsson RRUS 4478 B14	3	35.686	39.255	0.50	0.75	2.49	213.84	0.000	0.000	156.23	0.00	0.00
33	127.00	Raycap DC6-48-60-18-8F	3	35.686	39.255	0.75	0.75	4.95	114.48	0.000	0.000	310.90	0.00	0.00
34	127.00	Ericsson RRUS 32 RRU	3	35.686	39.255	0.50	0.75	4.99	277.20	0.000	0.000	313.40	0.00	0.00
35	127.00	Kaelus DBCT108F1V92-1	3	35.686	39.255	0.38	0.75	0.79	71.28	0.000	0.000	49.46	0.00	0.00
36	127.00	Ericsson RRUS 4478 B5	3	35.686	39.255	0.50	0.75	2.77	215.64	0.000	0.000	174.22	0.00	0.00
37	127.00	Ericsson RRUS 4415 B25	3	35.686	39.255	0.50	0.75	2.80	158.76	0.000	0.000	176.11	0.00	0.00
38	127.00	Ericsson RRUS 4426 B66	3	35.686	39.255	0.50	0.75	1.73	174.60	0.000	0.000	108.88	0.00	0.00
39	125.00	AIR 6449 B77D	3	35.567	39.124	0.64	0.75	7.90	316.80	0.000	0.000	494.44	0.00	0.00
40	117.00	MC-PK8-DSH	1	35.075	38.583	1.00	1.00	37.59	2072.40	0.000	0.000	2320.52	0.00	0.00
41	117.00	RDIDC-9181-OF-48	1	35.075	38.583	1.00	1.00	2.01	26.28	0.000	0.000	124.08	0.00	0.00
42	117.00	TA08025-B604	3	35.075	38.583	0.50	0.75	2.95	230.04	0.000	0.000	182.40	0.00	0.00
43	117.00	TA08025-B605	3	35.075	38.583	0.50	0.75	2.95	270.00	0.000	0.000	182.40	0.00	0.00
44	117.00	MX08FRO665-21	3	35.075	38.583	0.55	0.75	20.80	232.20	0.000	0.000	1283.78	0.00	0.00
							Totals:		**18,143.52**				**30,663.89**	

Total Applied Force Summary

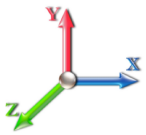
Structure:	CT13075-A-SBA		**Code:**	TIA-222-G	6/24/2022
Site Name:	New London		**Exposure:**	C	
Height:	149.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 13

IES Tower Engineering Solutions

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

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
2.00		256.03	710.95	0.00	0.00
4.00		253.95	705.60	0.00	0.00
6.00		251.87	700.25	0.00	0.00
8.00		249.78	694.90	0.00	0.00
10.00		247.70	689.54	0.00	0.00
12.00		245.62	684.19	0.00	0.00
14.00		243.54	678.84	0.00	0.00
16.00		244.44	673.49	0.00	0.00
18.00		248.41	668.14	0.00	0.00
20.00		251.77	662.79	0.00	0.00
22.00		254.62	657.43	0.00	0.00
24.00		257.03	652.08	0.00	0.00
26.00		259.07	646.73	0.00	0.00
28.00		260.77	641.38	0.00	0.00
30.00		262.18	636.03	0.00	0.00
32.00		263.32	630.67	0.00	0.00
34.00		264.24	625.32	0.00	0.00
36.00		264.93	619.97	0.00	0.00
38.00		265.44	614.62	0.00	0.00
40.00		265.76	609.27	0.00	0.00
42.00		265.92	603.91	0.00	0.00
44.00		265.93	598.56	0.00	0.00
46.00		265.80	593.21	0.00	0.00
47.25		165.72	368.04	0.00	0.00
48.00		100.85	392.58	0.00	0.00
50.00		269.40	1040.05	0.00	0.00
52.00		268.94	1030.11	0.00	0.00
53.25		167.55	638.77	0.00	0.00
54.00		100.32	189.32	0.00	0.00
56.00		267.68	501.70	0.00	0.00
58.00		266.90	497.11	0.00	0.00
60.00		266.02	492.53	0.00	0.00
62.00		265.06	487.94	0.00	0.00
64.00		264.02	483.35	0.00	0.00
66.00		262.89	478.76	0.00	0.00
68.00		261.69	474.18	0.00	0.00
70.00		260.42	469.59	0.00	0.00
72.00		259.07	465.00	0.00	0.00
74.00		257.66	460.42	0.00	0.00
76.00		256.18	455.83	0.00	0.00
78.00		254.65	451.24	0.00	0.00
80.00		253.05	446.65	0.00	0.00
82.00		251.39	442.07	0.00	0.00
84.00		249.68	437.48	0.00	0.00
86.00		247.92	432.89	0.00	0.00
88.00		246.10	428.30	0.00	0.00

Total Applied Force Summary

Structure:	CT13075-A-SBA		**Code:**	TIA-222-G	6/24/2022
Site Name:	New London		**Exposure:**	C	
Height:	149.00 (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

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90.00		244.24	423.72	0.00	0.00
92.00		242.32	419.13	0.00	0.00
94.00		240.36	414.54	0.00	0.00
96.00		238.36	409.95	0.00	0.00
98.00		239.58	641.05	0.00	0.00
100.00		237.50	633.40	0.00	0.00
100.75		88.40	235.56	0.00	0.00
102.00		146.75	179.32	0.00	0.00
104.00		233.21	284.43	0.00	0.00
106.00		231.01	281.37	0.00	0.00
108.00		228.77	278.31	0.00	0.00
110.00		226.49	275.25	0.00	0.00
112.00		224.18	272.19	0.00	0.00
114.00		221.83	269.14	0.00	0.00
116.00		219.44	266.08	0.00	0.00
117.00	(11) attachments	4201.90	2962.81	0.00	0.00
118.00		108.11	129.93	0.00	0.00
120.00		214.57	257.56	0.00	0.00
122.00		212.09	254.50	0.00	0.00
124.00		209.57	251.44	0.00	0.00
125.00	(3) attachments	598.18	441.38	0.00	0.00
126.00		103.10	123.81	0.00	0.00
127.00	(37) attachments	10421.53	5698.25	0.00	0.00
128.00		101.81	117.75	0.00	0.00
129.00	(3) attachments	510.63	354.94	0.00	0.00
130.00		100.51	116.22	0.00	0.00
132.00		199.20	230.14	0.00	0.00
134.00		196.53	227.08	0.00	0.00
136.00		193.84	224.02	0.00	0.00
137.00	(29) attachments	7363.98	4618.30	0.00	0.00
138.00		95.14	97.33	0.00	0.00
139.00		94.46	96.57	0.00	0.00
140.00		93.77	74.62	0.00	0.00
142.00		185.59	147.52	0.00	0.00
144.00		182.79	145.22	0.00	0.00
146.00		179.96	142.93	0.00	0.00
148.00		177.11	140.63	0.00	0.00
149.00	(38) attachments	8166.99	4744.66	0.00	2631.06
	Totals:	**48,545.09**	**53,442.84**	**0.00**	**2,631.06**

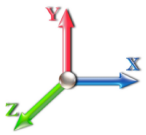
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (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	

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
2.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.017	0.000	22.791	0.00	0.66
2.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.017	0.000	22.791	0.00	0.00
4.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.017	0.000	22.791	0.00	0.66
4.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.017	0.000	22.791	0.00	0.00
6.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.017	0.000	22.791	0.00	0.66
6.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.017	0.000	22.791	0.00	0.00
8.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.018	0.000	22.791	0.00	0.66
8.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	22.791	0.00	0.00
10.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.018	0.000	22.791	0.00	0.66
10.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	22.791	0.00	0.00
12.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.018	0.000	22.791	0.00	0.66
12.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	22.791	0.00	0.00
14.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.018	0.000	22.791	0.00	0.66
14.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	22.791	0.00	0.00
16.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.018	0.000	23.072	0.00	0.66
16.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	23.072	0.00	0.00
18.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.018	0.000	23.652	0.00	0.66
18.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	23.652	0.00	0.00
20.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.018	0.000	24.182	0.00	0.66
20.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	24.182	0.00	0.00
22.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.019	0.000	24.672	0.00	0.66
22.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.019	0.000	24.672	0.00	0.00
24.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.019	0.000	25.128	0.00	0.66
24.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.019	0.000	25.128	0.00	0.00
26.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.019	0.000	25.555	0.00	0.66
26.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.019	0.000	25.555	0.00	0.00
28.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.019	0.000	25.957	0.00	0.66
28.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.019	0.000	25.957	0.00	0.00
30.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.019	0.000	26.337	0.00	0.66
30.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.019	0.000	26.337	0.00	0.00
32.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.020	0.000	26.697	0.00	0.66
32.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.020	0.000	26.697	0.00	0.00
34.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.020	0.000	27.040	0.00	0.66
34.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.020	0.000	27.040	0.00	0.00
36.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.020	0.000	27.367	0.00	0.66
36.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.020	0.000	27.367	0.00	0.00
38.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.020	0.000	27.681	0.00	0.66
38.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.020	0.000	27.681	0.00	0.00
40.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.020	0.000	27.981	0.00	0.66
40.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.020	0.000	27.981	0.00	0.00
42.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.020	0.000	28.270	0.00	0.66
42.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.020	0.000	28.270	0.00	0.00
44.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.021	0.000	28.548	0.00	0.66
44.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.021	0.000	28.548	0.00	0.00
46.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.021	0.000	28.817	0.00	0.66
46.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.021	0.000	28.817	0.00	0.00
47.25	Safety Cable	Yes	1.25	0.000	0.38	0.04	0.00	0.021	0.000	28.980	0.00	0.41

Linear Appurtenance Segment Forces (Factored)

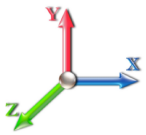
Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
47.25	Step bolts (ladder)	Yes	1.25	0.000	0.63	0.07	0.00	0.021	0.000	28.980	0.00	0.00
48.00	Safety Cable	Yes	0.75	0.000	0.38	0.02	0.00	0.021	0.000	29.076	0.00	0.25
48.00	Step bolts (ladder)	Yes	0.75	0.000	0.63	0.04	0.00	0.021	0.000	29.076	0.00	0.00
50.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.021	0.000	29.327	0.00	0.66
50.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.021	0.000	29.327	0.00	0.00
52.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.022	0.000	29.570	0.00	0.66
52.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.022	0.000	29.570	0.00	0.00
53.25	Safety Cable	Yes	1.25	0.000	0.38	0.04	0.00	0.022	0.000	29.719	0.00	0.41
53.25	Step bolts (ladder)	Yes	1.25	0.000	0.63	0.07	0.00	0.022	0.000	29.719	0.00	0.00
54.00	Safety Cable	Yes	0.75	0.000	0.38	0.02	0.00	0.021	0.000	29.806	0.00	0.25
54.00	Step bolts (ladder)	Yes	0.75	0.000	0.63	0.04	0.00	0.021	0.000	29.806	0.00	0.00
56.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.022	0.000	30.035	0.00	0.66
56.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.022	0.000	30.035	0.00	0.00
58.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.022	0.000	30.258	0.00	0.66
58.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.022	0.000	30.258	0.00	0.00
60.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.022	0.000	30.475	0.00	0.66
60.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.022	0.000	30.475	0.00	0.00
62.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.022	0.000	30.686	0.00	0.66
62.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.022	0.000	30.686	0.00	0.00
64.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.023	0.000	30.892	0.00	0.66
64.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.023	0.000	30.892	0.00	0.00
66.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.023	0.000	31.092	0.00	0.66
66.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.023	0.000	31.092	0.00	0.00
68.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.023	0.000	31.288	0.00	0.66
68.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.023	0.000	31.288	0.00	0.00
70.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.023	0.000	31.480	0.00	0.66
70.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.023	0.000	31.480	0.00	0.00
72.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.024	0.000	31.667	0.00	0.66
72.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.024	0.000	31.667	0.00	0.00
74.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.024	0.000	31.850	0.00	0.66
74.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.024	0.000	31.850	0.00	0.00
76.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.024	0.000	32.030	0.00	0.66
76.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.024	0.000	32.030	0.00	0.00
78.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.024	0.000	32.205	0.00	0.66
78.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.024	0.000	32.205	0.00	0.00
80.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.025	0.000	32.377	0.00	0.66
80.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.025	0.000	32.377	0.00	0.00
82.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.025	0.000	32.546	0.00	0.66
82.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.025	0.000	32.546	0.00	0.00
84.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.025	0.000	32.712	0.00	0.66
84.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.025	0.000	32.712	0.00	0.00
86.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.026	0.000	32.874	0.00	0.66
86.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.026	0.000	32.874	0.00	0.00
88.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.026	0.000	33.034	0.00	0.66
88.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.026	0.000	33.034	0.00	0.00
90.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.026	0.000	33.190	0.00	0.66
90.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.026	0.000	33.190	0.00	0.00

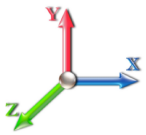
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (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	

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
92.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.026	0.000	33.344	0.00	0.66
92.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.026	0.000	33.344	0.00	0.00
94.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.027	0.000	33.496	0.00	0.66
94.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.027	0.000	33.496	0.00	0.00
96.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.027	0.000	33.644	0.00	0.66
96.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.027	0.000	33.644	0.00	0.00
98.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.028	0.000	33.791	0.00	0.66
98.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.028	0.000	33.791	0.00	0.00
100.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.028	0.000	33.935	0.00	0.66
100.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.028	0.000	33.935	0.00	0.00
100.75	Safety Cable	Yes	0.75	0.000	0.38	0.02	0.00	0.028	0.000	33.988	0.00	0.25
100.75	Step bolts (ladder)	Yes	0.75	0.000	0.63	0.04	0.00	0.028	0.000	33.988	0.00	0.00
102.00	Safety Cable	Yes	1.25	0.000	0.38	0.04	0.00	0.028	0.000	34.077	0.00	0.41
102.00	Step bolts (ladder)	Yes	1.25	0.000	0.63	0.07	0.00	0.028	0.000	34.077	0.00	0.00
104.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.028	0.000	34.216	0.00	0.66
104.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.028	0.000	34.216	0.00	0.00
106.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.029	0.000	34.354	0.00	0.66
106.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.029	0.000	34.354	0.00	0.00
108.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.029	0.000	34.489	0.00	0.66
108.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.029	0.000	34.489	0.00	0.00
110.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.029	0.000	34.623	0.00	0.66
110.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.029	0.000	34.623	0.00	0.00
112.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.030	0.000	34.754	0.00	0.66
112.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.030	0.000	34.754	0.00	0.00
114.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.030	0.000	34.884	0.00	0.66
114.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.030	0.000	34.884	0.00	0.00
116.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.031	0.000	35.012	0.00	0.66
116.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.031	0.000	35.012	0.00	0.00
117.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.031	0.000	35.075	0.00	0.33
117.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.031	0.000	35.075	0.00	0.00
118.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.031	0.000	35.138	0.00	0.33
118.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.031	0.000	35.138	0.00	0.00
120.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.032	0.000	35.263	0.00	0.66
120.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.032	0.000	35.263	0.00	0.00
122.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.032	0.000	35.386	0.00	0.66
122.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.032	0.000	35.386	0.00	0.00
124.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.033	0.000	35.507	0.00	0.66
124.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.033	0.000	35.507	0.00	0.00
125.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.033	0.000	35.567	0.00	0.33
125.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.033	0.000	35.567	0.00	0.00
126.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.033	0.000	35.627	0.00	0.33
126.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.033	0.000	35.627	0.00	0.00
127.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.034	0.000	35.686	0.00	0.33
127.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.034	0.000	35.686	0.00	0.00
128.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.034	0.000	35.745	0.00	0.33
128.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.034	0.000	35.745	0.00	0.00
129.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.034	0.000	35.804	0.00	0.33

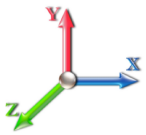
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (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	

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
129.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.034	0.000	35.804	0.00	0.00
130.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.034	0.000	35.862	0.00	0.33
130.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.034	0.000	35.862	0.00	0.00
132.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.035	0.000	35.977	0.00	0.66
132.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.035	0.000	35.977	0.00	0.00
134.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.035	0.000	36.091	0.00	0.66
134.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.035	0.000	36.091	0.00	0.00
136.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.036	0.000	36.204	0.00	0.66
136.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.036	0.000	36.204	0.00	0.00
137.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.036	0.000	36.260	0.00	0.33
137.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.036	0.000	36.260	0.00	0.00
138.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.037	0.000	36.316	0.00	0.33
138.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.037	0.000	36.316	0.00	0.00
139.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.037	0.000	36.371	0.00	0.33
139.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.037	0.000	36.371	0.00	0.00
140.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.037	0.000	36.426	0.00	0.33
140.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.037	0.000	36.426	0.00	0.00
142.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.038	0.000	36.535	0.00	0.66
142.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.038	0.000	36.535	0.00	0.00
144.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.039	0.000	36.642	0.00	0.66
144.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.039	0.000	36.642	0.00	0.00
146.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.039	0.000	36.749	0.00	0.66
146.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.039	0.000	36.749	0.00	0.00
148.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.040	0.000	36.854	0.00	0.66
148.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.040	0.000	36.854	0.00	0.00
149.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.041	0.000	36.907	0.00	0.33
149.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.041	0.000	36.907	0.00	0.00
										Totals:	**0.0**	**48.8**

Calculated Forces

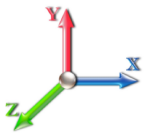
Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

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	-53.40	-48.59	0.00	-5603.3	0.00	5603.38	5451.60	2725.80	12956.4	6487.84	0.00	0.000	0.000	0.874
2.00	-52.61	-48.42	0.00	-5506.2	0.00	5506.21	5423.14	2711.57	12782.7	6400.90	0.02	-0.093	0.000	0.870
4.00	-51.83	-48.25	0.00	-5409.3	0.00	5409.37	5394.41	2697.20	12609.6	6314.20	0.08	-0.187	0.000	0.867
6.00	-51.05	-48.08	0.00	-5312.8	0.00	5312.87	5365.42	2682.71	12437.0	6227.76	0.18	-0.282	0.000	0.863
8.00	-50.28	-47.91	0.00	-5216.7	0.00	5216.72	5336.17	2668.08	12264.9	6141.58	0.32	-0.377	0.000	0.859
10.00	-49.51	-47.74	0.00	-5120.9	0.00	5120.90	5306.65	2653.32	12093.3	6055.68	0.50	-0.472	0.000	0.855
12.00	-48.75	-47.57	0.00	-5025.4	0.00	5025.42	5276.87	2638.43	11922.3	5970.05	0.72	-0.569	0.000	0.851
14.00	-47.99	-47.40	0.00	-4930.2	0.00	4930.29	5246.82	2623.41	11751.9	5884.71	0.98	-0.666	0.000	0.847
16.00	-47.24	-47.23	0.00	-4835.4	0.00	4835.49	5216.51	2608.26	11582.1	5799.67	1.28	-0.764	0.000	0.843
18.00	-46.49	-47.05	0.00	-4741.0	0.00	4741.03	5185.94	2592.97	11412.8	5714.93	1.62	-0.862	0.000	0.839
20.00	-45.75	-46.87	0.00	-4646.9	0.00	4646.93	5155.10	2577.55	11244.2	5630.50	2.00	-0.961	0.000	0.835
22.00	-45.02	-46.68	0.00	-4553.2	0.00	4553.20	5124.00	2562.00	11076.3	5546.38	2.43	-1.061	0.000	0.830
24.00	-44.29	-46.49	0.00	-4459.8	0.00	4459.84	5092.64	2546.32	10908.9	5462.60	2.89	-1.161	0.000	0.825
26.00	-43.57	-46.29	0.00	-4366.8	0.00	4366.86	5061.01	2530.51	10742.3	5379.14	3.40	-1.262	0.000	0.821
28.00	-42.85	-46.09	0.00	-4274.2	0.00	4274.28	5029.12	2514.56	10576.3	5296.03	3.95	-1.363	0.000	0.816
30.00	-42.14	-45.89	0.00	-4182.0	0.00	4182.09	4996.96	2498.48	10411.0	5213.26	4.55	-1.465	0.000	0.811
32.00	-41.43	-45.69	0.00	-4090.3	0.00	4090.31	4964.54	2482.27	10246.4	5130.86	5.18	-1.568	0.000	0.806
34.00	-40.73	-45.48	0.00	-3998.9	0.00	3998.94	4931.86	2465.93	10082.6	5048.81	5.86	-1.671	0.000	0.801
36.00	-40.04	-45.27	0.00	-3907.9	0.00	3907.99	4898.91	2449.45	9919.54	4967.14	6.58	-1.775	0.000	0.795
38.00	-39.35	-45.05	0.00	-3817.4	0.00	3817.46	4865.70	2432.85	9757.20	4885.85	7.35	-1.880	0.000	0.790
40.00	-38.67	-44.84	0.00	-3727.3	0.00	3727.35	4832.22	2416.11	9595.63	4804.95	8.16	-1.984	0.000	0.784
42.00	-37.99	-44.62	0.00	-3637.6	0.00	3637.67	4798.48	2399.24	9434.86	4724.44	9.02	-2.090	0.000	0.778
44.00	-37.32	-44.40	0.00	-3548.4	0.00	3548.43	4764.48	2382.24	9274.89	4644.34	9.91	-2.196	0.000	0.772
46.00	-36.67	-44.17	0.00	-3459.6	0.00	3459.63	4730.21	2365.11	9115.74	4564.64	10.86	-2.302	0.000	0.766
47.25	-36.27	-44.02	0.00	-3404.4	0.00	3404.42	4708.66	2354.33	9016.69	4515.05	11.47	-2.369	0.000	0.762
48.00	-35.83	-43.95	0.00	-3371.4	0.00	3371.40	4695.68	2347.84	8957.42	4485.37	11.84	-2.410	0.000	0.760
50.00	-34.72	-43.70	0.00	-3283.5	0.00	3283.50	4660.89	2330.44	8799.96	4406.52	12.88	-2.517	0.000	0.753
52.00	-33.63	-43.44	0.00	-3196.0	0.00	3196.09	4625.83	2312.91	8643.36	4328.11	13.96	-2.625	0.000	0.746
53.25	-32.96	-43.27	0.00	-3141.7	0.00	3141.79	3818.32	1909.16	7226.08	3618.41	14.65	-2.693	0.000	0.877
54.00	-32.72	-43.21	0.00	-3109.3	0.00	3109.34	3808.46	1904.23	7179.51	3595.09	15.08	-2.734	0.000	0.874
56.00	-32.14	-42.99	0.00	-3022.9	0.00	3022.91	3782.00	1891.00	7055.71	3533.10	16.25	-2.854	0.000	0.865
58.00	-31.57	-42.76	0.00	-2936.9	0.00	2936.94	3755.27	1877.63	6932.45	3471.38	17.47	-2.975	0.000	0.855
60.00	-31.00	-42.54	0.00	-2851.4	0.00	2851.42	3728.27	1864.14	6809.75	3409.94	18.74	-3.095	0.000	0.845
62.00	-30.44	-42.31	0.00	-2766.3	0.00	2766.35	3701.01	1850.51	6687.63	3348.79	20.07	-3.216	0.000	0.835
64.00	-29.88	-42.08	0.00	-2681.7	0.00	2681.73	3673.49	1836.75	6566.11	3287.93	21.44	-3.337	0.000	0.824
66.00	-29.33	-41.85	0.00	-2597.5	0.00	2597.57	3645.71	1822.85	6445.19	3227.39	22.86	-3.458	0.000	0.813
68.00	-28.78	-41.62	0.00	-2513.8	0.00	2513.87	3617.66	1808.83	6324.90	3167.15	24.34	-3.579	0.000	0.802
70.00	-28.24	-41.39	0.00	-2430.6	0.00	2430.63	3589.34	1794.67	6205.25	3107.24	25.86	-3.700	0.000	0.791
72.00	-27.71	-41.16	0.00	-2347.8	0.00	2347.84	3560.76	1780.38	6086.26	3047.65	27.44	-3.821	0.000	0.779
74.00	-27.18	-40.93	0.00	-2265.5	0.00	2265.52	3531.92	1765.96	5967.94	2988.40	29.06	-3.942	0.000	0.766
76.00	-26.66	-40.70	0.00	-2183.6	0.00	2183.66	3502.82	1751.41	5850.30	2929.50	30.74	-4.063	0.000	0.754
78.00	-26.14	-40.47	0.00	-2102.2	0.00	2102.26	3473.45	1736.72	5733.37	2870.94	32.47	-4.183	0.000	0.740
80.00	-25.63	-40.24	0.00	-2021.3	0.00	2021.32	3443.81	1721.91	5617.15	2812.75	34.24	-4.303	0.000	0.727
82.00	-25.13	-40.00	0.00	-1940.8	0.00	1940.85	3413.92	1706.96	5501.67	2754.92	36.07	-4.422	0.000	0.712
84.00	-24.63	-39.77	0.00	-1860.8	0.00	1860.85	3383.76	1691.88	5386.93	2697.47	37.95	-4.541	0.000	0.698
86.00	-24.14	-39.54	0.00	-1781.3	0.00	1781.30	3353.33	1676.67	5272.96	2640.40	39.87	-4.658	0.000	0.682
88.00	-23.65	-39.31	0.00	-1702.2	0.00	1702.22	3322.64	1661.32	5159.77	2583.72	41.85	-4.775	0.000	0.667
90.00	-23.17	-39.08	0.00	-1623.6	0.00	1623.61	3291.69	1645.84	5047.37	2527.44	43.87	-4.891	0.000	0.650

Calculated Forces

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (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

92.00	-22.70	-38.84	0.00	-1545.4	0.00	1545.46	3260.47	1630.24	4935.79	2471.56	45.95	-5.006	0.000	0.633
94.00	-22.23	-38.61	0.00	-1467.7	0.00	1467.78	3223.46	1611.73	4816.76	2411.96	48.07	-5.119	0.000	0.616
96.00	-21.77	-38.38	0.00	-1390.5	0.00	1390.56	3181.72	1590.86	4692.22	2349.60	50.23	-5.231	0.000	0.599
98.00	-21.08	-38.12	0.00	-1313.8	0.00	1313.80	3139.99	1570.00	4569.31	2288.05	52.44	-5.341	0.000	0.582
100.00	-20.42	-37.85	0.00	-1237.5	0.00	1237.56	3098.26	1549.13	4448.03	2227.32	54.70	-5.448	0.000	0.563
100.75	-20.16	-37.76	0.00	-1209.1	0.00	1209.17	1860.42	930.21	2714.89	1359.46	55.56	-5.489	0.000	0.902
102.00	-19.93	-37.63	0.00	-1161.9	0.00	1161.97	1851.10	925.55	2678.69	1341.34	57.00	-5.555	0.000	0.879
104.00	-19.57	-37.42	0.00	-1086.7	0.00	1086.71	1835.98	917.99	2620.93	1312.41	59.36	-5.701	0.000	0.840
106.00	-19.22	-37.21	0.00	-1011.8	0.00	1011.86	1820.60	910.30	2563.39	1283.60	61.78	-5.844	0.000	0.801
108.00	-18.88	-37.00	0.00	-937.44	0.00	937.44	1804.95	902.48	2506.08	1254.90	64.25	-5.981	0.000	0.759
110.00	-18.55	-36.79	0.00	-863.44	0.00	863.44	1789.04	894.52	2449.03	1226.33	66.78	-6.114	0.000	0.716
112.00	-18.22	-36.58	0.00	-789.86	0.00	789.86	1772.87	886.43	2392.24	1197.90	69.37	-6.241	0.000	0.671
114.00	-17.91	-36.36	0.00	-716.71	0.00	716.71	1756.43	878.22	2335.73	1169.60	72.01	-6.362	0.000	0.625
116.00	-17.61	-36.14	0.00	-643.99	0.00	643.99	1739.73	869.86	2279.52	1141.45	74.69	-6.476	0.000	0.576
117.00	-15.12	-31.64	0.00	-607.85	0.00	607.85	1731.28	865.64	2251.53	1127.44	76.05	-6.531	0.000	0.549
118.00	-14.96	-31.54	0.00	-576.21	0.00	576.21	1722.76	861.38	2223.62	1113.46	77.42	-6.584	0.000	0.528
120.00	-14.67	-31.32	0.00	-513.12	0.00	513.12	1705.53	852.77	2168.05	1085.64	80.20	-6.683	0.000	0.483
122.00	-14.40	-31.11	0.00	-450.48	0.00	450.48	1688.04	844.02	2112.82	1057.98	83.01	-6.776	0.000	0.436
124.00	-14.14	-30.88	0.00	-388.27	0.00	388.27	1670.28	835.14	2057.95	1030.51	85.86	-6.860	0.000	0.387
125.00	-13.75	-30.25	0.00	-357.38	0.00	357.38	1661.30	830.65	2030.66	1016.84	87.30	-6.899	0.000	0.361
126.00	-13.63	-30.14	0.00	-327.14	0.00	327.14	1652.26	826.13	2003.46	1003.22	88.75	-6.936	0.000	0.336
127.00	-9.22	-19.11	0.00	-297.00	0.00	297.00	1643.15	821.58	1976.36	989.65	90.20	-6.970	0.000	0.306
128.00	-9.11	-19.00	0.00	-277.90	0.00	277.90	1633.98	816.99	1949.35	976.13	91.66	-7.003	0.000	0.291
129.00	-8.81	-18.45	0.00	-258.90	0.00	258.90	1624.73	812.37	1922.45	962.65	93.13	-7.034	0.000	0.275
130.00	-8.69	-18.34	0.00	-240.45	0.00	240.45	1615.43	807.71	1895.65	949.24	94.60	-7.063	0.000	0.259
132.00	-8.47	-18.12	0.00	-203.77	0.00	203.77	1596.61	798.31	1842.37	922.56	97.57	-7.117	0.000	0.227
134.00	-8.26	-17.91	0.00	-167.52	0.00	167.52	1577.54	788.77	1789.53	896.09	100.55	-7.165	0.000	0.193
136.00	-8.05	-17.69	0.00	-131.70	0.00	131.70	1558.20	779.10	1737.14	869.86	103.56	-7.205	0.000	0.157
137.00	-4.39	-9.81	0.00	-114.01	0.00	114.01	1548.43	774.21	1711.12	856.83	105.06	-7.222	0.000	0.136
138.00	-4.30	-9.70	0.00	-104.21	0.00	104.21	1538.59	769.30	1685.21	843.86	106.57	-7.238	0.000	0.126
139.00	-4.22	-9.60	0.00	-94.51	0.00	94.51	1528.69	764.34	1659.43	830.95	108.09	-7.253	0.000	0.117
139.00	-4.22	-9.60	0.00	-94.51	0.00	94.51	1044.31	522.16	1138.99	570.34	108.09	-7.253	0.000	0.170
140.00	-4.15	-9.50	0.00	-84.91	0.00	84.91	1038.69	519.35	1122.71	562.19	109.60	-7.267	0.000	0.155
142.00	-4.02	-9.29	0.00	-65.92	0.00	65.92	1027.26	513.63	1090.28	545.95	112.65	-7.298	0.000	0.125
144.00	-3.90	-9.10	0.00	-47.33	0.00	47.33	1015.57	507.78	1058.02	529.79	115.70	-7.323	0.000	0.093
146.00	-3.78	-8.90	0.00	-29.14	0.00	29.14	1003.61	501.80	1025.94	513.73	118.77	-7.341	0.000	0.061
148.00	-3.66	-8.71	0.00	-11.34	0.00	11.34	991.38	495.69	994.07	497.78	121.84	-7.351	0.000	0.027
149.00	0.00	-8.17	0.00	-2.63	0.00	2.63	985.17	492.59	978.22	489.84	123.37	-7.353	0.000	0.006

Wind Loading - Shaft

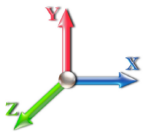
Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 21	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

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	477.24	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.85	22.791	25.07	473.37	0.650	0.000	2.00	9.820	6.38	256.0	0.0	489.8
4.00		1.00	0.85	22.791	25.07	469.51	0.650	0.000	2.00	9.740	6.33	253.9	0.0	485.8
6.00		1.00	0.85	22.791	25.07	465.64	0.650	0.000	2.00	9.660	6.28	251.9	0.0	481.7
8.00		1.00	0.85	22.791	25.07	461.78	0.650	0.000	2.00	9.580	6.23	249.8	0.0	477.7
10.00		1.00	0.85	22.791	25.07	457.91	0.650	0.000	2.00	9.500	6.18	247.7	0.0	473.7
12.00		1.00	0.85	22.791	25.07	454.04	0.650	0.000	2.00	9.421	6.12	245.6	0.0	469.7
14.00		1.00	0.85	22.791	25.07	450.18	0.650	0.000	2.00	9.341	6.07	243.5	0.0	465.7
16.00		1.00	0.86	23.072	25.38	449.06	0.650	0.000	2.00	9.261	6.02	244.4	0.0	461.7
18.00		1.00	0.88	23.652	26.02	450.72	0.650	0.000	2.00	9.181	5.97	248.4	0.0	457.7
20.00		1.00	0.90	24.182	26.60	451.77	0.650	0.000	2.00	9.101	5.92	251.8	0.0	453.6
22.00		1.00	0.92	24.672	27.14	452.30	0.650	0.000	2.00	9.021	5.86	254.6	0.0	449.6
24.00		1.00	0.94	25.128	27.64	452.40	0.650	0.000	2.00	8.941	5.81	257.0	0.0	445.6
26.00		1.00	0.95	25.555	28.11	452.14	0.650	0.000	2.00	8.861	5.76	259.1	0.0	441.6
28.00		1.00	0.97	25.957	28.55	451.55	0.650	0.000	2.00	8.782	5.71	260.8	0.0	437.6
30.00		1.00	0.98	26.337	28.97	450.69	0.650	0.000	2.00	8.702	5.66	262.2	0.0	433.6
32.00		1.00	1.00	26.697	29.37	449.58	0.650	0.000	2.00	8.622	5.60	263.3	0.0	429.6
34.00		1.00	1.01	27.040	29.74	448.24	0.650	0.000	2.00	8.542	5.55	264.2	0.0	425.6
36.00		1.00	1.02	27.367	30.10	446.71	0.650	0.000	2.00	8.462	5.50	264.9	0.0	421.5
38.00		1.00	1.03	27.681	30.45	445.00	0.650	0.000	2.00	8.382	5.45	265.4	0.0	417.5
40.00		1.00	1.04	27.981	30.78	443.13	0.650	0.000	2.00	8.302	5.40	265.8	0.0	413.5
42.00		1.00	1.05	28.270	31.10	441.10	0.650	0.000	2.00	8.222	5.34	265.9	0.0	409.5
44.00		1.00	1.06	28.548	31.40	438.94	0.650	0.000	2.00	8.143	5.29	265.9	0.0	405.5
46.00		1.00	1.07	28.817	31.70	436.65	0.650	0.000	2.00	8.063	5.24	265.8	0.0	401.5
47.25	Bot - Section 2	1.00	1.08	28.980	31.88	435.16	0.650	0.000	1.25	4.999	3.25	165.7	0.0	248.9
48.00		1.00	1.08	29.076	31.98	434.25	0.650	0.000	0.75	3.032	1.97	100.8	0.0	278.1
50.00		1.00	1.09	29.327	32.26	431.73	0.650	0.000	2.00	8.030	5.22	269.4	0.0	736.6
52.00		1.00	1.10	29.570	32.53	429.11	0.650	0.000	2.00	7.950	5.17	268.9	0.0	729.1
53.25	Top - Section 1	1.00	1.11	29.719	32.69	427.43	0.650	0.000	1.25	4.928	3.20	167.5	0.0	451.9
54.00		1.00	1.11	29.806	32.79	433.43	0.650	0.000	0.75	2.942	1.91	100.3	0.0	125.7
56.00		1.00	1.12	30.035	33.04	430.65	0.650	0.000	2.00	7.790	5.06	267.7	0.0	332.8
58.00		1.00	1.13	30.258	33.28	427.79	0.650	0.000	2.00	7.710	5.01	266.9	0.0	329.4
60.00		1.00	1.14	30.475	33.52	424.85	0.650	0.000	2.00	7.631	4.96	266.0	0.0	326.0
62.00		1.00	1.14	30.686	33.75	421.83	0.650	0.000	2.00	7.551	4.91	265.1	0.0	322.5
64.00		1.00	1.15	30.892	33.98	418.74	0.650	0.000	2.00	7.471	4.86	264.0	0.0	319.1
66.00		1.00	1.16	31.092	34.20	415.59	0.650	0.000	2.00	7.391	4.80	262.9	0.0	315.6
68.00		1.00	1.17	31.288	34.42	412.36	0.650	0.000	2.00	7.311	4.75	261.7	0.0	312.2
70.00		1.00	1.17	31.480	34.63	409.08	0.650	0.000	2.00	7.231	4.70	260.4	0.0	308.8
72.00		1.00	1.18	31.667	34.83	405.74	0.650	0.000	2.00	7.151	4.65	259.1	0.0	305.3
74.00		1.00	1.19	31.850	35.04	402.34	0.650	0.000	2.00	7.071	4.60	257.7	0.0	301.9
76.00		1.00	1.19	32.030	35.23	398.89	0.650	0.000	2.00	6.992	4.54	256.2	0.0	298.4
78.00		1.00	1.20	32.205	35.43	395.38	0.650	0.000	2.00	6.912	4.49	254.6	0.0	295.0
80.00		1.00	1.21	32.377	35.62	391.83	0.650	0.000	2.00	6.832	4.44	253.0	0.0	291.6
82.00		1.00	1.21	32.546	35.80	388.23	0.650	0.000	2.00	6.752	4.39	251.4	0.0	288.1
84.00		1.00	1.22	32.712	35.98	384.59	0.650	0.000	2.00	6.672	4.34	249.7	0.0	284.7
86.00		1.00	1.23	32.874	36.16	380.90	0.650	0.000	2.00	6.592	4.28	247.9	0.0	281.2
88.00		1.00	1.23	33.034	36.34	377.17	0.650	0.000	2.00	6.512	4.23	246.1	0.0	277.8

Wind Loading - Shaft

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (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	

90.00	1.00	1.24	33.190	36.51	373.39	0.650	0.000	2.00	6.432	4.18	244.2	0.0	274.3
92.00	1.00	1.24	33.344	36.68	369.58	0.650	0.000	2.00	6.353	4.13	242.3	0.0	270.9
94.00	1.00	1.25	33.496	36.85	365.73	0.650	0.000	2.00	6.273	4.08	240.4	0.0	267.5
96.00 Bot - Section 3	1.00	1.25	33.644	37.01	361.85	0.650	0.000	2.00	6.193	4.03	238.4	0.0	264.0
98.00	1.00	1.26	33.791	37.17	357.93	0.650	0.000	2.00	6.198	4.03	239.6	0.0	437.3
100.00	1.00	1.27	33.935	37.33	353.97	0.650	0.000	2.00	6.118	3.98	237.5	0.0	431.6
100.75 Top - Section 2	1.00	1.27	33.988	37.39	352.48	0.650	0.000	0.75	2.274	1.48	88.4	0.0	160.4
102.00	1.00	1.27	34.077	37.48	354.99	0.650	0.000	1.25	3.764	2.45	146.7	0.0	107.3
104.00	1.00	1.28	34.216	37.64	350.98	0.650	0.000	2.00	5.958	3.87	233.2	0.0	169.9
106.00	1.00	1.28	34.354	37.79	346.94	0.650	0.000	2.00	5.878	3.82	231.0	0.0	167.6
108.00	1.00	1.29	34.489	37.94	342.87	0.650	0.000	2.00	5.798	3.77	228.8	0.0	165.3
110.00	1.00	1.29	34.623	38.08	338.76	0.650	0.000	2.00	5.718	3.72	226.5	0.0	163.0
112.00	1.00	1.30	34.754	38.23	334.63	0.650	0.000	2.00	5.638	3.67	224.2	0.0	160.7
114.00	1.00	1.30	34.884	38.37	330.47	0.650	0.000	2.00	5.559	3.61	221.8	0.0	158.4
116.00	1.00	1.31	35.012	38.51	326.29	0.650	0.000	2.00	5.479	3.56	219.4	0.0	156.1
117.00 Appurtenance(s)	1.00	1.31	35.075	38.58	324.18	0.650	0.000	1.00	2.709	1.76	108.7	0.0	77.2
118.00	1.00	1.31	35.138	38.65	322.07	0.650	0.000	1.00	2.689	1.75	108.1	0.0	76.6
120.00	1.00	1.32	35.263	38.79	317.84	0.650	0.000	2.00	5.319	3.46	214.6	0.0	151.5
122.00	1.00	1.32	35.386	38.92	313.57	0.650	0.000	2.00	5.239	3.41	212.1	0.0	149.2
124.00	1.00	1.32	35.507	39.06	309.28	0.650	0.000	2.00	5.159	3.35	209.6	0.0	146.9
125.00 Appurtenance(s)	1.00	1.33	35.567	39.12	307.13	0.650	0.000	1.00	2.550	1.66	103.7	0.0	72.6
126.00	1.00	1.33	35.627	39.19	304.97	0.650	0.000	1.00	2.530	1.64	103.1	0.0	72.0
127.00 Appurtenance(s)	1.00	1.33	35.686	39.25	302.81	0.650	0.000	1.00	2.510	1.63	102.5	0.0	71.5
128.00	1.00	1.33	35.745	39.32	300.64	0.650	0.000	1.00	2.490	1.62	101.8	0.0	70.9
129.00 Appurtenance(s)	1.00	1.34	35.804	39.38	298.46	0.650	0.000	1.00	2.470	1.61	101.2	0.0	70.3
130.00	1.00	1.34	35.862	39.45	296.28	0.650	0.000	1.00	2.450	1.59	100.5	0.0	69.7
132.00	1.00	1.34	35.977	39.58	291.90	0.650	0.000	2.00	4.840	3.15	199.2	0.0	137.8
134.00	1.00	1.35	36.091	39.70	287.49	0.650	0.000	2.00	4.760	3.09	196.5	0.0	135.5
136.00	1.00	1.35	36.204	39.82	283.07	0.650	0.000	2.00	4.680	3.04	193.8	0.0	133.2
137.00 Appurtenance(s)	1.00	1.35	36.260	39.89	280.85	0.650	0.000	1.00	2.310	1.50	95.8	0.0	65.7
138.00	1.00	1.35	36.316	39.95	278.63	0.650	0.000	1.00	2.290	1.49	95.1	0.0	65.2
139.00 Top - Section 3	1.00	1.36	36.371	40.01	276.40	0.650	0.000	1.00	2.270	1.48	94.5	0.0	64.6
140.00	1.00	1.36	36.426	40.07	274.16	0.650	0.000	1.00	2.250	1.46	93.8	0.0	48.1
142.00	1.00	1.36	36.535	40.19	269.68	0.650	0.000	2.00	4.440	2.89	185.6	0.0	95.0
144.00	1.00	1.37	36.642	40.31	265.17	0.650	0.000	2.00	4.361	2.83	182.8	0.0	93.2
146.00	1.00	1.37	36.749	40.42	260.65	0.650	0.000	2.00	4.281	2.78	180.0	0.0	91.5
148.00	1.00	1.37	36.854	40.54	256.10	0.650	0.000	2.00	4.201	2.73	177.1	0.0	89.8
149.00 Appurtenance(s)	1.00	1.38	36.907	40.60	253.83	0.650	0.000	1.00	2.070	1.35	87.4	0.0	44.3
							Totals:	**149.00**			**17,881.2**		**23,456.8**

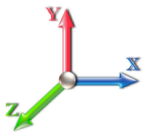
Discrete Appurtenance Forces

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (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	

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

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	149.00	MX10FRO660	3	36.933	40.626	0.65	0.75	19.32	124.20	0.000	0.500	1255.87	0.00	627.93
2	149.00	Antel BXA-80063/4CF	3	36.985	40.683	0.54	0.75	7.65	26.73	0.000	1.500	497.73	0.00	746.59
3	149.00	RFS DB-T1-6Z-8AB-0Z	1	36.933	40.626	0.50	0.75	2.41	17.01	0.000	0.500	156.78	0.00	78.39
4	149.00	RFS DB-T1-6Z-8AB-0Z	1	36.933	40.626	0.50	0.75	2.41	17.01	0.000	0.500	156.78	0.00	78.39
5	149.00	Low Profile	1	36.907	40.597	1.00	1.00	22.00	1350.00	0.000	0.000	1429.03	0.00	0.00
6	149.00	MX06FRO660-02	3	36.933	40.626	0.65	0.75	19.32	124.20	0.000	0.500	1255.87	0.00	627.93
7	149.00	Mount pipe	12	36.907	40.597	0.75	0.75	17.10	315.36	0.000	0.000	1110.74	0.00	0.00
8	149.00	B2/B66A RRH-BR049	3	36.933	40.626	0.50	0.75	2.82	227.88	0.000	0.500	183.24	0.00	91.62
9	149.00	B5/B13 RRH-BR04C	3	36.933	40.626	0.50	0.75	2.82	189.81	0.000	0.500	183.24	0.00	91.62
10	149.00	RT4401-48A (RRH only)	3	36.933	40.626	0.50	0.75	1.49	50.22	0.000	0.500	97.01	0.00	48.51
11	149.00	HRK12 (Handrail Kit)	1	36.907	40.597	1.00	1.00	8.20	453.60	0.000	0.000	532.64	0.00	0.00
12	149.00	PRK-1245 (kicker kit)	1	36.907	40.597	1.00	1.00	11.40	396.00	0.000	0.000	740.50	0.00	0.00
13	149.00	MT6407-77A	3	36.933	40.626	0.52	0.75	7.39	214.38	0.000	0.500	480.15	0.00	240.08
14	137.00	KRY 112 144/1	3	36.260	39.886	0.56	0.75	1.20	41.58	0.000	0.000	76.46	0.00	0.00
15	137.00	AIR6449 B41	3	36.260	39.886	0.53	0.75	9.03	278.10	0.000	0.000	576.01	0.00	0.00
16	137.00	KRD 9011461-B66A-B2A	3	36.260	39.886	0.65	0.75	12.74	356.94	0.000	0.000	813.25	0.00	0.00
17	137.00	APXVAARR24_43-U-NA2	3	36.260	39.886	0.56	0.75	34.16	345.60	0.000	0.000	2179.69	0.00	0.00
18	137.00	RRUS 4415 B25	3	36.260	39.886	0.50	0.75	2.47	124.20	0.000	0.000	157.78	0.00	0.00
19	137.00	4449 B71 + B12	3	36.260	39.886	0.50	0.75	2.97	197.64	0.000	0.000	189.52	0.00	0.00
20	137.00	Support rail kit - Mods	1	36.260	39.886	1.00	1.00	16.50	450.00	0.000	0.000	1052.99	0.00	0.00
21	137.00	Mount pipe	9	36.260	39.886	0.75	0.75	12.82	236.52	0.000	0.000	818.46	0.00	0.00
22	137.00	Low Profile Platform	1	36.260	39.886	1.00	1.00	22.00	1350.00	0.000	0.000	1403.99	0.00	0.00
23	129.00	AIR 6419 B77G	3	35.804	39.384	0.57	0.75	6.50	178.47	0.000	0.000	409.47	0.00	0.00
24	127.00	Handrail Reinforcement -	1	35.686	39.255	1.00	1.00	10.00	296.10	0.000	0.000	628.07	0.00	0.00
25	127.00	QD8616-7	3	35.686	39.255	0.69	0.75	38.92	184.14	0.000	0.000	2444.21	0.00	0.00
26	127.00	DMP65R-BU8DA	3	35.686	39.255	0.55	0.75	29.35	258.39	0.000	0.000	1843.49	0.00	0.00
27	127.00	RRUS 4449 B5/B12	3	35.686	39.255	0.50	0.75	2.97	191.70	0.000	0.000	186.52	0.00	0.00
28	127.00	Erisson 2012 B29	3	35.686	39.255	0.50	0.75	4.75	160.38	0.000	0.000	298.25	0.00	0.00
29	127.00	DC6-48-60-18-8C-EV	1	35.686	39.255	0.75	0.75	3.58	14.40	0.000	0.000	225.16	0.00	0.00
30	127.00	Collar Mount - Mod	1	35.686	39.255	1.00	1.00	2.50	135.54	0.000	0.000	157.02	0.00	0.00
31	127.00	MTC3607 Platform + HR &	1	35.686	39.255	1.00	1.00	51.70	2021.40	0.000	0.000	3247.15	0.00	0.00
32	127.00	Ericsson RRUS 4478 B14	3	35.686	39.255	0.50	0.75	2.49	160.38	0.000	0.000	156.23	0.00	0.00
33	127.00	Raycap DC6-48-60-18-8F	3	35.686	39.255	0.75	0.75	4.95	85.86	0.000	0.000	310.90	0.00	0.00
34	127.00	Ericsson RRUS 32 RRU	3	35.686	39.255	0.50	0.75	4.99	207.90	0.000	0.000	313.40	0.00	0.00
35	127.00	Kaelus DBCT108F1V92-1	3	35.686	39.255	0.38	0.75	0.79	53.46	0.000	0.000	49.46	0.00	0.00
36	127.00	Ericsson RRUS 4478 B5	3	35.686	39.255	0.50	0.75	2.77	161.73	0.000	0.000	174.22	0.00	0.00
37	127.00	Ericsson RRUS 4415 B25	3	35.686	39.255	0.50	0.75	2.80	119.07	0.000	0.000	176.11	0.00	0.00
38	127.00	Ericsson RRUS 4426 B66	3	35.686	39.255	0.50	0.75	1.73	130.95	0.000	0.000	108.88	0.00	0.00
39	125.00	AIR 6449 B77D	3	35.567	39.124	0.64	0.75	7.90	237.60	0.000	0.000	494.44	0.00	0.00
40	117.00	MC-PK8-DSH	1	35.075	38.583	1.00	1.00	37.59	1554.30	0.000	0.000	2320.52	0.00	0.00
41	117.00	RDIDC-9181-OF-48	1	35.075	38.583	1.00	1.00	2.01	19.71	0.000	0.000	124.08	0.00	0.00
42	117.00	TA08025-B604	3	35.075	38.583	0.50	0.75	2.95	172.53	0.000	0.000	182.40	0.00	0.00
43	117.00	TA08025-B605	3	35.075	38.583	0.50	0.75	2.95	202.50	0.000	0.000	182.40	0.00	0.00
44	117.00	MX08FRO665-21	3	35.075	38.583	0.55	0.75	20.80	174.15	0.000	0.000	1283.78	0.00	0.00
							Totals:		**13,607.64**			**30,663.89**		

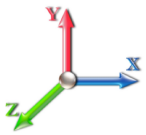
Total Applied Force Summary

Structure:	CT13075-A-SBA		**Code:**	TIA-222-G	6/24/2022
Site Name:	New London		**Exposure:**	C	
Height:	149.00 (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

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

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
2.00		256.03	533.21	0.00	0.00
4.00		253.95	529.20	0.00	0.00
6.00		251.87	525.19	0.00	0.00
8.00		249.78	521.17	0.00	0.00
10.00		247.70	517.16	0.00	0.00
12.00		245.62	513.14	0.00	0.00
14.00		243.54	509.13	0.00	0.00
16.00		244.44	505.12	0.00	0.00
18.00		248.41	501.10	0.00	0.00
20.00		251.77	497.09	0.00	0.00
22.00		254.62	493.07	0.00	0.00
24.00		257.03	489.06	0.00	0.00
26.00		259.07	485.05	0.00	0.00
28.00		260.77	481.03	0.00	0.00
30.00		262.18	477.02	0.00	0.00
32.00		263.32	473.01	0.00	0.00
34.00		264.24	468.99	0.00	0.00
36.00		264.93	464.98	0.00	0.00
38.00		265.44	460.96	0.00	0.00
40.00		265.76	456.95	0.00	0.00
42.00		265.92	452.94	0.00	0.00
44.00		265.93	448.92	0.00	0.00
46.00		265.80	444.91	0.00	0.00
47.25		165.72	276.03	0.00	0.00
48.00		100.85	294.44	0.00	0.00
50.00		269.40	780.04	0.00	0.00
52.00		268.94	772.58	0.00	0.00
53.25		167.55	479.08	0.00	0.00
54.00		100.32	141.99	0.00	0.00
56.00		267.68	376.28	0.00	0.00
58.00		266.90	372.84	0.00	0.00
60.00		266.02	369.39	0.00	0.00
62.00		265.06	365.95	0.00	0.00
64.00		264.02	362.51	0.00	0.00
66.00		262.89	359.07	0.00	0.00
68.00		261.69	355.63	0.00	0.00
70.00		260.42	352.19	0.00	0.00
72.00		259.07	348.75	0.00	0.00
74.00		257.66	345.31	0.00	0.00
76.00		256.18	341.87	0.00	0.00
78.00		254.65	338.43	0.00	0.00
80.00		253.05	334.99	0.00	0.00
82.00		251.39	331.55	0.00	0.00
84.00		249.68	328.11	0.00	0.00
86.00		247.92	324.67	0.00	0.00
88.00		246.10	321.23	0.00	0.00

Total Applied Force Summary

Structure:	CT13075-A-SBA		**Code:**	TIA-222-G	6/24/2022
Site Name:	New London		**Exposure:**	C	
Height:	149.00 (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

IES Tower Engineering Solutions

90.00		244.24	317.79	0.00	0.00
92.00		242.32	314.35	0.00	0.00
94.00		240.36	310.91	0.00	0.00
96.00		238.36	307.47	0.00	0.00
98.00		239.58	480.79	0.00	0.00
100.00		237.50	475.05	0.00	0.00
100.75		88.40	176.67	0.00	0.00
102.00		146.75	134.49	0.00	0.00
104.00		233.21	213.32	0.00	0.00
106.00		231.01	211.03	0.00	0.00
108.00		228.77	208.73	0.00	0.00
110.00		226.49	206.44	0.00	0.00
112.00		224.18	204.15	0.00	0.00
114.00		221.83	201.85	0.00	0.00
116.00		219.44	199.56	0.00	0.00
117.00	(11) attachments	4201.90	2222.11	0.00	0.00
118.00		108.11	97.45	0.00	0.00
120.00		214.57	193.17	0.00	0.00
122.00		212.09	190.88	0.00	0.00
124.00		209.57	188.58	0.00	0.00
125.00	(3) attachments	598.18	331.03	0.00	0.00
126.00		103.10	92.86	0.00	0.00
127.00	(37) attachments	10421.53	4273.68	0.00	0.00
128.00		101.81	88.31	0.00	0.00
129.00	(3) attachments	510.63	266.21	0.00	0.00
130.00		100.51	87.16	0.00	0.00
132.00		199.20	172.60	0.00	0.00
134.00		196.53	170.31	0.00	0.00
136.00		193.84	168.02	0.00	0.00
137.00	(29) attachments	7363.98	3463.73	0.00	0.00
138.00		95.14	73.00	0.00	0.00
139.00		94.46	72.43	0.00	0.00
140.00		93.77	55.96	0.00	0.00
142.00		185.59	110.64	0.00	0.00
144.00		182.79	108.92	0.00	0.00
146.00		179.96	107.20	0.00	0.00
148.00		177.11	105.48	0.00	0.00
149.00	(38) attachments	8166.99	3558.49	0.00	2631.06
	Totals:	**48,545.09**	**40,082.13**	**0.00**	**2,631.06**

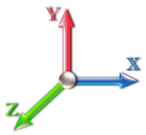
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (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	

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
2.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.017	0.000	22.791	0.00	0.49
2.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.017	0.000	22.791	0.00	0.00
4.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.017	0.000	22.791	0.00	0.49
4.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.017	0.000	22.791	0.00	0.00
6.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.017	0.000	22.791	0.00	0.49
6.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.017	0.000	22.791	0.00	0.00
8.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.018	0.000	22.791	0.00	0.49
8.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	22.791	0.00	0.00
10.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.018	0.000	22.791	0.00	0.49
10.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	22.791	0.00	0.00
12.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.018	0.000	22.791	0.00	0.49
12.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	22.791	0.00	0.00
14.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.018	0.000	22.791	0.00	0.49
14.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	22.791	0.00	0.00
16.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.018	0.000	23.072	0.00	0.49
16.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	23.072	0.00	0.00
18.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.018	0.000	23.652	0.00	0.49
18.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	23.652	0.00	0.00
20.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.018	0.000	24.182	0.00	0.49
20.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	24.182	0.00	0.00
22.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.019	0.000	24.672	0.00	0.49
22.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.019	0.000	24.672	0.00	0.00
24.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.019	0.000	25.128	0.00	0.49
24.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.019	0.000	25.128	0.00	0.00
26.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.019	0.000	25.555	0.00	0.49
26.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.019	0.000	25.555	0.00	0.00
28.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.019	0.000	25.957	0.00	0.49
28.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.019	0.000	25.957	0.00	0.00
30.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.019	0.000	26.337	0.00	0.49
30.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.019	0.000	26.337	0.00	0.00
32.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.020	0.000	26.697	0.00	0.49
32.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.020	0.000	26.697	0.00	0.00
34.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.020	0.000	27.040	0.00	0.49
34.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.020	0.000	27.040	0.00	0.00
36.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.020	0.000	27.367	0.00	0.49
36.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.020	0.000	27.367	0.00	0.00
38.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.020	0.000	27.681	0.00	0.49
38.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.020	0.000	27.681	0.00	0.00
40.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.020	0.000	27.981	0.00	0.49
40.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.020	0.000	27.981	0.00	0.00
42.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.020	0.000	28.270	0.00	0.49
42.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.020	0.000	28.270	0.00	0.00
44.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.021	0.000	28.548	0.00	0.49
44.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.021	0.000	28.548	0.00	0.00
46.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.021	0.000	28.817	0.00	0.49
46.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.021	0.000	28.817	0.00	0.00
47.25	Safety Cable	Yes	1.25	0.000	0.38	0.04	0.00	0.021	0.000	28.980	0.00	0.31

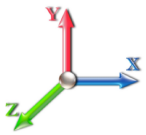
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (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: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
47.25	Step bolts (ladder)	Yes	1.25	0.000	0.63	0.07	0.00	0.021	0.000	28.980	0.00	0.00
48.00	Safety Cable	Yes	0.75	0.000	0.38	0.02	0.00	0.021	0.000	29.076	0.00	0.18
48.00	Step bolts (ladder)	Yes	0.75	0.000	0.63	0.04	0.00	0.021	0.000	29.076	0.00	0.00
50.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.021	0.000	29.327	0.00	0.49
50.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.021	0.000	29.327	0.00	0.00
52.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.022	0.000	29.570	0.00	0.49
52.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.022	0.000	29.570	0.00	0.00
53.25	Safety Cable	Yes	1.25	0.000	0.38	0.04	0.00	0.022	0.000	29.719	0.00	0.31
53.25	Step bolts (ladder)	Yes	1.25	0.000	0.63	0.07	0.00	0.022	0.000	29.719	0.00	0.00
54.00	Safety Cable	Yes	0.75	0.000	0.38	0.02	0.00	0.021	0.000	29.806	0.00	0.18
54.00	Step bolts (ladder)	Yes	0.75	0.000	0.63	0.04	0.00	0.021	0.000	29.806	0.00	0.00
56.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.022	0.000	30.035	0.00	0.49
56.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.022	0.000	30.035	0.00	0.00
58.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.022	0.000	30.258	0.00	0.49
58.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.022	0.000	30.258	0.00	0.00
60.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.022	0.000	30.475	0.00	0.49
60.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.022	0.000	30.475	0.00	0.00
62.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.022	0.000	30.686	0.00	0.49
62.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.022	0.000	30.686	0.00	0.00
64.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.023	0.000	30.892	0.00	0.49
64.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.023	0.000	30.892	0.00	0.00
66.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.023	0.000	31.092	0.00	0.49
66.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.023	0.000	31.092	0.00	0.00
68.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.023	0.000	31.288	0.00	0.49
68.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.023	0.000	31.288	0.00	0.00
70.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.023	0.000	31.480	0.00	0.49
70.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.023	0.000	31.480	0.00	0.00
72.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.024	0.000	31.667	0.00	0.49
72.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.024	0.000	31.667	0.00	0.00
74.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.024	0.000	31.850	0.00	0.49
74.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.024	0.000	31.850	0.00	0.00
76.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.024	0.000	32.030	0.00	0.49
76.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.024	0.000	32.030	0.00	0.00
78.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.024	0.000	32.205	0.00	0.49
78.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.024	0.000	32.205	0.00	0.00
80.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.025	0.000	32.377	0.00	0.49
80.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.025	0.000	32.377	0.00	0.00
82.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.025	0.000	32.546	0.00	0.49
82.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.025	0.000	32.546	0.00	0.00
84.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.025	0.000	32.712	0.00	0.49
84.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.025	0.000	32.712	0.00	0.00
86.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.026	0.000	32.874	0.00	0.49
86.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.026	0.000	32.874	0.00	0.00
88.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.026	0.000	33.034	0.00	0.49
88.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.026	0.000	33.034	0.00	0.00
90.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.026	0.000	33.190	0.00	0.49
90.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.026	0.000	33.190	0.00	0.00

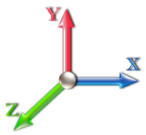
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (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	

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
92.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.026	0.000	33.344	0.00	0.49
92.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.026	0.000	33.344	0.00	0.00
94.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.027	0.000	33.496	0.00	0.49
94.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.027	0.000	33.496	0.00	0.00
96.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.027	0.000	33.644	0.00	0.49
96.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.027	0.000	33.644	0.00	0.00
98.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.028	0.000	33.791	0.00	0.49
98.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.028	0.000	33.791	0.00	0.00
100.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.028	0.000	33.935	0.00	0.49
100.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.028	0.000	33.935	0.00	0.00
100.75	Safety Cable	Yes	0.75	0.000	0.38	0.02	0.00	0.028	0.000	33.988	0.00	0.18
100.75	Step bolts (ladder)	Yes	0.75	0.000	0.63	0.04	0.00	0.028	0.000	33.988	0.00	0.00
102.00	Safety Cable	Yes	1.25	0.000	0.38	0.04	0.00	0.028	0.000	34.077	0.00	0.31
102.00	Step bolts (ladder)	Yes	1.25	0.000	0.63	0.07	0.00	0.028	0.000	34.077	0.00	0.00
104.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.028	0.000	34.216	0.00	0.49
104.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.028	0.000	34.216	0.00	0.00
106.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.029	0.000	34.354	0.00	0.49
106.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.029	0.000	34.354	0.00	0.00
108.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.029	0.000	34.489	0.00	0.49
108.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.029	0.000	34.489	0.00	0.00
110.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.029	0.000	34.623	0.00	0.49
110.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.029	0.000	34.623	0.00	0.00
112.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.030	0.000	34.754	0.00	0.49
112.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.030	0.000	34.754	0.00	0.00
114.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.030	0.000	34.884	0.00	0.49
114.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.030	0.000	34.884	0.00	0.00
116.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.031	0.000	35.012	0.00	0.49
116.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.031	0.000	35.012	0.00	0.00
117.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.031	0.000	35.075	0.00	0.25
117.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.031	0.000	35.075	0.00	0.00
118.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.031	0.000	35.138	0.00	0.25
118.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.031	0.000	35.138	0.00	0.00
120.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.032	0.000	35.263	0.00	0.49
120.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.032	0.000	35.263	0.00	0.00
122.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.032	0.000	35.386	0.00	0.49
122.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.032	0.000	35.386	0.00	0.00
124.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.033	0.000	35.507	0.00	0.49
124.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.033	0.000	35.507	0.00	0.00
125.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.033	0.000	35.567	0.00	0.25
125.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.033	0.000	35.567	0.00	0.00
126.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.033	0.000	35.627	0.00	0.25
126.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.033	0.000	35.627	0.00	0.00
127.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.034	0.000	35.686	0.00	0.25
127.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.034	0.000	35.686	0.00	0.00
128.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.034	0.000	35.745	0.00	0.25
128.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.034	0.000	35.745	0.00	0.00
129.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.034	0.000	35.804	0.00	0.25

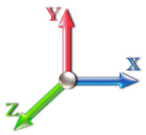
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (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	

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
129.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.034	0.000	35.804	0.00	0.00
130.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.034	0.000	35.862	0.00	0.25
130.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.034	0.000	35.862	0.00	0.00
132.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.035	0.000	35.977	0.00	0.49
132.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.035	0.000	35.977	0.00	0.00
134.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.035	0.000	36.091	0.00	0.49
134.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.035	0.000	36.091	0.00	0.00
136.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.036	0.000	36.204	0.00	0.49
136.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.036	0.000	36.204	0.00	0.00
137.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.036	0.000	36.260	0.00	0.25
137.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.036	0.000	36.260	0.00	0.00
138.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.037	0.000	36.316	0.00	0.25
138.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.037	0.000	36.316	0.00	0.00
139.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.037	0.000	36.371	0.00	0.25
139.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.037	0.000	36.371	0.00	0.00
140.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.037	0.000	36.426	0.00	0.25
140.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.037	0.000	36.426	0.00	0.00
142.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.038	0.000	36.535	0.00	0.49
142.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.038	0.000	36.535	0.00	0.00
144.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.039	0.000	36.642	0.00	0.49
144.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.039	0.000	36.642	0.00	0.00
146.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.039	0.000	36.749	0.00	0.49
146.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.039	0.000	36.749	0.00	0.00
148.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.040	0.000	36.854	0.00	0.49
148.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.040	0.000	36.854	0.00	0.00
149.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.041	0.000	36.907	0.00	0.25
149.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.041	0.000	36.907	0.00	0.00
										Totals:	**0.0**	**36.6**

Calculated Forces

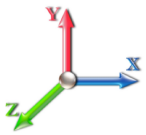
Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 30	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

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	-40.04	-48.58	0.00	-5543.6	0.00	5543.61	5451.60	2725.80	12956.4	6487.84	0.00	0.000	0.000	0.862
2.00	-39.43	-48.39	0.00	-5446.4	0.00	5446.45	5423.14	2711.57	12782.7	6400.90	0.02	-0.092	0.000	0.858
4.00	-38.82	-48.19	0.00	-5349.6	0.00	5349.68	5394.41	2697.20	12609.6	6314.20	0.08	-0.185	0.000	0.855
6.00	-38.22	-48.00	0.00	-5253.3	0.00	5253.30	5365.42	2682.71	12437.0	6227.76	0.18	-0.278	0.000	0.851
8.00	-37.62	-47.81	0.00	-5157.2	0.00	5157.29	5336.17	2668.08	12264.9	6141.58	0.32	-0.373	0.000	0.847
10.00	-37.03	-47.62	0.00	-5061.6	0.00	5061.67	5306.65	2653.32	12093.3	6055.68	0.49	-0.467	0.000	0.843
12.00	-36.44	-47.43	0.00	-4966.4	0.00	4966.43	5276.87	2638.43	11922.3	5970.05	0.71	-0.563	0.000	0.839
14.00	-35.85	-47.24	0.00	-4871.5	0.00	4871.57	5246.82	2623.41	11751.9	5884.71	0.97	-0.658	0.000	0.835
16.00	-35.27	-47.05	0.00	-4777.0	0.00	4777.08	5216.51	2608.26	11582.1	5799.67	1.26	-0.755	0.000	0.831
18.00	-34.69	-46.86	0.00	-4682.9	0.00	4682.98	5185.94	2592.97	11412.8	5714.93	1.60	-0.852	0.000	0.826
20.00	-34.12	-46.66	0.00	-4589.2	0.00	4589.27	5155.10	2577.55	11244.2	5630.50	1.98	-0.950	0.000	0.822
22.00	-33.55	-46.45	0.00	-4495.9	0.00	4495.96	5124.00	2562.00	11076.3	5546.38	2.40	-1.048	0.000	0.817
24.00	-32.99	-46.24	0.00	-4403.0	0.00	4403.06	5092.64	2546.32	10908.9	5462.60	2.86	-1.147	0.000	0.813
26.00	-32.43	-46.03	0.00	-4310.5	0.00	4310.58	5061.01	2530.51	10742.3	5379.14	3.36	-1.247	0.000	0.808
28.00	-31.87	-45.81	0.00	-4218.5	0.00	4218.53	5029.12	2514.56	10576.3	5296.03	3.91	-1.347	0.000	0.803
30.00	-31.32	-45.59	0.00	-4126.9	0.00	4126.90	4996.96	2498.48	10411.0	5213.26	4.49	-1.448	0.000	0.798
32.00	-30.78	-45.37	0.00	-4035.7	0.00	4035.72	4964.54	2482.27	10246.4	5130.86	5.12	-1.549	0.000	0.793
34.00	-30.23	-45.15	0.00	-3944.9	0.00	3944.97	4931.86	2465.93	10082.6	5048.81	5.79	-1.651	0.000	0.788
36.00	-29.70	-44.92	0.00	-3854.6	0.00	3854.67	4898.91	2449.45	9919.54	4967.14	6.51	-1.753	0.000	0.782
38.00	-29.16	-44.70	0.00	-3764.8	0.00	3764.83	4865.70	2432.85	9757.20	4885.85	7.26	-1.856	0.000	0.777
40.00	-28.63	-44.47	0.00	-3675.4	0.00	3675.43	4832.22	2416.11	9595.63	4804.95	8.06	-1.960	0.000	0.771
42.00	-28.11	-44.24	0.00	-3586.5	0.00	3586.50	4798.48	2399.24	9434.86	4724.44	8.91	-2.064	0.000	0.765
44.00	-27.59	-44.01	0.00	-3498.0	0.00	3498.02	4764.48	2382.24	9274.89	4644.34	9.80	-2.168	0.000	0.759
46.00	-27.09	-43.76	0.00	-3410.0	0.00	3410.01	4730.21	2365.11	9115.74	4564.64	10.73	-2.273	0.000	0.753
47.25	-26.78	-43.61	0.00	-3355.3	0.00	3355.31	4708.66	2354.33	9016.69	4515.05	11.33	-2.339	0.000	0.749
48.00	-26.44	-43.53	0.00	-3322.6	0.00	3322.60	4695.68	2347.84	8957.42	4485.37	11.70	-2.379	0.000	0.747
50.00	-25.59	-43.28	0.00	-3235.5	0.00	3235.54	4660.89	2330.44	8799.96	4406.52	12.72	-2.485	0.000	0.740
52.00	-24.76	-43.01	0.00	-3148.9	0.00	3148.98	4625.83	2312.91	8643.36	4328.11	13.79	-2.591	0.000	0.733
53.25	-24.25	-42.85	0.00	-3095.2	0.00	3095.22	3818.32	1909.16	7226.08	3618.41	14.47	-2.658	0.000	0.862
54.00	-24.06	-42.77	0.00	-3063.0	0.00	3063.08	3808.46	1904.23	7179.51	3595.09	14.89	-2.699	0.000	0.859
56.00	-23.61	-42.54	0.00	-2977.5	0.00	2977.54	3782.00	1891.00	7055.71	3533.10	16.05	-2.817	0.000	0.850
58.00	-23.16	-42.30	0.00	-2892.4	0.00	2892.47	3755.27	1877.63	6932.45	3471.38	17.26	-2.935	0.000	0.840
60.00	-22.72	-42.06	0.00	-2807.8	0.00	2807.87	3728.27	1864.14	6809.75	3409.94	18.51	-3.054	0.000	0.830
62.00	-22.28	-41.82	0.00	-2723.7	0.00	2723.75	3701.01	1850.51	6687.63	3348.79	19.82	-3.173	0.000	0.820
64.00	-21.85	-41.58	0.00	-2640.1	0.00	2640.11	3673.49	1836.75	6566.11	3287.93	21.17	-3.292	0.000	0.809
66.00	-21.42	-41.35	0.00	-2556.9	0.00	2556.94	3645.71	1822.85	6445.19	3227.39	22.58	-3.411	0.000	0.799
68.00	-20.99	-41.11	0.00	-2474.2	0.00	2474.25	3617.66	1808.83	6324.90	3167.15	24.03	-3.531	0.000	0.788
70.00	-20.57	-40.87	0.00	-2392.0	0.00	2392.04	3589.34	1794.67	6205.25	3107.24	25.53	-3.650	0.000	0.776
72.00	-20.16	-40.63	0.00	-2310.3	0.00	2310.31	3560.76	1780.38	6086.26	3047.65	27.09	-3.769	0.000	0.764
74.00	-19.75	-40.39	0.00	-2229.0	0.00	2229.06	3531.92	1765.96	5967.94	2988.40	28.69	-3.888	0.000	0.752
76.00	-19.34	-40.15	0.00	-2148.2	0.00	2148.28	3502.82	1751.41	5850.30	2929.50	30.35	-4.007	0.000	0.739
78.00	-18.94	-39.91	0.00	-2067.9	0.00	2067.98	3473.45	1736.72	5733.37	2870.94	32.05	-4.125	0.000	0.726
80.00	-18.54	-39.67	0.00	-1988.1	0.00	1988.16	3443.81	1721.91	5617.15	2812.75	33.80	-4.243	0.000	0.713
82.00	-18.15	-39.43	0.00	-1908.8	0.00	1908.82	3413.92	1706.96	5501.67	2754.92	35.60	-4.360	0.000	0.699
84.00	-17.76	-39.20	0.00	-1829.9	0.00	1829.95	3383.76	1691.88	5386.93	2697.47	37.45	-4.477	0.000	0.684
86.00	-17.38	-38.96	0.00	-1751.5	0.00	1751.56	3353.33	1676.67	5272.96	2640.40	39.35	-4.593	0.000	0.669
88.00	-17.00	-38.72	0.00	-1673.6	0.00	1673.65	3322.64	1661.32	5159.77	2583.72	41.30	-4.708	0.000	0.653
90.00	-16.63	-38.48	0.00	-1596.2	0.00	1596.21	3291.69	1645.84	5047.37	2527.44	43.30	-4.821	0.000	0.637

Calculated Forces

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 31

92.00	-16.26	-38.25	0.00	-1519.2	0.00	1519.24	3260.47	1630.24	4935.79	2471.56	45.34	-4.934	0.000	0.620
94.00	-15.90	-38.01	0.00	-1442.7	0.00	1442.74	3223.46	1611.73	4816.76	2411.96	47.43	-5.045	0.000	0.604
96.00	-15.54	-37.78	0.00	-1366.7	0.00	1366.72	3181.72	1590.86	4692.22	2349.60	49.56	-5.155	0.000	0.587
98.00	-15.02	-37.52	0.00	-1291.1	0.00	1291.17	3139.99	1570.00	4569.31	2288.05	51.74	-5.263	0.000	0.570
100.00	-14.52	-37.26	0.00	-1216.1	0.00	1216.13	3098.26	1549.13	4448.03	2227.32	53.97	-5.369	0.000	0.551
100.75	-14.32	-37.17	0.00	-1188.1	0.00	1188.18	1860.42	930.21	2714.89	1359.46	54.81	-5.409	0.000	0.883
102.00	-14.13	-37.04	0.00	-1141.7	0.00	1141.72	1851.10	925.55	2678.69	1341.34	56.24	-5.474	0.000	0.860
104.00	-13.85	-36.82	0.00	-1067.6	0.00	1067.65	1835.98	917.99	2620.93	1312.41	58.56	-5.618	0.000	0.823
106.00	-13.57	-36.60	0.00	-994.01	0.00	994.01	1820.60	910.30	2563.39	1283.60	60.94	-5.757	0.000	0.783
108.00	-13.30	-36.38	0.00	-920.82	0.00	920.82	1804.95	902.48	2506.08	1254.90	63.38	-5.893	0.000	0.743
110.00	-13.04	-36.16	0.00	-848.05	0.00	848.05	1789.04	894.52	2449.03	1226.33	65.87	-6.023	0.000	0.700
112.00	-12.78	-35.95	0.00	-775.73	0.00	775.73	1772.87	886.43	2392.24	1197.90	68.42	-6.148	0.000	0.656
114.00	-12.54	-35.73	0.00	-703.83	0.00	703.83	1756.43	878.22	2335.73	1169.60	71.02	-6.266	0.000	0.611
116.00	-12.31	-35.51	0.00	-632.37	0.00	632.37	1739.73	869.86	2279.52	1141.45	73.66	-6.378	0.000	0.563
117.00	-10.54	-31.09	0.00	-596.87	0.00	596.87	1731.28	865.64	2251.53	1127.44	75.00	-6.432	0.000	0.537
118.00	-10.42	-30.99	0.00	-565.77	0.00	565.77	1722.76	861.38	2223.62	1113.46	76.35	-6.484	0.000	0.515
120.00	-10.20	-30.77	0.00	-503.80	0.00	503.80	1705.53	852.77	2168.05	1085.64	79.09	-6.582	0.000	0.471
122.00	-9.99	-30.55	0.00	-442.26	0.00	442.26	1688.04	844.02	2112.82	1057.98	81.86	-6.673	0.000	0.425
124.00	-9.79	-30.33	0.00	-381.15	0.00	381.15	1670.28	835.14	2057.95	1030.51	84.67	-6.755	0.000	0.377
125.00	-9.52	-29.71	0.00	-350.82	0.00	350.82	1661.30	830.65	2030.66	1016.84	86.08	-6.794	0.000	0.352
126.00	-9.42	-29.60	0.00	-321.11	0.00	321.11	1652.26	826.13	2003.46	1003.22	87.51	-6.830	0.000	0.327
127.00	-6.41	-18.75	0.00	-291.51	0.00	291.51	1643.15	821.58	1976.36	989.65	88.94	-6.864	0.000	0.299
128.00	-6.32	-18.64	0.00	-272.77	0.00	272.77	1633.98	816.99	1949.35	976.13	90.38	-6.896	0.000	0.284
129.00	-6.11	-18.10	0.00	-254.13	0.00	254.13	1624.73	812.37	1922.45	962.65	91.82	-6.926	0.000	0.268
130.00	-6.02	-18.00	0.00	-236.03	0.00	236.03	1615.43	807.71	1895.65	949.24	93.27	-6.955	0.000	0.253
132.00	-5.86	-17.78	0.00	-200.04	0.00	200.04	1596.61	798.31	1842.37	922.56	96.19	-7.008	0.000	0.221
134.00	-5.70	-17.57	0.00	-164.48	0.00	164.48	1577.54	788.77	1789.53	896.09	99.13	-7.055	0.000	0.188
136.00	-5.55	-17.36	0.00	-129.34	0.00	129.34	1558.20	779.10	1737.14	869.86	102.09	-7.094	0.000	0.153
137.00	-3.02	-9.62	0.00	-111.98	0.00	111.98	1548.43	774.21	1711.12	856.83	103.57	-7.111	0.000	0.133
138.00	-2.96	-9.52	0.00	-102.35	0.00	102.35	1538.59	769.30	1685.21	843.86	105.06	-7.127	0.000	0.123
139.00	-2.90	-9.42	0.00	-92.83	0.00	92.83	1528.69	764.34	1659.43	830.95	106.55	-7.141	0.000	0.114
139.00	-2.90	-9.42	0.00	-92.83	0.00	92.83	1044.31	522.16	1138.99	570.34	106.55	-7.141	0.000	0.166
140.00	-2.85	-9.32	0.00	-83.41	0.00	83.41	1038.69	519.35	1122.71	562.19	108.04	-7.155	0.000	0.151
142.00	-2.76	-9.12	0.00	-64.77	0.00	64.77	1027.26	513.63	1090.28	545.95	111.04	-7.186	0.000	0.122
144.00	-2.67	-8.93	0.00	-46.52	0.00	46.52	1015.57	507.78	1058.02	529.79	114.05	-7.210	0.000	0.091
146.00	-2.58	-8.74	0.00	-28.66	0.00	28.66	1003.61	501.80	1025.94	513.73	117.07	-7.228	0.000	0.059
148.00	-2.50	-8.55	0.00	-11.18	0.00	11.18	991.38	495.69	994.07	497.78	120.09	-7.237	0.000	0.025
149.00	0.00	-8.17	0.00	-2.63	0.00	2.63	985.17	492.59	978.22	489.84	121.60	-7.239	0.000	0.006

Wind Loading - Shaft

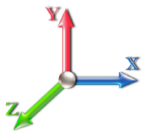
Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 32	

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 26

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
2.00		1.00	0.85	5.168	5.68	0.00	1.200	1.133	2.00	10.198	12.24	69.6	167.3	820.4
4.00		1.00	0.85	5.168	5.68	0.00	1.200	1.215	2.00	10.145	12.17	69.2	178.2	825.8
6.00		1.00	0.85	5.168	5.68	0.00	1.200	1.265	2.00	10.082	12.10	68.8	184.2	826.5
8.00		1.00	0.85	5.168	5.68	0.00	1.200	1.302	2.00	10.014	12.02	68.3	188.1	825.1
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	2.00	9.944	11.93	67.8	190.9	822.5
12.00		1.00	0.85	5.168	5.68	0.00	1.200	1.356	2.00	9.872	11.85	67.3	192.9	819.2
14.00		1.00	0.85	5.168	5.68	0.00	1.200	1.377	2.00	9.800	11.76	66.9	194.3	815.3
16.00		1.00	0.86	5.232	5.76	0.00	1.200	1.395	2.00	9.726	11.67	67.2	195.4	810.9
18.00		1.00	0.88	5.363	5.90	0.00	1.200	1.412	2.00	9.651	11.58	68.3	196.1	806.3
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	2.00	9.577	11.49	69.3	196.5	801.4
22.00		1.00	0.92	5.595	6.15	0.00	1.200	1.440	2.00	9.501	11.40	70.2	196.7	796.2
24.00		1.00	0.94	5.698	6.27	0.00	1.200	1.453	2.00	9.426	11.31	70.9	196.8	790.9
26.00		1.00	0.95	5.795	6.37	0.00	1.200	1.465	2.00	9.350	11.22	71.5	196.7	785.5
28.00		1.00	0.97	5.886	6.47	0.00	1.200	1.476	2.00	9.273	11.13	72.0	196.4	779.9
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	2.00	9.197	11.04	72.5	196.1	774.2
32.00		1.00	1.00	6.054	6.66	0.00	1.200	1.495	2.00	9.120	10.94	72.9	195.6	768.4
34.00		1.00	1.01	6.132	6.74	0.00	1.200	1.504	2.00	9.043	10.85	73.2	195.0	762.4
36.00		1.00	1.02	6.206	6.83	0.00	1.200	1.513	2.00	8.966	10.76	73.4	194.4	756.5
38.00		1.00	1.03	6.277	6.90	0.00	1.200	1.521	2.00	8.889	10.67	73.7	193.7	750.4
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	2.00	8.812	10.57	73.8	192.9	744.3
42.00		1.00	1.05	6.410	7.05	0.00	1.200	1.537	2.00	8.735	10.48	73.9	192.1	738.1
44.00		1.00	1.06	6.474	7.12	0.00	1.200	1.544	2.00	8.657	10.39	74.0	191.2	731.8
46.00		1.00	1.07	6.534	7.19	0.00	1.200	1.551	2.00	8.580	10.30	74.0	190.2	725.5
47.25	Bot - Section 2	1.00	1.08	6.571	7.23	0.00	1.200	1.555	1.25	5.323	6.39	46.2	118.5	450.3
48.00		1.00	1.08	6.593	7.25	0.00	1.200	1.557	0.75	3.226	3.87	28.1	72.0	442.9
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	2.00	8.551	10.26	75.1	191.1	1173.2
52.00		1.00	1.10	6.705	7.38	0.00	1.200	1.570	2.00	8.473	10.17	75.0	190.0	1162.2
53.25	Top - Section 1	1.00	1.11	6.739	7.41	0.00	1.200	1.574	1.25	5.256	6.31	46.8	118.3	720.9
54.00		1.00	1.11	6.759	7.43	0.00	1.200	1.576	0.75	3.139	3.77	28.0	70.8	238.4
56.00		1.00	1.12	6.811	7.49	0.00	1.200	1.581	2.00	8.317	9.98	74.8	187.7	631.5
58.00		1.00	1.13	6.861	7.55	0.00	1.200	1.587	2.00	8.239	9.89	74.6	186.5	625.7
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	2.00	8.161	9.79	74.4	185.3	619.9
62.00		1.00	1.14	6.958	7.65	0.00	1.200	1.598	2.00	8.083	9.70	74.2	184.0	614.1
64.00		1.00	1.15	7.005	7.71	0.00	1.200	1.603	2.00	8.005	9.61	74.0	182.7	608.2
66.00		1.00	1.16	7.050	7.76	0.00	1.200	1.608	2.00	7.927	9.51	73.8	181.4	602.3
68.00		1.00	1.17	7.095	7.80	0.00	1.200	1.612	2.00	7.849	9.42	73.5	180.1	596.3
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	2.00	7.770	9.32	73.2	178.7	590.4
72.00		1.00	1.18	7.181	7.90	0.00	1.200	1.622	2.00	7.692	9.23	72.9	177.3	584.4
74.00		1.00	1.19	7.222	7.94	0.00	1.200	1.626	2.00	7.613	9.14	72.6	175.9	578.4
76.00		1.00	1.19	7.263	7.99	0.00	1.200	1.631	2.00	7.535	9.04	72.2	174.4	572.4
78.00		1.00	1.20	7.303	8.03	0.00	1.200	1.635	2.00	7.457	8.95	71.9	173.0	566.3
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	2.00	7.378	8.85	71.5	171.5	560.2
82.00		1.00	1.21	7.380	8.12	0.00	1.200	1.643	2.00	7.300	8.76	71.1	170.0	554.1
84.00		1.00	1.22	7.418	8.16	0.00	1.200	1.647	2.00	7.221	8.67	70.7	168.5	548.0
86.00		1.00	1.23	7.454	8.20	0.00	1.200	1.651	2.00	7.142	8.57	70.3	166.9	541.9
88.00		1.00	1.23	7.491	8.24	0.00	1.200	1.655	2.00	7.064	8.48	69.8	165.4	535.8

Wind Loading - Shaft

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 33	

90.00	1.00	1.24	7.526	8.28	0.00	1.200	1.658	2.00	6.985	8.38	69.4	163.8	529.6
92.00	1.00	1.24	7.561	8.32	0.00	1.200	1.662	2.00	6.907	8.29	68.9	162.2	523.4
94.00	1.00	1.25	7.595	8.35	0.00	1.200	1.666	2.00	6.828	8.19	68.5	160.6	517.2
96.00 Bot - Section 3	1.00	1.25	7.629	8.39	0.00	1.200	1.669	2.00	6.749	8.10	68.0	159.0	511.0
98.00	1.00	1.26	7.662	8.43	0.00	1.200	1.672	2.00	6.755	8.11	68.3	159.4	742.6
100.00	1.00	1.27	7.695	8.46	0.00	1.200	1.676	2.00	6.676	8.01	67.8	157.8	733.3
100.75 Top - Section 2	1.00	1.27	7.707	8.48	0.00	1.200	1.677	0.75	2.483	2.98	25.3	58.9	272.8
102.00	1.00	1.27	7.727	8.50	0.00	1.200	1.679	1.25	4.114	4.94	42.0	97.6	240.7
104.00	1.00	1.28	7.759	8.53	0.00	1.200	1.682	2.00	6.519	7.82	66.8	154.5	381.0
106.00	1.00	1.28	7.790	8.57	0.00	1.200	1.686	2.00	6.440	7.73	66.2	152.8	376.2
108.00	1.00	1.29	7.821	8.60	0.00	1.200	1.689	2.00	6.361	7.63	65.7	151.1	371.5
110.00	1.00	1.29	7.851	8.64	0.00	1.200	1.692	2.00	6.282	7.54	65.1	149.4	366.7
112.00	1.00	1.30	7.881	8.67	0.00	1.200	1.695	2.00	6.203	7.44	64.5	147.6	361.9
114.00	1.00	1.30	7.910	8.70	0.00	1.200	1.698	2.00	6.125	7.35	63.9	145.9	357.1
116.00	1.00	1.31	7.939	8.73	0.00	1.200	1.701	2.00	6.046	7.25	63.4	144.2	352.3
117.00 Appurtenance(s)	1.00	1.31	7.954	8.75	0.00	1.200	1.702	1.00	2.993	3.59	31.4	71.6	174.6
118.00	1.00	1.31	7.968	8.76	0.00	1.200	1.704	1.00	2.973	3.57	31.3	71.2	173.4
120.00	1.00	1.32	7.996	8.80	0.00	1.200	1.707	2.00	5.888	7.07	62.1	140.6	342.7
122.00	1.00	1.32	8.024	8.83	0.00	1.200	1.710	2.00	5.809	6.97	61.5	138.9	337.8
124.00	1.00	1.32	8.051	8.86	0.00	1.200	1.712	2.00	5.730	6.88	60.9	137.1	333.0
125.00 Appurtenance(s)	1.00	1.33	8.065	8.87	0.00	1.200	1.714	1.00	2.835	3.40	30.2	68.1	164.9
126.00	1.00	1.33	8.079	8.89	0.00	1.200	1.715	1.00	2.816	3.38	30.0	67.6	163.7
127.00 Appurtenance(s)	1.00	1.33	8.092	8.90	0.00	1.200	1.716	1.00	2.796	3.35	29.9	67.2	162.5
128.00	1.00	1.33	8.105	8.92	0.00	1.200	1.718	1.00	2.776	3.33	29.7	66.7	161.3
129.00 Appurtenance(s)	1.00	1.34	8.119	8.93	0.00	1.200	1.719	1.00	2.756	3.31	29.5	66.3	160.0
130.00	1.00	1.34	8.132	8.95	0.00	1.200	1.720	1.00	2.737	3.28	29.4	65.8	158.8
132.00	1.00	1.34	8.158	8.97	0.00	1.200	1.723	2.00	5.414	6.50	58.3	129.8	313.5
134.00	1.00	1.35	8.184	9.00	0.00	1.200	1.726	2.00	5.335	6.40	57.6	128.0	308.6
136.00	1.00	1.35	8.210	9.03	0.00	1.200	1.728	2.00	5.256	6.31	57.0	126.1	303.7
137.00 Appurtenance(s)	1.00	1.35	8.222	9.04	0.00	1.200	1.729	1.00	2.598	3.12	28.2	62.6	150.3
138.00	1.00	1.35	8.235	9.06	0.00	1.200	1.731	1.00	2.579	3.09	28.0	62.1	149.0
139.00 Top - Section 3	1.00	1.36	8.247	9.07	0.00	1.200	1.732	1.00	2.559	3.07	27.9	61.7	147.8
140.00	1.00	1.36	8.260	9.09	0.00	1.200	1.733	1.00	2.539	3.05	27.7	61.2	125.4
142.00	1.00	1.36	8.285	9.11	0.00	1.200	1.736	2.00	5.019	6.02	54.9	120.6	247.2
144.00	1.00	1.37	8.309	9.14	0.00	1.200	1.738	2.00	4.940	5.93	54.2	118.7	243.0
146.00	1.00	1.37	8.333	9.17	0.00	1.200	1.741	2.00	4.861	5.83	53.5	116.8	238.8
148.00	1.00	1.37	8.357	9.19	0.00	1.200	1.743	2.00	4.782	5.74	52.7	114.9	234.6
149.00 Appurtenance(s)	1.00	1.38	8.369	9.21	0.00	1.200	1.744	1.00	2.361	2.83	26.1	57.0	116.0
							Totals:	**149.00**			**5,049.1**		**43,743.0**

Discrete Appurtenance Forces

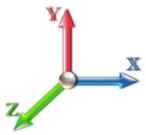
Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 34	

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 26

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	149.00	MX10FRO660	3	8.375	9.212	0.68	0.75	22.77	971.90	0.000	0.500	209.77	0.00	104.89
2	149.00	Antel BXA-80063/4CF	3	8.387	9.225	0.54	0.75	10.64	250.84	0.000	1.500	98.15	0.00	147.22
3	149.00	RFS DB-T1-6Z-8AB-0Z	1	8.375	9.212	0.50	0.75	2.85	166.29	0.000	0.500	26.26	0.00	13.13
4	149.00	RFS DB-T1-6Z-8AB-0Z	1	8.375	9.212	0.50	0.75	2.85	166.29	0.000	0.500	26.26	0.00	13.13
5	149.00	Low Profile	1	8.369	9.206	1.00	1.00	39.65	2808.04	0.000	0.000	365.01	0.00	0.00
6	149.00	MX06FRO660-02	3	8.375	9.212	0.68	0.75	22.77	971.90	0.000	0.500	209.77	0.00	104.89
7	149.00	Mount pipe	12	8.369	9.206	0.75	0.75	39.29	982.17	0.000	0.000	361.68	0.00	0.00
8	149.00	B2/B66A RRH-BR049	3	8.375	9.212	0.56	0.75	4.12	533.32	0.000	0.500	37.98	0.00	18.99
9	149.00	B5/B13 RRH-BR04C	3	8.375	9.212	0.56	0.75	4.12	460.98	0.000	0.500	37.98	0.00	18.99
10	149.00	RT4401-48A (RRH only)	3	8.375	9.212	0.56	0.75	2.38	131.39	0.000	0.500	21.94	0.00	10.97
11	149.00	HRK12 (Handrail Kit)	1	8.369	9.206	1.00	1.00	16.21	1706.52	0.000	0.000	149.21	0.00	0.00
12	149.00	PRK-1245 (kicker kit)	1	8.369	9.206	1.00	1.00	23.33	714.95	0.000	0.000	214.76	0.00	0.00
13	149.00	MT6407-77A	3	8.375	9.212	0.56	0.75	9.51	644.17	0.000	0.500	87.62	0.00	43.81
14	137.00	KRY 112 144/1	3	8.222	9.044	0.60	0.75	2.39	97.28	0.000	0.000	21.63	0.00	0.00
15	137.00	AIR6449 B41	3	8.222	9.044	0.53	0.75	10.53	683.34	0.000	0.000	95.24	0.00	0.00
16	137.00	KRD 9011461-B66A-B2A	3	8.222	9.044	0.65	0.75	14.92	1019.77	0.000	0.000	134.92	0.00	0.00
17	137.00	APXVAARR24_43-U-NA2	3	8.222	9.044	0.60	0.75	39.82	1701.86	0.000	0.000	360.15	0.00	0.00
18	137.00	RRUS 4415 B25	3	8.222	9.044	0.50	0.75	3.24	259.60	0.000	0.000	29.32	0.00	0.00
19	137.00	4449 B71 + B12	3	8.222	9.044	0.50	0.75	3.82	259.99	0.000	0.000	34.55	0.00	0.00
20	137.00	Support rail kit - Mods	1	8.222	9.044	1.00	1.00	32.48	1038.02	0.000	0.000	293.77	0.00	0.00
21	137.00	Mount pipe	9	8.222	9.044	0.75	0.75	29.33	732.05	0.000	0.000	265.25	0.00	0.00
22	137.00	Low Profile Platform	1	8.222	9.044	1.00	1.00	39.50	2797.10	0.000	0.000	357.28	0.00	0.00
23	129.00	AIR 6419 B77G	3	8.119	8.931	0.57	0.75	7.84	454.17	0.000	0.000	70.00	0.00	0.00
24	127.00	Handrail Reinforcement -	1	8.092	8.901	1.00	1.00	20.30	701.56	0.000	0.000	180.68	0.00	0.00
25	127.00	QD8616-7	3	8.092	8.901	0.69	0.75	42.72	1478.58	0.000	0.000	380.23	0.00	0.00
26	127.00	DMP65R-BU8DA	3	8.092	8.901	0.55	0.75	32.25	1803.45	0.000	0.000	287.10	0.00	0.00
27	127.00	RRUS 4449 B5/B12	3	8.092	8.901	0.50	0.75	3.78	372.30	0.000	0.000	33.66	0.00	0.00
28	127.00	Erisson 2012 B29	3	8.092	8.901	0.50	0.75	5.79	351.60	0.000	0.000	51.56	0.00	0.00
29	127.00	DC6-48-60-18-8C-EV	1	8.092	8.901	0.75	0.75	4.24	111.09	0.000	0.000	37.72	0.00	0.00
30	127.00	Collar Mount - Mod	1	8.092	8.901	1.00	1.00	5.07	321.21	0.000	0.000	45.17	0.00	0.00
31	127.00	MTC3607 Platform + HR &	1	8.092	8.901	1.00	1.00	89.33	4775.24	0.000	0.000	795.11	0.00	0.00
32	127.00	Ericsson RRUS 4478 B14	3	8.092	8.901	0.50	0.75	3.26	307.99	0.000	0.000	28.98	0.00	0.00
33	127.00	Raycap DC6-48-60-18-8F	3	8.092	8.901	0.75	0.75	7.27	243.79	0.000	0.000	64.69	0.00	0.00
34	127.00	Ericsson RRUS 32 RRU	3	8.092	8.901	0.50	0.75	3.35	419.49	0.000	0.000	29.78	0.00	0.00
35	127.00	Kaelus DBCT108F1V92-1	3	8.092	8.901	0.38	0.75	1.07	144.01	0.000	0.000	9.55	0.00	0.00
36	127.00	Ericsson RRUS 4478 B5	3	8.092	8.901	0.50	0.75	3.59	324.77	0.000	0.000	31.93	0.00	0.00
37	127.00	Ericsson RRUS 4415 B25	3	8.092	8.901	0.50	0.75	3.65	268.13	0.000	0.000	32.52	0.00	0.00
38	127.00	Ericsson RRUS 4426 B66	3	8.092	8.901	0.50	0.75	2.44	289.40	0.000	0.000	21.68	0.00	0.00
39	125.00	AIR 6449 B77D	3	8.065	8.872	0.64	0.75	9.51	720.63	0.000	0.000	84.34	0.00	0.00
40	117.00	MC-PK8-DSH	1	7.954	8.749	1.00	1.00	83.66	3345.81	0.000	0.000	731.98	0.00	0.00
41	117.00	RDIDC-9181-OF-48	1	7.954	8.749	1.00	1.00	2.56	65.52	0.000	0.000	22.44	0.00	0.00
42	117.00	TA08025-B604	3	7.954	8.749	0.50	0.75	3.78	341.90	0.000	0.000	33.07	0.00	0.00
43	117.00	TA08025-B605	3	7.954	8.749	0.50	0.75	3.78	385.26	0.000	0.000	33.07	0.00	0.00
44	117.00	MX08FRO665-21	3	7.954	8.749	0.56	0.75	23.49	881.80	0.000	0.000	205.50	0.00	0.00
							Totals:		**37,205.46**				**6,649.22**	

Total Applied Force Summary

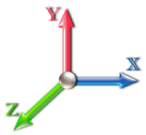
Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 35	

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 26

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
2.00		69.57	885.25	0.00	0.00
4.00		69.21	891.69	0.00	0.00
6.00		68.78	893.01	0.00	0.00
8.00		68.31	892.10	0.00	0.00
10.00		67.84	889.91	0.00	0.00
12.00		67.35	886.88	0.00	0.00
14.00		66.85	883.26	0.00	0.00
16.00		67.17	879.20	0.00	0.00
18.00		68.33	874.79	0.00	0.00
20.00		69.32	870.09	0.00	0.00
22.00		70.17	865.17	0.00	0.00
24.00		70.89	860.05	0.00	0.00
26.00		71.52	854.76	0.00	0.00
28.00		72.05	849.33	0.00	0.00
30.00		72.50	843.77	0.00	0.00
32.00		72.88	838.10	0.00	0.00
34.00		73.19	832.33	0.00	0.00
36.00		73.45	826.47	0.00	0.00
38.00		73.65	820.53	0.00	0.00
40.00		73.80	814.51	0.00	0.00
42.00		73.91	808.43	0.00	0.00
44.00		73.98	802.29	0.00	0.00
46.00		74.00	796.09	0.00	0.00
47.25		46.17	494.49	0.00	0.00
48.00		28.08	469.42	0.00	0.00
50.00		75.06	1244.02	0.00	0.00
52.00		75.00	1233.09	0.00	0.00
53.25		46.75	765.24	0.00	0.00
54.00		28.00	265.05	0.00	0.00
56.00		74.77	702.59	0.00	0.00
58.00		74.62	696.89	0.00	0.00
60.00		74.45	691.16	0.00	0.00
62.00		74.24	685.40	0.00	0.00
64.00		74.02	679.60	0.00	0.00
66.00		73.77	673.78	0.00	0.00
68.00		73.50	667.92	0.00	0.00
70.00		73.22	662.04	0.00	0.00
72.00		72.91	656.13	0.00	0.00
74.00		72.58	650.20	0.00	0.00
76.00		72.24	644.24	0.00	0.00
78.00		71.88	638.26	0.00	0.00
80.00		71.50	632.26	0.00	0.00
82.00		71.11	626.23	0.00	0.00
84.00		70.70	620.19	0.00	0.00
86.00		70.28	614.13	0.00	0.00
88.00		69.84	608.05	0.00	0.00

Total Applied Force Summary

Structure:	CT13075-A-SBA		**Code:**	TIA-222-G	6/24/2022
Site Name:	New London		**Exposure:**	C	
Height:	149.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 36

Tower Engineering Solutions

90.00		69.39	601.95	0.00	0.00
92.00		68.93	595.83	0.00	0.00
94.00		68.46	589.70	0.00	0.00
96.00		67.97	583.55	0.00	0.00
98.00		68.32	815.16	0.00	0.00
100.00		67.81	805.93	0.00	0.00
100.75		25.26	300.03	0.00	0.00
102.00		41.96	286.14	0.00	0.00
104.00		66.76	453.73	0.00	0.00
106.00		66.22	449.04	0.00	0.00
108.00		65.67	444.33	0.00	0.00
110.00		65.11	439.62	0.00	0.00
112.00		64.53	434.89	0.00	0.00
114.00		63.95	430.15	0.00	0.00
116.00		63.36	425.39	0.00	0.00
117.00	(11) attachments	1057.47	5231.42	0.00	0.00
118.00		31.27	208.73	0.00	0.00
120.00		62.15	413.45	0.00	0.00
122.00		61.53	408.67	0.00	0.00
124.00		60.90	403.87	0.00	0.00
125.00	(3) attachments	114.52	920.98	0.00	0.00
126.00		30.02	199.15	0.00	0.00
127.00	(37) attachments	2060.20	12110.54	0.00	0.00
128.00		29.70	192.20	0.00	0.00
129.00	(3) attachments	99.54	645.16	0.00	0.00
130.00		29.37	189.79	0.00	0.00
132.00		58.30	375.50	0.00	0.00
134.00		57.63	370.65	0.00	0.00
136.00		56.96	365.80	0.00	0.00
137.00	(29) attachments	1620.31	8770.30	0.00	0.00
138.00		28.03	167.31	0.00	0.00
139.00		27.86	166.10	0.00	0.00
140.00		27.68	143.69	0.00	0.00
142.00		54.89	283.84	0.00	0.00
144.00		54.18	279.71	0.00	0.00
146.00		53.47	275.57	0.00	0.00
148.00		52.75	271.43	0.00	0.00
149.00	(38) attachments	1872.47	10643.17	0.00	476.01
	Totals:	**11,698.33**	**85,970.82**	**0.00**	**476.01**

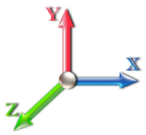
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 37	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
2.00	Safety Cable	Yes	2.00	0.000	0.38	0.44	0.00	0.017	0.000	5.168	0.00	4.48
2.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.48	0.00	0.017	0.000	5.168	0.00	3.14
4.00	Safety Cable	Yes	2.00	0.000	0.38	0.47	0.00	0.017	0.000	5.168	0.00	4.99
4.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.51	0.00	0.017	0.000	5.168	0.00	3.60
6.00	Safety Cable	Yes	2.00	0.000	0.38	0.48	0.00	0.017	0.000	5.168	0.00	5.33
6.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.53	0.00	0.017	0.000	5.168	0.00	3.91
8.00	Safety Cable	Yes	2.00	0.000	0.38	0.50	0.00	0.018	0.000	5.168	0.00	5.58
8.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.54	0.00	0.018	0.000	5.168	0.00	4.14
10.00	Safety Cable	Yes	2.00	0.000	0.38	0.51	0.00	0.018	0.000	5.168	0.00	5.79
10.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.55	0.00	0.018	0.000	5.168	0.00	4.33
12.00	Safety Cable	Yes	2.00	0.000	0.38	0.52	0.00	0.018	0.000	5.168	0.00	5.96
12.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.56	0.00	0.018	0.000	5.168	0.00	4.49
14.00	Safety Cable	Yes	2.00	0.000	0.38	0.52	0.00	0.018	0.000	5.168	0.00	6.11
14.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.56	0.00	0.018	0.000	5.168	0.00	4.63
16.00	Safety Cable	Yes	2.00	0.000	0.38	0.53	0.00	0.018	0.000	5.232	0.00	6.25
16.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.57	0.00	0.018	0.000	5.232	0.00	4.76
18.00	Safety Cable	Yes	2.00	0.000	0.38	0.53	0.00	0.018	0.000	5.363	0.00	6.37
18.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.58	0.00	0.018	0.000	5.363	0.00	4.87
20.00	Safety Cable	Yes	2.00	0.000	0.38	0.54	0.00	0.018	0.000	5.483	0.00	6.48
20.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.58	0.00	0.018	0.000	5.483	0.00	4.97
22.00	Safety Cable	Yes	2.00	0.000	0.38	0.54	0.00	0.019	0.000	5.595	0.00	6.59
22.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.59	0.00	0.019	0.000	5.595	0.00	5.07
24.00	Safety Cable	Yes	2.00	0.000	0.38	0.55	0.00	0.019	0.000	5.698	0.00	6.68
24.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.59	0.00	0.019	0.000	5.698	0.00	5.16
26.00	Safety Cable	Yes	2.00	0.000	0.38	0.55	0.00	0.019	0.000	5.795	0.00	6.77
26.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.59	0.00	0.019	0.000	5.795	0.00	5.24
28.00	Safety Cable	Yes	2.00	0.000	0.38	0.56	0.00	0.019	0.000	5.886	0.00	6.86
28.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.60	0.00	0.019	0.000	5.886	0.00	5.32
30.00	Safety Cable	Yes	2.00	0.000	0.38	0.56	0.00	0.019	0.000	5.972	0.00	6.94
30.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.60	0.00	0.019	0.000	5.972	0.00	5.39
32.00	Safety Cable	Yes	2.00	0.000	0.38	0.56	0.00	0.020	0.000	6.054	0.00	7.02
32.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.60	0.00	0.020	0.000	6.054	0.00	5.46
34.00	Safety Cable	Yes	2.00	0.000	0.38	0.56	0.00	0.020	0.000	6.132	0.00	7.09
34.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.61	0.00	0.020	0.000	6.132	0.00	5.53
36.00	Safety Cable	Yes	2.00	0.000	0.38	0.57	0.00	0.020	0.000	6.206	0.00	7.16
36.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.61	0.00	0.020	0.000	6.206	0.00	5.59
38.00	Safety Cable	Yes	2.00	0.000	0.38	0.57	0.00	0.020	0.000	6.277	0.00	7.22
38.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.61	0.00	0.020	0.000	6.277	0.00	5.66
40.00	Safety Cable	Yes	2.00	0.000	0.38	0.57	0.00	0.020	0.000	6.345	0.00	7.28
40.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.61	0.00	0.020	0.000	6.345	0.00	5.71
42.00	Safety Cable	Yes	2.00	0.000	0.38	0.58	0.00	0.020	0.000	6.410	0.00	7.34
42.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.62	0.00	0.020	0.000	6.410	0.00	5.77
44.00	Safety Cable	Yes	2.00	0.000	0.38	0.58	0.00	0.021	0.000	6.474	0.00	7.40
44.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.62	0.00	0.021	0.000	6.474	0.00	5.82
46.00	Safety Cable	Yes	2.00	0.000	0.38	0.58	0.00	0.021	0.000	6.534	0.00	7.46
46.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.62	0.00	0.021	0.000	6.534	0.00	5.88
47.25	Safety Cable	Yes	1.25	0.000	0.38	0.36	0.00	0.021	0.000	6.571	0.00	4.68

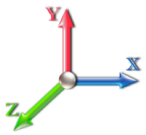
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 38	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
47.25	Step bolts (ladder)	Yes	1.25	0.000	0.63	0.39	0.00	0.021	0.000	6.571	0.00	3.69
48.00	Safety Cable	Yes	0.75	0.000	0.38	0.22	0.00	0.021	0.000	6.593	0.00	2.82
48.00	Step bolts (ladder)	Yes	0.75	0.000	0.63	0.23	0.00	0.021	0.000	6.593	0.00	2.22
50.00	Safety Cable	Yes	2.00	0.000	0.38	0.58	0.00	0.021	0.000	6.650	0.00	7.56
50.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.63	0.00	0.021	0.000	6.650	0.00	5.97
52.00	Safety Cable	Yes	2.00	0.000	0.38	0.59	0.00	0.022	0.000	6.705	0.00	7.62
52.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.63	0.00	0.022	0.000	6.705	0.00	6.02
53.25	Safety Cable	Yes	1.25	0.000	0.38	0.37	0.00	0.022	0.000	6.739	0.00	4.78
53.25	Step bolts (ladder)	Yes	1.25	0.000	0.63	0.39	0.00	0.022	0.000	6.739	0.00	3.78
54.00	Safety Cable	Yes	0.75	0.000	0.38	0.22	0.00	0.021	0.000	6.759	0.00	2.87
54.00	Step bolts (ladder)	Yes	0.75	0.000	0.63	0.24	0.00	0.021	0.000	6.759	0.00	2.28
56.00	Safety Cable	Yes	2.00	0.000	0.38	0.59	0.00	0.022	0.000	6.811	0.00	7.71
56.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.63	0.00	0.022	0.000	6.811	0.00	6.11
58.00	Safety Cable	Yes	2.00	0.000	0.38	0.59	0.00	0.022	0.000	6.861	0.00	7.76
58.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.63	0.00	0.022	0.000	6.861	0.00	6.15
60.00	Safety Cable	Yes	2.00	0.000	0.38	0.59	0.00	0.022	0.000	6.910	0.00	7.80
60.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.64	0.00	0.022	0.000	6.910	0.00	6.20
62.00	Safety Cable	Yes	2.00	0.000	0.38	0.60	0.00	0.022	0.000	6.958	0.00	7.85
62.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.64	0.00	0.022	0.000	6.958	0.00	6.24
64.00	Safety Cable	Yes	2.00	0.000	0.38	0.60	0.00	0.023	0.000	7.005	0.00	7.89
64.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.64	0.00	0.023	0.000	7.005	0.00	6.28
66.00	Safety Cable	Yes	2.00	0.000	0.38	0.60	0.00	0.023	0.000	7.050	0.00	7.93
66.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.64	0.00	0.023	0.000	7.050	0.00	6.32
68.00	Safety Cable	Yes	2.00	0.000	0.38	0.60	0.00	0.023	0.000	7.095	0.00	7.97
68.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.64	0.00	0.023	0.000	7.095	0.00	6.35
70.00	Safety Cable	Yes	2.00	0.000	0.38	0.60	0.00	0.023	0.000	7.138	0.00	8.01
70.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.64	0.00	0.023	0.000	7.138	0.00	6.39
72.00	Safety Cable	Yes	2.00	0.000	0.38	0.60	0.00	0.024	0.000	7.181	0.00	8.05
72.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.65	0.00	0.024	0.000	7.181	0.00	6.43
74.00	Safety Cable	Yes	2.00	0.000	0.38	0.61	0.00	0.024	0.000	7.222	0.00	8.09
74.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.65	0.00	0.024	0.000	7.222	0.00	6.46
76.00	Safety Cable	Yes	2.00	0.000	0.38	0.61	0.00	0.024	0.000	7.263	0.00	8.13
76.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.65	0.00	0.024	0.000	7.263	0.00	6.50
78.00	Safety Cable	Yes	2.00	0.000	0.38	0.61	0.00	0.024	0.000	7.303	0.00	8.16
78.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.65	0.00	0.024	0.000	7.303	0.00	6.53
80.00	Safety Cable	Yes	2.00	0.000	0.38	0.61	0.00	0.025	0.000	7.342	0.00	8.20
80.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.65	0.00	0.025	0.000	7.342	0.00	6.56
82.00	Safety Cable	Yes	2.00	0.000	0.38	0.61	0.00	0.025	0.000	7.380	0.00	8.23
82.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.65	0.00	0.025	0.000	7.380	0.00	6.60
84.00	Safety Cable	Yes	2.00	0.000	0.38	0.61	0.00	0.025	0.000	7.418	0.00	8.27
84.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.65	0.00	0.025	0.000	7.418	0.00	6.63
86.00	Safety Cable	Yes	2.00	0.000	0.38	0.61	0.00	0.026	0.000	7.454	0.00	8.30
86.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.66	0.00	0.026	0.000	7.454	0.00	6.66
88.00	Safety Cable	Yes	2.00	0.000	0.38	0.61	0.00	0.026	0.000	7.491	0.00	8.33
88.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.66	0.00	0.026	0.000	7.491	0.00	6.69
90.00	Safety Cable	Yes	2.00	0.000	0.38	0.62	0.00	0.026	0.000	7.526	0.00	8.37
90.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.66	0.00	0.026	0.000	7.526	0.00	6.72

Linear Appurtenance Segment Forces (Factored)

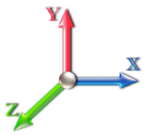
Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 39	

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 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
92.00	Safety Cable	Yes	2.00	0.000	0.38	0.62	0.00	0.026	0.000	7.561	0.00	8.40
92.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.66	0.00	0.026	0.000	7.561	0.00	6.75
94.00	Safety Cable	Yes	2.00	0.000	0.38	0.62	0.00	0.027	0.000	7.595	0.00	8.43
94.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.66	0.00	0.027	0.000	7.595	0.00	6.78
96.00	Safety Cable	Yes	2.00	0.000	0.38	0.62	0.00	0.027	0.000	7.629	0.00	8.46
96.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.66	0.00	0.027	0.000	7.629	0.00	6.81
98.00	Safety Cable	Yes	2.00	0.000	0.38	0.62	0.00	0.028	0.000	7.662	0.00	8.49
98.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.66	0.00	0.028	0.000	7.662	0.00	6.83
100.00	Safety Cable	Yes	2.00	0.000	0.38	0.62	0.00	0.028	0.000	7.695	0.00	8.52
100.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.66	0.00	0.028	0.000	7.695	0.00	6.86
100.75	Safety Cable	Yes	0.75	0.000	0.38	0.23	0.00	0.028	0.000	7.707	0.00	3.20
100.75	Step bolts (ladder)	Yes	0.75	0.000	0.63	0.25	0.00	0.028	0.000	7.707	0.00	2.58
102.00	Safety Cable	Yes	1.25	0.000	0.38	0.39	0.00	0.028	0.000	7.727	0.00	5.34
102.00	Step bolts (ladder)	Yes	1.25	0.000	0.63	0.42	0.00	0.028	0.000	7.727	0.00	4.31
104.00	Safety Cable	Yes	2.00	0.000	0.38	0.62	0.00	0.028	0.000	7.759	0.00	8.58
104.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.67	0.00	0.028	0.000	7.759	0.00	6.92
106.00	Safety Cable	Yes	2.00	0.000	0.38	0.63	0.00	0.029	0.000	7.790	0.00	8.60
106.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.67	0.00	0.029	0.000	7.790	0.00	6.94
108.00	Safety Cable	Yes	2.00	0.000	0.38	0.63	0.00	0.029	0.000	7.821	0.00	8.63
108.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.67	0.00	0.029	0.000	7.821	0.00	6.97
110.00	Safety Cable	Yes	2.00	0.000	0.38	0.63	0.00	0.029	0.000	7.851	0.00	8.66
110.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.67	0.00	0.029	0.000	7.851	0.00	6.99
112.00	Safety Cable	Yes	2.00	0.000	0.38	0.63	0.00	0.030	0.000	7.881	0.00	8.69
112.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.67	0.00	0.030	0.000	7.881	0.00	7.02
114.00	Safety Cable	Yes	2.00	0.000	0.38	0.63	0.00	0.030	0.000	7.910	0.00	8.71
114.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.67	0.00	0.030	0.000	7.910	0.00	7.04
116.00	Safety Cable	Yes	2.00	0.000	0.38	0.63	0.00	0.031	0.000	7.939	0.00	8.74
116.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.67	0.00	0.031	0.000	7.939	0.00	7.07
117.00	Safety Cable	Yes	1.00	0.000	0.38	0.32	0.00	0.031	0.000	7.954	0.00	4.38
117.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.34	0.00	0.031	0.000	7.954	0.00	3.54
118.00	Safety Cable	Yes	1.00	0.000	0.38	0.32	0.00	0.031	0.000	7.968	0.00	4.38
118.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.34	0.00	0.031	0.000	7.968	0.00	3.55
120.00	Safety Cable	Yes	2.00	0.000	0.38	0.63	0.00	0.032	0.000	7.996	0.00	8.79
120.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.67	0.00	0.032	0.000	7.996	0.00	7.12
122.00	Safety Cable	Yes	2.00	0.000	0.38	0.63	0.00	0.032	0.000	8.024	0.00	8.82
122.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.67	0.00	0.032	0.000	8.024	0.00	7.14
124.00	Safety Cable	Yes	2.00	0.000	0.38	0.63	0.00	0.033	0.000	8.051	0.00	8.84
124.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.68	0.00	0.033	0.000	8.051	0.00	7.16
125.00	Safety Cable	Yes	1.00	0.000	0.38	0.32	0.00	0.033	0.000	8.065	0.00	4.43
125.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.34	0.00	0.033	0.000	8.065	0.00	3.59
126.00	Safety Cable	Yes	1.00	0.000	0.38	0.32	0.00	0.033	0.000	8.079	0.00	4.43
126.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.34	0.00	0.033	0.000	8.079	0.00	3.59
127.00	Safety Cable	Yes	1.00	0.000	0.38	0.32	0.00	0.034	0.000	8.092	0.00	4.44
127.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.34	0.00	0.034	0.000	8.092	0.00	3.60
128.00	Safety Cable	Yes	1.00	0.000	0.38	0.32	0.00	0.034	0.000	8.105	0.00	4.45
128.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.34	0.00	0.034	0.000	8.105	0.00	3.60
129.00	Safety Cable	Yes	1.00	0.000	0.38	0.32	0.00	0.034	0.000	8.119	0.00	4.45

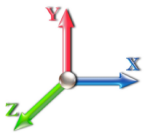
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 40	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
129.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.34	0.00	0.034	0.000	8.119	0.00	3.61
130.00	Safety Cable	Yes	1.00	0.000	0.38	0.32	0.00	0.034	0.000	8.132	0.00	4.46
130.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.34	0.00	0.034	0.000	8.132	0.00	3.62
132.00	Safety Cable	Yes	2.00	0.000	0.38	0.64	0.00	0.035	0.000	8.158	0.00	8.94
132.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.68	0.00	0.035	0.000	8.158	0.00	7.25
134.00	Safety Cable	Yes	2.00	0.000	0.38	0.64	0.00	0.035	0.000	8.184	0.00	8.96
134.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.68	0.00	0.035	0.000	8.184	0.00	7.28
136.00	Safety Cable	Yes	2.00	0.000	0.38	0.64	0.00	0.036	0.000	8.210	0.00	8.98
136.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.68	0.00	0.036	0.000	8.210	0.00	7.30
137.00	Safety Cable	Yes	1.00	0.000	0.38	0.32	0.00	0.036	0.000	8.222	0.00	4.50
137.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.34	0.00	0.036	0.000	8.222	0.00	3.65
138.00	Safety Cable	Yes	1.00	0.000	0.38	0.32	0.00	0.037	0.000	8.235	0.00	4.50
138.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.34	0.00	0.037	0.000	8.235	0.00	3.66
139.00	Safety Cable	Yes	1.00	0.000	0.38	0.32	0.00	0.037	0.000	8.247	0.00	4.51
139.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.34	0.00	0.037	0.000	8.247	0.00	3.66
140.00	Safety Cable	Yes	1.00	0.000	0.38	0.32	0.00	0.037	0.000	8.260	0.00	4.51
140.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.34	0.00	0.037	0.000	8.260	0.00	3.67
142.00	Safety Cable	Yes	2.00	0.000	0.38	0.64	0.00	0.038	0.000	8.285	0.00	9.05
142.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.68	0.00	0.038	0.000	8.285	0.00	7.36
144.00	Safety Cable	Yes	2.00	0.000	0.38	0.64	0.00	0.039	0.000	8.309	0.00	9.07
144.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.68	0.00	0.039	0.000	8.309	0.00	7.38
146.00	Safety Cable	Yes	2.00	0.000	0.38	0.64	0.00	0.039	0.000	8.333	0.00	9.10
146.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.69	0.00	0.039	0.000	8.333	0.00	7.40
148.00	Safety Cable	Yes	2.00	0.000	0.38	0.64	0.00	0.040	0.000	8.357	0.00	9.12
148.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.69	0.00	0.040	0.000	8.357	0.00	7.42
149.00	Safety Cable	Yes	1.00	0.000	0.38	0.32	0.00	0.041	0.000	8.369	0.00	4.56
149.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.34	0.00	0.041	0.000	8.369	0.00	3.72
										Totals:	**0.0**	**1,047.6**

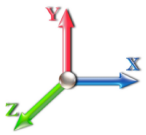
Calculated Forces

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 41	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

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	-85.97	-11.72	0.00	-1362.8	0.00	1362.88	5451.60	2725.80	12956.4	6487.84	0.00	0.000	0.000	0.226
2.00	-85.08	-11.68	0.00	-1339.4	0.00	1339.45	5423.14	2711.57	12782.7	6400.90	0.01	-0.023	0.000	0.225
4.00	-84.18	-11.64	0.00	-1316.0	0.00	1316.09	5394.41	2697.20	12609.6	6314.20	0.02	-0.045	0.000	0.224
6.00	-83.28	-11.61	0.00	-1292.8	0.00	1292.81	5365.42	2682.71	12437.0	6227.76	0.04	-0.068	0.000	0.223
8.00	-82.39	-11.57	0.00	-1269.5	0.00	1269.59	5336.17	2668.08	12264.9	6141.58	0.08	-0.092	0.000	0.222
10.00	-81.49	-11.54	0.00	-1246.4	0.00	1246.45	5306.65	2653.32	12093.3	6055.68	0.12	-0.115	0.000	0.221
12.00	-80.60	-11.50	0.00	-1223.3	0.00	1223.38	5276.87	2638.43	11922.3	5970.05	0.17	-0.138	0.000	0.220
14.00	-79.71	-11.46	0.00	-1200.3	0.00	1200.38	5246.82	2623.41	11751.9	5884.71	0.24	-0.162	0.000	0.219
16.00	-78.83	-11.43	0.00	-1177.4	0.00	1177.46	5216.51	2608.26	11582.1	5799.67	0.31	-0.186	0.000	0.218
18.00	-77.95	-11.39	0.00	-1154.6	0.00	1154.61	5185.94	2592.97	11412.8	5714.93	0.39	-0.210	0.000	0.217
20.00	-77.08	-11.35	0.00	-1131.8	0.00	1131.84	5155.10	2577.55	11244.2	5630.50	0.49	-0.234	0.000	0.216
22.00	-76.21	-11.31	0.00	-1109.1	0.00	1109.14	5124.00	2562.00	11076.3	5546.38	0.59	-0.258	0.000	0.215
24.00	-75.34	-11.26	0.00	-1086.5	0.00	1086.53	5092.64	2546.32	10908.9	5462.60	0.70	-0.283	0.000	0.214
26.00	-74.48	-11.22	0.00	-1064.0	0.00	1064.01	5061.01	2530.51	10742.3	5379.14	0.83	-0.307	0.000	0.213
28.00	-73.63	-11.17	0.00	-1041.5	0.00	1041.57	5029.12	2514.56	10576.3	5296.03	0.96	-0.332	0.000	0.211
30.00	-72.78	-11.13	0.00	-1019.2	0.00	1019.22	4996.96	2498.48	10411.0	5213.26	1.11	-0.357	0.000	0.210
32.00	-71.94	-11.08	0.00	-996.97	0.00	996.97	4964.54	2482.27	10246.4	5130.86	1.26	-0.382	0.000	0.209
34.00	-71.10	-11.03	0.00	-974.81	0.00	974.81	4931.86	2465.93	10082.6	5048.81	1.43	-0.407	0.000	0.208
36.00	-70.27	-10.99	0.00	-952.74	0.00	952.74	4898.91	2449.45	9919.54	4967.14	1.60	-0.432	0.000	0.206
38.00	-69.45	-10.94	0.00	-930.77	0.00	930.77	4865.70	2432.85	9757.20	4885.85	1.79	-0.458	0.000	0.205
40.00	-68.63	-10.89	0.00	-908.90	0.00	908.90	4832.22	2416.11	9595.63	4804.95	1.99	-0.483	0.000	0.203
42.00	-67.82	-10.84	0.00	-887.13	0.00	887.13	4798.48	2399.24	9434.86	4724.44	2.20	-0.509	0.000	0.202
44.00	-67.01	-10.79	0.00	-865.46	0.00	865.46	4764.48	2382.24	9274.89	4644.34	2.41	-0.535	0.000	0.200
46.00	-66.21	-10.73	0.00	-843.89	0.00	843.89	4730.21	2365.11	9115.74	4564.64	2.64	-0.561	0.000	0.199
47.25	-65.71	-10.69	0.00	-830.48	0.00	830.48	4708.66	2354.33	9016.69	4515.05	2.79	-0.577	0.000	0.198
48.00	-65.24	-10.68	0.00	-822.46	0.00	822.46	4695.68	2347.84	8957.42	4485.37	2.88	-0.587	0.000	0.197
50.00	-63.99	-10.62	0.00	-801.10	0.00	801.10	4660.89	2330.44	8799.96	4406.52	3.14	-0.613	0.000	0.196
52.00	-62.76	-10.56	0.00	-779.86	0.00	779.86	4625.83	2312.91	8643.36	4328.11	3.40	-0.640	0.000	0.194
53.25	-61.99	-10.51	0.00	-766.66	0.00	766.66	3818.32	1909.16	7226.08	3618.41	3.57	-0.656	0.000	0.228
54.00	-61.72	-10.51	0.00	-758.78	0.00	758.78	3808.46	1904.23	7179.51	3595.09	3.67	-0.666	0.000	0.227
56.00	-61.01	-10.45	0.00	-737.77	0.00	737.77	3782.00	1891.00	7055.71	3533.10	3.96	-0.696	0.000	0.225
58.00	-60.31	-10.40	0.00	-716.86	0.00	716.86	3755.27	1877.63	6932.45	3471.38	4.26	-0.725	0.000	0.223
60.00	-59.62	-10.35	0.00	-696.06	0.00	696.06	3728.27	1864.14	6809.75	3409.94	4.57	-0.754	0.000	0.220
62.00	-58.93	-10.30	0.00	-675.37	0.00	675.37	3701.01	1850.51	6687.63	3348.79	4.89	-0.784	0.000	0.218
64.00	-58.24	-10.24	0.00	-654.78	0.00	654.78	3673.49	1836.75	6566.11	3287.93	5.22	-0.813	0.000	0.215
66.00	-57.57	-10.19	0.00	-634.30	0.00	634.30	3645.71	1822.85	6445.19	3227.39	5.57	-0.843	0.000	0.212
68.00	-56.89	-10.13	0.00	-613.92	0.00	613.92	3617.66	1808.83	6324.90	3167.15	5.93	-0.872	0.000	0.210
70.00	-56.23	-10.08	0.00	-593.65	0.00	593.65	3589.34	1794.67	6205.25	3107.24	6.30	-0.902	0.000	0.207
72.00	-55.57	-10.02	0.00	-573.50	0.00	573.50	3560.76	1780.38	6086.26	3047.65	6.69	-0.932	0.000	0.204
74.00	-54.91	-9.97	0.00	-553.45	0.00	553.45	3531.92	1765.96	5967.94	2988.40	7.08	-0.961	0.000	0.201
76.00	-54.27	-9.91	0.00	-533.51	0.00	533.51	3502.82	1751.41	5850.30	2929.50	7.49	-0.991	0.000	0.198
78.00	-53.62	-9.86	0.00	-513.68	0.00	513.68	3473.45	1736.72	5733.37	2870.94	7.91	-1.020	0.000	0.194
80.00	-52.99	-9.80	0.00	-493.97	0.00	493.97	3443.81	1721.91	5617.15	2812.75	8.35	-1.049	0.000	0.191
82.00	-52.36	-9.75	0.00	-474.36	0.00	474.36	3413.92	1706.96	5501.67	2754.92	8.79	-1.078	0.000	0.188
84.00	-51.73	-9.69	0.00	-454.87	0.00	454.87	3383.76	1691.88	5386.93	2697.47	9.25	-1.107	0.000	0.184
86.00	-51.12	-9.63	0.00	-435.49	0.00	435.49	3353.33	1676.67	5272.96	2640.40	9.72	-1.136	0.000	0.180
88.00	-50.51	-9.58	0.00	-416.22	0.00	416.22	3322.64	1661.32	5159.77	2583.72	10.20	-1.165	0.000	0.176
90.00	-49.90	-9.52	0.00	-397.07	0.00	397.07	3291.69	1645.84	5047.37	2527.44	10.70	-1.193	0.000	0.172

Calculated Forces

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 42

92.00	-49.30	-9.46	0.00	-378.04	0.00	378.04	3260.47	1630.24	4935.79	2471.56	11.20	-1.221	0.000	0.168
94.00	-48.71	-9.40	0.00	-359.11	0.00	359.11	3223.46	1611.73	4816.76	2411.96	11.72	-1.249	0.000	0.164
96.00	-48.12	-9.35	0.00	-340.31	0.00	340.31	3181.72	1590.86	4692.22	2349.60	12.25	-1.276	0.000	0.160
98.00	-47.31	-9.28	0.00	-321.61	0.00	321.61	3139.99	1570.00	4569.31	2288.05	12.79	-1.303	0.000	0.156
100.00	-46.50	-9.21	0.00	-303.05	0.00	303.05	3098.26	1549.13	4448.03	2227.32	13.34	-1.329	0.000	0.151
100.75	-46.20	-9.19	0.00	-296.14	0.00	296.14	1860.42	930.21	2714.89	1359.46	13.55	-1.339	0.000	0.243
102.00	-45.91	-9.16	0.00	-284.66	0.00	284.66	1851.10	925.55	2678.69	1341.34	13.91	-1.356	0.000	0.237
104.00	-45.45	-9.11	0.00	-266.34	0.00	266.34	1835.98	917.99	2620.93	1312.41	14.48	-1.391	0.000	0.228
106.00	-45.00	-9.06	0.00	-248.12	0.00	248.12	1820.60	910.30	2563.39	1283.60	15.07	-1.426	0.000	0.218
108.00	-44.55	-9.01	0.00	-230.00	0.00	230.00	1804.95	902.48	2506.08	1254.90	15.68	-1.460	0.000	0.208
110.00	-44.11	-8.96	0.00	-211.98	0.00	211.98	1789.04	894.52	2449.03	1226.33	16.30	-1.493	0.000	0.198
112.00	-43.67	-8.91	0.00	-194.07	0.00	194.07	1772.87	886.43	2392.24	1197.90	16.93	-1.524	0.000	0.187
114.00	-43.24	-8.85	0.00	-176.26	0.00	176.26	1756.43	878.22	2335.73	1169.60	17.57	-1.554	0.000	0.175
116.00	-42.81	-8.79	0.00	-158.55	0.00	158.55	1739.73	869.86	2279.52	1141.45	18.23	-1.582	0.000	0.164
117.00	-37.61	-7.60	0.00	-149.76	0.00	149.76	1731.28	865.64	2251.53	1127.44	18.56	-1.595	0.000	0.155
118.00	-37.40	-7.57	0.00	-142.16	0.00	142.16	1722.76	861.38	2223.62	1113.46	18.90	-1.608	0.000	0.149
120.00	-36.98	-7.52	0.00	-127.02	0.00	127.02	1705.53	852.77	2168.05	1085.64	19.58	-1.633	0.000	0.139
122.00	-36.57	-7.46	0.00	-111.99	0.00	111.99	1688.04	844.02	2112.82	1057.98	20.27	-1.656	0.000	0.128
124.00	-36.17	-7.39	0.00	-97.08	0.00	97.08	1670.28	835.14	2057.95	1030.51	20.97	-1.677	0.000	0.116
125.00	-35.25	-7.26	0.00	-89.68	0.00	89.68	1661.30	830.65	2030.66	1016.84	21.32	-1.686	0.000	0.109
126.00	-35.05	-7.23	0.00	-82.43	0.00	82.43	1652.26	826.13	2003.46	1003.22	21.67	-1.696	0.000	0.103
127.00	-23.01	-4.81	0.00	-75.20	0.00	75.20	1643.15	821.58	1976.36	989.65	22.03	-1.704	0.000	0.090
128.00	-22.82	-4.78	0.00	-70.39	0.00	70.39	1633.98	816.99	1949.35	976.13	22.39	-1.713	0.000	0.086
129.00	-22.17	-4.66	0.00	-65.61	0.00	65.61	1624.73	812.37	1922.45	962.65	22.75	-1.721	0.000	0.082
130.00	-21.98	-4.63	0.00	-60.95	0.00	60.95	1615.43	807.71	1895.65	949.24	23.11	-1.728	0.000	0.078
132.00	-21.61	-4.57	0.00	-51.68	0.00	51.68	1596.61	798.31	1842.37	922.56	23.84	-1.742	0.000	0.070
134.00	-21.24	-4.50	0.00	-42.55	0.00	42.55	1577.54	788.77	1789.53	896.09	24.57	-1.754	0.000	0.061
136.00	-20.87	-4.44	0.00	-33.54	0.00	33.54	1558.20	779.10	1737.14	869.86	25.31	-1.764	0.000	0.052
137.00	-12.16	-2.55	0.00	-29.11	0.00	29.11	1548.43	774.21	1711.12	856.83	25.68	-1.768	0.000	0.042
138.00	-11.99	-2.52	0.00	-26.56	0.00	26.56	1538.59	769.30	1685.21	843.86	26.05	-1.772	0.000	0.039
139.00	-11.83	-2.48	0.00	-24.04	0.00	24.04	1528.69	764.34	1659.43	830.95	26.42	-1.776	0.000	0.037
139.00	-11.83	-2.48	0.00	-24.04	0.00	24.04	1044.31	522.16	1138.99	570.34	26.42	-1.776	0.000	0.054
140.00	-11.68	-2.45	0.00	-21.56	0.00	21.56	1038.69	519.35	1122.71	562.19	26.79	-1.780	0.000	0.050
142.00	-11.40	-2.39	0.00	-16.65	0.00	16.65	1027.26	513.63	1090.28	545.95	27.54	-1.788	0.000	0.042
144.00	-11.12	-2.33	0.00	-11.87	0.00	11.87	1015.57	507.78	1058.02	529.79	28.29	-1.794	0.000	0.033
146.00	-10.85	-2.27	0.00	-7.22	0.00	7.22	1003.61	501.80	1025.94	513.73	29.04	-1.798	0.000	0.025
148.00	-10.58	-2.21	0.00	-2.68	0.00	2.68	991.38	495.69	994.07	497.78	29.79	-1.801	0.000	0.016
149.00	0.00	-1.87	0.00	-0.48	0.00	0.48	985.17	492.59	978.22	489.84	30.17	-1.801	0.000	0.001

Seismic Segment Forces (Factored)

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 43	

Load Case:	1.2D + 1.0E							**Iterations**	23
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)**	0.35		**SA**	0.03	**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	
2.00		544.19	0.00	0.01	0.01	4.42	
4.00		539.73	0.00	0.03	0.01	7.46	
6.00		535.27	0.00	0.04	0.02	9.62	
8.00		530.81	0.01	0.05	0.03	11.17	
10.00		526.35	0.01	0.05	0.03	12.29	
12.00		521.89	0.01	0.06	0.03	13.10	
14.00		517.43	0.02	0.06	0.04	13.67	
16.00		512.97	0.02	0.07	0.04	14.07	
18.00		508.51	0.03	0.07	0.04	14.35	
20.00		504.05	0.03	0.07	0.04	14.53	
22.00		499.60	0.04	0.07	0.04	14.64	
24.00		495.14	0.05	0.07	0.04	14.72	
26.00		490.68	0.06	0.07	0.04	14.76	
28.00		486.22	0.07	0.07	0.04	14.78	
30.00		481.76	0.08	0.07	0.04	14.80	
32.00		477.30	0.09	0.07	0.04	14.81	
34.00		472.84	0.10	0.07	0.04	14.81	
36.00		468.38	0.11	0.07	0.04	14.81	
38.00		463.92	0.12	0.07	0.03	14.81	
40.00		459.46	0.14	0.07	0.03	14.79	
42.00		455.00	0.15	0.07	0.03	14.76	
44.00		450.54	0.16	0.07	0.03	14.70	
46.00		446.08	0.18	0.07	0.03	14.60	
47.25	Bot - Section 2	276.53	0.19	0.06	0.02	9.06	
48.00		309.05	0.20	0.06	0.02	10.12	
50.00		818.44	0.21	0.06	0.02	26.70	
52.00		810.16	0.23	0.06	0.02	26.18	
53.25	Top - Section 1	502.14	0.24	0.06	0.02	16.08	
54.00		139.67	0.25	0.06	0.02	4.44	
56.00		369.82	0.27	0.05	0.02	11.48	
58.00		366.00	0.29	0.05	0.01	10.97	
60.00		362.17	0.31	0.04	0.01	10.35	
62.00		358.35	0.33	0.04	0.01	9.60	
64.00		354.53	0.35	0.03	0.01	8.72	
66.00		350.70	0.37	0.03	0.01	7.70	
68.00		346.88	0.39	0.02	0.01	6.54	
70.00		343.06	0.42	0.01	0.01	5.25	
72.00		339.24	0.44	0.00	0.01	3.86	
74.00		335.41	0.47	0.00	0.01	2.37	
76.00		331.59	0.49	-0.01	0.01	0.83	
78.00		327.77	0.52	-0.02	0.01	-0.72	
80.00		323.95	0.54	-0.03	0.01	-2.25	
82.00		320.12	0.57	-0.04	0.01	-3.71	
84.00		316.30	0.60	-0.05	0.01	-5.05	
86.00		312.48	0.63	-0.06	0.02	-6.25	

Seismic Segment Forces (Factored)

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 44	

88.00			308.65	0.66	-0.07	0.02	-7.26		
90.00			304.83	0.69	-0.08	0.03	-8.08		
92.00			301.01	0.72	-0.09	0.03	-8.67		
94.00			297.19	0.75	-0.10	0.04	-9.05		
96.00	Bot - Section 3		293.36	0.78	-0.11	0.05	-9.21		
98.00			485.94	0.82	-0.11	0.06	-15.34		
100.00			479.57	0.85	-0.12	0.07	-14.87		
100.75	Top - Section 2		178.20	0.86	-0.12	0.07	-5.45		
102.00			119.27	0.89	-0.12	0.08	-3.54		
104.00			188.76	0.92	-0.12	0.10	-5.22		
106.00			186.21	0.96	-0.12	0.11	-4.63		
108.00			183.66	0.99	-0.11	0.13	-3.92		
110.00			181.11	1.03	-0.10	0.15	-3.09		
112.00			178.56	1.07	-0.09	0.17	-2.15		
114.00			176.01	1.11	-0.07	0.19	-1.11		
116.00			173.47	1.15	-0.04	0.22	0.02		
117.00	Appurtenance(s)		2444.8	1.17	-0.03	0.23	8.89		
118.00			85.14	1.19	-0.01	0.24	0.62		
120.00			168.37	1.23	0.03	0.27	2.57		
122.00			165.82	1.27	0.08	0.31	3.96		
124.00			163.27	1.31	0.13	0.34	5.43		
125.00	Appurtenance(s)		344.68	1.33	0.16	0.36	13.18		
126.00			80.04	1.35	0.20	0.38	3.47		
127.00	Appurtenance(s)		4725.4	1.37	0.23	0.40	230.26		
128.00			78.77	1.39	0.27	0.43	4.27		
129.00	Appurtenance(s)		276.43	1.42	0.32	0.45	16.58		
130.00			77.49	1.44	0.36	0.47	5.10		
132.00			153.08	1.48	0.46	0.52	11.98		
134.00			150.53	1.53	0.57	0.58	13.76		
136.00			147.98	1.57	0.70	0.64	15.58		
137.00	Appurtenance(s)		3829.2	1.60	0.77	0.67	430.89		
138.00			72.40	1.62	0.85	0.70	8.69		
139.00	Top - Section 3		71.76	1.64	0.92	0.73	9.16		
140.00			53.47	1.67	1.01	0.77	7.24		
142.00			105.50	1.72	1.19	0.84	16.00		
144.00			103.59	1.77	1.39	0.92	17.48		
146.00			101.68	1.81	1.61	1.00	18.97		
148.00			99.77	1.86	1.85	1.09	20.48		
149.00	Appurtenance(s)		3945.1	1.89	1.98	1.14	847.73		
		Totals:	**41,182.7**				**2,069.5**	**Total Wind:**	**48,545.1**

Calculated Forces

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 45	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	23
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)**	0.35	**SA**	0.03	**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	-53.44	-2.19	0.00	-271.46	0.00	271.46	5451.60	2725.80	12956.4	6487.84		0.00	0.00	0.052
2.00	-52.73	-2.19	0.00	-267.09	0.00	267.09	5423.14	2711.57	12782.7	6400.90		0.00	0.00	0.051
4.00	-52.03	-2.18	0.00	-262.71	0.00	262.71	5394.41	2697.20	12609.6	6314.20		0.00	-0.01	0.051
6.00	-51.33	-2.18	0.00	-258.34	0.00	258.34	5365.42	2682.71	12437.0	6227.76		0.01	-0.01	0.051
8.00	-50.63	-2.17	0.00	-253.98	0.00	253.98	5336.17	2668.08	12264.9	6141.58		0.02	-0.02	0.051
10.00	-49.94	-2.16	0.00	-249.64	0.00	249.64	5306.65	2653.32	12093.3	6055.68		0.02	-0.02	0.051
12.00	-49.26	-2.15	0.00	-245.31	0.00	245.31	5276.87	2638.43	11922.3	5970.05		0.03	-0.03	0.050
14.00	-48.58	-2.14	0.00	-241.00	0.00	241.00	5246.82	2623.41	11751.9	5884.71		0.05	-0.03	0.050
16.00	-47.90	-2.13	0.00	-236.71	0.00	236.71	5216.51	2608.26	11582.1	5799.67		0.06	-0.04	0.050
18.00	-47.24	-2.12	0.00	-232.45	0.00	232.45	5185.94	2592.97	11412.8	5714.93		0.08	-0.04	0.050
20.00	-46.57	-2.11	0.00	-228.20	0.00	228.20	5155.10	2577.55	11244.2	5630.50		0.10	-0.05	0.050
22.00	-45.91	-2.10	0.00	-223.98	0.00	223.98	5124.00	2562.00	11076.3	5546.38		0.12	-0.05	0.049
24.00	-45.26	-2.09	0.00	-219.78	0.00	219.78	5092.64	2546.32	10908.9	5462.60		0.14	-0.06	0.049
26.00	-44.62	-2.08	0.00	-215.60	0.00	215.60	5061.01	2530.51	10742.3	5379.14		0.17	-0.06	0.049
28.00	-43.97	-2.07	0.00	-211.44	0.00	211.44	5029.12	2514.56	10576.3	5296.03		0.19	-0.07	0.049
30.00	-43.34	-2.05	0.00	-207.31	0.00	207.31	4996.96	2498.48	10411.0	5213.26		0.22	-0.07	0.048
32.00	-42.71	-2.04	0.00	-203.20	0.00	203.20	4964.54	2482.27	10246.4	5130.86		0.25	-0.08	0.048
34.00	-42.08	-2.03	0.00	-199.12	0.00	199.12	4931.86	2465.93	10082.6	5048.81		0.29	-0.08	0.048
36.00	-41.46	-2.02	0.00	-195.06	0.00	195.06	4898.91	2449.45	9919.54	4967.14		0.32	-0.09	0.048
38.00	-40.85	-2.01	0.00	-191.02	0.00	191.02	4865.70	2432.85	9757.20	4885.85		0.36	-0.09	0.047
40.00	-40.24	-1.99	0.00	-187.01	0.00	187.01	4832.22	2416.11	9595.63	4804.95		0.40	-0.10	0.047
42.00	-39.63	-1.98	0.00	-183.02	0.00	183.02	4798.48	2399.24	9434.86	4724.44		0.44	-0.10	0.047
44.00	-39.03	-1.97	0.00	-179.05	0.00	179.05	4764.48	2382.24	9274.89	4644.34		0.49	-0.11	0.047
46.00	-38.44	-1.96	0.00	-175.11	0.00	175.11	4730.21	2365.11	9115.74	4564.64		0.53	-0.11	0.046
47.25	-38.07	-1.95	0.00	-172.66	0.00	172.66	4708.66	2354.33	9016.69	4515.05		0.56	-0.12	0.046
48.00	-37.68	-1.94	0.00	-171.20	0.00	171.20	4695.68	2347.84	8957.42	4485.37		0.58	-0.12	0.046
50.00	-36.64	-1.92	0.00	-167.32	0.00	167.32	4660.89	2330.44	8799.96	4406.52		0.63	-0.12	0.046
52.00	-35.61	-1.89	0.00	-163.49	0.00	163.49	4625.83	2312.91	8643.36	4328.11		0.69	-0.13	0.045
53.25	-34.97	-1.87	0.00	-161.13	0.00	161.13	3818.32	1909.16	7226.08	3618.41		0.72	-0.13	0.054
54.00	-34.78	-1.87	0.00	-159.72	0.00	159.72	3808.46	1904.23	7179.51	3595.09		0.74	-0.14	0.054
56.00	-34.28	-1.86	0.00	-155.98	0.00	155.98	3782.00	1891.00	7055.71	3533.10		0.80	-0.14	0.053
58.00	-33.78	-1.85	0.00	-152.25	0.00	152.25	3755.27	1877.63	6932.45	3471.38		0.86	-0.15	0.053
60.00	-33.29	-1.85	0.00	-148.54	0.00	148.54	3728.27	1864.14	6809.75	3409.94		0.92	-0.15	0.052
62.00	-32.80	-1.84	0.00	-144.85	0.00	144.85	3701.01	1850.51	6687.63	3348.79		0.99	-0.16	0.052
64.00	-32.32	-1.83	0.00	-141.17	0.00	141.17	3673.49	1836.75	6566.11	3287.93		1.06	-0.17	0.052
66.00	-31.84	-1.83	0.00	-137.51	0.00	137.51	3645.71	1822.85	6445.19	3227.39		1.13	-0.17	0.051
68.00	-31.36	-1.82	0.00	-133.86	0.00	133.86	3617.66	1808.83	6324.90	3167.15		1.20	-0.18	0.051
70.00	-30.90	-1.82	0.00	-130.21	0.00	130.21	3589.34	1794.67	6205.25	3107.24		1.28	-0.19	0.051
72.00	-30.43	-1.82	0.00	-126.57	0.00	126.57	3560.76	1780.38	6086.26	3047.65		1.36	-0.19	0.050
74.00	-29.97	-1.82	0.00	-122.94	0.00	122.94	3531.92	1765.96	5967.94	2988.40		1.44	-0.20	0.050
76.00	-29.51	-1.82	0.00	-119.30	0.00	119.30	3502.82	1751.41	5850.30	2929.50		1.53	-0.21	0.049
78.00	-29.06	-1.82	0.00	-115.67	0.00	115.67	3473.45	1736.72	5733.37	2870.94		1.61	-0.21	0.049
80.00	-28.61	-1.82	0.00	-112.03	0.00	112.03	3443.81	1721.91	5617.15	2812.75		1.70	-0.22	0.048
82.00	-28.17	-1.82	0.00	-108.39	0.00	108.39	3413.92	1706.96	5501.67	2754.92		1.80	-0.23	0.048
84.00	-27.73	-1.82	0.00	-104.74	0.00	104.74	3383.76	1691.88	5386.93	2697.47		1.89	-0.23	0.047
86.00	-27.30	-1.83	0.00	-101.09	0.00	101.09	3353.33	1676.67	5272.96	2640.40		1.99	-0.24	0.046
88.00	-26.87	-1.83	0.00	-97.44	0.00	97.44	3322.64	1661.32	5159.77	2583.72		2.09	-0.25	0.046

Calculated Forces

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 46

90.00	-26.45	-1.83	0.00	-93.79	0.00	93.79	3291.69	1645.84	5047.37	2527.44	2.20	-0.25	0.045
92.00	-26.03	-1.83	0.00	-90.13	0.00	90.13	3260.47	1630.24	4935.79	2471.56	2.31	-0.26	0.044
94.00	-25.62	-1.83	0.00	-86.47	0.00	86.47	3223.46	1611.73	4816.76	2411.96	2.42	-0.27	0.044
96.00	-25.21	-1.83	0.00	-82.81	0.00	82.81	3181.72	1590.86	4692.22	2349.60	2.53	-0.27	0.043
98.00	-24.56	-1.83	0.00	-79.15	0.00	79.15	3139.99	1570.00	4569.31	2288.05	2.64	-0.28	0.042
100.00	-23.93	-1.83	0.00	-75.49	0.00	75.49	3098.26	1549.13	4448.03	2227.32	2.76	-0.29	0.042
100.75	-23.69	-1.83	0.00	-74.11	0.00	74.11	1860.42	930.21	2714.89	1359.46	2.81	-0.29	0.067
102.00	-23.52	-1.83	0.00	-71.83	0.00	71.83	1851.10	925.55	2678.69	1341.34	2.88	-0.29	0.066
104.00	-23.23	-1.83	0.00	-68.16	0.00	68.16	1835.98	917.99	2620.93	1312.41	3.01	-0.30	0.065
106.00	-22.95	-1.84	0.00	-64.49	0.00	64.49	1820.60	910.30	2563.39	1283.60	3.14	-0.31	0.063
108.00	-22.67	-1.84	0.00	-60.82	0.00	60.82	1804.95	902.48	2506.08	1254.90	3.27	-0.32	0.061
110.00	-22.39	-1.84	0.00	-57.14	0.00	57.14	1789.04	894.52	2449.03	1226.33	3.40	-0.33	0.059
112.00	-22.12	-1.84	0.00	-53.46	0.00	53.46	1772.87	886.43	2392.24	1197.90	3.54	-0.34	0.057
114.00	-21.85	-1.84	0.00	-49.78	0.00	49.78	1756.43	878.22	2335.73	1169.60	3.68	-0.34	0.055
116.00	-21.59	-1.84	0.00	-46.09	0.00	46.09	1739.73	869.86	2279.52	1141.45	3.83	-0.35	0.053
117.00	-18.62	-1.82	0.00	-44.25	0.00	44.25	1731.28	865.64	2251.53	1127.44	3.91	-0.36	0.050
118.00	-18.49	-1.82	0.00	-42.43	0.00	42.43	1722.76	861.38	2223.62	1113.46	3.98	-0.36	0.049
120.00	-18.24	-1.82	0.00	-38.79	0.00	38.79	1705.53	852.77	2168.05	1085.64	4.13	-0.37	0.046
122.00	-17.98	-1.81	0.00	-35.16	0.00	35.16	1688.04	844.02	2112.82	1057.98	4.29	-0.37	0.044
124.00	-17.73	-1.81	0.00	-31.53	0.00	31.53	1670.28	835.14	2057.95	1030.51	4.45	-0.38	0.041
125.00	-17.29	-1.79	0.00	-29.72	0.00	29.72	1661.30	830.65	2030.66	1016.84	4.53	-0.38	0.040
126.00	-17.16	-1.79	0.00	-27.93	0.00	27.93	1652.26	826.13	2003.46	1003.22	4.61	-0.39	0.038
127.00	-11.47	-1.52	0.00	-26.14	0.00	26.14	1643.15	821.58	1976.36	989.65	4.69	-0.39	0.033
128.00	-11.35	-1.52	0.00	-24.62	0.00	24.62	1633.98	816.99	1949.35	976.13	4.77	-0.39	0.032
129.00	-11.00	-1.50	0.00	-23.10	0.00	23.10	1624.73	812.37	1922.45	962.65	4.85	-0.40	0.031
130.00	-10.88	-1.49	0.00	-21.60	0.00	21.60	1615.43	807.71	1895.65	949.24	4.94	-0.40	0.029
132.00	-10.65	-1.48	0.00	-18.61	0.00	18.61	1596.61	798.31	1842.37	922.56	5.11	-0.40	0.027
134.00	-10.42	-1.47	0.00	-15.65	0.00	15.65	1577.54	788.77	1789.53	896.09	5.28	-0.41	0.024
136.00	-10.20	-1.45	0.00	-12.72	0.00	12.72	1558.20	779.10	1737.14	869.86	5.45	-0.41	0.021
137.00	-5.58	-0.99	0.00	-11.27	0.00	11.27	1548.43	774.21	1711.12	856.83	5.54	-0.41	0.017
138.00	-5.49	-0.98	0.00	-10.29	0.00	10.29	1538.59	769.30	1685.21	843.86	5.62	-0.42	0.016
139.00	-5.39	-0.97	0.00	-9.31	0.00	9.31	1528.69	764.34	1659.43	830.95	5.71	-0.42	0.015
139.00	-5.39	-0.97	0.00	-9.31	0.00	9.31	1044.31	522.16	1138.99	570.34	5.71	-0.42	0.021
140.00	-5.31	-0.96	0.00	-8.34	0.00	8.34	1038.69	519.35	1122.71	562.19	5.80	-0.42	0.020
142.00	-5.17	-0.94	0.00	-6.42	0.00	6.42	1027.26	513.63	1090.28	545.95	5.97	-0.42	0.017
144.00	-5.02	-0.92	0.00	-4.54	0.00	4.54	1015.57	507.78	1058.02	529.79	6.15	-0.42	0.014
146.00	-4.88	-0.90	0.00	-2.69	0.00	2.69	1003.61	501.80	1025.94	513.73	6.33	-0.43	0.010
148.00	-4.74	-0.88	0.00	-0.88	0.00	0.88	991.38	495.69	994.07	497.78	6.51	-0.43	0.007
149.00	0.00	-0.85	0.00	0.00	0.00	0.00	985.17	492.59	978.22	489.84	6.60	-0.43	0.000

Seismic Segment Forces (Factored)

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 47	

IES Tower Engineering Solutions

Load Case:	0.9D + 1.0E							**Iterations**	23
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)**	0.35		**SA**	0.03	**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	
2.00		544.19	0.00	0.01	0.01	4.42	
4.00		539.73	0.00	0.03	0.01	7.46	
6.00		535.27	0.00	0.04	0.02	9.62	
8.00		530.81	0.01	0.05	0.03	11.17	
10.00		526.35	0.01	0.05	0.03	12.29	
12.00		521.89	0.01	0.06	0.03	13.10	
14.00		517.43	0.02	0.06	0.04	13.67	
16.00		512.97	0.02	0.07	0.04	14.07	
18.00		508.51	0.03	0.07	0.04	14.35	
20.00		504.05	0.03	0.07	0.04	14.53	
22.00		499.60	0.04	0.07	0.04	14.64	
24.00		495.14	0.05	0.07	0.04	14.72	
26.00		490.68	0.06	0.07	0.04	14.76	
28.00		486.22	0.07	0.07	0.04	14.78	
30.00		481.76	0.08	0.07	0.04	14.80	
32.00		477.30	0.09	0.07	0.04	14.81	
34.00		472.84	0.10	0.07	0.04	14.81	
36.00		468.38	0.11	0.07	0.04	14.81	
38.00		463.92	0.12	0.07	0.03	14.81	
40.00		459.46	0.14	0.07	0.03	14.79	
42.00		455.00	0.15	0.07	0.03	14.76	
44.00		450.54	0.16	0.07	0.03	14.70	
46.00		446.08	0.18	0.07	0.03	14.60	
47.25	Bot - Section 2	276.53	0.19	0.06	0.02	9.06	
48.00		309.05	0.20	0.06	0.02	10.12	
50.00		818.44	0.21	0.06	0.02	26.70	
52.00		810.16	0.23	0.06	0.02	26.18	
53.25	Top - Section 1	502.14	0.24	0.06	0.02	16.08	
54.00		139.67	0.25	0.06	0.02	4.44	
56.00		369.82	0.27	0.05	0.02	11.48	
58.00		366.00	0.29	0.05	0.01	10.97	
60.00		362.17	0.31	0.04	0.01	10.35	
62.00		358.35	0.33	0.04	0.01	9.60	
64.00		354.53	0.35	0.03	0.01	8.72	
66.00		350.70	0.37	0.03	0.01	7.70	
68.00		346.88	0.39	0.02	0.01	6.54	
70.00		343.06	0.42	0.01	0.01	5.25	
72.00		339.24	0.44	0.00	0.01	3.86	
74.00		335.41	0.47	0.00	0.01	2.37	
76.00		331.59	0.49	-0.01	0.01	0.83	
78.00		327.77	0.52	-0.02	0.01	-0.72	
80.00		323.95	0.54	-0.03	0.01	-2.25	
82.00		320.12	0.57	-0.04	0.01	-3.71	
84.00		316.30	0.60	-0.05	0.01	-5.05	
86.00		312.48	0.63	-0.06	0.02	-6.25	

Seismic Segment Forces (Factored)

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 48	

88.00			308.65	0.66	-0.07	0.02	-7.26	
90.00			304.83	0.69	-0.08	0.03	-8.08	
92.00			301.01	0.72	-0.09	0.03	-8.67	
94.00			297.19	0.75	-0.10	0.04	-9.05	
96.00	Bot - Section 3		293.36	0.78	-0.11	0.05	-9.21	
98.00			485.94	0.82	-0.11	0.06	-15.34	
100.00			479.57	0.85	-0.12	0.07	-14.87	
100.75	Top - Section 2		178.20	0.86	-0.12	0.07	-5.45	
102.00			119.27	0.89	-0.12	0.08	-3.54	
104.00			188.76	0.92	-0.12	0.10	-5.22	
106.00			186.21	0.96	-0.12	0.11	-4.63	
108.00			183.66	0.99	-0.11	0.13	-3.92	
110.00			181.11	1.03	-0.10	0.15	-3.09	
112.00			178.56	1.07	-0.09	0.17	-2.15	
114.00			176.01	1.11	-0.07	0.19	-1.11	
116.00			173.47	1.15	-0.04	0.22	0.02	
117.00	Appurtenance(s)		2444.8	1.17	-0.03	0.23	8.89	
118.00			85.14	1.19	-0.01	0.24	0.62	
120.00			168.37	1.23	0.03	0.27	2.57	
122.00			165.82	1.27	0.08	0.31	3.96	
124.00			163.27	1.31	0.13	0.34	5.43	
125.00	Appurtenance(s)		344.68	1.33	0.16	0.36	13.18	
126.00			80.04	1.35	0.20	0.38	3.47	
127.00	Appurtenance(s)		4725.4	1.37	0.23	0.40	230.26	
128.00			78.77	1.39	0.27	0.43	4.27	
129.00	Appurtenance(s)		276.43	1.42	0.32	0.45	16.58	
130.00			77.49	1.44	0.36	0.47	5.10	
132.00			153.08	1.48	0.46	0.52	11.98	
134.00			150.53	1.53	0.57	0.58	13.76	
136.00			147.98	1.57	0.70	0.64	15.58	
137.00	Appurtenance(s)		3829.2	1.60	0.77	0.67	430.89	
138.00			72.40	1.62	0.85	0.70	8.69	
139.00	Top - Section 3		71.76	1.64	0.92	0.73	9.16	
140.00			53.47	1.67	1.01	0.77	7.24	
142.00			105.50	1.72	1.19	0.84	16.00	
144.00			103.59	1.77	1.39	0.92	17.48	
146.00			101.68	1.81	1.61	1.00	18.97	
148.00			99.77	1.86	1.85	1.09	20.48	
149.00	Appurtenance(s)		3945.1	1.89	1.98	1.14	847.73	
		Totals:	**41,182.7**				**2,069.5**	**Total Wind:** **48,545.1**

Calculated Forces

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 49	

Tower Engineering Solutions

Load Case:	0.9D + 1.0E							**Iterations**	23
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)**	0.35	**SA**	0.03	**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	-40.08	-2.19	0.00	-268.36	0.00	268.36	5451.60	2725.80	12956.4	6487.84		0.00	0.00	0.049
2.00	-39.55	-2.19	0.00	-263.98	0.00	263.98	5423.14	2711.57	12782.7	6400.90		0.00	0.00	0.049
4.00	-39.02	-2.18	0.00	-259.61	0.00	259.61	5394.41	2697.20	12609.6	6314.20		0.00	-0.01	0.048
6.00	-38.49	-2.18	0.00	-255.24	0.00	255.24	5365.42	2682.71	12437.0	6227.76		0.01	-0.01	0.048
8.00	-37.97	-2.17	0.00	-250.89	0.00	250.89	5336.17	2668.08	12264.9	6141.58		0.02	-0.02	0.048
10.00	-37.46	-2.16	0.00	-246.56	0.00	246.56	5306.65	2653.32	12093.3	6055.68		0.02	-0.02	0.048
12.00	-36.94	-2.15	0.00	-242.24	0.00	242.24	5276.87	2638.43	11922.3	5970.05		0.03	-0.03	0.048
14.00	-36.43	-2.14	0.00	-237.94	0.00	237.94	5246.82	2623.41	11751.9	5884.71		0.05	-0.03	0.047
16.00	-35.93	-2.13	0.00	-233.67	0.00	233.67	5216.51	2608.26	11582.1	5799.67		0.06	-0.04	0.047
18.00	-35.43	-2.11	0.00	-229.42	0.00	229.42	5185.94	2592.97	11412.8	5714.93		0.08	-0.04	0.047
20.00	-34.93	-2.10	0.00	-225.19	0.00	225.19	5155.10	2577.55	11244.2	5630.50		0.10	-0.05	0.047
22.00	-34.44	-2.09	0.00	-220.99	0.00	220.99	5124.00	2562.00	11076.3	5546.38		0.12	-0.05	0.047
24.00	-33.95	-2.08	0.00	-216.81	0.00	216.81	5092.64	2546.32	10908.9	5462.60		0.14	-0.06	0.046
26.00	-33.46	-2.06	0.00	-212.66	0.00	212.66	5061.01	2530.51	10742.3	5379.14		0.16	-0.06	0.046
28.00	-32.98	-2.05	0.00	-208.53	0.00	208.53	5029.12	2514.56	10576.3	5296.03		0.19	-0.07	0.046
30.00	-32.50	-2.04	0.00	-204.42	0.00	204.42	4996.96	2498.48	10411.0	5213.26		0.22	-0.07	0.046
32.00	-32.03	-2.03	0.00	-200.34	0.00	200.34	4964.54	2482.27	10246.4	5130.86		0.25	-0.08	0.045
34.00	-31.56	-2.01	0.00	-196.29	0.00	196.29	4931.86	2465.93	10082.6	5048.81		0.28	-0.08	0.045
36.00	-31.10	-2.00	0.00	-192.26	0.00	192.26	4898.91	2449.45	9919.54	4967.14		0.32	-0.09	0.045
38.00	-30.63	-1.99	0.00	-188.25	0.00	188.25	4865.70	2432.85	9757.20	4885.85		0.35	-0.09	0.045
40.00	-30.18	-1.98	0.00	-184.28	0.00	184.28	4832.22	2416.11	9595.63	4804.95		0.39	-0.10	0.045
42.00	-29.72	-1.96	0.00	-180.32	0.00	180.32	4798.48	2399.24	9434.86	4724.44		0.44	-0.10	0.044
44.00	-29.27	-1.95	0.00	-176.40	0.00	176.40	4764.48	2382.24	9274.89	4644.34		0.48	-0.11	0.044
46.00	-28.83	-1.94	0.00	-172.50	0.00	172.50	4730.21	2365.11	9115.74	4564.64		0.53	-0.11	0.044
47.25	-28.55	-1.93	0.00	-170.07	0.00	170.07	4708.66	2354.33	9016.69	4515.05		0.55	-0.12	0.044
48.00	-28.26	-1.92	0.00	-168.63	0.00	168.63	4695.68	2347.84	8957.42	4485.37		0.57	-0.12	0.044
50.00	-27.48	-1.89	0.00	-164.79	0.00	164.79	4660.89	2330.44	8799.96	4406.52		0.62	-0.12	0.043
52.00	-26.71	-1.87	0.00	-161.00	0.00	161.00	4625.83	2312.91	8643.36	4328.11		0.68	-0.13	0.043
53.25	-26.23	-1.85	0.00	-158.66	0.00	158.66	3818.32	1909.16	7226.08	3618.41		0.71	-0.13	0.051
54.00	-26.09	-1.85	0.00	-157.27	0.00	157.27	3808.46	1904.23	7179.51	3595.09		0.73	-0.13	0.051
56.00	-25.71	-1.84	0.00	-153.57	0.00	153.57	3782.00	1891.00	7055.71	3533.10		0.79	-0.14	0.050
58.00	-25.34	-1.83	0.00	-149.89	0.00	149.89	3755.27	1877.63	6932.45	3471.38		0.85	-0.15	0.050
60.00	-24.97	-1.82	0.00	-146.23	0.00	146.23	3728.27	1864.14	6809.75	3409.94		0.91	-0.15	0.050
62.00	-24.60	-1.81	0.00	-142.58	0.00	142.58	3701.01	1850.51	6687.63	3348.79		0.98	-0.16	0.049
64.00	-24.24	-1.81	0.00	-138.95	0.00	138.95	3673.49	1836.75	6566.11	3287.93		1.04	-0.16	0.049
66.00	-23.88	-1.80	0.00	-135.34	0.00	135.34	3645.71	1822.85	6445.19	3227.39		1.11	-0.17	0.048
68.00	-23.52	-1.80	0.00	-131.74	0.00	131.74	3617.66	1808.83	6324.90	3167.15		1.19	-0.18	0.048
70.00	-23.17	-1.79	0.00	-128.14	0.00	128.14	3589.34	1794.67	6205.25	3107.24		1.26	-0.18	0.048
72.00	-22.82	-1.79	0.00	-124.56	0.00	124.56	3560.76	1780.38	6086.26	3047.65		1.34	-0.19	0.047
74.00	-22.48	-1.79	0.00	-120.98	0.00	120.98	3531.92	1765.96	5967.94	2988.40		1.42	-0.20	0.047
76.00	-22.13	-1.79	0.00	-117.40	0.00	117.40	3502.82	1751.41	5850.30	2929.50		1.51	-0.20	0.046
78.00	-21.79	-1.79	0.00	-113.82	0.00	113.82	3473.45	1736.72	5733.37	2870.94		1.59	-0.21	0.046
80.00	-21.46	-1.79	0.00	-110.24	0.00	110.24	3443.81	1721.91	5617.15	2812.75		1.68	-0.22	0.045
82.00	-21.13	-1.79	0.00	-106.65	0.00	106.65	3413.92	1706.96	5501.67	2754.92		1.77	-0.22	0.045
84.00	-20.80	-1.79	0.00	-103.06	0.00	103.06	3383.76	1691.88	5386.93	2697.47		1.87	-0.23	0.044
86.00	-20.47	-1.80	0.00	-99.48	0.00	99.48	3353.33	1676.67	5272.96	2640.40		1.97	-0.24	0.044
88.00	-20.15	-1.80	0.00	-95.88	0.00	95.88	3322.64	1661.32	5159.77	2583.72		2.07	-0.24	0.043

Calculated Forces

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 50

90.00	-19.84	-1.80	0.00	-92.29	0.00	92.29	3291.69	1645.84	5047.37	2527.44	2.17	-0.25	0.043
92.00	-19.52	-1.80	0.00	-88.70	0.00	88.70	3260.47	1630.24	4935.79	2471.56	2.27	-0.26	0.042
94.00	-19.21	-1.80	0.00	-85.10	0.00	85.10	3223.46	1611.73	4816.76	2411.96	2.38	-0.26	0.041
96.00	-18.90	-1.80	0.00	-81.50	0.00	81.50	3181.72	1590.86	4692.22	2349.60	2.49	-0.27	0.041
98.00	-18.42	-1.80	0.00	-77.90	0.00	77.90	3139.99	1570.00	4569.31	2288.05	2.61	-0.27	0.040
100.00	-17.95	-1.80	0.00	-74.30	0.00	74.30	3098.26	1549.13	4448.03	2227.32	2.72	-0.28	0.039
100.75	-17.77	-1.80	0.00	-72.95	0.00	72.95	1860.42	930.21	2714.89	1359.46	2.77	-0.28	0.063
102.00	-17.63	-1.80	0.00	-70.70	0.00	70.70	1851.10	925.55	2678.69	1341.34	2.84	-0.29	0.062
104.00	-17.42	-1.80	0.00	-67.10	0.00	67.10	1835.98	917.99	2620.93	1312.41	2.97	-0.30	0.061
106.00	-17.21	-1.80	0.00	-63.50	0.00	63.50	1820.60	910.30	2563.39	1283.60	3.09	-0.31	0.059
108.00	-17.00	-1.81	0.00	-59.89	0.00	59.89	1804.95	902.48	2506.08	1254.90	3.22	-0.31	0.057
110.00	-16.79	-1.81	0.00	-56.28	0.00	56.28	1789.04	894.52	2449.03	1226.33	3.35	-0.32	0.055
112.00	-16.59	-1.81	0.00	-52.67	0.00	52.67	1772.87	886.43	2392.24	1197.90	3.49	-0.33	0.053
114.00	-16.39	-1.81	0.00	-49.05	0.00	49.05	1756.43	878.22	2335.73	1169.60	3.63	-0.34	0.051
116.00	-16.19	-1.81	0.00	-45.43	0.00	45.43	1739.73	869.86	2279.52	1141.45	3.78	-0.35	0.049
117.00	-13.97	-1.79	0.00	-43.62	0.00	43.62	1731.28	865.64	2251.53	1127.44	3.85	-0.35	0.047
118.00	-13.87	-1.79	0.00	-41.84	0.00	41.84	1722.76	861.38	2223.62	1113.46	3.92	-0.35	0.046
120.00	-13.67	-1.79	0.00	-38.26	0.00	38.26	1705.53	852.77	2168.05	1085.64	4.07	-0.36	0.043
122.00	-13.48	-1.78	0.00	-34.69	0.00	34.69	1688.04	844.02	2112.82	1057.98	4.23	-0.37	0.041
124.00	-13.29	-1.78	0.00	-31.12	0.00	31.12	1670.28	835.14	2057.95	1030.51	4.38	-0.38	0.038
125.00	-12.96	-1.76	0.00	-29.34	0.00	29.34	1661.30	830.65	2030.66	1016.84	4.46	-0.38	0.037
126.00	-12.87	-1.76	0.00	-27.58	0.00	27.58	1652.26	826.13	2003.46	1003.22	4.54	-0.38	0.035
127.00	-8.60	-1.50	0.00	-25.82	0.00	25.82	1643.15	821.58	1976.36	989.65	4.62	-0.38	0.031
128.00	-8.51	-1.50	0.00	-24.32	0.00	24.32	1633.98	816.99	1949.35	976.13	4.70	-0.39	0.030
129.00	-8.24	-1.48	0.00	-22.82	0.00	22.82	1624.73	812.37	1922.45	962.65	4.78	-0.39	0.029
130.00	-8.16	-1.47	0.00	-21.35	0.00	21.35	1615.43	807.71	1895.65	949.24	4.87	-0.39	0.028
132.00	-7.98	-1.46	0.00	-18.40	0.00	18.40	1596.61	798.31	1842.37	922.56	5.03	-0.40	0.025
134.00	-7.81	-1.45	0.00	-15.48	0.00	15.48	1577.54	788.77	1789.53	896.09	5.20	-0.40	0.022
136.00	-7.65	-1.43	0.00	-12.58	0.00	12.58	1558.20	779.10	1737.14	869.86	5.37	-0.41	0.019
137.00	-4.19	-0.98	0.00	-11.15	0.00	11.15	1548.43	774.21	1711.12	856.83	5.46	-0.41	0.016
138.00	-4.11	-0.97	0.00	-10.18	0.00	10.18	1538.59	769.30	1685.21	843.86	5.54	-0.41	0.015
139.00	-4.04	-0.96	0.00	-9.21	0.00	9.21	1528.69	764.34	1659.43	830.95	5.63	-0.41	0.014
139.00	-4.04	-0.96	0.00	-9.21	0.00	9.21	1044.31	522.16	1138.99	570.34	5.63	-0.41	0.020
140.00	-3.98	-0.95	0.00	-8.26	0.00	8.26	1038.69	519.35	1122.71	562.19	5.71	-0.41	0.019
142.00	-3.87	-0.93	0.00	-6.36	0.00	6.36	1027.26	513.63	1090.28	545.95	5.89	-0.42	0.015
144.00	-3.76	-0.91	0.00	-4.49	0.00	4.49	1015.57	507.78	1058.02	529.79	6.06	-0.42	0.012
146.00	-3.66	-0.89	0.00	-2.66	0.00	2.66	1003.61	501.80	1025.94	513.73	6.24	-0.42	0.009
148.00	-3.55	-0.87	0.00	-0.87	0.00	0.87	991.38	495.69	994.07	497.78	6.41	-0.42	0.005
149.00	0.00	-0.85	0.00	0.00	0.00	0.00	985.17	492.59	978.22	489.84	6.50	-0.42	0.000

Wind Loading - Shaft

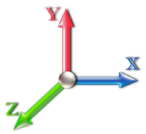
Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 51	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 25

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	272.71	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.85	7.442	8.19	270.50	0.650	0.000	2.00	9.820	6.38	52.3	0.0	544.2
4.00		1.00	0.85	7.442	8.19	268.29	0.650	0.000	2.00	9.740	6.33	51.8	0.0	539.7
6.00		1.00	0.85	7.442	8.19	266.08	0.650	0.000	2.00	9.660	6.28	51.4	0.0	535.3
8.00		1.00	0.85	7.442	8.19	263.87	0.650	0.000	2.00	9.580	6.23	51.0	0.0	530.8
10.00		1.00	0.85	7.442	8.19	261.66	0.650	0.000	2.00	9.500	6.18	50.6	0.0	526.4
12.00		1.00	0.85	7.442	8.19	259.45	0.650	0.000	2.00	9.421	6.12	50.1	0.0	521.9
14.00		1.00	0.85	7.442	8.19	257.24	0.650	0.000	2.00	9.341	6.07	49.7	0.0	517.4
16.00		1.00	0.86	7.534	8.29	256.61	0.650	0.000	2.00	9.261	6.02	49.9	0.0	513.0
18.00		1.00	0.88	7.723	8.50	257.56	0.650	0.000	2.00	9.181	5.97	50.7	0.0	508.5
20.00		1.00	0.90	7.896	8.69	258.15	0.650	0.000	2.00	9.101	5.92	51.4	0.0	504.1
22.00		1.00	0.92	8.056	8.86	258.46	0.650	0.000	2.00	9.021	5.86	52.0	0.0	499.6
24.00		1.00	0.94	8.205	9.03	258.52	0.650	0.000	2.00	8.941	5.81	52.5	0.0	495.1
26.00		1.00	0.95	8.345	9.18	258.36	0.650	0.000	2.00	8.861	5.76	52.9	0.0	490.7
28.00		1.00	0.97	8.476	9.32	258.03	0.650	0.000	2.00	8.782	5.71	53.2	0.0	486.2
30.00		1.00	0.98	8.600	9.46	257.54	0.650	0.000	2.00	8.702	5.66	53.5	0.0	481.8
32.00		1.00	1.00	8.717	9.59	256.90	0.650	0.000	2.00	8.622	5.60	53.7	0.0	477.3
34.00		1.00	1.01	8.829	9.71	256.14	0.650	0.000	2.00	8.542	5.55	53.9	0.0	472.8
36.00		1.00	1.02	8.936	9.83	255.26	0.650	0.000	2.00	8.462	5.50	54.1	0.0	468.4
38.00		1.00	1.03	9.039	9.94	254.29	0.650	0.000	2.00	8.382	5.45	54.2	0.0	463.9
40.00		1.00	1.04	9.137	10.05	253.21	0.650	0.000	2.00	8.302	5.40	54.2	0.0	459.5
42.00		1.00	1.05	9.231	10.15	252.06	0.650	0.000	2.00	8.222	5.34	54.3	0.0	455.0
44.00		1.00	1.06	9.322	10.25	250.82	0.650	0.000	2.00	8.143	5.29	54.3	0.0	450.5
46.00		1.00	1.07	9.410	10.35	249.52	0.650	0.000	2.00	8.063	5.24	54.2	0.0	446.1
47.25	Bot - Section 2	1.00	1.08	9.463	10.41	248.66	0.650	0.000	1.25	4.999	3.25	33.8	0.0	276.5
48.00		1.00	1.08	9.494	10.44	248.14	0.650	0.000	0.75	3.032	1.97	20.6	0.0	309.1
50.00		1.00	1.09	9.576	10.53	246.70	0.650	0.000	2.00	8.030	5.22	55.0	0.0	818.4
52.00		1.00	1.10	9.656	10.62	245.21	0.650	0.000	2.00	7.950	5.17	54.9	0.0	810.2
53.25	Top - Section 1	1.00	1.11	9.704	10.67	244.24	0.650	0.000	1.25	4.928	3.20	34.2	0.0	502.1
54.00		1.00	1.11	9.733	10.71	247.67	0.650	0.000	0.75	2.942	1.91	20.5	0.0	139.7
56.00		1.00	1.12	9.807	10.79	246.09	0.650	0.000	2.00	7.790	5.06	54.6	0.0	369.8
58.00		1.00	1.13	9.880	10.87	244.45	0.650	0.000	2.00	7.710	5.01	54.5	0.0	366.0
60.00		1.00	1.14	9.951	10.95	242.77	0.650	0.000	2.00	7.631	4.96	54.3	0.0	362.2
62.00		1.00	1.14	10.020	11.02	241.05	0.650	0.000	2.00	7.551	4.91	54.1	0.0	358.4
64.00		1.00	1.15	10.087	11.10	239.28	0.650	0.000	2.00	7.471	4.86	53.9	0.0	354.5
66.00		1.00	1.16	10.153	11.17	237.48	0.650	0.000	2.00	7.391	4.80	53.7	0.0	350.7
68.00		1.00	1.17	10.217	11.24	235.64	0.650	0.000	2.00	7.311	4.75	53.4	0.0	346.9
70.00		1.00	1.17	10.279	11.31	233.76	0.650	0.000	2.00	7.231	4.70	53.1	0.0	343.1
72.00		1.00	1.18	10.340	11.37	231.85	0.650	0.000	2.00	7.151	4.65	52.9	0.0	339.2
74.00		1.00	1.19	10.400	11.44	229.91	0.650	0.000	2.00	7.071	4.60	52.6	0.0	335.4
76.00		1.00	1.19	10.459	11.50	227.94	0.650	0.000	2.00	6.992	4.54	52.3	0.0	331.6
78.00		1.00	1.20	10.516	11.57	225.93	0.650	0.000	2.00	6.912	4.49	52.0	0.0	327.8
80.00		1.00	1.21	10.572	11.63	223.90	0.650	0.000	2.00	6.832	4.44	51.6	0.0	323.9
82.00		1.00	1.21	10.627	11.69	221.85	0.650	0.000	2.00	6.752	4.39	51.3	0.0	320.1
84.00		1.00	1.22	10.681	11.75	219.76	0.650	0.000	2.00	6.672	4.34	51.0	0.0	316.3
86.00		1.00	1.23	10.734	11.81	217.66	0.650	0.000	2.00	6.592	4.28	50.6	0.0	312.5
88.00		1.00	1.23	10.787	11.87	215.52	0.650	0.000	2.00	6.512	4.23	50.2	0.0	308.7

Wind Loading - Shaft

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 52	

90.00		1.00	1.24	10.838	11.92	213.37	0.650	0.000	2.00	6.432	4.18	49.8	0.0	304.8
92.00		1.00	1.24	10.888	11.98	211.19	0.650	0.000	2.00	6.353	4.13	49.5	0.0	301.0
94.00		1.00	1.25	10.937	12.03	208.99	0.650	0.000	2.00	6.273	4.08	49.1	0.0	297.2
96.00	Bot - Section 3	1.00	1.25	10.986	12.08	206.77	0.650	0.000	2.00	6.193	4.03	48.6	0.0	293.4
98.00		1.00	1.26	11.034	12.14	204.53	0.650	0.000	2.00	6.198	4.03	48.9	0.0	485.9
100.00		1.00	1.27	11.081	12.19	202.27	0.650	0.000	2.00	6.118	3.98	48.5	0.0	479.6
100.75	Top - Section 2	1.00	1.27	11.098	12.21	201.42	0.650	0.000	0.75	2.274	1.48	18.0	0.0	178.2
102.00		1.00	1.27	11.127	12.24	202.85	0.650	0.000	1.25	3.764	2.45	29.9	0.0	119.3
104.00		1.00	1.28	11.173	12.29	200.56	0.650	0.000	2.00	5.958	3.87	47.6	0.0	188.8
106.00		1.00	1.28	11.218	12.34	198.25	0.650	0.000	2.00	5.878	3.82	47.1	0.0	186.2
108.00		1.00	1.29	11.262	12.39	195.92	0.650	0.000	2.00	5.798	3.77	46.7	0.0	183.7
110.00		1.00	1.29	11.305	12.44	193.58	0.650	0.000	2.00	5.718	3.72	46.2	0.0	181.1
112.00		1.00	1.30	11.348	12.48	191.22	0.650	0.000	2.00	5.638	3.67	45.8	0.0	178.6
114.00		1.00	1.30	11.391	12.53	188.84	0.650	0.000	2.00	5.559	3.61	45.3	0.0	176.0
116.00		1.00	1.31	11.432	12.58	186.45	0.650	0.000	2.00	5.479	3.56	44.8	0.0	173.5
117.00	Appurtenance(s)	1.00	1.31	11.453	12.60	185.25	0.650	0.000	1.00	2.709	1.76	22.2	0.0	85.8
118.00		1.00	1.31	11.474	12.62	184.04	0.650	0.000	1.00	2.689	1.75	22.1	0.0	85.1
120.00		1.00	1.32	11.514	12.67	181.62	0.650	0.000	2.00	5.319	3.46	43.8	0.0	168.4
122.00		1.00	1.32	11.554	12.71	179.18	0.650	0.000	2.00	5.239	3.41	43.3	0.0	165.8
124.00		1.00	1.32	11.594	12.75	176.73	0.650	0.000	2.00	5.159	3.35	42.8	0.0	163.3
125.00	Appurtenance(s)	1.00	1.33	11.614	12.78	175.50	0.650	0.000	1.00	2.550	1.66	21.2	0.0	80.7
126.00		1.00	1.33	11.633	12.80	174.27	0.650	0.000	1.00	2.530	1.64	21.0	0.0	80.0
127.00	Appurtenance(s)	1.00	1.33	11.653	12.82	173.03	0.650	0.000	1.00	2.510	1.63	20.9	0.0	79.4
128.00		1.00	1.33	11.672	12.84	171.79	0.650	0.000	1.00	2.490	1.62	20.8	0.0	78.8
129.00	Appurtenance(s)	1.00	1.34	11.691	12.86	170.55	0.650	0.000	1.00	2.470	1.61	20.6	0.0	78.1
130.00		1.00	1.34	11.710	12.88	169.30	0.650	0.000	1.00	2.450	1.59	20.5	0.0	77.5
132.00		1.00	1.34	11.748	12.92	166.80	0.650	0.000	2.00	4.840	3.15	40.7	0.0	153.1
134.00		1.00	1.35	11.785	12.96	164.28	0.650	0.000	2.00	4.760	3.09	40.1	0.0	150.5
136.00		1.00	1.35	11.822	13.00	161.75	0.650	0.000	2.00	4.680	3.04	39.6	0.0	148.0
137.00	Appurtenance(s)	1.00	1.35	11.840	13.02	160.49	0.650	0.000	1.00	2.310	1.50	19.6	0.0	73.0
138.00		1.00	1.35	11.858	13.04	159.21	0.650	0.000	1.00	2.290	1.49	19.4	0.0	72.4
139.00	Top - Section 3	1.00	1.36	11.876	13.06	157.94	0.650	0.000	1.00	2.270	1.48	19.3	0.0	71.8
140.00		1.00	1.36	11.894	13.08	156.66	0.650	0.000	1.00	2.250	1.46	19.1	0.0	53.5
142.00		1.00	1.36	11.930	13.12	154.10	0.650	0.000	2.00	4.440	2.89	37.9	0.0	105.5
144.00		1.00	1.37	11.965	13.16	151.53	0.650	0.000	2.00	4.361	2.83	37.3	0.0	103.6
146.00		1.00	1.37	12.000	13.20	148.94	0.650	0.000	2.00	4.281	2.78	36.7	0.0	101.7
148.00		1.00	1.37	12.034	13.24	146.35	0.650	0.000	2.00	4.201	2.73	36.1	0.0	99.8
149.00	Appurtenance(s)	1.00	1.38	12.051	13.26	145.04	0.650	0.000	1.00	2.070	1.35	17.8	0.0	49.2
								Totals:	**149.00**			**3,649.2**		**26,063.1**

Discrete Appurtenance Forces

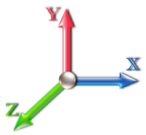
Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 53	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 25

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	149.00	MX10FRO660	3	12.060	13.266	0.65	0.75	19.32	138.00	0.000	0.500	256.30	0.00	128.15
2	149.00	Antel BXA-80063/4CF	3	12.077	13.284	0.54	0.75	7.65	29.70	0.000	1.500	101.58	0.00	152.37
3	149.00	RFS DB-T1-6Z-8AB-0Z	1	12.060	13.266	0.50	0.75	2.41	18.90	0.000	0.500	32.00	0.00	16.00
4	149.00	RFS DB-T1-6Z-8AB-0Z	1	12.060	13.266	0.50	0.75	2.41	18.90	0.000	0.500	32.00	0.00	16.00
5	149.00	Low Profile	1	12.051	13.256	1.00	1.00	22.00	1500.00	0.000	0.000	291.64	0.00	0.00
6	149.00	MX06FRO660-02	3	12.060	13.266	0.65	0.75	19.32	138.00	0.000	0.500	256.30	0.00	128.15
7	149.00	Mount pipe	12	12.051	13.256	0.75	0.75	17.10	350.40	0.000	0.000	226.68	0.00	0.00
8	149.00	B2/B66A RRH-BR049	3	12.060	13.266	0.50	0.75	2.82	253.20	0.000	0.500	37.40	0.00	18.70
9	149.00	B5/B13 RRH-BR04C	3	12.060	13.266	0.50	0.75	2.82	210.90	0.000	0.500	37.40	0.00	18.70
10	149.00	RT4401-48A (RRH only)	3	12.060	13.266	0.50	0.75	1.49	55.80	0.000	0.500	19.80	0.00	9.90
11	149.00	HRK12 (Handrail Kit)	1	12.051	13.256	1.00	1.00	8.20	504.00	0.000	0.000	108.70	0.00	0.00
12	149.00	PRK-1245 (kicker kit)	1	12.051	13.256	1.00	1.00	11.40	440.00	0.000	0.000	151.12	0.00	0.00
13	149.00	MT6407-77A	3	12.060	13.266	0.52	0.75	7.39	238.20	0.000	0.500	97.99	0.00	48.99
14	137.00	KRY 112 144/1	3	11.840	13.024	0.56	0.75	1.20	46.20	0.000	0.000	15.60	0.00	0.00
15	137.00	AIR6449 B41	3	11.840	13.024	0.53	0.75	9.03	309.00	0.000	0.000	117.55	0.00	0.00
16	137.00	KRD 9011461-B66A-B2A	3	11.840	13.024	0.65	0.75	12.74	396.60	0.000	0.000	165.97	0.00	0.00
17	137.00	APXVAARR24_43-U-NA2	3	11.840	13.024	0.56	0.75	34.16	384.00	0.000	0.000	444.84	0.00	0.00
18	137.00	RRUS 4415 B25	3	11.840	13.024	0.50	0.75	2.47	138.00	0.000	0.000	32.20	0.00	0.00
19	137.00	4449 B71 + B12	3	11.840	13.024	0.50	0.75	2.97	219.60	0.000	0.000	38.68	0.00	0.00
20	137.00	Support rail kit - Mods	1	11.840	13.024	1.00	1.00	16.50	500.00	0.000	0.000	214.90	0.00	0.00
21	137.00	Mount pipe	9	11.840	13.024	0.75	0.75	12.82	262.80	0.000	0.000	167.03	0.00	0.00
22	137.00	Low Profile Platform	1	11.840	13.024	1.00	1.00	22.00	1500.00	0.000	0.000	286.53	0.00	0.00
23	129.00	AIR 6419 B77G	3	11.691	12.860	0.57	0.75	6.50	198.30	0.000	0.000	83.56	0.00	0.00
24	127.00	Handrail Reinforcement -	1	11.653	12.818	1.00	1.00	10.00	329.00	0.000	0.000	128.18	0.00	0.00
25	127.00	QD8616-7	3	11.653	12.818	0.69	0.75	38.92	204.60	0.000	0.000	498.82	0.00	0.00
26	127.00	DMP65R-BU8DA	3	11.653	12.818	0.55	0.75	29.35	287.10	0.000	0.000	376.22	0.00	0.00
27	127.00	RRUS 4449 B5/B12	3	11.653	12.818	0.50	0.75	2.97	213.00	0.000	0.000	38.07	0.00	0.00
28	127.00	Erisson 2012 B29	3	11.653	12.818	0.50	0.75	4.75	178.20	0.000	0.000	60.87	0.00	0.00
29	127.00	DC6-48-60-18-8C-EV	1	11.653	12.818	0.75	0.75	3.58	16.00	0.000	0.000	45.95	0.00	0.00
30	127.00	Collar Mount - Mod	1	11.653	12.818	1.00	1.00	2.50	150.60	0.000	0.000	32.04	0.00	0.00
31	127.00	MTC3607 Platform + HR &	1	11.653	12.818	1.00	1.00	51.70	2246.00	0.000	0.000	662.68	0.00	0.00
32	127.00	Ericsson RRUS 4478 B14	3	11.653	12.818	0.50	0.75	2.49	178.20	0.000	0.000	31.88	0.00	0.00
33	127.00	Raycap DC6-48-60-18-8F	3	11.653	12.818	0.75	0.75	4.95	95.40	0.000	0.000	63.45	0.00	0.00
34	127.00	Ericsson RRUS 32 RRU	3	11.653	12.818	0.50	0.75	4.99	231.00	0.000	0.000	63.96	0.00	0.00
35	127.00	Kaelus DBCT108F1V92-1	3	11.653	12.818	0.38	0.75	0.79	59.40	0.000	0.000	10.09	0.00	0.00
36	127.00	Ericsson RRUS 4478 B5	3	11.653	12.818	0.50	0.75	2.77	179.70	0.000	0.000	35.55	0.00	0.00
37	127.00	Ericsson RRUS 4415 B25	3	11.653	12.818	0.50	0.75	2.80	132.30	0.000	0.000	35.94	0.00	0.00
38	127.00	Ericsson RRUS 4426 B66	3	11.653	12.818	0.50	0.75	1.73	145.50	0.000	0.000	22.22	0.00	0.00
39	125.00	AIR 6449 B77D	3	11.614	12.775	0.64	0.75	7.90	264.00	0.000	0.000	100.91	0.00	0.00
40	117.00	MC-PK8-DSH	1	11.453	12.598	1.00	1.00	37.59	1727.00	0.000	0.000	473.58	0.00	0.00
41	117.00	RDIDC-9181-OF-48	1	11.453	12.598	1.00	1.00	2.01	21.90	0.000	0.000	25.32	0.00	0.00
42	117.00	TA08025-B604	3	11.453	12.598	0.50	0.75	2.95	191.70	0.000	0.000	37.22	0.00	0.00
43	117.00	TA08025-B605	3	11.453	12.598	0.50	0.75	2.95	225.00	0.000	0.000	37.22	0.00	0.00
44	117.00	MX08FRO665-21	3	11.453	12.598	0.55	0.75	20.80	193.50	0.000	0.000	262.00	0.00	0.00
							Totals:		**15,119.60**			**6,257.94**		

Total Applied Force Summary

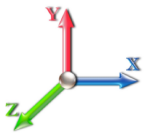
Structure:	CT13075-A-SBA		**Code:**	TIA-222-G	6/24/2022
Site Name:	New London		**Exposure:**	C	
Height:	149.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 54

IES Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 25

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
2.00		52.25	592.46	0.00	0.00
4.00		51.83	588.00	0.00	0.00
6.00		51.40	583.54	0.00	0.00
8.00		50.98	579.08	0.00	0.00
10.00		50.55	574.62	0.00	0.00
12.00		50.13	570.16	0.00	0.00
14.00		49.70	565.70	0.00	0.00
16.00		49.88	561.24	0.00	0.00
18.00		50.70	556.78	0.00	0.00
20.00		51.38	552.32	0.00	0.00
22.00		51.96	547.86	0.00	0.00
24.00		52.46	543.40	0.00	0.00
26.00		52.87	538.94	0.00	0.00
28.00		53.22	534.48	0.00	0.00
30.00		53.51	530.02	0.00	0.00
32.00		53.74	525.56	0.00	0.00
34.00		53.93	521.10	0.00	0.00
36.00		54.07	516.64	0.00	0.00
38.00		54.17	512.18	0.00	0.00
40.00		54.24	507.72	0.00	0.00
42.00		54.27	503.26	0.00	0.00
44.00		54.27	498.80	0.00	0.00
46.00		54.24	494.34	0.00	0.00
47.25		33.82	306.70	0.00	0.00
48.00		20.58	327.15	0.00	0.00
50.00		54.98	866.71	0.00	0.00
52.00		54.89	858.43	0.00	0.00
53.25		34.19	532.31	0.00	0.00
54.00		20.47	157.77	0.00	0.00
56.00		54.63	418.08	0.00	0.00
58.00		54.47	414.26	0.00	0.00
60.00		54.29	410.44	0.00	0.00
62.00		54.09	406.62	0.00	0.00
64.00		53.88	402.79	0.00	0.00
66.00		53.65	398.97	0.00	0.00
68.00		53.41	395.15	0.00	0.00
70.00		53.15	391.32	0.00	0.00
72.00		52.87	387.50	0.00	0.00
74.00		52.58	383.68	0.00	0.00
76.00		52.28	379.86	0.00	0.00
78.00		51.97	376.03	0.00	0.00
80.00		51.64	372.21	0.00	0.00
82.00		51.30	368.39	0.00	0.00
84.00		50.96	364.57	0.00	0.00
86.00		50.60	360.74	0.00	0.00
88.00		50.23	356.92	0.00	0.00

Total Applied Force Summary

Structure:	CT13075-A-SBA		**Code:**	TIA-222-G	6/24/2022
Site Name:	New London		**Exposure:**	C	
Height:	149.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 55

Tower Engineering Solutions

90.00		49.84	353.10	0.00	0.00
92.00		49.45	349.27	0.00	0.00
94.00		49.05	345.45	0.00	0.00
96.00		48.64	341.63	0.00	0.00
98.00		48.89	534.21	0.00	0.00
100.00		48.47	527.84	0.00	0.00
100.75		18.04	196.30	0.00	0.00
102.00		29.95	149.43	0.00	0.00
104.00		47.59	237.02	0.00	0.00
106.00		47.15	234.47	0.00	0.00
108.00		46.69	231.93	0.00	0.00
110.00		46.22	229.38	0.00	0.00
112.00		45.75	226.83	0.00	0.00
114.00		45.27	224.28	0.00	0.00
116.00		44.78	221.73	0.00	0.00
117.00	(11) attachments	857.53	2469.01	0.00	0.00
118.00		22.06	108.27	0.00	0.00
120.00		43.79	214.63	0.00	0.00
122.00		43.28	212.09	0.00	0.00
124.00		42.77	209.54	0.00	0.00
125.00	(3) attachments	122.08	367.81	0.00	0.00
126.00		21.04	103.18	0.00	0.00
127.00	(37) attachments	2126.84	4748.54	0.00	0.00
128.00		20.78	98.12	0.00	0.00
129.00	(3) attachments	104.21	295.78	0.00	0.00
130.00		20.51	96.85	0.00	0.00
132.00		40.65	191.78	0.00	0.00
134.00		40.11	189.23	0.00	0.00
136.00		39.56	186.69	0.00	0.00
137.00	(29) attachments	1502.85	3848.59	0.00	0.00
138.00		19.42	81.11	0.00	0.00
139.00		19.28	80.47	0.00	0.00
140.00		19.14	62.18	0.00	0.00
142.00		37.88	122.93	0.00	0.00
144.00		37.30	121.02	0.00	0.00
146.00		36.73	119.11	0.00	0.00
148.00		36.15	117.20	0.00	0.00
149.00	(38) attachments	1666.73	3953.88	0.00	536.95
	Totals:	**9,907.16**	**44,535.70**	**0.00**	**536.95**

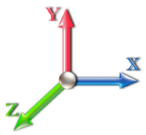
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 56	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
2.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.017	0.000	7.442	0.00	0.55
2.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.017	0.000	7.442	0.00	0.00
4.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.017	0.000	7.442	0.00	0.55
4.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.017	0.000	7.442	0.00	0.00
6.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.017	0.000	7.442	0.00	0.55
6.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.017	0.000	7.442	0.00	0.00
8.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.018	0.000	7.442	0.00	0.55
8.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	7.442	0.00	0.00
10.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.018	0.000	7.442	0.00	0.55
10.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	7.442	0.00	0.00
12.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.018	0.000	7.442	0.00	0.55
12.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	7.442	0.00	0.00
14.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.018	0.000	7.442	0.00	0.55
14.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	7.442	0.00	0.00
16.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.018	0.000	7.534	0.00	0.55
16.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	7.534	0.00	0.00
18.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.018	0.000	7.723	0.00	0.55
18.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	7.723	0.00	0.00
20.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.018	0.000	7.896	0.00	0.55
20.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	7.896	0.00	0.00
22.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.019	0.000	8.056	0.00	0.55
22.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.019	0.000	8.056	0.00	0.00
24.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.019	0.000	8.205	0.00	0.55
24.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.019	0.000	8.205	0.00	0.00
26.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.019	0.000	8.345	0.00	0.55
26.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.019	0.000	8.345	0.00	0.00
28.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.019	0.000	8.476	0.00	0.55
28.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.019	0.000	8.476	0.00	0.00
30.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.019	0.000	8.600	0.00	0.55
30.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.019	0.000	8.600	0.00	0.00
32.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.020	0.000	8.717	0.00	0.55
32.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.020	0.000	8.717	0.00	0.00
34.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.020	0.000	8.829	0.00	0.55
34.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.020	0.000	8.829	0.00	0.00
36.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.020	0.000	8.936	0.00	0.55
36.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.020	0.000	8.936	0.00	0.00
38.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.020	0.000	9.039	0.00	0.55
38.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.020	0.000	9.039	0.00	0.00
40.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.020	0.000	9.137	0.00	0.55
40.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.020	0.000	9.137	0.00	0.00
42.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.020	0.000	9.231	0.00	0.55
42.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.020	0.000	9.231	0.00	0.00
44.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.021	0.000	9.322	0.00	0.55
44.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.021	0.000	9.322	0.00	0.00
46.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.021	0.000	9.410	0.00	0.55
46.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.021	0.000	9.410	0.00	0.00
47.25	Safety Cable	Yes	1.25	0.000	0.38	0.04	0.00	0.021	0.000	9.463	0.00	0.34

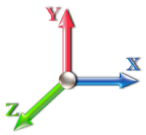
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 57	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
47.25	Step bolts (ladder)	Yes	1.25	0.000	0.63	0.07	0.00	0.021	0.000	9.463	0.00	0.00
48.00	Safety Cable	Yes	0.75	0.000	0.38	0.02	0.00	0.021	0.000	9.494	0.00	0.20
48.00	Step bolts (ladder)	Yes	0.75	0.000	0.63	0.04	0.00	0.021	0.000	9.494	0.00	0.00
50.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.021	0.000	9.576	0.00	0.55
50.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.021	0.000	9.576	0.00	0.00
52.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.022	0.000	9.656	0.00	0.55
52.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.022	0.000	9.656	0.00	0.00
53.25	Safety Cable	Yes	1.25	0.000	0.38	0.04	0.00	0.022	0.000	9.704	0.00	0.34
53.25	Step bolts (ladder)	Yes	1.25	0.000	0.63	0.07	0.00	0.022	0.000	9.704	0.00	0.00
54.00	Safety Cable	Yes	0.75	0.000	0.38	0.02	0.00	0.021	0.000	9.733	0.00	0.20
54.00	Step bolts (ladder)	Yes	0.75	0.000	0.63	0.04	0.00	0.021	0.000	9.733	0.00	0.00
56.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.022	0.000	9.807	0.00	0.55
56.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.022	0.000	9.807	0.00	0.00
58.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.022	0.000	9.880	0.00	0.55
58.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.022	0.000	9.880	0.00	0.00
60.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.022	0.000	9.951	0.00	0.55
60.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.022	0.000	9.951	0.00	0.00
62.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.022	0.000	10.020	0.00	0.55
62.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.022	0.000	10.020	0.00	0.00
64.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.023	0.000	10.087	0.00	0.55
64.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.023	0.000	10.087	0.00	0.00
66.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.023	0.000	10.153	0.00	0.55
66.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.023	0.000	10.153	0.00	0.00
68.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.023	0.000	10.217	0.00	0.55
68.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.023	0.000	10.217	0.00	0.00
70.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.023	0.000	10.279	0.00	0.55
70.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.023	0.000	10.279	0.00	0.00
72.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.024	0.000	10.340	0.00	0.55
72.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.024	0.000	10.340	0.00	0.00
74.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.024	0.000	10.400	0.00	0.55
74.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.024	0.000	10.400	0.00	0.00
76.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.024	0.000	10.459	0.00	0.55
76.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.024	0.000	10.459	0.00	0.00
78.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.024	0.000	10.516	0.00	0.55
78.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.024	0.000	10.516	0.00	0.00
80.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.025	0.000	10.572	0.00	0.55
80.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.025	0.000	10.572	0.00	0.00
82.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.025	0.000	10.627	0.00	0.55
82.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.025	0.000	10.627	0.00	0.00
84.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.025	0.000	10.681	0.00	0.55
84.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.025	0.000	10.681	0.00	0.00
86.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.026	0.000	10.734	0.00	0.55
86.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.026	0.000	10.734	0.00	0.00
88.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.026	0.000	10.787	0.00	0.55
88.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.026	0.000	10.787	0.00	0.00
90.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.026	0.000	10.838	0.00	0.55
90.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.026	0.000	10.838	0.00	0.00

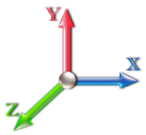
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 58	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
92.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.026	0.000	10.888	0.00	0.55
92.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.026	0.000	10.888	0.00	0.00
94.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.027	0.000	10.937	0.00	0.55
94.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.027	0.000	10.937	0.00	0.00
96.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.027	0.000	10.986	0.00	0.55
96.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.027	0.000	10.986	0.00	0.00
98.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.028	0.000	11.034	0.00	0.55
98.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.028	0.000	11.034	0.00	0.00
100.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.028	0.000	11.081	0.00	0.55
100.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.028	0.000	11.081	0.00	0.00
100.75	Safety Cable	Yes	0.75	0.000	0.38	0.02	0.00	0.028	0.000	11.098	0.00	0.20
100.75	Step bolts (ladder)	Yes	0.75	0.000	0.63	0.04	0.00	0.028	0.000	11.098	0.00	0.00
102.00	Safety Cable	Yes	1.25	0.000	0.38	0.04	0.00	0.028	0.000	11.127	0.00	0.34
102.00	Step bolts (ladder)	Yes	1.25	0.000	0.63	0.07	0.00	0.028	0.000	11.127	0.00	0.00
104.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.028	0.000	11.173	0.00	0.55
104.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.028	0.000	11.173	0.00	0.00
106.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.029	0.000	11.218	0.00	0.55
106.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.029	0.000	11.218	0.00	0.00
108.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.029	0.000	11.262	0.00	0.55
108.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.029	0.000	11.262	0.00	0.00
110.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.029	0.000	11.305	0.00	0.55
110.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.029	0.000	11.305	0.00	0.00
112.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.030	0.000	11.348	0.00	0.55
112.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.030	0.000	11.348	0.00	0.00
114.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.030	0.000	11.391	0.00	0.55
114.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.030	0.000	11.391	0.00	0.00
116.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.031	0.000	11.432	0.00	0.55
116.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.031	0.000	11.432	0.00	0.00
117.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.031	0.000	11.453	0.00	0.27
117.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.031	0.000	11.453	0.00	0.00
118.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.031	0.000	11.474	0.00	0.27
118.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.031	0.000	11.474	0.00	0.00
120.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.032	0.000	11.514	0.00	0.55
120.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.032	0.000	11.514	0.00	0.00
122.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.032	0.000	11.554	0.00	0.55
122.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.032	0.000	11.554	0.00	0.00
124.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.033	0.000	11.594	0.00	0.55
124.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.033	0.000	11.594	0.00	0.00
125.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.033	0.000	11.614	0.00	0.27
125.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.033	0.000	11.614	0.00	0.00
126.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.033	0.000	11.633	0.00	0.27
126.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.033	0.000	11.633	0.00	0.00
127.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.034	0.000	11.653	0.00	0.27
127.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.034	0.000	11.653	0.00	0.00
128.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.034	0.000	11.672	0.00	0.27
128.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.034	0.000	11.672	0.00	0.00
129.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.034	0.000	11.691	0.00	0.27

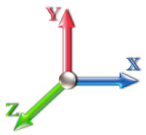
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 59	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
129.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.034	0.000	11.691	0.00	0.00
130.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.034	0.000	11.710	0.00	0.27
130.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.034	0.000	11.710	0.00	0.00
132.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.035	0.000	11.748	0.00	0.55
132.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.035	0.000	11.748	0.00	0.00
134.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.035	0.000	11.785	0.00	0.55
134.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.035	0.000	11.785	0.00	0.00
136.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.036	0.000	11.822	0.00	0.55
136.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.036	0.000	11.822	0.00	0.00
137.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.036	0.000	11.840	0.00	0.27
137.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.036	0.000	11.840	0.00	0.00
138.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.037	0.000	11.858	0.00	0.27
138.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.037	0.000	11.858	0.00	0.00
139.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.037	0.000	11.876	0.00	0.27
139.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.037	0.000	11.876	0.00	0.00
140.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.037	0.000	11.894	0.00	0.27
140.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.037	0.000	11.894	0.00	0.00
142.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.038	0.000	11.930	0.00	0.55
142.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.038	0.000	11.930	0.00	0.00
144.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.039	0.000	11.965	0.00	0.55
144.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.039	0.000	11.965	0.00	0.00
146.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.039	0.000	12.000	0.00	0.55
146.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.039	0.000	12.000	0.00	0.00
148.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.040	0.000	12.034	0.00	0.55
148.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.040	0.000	12.034	0.00	0.00
149.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.041	0.000	12.051	0.00	0.27
149.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.041	0.000	12.051	0.00	0.00
										Totals:	**0.0**	**40.7**

Calculated Forces

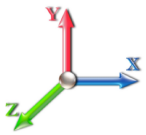
Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 60	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 25

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	-44.53	-9.91	0.00	-1137.9	0.00	1137.93	5451.60	2725.80	12956.4	6487.84	0.00	0.000	0.000	0.184
2.00	-43.94	-9.88	0.00	-1118.1	0.00	1118.10	5423.14	2711.57	12782.7	6400.90	0.00	-0.019	0.000	0.183
4.00	-43.35	-9.84	0.00	-1098.3	0.00	1098.35	5394.41	2697.20	12609.6	6314.20	0.02	-0.038	0.000	0.182
6.00	-42.76	-9.80	0.00	-1078.6	0.00	1078.67	5365.42	2682.71	12437.0	6227.76	0.04	-0.057	0.000	0.181
8.00	-42.18	-9.76	0.00	-1059.0	0.00	1059.07	5336.17	2668.08	12264.9	6141.58	0.06	-0.076	0.000	0.180
10.00	-41.60	-9.73	0.00	-1039.5	0.00	1039.55	5306.65	2653.32	12093.3	6055.68	0.10	-0.096	0.000	0.180
12.00	-41.03	-9.69	0.00	-1020.0	0.00	1020.09	5276.87	2638.43	11922.3	5970.05	0.15	-0.116	0.000	0.179
14.00	-40.46	-9.65	0.00	-1000.7	0.00	1000.72	5246.82	2623.41	11751.9	5884.71	0.20	-0.135	0.000	0.178
16.00	-39.89	-9.61	0.00	-981.41	0.00	981.41	5216.51	2608.26	11582.1	5799.67	0.26	-0.155	0.000	0.177
18.00	-39.33	-9.58	0.00	-962.18	0.00	962.18	5185.94	2592.97	11412.8	5714.93	0.33	-0.175	0.000	0.176
20.00	-38.78	-9.54	0.00	-943.03	0.00	943.03	5155.10	2577.55	11244.2	5630.50	0.41	-0.195	0.000	0.175
22.00	-38.23	-9.50	0.00	-923.96	0.00	923.96	5124.00	2562.00	11076.3	5546.38	0.49	-0.215	0.000	0.174
24.00	-37.68	-9.45	0.00	-904.97	0.00	904.97	5092.64	2546.32	10908.9	5462.60	0.59	-0.236	0.000	0.173
26.00	-37.14	-9.41	0.00	-886.06	0.00	886.06	5061.01	2530.51	10742.3	5379.14	0.69	-0.256	0.000	0.172
28.00	-36.60	-9.37	0.00	-867.23	0.00	867.23	5029.12	2514.56	10576.3	5296.03	0.80	-0.277	0.000	0.171
30.00	-36.07	-9.33	0.00	-848.49	0.00	848.49	4996.96	2498.48	10411.0	5213.26	0.92	-0.297	0.000	0.170
32.00	-35.54	-9.28	0.00	-829.84	0.00	829.84	4964.54	2482.27	10246.4	5130.86	1.05	-0.318	0.000	0.169
34.00	-35.01	-9.24	0.00	-811.27	0.00	811.27	4931.86	2465.93	10082.6	5048.81	1.19	-0.339	0.000	0.168
36.00	-34.49	-9.20	0.00	-792.79	0.00	792.79	4898.91	2449.45	9919.54	4967.14	1.34	-0.360	0.000	0.167
38.00	-33.98	-9.15	0.00	-774.40	0.00	774.40	4865.70	2432.85	9757.20	4885.85	1.49	-0.381	0.000	0.165
40.00	-33.47	-9.11	0.00	-756.10	0.00	756.10	4832.22	2416.11	9595.63	4804.95	1.66	-0.403	0.000	0.164
42.00	-32.96	-9.06	0.00	-737.89	0.00	737.89	4798.48	2399.24	9434.86	4724.44	1.83	-0.424	0.000	0.163
44.00	-32.46	-9.01	0.00	-719.77	0.00	719.77	4764.48	2382.24	9274.89	4644.34	2.01	-0.446	0.000	0.162
46.00	-31.96	-8.97	0.00	-701.74	0.00	701.74	4730.21	2365.11	9115.74	4564.64	2.20	-0.467	0.000	0.161
47.25	-31.66	-8.94	0.00	-690.54	0.00	690.54	4708.66	2354.33	9016.69	4515.05	2.33	-0.481	0.000	0.160
48.00	-31.33	-8.92	0.00	-683.84	0.00	683.84	4695.68	2347.84	8957.42	4485.37	2.40	-0.489	0.000	0.159
50.00	-30.46	-8.87	0.00	-666.00	0.00	666.00	4660.89	2330.44	8799.96	4406.52	2.61	-0.511	0.000	0.158
52.00	-29.60	-8.82	0.00	-648.26	0.00	648.26	4625.83	2312.91	8643.36	4328.11	2.83	-0.533	0.000	0.156
53.25	-29.06	-8.78	0.00	-637.24	0.00	637.24	3818.32	1909.16	7226.08	3618.41	2.97	-0.546	0.000	0.184
54.00	-28.90	-8.77	0.00	-630.65	0.00	630.65	3808.46	1904.23	7179.51	3595.09	3.06	-0.555	0.000	0.183
56.00	-28.48	-8.72	0.00	-613.12	0.00	613.12	3782.00	1891.00	7055.71	3533.10	3.30	-0.579	0.000	0.181
58.00	-28.06	-8.67	0.00	-595.68	0.00	595.68	3755.27	1877.63	6932.45	3471.38	3.55	-0.604	0.000	0.179
60.00	-27.65	-8.63	0.00	-578.33	0.00	578.33	3728.27	1864.14	6809.75	3409.94	3.80	-0.628	0.000	0.177
62.00	-27.24	-8.58	0.00	-561.07	0.00	561.07	3701.01	1850.51	6687.63	3348.79	4.07	-0.653	0.000	0.175
64.00	-26.84	-8.53	0.00	-543.91	0.00	543.91	3673.49	1836.75	6566.11	3287.93	4.35	-0.677	0.000	0.173
66.00	-26.43	-8.49	0.00	-526.84	0.00	526.84	3645.71	1822.85	6445.19	3227.39	4.64	-0.702	0.000	0.171
68.00	-26.04	-8.44	0.00	-509.87	0.00	509.87	3617.66	1808.83	6324.90	3167.15	4.94	-0.726	0.000	0.168
70.00	-25.64	-8.39	0.00	-492.99	0.00	492.99	3589.34	1794.67	6205.25	3107.24	5.25	-0.751	0.000	0.166
72.00	-25.25	-8.35	0.00	-476.21	0.00	476.21	3560.76	1780.38	6086.26	3047.65	5.57	-0.775	0.000	0.163
74.00	-24.86	-8.30	0.00	-459.52	0.00	459.52	3531.92	1765.96	5967.94	2988.40	5.90	-0.800	0.000	0.161
76.00	-24.48	-8.25	0.00	-442.92	0.00	442.92	3502.82	1751.41	5850.30	2929.50	6.24	-0.824	0.000	0.158
78.00	-24.10	-8.20	0.00	-426.42	0.00	426.42	3473.45	1736.72	5733.37	2870.94	6.59	-0.849	0.000	0.155
80.00	-23.73	-8.16	0.00	-410.01	0.00	410.01	3443.81	1721.91	5617.15	2812.75	6.95	-0.873	0.000	0.153
82.00	-23.36	-8.11	0.00	-393.70	0.00	393.70	3413.92	1706.96	5501.67	2754.92	7.32	-0.897	0.000	0.150
84.00	-22.99	-8.06	0.00	-377.48	0.00	377.48	3383.76	1691.88	5386.93	2697.47	7.70	-0.921	0.000	0.147
86.00	-22.63	-8.02	0.00	-361.36	0.00	361.36	3353.33	1676.67	5272.96	2640.40	8.10	-0.945	0.000	0.144
88.00	-22.27	-7.97	0.00	-345.33	0.00	345.33	3322.64	1661.32	5159.77	2583.72	8.50	-0.969	0.000	0.140
90.00	-21.91	-7.92	0.00	-329.39	0.00	329.39	3291.69	1645.84	5047.37	2527.44	8.91	-0.992	0.000	0.137

Calculated Forces

Structure:	CT13075-A-SBA	**Code:**	TIA-222-G	6/24/2022	
Site Name:	New London	**Exposure:**	C		
Height:	149.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 61

92.00	-21.56	-7.87	0.00	-313.55	0.00	313.55	3260.47	1630.24	4935.79	2471.56	9.33	-1.016	0.000	0.133
94.00	-21.21	-7.83	0.00	-297.80	0.00	297.80	3223.46	1611.73	4816.76	2411.96	9.76	-1.039	0.000	0.130
96.00	-20.87	-7.78	0.00	-282.15	0.00	282.15	3181.72	1590.86	4692.22	2349.60	10.20	-1.061	0.000	0.127
98.00	-20.33	-7.73	0.00	-266.59	0.00	266.59	3139.99	1570.00	4569.31	2288.05	10.65	-1.084	0.000	0.123
100.00	-19.80	-7.68	0.00	-251.13	0.00	251.13	3098.26	1549.13	4448.03	2227.32	11.11	-1.105	0.000	0.119
100.75	-19.61	-7.66	0.00	-245.37	0.00	245.37	1860.42	930.21	2714.89	1359.46	11.28	-1.114	0.000	0.191
102.00	-19.46	-7.63	0.00	-235.80	0.00	235.80	1851.10	925.55	2678.69	1341.34	11.58	-1.127	0.000	0.186
104.00	-19.22	-7.59	0.00	-220.53	0.00	220.53	1835.98	917.99	2620.93	1312.41	12.05	-1.157	0.000	0.179
106.00	-18.98	-7.55	0.00	-205.35	0.00	205.35	1820.60	910.30	2563.39	1283.60	12.55	-1.186	0.000	0.170
108.00	-18.74	-7.51	0.00	-190.25	0.00	190.25	1804.95	902.48	2506.08	1254.90	13.05	-1.214	0.000	0.162
110.00	-18.51	-7.46	0.00	-175.24	0.00	175.24	1789.04	894.52	2449.03	1226.33	13.56	-1.240	0.000	0.153
112.00	-18.28	-7.42	0.00	-160.32	0.00	160.32	1772.87	886.43	2392.24	1197.90	14.09	-1.266	0.000	0.144
114.00	-18.06	-7.38	0.00	-145.48	0.00	145.48	1756.43	878.22	2335.73	1169.60	14.62	-1.291	0.000	0.135
116.00	-17.83	-7.33	0.00	-130.72	0.00	130.72	1739.73	869.86	2279.52	1141.45	15.17	-1.314	0.000	0.125
117.00	-15.38	-6.42	0.00	-123.39	0.00	123.39	1731.28	865.64	2251.53	1127.44	15.45	-1.325	0.000	0.118
118.00	-15.27	-6.40	0.00	-116.97	0.00	116.97	1722.76	861.38	2223.62	1113.46	15.73	-1.336	0.000	0.114
120.00	-15.06	-6.36	0.00	-104.17	0.00	104.17	1705.53	852.77	2168.05	1085.64	16.29	-1.356	0.000	0.105
122.00	-14.85	-6.31	0.00	-91.45	0.00	91.45	1688.04	844.02	2112.82	1057.98	16.86	-1.375	0.000	0.095
124.00	-14.64	-6.27	0.00	-78.82	0.00	78.82	1670.28	835.14	2057.95	1030.51	17.44	-1.392	0.000	0.085
125.00	-14.27	-6.14	0.00	-72.55	0.00	72.55	1661.30	830.65	2030.66	1016.84	17.73	-1.400	0.000	0.080
126.00	-14.17	-6.12	0.00	-66.41	0.00	66.41	1652.26	826.13	2003.46	1003.22	18.03	-1.407	0.000	0.075
127.00	-9.47	-3.88	0.00	-60.30	0.00	60.30	1643.15	821.58	1976.36	989.65	18.32	-1.414	0.000	0.067
128.00	-9.37	-3.85	0.00	-56.42	0.00	56.42	1633.98	816.99	1949.35	976.13	18.62	-1.421	0.000	0.064
129.00	-9.08	-3.74	0.00	-52.57	0.00	52.57	1624.73	812.37	1922.45	962.65	18.92	-1.427	0.000	0.060
130.00	-8.98	-3.72	0.00	-48.82	0.00	48.82	1615.43	807.71	1895.65	949.24	19.22	-1.433	0.000	0.057
132.00	-8.79	-3.68	0.00	-41.38	0.00	41.38	1596.61	798.31	1842.37	922.56	19.82	-1.444	0.000	0.050
134.00	-8.60	-3.63	0.00	-34.02	0.00	34.02	1577.54	788.77	1789.53	896.09	20.43	-1.454	0.000	0.043
136.00	-8.42	-3.59	0.00	-26.75	0.00	26.75	1558.20	779.10	1737.14	869.86	21.04	-1.462	0.000	0.036
137.00	-4.61	-1.99	0.00	-23.16	0.00	23.16	1548.43	774.21	1711.12	856.83	21.35	-1.465	0.000	0.030
138.00	-4.53	-1.97	0.00	-21.17	0.00	21.17	1538.59	769.30	1685.21	843.86	21.65	-1.469	0.000	0.028
139.00	-4.45	-1.95	0.00	-19.20	0.00	19.20	1528.69	764.34	1659.43	830.95	21.96	-1.472	0.000	0.026
139.00	-4.45	-1.95	0.00	-19.20	0.00	19.20	1044.31	522.16	1138.99	570.34	21.96	-1.472	0.000	0.038
140.00	-4.39	-1.93	0.00	-17.25	0.00	17.25	1038.69	519.35	1122.71	562.19	22.27	-1.474	0.000	0.035
142.00	-4.26	-1.89	0.00	-13.39	0.00	13.39	1027.26	513.63	1090.28	545.95	22.89	-1.481	0.000	0.029
144.00	-4.14	-1.85	0.00	-9.62	0.00	9.62	1015.57	507.78	1058.02	529.79	23.51	-1.486	0.000	0.022
146.00	-4.03	-1.81	0.00	-5.92	0.00	5.92	1003.61	501.80	1025.94	513.73	24.13	-1.490	0.000	0.016
148.00	-3.91	-1.77	0.00	-2.31	0.00	2.31	991.38	495.69	994.07	497.78	24.76	-1.492	0.000	0.009
149.00	0.00	-1.67	0.00	-0.54	0.00	0.54	985.17	492.59	978.22	489.84	25.07	-1.492	0.000	0.001

Final Analysis Summary

Structure:	CT13075-A-SBA		**Code:**	TIA-222-G	6/24/2022
Site Name:	New London		**Exposure:**	C	
Height:	149.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 62

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	48.6	0.00	53.40	0.00	0.00	5603.38
0.9D + 1.6W 105 mph Wind	48.6	0.00	40.04	0.00	0.00	5543.61
1.2D + 1.0Di + 1.0Wi 50 mph Wind	11.7	0.00	85.97	0.00	0.00	1362.88
1.2D + 1.0E	2.2	0.00	53.44	0.00	0.00	271.46
0.9D + 1.0E	2.2	0.00	40.08	0.00	0.00	268.36
1.0D + 1.0W 60 mph Wind	9.9	0.00	44.53	0.00	0.00	1137.93

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	-20.16	-37.76	0.00	-1209.1	0.00	-1209.1	1860.42	930.21	2714.89	1359.46	100.75	0.902
0.9D + 1.6W 105 mph Wind	-14.32	-37.17	0.00	-1188.1	0.00	-1188.1	1860.42	930.21	2714.89	1359.46	100.75	0.883
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-46.20	-9.19	0.00	-296.14	0.00	-296.14	1860.42	930.21	2714.89	1359.46	100.75	0.243
1.2D + 1.0E	-23.69	-1.83	0.00	-74.11	0.00	-74.11	1860.42	930.21	2714.89	1359.46	100.75	0.067
0.9D + 1.0E	-17.77	-1.80	0.00	-72.95	0.00	-72.95	1860.42	930.21	2714.89	1359.46	100.75	0.063
1.0D + 1.0W 60 mph Wind	-19.61	-7.66	0.00	-245.37	0.00	-245.37	1860.42	930.21	2714.89	1359.46	100.75	0.191

Base Plate Summary

Structure:	CT13075-A-SB		**Code:**	TIA-222-G	6/24/2022
Site Name:	New London		**Exposure:**	C	
Height:	149.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 63

Tower Engineering Solutions

Reactions

Original Design

Moment (kip-ft):	5442.50
Axial (kip):	53.57
Shear (kip):	49.90

Analysis (1.2D + 1.6W)

Moment (kip-ft):	5603.38
Axial (kip):	53.40
Shear (kip):	48.59

Base Plate

Yield (ksi):	60.00
Width (in):	65.38
Style:	Clipped
Polygon Sides:	8.00
Clip Length (in):	14.00
Effective Len (in):	8.93
Moment (kip-in):	700.31
Allow Stress (ksi):	81.00
Applied Stress (ksi):	62.37
Stress Ratio:	0.77

Anchor Bolts

Bolt Circle:	64.88
Number Bolts:	20.00
Bolt Type:	2.25" 18J
Bolt Diameter (in):	2.25
Yield (ksi):	75.00
Ultimate (ksi):	100.00
Arrangement:	Clustered
Cluster Dist (in):	6.00
Start Angle (deg):	45.00

Compression

Force (kip):	211.58
Allowable (kip):	260.00
Ratio:	0.83

Tension

Force (kip):	202.98
Allowable (kip):	260.00
Ratio:	0.80

Monopole Mat Foundation Design

				Date
				6/24/2022
	Customer Name:	AT&T	**TIA Standard:**	TIA-222-G
	Site Name:		**Structure Height (Ft.):**	149
	Site Number:	CT13075-A-SBA	**Engineer Name:**	J. Tibbetts
	Engr. Number:	130842	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

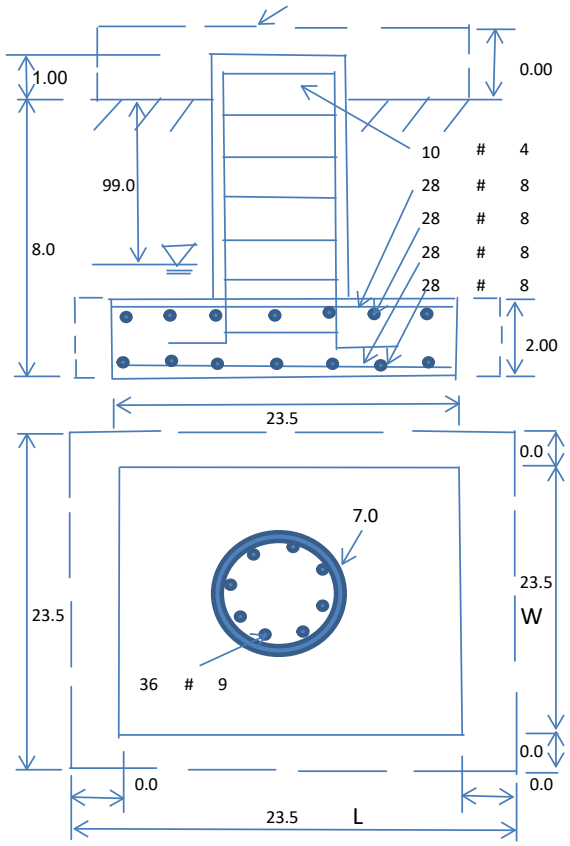
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	53.4	Shear Force (Kips):	48.6
Uplift Force (Kips):	0.0	Moment (Kips-ft):	5603.4
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	7.0	Depth of Base BG (ft.):	8.0
Pier Height A. G. (ft.):	1.00	Thickness of Pad (ft):	2.00
Length of Pad (ft.):	23.5	Width of Pad (ft.):	23.5
Final Length of pad (ft)	23.5	Final width of pad (ft):	23.5



Material Properties and Reabr Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	9	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	36	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	8	
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):	28	Qty. of Rebar in Pad (W):	28	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	28	Qty. of Rebar in Pad (W):	28	
Apply 1.35 factor for e/w Per G:	1.35			

Soil Design Parameters:

Soil Unit Weight (pcf):	105.0	Soil Buoyant Weight:	50.0	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.):	3082.59	Total Dry Soil Weight (Kips):	323.67
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	323.67	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	1373.89	Total Dry Concrete Weight (Kips):	206.08
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	206.08	Total Vertical Load on Base (Kips):	583.16

Check Soil Capacities:

					Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	5960	<	Allowable Factored Soil Bearing (psf):	15000	0.40	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	6229.6	>	Design Factored Momont (kips-ft):	5849	0.94	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.07	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):	1.00		Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	6026.1	>	Design Factored Moment (Mu, Kips-F	5943.6	0.99	OK!
Calculated Shear Capacity (Kips):	660.1	>	Design Factored Shear (Kips):	48.6	0.07	OK!
Calculated Tension Capacity (Tn, Kips):	1944.0	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	9734.2	>	Design Factored Axial Load (Pu Kips):	53.4	0.01	OK!
Moment & Axial Strength Combination:	0.99	OK!	Check Tie Spacing (Design/Required):		1	OK!
Pier Reinforcement Ratio:	0.006		Reinforcement Ratio is satisfied per ACI			
(2).Concrete Pad:						
One-Way Design Shear Capacity (L-Direction, Kips):	548.4	>	One-Way Factored Shear (L-D. Kips):	394.3	0.72	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	548.4	>	One-Way Factored Shear (W-D., Kips)	394.3	0.72	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	532.5	>	One-Way Factored Shear (C-C, Kips):	414.7	0.78	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0038	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0038		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	1971.7	>	Moment at Bottom (L-Dir. K-Ft):	1726.8	0.88	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	1971.7	>	Moment at Bottom (W-Dir. K-Ft):	1726.8	0.88	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	2762.4	>	Moment at Bottom (C-C Dir. K-Ft):	2442.1	0.88	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0038	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0038		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	1971.7	>	Moment at the top (L-Dir K-Ft):	838.0	0.43	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	1971.7	>	Moment at the top (W-Dir K-Ft):	838.0	0.43	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	2762.4	>	Moment at the top (C-C Dir. K-Ft):	788.3	0.29	OK!
(3).Check Punching Shear Capacity due to Moment in the Pier:						
Moment transferred by punching shear:	2241.4	k-ft.	Max. factored shear stress v_{u_CD}:		8.7	Psi
Max. factored shear stress v_{u_AB}:	22.0	Psi	Factored shear Strength ϕv_n:		189.7	Psi
Max. factored shear stress v_u:	22.0	Psi	Check Usage of Punching Shear Capacity:		0.12	OK!

May 3, 2022 (Rev.3)
April 22, 2022 (Rev.2)
April 1, 2022 (Rev.1)
March 28, 2022

SAI Communications
12 Industrial Way
Salem NH, 03079

RE:	Site Number:	CT2820
	FA Number:	10577793
	PACE Number:	MRCTB062306
	PT Number:	2051A146BE
	Site Name:	GROTON PLEASANT VALLEY ROAD NORTH S2820A
	Site Address:	1294 Pleasant Valley Road North Groton, CT 06340

To Whom It May Concern:

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

- (3) 4478 B14 RRH's (18.1"x13.4"x8.20" – Wt. = 60 lbs. /each)
- (3) 4426 B66 RRH's (14.9"x13.2"x5.8" – Wt. = 49 lbs. /each)
- (3) RRUS 32 B30 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (3) 4415 B25 RRH's (16.5"x13.4"x5.9" – Wt. = 46 lbs. /each)
- (1) DC6-48-60-0-8C Surge Arrestors (24.0"x9.7"Ø – Wt. = 33 lbs.)
- (**3**) DC6-48-60-18 Surge Arrestors (24.0"x9.7"Ø – Wt. = 33 lbs.)
- **(3) QD8616-7 Antennas (96.0"x22.0"x9.6" – Wt. = 68 lbs. /each)**
- **(3) AIR6419 Antennas (31.1"X16.1"X7.3"– Wt. = 66 lbs. /each)**
- **(3) AIR6449 Antennas (30.6"X15.9"X10.6" – Wt. = 82 lbs. /each)**
- **(3) DMP65R-BU8DA Antennas (96.0"x20.7"x7.7" – Wt. = 119 lbs. /each)**
- **(3) 4449 B5/B12 RRH's (17.9"x13.2"x9.4" – Wt. = 73 lbs. /each)**
- **(3) 2012 B29 RRH's (16.5"x13.5"x5.9" – Wt. = 43 lbs. /each)**

**Proposed equipment shown in bold.*

No original structural design documents or fabrication drawings were available for the existing mounts. HDG's subconsultant, ProVertic LLC, conducted a survey climb and mapping of the existing AT&T antenna mounts on June 11, 2018. HDG conducted a ground audit of the existing antenna mounts on October 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 1.14 in was used for this analysis.
- HDG considers this site to be exposure category C; tower is located near large, flat, open, terrain/grasslands.
- 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 0.160 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 50 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 3.
- 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 mounts are secured to the existing monopole with ring mounts and 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 NOT CAPABLE** of supporting the proposed installation. HDG recommends the following modifications:

- **Proposed handrail reinforcement kit, SitePro1 P/N PRK-SFS-L (or approved equal) secured to existing handrail kit (typ. of 1 per sector, total of 3).**

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing Mount Rating	9	LC 8	144%	**FAIL**
Modified Mount Rating	1	LC 7	89%	**PASS**

Reference Documents:

- Mount mapping report prepared by ProVertic LLC dated June 21, 2018.

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.

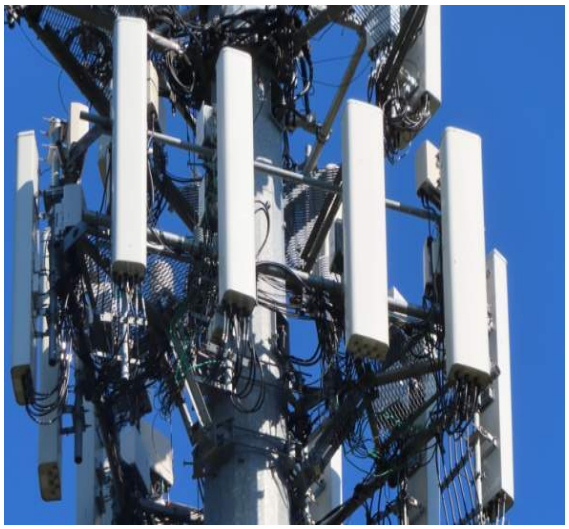
Respectfully Submitted,
Hudson Design Group LLC

Michael Cabral
Vice President

STATE OF CONNECTICUT
DANIEL HAMM
24178
LICENSED
PROFESSIONAL ENGINEER

Daniel P. Hamm, PE
Principal

FIELD PHOTOS:



FIELD PHOTOS (CONT.):

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Wind & Ice
Calculations

ANSI/TIA-222H - WIND, ICE & SEISMIC LOAD CALCULATIONS

Site Code/Name		CT2028 - GROTON PLEASANT VALLEY ROAD ROAD NORTH S2820A		
State		Connecticut		
County		New London		*Reference*
Structure Class		II		*Table 2-1*
Exposure Category		C		*Section 2.6.5.1.2*
Topographic Category		1 - Kzt = 1		*Section 2.6.6.2.1*
Mean Elevation of base of structure	z_s	142.76	ft	*ASCE7-16 Hazards*
Height Above Ground	z	127	ft	

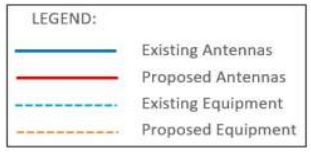
Wind Parameters				
Basic wind speed	V	135	mph	*Appendix N of Connecticut Building Code*
Wind direction probability factor	K_d	0.95		*Section 16.6*
Gust effect factor	G_h	1		*Section 16.6*
Velocity Pressure (Ka = 0.9)		52.82	psf	*Section 2.6.11.6*

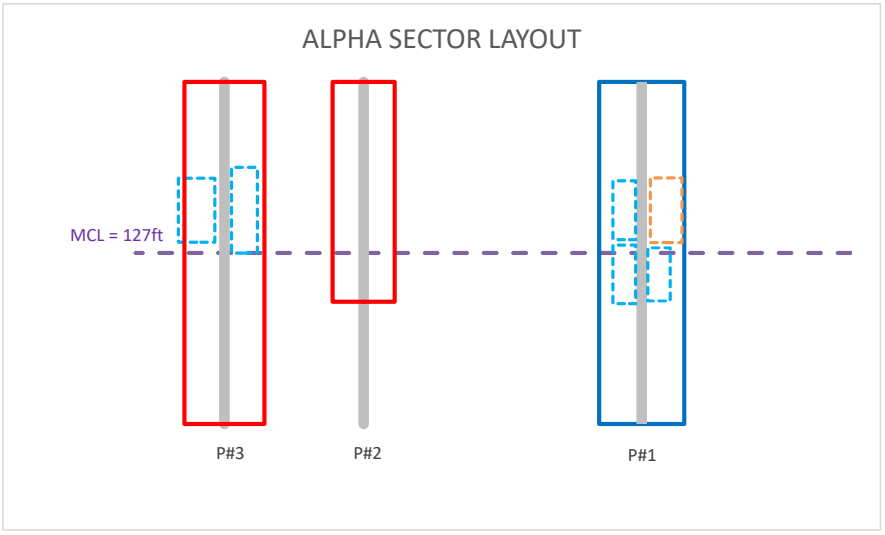
Wind & Ice Parameters				
Base windspeed in conjunction with ice, V_i		50	mph	*ASCE7-16 Hazards Tool*
Base Ice thickness	t_i	1.00	in	*ASCE7-16 Hazards Tool*
Ice Velocity Pressure (Ka = 0.9)	q_{ice}	7.25	psf	*Section 2.6.11.6*
Design Ice Thickness	t_{iz}	1.14	in	*Section 2.6.10*

Seismic Parameters				
Site Soil Class		D - Default		*Table 2-10*
Seismic Design Category		B		*ASCE7-16 Hazards Tool*
Spectral Response at Short Periods	S_s	0.16		*Appendix N of Connecticut Building Code*
Spectral Response at 1sec	S_1	0.058		*Appendix N of Connecticut Building Code*
Long Period Transition Period	T_L	6		*ASCE7-16 Hazards Tool*
Seismic Importance Factor	I_s	1		*Table 2-3*
Response modification coefficient	R	2		*Section 16.7*
Short-Period Site Coefficient	F_a	1.6		*Table 2-11*
Design Spectral Response at Short Periods	S_{DS}	0.171		*Section 2.7.5*
Seismic Response Coefficient	C_s	0.085		*Section 2.7.7.1*

ALPHA SECTOR

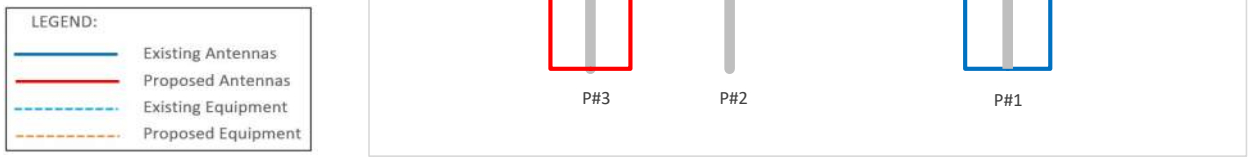
Position	Appurtenance properties						Wind		Ice	Seismic
	Manufacturer	Model	L [in]	W [in]	D [in]	Weight [lbs]	0^o [lbs]	90^o [lbs]	IceWeight [lbs]	E_H [lbs]
1	Quintel	QD8616-7	96.0	22.0	9.6	68.0	993.8	507.1	284.6	5.8
2	Ericsson	AIR6449 +AIR6419(Stacked)	61.7	16.1	10.6	148.0	458.8	323.3	149.5	12.6
3	CCI	DMP65R-BU8DA	96.0	20.7	7.7	119.0	943.9	429.0	262.9	10.2
1	Ericsson	4478 B14	18.1	13.4	8.2	60.0	65.3	106.8	37.8	5.1
1	Ericsson	4415 B25	16.5	13.4	5.9	46.0	43.3	97.3	32.4	3.9
1	Ericsson	4426 B66	14.9	13.2	5.8	49.0	38.1	86.6	29.1	4.2
3	Ericsson	4449 B5/B12	17.9	13.2	9.4	73.0	74.1	104.0	38.5	6.2
3	Ericsson	RRUS-32 B30	24.0	12.1	6.7	33.0	83.1	127.8	43.9	2.8
1	Ericsson	2012 B29	16.5	13.5	5.9	43.0	43.3	98.0	32.6	3.7





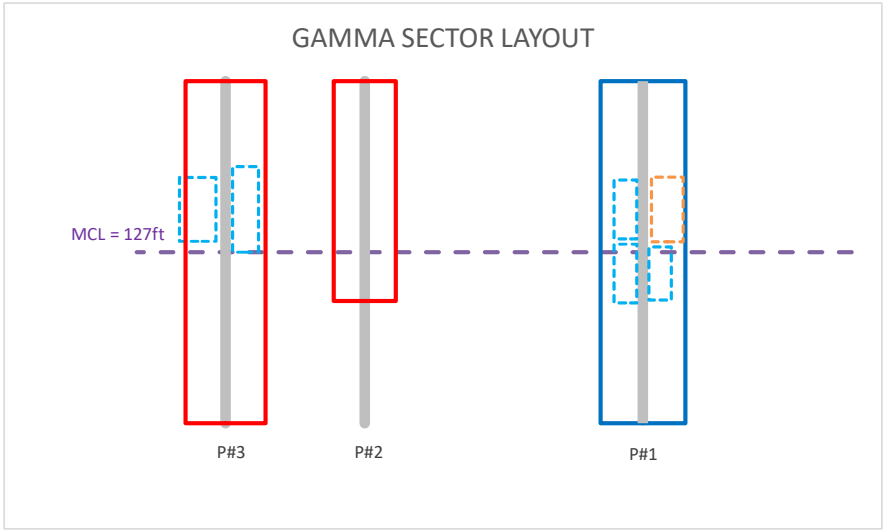
BETA SECTOR

Position	Appurtenance properties						Wind		Ice	Seismic
	Manufacturer	Model	L [in]	W [in]	D [in]	Weight [lbs]	0^o [lbs]	90^o [lbs]	IceWeight [lbs]	E_H [lbs]
1	Quintel	QD8616-7	96.0	22.0	9.6	68.0	993.8	507.1	284.6	5.8
2	Ericsson	AIR6449 +AIR6419(Stacked)	61.7	16.1	10.6	148.0	458.8	323.3	149.5	12.6
3	CCI	DMP65R-BU8DA	96.0	20.7	7.7	119.0	943.9	429.0	262.9	10.2
1	Ericsson	4478 B14	18.1	13.4	8.2	60.0	96.4	75.7	37.8	5.1
1	Ericsson	4415 B25	16.5	13.4	5.9	46.0	83.8	56.8	32.4	3.9
1	Ericsson	4426 B66	14.9	13.2	5.8	49.0	74.5	50.2	29.1	4.2
3	Ericsson	4449 B5/B12	17.9	13.2	9.4	73.0	96.5	81.5	38.5	6.2
3	Ericsson	RRUS-32 B30	24.0	12.1	6.7	33.0	116.6	94.3	43.9	2.8
-	Raycap	DC6-48-60-0-8C	24.0	9.7	9.7	33.0	102.5	102.5	43.5	2.8
-	Raycap	DC6-48-60-18	24.0	9.7	9.7	33.0	102.5	102.5	43.5	2.8
1	Ericsson	2012 B29	16.5	13.5	5.9	43.0	84.4	57.0	32.6	3.7



GAMMA SECTOR

Position	Appurtenance properties						Wind		Ice	Seismic
	Manufacturer	Model	L [in]	W [in]	D [in]	Weight [lbs]	0^o [lbs]	90^o [lbs]	IceWeight [lbs]	E_H [lbs]
1	Quintel	QD8616-7	96.0	22.0	9.6	68.0	993.8	507.1	284.6	5.8
2	Ericsson	AIR6449 +AIR6419(Stacked)	61.7	16.1	10.6	148.0	458.8	323.3	149.5	12.6
3	CCI	DMP65R-BU8DA	96.0	20.7	7.7	119.0	943.9	429.0	262.9	10.2
1	Ericsson	4478 B14	18.1	13.4	8.2	60.0	96.4	75.7	37.8	5.1
1	Ericsson	4415 B25	16.5	13.4	5.9	46.0	83.8	56.8	32.4	3.9
1	Ericsson	4426 B66	14.9	13.2	5.8	49.0	74.5	50.2	29.1	4.2
3	Ericsson	4449 B5/B12	17.9	13.2	9.4	73.0	96.5	81.5	38.5	6.2
3	Ericsson	RRUS-32 B30	24.0	12.1	6.7	33.0	116.6	94.3	43.9	2.8
-	Raycap	DC6-48-60-18	24.0	9.7	9.7	33.0	102.5	102.5	43.5	2.8
-	Raycap	DC6-48-60-18	24.0	9.7	9.7	33.0	102.5	102.5	43.5	2.8
1	Ericsson	2012 B29	16.5	13.5	5.9	43.0	84.4	57.0	32.6	3.7



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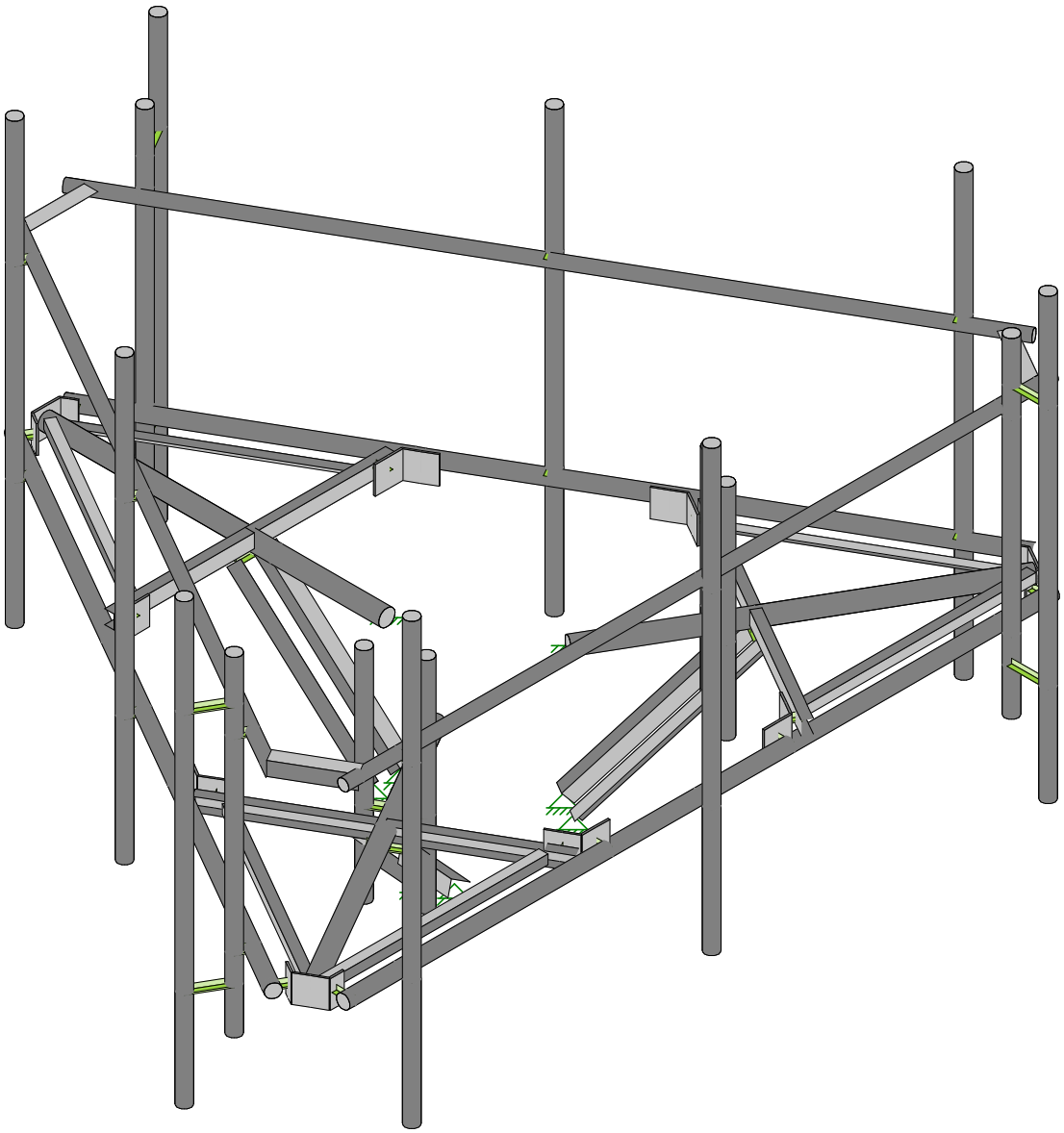
Design Group LLC

Mount Calculations
(Existing Conditions)



Envelope Only Solution

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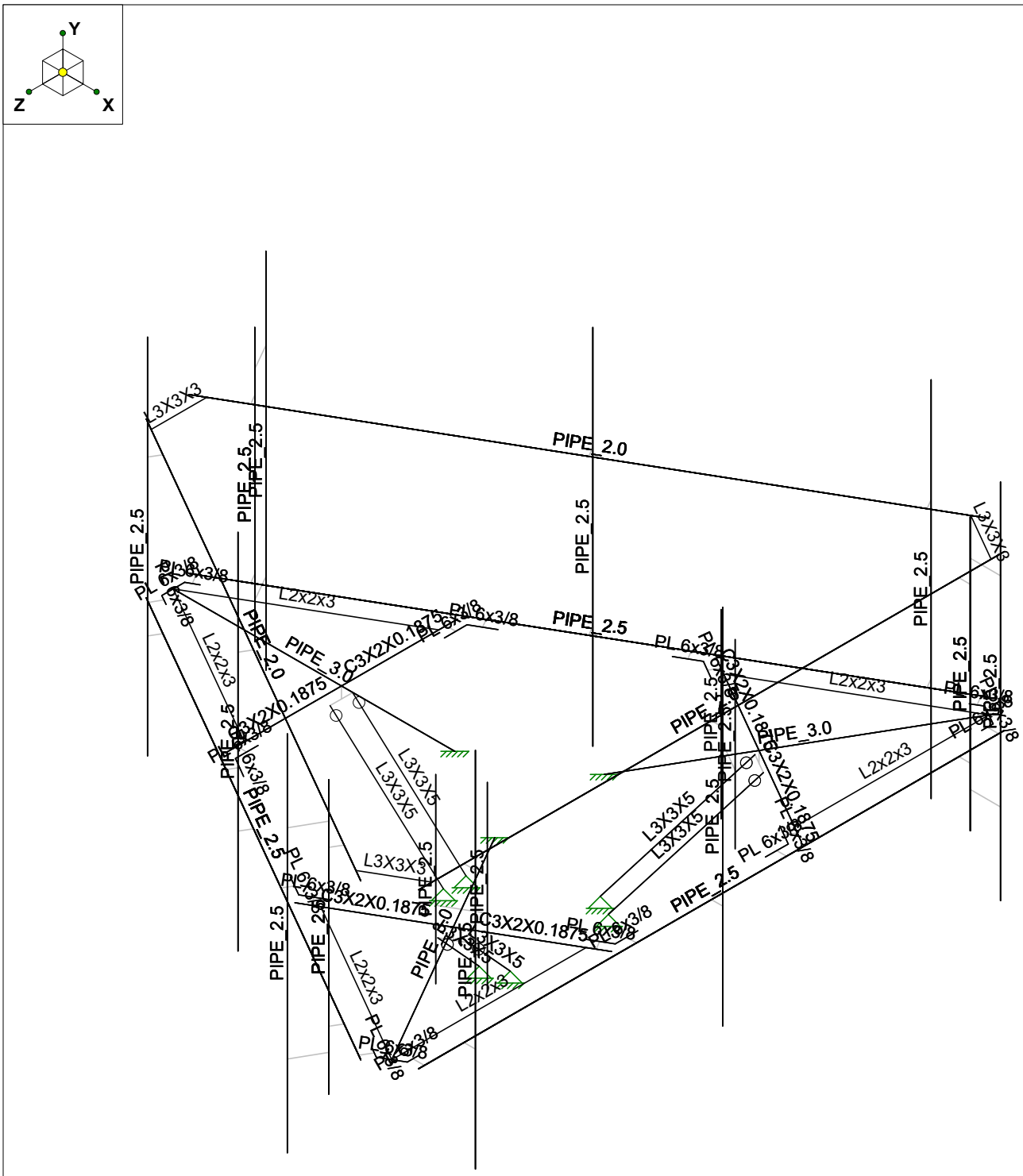

Envelope Only Solution

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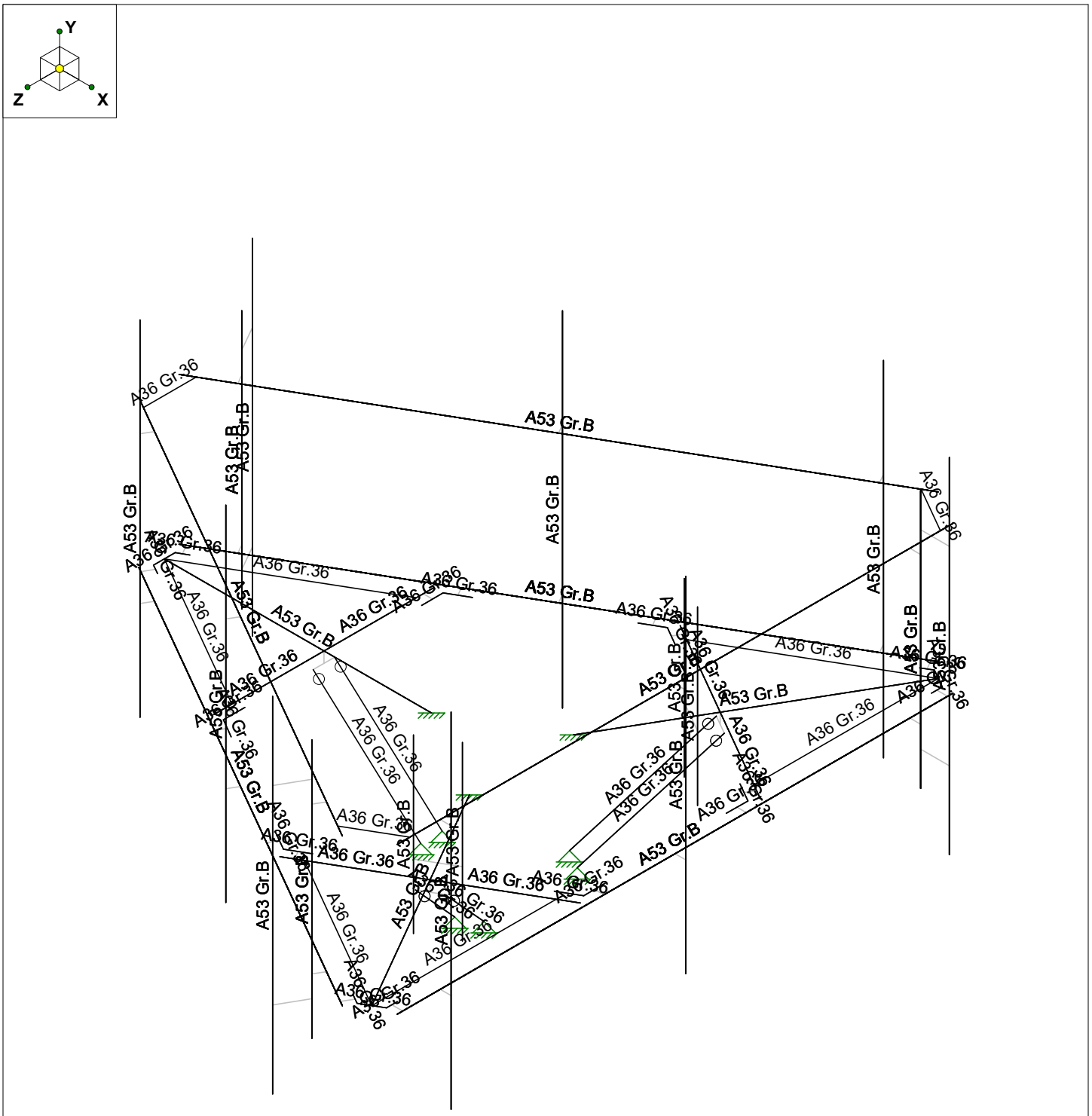

Envelope Only Solution

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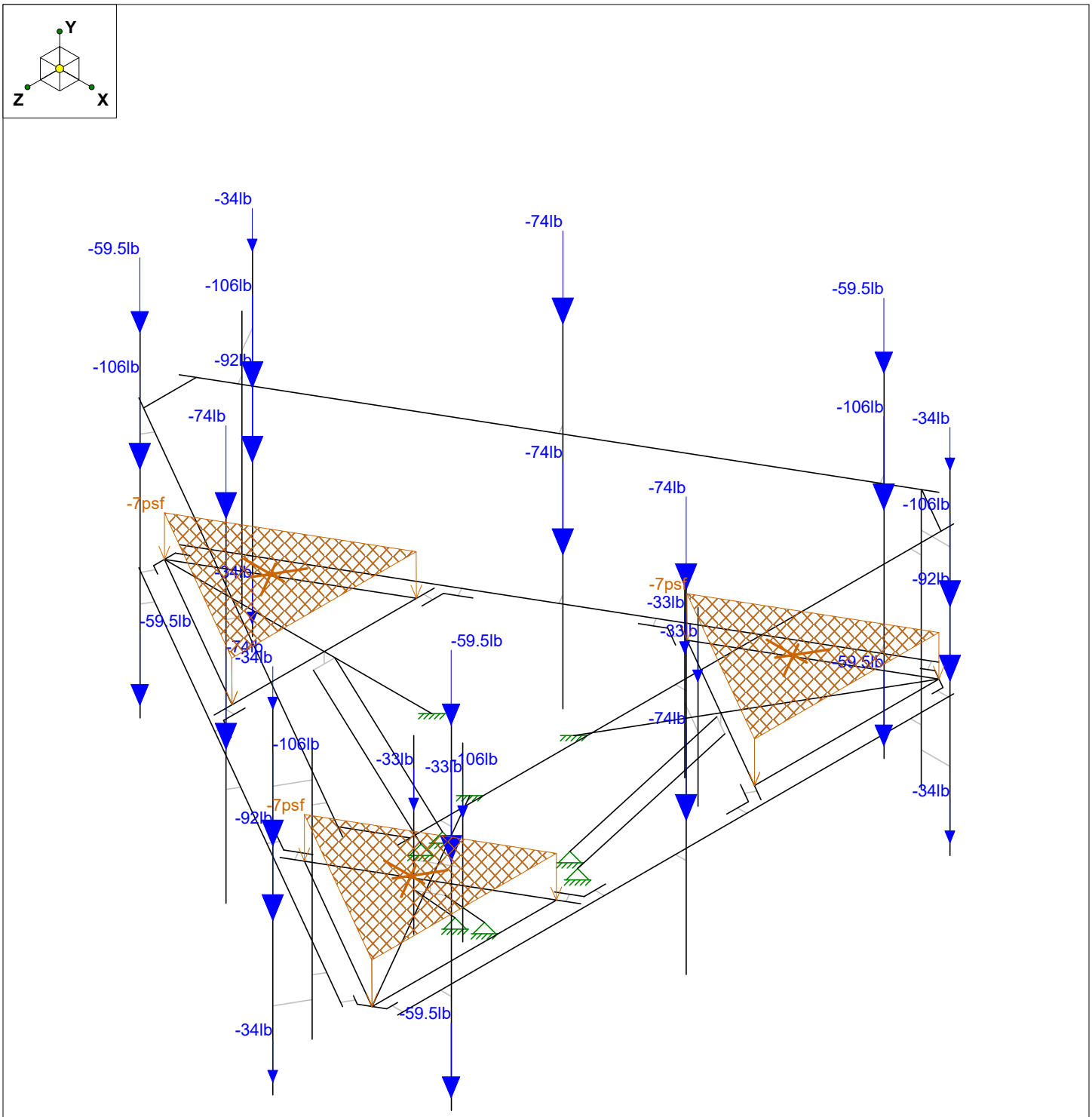

Loads: BLC 2, We
Envelope Only Solution

Hudson Design Group	GROTON PLEASANT VALLEY ROAD NORTH S2820A	SK - 4
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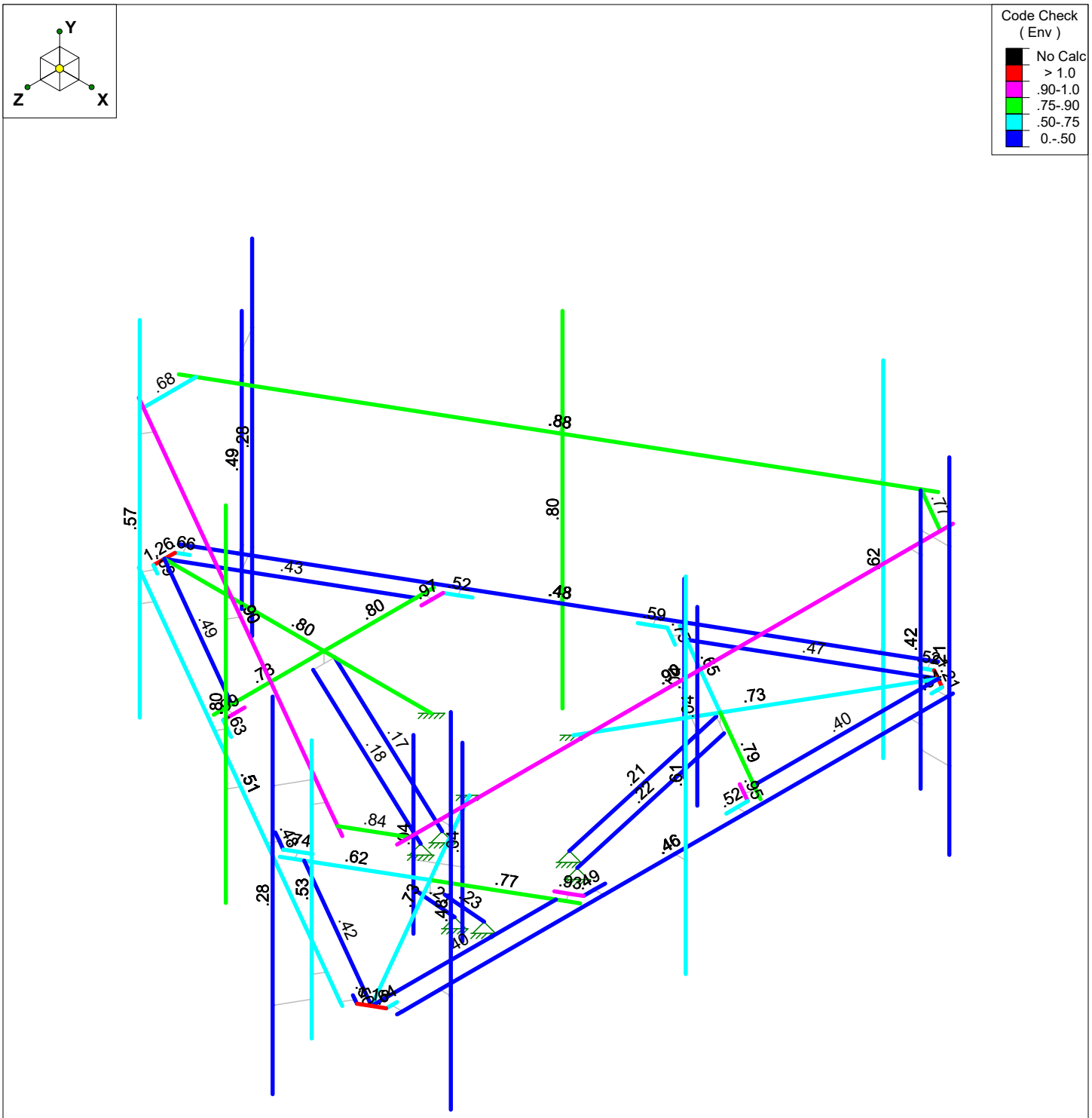

Member Code Checks Displayed (Enveloped)
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Hudson Design Group	GROTON PLEASANT VALLEY ROAD NORTH S2820A	SK - 5
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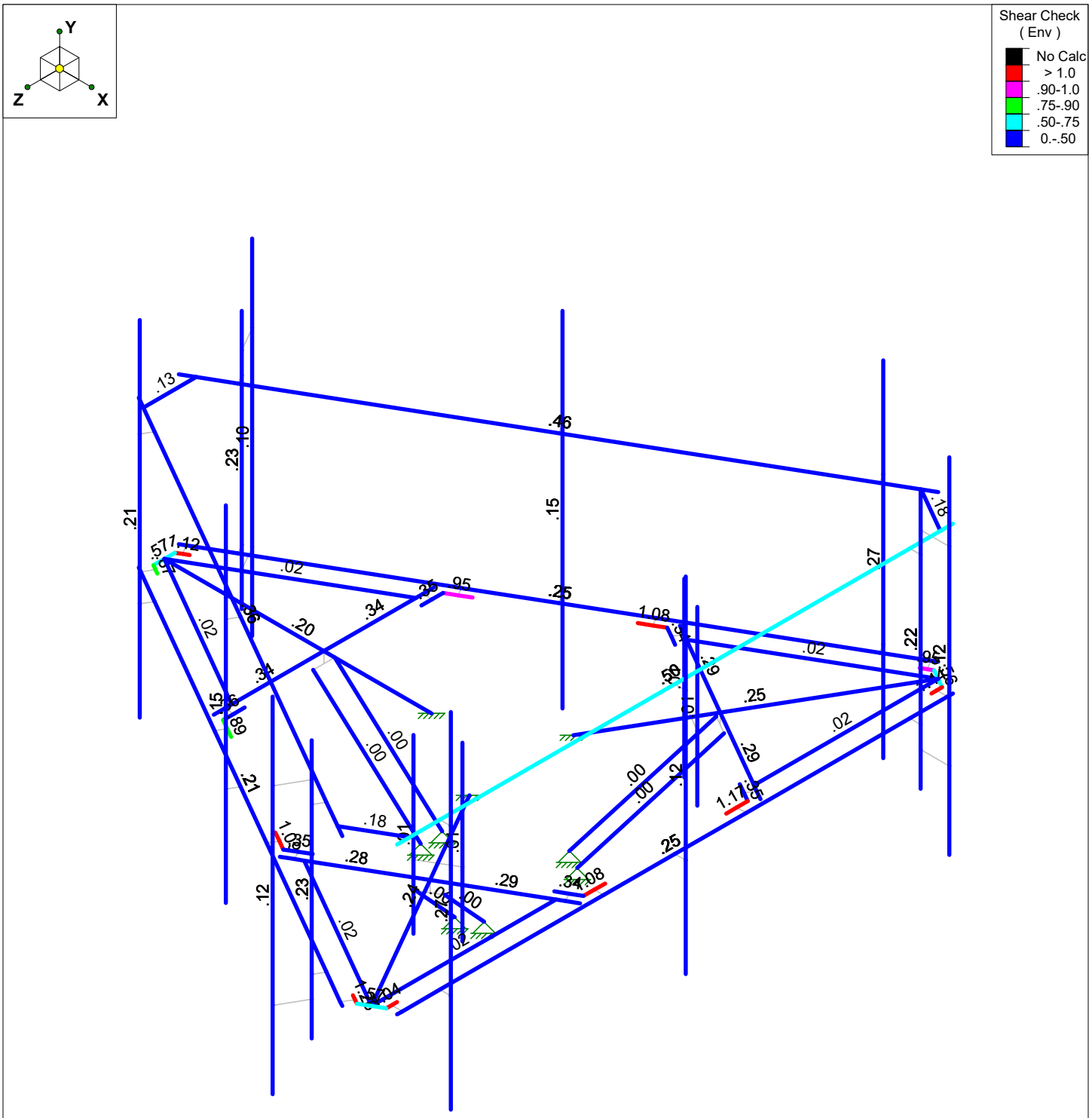

Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

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AD		Apr 22, 2022 at 11:35 AM
CT2820		CT2820_MMR(Without Kicker Kit)....

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (in/sec^2)	386.4
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 15th(360-16): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 15th(360-16): LRFD
Cold Formed Steel Code	AISI S100-16: LRFD
Wood Code	None
Wood Temperature	< 100F
Concrete Code	None
Masonry Code	None
Aluminum Code	AA ADM1-15: LRFD - Building
Stainless Steel Code	AISC 14th(360-10): LRFD
Adjust Stiffness?	Yes(Iterative)

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	No
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

(Global) Model Settings, Continued

Seismic Code	ASCE 7-16
Seismic Base Elevation (in)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	4
Cd X	4
Rho Z	1
Rho X	1

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (...	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.25	65	1.15
8	A913 Gr.65	29000	11154	.3	.65	.49	65	1.1	80	1.1

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	PIPE_2.5	PIPE_2.5	None	None	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
2	PIPE_3.0	PIPE_3.0	None	None	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
3	L2x2x3	L2x2x3	None	None	A36 Gr.36	Typical	.722	.271	.271	.009
4	C3X2X0.1875	C3X2X0.1875	None	None	A36 Gr.36	Typical	1.245	.497	1.772	.014
5	PL 6x3/8	PL 6x3/8	None	None	A36 Gr.36	Typical	2.25	.026	6.75	.101
6	PIPE_2.0	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
7	L3X3X5	L3X3X5	None	None	A36 Gr.36	Typical	1.78	1.5	1.5	.06
8	L3X3X3	L3X3X3	None	None	A36 Gr.36	Typical	1.09	.948	.948	.014
9	L2.5x2.5x3	L2.5x2.5x3	None	None	A36 Gr.36	Typical	.901	.535	.535	.011

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N64	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N3	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N65	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N198	Reaction	Reaction	Reaction			

Joint Boundary Conditions (Continued)

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
5	N199	Reaction	Reaction	Reaction			
6	N203	Reaction	Reaction	Reaction			
7	N204	Reaction	Reaction	Reaction			
8	N208	Reaction	Reaction	Reaction			
9	N209	Reaction	Reaction	Reaction			

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N4	N6			PL 6x3/8	None	None	A36 Gr.36	Typical
2	M2	N1	N2			PIPE_2.5	None	None	A53 Gr.B	Typical
3	M3	N114	N3			PIPE_3.0	None	None	A53 Gr.B	Typical
4	M4	N4	N5			PL 6x3/8	None	None	A36 Gr.36	Typical
5	M5	N6	N7			PL 6x3/8	None	None	A36 Gr.36	Typical
6	M6	N8	N9			RIGID	None	None	RIGID	Typical
7	M7	N10	N12			PL 6x3/8	None	None	A36 Gr.36	Typical
8	M8	N10	N11			PL 6x3/8	None	None	A36 Gr.36	Typical
9	M9	N12	N13			PL 6x3/8	None	None	A36 Gr.36	Typical
10	M10	N14	N15			RIGID	None	None	RIGID	Typical
11	M11	N16	N17			PIPE_2.5	None	None	A53 Gr.B	Typical
12	M12	N18	N19			RIGID	None	None	RIGID	Typical
13	M13	N20	N21			RIGID	None	None	RIGID	Typical
14	M14	N22	N23			PIPE_2.5	None	None	A53 Gr.B	Typical
15	M15	N24	N26			PL 6x3/8	None	None	A36 Gr.36	Typical
16	M16	N24	N25			PL 6x3/8	None	None	A36 Gr.36	Typical
17	M17	N26	N27			PL 6x3/8	None	None	A36 Gr.36	Typical
18	M18	N28	N29			RIGID	None	None	RIGID	Typical
19	M19	N30	N31			RIGID	None	None	RIGID	Typical
20	M20	N33	N32			PIPE_2.5	None	None	A53 Gr.B	Typical
21	M21	N34	N35			RIGID	None	None	RIGID	Typical
22	M22	N36	N37			RIGID	None	None	RIGID	Typical
23	M23	N39	N38			PIPE_2.5	None	None	A53 Gr.B	Typical
24	M24	N40	N41			RIGID	None	None	RIGID	Typical
25	M25	N42	N43			RIGID	None	None	RIGID	Typical
26	M26	N45	N44			PIPE_2.5	None	None	A53 Gr.B	Typical
27	M27	N47	N46			PIPE_2.5	None	None	A53 Gr.B	Typical
28	M28	N48	N49			PIPE_2.0	None	None	A53 Gr.B	Typical
29	M29	N50	N51			PIPE_2.0	None	None	A53 Gr.B	Typical
30	M30	N52	N53			PIPE_2.0	None	None	A53 Gr.B	Typical
31	M31	N56	N57			RIGID	None	None	RIGID	Typical
32	M32	N58	N59			RIGID	None	None	RIGID	Typical
33	M33	N60	N61			RIGID	None	None	RIGID	Typical
34	M34	N62	N63			RIGID	None	None	RIGID	Typical
35	M35	N134	N64			PIPE_3.0	None	None	A53 Gr.B	Typical
36	M36	N94	N65			PIPE_3.0	None	None	A53 Gr.B	Typical
37	M37	N66	N68			RIGID	None	None	RIGID	Typical
38	M38	N67	N68			RIGID	None	None	RIGID	Typical
39	M39	N70	N69			PIPE_2.5	None	None	A53 Gr.B	Typical
40	M40	N76	N75			PL 6x3/8	None	None	A36 Gr.36	Typical
41	M41	N76	N77			PL 6x3/8	None	None	A36 Gr.36	Typical
42	M42	N79	N78		180	C3X2X0.1875	None	None	A36 Gr.36	Typical
43	M43	N79	N80			C3X2X0.1875	None	None	A36 Gr.36	Typical
44	M44	N81	N82			RIGID	None	None	RIGID	Typical
45	M45	N83	N84			RIGID	None	None	RIGID	Typical
46	M46	N86	N85			PL 6x3/8	None	None	A36 Gr.36	Typical
47	M47	N86	N87			PL 6x3/8	None	None	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
48	M48	N88	N89			RIGID	None	None	RIGID	Typical
49	M49	N90	N91			RIGID	None	None	RIGID	Typical
50	M50	N92	N94		180	L2x2x3	None	None	A36 Gr.36	Typical
51	M51	N93	N94		90	L2x2x3	None	None	A36 Gr.36	Typical
52	M52	N96	N95			PL 6x3/8	None	None	A36 Gr.36	Typical
53	M53	N96	N97			PL 6x3/8	None	None	A36 Gr.36	Typical
54	M54	N99	N98			C3X2X0.1875	None	None	A36 Gr.36	Typical
55	M55	N100	N99			C3X2X0.1875	None	None	A36 Gr.36	Typical
56	M56	N101	N102			RIGID	None	None	RIGID	Typical
57	M57	N103	N104			RIGID	None	None	RIGID	Typical
58	M58	N106	N105			PL 6x3/8	None	None	A36 Gr.36	Typical
59	M59	N106	N107			PL 6x3/8	None	None	A36 Gr.36	Typical
60	M60	N108	N109			RIGID	None	None	RIGID	Typical
61	M61	N110	N111			RIGID	None	None	RIGID	Typical
62	M62	N112	N114		90	L2x2x3	None	None	A36 Gr.36	Typical
63	M63	N113	N114		180	L2x2x3	None	None	A36 Gr.36	Typical
64	M64	N116	N115			PL 6x3/8	None	None	A36 Gr.36	Typical
65	M65	N116	N117			PL 6x3/8	None	None	A36 Gr.36	Typical
66	M66	N119	N118			C3X2X0.1875	None	None	A36 Gr.36	Typical
67	M67	N119	N120		180	C3X2X0.1875	None	None	A36 Gr.36	Typical
68	M68	N121	N122			RIGID	None	None	RIGID	Typical
69	M69	N123	N124			RIGID	None	None	RIGID	Typical
70	M70	N126	N125			PL 6x3/8	None	None	A36 Gr.36	Typical
71	M71	N126	N127			PL 6x3/8	None	None	A36 Gr.36	Typical
72	M72	N128	N129			RIGID	None	None	RIGID	Typical
73	M73	N130	N131			RIGID	None	None	RIGID	Typical
74	M74	N132	N134		90	L2x2x3	None	None	A36 Gr.36	Typical
75	M75	N133	N134		180	L2x2x3	None	None	A36 Gr.36	Typical
76	M76	N136	N138			RIGID	None	None	RIGID	Typical
77	M77	N137	N138			RIGID	None	None	RIGID	Typical
78	M78	N140	N139			PIPE_2.5	None	None	A53 Gr.B	Typical
79	M79	N142	N141			PIPE_2.5	None	None	A53 Gr.B	Typical
80	M80	N146	N147			PIPE_2.5	None	None	A53 Gr.B	Typical
81	M81	N55	N54		90	L3X3X3	None	None	A36 Gr.36	Typical
82	M82	N74	N73		90	L3X3X3	None	None	A36 Gr.36	Typical
83	M83	N71	N72		90	L3X3X3	None	None	A36 Gr.36	Typical
84	M84	N149	N148			PIPE_2.5	None	None	A53 Gr.B	Typical
85	M85	N150	N151			RIGID	None	None	RIGID	Typical
86	M86	N152	N153			RIGID	None	None	RIGID	Typical
87	M87	N155	N154			PIPE_2.5	None	None	A53 Gr.B	Typical
88	M88	N156	N157			RIGID	None	None	RIGID	Typical
89	M89	N145	N158			RIGID	None	None	RIGID	Typical
90	M90	N160	N159			PIPE_2.5	None	None	A53 Gr.B	Typical
91	M91	N162	N161			PIPE_2.5	None	None	A53 Gr.B	Typical
92	M92	N163	N164			RIGID	None	None	RIGID	Typical
93	M93	N165	N166			RIGID	None	None	RIGID	Typical
94	M94	N167	N168			RIGID	None	None	RIGID	Typical
95	M95	N169	N170			RIGID	None	None	RIGID	Typical
96	M96	N173	N172			PIPE_2.5	None	None	A53 Gr.B	Typical
97	M97	N174	N175			RIGID	None	None	RIGID	Typical
98	M98	N176	N177			RIGID	None	None	RIGID	Typical
99	M99	N179	N178			PIPE_2.5	None	None	A53 Gr.B	Typical
100	M100	N180	N181			RIGID	None	None	RIGID	Typical
101	M101	N171	N182			RIGID	None	None	RIGID	Typical
102	M102	N184	N183			PIPE_2.5	None	None	A53 Gr.B	Typical
103	M103	N186	N185			PIPE_2.5	None	None	A53 Gr.B	Typical
104	M104	N187	N188			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
105	M105	N189	N190			RIGID	None	None	RIGID	Typical
106	M106	N191	N192			RIGID	None	None	RIGID	Typical
107	M107	N193	N194			RIGID	None	None	RIGID	Typical
108	M108	N195	N119			RIGID	None	None	RIGID	Typical
109	M109	N196	N197			RIGID	None	None	RIGID	Typical
110	M110	N198	N196		180	L3X3X5	None	None	A36 Gr.36	Typical
111	M111	N199	N197		90	L3X3X5	None	None	A36 Gr.36	Typical
112	M112	N200	N79			RIGID	None	None	RIGID	Typical
113	M113	N201	N202			RIGID	None	None	RIGID	Typical
114	M114	N203	N201		180	L3X3X5	None	None	A36 Gr.36	Typical
115	M115	N204	N202		90	L3X3X5	None	None	A36 Gr.36	Typical
116	M116	N205	N99			RIGID	None	None	RIGID	Typical
117	M117	N206	N207			RIGID	None	None	RIGID	Typical
118	M118	N208	N206		180	L3X3X5	None	None	A36 Gr.36	Typical
119	M119	N209	N207		90	L3X3X5	None	None	A36 Gr.36	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes	** NA **			None
2	M2						Yes	** NA **			None
3	M3						Yes	** NA **			None
4	M4						Yes	** NA **			None
5	M5						Yes	** NA **			None
6	M6		OOOOOO				Yes	** NA **			None
7	M7						Yes	** NA **			None
8	M8						Yes	** NA **			None
9	M9						Yes	** NA **			None
10	M10		OOOOOO				Yes	** NA **			None
11	M11						Yes	** NA **			None
12	M12		OOOOOO				Yes	** NA **			None
13	M13		OOOOOO				Yes	** NA **			None
14	M14						Yes	** NA **			None
15	M15						Yes	** NA **			None
16	M16						Yes	** NA **			None
17	M17						Yes	** NA **			None
18	M18		OOOOOO				Yes	** NA **			None
19	M19		OOOOOO				Yes	** NA **			None
20	M20						Yes	** NA **			None
21	M21						Yes	** NA **			None
22	M22						Yes	** NA **			None
23	M23						Yes	** NA **			None
24	M24						Yes	** NA **			None
25	M25						Yes	** NA **			None
26	M26						Yes	** NA **			None
27	M27						Yes	** NA **			None
28	M28						Yes	** NA **			None
29	M29						Yes	** NA **			None
30	M30						Yes	** NA **			None
31	M31						Yes	** NA **			None
32	M32						Yes	** NA **			None
33	M33						Yes	** NA **			None
34	M34						Yes	** NA **			None
35	M35						Yes	** NA **			None
36	M36						Yes	** NA **			None
37	M37						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
38	M38						Yes	** NA **			None
39	M39						Yes	** NA **			None
40	M40						Yes	** NA **			None
41	M41						Yes	** NA **			None
42	M42						Yes	** NA **			None
43	M43						Yes	** NA **			None
44	M44						Yes	** NA **			None
45	M45		OOOOOO				Yes	** NA **			None
46	M46						Yes	** NA **			None
47	M47						Yes	** NA **			None
48	M48						Yes	** NA **			None
49	M49		OOOOOO				Yes	** NA **			None
50	M50						Yes	** NA **			None
51	M51						Yes	** NA **			None
52	M52						Yes	** NA **			None
53	M53						Yes	** NA **			None
54	M54						Yes	** NA **			None
55	M55						Yes	** NA **			None
56	M56						Yes	** NA **			None
57	M57		OOOOOO				Yes	** NA **			None
58	M58						Yes	** NA **			None
59	M59						Yes	** NA **			None
60	M60						Yes	** NA **			None
61	M61		OOOOOO				Yes	** NA **			None
62	M62						Yes	** NA **			None
63	M63						Yes	** NA **			None
64	M64						Yes	** NA **			None
65	M65						Yes	** NA **			None
66	M66						Yes	** NA **			None
67	M67						Yes	** NA **			None
68	M68						Yes	** NA **			None
69	M69		OOOOOO				Yes	** NA **			None
70	M70						Yes	** NA **			None
71	M71						Yes	** NA **			None
72	M72						Yes	** NA **			None
73	M73		OOOOOO				Yes	** NA **			None
74	M74						Yes	** NA **			None
75	M75						Yes	** NA **			None
76	M76						Yes	** NA **			None
77	M77						Yes	** NA **			None
78	M78						Yes	** NA **			None
79	M79						Yes	** NA **			None
80	M80						Yes	** NA **			None
81	M81						Yes	** NA **			None
82	M82						Yes	** NA **			None
83	M83						Yes	** NA **			None
84	M84						Yes	** NA **			None
85	M85						Yes	** NA **			None
86	M86						Yes	** NA **			None
87	M87						Yes	** NA **			None
88	M88						Yes	** NA **			None
89	M89						Yes	** NA **			None
90	M90						Yes	** NA **			None
91	M91						Yes	** NA **			None
92	M92						Yes	** NA **			None
93	M93						Yes	** NA **			None
94	M94						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
95	M95						Yes	** NA **			None
96	M96						Yes	** NA **			None
97	M97						Yes	** NA **			None
98	M98						Yes	** NA **			None
99	M99						Yes	** NA **			None
100	M100						Yes	** NA **			None
101	M101						Yes	** NA **			None
102	M102						Yes	** NA **			None
103	M103						Yes	** NA **			None
104	M104						Yes	** NA **			None
105	M105						Yes	** NA **			None
106	M106						Yes	** NA **			None
107	M107						Yes	** NA **			None
108	M108						Yes	** NA **			None
109	M109						Yes	** NA **			None
110	M110		BenPIN				Yes	** NA **			None
111	M111		BenPIN				Yes	** NA **			None
112	M112						Yes	** NA **			None
113	M113						Yes	** NA **			None
114	M114		BenPIN				Yes	** NA **			None
115	M115		BenPIN				Yes	** NA **			None
116	M116						Yes	** NA **			None
117	M117						Yes	** NA **			None
118	M118		BenPIN				Yes	** NA **			None
119	M119		BenPIN				Yes	** NA **			None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[...	Lcomp bot[...	L-torq...	Kyy	Kzz	Cb	Functi...
1	M1	PL 6x3/8	6			Lbyy						Lateral
2	M2	PIPE_2.5	155			Lbyy						Lateral
3	M3	PIPE_3.0	74.5			Lbyy						Lateral
4	M4	PL 6x3/8	3			Lbyy						Lateral
5	M5	PL 6x3/8	3			Lbyy						Lateral
6	M7	PL 6x3/8	6			Lbyy						Lateral
7	M8	PL 6x3/8	3			Lbyy						Lateral
8	M9	PL 6x3/8	3			Lbyy						Lateral
9	M11	PIPE_2.5	155			Lbyy						Lateral
10	M14	PIPE_2.5	155			Lbyy						Lateral
11	M15	PL 6x3/8	6			Lbyy						Lateral
12	M16	PL 6x3/8	3			Lbyy						Lateral
13	M17	PL 6x3/8	3			Lbyy						Lateral
14	M20	PIPE_2.5	72			Lbyy						Lateral
15	M23	PIPE_2.5	96			Lbyy						Lateral
16	M26	PIPE_2.5	96			Lbyy						Lateral
17	M27	PIPE_2.5	96			Lbyy						Lateral
18	M28	PIPE_2.0	155			Lbyy						Lateral
19	M29	PIPE_2.0	155			Lbyy						Lateral
20	M30	PIPE_2.0	155			Lbyy						Lateral
21	M35	PIPE_3.0	74.5			Lbyy						Lateral
22	M36	PIPE_3.0	74.5			Lbyy						Lateral
23	M39	PIPE_2.5	48			Lbyy						Lateral
24	M40	PL 6x3/8	6			Lbyy						Lateral
25	M41	PL 6x3/8	6			Lbyy						Lateral
26	M42	C3X2X0.18...	30.656			Lbyy						Lateral
27	M43	C3X2X0.18...	30.656			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[...	Lcomp bot[...	L-torq...	Kyy	Kzz	Cb	Functi...
28	M46	PL 6x3/8	6			Lbyy						Lateral
29	M47	PL 6x3/8	6			Lbyy						Lateral
30	M50	L2x2x3	51.384			Lbyy						Lateral
31	M51	L2x2x3	51.384			Lbyy						Lateral
32	M52	PL 6x3/8	6			Lbyy						Lateral
33	M53	PL 6x3/8	6			Lbyy						Lateral
34	M54	C3X2X0.18...	30.656			Lbyy						Lateral
35	M55	C3X2X0.18...	30.656			Lbyy						Lateral
36	M58	PL 6x3/8	6			Lbyy						Lateral
37	M59	PL 6x3/8	6			Lbyy						Lateral
38	M62	L2x2x3	51.384			Lbyy						Lateral
39	M63	L2x2x3	51.384			Lbyy						Lateral
40	M64	PL 6x3/8	6			Lbyy						Lateral
41	M65	PL 6x3/8	6			Lbyy						Lateral
42	M66	C3X2X0.18...	30.656			Lbyy						Lateral
43	M67	C3X2X0.18...	30.656			Lbyy						Lateral
44	M70	PL 6x3/8	6			Lbyy						Lateral
45	M71	PL 6x3/8	6			Lbyy						Lateral
46	M74	L2x2x3	51.384			Lbyy						Lateral
47	M75	L2x2x3	51.384			Lbyy						Lateral
48	M78	PIPE_2.5	48			Lbyy						Lateral
49	M79	PIPE_2.5	48			Lbyy						Lateral
50	M80	PIPE_2.5	48									Lateral
51	M81	L3X3X3	14.696									Lateral
52	M82	L3X3X3	14.696									Lateral
53	M83	L3X3X3	14.696									Lateral
54	M84	PIPE_2.5	72			Lbyy						Lateral
55	M87	PIPE_2.5	96			Lbyy						Lateral
56	M90	PIPE_2.5	96			Lbyy						Lateral
57	M91	PIPE_2.5	96			Lbyy						Lateral
58	M96	PIPE_2.5	72			Lbyy						Lateral
59	M99	PIPE_2.5	96			Lbyy						Lateral
60	M102	PIPE_2.5	96			Lbyy						Lateral
61	M103	PIPE_2.5	96			Lbyy						Lateral
62	M110	L3X3X5	40.361									Lateral
63	M111	L3X3X5	40.361									Lateral
64	M114	L3X3X5	40.361									Lateral
65	M115	L3X3X5	40.361									Lateral
66	M118	L3X3X5	40.361									Lateral
67	M119	L3X3X5	40.361									Lateral

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(Plate/...
1	Self We	DL		-1.1						
2	We	DL					40		3	
3	Ice We	DL					40	43	3	
4	W0	WL					40	43		
5	W30	WL					80	86		
6	W60	WL					80	86		
7	W90	WL					40	43		
8	W120	WL					80	86		
9	W150	WL					80	86		
10	W0 + Ice	WL					40	43		
11	W30 + Ice	WL					80	86		
12	W60 + Ice	WL					80	86		

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(Plate/...
13	W90 + Ice	WL					40	43		
14	W120 + Ice	WL					80	86		
15	W150 + Ice	WL					80	86		
16	500lbs LM 1	LL				1				
17	500lbs LM 2	LL				1				
18	500lbs LM 3	LL				1				
19	500lbs LM 4	LL								
20	250lbs LV 5	LL				1				
21	250lbs LV 6	LL				1				
22	E0	EL	-.09				40			
23	E90	EL			.09		40			
24	BLC 2 Transient Are...	None						21		
25	BLC 3 Transient Are...	None						21		

Load Combinations

	Description	Solve	PDelta	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
1	Dead	Yes	Y		1	1.4	2	1.4	0		0															
2	Dead + ...	Yes	Y		1	1.2	2	1.2	4	1	0															
3	Dead + ...	Yes	Y		1	1.2	2	1.2	5	1	0															
4	Dead + ...	Yes	Y		1	1.2	2	1.2	6	1	0															
5	Dead + ...	Yes	Y		1	1.2	2	1.2	7	1	0															
6	Dead + ...	Yes	Y		1	1.2	2	1.2	8	1	0															
7	Dead + ...	Yes	Y		1	1.2	2	1.2	9	1	0															
8	Dead + ...	Yes	Y		1	1.2	2	1.2	4	-1	0															
9	Dead + ...	Yes	Y		1	1.2	2	1.2	5	-1	0															
10	Dead + ...	Yes	Y		1	1.2	2	1.2	6	-1	0															
11	Dead + ...	Yes	Y		1	1.2	2	1.2	7	-1	0															
12	Dead + ...	Yes	Y		1	1.2	2	1.2	8	-1	0															
13	Dead + ...	Yes	Y		1	1.2	2	1.2	9	-1	0															
14	Dead + Ic...	Yes	Y		1	1.2	2	1.2	10	1	3	1															
15	Dead + Ic...	Yes	Y		1	1.2	2	1.2	11	1	3	1															
16	Dead + Ic...	Yes	Y		1	1.2	2	1.2	12	1	3	1															
17	Dead + Ic...	Yes	Y		1	1.2	2	1.2	13	1	3	1															
18	Dead + Ic...	Yes	Y		1	1.2	2	1.2	14	1	3	1															
19	Dead + Ic...	Yes	Y		1	1.2	2	1.2	15	1	3	1															
20	Dead + Ic...	Yes	Y		1	1.2	2	1.2	10	-1	3	1															
21	Dead + Ic...	Yes	Y		1	1.2	2	1.2	11	-1	3	1															
22	Dead + Ic...	Yes	Y		1	1.2	2	1.2	12	-1	3	1															
23	Dead + Ic...	Yes	Y		1	1.2	2	1.2	13	-1	3	1															
24	Dead + Ic...	Yes	Y		1	1.2	2	1.2	14	-1	3	1															
25	Dead + Ic...	Yes	Y		1	1.2	2	1.2	15	-1	3	1															
26	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	4	.049															
27	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	5	.049															
28	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	6	.049															
29	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	7	.049															
30	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	8	.049															
31	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	9	.049															
32	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	4	-.049															
33	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	5	-.049															
34	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	6	-.049															
35	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	7	-.049															
36	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	8	-.049															
37	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	9	-.049															
38	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	4	.049															
39	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	5	.049															

Load Combinations (Continued)

	Description	Solve	PDelta	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
40	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	6	.049												
41	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	7	.049												
42	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	8	.049												
43	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	9	.049												
44	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	4	-.049												
45	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	5	-.049												
46	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	6	-.049												
47	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	7	-.049												
48	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	8	-.049												
49	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	9	-.049												
50	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	4	.049												
51	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	5	.049												
52	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	6	.049												
53	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	7	.049												
54	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	8	.049												
55	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	9	.049												
56	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	4	-.049												
57	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	5	-.049												
58	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	6	-.049												
59	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	7	-.049												
60	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	8	-.049												
61	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	9	-.049												
62	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	4	.049												
63	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	5	.049												
64	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	6	.049												
65	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	7	.049												
66	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	8	.049												
67	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	9	.049												
68	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	4	-.049												
69	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	5	-.049												
70	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	6	-.049												
71	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	7	-.049												
72	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	8	-.049												
73	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	9	-.049												
74	Dead + L...	Yes	Y		1	1.2	2	1.2	20	1.5	0													
75	Dead + L...	Yes	Y		1	1.2	2	1.2	21	1.5	0													
76	Service 6...	Yes	Y		1	1	2	1	4	.198	0													
77	(1.2 + 0.2...	Yes	Y		1	1.234	2	1.234	22	1	23													
78	(1.2 + 0.2...	Yes	Y		1	1.234	2	1.234	22	.866	23	.5												
79	(1.2 + 0.2...	Yes	Y		1	1.234	2	1.234	22	.5	23	.866												
80	(1.2 + 0.2...	Yes	Y		1	1.234	2	1.234	22		23	1												
81	(1.2 + 0.2...	Yes	Y		1	1.234	2	1.234	22	-.5	23	.866												
82	(1.2 + 0.2...	Yes	Y		1	1.234	2	1.234	22	-.866	23	.5												
83	(1.2 + 0.2...	Yes	Y		1	1.234	2	1.234	22	-1	23													
84	(1.2 + 0.2...	Yes	Y		1	1.234	2	1.234	22	-.866	23	-.5												
85	(1.2 + 0.2...	Yes	Y		1	1.234	2	1.234	22	-.5	23	-.866												
86	(1.2 + 0.2...	Yes	Y		1	1.234	2	1.234	22		23	-1												
87	(1.2 + 0.2...	Yes	Y		1	1.234	2	1.234	22	.5	23	-.866												
88	(1.2 + 0.2...	Yes	Y		1	1.234	2	1.234	22	.866	23	-.5												

Joint Loads and Enforced Displacements (BLC 16 : 500lbs LM 1)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-in), (in,rad), (lb*s^2...
1	N57	L	Y	-500

Joint Loads and Enforced Displacements (BLC 17 : 500lbs LM 2)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-in), (in,rad), (lb*s^2...
1	N58	L	Y	-500

Joint Loads and Enforced Displacements (BLC 18 : 500lbs LM 3)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-in), (in,rad), (lb*s^2...
1	N60	L	Y	-500

Joint Loads and Enforced Displacements (BLC 20 : 250lbs LV 5)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-in), (in,rad), (lb*s^2...
1	N17	L	Y	-250

Joint Loads and Enforced Displacements (BLC 21 : 250lbs LV 6)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-in), (in,rad), (lb*s^2...
1	N40	L	Y	-250

Envelope AISC 15th(360-16): LRFD Steel Code Checks

	Member	Shape	Code Check	Loc[in]	LC	Shear C...	Loc[in]	Dir	LC	phi*P...	phi*P...	phi*M...	phi*M.....	Eqn
1	M9	PL 6x3/8	.639	0	9	1.440	0	y	8	7001...	72900	6.834	109.35 ...	H1-1b
2	M16	PL 6x3/8	.500	0	6	1.277	0	y	3	7001...	72900	6.834	109.35 ...	H1-1b
3	M52	PL 6x3/8	.521	0	3	1.165	0	y	2	6201...	72900	6.834	109.35 ...	H1-1b
4	M4	PL 6x3/8	.664	0	2	1.121	0	y	12	7001...	72900	6.834	109.35 ...	H1-1b
5	M46	PL 6x3/8	.476	3	7	1.094	0	y	9	6201...	72900	6.834	109.35 ...	H1-1b
6	M58	PL 6x3/8	.594	3	9	1.080	0	y	7	6201...	72900	6.834	109.35 ...	H1-1b
7	M40	PL 6x3/8	.487	3	6	1.080	0	y	3	6201...	72900	6.834	109.35 ...	H1-1b
8	M17	PL 6x3/8	.643	0	7	1.040	0	y	8	7001...	72900	6.834	109.35 ...	H1-1b
9	M64	PL 6x3/8	.522	0	7	.954	0	y	6	6201...	72900	6.834	109.35 ...	H1-1b
10	M8	PL 6x3/8	.518	0	10	.952	0	y	13	7001...	72900	6.834	109.35 ...	H1-1b
11	M70	PL 6x3/8	.632	3	2	.890	0	y	10	6201...	72900	6.834	109.35 ...	H1-1b
12	M5	PL 6x3/8	.690	0	2	.874	0	y	4	7001...	72900	6.834	109.35 ...	H1-1b
13	M1	PL 6x3/8	1.264	3	2	.570	3	y	14	6201...	72900	6.834	109.35 ...	H1-1b
14	M15	PL 6x3/8	1.180	3	7	.568	3	y	19	6201...	72900	6.834	109.35 ...	H1-1b
15	M7	PL 6x3/8	1.211	3	3	.563	3	y	22	6201...	72900	6.834	109.35 ...	H1-1b
16	M30	PIPE_2.0	.901	11.302	7	.504	150.156		8	5895...	32130	22.459	22.459 ...	H3-6
17	M29	PIPE_2.0	.883	11.302	13	.457	11.302		13	5895...	32130	22.459	22.459 ...	H3-6
18	M71	PL 6x3/8	.993	3	2	.365	3	y	2	6201...	72900	6.834	109.35 ...	H1-1b
19	M28	PIPE_2.0	.901	143.698	3	.364	150.156		3	5895...	32130	22.459	22.459 ...	H3-6
20	M65	PL 6x3/8	.970	3	8	.353	3	y	14	6201...	72900	6.834	109.35 ...	H1-1b
21	M47	PL 6x3/8	.740	3	12	.346	3	y	19	6201...	72900	6.834	109.35 ...	H1-1b
22	M53	PL 6x3/8	.952	3	3	.345	3	y	22	6201...	72900	6.834	109.35 ...	H1-1b
23	M66	C3X2X0...	.777	25.866	3	.339	25.866	z	2	3262...	40338	18.958	44.744 ...	H1-1b
24	M59	PL 6x3/8	.745	3	10	.338	3	y	21	6201...	72900	6.834	109.35 ...	H1-1b
25	M67	C3X2X0...	.797	25.866	13	.336	25.866	z	2	3262...	40338	18.958	44.744 ...	H1-1b
26	M41	PL 6x3/8	.930	3	7	.335	3	y	19	6201...	72900	6.834	109.35 ...	H1-1b
27	M43	C3X2X0...	.773	25.866	7	.294	25.866	z	7	3262...	40338	18.958	44.744 ...	H1-1b
28	M55	C3X2X0...	.793	4.79	9	.288	4.79	z	9	3262...	40338	18.958	44.744 ...	H1-1b
29	M54	C3X2X0...	.648	0	10	.286	25.866	z	9	3262...	40338	18.958	44.744 ...	H1-1b
30	M42	C3X2X0...	.620	25.866	5	.277	25.866	z	6	3262...	40338	18.958	44.744 ...	H1-1b
31	M27	PIPE_2.5	.481	68	10	.268	68		9	3003...	50715	43.155	43.155 ...	H1-1b
32	M91	PIPE_2.5	.624	68	2	.268	68		13	3003...	50715	43.155	43.155 ...	H1-1b
33	M3	PIPE_3.0	.733	74.5	13	.253	44.234		8	5304...	65205	68.985	68.985 ...	H1-1b
34	M11	PIPE_2.5	.457	12.917	7	.246	96.875		3	1363...	50715	43.155	43.155 ...	H1-1b
35	M2	PIPE_2.5	.475	77.5	8	.246	58.125		7	1363...	50715	43.155	43.155 ...	H1-1b
36	M36	PIPE_3.0	.733	74.5	9	.238	44.234		3	5304...	65205	68.985	68.985 ...	H1-1b
37	M96	PIPE_2.5	.529	56.25	2	.232	15		2	3777...	50715	43.155	43.155 ...	H1-1b
38	M84	PIPE_2.5	.490	56.25	9	.229	57		2	3777...	50715	43.155	43.155 ...	H1-1b

Envelope AISC 15th(360-16): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[in]	LC	Shear C...	Loc[in]	Dir	LC	phi*P...	phi*P...	phi*M...	phi*M.....		Eqn
39	M20	PIPE_2.5	.415	56.25	6	.216	56.25		7	3777...	50715	43.155	43.155	...	H1-1b
40	M103	PIPE_2.5	.572	68	7	.212	68		5	3003...	50715	43.155	43.155	...	H1-1b
41	M14	PIPE_2.5	.507	142.083	2	.206	96.875		9	1363...	50715	43.155	43.155	...	H1-1b
42	M35	PIPE_3.0	.796	44.234	2	.202	44.234		12	5304...	65205	68.985	68.985	...	H1-1b
43	M81	L3X3X3	.837	14.696	8	.179	14.696	z	3	2818...	35316	15.841	34.862	...	H2-1
44	M83	L3X3X3	.773	0	8	.179	14.696	z	7	2818...	35316	15.841	34.862	...	H2-1
45	M102	PIPE_2.5	.801	68	13	.154	68		13	3003...	50715	43.155	43.155	...	H1-1b
46	M90	PIPE_2.5	.800	68	9	.154	68		9	3003...	50715	43.155	43.155	...	H1-1b
47	M82	L3X3X3	.683	14.696	3	.132	.153	y	11	2818...	35316	15.841	34.862	...	H2-1
48	M23	PIPE_2.5	.215	21	8	.124	74		7	3003...	50715	43.155	43.155	...	H1-1b
49	M99	PIPE_2.5	.279	74	13	.124	74		3	3003...	50715	43.155	43.155	...	H1-1b
50	M26	PIPE_2.5	.611	68	4	.118	68		5	3003...	50715	43.155	43.155	...	H1-1b
51	M87	PIPE_2.5	.280	74	9	.100	22		12	3003...	50715	43.155	43.155	...	H1-1b
52	M62	L2x2x3	.473	51.384	9	.019	51.384	z	8	9335...	2339...	6.693	13.306	...	H2-1
53	M74	L2x2x3	.495	51.384	2	.018	51.384	z	13	9335...	2339...	6.693	12.737	...	H2-1
54	M51	L2x2x3	.402	51.384	6	.018	0	y	3	9335...	2339...	6.693	12.841	...	H2-1
55	M63	L2x2x3	.402	0	9	.018	0	z	2	9335...	2339...	6.693	13.896	...	H2-1
56	M50	L2x2x3	.421	51.384	7	.018	0	z	9	9335...	2339...	6.693	13.187	...	H2-1
57	M75	L2x2x3	.435	51.384	2	.016	0	z	6	9335...	2339...	6.693	12.85	...	H2-1
58	M80	PIPE_2.5	.040	30	10	.009	30		10	4449...	50715	43.155	43.155	...	H1-1b
59	M39	PIPE_2.5	.040	30	10	.009	30		10	4449...	50715	43.155	43.155	...	H1-1b
60	M79	PIPE_2.5	.040	30	6	.009	30		6	4449...	50715	43.155	43.155	...	H1-1b
61	M78	PIPE_2.5	.040	30	6	.009	30		6	4449...	50715	43.155	43.155	...	H1-1b
62	M119	L3X3X5	.223	20.601	8	.002	40.361	y	7	4481...	57672	24.176	54.426	...	H2-1
63	M115	L3X3X5	.213	20.601	3	.002	40.361	y	3	4481...	57672	24.176	54.425	...	H2-1
64	M114	L3X3X5	.230	20.601	8	.002	40.361	z	9	4481...	57672	24.176	54.426	...	H2-1
65	M118	L3X3X5	.212	20.601	13	.002	40.361	z	13	4481...	57672	24.176	54.425	...	H2-1
66	M110	L3X3X5	.179	20.18	4	.002	40.361	z	11	4481...	57672	24.176	54.437	...	H2-1
67	M111	L3X3X5	.174	20.18	12	.002	0	y	11	4481...	57672	24.176	54.437	...	H2-1

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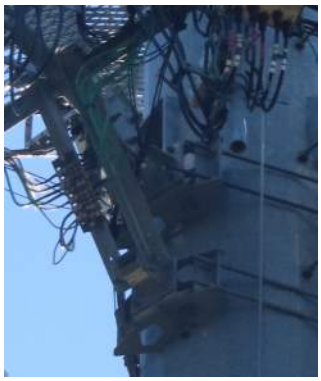
Connection Check

SITE DETAILS

Site Name/Code	CT2028 - GROTON PLEASANT VALLEY ROAD ROAD NORTH S2820A
Date	4/22/2022
Engineer	AD

CONNECTION PARAMETERS

Number of bolts		**4**	
b - width of member		**3.5**	*in*
d - height of member		**3.5**	*in*
B - horizontal bolt spacing		**7**	*in*
D - vertical bolt spacing		**7**	*in*
Bolt Diameter	d	**1**	*in*
Section Shape		**Pipe**	
Weld Thickness		**1/4**	*in*
Tensile Area	A_b	0.79	in^2
Tensile Area	A_n	0.61	in^2
Grade		**A325**	
Bolt Ultimate Strength	F_{ub}	120	*ksi*
Connection length reduction factor	R_b	1	



Connection Sketch/Photo

FLANGE LOADS

Loadcase #		**8**	
Bending Moment	Mzz	**10.26**	*kips-in*
Bending Moment	Myy	**44.69**	*kips-in*
Torsional Moment	Mxx	**0.34**	*kips-in*
Shear Force	Vy	**1.07**	*kips*
Shear Force	Vz	**2.57**	*kips*
Axial Force	Px	**6.77**	*kips*

BOLT CHECK

Bolt Tension Capacity

$\phi R_{nt} = 0.75 * F_{ub} * A_n$

$\phi R_{nt} =$ **54.5** *kips*

Bolt Shear Capacity

$\phi R_{nv} = 0.75 * 0.625 * 0.8 * Fub * Ab * Rb$

$\phi R_{nv} =$ **35.3** *kips*

Maximum Bolt Tension

$T_{ub} = F_{Mxx} + F_{Mzz} + T_y/4$

$T_{ub} =$ **5.62** *kips*

Maximum Bolt Shear

$V_{ub} = \text{sqrt}((V_x/4)^2 + (V_y/4)^2) + F_{Myy}$

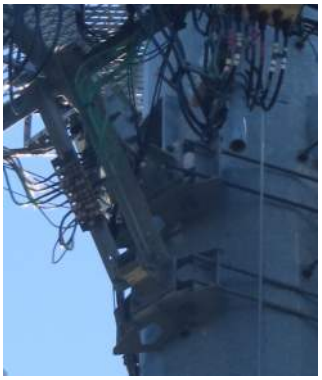
$V_{ub} =$ **0.71** *kips*

Tension Ratio:	**10.3%**	**%**	**Shear Ratio:**	**2.0%**	**%**
	PASS			PASS	

$(T_{ub} / \phi R_{nt})^2 + (V_{ub} / \phi R_{nv})^2 < 1.0$ **OK** Ratio **1.1%** PASS

WELD CHECK

Filler Metal F_{EXX}	**70**	ksi	Are stiffners present?	**Yes**
Weld Thk.	**0.25**	in	Length of stiffner	1.5 in
Base metal F_u	**58**	ksi		
Type of section	**Pipe**			
Length of Section [b]	**3.5**	in		
Length of Section [d]	**3.5**	in		
I_{total}	**23.00**	in		
I_p	**33.67**	in^3		
S_z	**25.60**	in^2		
S_y	**25.60**	in^2		
R_{ux}	2.44	kips/in		
R_{uy}	0.06	kips/in		
R_{uz}	0.13	kips/in		
R_u	2.44	kips/in		
Allowable Weld Stress	**5.57**	kips/in	**43.9%** PASS	



Connection Sketch

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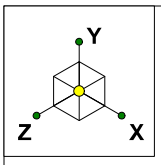
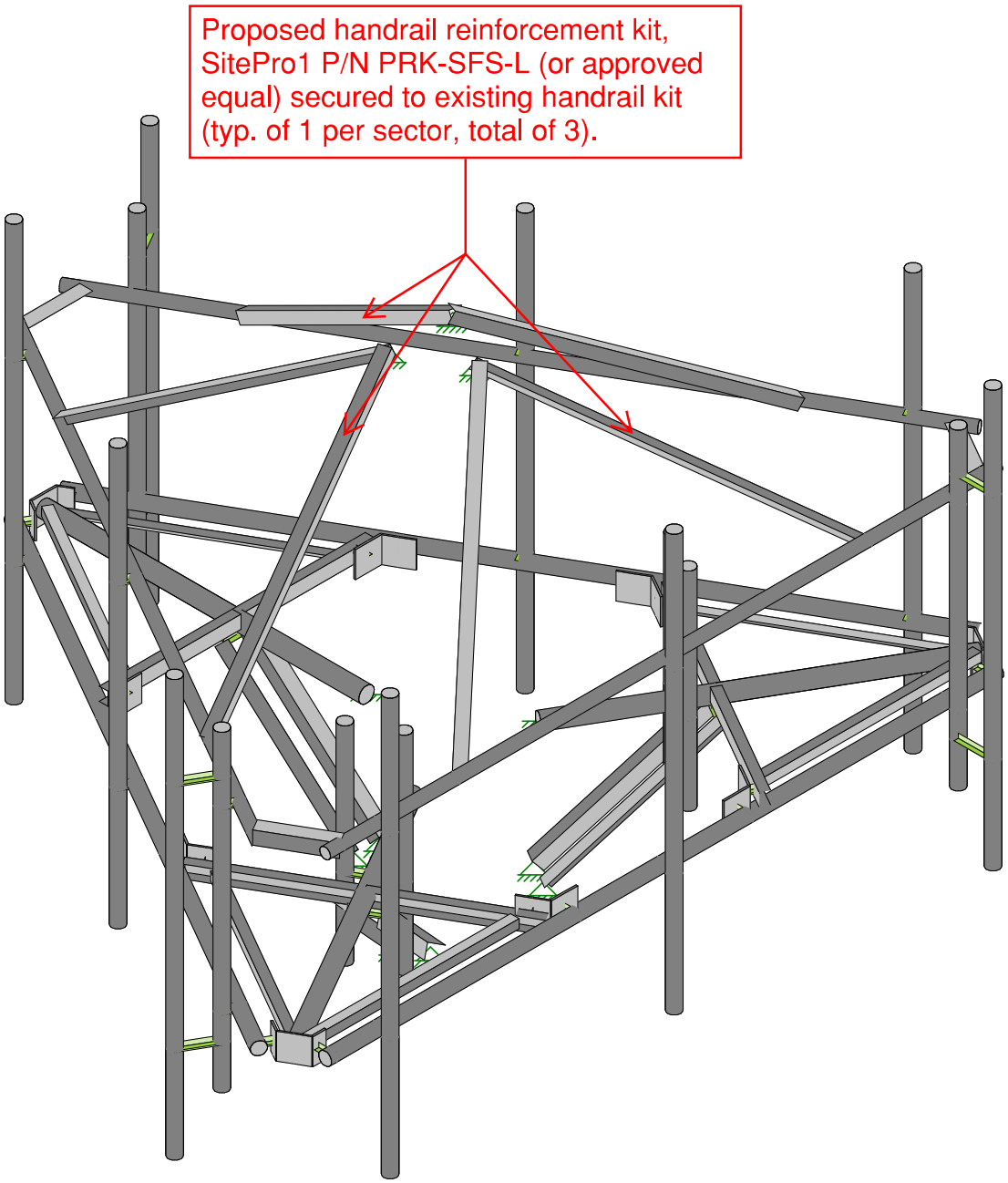
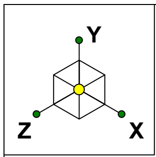
Mount Calculations
(Modified Conditions)

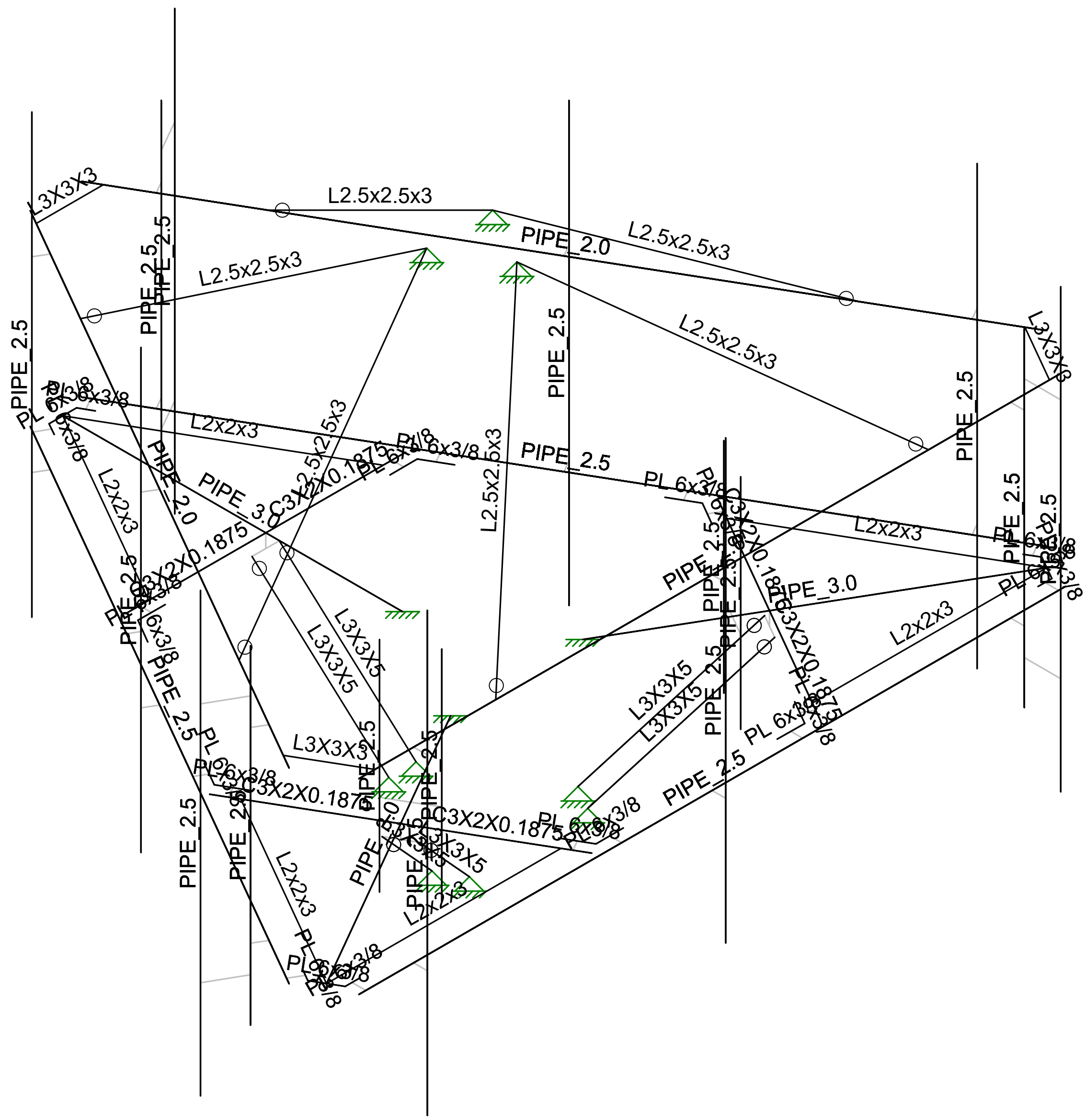




Envelope Only Solution

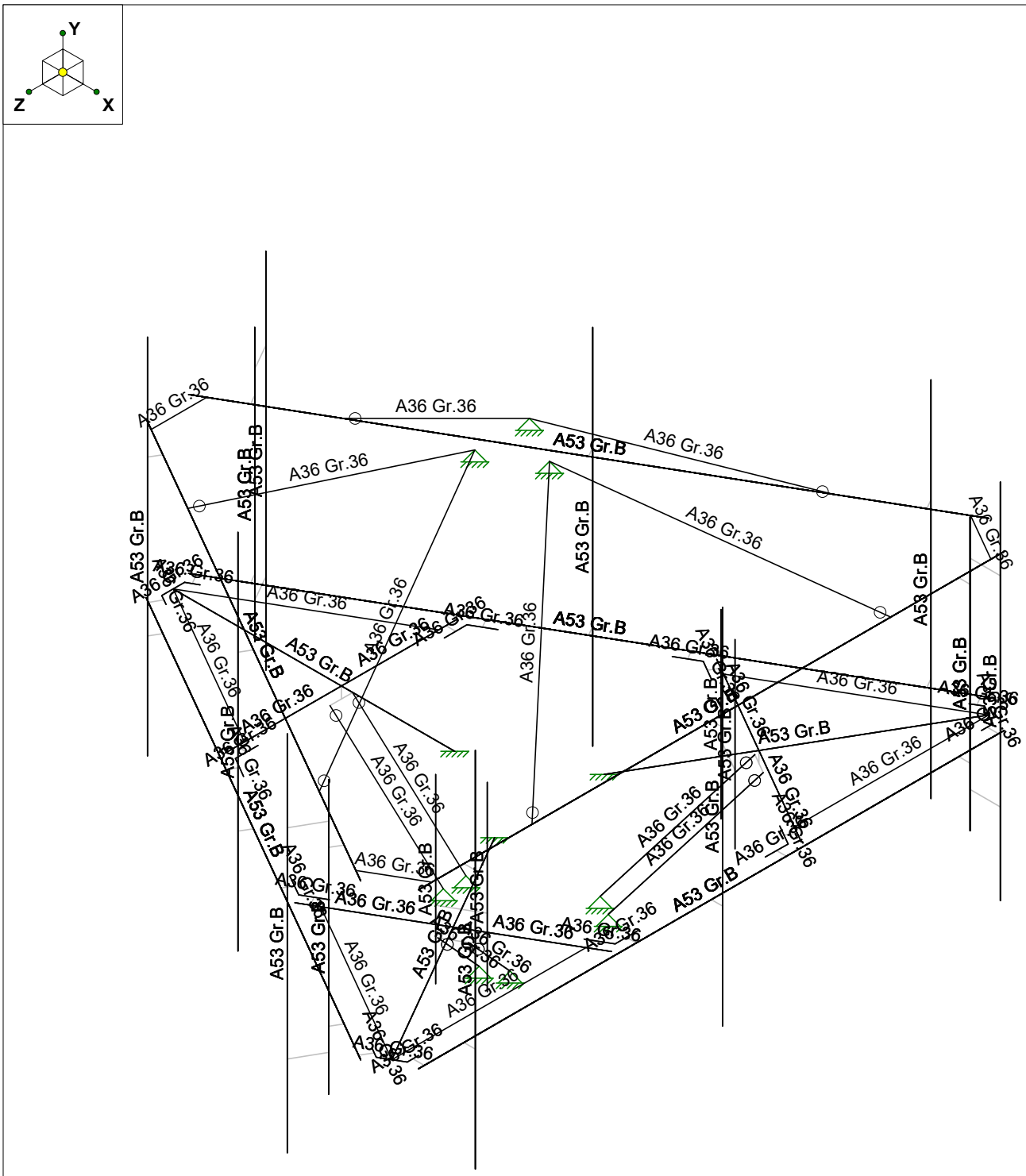
Hudson Design Group	GROTON PLEASANT VALLEY ROAD NORTH S2820A	SK - 1
AD		Apr 21, 2022 at 3:54 PM
CT2820		CT2820_MMR(With Kicker Kit).r3d





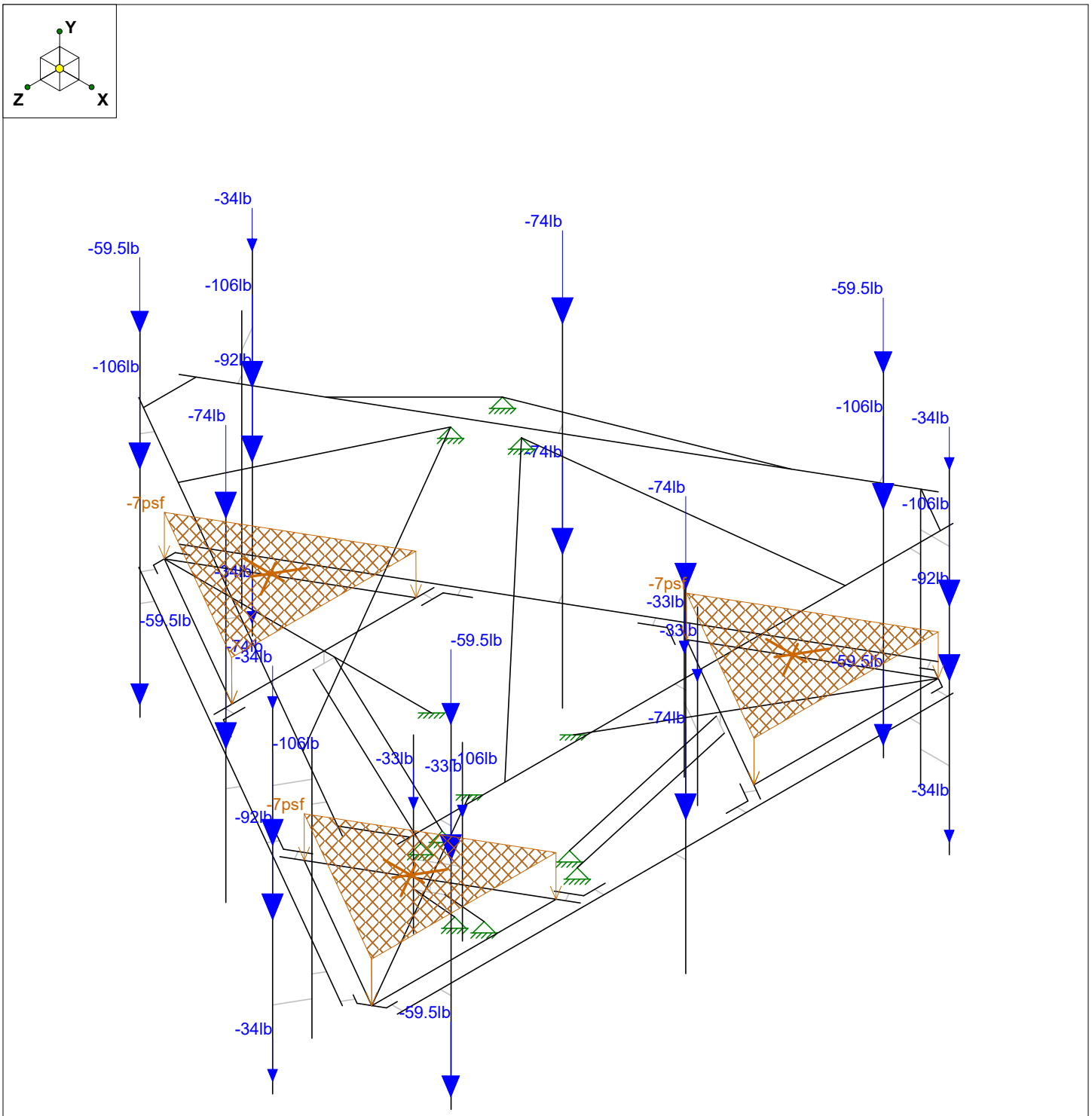
Envelope Only Solution

Hudson Design Group	GROTON PLEASANT VALLEY ROAD NORTH S2820A	SK - 2
AD		Apr 21, 2022 at 3:55 PM
CT2820		CT2820_MMR(With Kicker Kit).r3d



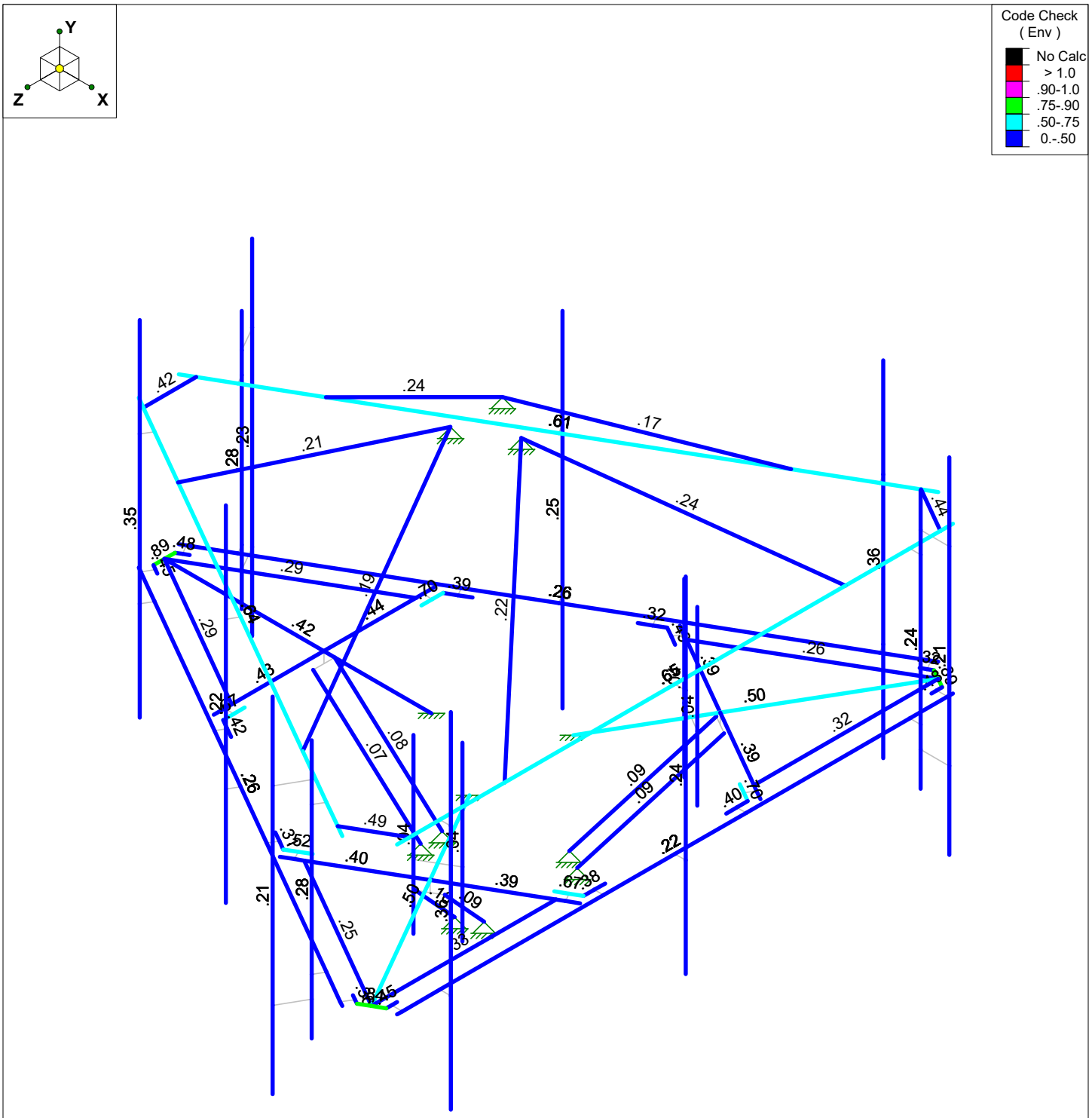
Envelope Only Solution

Hudson Design Group	GROTON PLEASANT VALLEY ROAD NORTH S2820A	SK - 3
AD		Apr 21, 2022 at 3:55 PM
CT2820		CT2820_MMR(With Kicker Kit).r3d



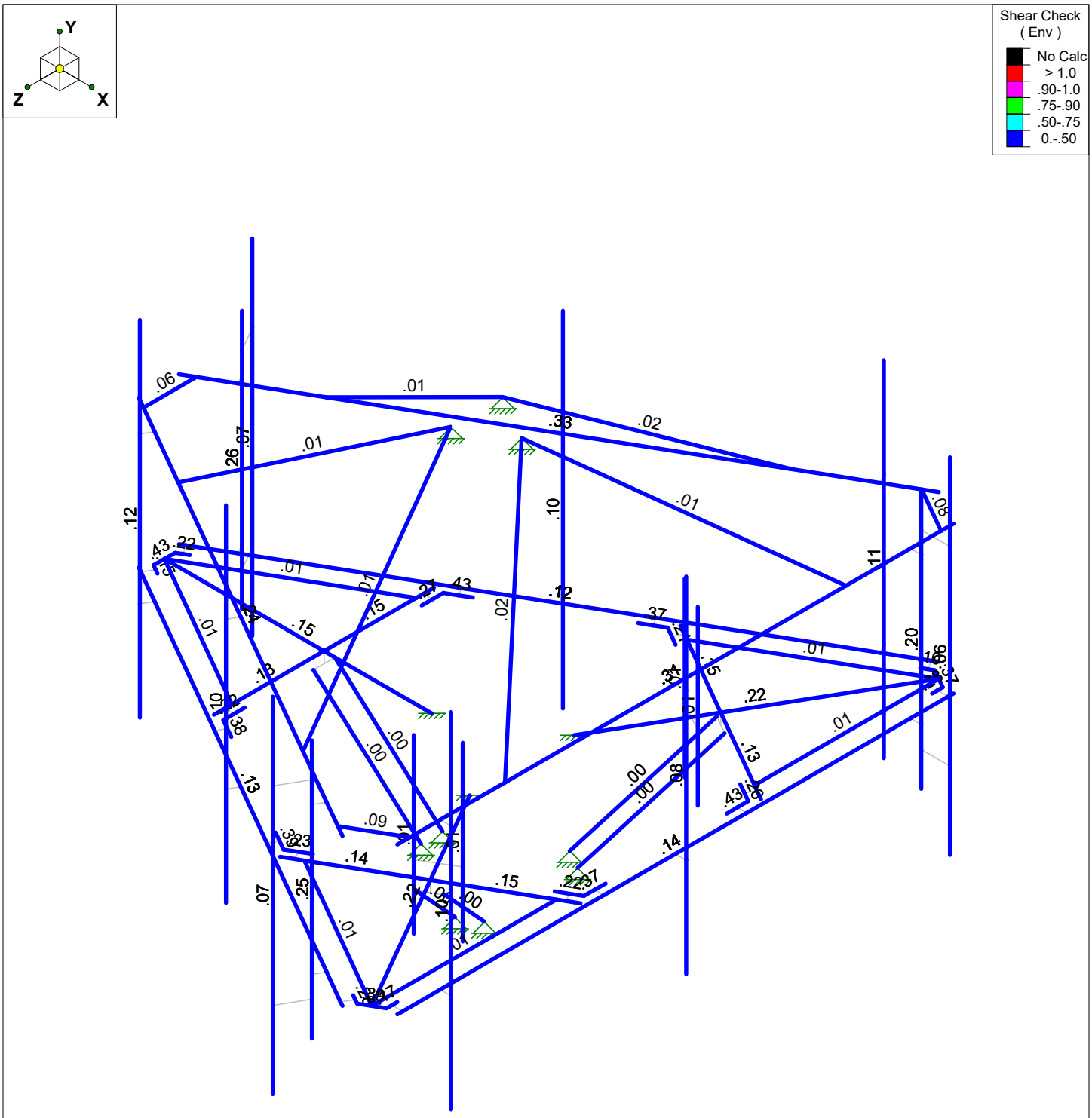
Loads: BLC 2, We
Envelope Only Solution

Hudson Design Group	GROTON PLEASANT VALLEY ROAD NORTH S2820A	SK - 4
AD		Apr 22, 2022 at 11:43 AM
CT2820		CT2820_MMR(With Kicker Kit).r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Hudson Design Group	GROTON PLEASANT VALLEY ROAD NORTH S2820A	SK - 5
AD		Apr 22, 2022 at 11:44 AM
CT2820		CT2820_MMR(With Kicker Kit).r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Hudson Design Group	GROTON PLEASANT VALLEY ROAD NORTH S2820A	SK - 6
AD		Apr 22, 2022 at 11:44 AM
CT2820		CT2820_MMR(With Kicker Kit).r3d

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (in/sec^2)	386.4
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 15th(360-16): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 15th(360-16): LRFD
Cold Formed Steel Code	AISI S100-16: LRFD
Wood Code	None
Wood Temperature	< 100F
Concrete Code	None
Masonry Code	None
Aluminum Code	AA ADM1-15: LRFD - Building
Stainless Steel Code	AISC 14th(360-10): LRFD
Adjust Stiffness?	Yes(Iterative)

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	No
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

(Global) Model Settings, Continued

Seismic Code	ASCE 7-16
Seismic Base Elevation (in)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	4
Cd X	4
Rho Z	1
Rho X	1

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (...	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.25	65	1.15
8	A913 Gr.65	29000	11154	.3	.65	.49	65	1.1	80	1.1

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	PIPE_2.5	PIPE_2.5	None	None	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
2	PIPE_3.0	PIPE_3.0	None	None	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
3	L2x2x3	L2x2x3	None	None	A36 Gr.36	Typical	.722	.271	.271	.009
4	C3X2X0.1875	C3X2X0.1875	None	None	A36 Gr.36	Typical	1.245	.497	1.772	.014
5	PL 6x3/8	PL 6x3/8	None	None	A36 Gr.36	Typical	2.25	.026	6.75	.101
6	PIPE_2.0	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
7	L3X3X5	L3X3X5	None	None	A36 Gr.36	Typical	1.78	1.5	1.5	.06
8	L3X3X3	L3X3X3	None	None	A36 Gr.36	Typical	1.09	.948	.948	.014
9	L2.5x2.5x3	L2.5x2.5x3	None	None	A36 Gr.36	Typical	.901	.535	.535	.011

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N64	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N3	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N65	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N198	Reaction	Reaction	Reaction			

Joint Boundary Conditions (Continued)

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
5	N199	Reaction	Reaction	Reaction			
6	N203	Reaction	Reaction	Reaction			
7	N204	Reaction	Reaction	Reaction			
8	N208	Reaction	Reaction	Reaction			
9	N209	Reaction	Reaction	Reaction			
10	N222	Reaction	Reaction	Reaction			
11	N217	Reaction	Reaction	Reaction			
12	N225	Reaction	Reaction	Reaction			

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N4	N6			PL 6x3/8	None	None	A36 Gr.36	Typical
2	M2	N1	N2			PIPE_2.5	None	None	A53 Gr.B	Typical
3	M3	N114	N3			PIPE_3.0	None	None	A53 Gr.B	Typical
4	M4	N4	N5			PL 6x3/8	None	None	A36 Gr.36	Typical
5	M5	N6	N7			PL 6x3/8	None	None	A36 Gr.36	Typical
6	M6	N8	N9			RIGID	None	None	RIGID	Typical
7	M7	N10	N12			PL 6x3/8	None	None	A36 Gr.36	Typical
8	M8	N10	N11			PL 6x3/8	None	None	A36 Gr.36	Typical
9	M9	N12	N13			PL 6x3/8	None	None	A36 Gr.36	Typical
10	M10	N14	N15			RIGID	None	None	RIGID	Typical
11	M11	N16	N17			PIPE_2.5	None	None	A53 Gr.B	Typical
12	M12	N18	N19			RIGID	None	None	RIGID	Typical
13	M13	N20	N21			RIGID	None	None	RIGID	Typical
14	M14	N22	N23			PIPE_2.5	None	None	A53 Gr.B	Typical
15	M15	N24	N26			PL 6x3/8	None	None	A36 Gr.36	Typical
16	M16	N24	N25			PL 6x3/8	None	None	A36 Gr.36	Typical
17	M17	N26	N27			PL 6x3/8	None	None	A36 Gr.36	Typical
18	M18	N28	N29			RIGID	None	None	RIGID	Typical
19	M19	N30	N31			RIGID	None	None	RIGID	Typical
20	M20	N33	N32			PIPE_2.5	None	None	A53 Gr.B	Typical
21	M21	N34	N35			RIGID	None	None	RIGID	Typical
22	M22	N36	N37			RIGID	None	None	RIGID	Typical
23	M23	N39	N38			PIPE_2.5	None	None	A53 Gr.B	Typical
24	M24	N40	N41			RIGID	None	None	RIGID	Typical
25	M25	N42	N43			RIGID	None	None	RIGID	Typical
26	M26	N45	N44			PIPE_2.5	None	None	A53 Gr.B	Typical
27	M27	N47	N46			PIPE_2.5	None	None	A53 Gr.B	Typical
28	M28	N48	N49			PIPE_2.0	None	None	A53 Gr.B	Typical
29	M29	N50	N51			PIPE_2.0	None	None	A53 Gr.B	Typical
30	M30	N52	N53			PIPE_2.0	None	None	A53 Gr.B	Typical
31	M31	N56	N57			RIGID	None	None	RIGID	Typical
32	M32	N58	N59			RIGID	None	None	RIGID	Typical
33	M33	N60	N61			RIGID	None	None	RIGID	Typical
34	M34	N62	N63			RIGID	None	None	RIGID	Typical
35	M35	N134	N64			PIPE_3.0	None	None	A53 Gr.B	Typical
36	M36	N94	N65			PIPE_3.0	None	None	A53 Gr.B	Typical
37	M37	N66	N68			RIGID	None	None	RIGID	Typical
38	M38	N67	N68			RIGID	None	None	RIGID	Typical
39	M39	N70	N69			PIPE_2.5	None	None	A53 Gr.B	Typical
40	M40	N76	N75			PL 6x3/8	None	None	A36 Gr.36	Typical
41	M41	N76	N77			PL 6x3/8	None	None	A36 Gr.36	Typical
42	M42	N79	N78		180	C3X2X0.1875	None	None	A36 Gr.36	Typical
43	M43	N79	N80			C3X2X0.1875	None	None	A36 Gr.36	Typical
44	M44	N81	N82			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
45	M45	N83	N84			RIGID	None	None	RIGID	Typical
46	M46	N86	N85			PL 6x3/8	None	None	A36 Gr.36	Typical
47	M47	N86	N87			PL 6x3/8	None	None	A36 Gr.36	Typical
48	M48	N88	N89			RIGID	None	None	RIGID	Typical
49	M49	N90	N91			RIGID	None	None	RIGID	Typical
50	M50	N92	N94		180	L2x2x3	None	None	A36 Gr.36	Typical
51	M51	N93	N94		90	L2x2x3	None	None	A36 Gr.36	Typical
52	M52	N96	N95			PL 6x3/8	None	None	A36 Gr.36	Typical
53	M53	N96	N97			PL 6x3/8	None	None	A36 Gr.36	Typical
54	M54	N99	N98			C3X2X0.1875	None	None	A36 Gr.36	Typical
55	M55	N100	N99			C3X2X0.1875	None	None	A36 Gr.36	Typical
56	M56	N101	N102			RIGID	None	None	RIGID	Typical
57	M57	N103	N104			RIGID	None	None	RIGID	Typical
58	M58	N106	N105			PL 6x3/8	None	None	A36 Gr.36	Typical
59	M59	N106	N107			PL 6x3/8	None	None	A36 Gr.36	Typical
60	M60	N108	N109			RIGID	None	None	RIGID	Typical
61	M61	N110	N111			RIGID	None	None	RIGID	Typical
62	M62	N112	N114		90	L2x2x3	None	None	A36 Gr.36	Typical
63	M63	N113	N114		180	L2x2x3	None	None	A36 Gr.36	Typical
64	M64	N116	N115			PL 6x3/8	None	None	A36 Gr.36	Typical
65	M65	N116	N117			PL 6x3/8	None	None	A36 Gr.36	Typical
66	M66	N119	N118			C3X2X0.1875	None	None	A36 Gr.36	Typical
67	M67	N119	N120		180	C3X2X0.1875	None	None	A36 Gr.36	Typical
68	M68	N121	N122			RIGID	None	None	RIGID	Typical
69	M69	N123	N124			RIGID	None	None	RIGID	Typical
70	M70	N126	N125			PL 6x3/8	None	None	A36 Gr.36	Typical
71	M71	N126	N127			PL 6x3/8	None	None	A36 Gr.36	Typical
72	M72	N128	N129			RIGID	None	None	RIGID	Typical
73	M73	N130	N131			RIGID	None	None	RIGID	Typical
74	M74	N132	N134		90	L2x2x3	None	None	A36 Gr.36	Typical
75	M75	N133	N134		180	L2x2x3	None	None	A36 Gr.36	Typical
76	M76	N136	N138			RIGID	None	None	RIGID	Typical
77	M77	N137	N138			RIGID	None	None	RIGID	Typical
78	M78	N140	N139			PIPE_2.5	None	None	A53 Gr.B	Typical
79	M79	N142	N141			PIPE_2.5	None	None	A53 Gr.B	Typical
80	M80	N146	N147			PIPE_2.5	None	None	A53 Gr.B	Typical
81	M81	N55	N54		90	L3X3X3	None	None	A36 Gr.36	Typical
82	M82	N74	N73		90	L3X3X3	None	None	A36 Gr.36	Typical
83	M83	N71	N72		90	L3X3X3	None	None	A36 Gr.36	Typical
84	M84	N149	N148			PIPE_2.5	None	None	A53 Gr.B	Typical
85	M85	N150	N151			RIGID	None	None	RIGID	Typical
86	M86	N152	N153			RIGID	None	None	RIGID	Typical
87	M87	N155	N154			PIPE_2.5	None	None	A53 Gr.B	Typical
88	M88	N156	N157			RIGID	None	None	RIGID	Typical
89	M89	N145	N158			RIGID	None	None	RIGID	Typical
90	M90	N160	N159			PIPE_2.5	None	None	A53 Gr.B	Typical
91	M91	N162	N161			PIPE_2.5	None	None	A53 Gr.B	Typical
92	M92	N163	N164			RIGID	None	None	RIGID	Typical
93	M93	N165	N166			RIGID	None	None	RIGID	Typical
94	M94	N167	N168			RIGID	None	None	RIGID	Typical
95	M95	N169	N170			RIGID	None	None	RIGID	Typical
96	M96	N173	N172			PIPE_2.5	None	None	A53 Gr.B	Typical
97	M97	N174	N175			RIGID	None	None	RIGID	Typical
98	M98	N176	N177			RIGID	None	None	RIGID	Typical
99	M99	N179	N178			PIPE_2.5	None	None	A53 Gr.B	Typical
100	M100	N180	N181			RIGID	None	None	RIGID	Typical
101	M101	N171	N182			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
102	M102	N184	N183			PIPE_2.5	None	None	A53 Gr.B	Typical
103	M103	N186	N185			PIPE_2.5	None	None	A53 Gr.B	Typical
104	M104	N187	N188			RIGID	None	None	RIGID	Typical
105	M105	N189	N190			RIGID	None	None	RIGID	Typical
106	M106	N191	N192			RIGID	None	None	RIGID	Typical
107	M107	N193	N194			RIGID	None	None	RIGID	Typical
108	M108	N195	N119			RIGID	None	None	RIGID	Typical
109	M109	N196	N197			RIGID	None	None	RIGID	Typical
110	M110	N198	N196		180	L3X3X5	None	None	A36 Gr.36	Typical
111	M111	N199	N197		90	L3X3X5	None	None	A36 Gr.36	Typical
112	M112	N200	N79			RIGID	None	None	RIGID	Typical
113	M113	N201	N202			RIGID	None	None	RIGID	Typical
114	M114	N203	N201		180	L3X3X5	None	None	A36 Gr.36	Typical
115	M115	N204	N202		90	L3X3X5	None	None	A36 Gr.36	Typical
116	M116	N205	N99			RIGID	None	None	RIGID	Typical
117	M117	N206	N207			RIGID	None	None	RIGID	Typical
118	M118	N208	N206		180	L3X3X5	None	None	A36 Gr.36	Typical
119	M119	N209	N207		90	L3X3X5	None	None	A36 Gr.36	Typical
120	M120	N215	N217		90	L2.5x2.5x3	None	None	A36 Gr.36	Typical
121	M121	N216	N217		180	L2.5x2.5x3	None	None	A36 Gr.36	Typical
122	M122	N220	N222		90	L2.5x2.5x3	None	None	A36 Gr.36	Typical
123	M123	N221	N222		180	L2.5x2.5x3	None	None	A36 Gr.36	Typical
124	M124	N223	N225		90	L2.5x2.5x3	None	None	A36 Gr.36	Typical
125	M125	N224	N225		180	L2.5x2.5x3	None	None	A36 Gr.36	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes	** NA **			None
2	M2						Yes	** NA **			None
3	M3						Yes	** NA **			None
4	M4						Yes	** NA **			None
5	M5						Yes	** NA **			None
6	M6		OOOOOO				Yes	** NA **			None
7	M7						Yes	** NA **			None
8	M8						Yes	** NA **			None
9	M9						Yes	** NA **			None
10	M10		OOOOOO				Yes	** NA **			None
11	M11						Yes	** NA **			None
12	M12		OOOOOO				Yes	** NA **			None
13	M13		OOOOOO				Yes	** NA **			None
14	M14						Yes	** NA **			None
15	M15						Yes	** NA **			None
16	M16						Yes	** NA **			None
17	M17						Yes	** NA **			None
18	M18		OOOOOO				Yes	** NA **			None
19	M19		OOOOOO				Yes	** NA **			None
20	M20						Yes	** NA **			None
21	M21						Yes	** NA **			None
22	M22						Yes	** NA **			None
23	M23						Yes	** NA **			None
24	M24						Yes	** NA **			None
25	M25						Yes	** NA **			None
26	M26						Yes	** NA **			None
27	M27						Yes	** NA **			None
28	M28						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
29	M29						Yes	** NA **			None
30	M30						Yes	** NA **			None
31	M31						Yes	** NA **			None
32	M32						Yes	** NA **			None
33	M33						Yes	** NA **			None
34	M34						Yes	** NA **			None
35	M35						Yes	** NA **			None
36	M36						Yes	** NA **			None
37	M37						Yes	** NA **			None
38	M38						Yes	** NA **			None
39	M39						Yes	** NA **			None
40	M40						Yes	** NA **			None
41	M41						Yes	** NA **			None
42	M42						Yes	** NA **			None
43	M43						Yes	** NA **			None
44	M44						Yes	** NA **			None
45	M45		OOOOOO				Yes	** NA **			None
46	M46						Yes	** NA **			None
47	M47						Yes	** NA **			None
48	M48						Yes	** NA **			None
49	M49		OOOOOO				Yes	** NA **			None
50	M50						Yes	** NA **			None
51	M51						Yes	** NA **			None
52	M52						Yes	** NA **			None
53	M53						Yes	** NA **			None
54	M54						Yes	** NA **			None
55	M55						Yes	** NA **			None
56	M56						Yes	** NA **			None
57	M57		OOOOOO				Yes	** NA **			None
58	M58						Yes	** NA **			None
59	M59						Yes	** NA **			None
60	M60						Yes	** NA **			None
61	M61		OOOOOO				Yes	** NA **			None
62	M62						Yes	** NA **			None
63	M63						Yes	** NA **			None
64	M64						Yes	** NA **			None
65	M65						Yes	** NA **			None
66	M66						Yes	** NA **			None
67	M67						Yes	** NA **			None
68	M68						Yes	** NA **			None
69	M69		OOOOOO				Yes	** NA **			None
70	M70						Yes	** NA **			None
71	M71						Yes	** NA **			None
72	M72						Yes	** NA **			None
73	M73		OOOOOO				Yes	** NA **			None
74	M74						Yes	** NA **			None
75	M75						Yes	** NA **			None
76	M76						Yes	** NA **			None
77	M77						Yes	** NA **			None
78	M78						Yes	** NA **			None
79	M79						Yes	** NA **			None
80	M80						Yes	** NA **			None
81	M81						Yes	** NA **			None
82	M82						Yes	** NA **			None
83	M83						Yes	** NA **			None
84	M84						Yes	** NA **			None
85	M85						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
86	M86						Yes	** NA **			None
87	M87						Yes	** NA **			None
88	M88						Yes	** NA **			None
89	M89						Yes	** NA **			None
90	M90						Yes	** NA **			None
91	M91						Yes	** NA **			None
92	M92						Yes	** NA **			None
93	M93						Yes	** NA **			None
94	M94						Yes	** NA **			None
95	M95						Yes	** NA **			None
96	M96						Yes	** NA **			None
97	M97						Yes	** NA **			None
98	M98						Yes	** NA **			None
99	M99						Yes	** NA **			None
100	M100						Yes	** NA **			None
101	M101						Yes	** NA **			None
102	M102						Yes	** NA **			None
103	M103						Yes	** NA **			None
104	M104						Yes	** NA **			None
105	M105						Yes	** NA **			None
106	M106						Yes	** NA **			None
107	M107						Yes	** NA **			None
108	M108						Yes	** NA **			None
109	M109						Yes	** NA **			None
110	M110		BenPIN				Yes	** NA **			None
111	M111		BenPIN				Yes	** NA **			None
112	M112						Yes	** NA **			None
113	M113						Yes	** NA **			None
114	M114		BenPIN				Yes	** NA **			None
115	M115		BenPIN				Yes	** NA **			None
116	M116						Yes	** NA **			None
117	M117						Yes	** NA **			None
118	M118		BenPIN				Yes	** NA **			None
119	M119		BenPIN				Yes	** NA **			None
120	M120	BenPIN					Yes	** NA **			None
121	M121	BenPIN					Yes	** NA **			None
122	M122	BenPIN					Yes	** NA **			None
123	M123	BenPIN					Yes	** NA **			None
124	M124	BenPIN					Yes	** NA **			None
125	M125	BenPIN					Yes	** NA **			None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[...	Lcomp bot[...	L-torq...	Kyy	Kzz	Cb	Functi...
1	M1	PL 6x3/8	6			Lbyy						Lateral
2	M2	PIPE_2.5	155			Lbyy						Lateral
3	M3	PIPE_3.0	74.5			Lbyy						Lateral
4	M4	PL 6x3/8	3			Lbyy						Lateral
5	M5	PL 6x3/8	3			Lbyy						Lateral
6	M7	PL 6x3/8	6			Lbyy						Lateral
7	M8	PL 6x3/8	3			Lbyy						Lateral
8	M9	PL 6x3/8	3			Lbyy						Lateral
9	M11	PIPE_2.5	155			Lbyy						Lateral
10	M14	PIPE_2.5	155			Lbyy						Lateral
11	M15	PL 6x3/8	6			Lbyy						Lateral
12	M16	PL 6x3/8	3			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[...	Lcomp bot[...	L-torq...	Kyy	Kzz	Cb	Functi...
13	M17	PL 6x3/8	3			Lbyy						Lateral
14	M20	PIPE_2.5	72			Lbyy						Lateral
15	M23	PIPE_2.5	96			Lbyy						Lateral
16	M26	PIPE_2.5	96			Lbyy						Lateral
17	M27	PIPE_2.5	96			Lbyy						Lateral
18	M28	PIPE_2.0	155			Lbyy						Lateral
19	M29	PIPE_2.0	155			Lbyy						Lateral
20	M30	PIPE_2.0	155			Lbyy						Lateral
21	M35	PIPE_3.0	74.5			Lbyy						Lateral
22	M36	PIPE_3.0	74.5			Lbyy						Lateral
23	M39	PIPE_2.5	48			Lbyy						Lateral
24	M40	PL 6x3/8	6			Lbyy						Lateral
25	M41	PL 6x3/8	6			Lbyy						Lateral
26	M42	C3X2X0.18...	30.656			Lbyy						Lateral
27	M43	C3X2X0.18...	30.656			Lbyy						Lateral
28	M46	PL 6x3/8	6			Lbyy						Lateral
29	M47	PL 6x3/8	6			Lbyy						Lateral
30	M50	L2x2x3	51.384			Lbyy						Lateral
31	M51	L2x2x3	51.384			Lbyy						Lateral
32	M52	PL 6x3/8	6			Lbyy						Lateral
33	M53	PL 6x3/8	6			Lbyy						Lateral
34	M54	C3X2X0.18...	30.656			Lbyy						Lateral
35	M55	C3X2X0.18...	30.656			Lbyy						Lateral
36	M58	PL 6x3/8	6			Lbyy						Lateral
37	M59	PL 6x3/8	6			Lbyy						Lateral
38	M62	L2x2x3	51.384			Lbyy						Lateral
39	M63	L2x2x3	51.384			Lbyy						Lateral
40	M64	PL 6x3/8	6			Lbyy						Lateral
41	M65	PL 6x3/8	6			Lbyy						Lateral
42	M66	C3X2X0.18...	30.656			Lbyy						Lateral
43	M67	C3X2X0.18...	30.656			Lbyy						Lateral
44	M70	PL 6x3/8	6			Lbyy						Lateral
45	M71	PL 6x3/8	6			Lbyy						Lateral
46	M74	L2x2x3	51.384			Lbyy						Lateral
47	M75	L2x2x3	51.384			Lbyy						Lateral
48	M78	PIPE_2.5	48			Lbyy						Lateral
49	M79	PIPE_2.5	48			Lbyy						Lateral
50	M80	PIPE_2.5	48									Lateral
51	M81	L3X3X3	14.696									Lateral
52	M82	L3X3X3	14.696									Lateral
53	M83	L3X3X3	14.696									Lateral
54	M84	PIPE_2.5	72			Lbyy						Lateral
55	M87	PIPE_2.5	96			Lbyy						Lateral
56	M90	PIPE_2.5	96			Lbyy						Lateral
57	M91	PIPE_2.5	96			Lbyy						Lateral
58	M96	PIPE_2.5	72			Lbyy						Lateral
59	M99	PIPE_2.5	96			Lbyy						Lateral
60	M102	PIPE_2.5	96			Lbyy						Lateral
61	M103	PIPE_2.5	96			Lbyy						Lateral
62	M110	L3X3X5	40.361									Lateral
63	M111	L3X3X5	40.361									Lateral
64	M114	L3X3X5	40.361									Lateral
65	M115	L3X3X5	40.361									Lateral
66	M118	L3X3X5	40.361									Lateral
67	M119	L3X3X5	40.361									Lateral
68	M120	L2.5x2.5x3	74.405									Lateral
69	M121	L2.5x2.5x3	74.405									Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[...	Lcomp bot[...	L-torq...	Kyy	Kzz	Cb	Functi...
70	M122	L2.5x2.5x3	74.405									Lateral
71	M123	L2.5x2.5x3	74.406									Lateral
72	M124	L2.5x2.5x3	74.406									Lateral
73	M125	L2.5x2.5x3	74.405									Lateral

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(Plate/...
1	Self We	DL		-1.1						
2	We	DL					40		3	
3	Ice We	DL					40	49	3	
4	W0	WL					40	49		
5	W30	WL					80	98		
6	W60	WL					80	98		
7	W90	WL					40	49		
8	W120	WL					80	98		
9	W150	WL					80	98		
10	W0 + Ice	WL					40	49		
11	W30 + Ice	WL					80	98		
12	W60 + Ice	WL					80	98		
13	W90 + Ice	WL					40	49		
14	W120 + Ice	WL					80	98		
15	W150 + Ice	WL					80	98		
16	500lbs LM 1	LL				1				
17	500lbs LM 2	LL				1				
18	500lbs LM 3	LL				1				
19	500lbs LM 4	LL								
20	250lbs LV 5	LL				1				
21	250lbs LV 6	LL				1				
22	E0	EL	-.09				40			
23	E90	EL			.09		40			
24	BLC 2 Transient Are...	None						21		
25	BLC 3 Transient Are...	None						21		

Load Combinations

	Description	Solve	PDelta	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
1	Dead	Yes	Y		1	1.4	2	1.4	0		0													
2	Dead + ...	Yes	Y		1	1.2	2	1.2	4	1	0													
3	Dead + ...	Yes	Y		1	1.2	2	1.2	5	1	0													
4	Dead + ...	Yes	Y		1	1.2	2	1.2	6	1	0													
5	Dead + ...	Yes	Y		1	1.2	2	1.2	7	1	0													
6	Dead + ...	Yes	Y		1	1.2	2	1.2	8	1	0													
7	Dead + ...	Yes	Y		1	1.2	2	1.2	9	1	0													
8	Dead + ...	Yes	Y		1	1.2	2	1.2	4	-1	0													
9	Dead + ...	Yes	Y		1	1.2	2	1.2	5	-1	0													
10	Dead + ...	Yes	Y		1	1.2	2	1.2	6	-1	0													
11	Dead + ...	Yes	Y		1	1.2	2	1.2	7	-1	0													
12	Dead + ...	Yes	Y		1	1.2	2	1.2	8	-1	0													
13	Dead + ...	Yes	Y		1	1.2	2	1.2	9	-1	0													
14	Dead + Ic...	Yes	Y		1	1.2	2	1.2	10	1	3	1												
15	Dead + Ic...	Yes	Y		1	1.2	2	1.2	11	1	3	1												
16	Dead + Ic...	Yes	Y		1	1.2	2	1.2	12	1	3	1												
17	Dead + Ic...	Yes	Y		1	1.2	2	1.2	13	1	3	1												
18	Dead + Ic...	Yes	Y		1	1.2	2	1.2	14	1	3	1												
19	Dead + Ic...	Yes	Y		1	1.2	2	1.2	15	1	3	1												

Load Combinations (Continued)

	Description	Solve	PDelta	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
20	Dead + lc...	Yes	Y		1	1.2	2	1.2	10	-1	3	1														
21	Dead + lc...	Yes	Y		1	1.2	2	1.2	11	-1	3	1														
22	Dead + lc...	Yes	Y		1	1.2	2	1.2	12	-1	3	1														
23	Dead + lc...	Yes	Y		1	1.2	2	1.2	13	-1	3	1														
24	Dead + lc...	Yes	Y		1	1.2	2	1.2	14	-1	3	1														
25	Dead + lc...	Yes	Y		1	1.2	2	1.2	15	-1	3	1														
26	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	4	.049														
27	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	5	.049														
28	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	6	.049														
29	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	7	.049														
30	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	8	.049														
31	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	9	.049														
32	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	4	-.049														
33	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	5	-.049														
34	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	6	-.049														
35	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	7	-.049														
36	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	8	-.049														
37	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	9	-.049														
38	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	4	.049														
39	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	5	.049														
40	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	6	.049														
41	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	7	.049														
42	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	8	.049														
43	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	9	.049														
44	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	4	-.049														
45	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	5	-.049														
46	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	6	-.049														
47	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	7	-.049														
48	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	8	-.049														
49	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	9	-.049														
50	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	4	.049														
51	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	5	.049														
52	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	6	.049														
53	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	7	.049														
54	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	8	.049														
55	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	9	.049														
56	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	4	-.049														
57	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	5	-.049														
58	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	6	-.049														
59	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	7	-.049														
60	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	8	-.049														
61	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	9	-.049														
62	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	4	.049														
63	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	5	.049														
64	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	6	.049														
65	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	7	.049														
66	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	8	.049														
67	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	9	.049														
68	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	4	-.049														
69	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	5	-.049														
70	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	6	-.049														
71	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	7	-.049														
72	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	8	-.049														
73	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	9	-.049														
74	Dead + L...	Yes	Y		1	1.2	2	1.2	20	1.5	0															
75	Dead + L...	Yes	Y		1	1.2	2	1.2	21	1.5	0															
76	Service 6...	Yes	Y		1	1	2	1	4	.198	0															

Load Combinations (Continued)

	Description	Solve	PDelta	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
77	(1.2 + 0.2...	Yes	Y		1	1.234	2	1.234	22	1	23													
78	(1.2 + 0.2...	Yes	Y		1	1.234	2	1.234	22	.866	23	.5												
79	(1.2 + 0.2...	Yes	Y		1	1.234	2	1.234	22	.5	23	.866												
80	(1.2 + 0.2...	Yes	Y		1	1.234	2	1.234	22		23	1												
81	(1.2 + 0.2...	Yes	Y		1	1.234	2	1.234	22	-.5	23	.866												
82	(1.2 + 0.2...	Yes	Y		1	1.234	2	1.234	22	-.866	23	.5												
83	(1.2 + 0.2...	Yes	Y		1	1.234	2	1.234	22	-1	23													
84	(1.2 + 0.2...	Yes	Y		1	1.234	2	1.234	22	-.866	23	-.5												
85	(1.2 + 0.2...	Yes	Y		1	1.234	2	1.234	22	-.5	23	-.866												
86	(1.2 + 0.2...	Yes	Y		1	1.234	2	1.234	22		23	-1												
87	(1.2 + 0.2...	Yes	Y		1	1.234	2	1.234	22	.5	23	-.866												
88	(1.2 + 0.2...	Yes	Y		1	1.234	2	1.234	22	.866	23	-.5												

Joint Loads and Enforced Displacements (BLC 16 : 500lbs LM 1)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-in), (in,rad), (lb*s^2...
1	N57	L	Y	-500

Joint Loads and Enforced Displacements (BLC 17 : 500lbs LM 2)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-in), (in,rad), (lb*s^2...
1	N58	L	Y	-500

Joint Loads and Enforced Displacements (BLC 18 : 500lbs LM 3)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-in), (in,rad), (lb*s^2...
1	N60	L	Y	-500

Joint Loads and Enforced Displacements (BLC 20 : 250lbs LV 5)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-in), (in,rad), (lb*s^2...
1	N17	L	Y	-250

Joint Loads and Enforced Displacements (BLC 21 : 250lbs LV 6)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-in), (in,rad), (lb*s^2...
1	N40	L	Y	-250

Envelope AISC 15th(360-16): LRFD Steel Code Checks

	Member	Shape	Code Check	Loc[in]	LC	Shear C...	Loc[in]	Dir	LC	phi*P...	phi*P...	phi*M...	phi*M.....	Eqn
1	M1	PL 6x3/8	.893	3	7	.431	3	y	8	6201...	72900	6.834	109.35 ...	H1-1b
2	M7	PL 6x3/8	.890	3	3	.371	3	y	4	6201...	72900	6.834	109.35 ...	H1-1b
3	M15	PL 6x3/8	.842	3	7	.388	2.938	y	13	6201...	72900	6.834	109.35 ...	H1-1b
4	M65	PL 6x3/8	.701	3	7	.268	3	y	8	6201...	72900	6.834	109.35 ...	H1-1b
5	M53	PL 6x3/8	.700	3	3	.261	3	y	3	6201...	72900	6.834	109.35 ...	H1-1b
6	M41	PL 6x3/8	.669	3	7	.218	3	y	13	6201...	72900	6.834	109.35 ...	H1-1b
7	M71	PL 6x3/8	.669	3	3	.217	3	y	9	6201...	72900	6.834	109.35 ...	H1-1b
8	M30	PIPE_2.0	.646	124.323	7	.314	150.156		3	5895....	32130	22.459	22.459 ...	H1-1a
9	M28	PIPE_2.0	.645	30.677	3	.243	150.156		8	5895....	32130	22.459	22.459 ...	H1-1a
10	M29	PIPE_2.0	.606	124.323	13	.328	4.844		8	5895....	32130	22.459	22.459 ...	H1-1b
11	M47	PL 6x3/8	.520	3	11	.235	3	y	12	6201...	72900	6.834	109.35 ...	H1-1b
12	M3	PIPE_3.0	.505	74.5	7	.223	50.443		13	5304...	65205	68.985	68.985 ...	H1-1b
13	M36	PIPE_3.0	.504	74.5	3	.223	50.443		9	5304...	65205	68.985	68.985 ...	H1-1b
14	M59	PL 6x3/8	.486	3	12	.206	3	y	17	6201...	72900	6.834	109.35 ...	H1-1b
15	M81	L3X3X3	.485	0	8	.088	14.696	z	2	2818...	35316	15.841	34.002 ...	H2-1
16	M4	PL 6x3/8	.483	0	7	.218	1.5	y	12	7001...	72900	6.834	109.35 ...	H1-1b
17	M9	PL 6x3/8	.482	0	3	.283	1.5	y	8	7001...	72900	6.834	109.35 ...	H1-1b

Envelope AISC 15th(360-16): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[in]	LC	Shear C...	Loc[in]	Dir	LC	phi*P...	phi*P...	phi*M...	phi*M.....		Eqn
18	M5	PL 6x3/8	.447	0	9	.149	1.5	y	3	7001...	72900	6.834	109.35	...	H1-1b
19	M17	PL 6x3/8	.446	0	13	.165	1.5	y	8	7001...	72900	6.834	109.35	...	H1-1b
20	M83	L3X3X3	.443	14.696	7	.077	14.696	z	7	2818...	35316	15.841	34.002	...	H2-1
21	M67	C3X2X0...	.435	0	8	.154	25.866	z	8	3262...	40338	18.958	44.744	...	H1-1b
22	M66	C3X2X0...	.433	0	8	.176	25.866	z	8	3262...	40338	18.958	44.744	...	H1-1b
23	M82	L3X3X3	.419	0	3	.064	12.094	y	9	2818...	35316	15.841	34.002	...	H2-1
24	M35	PIPE_3.0	.419	44.234	8	.146	74.5		5	5304...	65205	68.985	68.985	...	H1-1b
25	M70	PL 6x3/8	.418	3	2	.376	0	y	21	6201...	72900	6.834	109.35	...	H1-1b
26	M52	PL 6x3/8	.402	0	2	.427	0	y	3	6201...	72900	6.834	109.35	...	H1-1b
27	M42	C3X2X0...	.399	0	13	.136	25.866	y	25	3262...	40338	18.958	44.744	...	H1-1b
28	M64	PL 6x3/8	.394	0	7	.434	0	y	7	6201...	72900	6.834	109.35	...	H1-1b
29	M55	C3X2X0...	.394	4.79	3	.135	4.79	y	16	3262...	40338	18.958	44.744	...	H1-1b
30	M54	C3X2X0...	.393	0	3	.155	25.866	z	3	3262...	40338	18.958	44.744	...	H1-1b
31	M43	C3X2X0...	.385	25.866	13	.148	25.866	y	24	3262...	40338	18.958	44.744	...	H1-1b
32	M40	PL 6x3/8	.385	0	2	.374	0	y	14	6201...	72900	6.834	109.35	...	H1-1b
33	M27	PIPE_2.5	.361	28	8	.104	28		6	3003...	50715	43.155	43.155	...	H1-1b
34	M16	PL 6x3/8	.361	0	11	.278	0	y	3	7001...	72900	6.834	109.35	...	H1-1b
35	M91	PIPE_2.5	.360	68	2	.115	68		9	3003...	50715	43.155	43.155	...	H1-1b
36	M103	PIPE_2.5	.349	68	7	.122	28		2	3003...	50715	43.155	43.155	...	H1-1b
37	M51	L2x2x3	.329	0	8	.015	0	y	2	9335...	2339...	6.693	14.648	...	H2-1
38	M8	PL 6x3/8	.322	0	5	.101	0	y	13	7001...	72900	6.834	109.35	...	H1-1b
39	M58	PL 6x3/8	.321	3	10	.373	0	y	18	6201...	72900	6.834	109.35	...	H1-1b
40	M63	L2x2x3	.321	0	8	.015	0	z	2	9335...	2339...	6.693	14.462	...	H2-1
41	M46	PL 6x3/8	.313	0	10	.388	0	y	23	6201...	72900	6.834	109.35	...	H1-1b
42	M75	L2x2x3	.290	0	13	.013	0	z	6	9335...	2339...	6.693	14.198	...	H2-1
43	M74	L2x2x3	.285	0	3	.013	0	y	10	9335...	2339...	6.693	14.426	...	H2-1
44	M96	PIPE_2.5	.281	56.25	2	.253	15		7	3777...	50715	43.155	43.155	...	H1-1b
45	M84	PIPE_2.5	.275	56.25	9	.259	15		2	3777...	50715	43.155	43.155	...	H1-1b
46	M2	PIPE_2.5	.261	142.083	9	.118	77.5		7	1363...	50715	43.155	43.155	...	H1-1b
47	M14	PIPE_2.5	.260	142.083	13	.129	77.5		9	1363...	50715	43.155	43.155	...	H1-1b
48	M62	L2x2x3	.257	0	12	.013	0	y	6	9335...	2339...	6.693	14.816	...	H2-1
49	M50	L2x2x3	.250	0	4	.013	0	z	10	9335...	2339...	6.693	14.645	...	H2-1
50	M90	PIPE_2.5	.248	68	8	.097	68		8	3003...	50715	43.155	43.155	...	H1-1b
51	M20	PIPE_2.5	.244	15.75	8	.202	15		10	3777...	50715	43.155	43.155	...	H1-1b
52	M121	L2.5x2.5...	.237	41.078	3	.015	74.405	z	13	8541...	2919...	10.471	18.215	...	H2-1
53	M123	L2.5x2.5...	.236	41.078	7	.013	74.406	z	5	8541...	2919...	10.471	18.215	...	H2-1
54	M26	PIPE_2.5	.236	68	2	.077	68		4	3003...	50715	43.155	43.155	...	H1-1b
55	M87	PIPE_2.5	.225	22	2	.073	22		2	3003...	50715	43.155	43.155	...	H1-1b
56	M11	PIPE_2.5	.224	12.917	5	.140	96.875		2	1363...	50715	43.155	43.155	...	H1-1b
57	M102	PIPE_2.5	.218	68	13	.097	68		13	3003...	50715	43.155	43.155	...	H1-1b
58	M120	L2.5x2.5...	.215	41.078	13	.016	74.405	y	3	8541...	2919...	10.471	18.213	...	H2-1
59	M99	PIPE_2.5	.215	21	2	.067	22		7	3003...	50715	43.155	43.155	...	H1-1b
60	M23	PIPE_2.5	.215	21	8	.063	22		10	3003...	50715	43.155	43.155	...	H1-1b
61	M124	L2.5x2.5...	.214	41.078	9	.014	74.406	y	11	8541...	2919...	10.471	18.213	...	H2-1
62	M125	L2.5x2.5...	.192	38.753	12	.015	74.405	z	9	8541...	2919...	10.471	18.205	...	H2-1
63	M122	L2.5x2.5...	.173	38.753	4	.016	74.405	y	7	8541...	2919...	10.471	18.204	...	H2-1
64	M115	L3X3X5	.101	19.76	2	.002	40.361	y	3	4481...	57672	24.176	54.431	...	H2-1
65	M119	L3X3X5	.093	20.18	7	.002	40.361	y	7	4481...	57672	24.176	54.432	...	H2-1
66	M114	L3X3X5	.091	20.18	9	.002	40.361	z	9	4481...	57672	24.176	54.432	...	H2-1
67	M118	L3X3X5	.091	20.18	13	.002	40.361	z	13	4481...	57672	24.176	54.432	...	H2-1
68	M111	L3X3X5	.078	19.76	10	.002	0	y	11	4481...	57672	24.176	54.437	...	H2-1
69	M110	L3X3X5	.068	19.76	6	.002	40.361	z	11	4481...	57672	24.176	54.437	...	H2-1
70	M79	PIPE_2.5	.040	30	6	.009	30		6	4449...	50715	43.155	43.155	...	H1-1b
71	M78	PIPE_2.5	.040	30	6	.009	30		6	4449...	50715	43.155	43.155	...	H1-1b
72	M80	PIPE_2.5	.040	30	10	.009	30		10	4449...	50715	43.155	43.155	...	H1-1b
73	M39	PIPE_2.5	.040	30	10	.009	30		10	4449...	50715	43.155	43.155	...	H1-1b

HUDSON
Design Group LLC

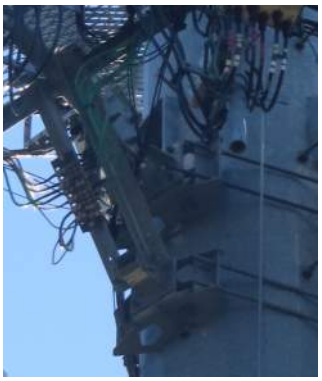
Connection Check

SITE DETAILS

Site Name/Code	CT2028 - GROTON PLEASANT VALLEY ROAD ROAD NORTH S2820A
Date	4/22/2022
Engineer	AD

CONNECTION PARAMETERS

Number of bolts		**4**	
b - width of member		**3.5**	*in*
d - height of member		**3.5**	*in*
B - horizontal bolt spacing		**7**	*in*
D - vertical bolt spacing		**7**	*in*
Bolt Diameter	d	**1**	*in*
Section Shape		**Pipe**	
Weld Thickness		**1/4**	*in*
Tensile Area	A_b	0.79	in^2
Tensile Area	A_n	0.61	in^2
Grade		**A325**	
Bolt Ultimate Strength	F_{ub}	120	*ksi*
Connection length reduction factor	R_b	1	



Connection Sketch/Photo

FLANGE LOADS

Loadcase #		**9**	
Bending Moment	Mzz	**1.78**	*kips-in*
Bending Moment	Myy	**33.98**	*kips-in*
Torsional Moment	Mxx	**6.20**	*kips-in*
Shear Force	Vy	**0.19**	*kips*
Shear Force	Vz	**1.71**	*kips*
Axial Force	Px	**1.37**	*kips*

BOLT CHECK

Bolt Tension Capacity

$\phi R_{nt} = 0.75 * F_{ub} * A_n$

$\phi R_{nt} =$ **54.5** *kips*

Bolt Shear Capacity

$\phi R_{nv} = 0.75 * 0.625 * 0.8 * Fub * Ab * Rb$

$\phi R_{nv} =$ **35.3** *kips*

Maximum Bolt Tension

$T_{ub} = F_{Mxx} + F_{Mzz} + T_y/4$

$T_{ub} =$ **2.90** *kips*

Maximum Bolt Shear

$V_{ub} = \text{sqrt}((V_x/4)^2 + (V_y/4)^2) + F_{Myy}$

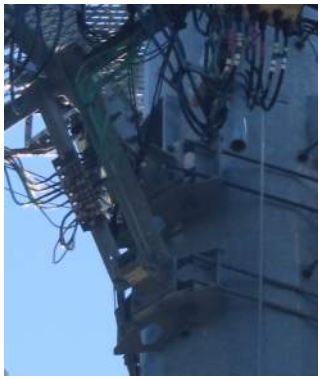
$V_{ub} =$ **0.74** *kips*

Tension Ratio:	**5.3%**	**%**	**Shear Ratio:**	**2.1%**	**%**
	PASS			PASS	

$(T_{ub} / \phi R_{nt})^2 + (V_{ub} / \phi R_{nv})^2 < 1.0$ **OK** Ratio **0.3%** PASS

WELD CHECK

Filler Metal F_{EXX}	**70**	ksi	Are stiffners present?	**Yes**
Weld Thk.	**0.25**	in	Length of stiffner	1.5 in
Base metal F_u	**58**	ksi		
Type of section	**Pipe**			
Length of Section [b]	**3.5**	in		
Length of Section [d]	**3.5**	in		
I_{total}	**23.00**	in		
I_p	**33.67**	in^3		
S_z	**25.60**	in^2		
S_y	**25.60**	in^2		
R_{ux}	1.46	kips/in		
R_{uy}	0.33	kips/in		
R_{uz}	0.40	kips/in		
R_u	1.54	kips/in		
Allowable Weld Stress	**5.57**	kips/in	**27.7%** PASS	



Connection Sketch

STRUCTURAL NOTES:

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-H STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
3. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
4. STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
5. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
6. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
7. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
8. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
9. FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
10. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND DI.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL". 14TH EDITION.
11. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
12. UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
13. EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-270 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
15. LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
16. WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
17. ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
18. NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
19. SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

GENERAL: WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE INSPECTION CHECKLIST ABOVE.

THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTOR FOR THE WORK DESIGNED BY THEM, PROVIDED THOSE PERSONNEL MEET THE QUALIFICATION REQUIREMENTS.

STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 107.1 AS A CONDITION FOR ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1705.

REPORT REQUIREMENT: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS SHALL BE SUBMITTED.

SPECIAL INSPECTION CHECKLIST	
BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
N/A	ENGINEER OF RECORD APPROVED SHOP DRAWINGS [1]
N/A	MATERIAL SPECIFICATIONS REPORT [2]
N/A	FABRICATOR NDE INSPECTION
REQUIRED	PACKING SLIPS [3]
ADDITIONAL TESTING AND INSPECTIONS:	
DURING CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS [4]
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION [5]
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT
ADDITIONAL TESTING AND INSPECTIONS:	
AFTER CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS [6]
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
REQUIRED	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

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

SITE NUMBER: CTL02820
SITE NAME: GROTON PLEASANT VALLEY ROAD NORTH S2820A

1294 PLEASANT VALLEY ROAD NORTH
GROTON, CT 06340
NEW LONDON COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	06/01/22	ISSUED FOR CONSTRUCTION	PM	HC	DPH
A	04/29/22	ISSUED FOR REVIEW	PM	HC	DPH

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

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

AT&T

STRUCTURAL NOTES
5G NR 1SR CBAND_4TXRX ANTENNA RETROFIT_
5G NR UPGRADE_LTE 7C ADD UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02820	SN-1	1

NOTE:

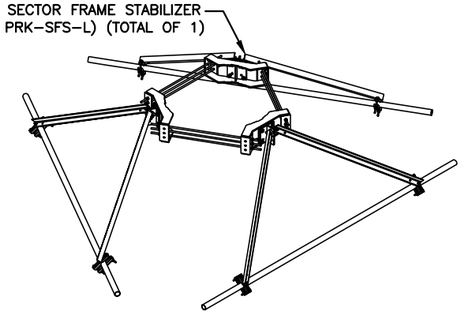
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

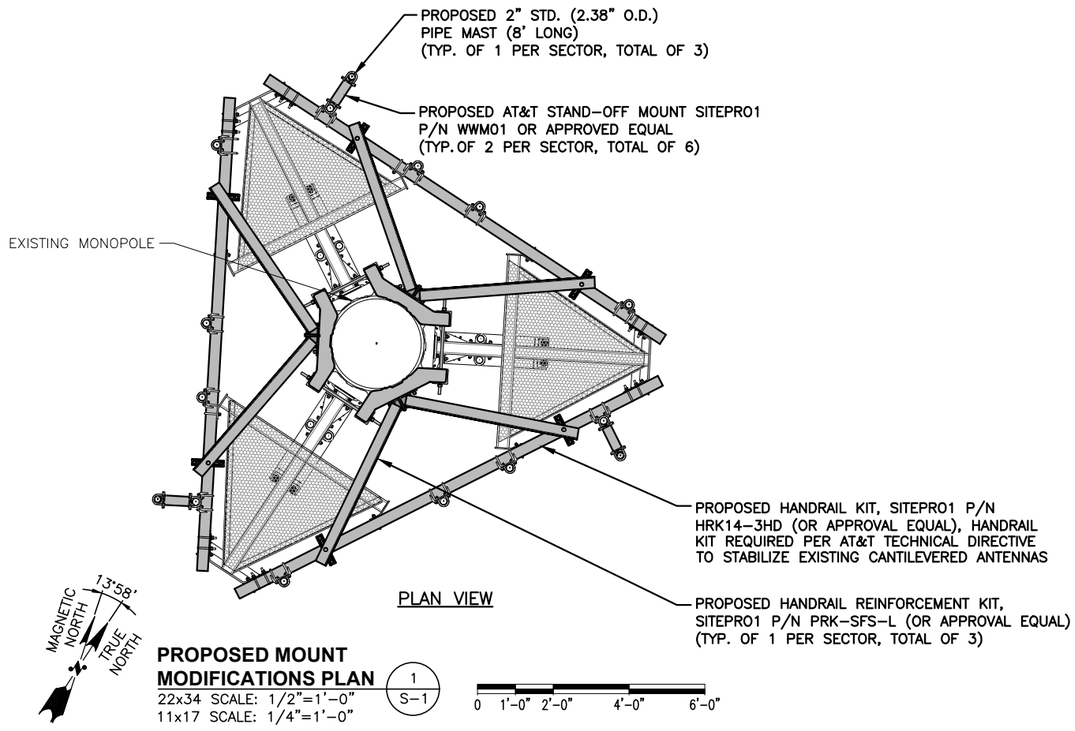
AN ANALYSIS FOR THE CAPACITY OF PROPOSED **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED
BY: HUDSON DESIGN GROUP, LLC.
DATED: MAY 3, 2022 (Rev.3).

NOTE:

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



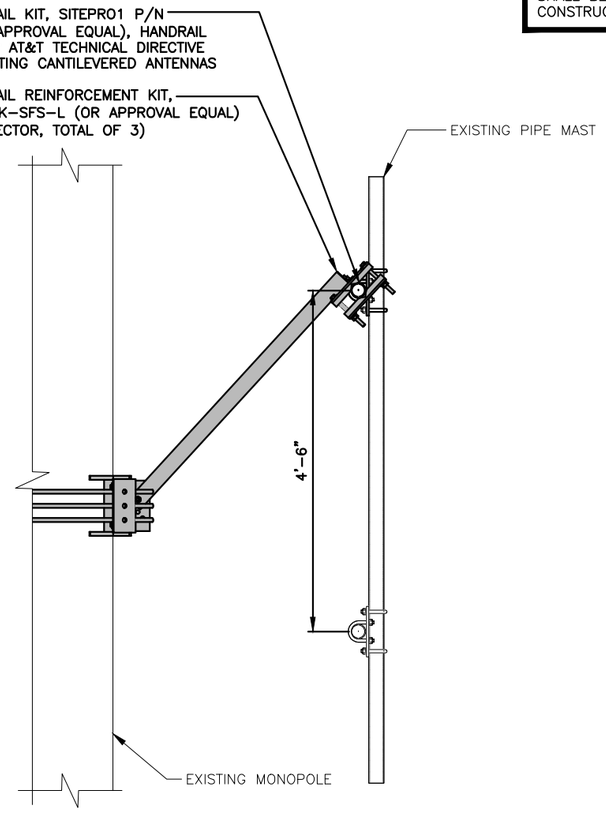
HANDRAIL REINFORCEMENT KIT DETAIL (3 / S-1)
SCALE: N.T.S



PLAN VIEW

PROPOSED MOUNT MODIFICATIONS PLAN (1 / S-1)
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"

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



PROPOSED MOUNT MODIFICATIONS ELEVATION (2 / S-1)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

0 0'-6" 1'-0" 2'-0" 3'-0"

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
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TEL: (978) 557-5553
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SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL02820
SITE NAME: GROTON PLEASANT VALLEY ROAD NORTH S2820A

1294 PLEASANT VALLEY ROAD NORTH
GROTON, CT 06340
NEW LONDON COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
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A	04/29/22	ISSUED FOR REVIEW	PM	HC	DPH

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

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

AT&T

MOUNT MODIFICATION DESIGN
5G NR 1SR CBAND_4TXRX ANTENNA RETROFIT_
5G NR UPGRADE_LTE 7C ADD UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02820	S-1	1

STRUCTURAL NOTES:

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-H STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
3. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
4. STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
5. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
6. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
7. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
8. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
9. FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
10. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND DI.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL". 14TH EDITION.
11. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
12. UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
13. EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-270 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
15. LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
16. WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
17. ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
18. NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
19. SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

GENERAL: WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE INSPECTION CHECKLIST ABOVE.

THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTOR FOR THE WORK DESIGNED BY THEM, PROVIDED THOSE PERSONNEL MEET THE QUALIFICATION REQUIREMENTS.

STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 107.1 AS A CONDITION FOR ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1705.

REPORT REQUIREMENT: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS SHALL BE SUBMITTED.

SPECIAL INSPECTION CHECKLIST	
BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
N/A	ENGINEER OF RECORD APPROVED SHOP DRAWINGS [1]
N/A	MATERIAL SPECIFICATIONS REPORT [2]
N/A	FABRICATOR NDE INSPECTION
REQUIRED	PACKING SLIPS [3]
ADDITIONAL TESTING AND INSPECTIONS:	
DURING CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS [4]
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION [5]
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT
ADDITIONAL TESTING AND INSPECTIONS:	
AFTER CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS [6]
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
REQUIRED	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

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SITE NUMBER: CTL02820
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NEW LONDON COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
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SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: PM

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

AT&T

STRUCTURAL NOTES
5G NR 1SR CBAND_4TXRX ANTENNA RETROFIT_
5G NR UPGRADE_LTE 7C ADD UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02820	SN-1	1

NOTE:

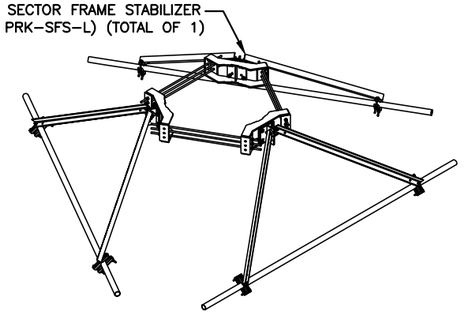
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

AN ANALYSIS FOR THE CAPACITY OF PROPOSED **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED
BY: HUDSON DESIGN GROUP, LLC.
DATED: MAY 3, 2022 (Rev.3).

NOTE:

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



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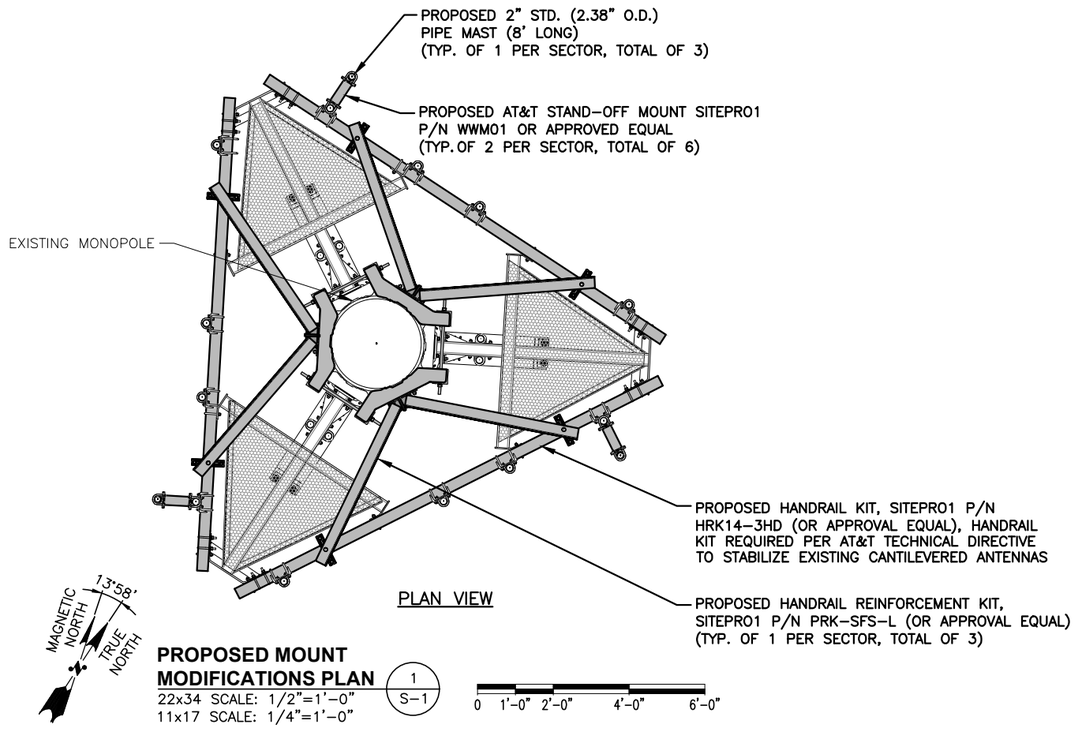
SCALE: N.T.S



PLAN VIEW

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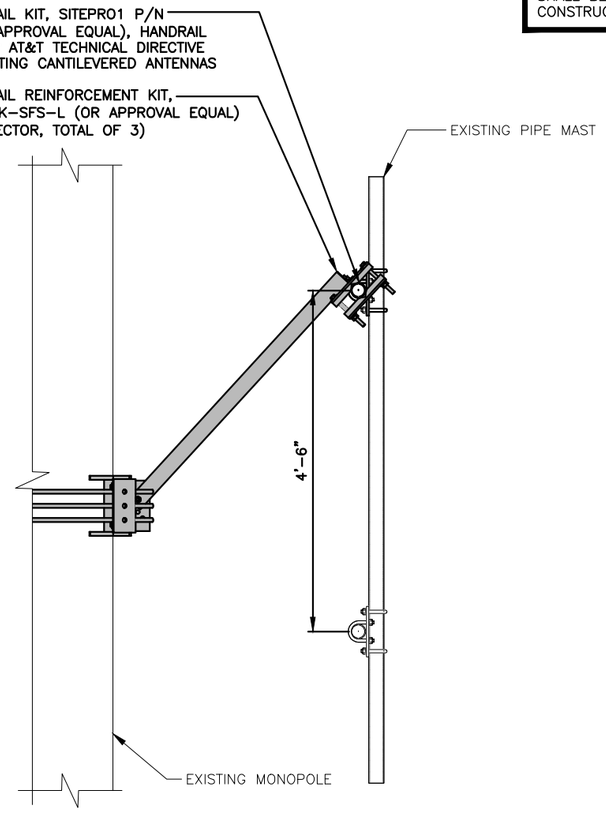

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STATE OF CONNECTICUT
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MOUNT MODIFICATION DESIGN
5G NR 1SR CBAND_4TXRX ANTENNA RETROFIT_
5G NR UPGRADE_LTE 7C ADD UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02820	S-1	1

Commercial Property Card

Print Date: 6/21/2022

Card 1 of 1

Account	Location	Zoning	Deed Book/Page	Acres
178010470143	1294 PLEASANT VALLEY RD NORTH	RU-20	774/624	3.66

District	Use Code
POQUONNOCK BRIDGE	SMALL RETAIL AND SERVICE STORES

Current Owner

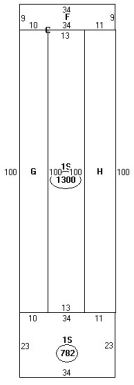
JFM ENTERPRISES LLC
C/O JENNIFER MACIEROWSKI
920 PLEASANT VALLEY RD N
GROTON CT 06340

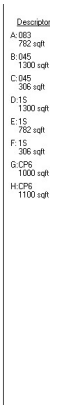
Property Picture

Building Information

Building No:	1
Year Built:	1975
No of Units:	1
Structure Type:	RETAIL - SINGLE OCCUPANCY
Building Total Area:	2388 sqft.
Grade:	D+
Identical Units:	1

Building Sketch





Valuation

Land:	$217,700
Building:	$84,400
Total:	$302,100
Total Assessed Value:	$211,470

Recent Sales

Book/Page	Date	Price
651/124	10/1/1997	$123,380
721/770	10/23/2000	$140,000
774/624	6/20/2002	$150,000

Sketch Legend

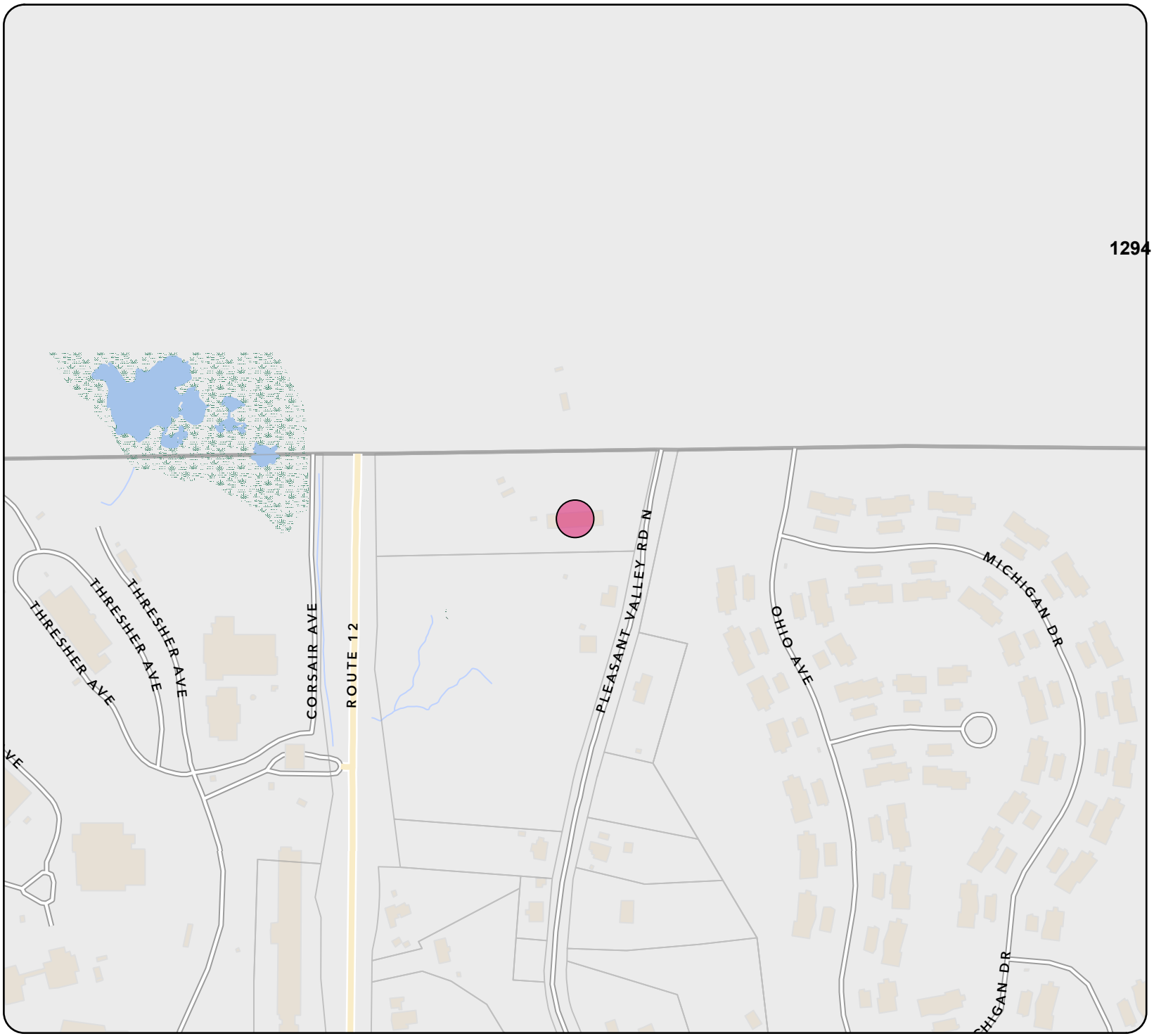
----	Main Living Area	1SMA	Masonry	GRHS	Attached Greenhouse
1FR	Frame	OMP	Open Masonry Porch	CAT	Cathedral Ceiling
OFP	Open Frame Porch	EMP	Enclosed Msry Porch	SOP	Screen Open Frame Prch
EFP	Enclosed Frame Porch	MUB	Masonry Utility	SMP	Screen Open Msnry Prch
FUB	Frame Utility Building	MB	Masonry Bay	CPAT	Concrete Patio
FB	Frame Bay	MOH	Masonry Overhang	B	Basement
FG	Frame Garage	.5MA	1/2 Story Masonry		
FOH	Frame Overhang	MP	Masonry Patio		
.5FR	1/2 Story Frame	WD	Wood Deck		
A(U)	Attic (Unfinished)	CPY	Canopy		
A(F)	Attic (Finished)				

Exterior/Interior Information

Levels	Use Type	Ext. Walls	Const. Type	Heating	A/C	Condition
01 - 01	MULTI-USE SALES	CONCRETE BLOCK	WOOD JOIST	HOT AIR	NONE	NORMAL
01 - 01	WAREHOUSE	CONCRETE BLOCK	WOOD JOIST	HOT AIR	NONE	NORMAL
01 - 01	WAREHOUSE	FRAME	WOOD JOIST	NONE	NONE	NORMAL

TOWN OF GROTON

1294 Pleasant Valley Road N GIS Ma



Map Created 6/21/2022 using the Town of Groton, Connecticut GIS Web Application

0 370 740 ft

1:3,906

Disclaimer:

The planimetric and topographic information depicted on this map was compiled by Fugro based on an aerial flight performed in April 2020. The parcel and property line information depicted on this map has been compiled from recorded deeds, maps, assessor records, and other sources of information in the Town of Groton. The intent of this map is to depict a graphical representation of real property information relative to the planimetric features for the Town of Groton and is subject to change as a more accurate survey may disclose. The Town of Groton and the mapping companies assume no legal responsibility for the information contained in this data.
THIS MAP IS NOT TO BE USED FOR THE TRANSFER OF PROPERTY.

Horizontal Datum:
Connecticut State Plane Coordinates, North American Datum of 1983 (NAD83 Feet).

Vertical Datum:
North American Vertical Datum of 1988 (NAVD88)

DOCKET NO. 330 – Optasite Towers, LLC and Omnipoint Communications, Inc. application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility at 1294 Pleasant Valley Road North in Groton, Connecticut.	Connecticut Siting Council June 7, 2007

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance 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 Pubic Need, as provided by General Statutes § 16-50k, be issued to Optasite Towers, LLC for the construction, maintenance and operation of a wireless telecommunications facility to be located at 1294 Pleasant Valley Road North in Groton, Connecticut.

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 designed as a steel monopole and shall be constructed no taller than 140 feet above ground level to provide telecommunications services to both public and private entities.

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 Town of Groton 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, antenna mountings, equipment building, access road, utility line, and landscaping; and

   b) construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

3. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of 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 electromagnetic radio frequency power density is submitted to the Council in the event other carriers locate at this facility or if 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. The Certificate Holder shall provide reasonable space on the tower for no compensation for any Town of Groton public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.

7. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed and providing wireless services 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.

8. Any request for extension of the time period referred to in Condition 7 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 Town of Groton. Any proposed modifications to this Decision and Order shall likewise be so served.

9. 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.

10. The Certificate Holder shall remove any nonfunctioning antenna, and associated antenna mounting equipment, within 60 days of the date the antenna ceased to function.

11. 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.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in the New London Day and the Norwich Bulletin.

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.

The parties and intervenors in this proceeding are:

Status Granted	**Status Holder (name, address & phone number)**	**Representative (name, address & phone number)**
Applicant	Optasite Towers, LLC One Research Drive, Suite 200C Westborough, MA 01581 Omnipoint Communications, Inc. 100 Filley Street Bloomfield, CT 06002	Julie Kohler, Esq. Carrie L. Larson, Esq. Cohen and Wolf, P.C. 1115 Broad Street Bridgeport, CT 06604 (203) 368-0211 (203) 394-9901 fax jkohler@cohenandwolf.com clarson@cohenandwolf.com

CERTIFICATION

The undersigned members of the Connecticut Siting Council (Council) hereby certify that they have heard this case, or read the record thereof, in a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction, maintenance and operation of a telecommunications facility at 1294 Pleasant Valley Road North, Groton, Connecticut; and voted as follows to approve the proposed facility located at 1294 Pleasant Valley Road North, Groton, Connecticut:

Council Members	Vote Cast
Daniel F. Caruso, Chairman	Yes
Colin C. Tait, Vice Chairman	Yes
Commissioner Donald W. Downes Designee: Gerald J. Heffernan	Yes
Commissioner Gina McCarthy Designee: Brian J. Emerick	Abstain
Philip T. Ashton	Yes
Daniel P. Lynch, Jr.	Abstain
James J. Murphy, Jr.	Yes
Dr. Barbara Currier Bell	Yes
Edward S. Wilensky	Yes

Dated at New Britain, Connecticut, June 7, 2007.

STATE OF CONNECTICUT)

ss. New Britain, Connecticut :

COUNTY OF HARTFORD)

I hereby certify that the foregoing is a true and correct copy of the Findings of Fact, Opinion, and Decision and Order issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:

S. Derek Phelps
Executive Director
Connecticut Siting Council

I certify that a copy of the Findings of Fact, Opinion, and Decision and Order in Docket No. 330 has been forwarded by Certified First Class Return Receipt Requested mail on June 12, 2007, to all parties and intervenors of record as listed on the attached service list, dated February 26, 2007.

ATTEST:

Lisa A. Fontaine
Administrative Assistant
Connecticut Siting Council

Date: February 26, 2007

LIST OF PARTIES AND INTERVENORS
SERVICE LIST

Status Granted	Status Holder (name, address & phone number)	Representative (name, address & phone number)
Applicant	Optasite Towers LLC and Omnipoint Communications, Inc.	Julie Kohler, Esq. Carrie L. Larson, Esq. Deborah S. Erickson, Esq. Cohen and Wolf, P.C. 1115 Broad Street Bridgeport, CT 06604 (203) 368-0211 (203) 394-9901 fax jkohler@cohenandwolf.com clarson@cohenandwolf.com derickson@cohenandwolf.com

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

December 13, 2013

Adam F. Braillard
Regional Land Use Manager
Smartlink, LLC
33 Boston Post Road West
Marlborough, MA 01752

RE: **TS-AT&T-059T-131115** - New Cingular Wireless PCS, LLC request for an order to approve the shared used of an existing telecommunications facility located at 1294 Pleasant Valley Road North, Groton, Connecticut.

Dear Mr. Braillard:

At a public meeting held December 12, 2013, the Connecticut Siting Council (Council) ruled that the shared use of this existing tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility to avoid the unnecessary proliferation of tower structures with the following conditions:

- The proposed coax shall be installed and utilized in accordance with the recommendations made in the Structural Analysis Report prepared by FDH Engineering dated October 30, 2013 and stamped by Christopher Murphy; and
- Within 45 days following completion of the antenna installation, AT&T shall provide documentation certified by a professional engineer that its installation complied with the recommendations of the structural analysis.
- Any deviation from the proposed installation as specified in the original tower share request and supporting materials with the Council shall render this decision invalid;
- Any material changes to the proposed installation as specified in the original tower share request and supporting materials filed with the Council shall require an explicit request for modification to the Council pursuant to Connecticut General Statutes § 16-50aa, including all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65;
- Not less than 45 days after completion of the proposed installation, the Council shall be notified in writing that the installation has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

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CONNECTICUT SITING COUNCIL

This decision is under the exclusive jurisdiction of the Council. This facility has been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

This decision applies only to this request for tower sharing and is not applicable to any other request or construction. Please be advised that the validity of this action shall expire one year from the date of this letter.

The proposed shared use is to be implemented as specified in your letter dated November 13, 2013, including the placement of all necessary equipment and shelters within the tower compound.

Thank you for your attention and cooperation.

Very truly yours,

Robert Stein

Robert Stein
Chairman

RS/CDM/laf

c: The Honorable Heather B. Somers, Mayor, Town of Groton
Mark Oefinger, Town Manager, Town of Groton
Michael J. Murphy, AICP, Director of Planning and Development, Town of Groton
Kenneth C. Baldwin, Esq., Robinson & Cole LLP (o/b/o Verizon)

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www.ct.gov/csc

May 16, 2014

Steven Quinn
Smartlink
33 Boston Post Road West
Marlborough, MA 01752

RE: **TS-AT&T-059T-131115** – New Cingular Wireless PCS, LLC request for an order to approve the shared used of an existing telecommunications facility located at 1294 Pleasant Valley Road North, Groton, Connecticut. **Request to Revise.**

Dear Mr. Quinn:

At a public meeting of the Connecticut Siting Council (Council) held on May 15, 2014, the Council approved the requested amendment dated April 16, 2014, to the above-referenced tower share request that was originally approved by the Council on December 12, 2013, with the following conditions:

- The proposed coax and the accessory equipment shall be installed in accordance with the recommendations made in the Structural Analysis Report prepared by FDH Engineering dated April 8, 2014 and stamped by Bradley Newman; and
- Not more than 45 days following completion of the antenna installation, AT&T shall provide documentation certifying that its installation complied with the engineer's recommendation.

This decision is under the exclusive jurisdiction of the Council. This facility has been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

This decision applies only to the requested tower share amendment and is not applicable to any other request or construction. Please be advised that the validity of this action shall expire one year from the date of this letter.

The proposed shared use is to be implemented as specified in your tower share request letter dated November 13, 2013 and the request for an amendment letter dated April 16, 2014, including the placement of all necessary equipment and shelters within the tower compound.

Very truly yours,

Robert Stein MMB

Robert Stein
Chairman

RS/CDM/cm

c: The Honorable Rita M. Schmidt, Mayor, Town of Groton
Mark Oefinger, Town Manager, Town of Groton
Deborah G. Jones, Acting Director of Planning and Development, Town of Groton
SBA

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: CT13075-A, New London

Property Located at: 1294 Pleasant Valley Road North, Groton, CT, 06340

THE CITY/COUNTY OF: Groton / New London/Groton

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 JFM Enterprises, LLC.

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 Infrastructure, LLC

Jason Silberstein

Executive VP, Site Leasing

Date: 6/08/2022

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JOHN BURT TOWN MANAGER
TOWN OF GROTON
45 FORT HILL RD
GROTON CT 06340-4360

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JONATHAN J REINER, AICP TOWN PLANNER
TOWN OF GROTON
134 GROTON LONG POINT RD
GROTON CT 06340-4873

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JENNIFER MACIEROWSKI
JFM ENTERPRISES, LLC
920 PLEASANT VALLEY RD N
GROTON CT 06340-6116

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SBA COMMUNICATIONS CORP
8051 CONGRESS AVE
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Expected Delivery Date: 07/09/22
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MELANIE BACHMAN EXECUTIVE DIRECTOR
CT SITING COUNCIL
10 FRANKLIN SQ
NEW BRITAIN CT 06051-2655

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Hollis Redding TOWN MANAGER COPY

From: auto-reply@usps.com
Sent: Thursday, July 7, 2022 3:25 PM
To: Hollis Redding
Subject: USPS® Expected Delivery by Friday, July 8, 2022 arriving by 9:00pm 9405503699300290462099

UNITED STATES POSTAL SERVICE®

Hello **HOLLIS M REDDING**,

USPS is now in possession of your item as of 3:09 pm on July 7, 2022 in MERIDEN,

Tracking Number: **9405503699300290462099**

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Fri
8
July

By 9:00pm

Tracking & Delivery Options

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Hollis Redding TOWN PLANNER COPY

From: auto-reply@usps.com
Sent: Thursday, July 7, 2022 3:25 PM
To: Hollis Redding
Subject: USPS® Expected Delivery by Friday, July 8, 2022 arriving by 9:00pm 9405503699300290462105

UNITED STATES POSTAL SERVICE®

Hello **HOLLIS M REDDING**,

USPS is now in possession of your item as of 3:09 pm on July 7, 2022 in MERIDEN,

Tracking Number: **9405503699300290462105**

Expected Delivery By

Fri
8
July

By 9:00pm

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Data provided by USPS

Tracking number 940550369930029046211 2

Expected delivery
July 08, 08:00PM

- Tracking number created
  July 07, 12:00AM
- In transit
  July 07, 03:09PM
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- Delivered

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To: Hollis Redding
Subject: USPS® Expected Delivery by Monday, July 11, 2022 arriving by 9:00pm 9405503699300290462129
Date: Thursday, July 7, 2022 3:24:28 PM

TOWER OWNER COPY

Hello **HOLLIS M REDDING**,

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9405503699300290462129

Expected Delivery By

11
July

By 9:00pm

By 9:00pm