



November 13, 2020

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 CT2369  
5 Exeter Drive, Sterling, CT 06377 (the "Property")  
Latitude: 41.714027 N Longitude: 71.822722 W

Dear Ms. Bachman:

AT&T currently maintains (9) antennas at the 130-foot level on the existing 140' monopole tower ("Tower") at 5 Exeter Drive, Sterling, CT. The Tower is owned by SBA Infrastructure, LLC ("SBA") and the property is owned by the Town of Sterling. AT&T intends to modify its facility by replacing (3) antennas with (3) DMP65R-BU8DA & replacing (6) RRUs with (3) B5/B12 4449 RRUs and (3) 8843 B2 B66A RRUs. The height of AT&Ts existing and proposed antennas & RRUs is 130'.

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

The facility received CT Siting Council ("CSC") approval under Docket 345 on February 14, 2008. Per the CSC Decision & Order, the tower shall be no taller than 140'. The AT&T modification complies with the above-mentioned approval. AT&T received CSC approval under TS-CING-136-080328.

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 the Honorable Russell M. Gray, First Selectman, Town of Sterling as elected official & property owner, and Ms. Melissa Gil, Zoning Enforcement, Town of Sterling. SBA Infrastructure, LLC, the tower owner, received a copy by email.

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](mailto:hredding@saigrp.com)

Enclosures

Cc: Honorable Russell M. Gray, 1st Selectman, Town of Sterling, elected official/property owner  
Ms. Melissa Gil, Zoning Enforcement Officer, Town of Sterling  
SBA Infrastructure, LLC as tower owner

## Power Density

### Existing Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm <sup>2</sup> )	Freq. Band (MHz <sup>**</sup> )	Limit S (mW/cm <sup>2</sup> )	%MPE
Other Carriers*							3.24%
AT&T	1	565	130	0.0132	880	0.5867	0.23%
AT&T	1	283	130	0.0066	1900	1.0000	0.07%
AT&T	1	525	130	0.0123	880	0.5867	0.21%
AT&T	1	1045	130	0.0244	1900	1.0000	0.24%
AT&T	2	3381	130	0.1582	734	0.4893	3.23%
Site Total							7.22%

\*Per CSC Records (available upon request, includes calculation formulas)

\*\* If a range of frequencies are used, such as 880-894, enter the lowest value, i.e. 880

### Proposed Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm <sup>2</sup> )	Freq. Band (MHz <sup>**</sup> )	Limit S (mW/cm <sup>2</sup> )	%MPE
Other Carriers*							3.24%
AT&T UMTS	1	565	130	0.0132	880	0.5867	0.23%
AT&T LTE	1	2951	130	0.0690	700	0.4667	1.48%
AT&T LTE	2	3664	130	0.1714	1900	1.0000	1.71%
AT&T LTE	1	1476	130	0.0345	700	0.4667	0.74%
AT&T LTE	1	1000	130	0.0234	850	0.5667	0.41%
AT&T LTE	1	5070	130	0.1186	2100	1.0000	1.19%
AT&T 5G	1	1000	130	0.0234	850	0.5667	0.41%
Site Total							9.41%

\*Per CSC Records (available upon request, includes calculation formulas)

\*\* If a range of frequencies are used, such as 880-894, enter the lowest value, i.e. 880

**PROJECT INFORMATION**

SCOPE OF WORK: ITEMS TO BE MOUNTED ON THE EXISTING MONOPOLE:

- NEW AT&T ANTENNAS: (DMP65R-BU8DA) @ POS. 4 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW LOCATION OF EXISTING AT&T ANTENNAS (HPA-65R-BU8AA) @ POS. 3, RELOCATED FROM POS. 4 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: B5/B12 4449 (850/700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: 8843 B2/B66A (PCS/AWS) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- ADD Y-CABLES (TOTAL OF 6).
- NEW AT&T DC TRUNK FOR TO HEAVIER GAUGE TO SUPPORT DUAL BAND RRUS (TOTAL OF 2) (TO REPLACE EXISTING).
- INSTALL NEW HANDRAIL KIT, SITEPRO1 P/N HRK12 (OR APPROVED). HANDRAIL KIT IS REQUIRED PER AT&T TECHNICAL DIRECTIVE TO STABILIZE EXISTING CANTILEVERED ANTENNAS.
- REMOVE EXISTING PIPE MASTS AND INSTALL NEW 2-1/2" STD. (2.88" O.D.) 10'-0" LONG PIPE MASTS BEHIND EXISTING HPA-65R-BUU-H8 ANTENNAS (TYP. OF 1 PER SECTOR, TOTAL OF 3).

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:

- NEW AT&T RRUS: RRUS-4478 B14 (700) MOUNTED ON PROPOSED H-FRAME (TOTAL OF 2) (ALPHA & GAMMA WILL SHARE).
- ADD RBS 6630 FOR 5G.
- ADD IDLe.
- PROPOSED AT&T SURGE ARRESTOR (TSXDC-4310FM) (TOTAL OF 8).
- PROPOSED NEW AT&T DC POWER PLANT.

ITEMS TO BE REMOVED:

- EXISTING AT&T RRUS-11 B12 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T RRUS-32 B2 (PCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T ANTENNAS (7770) @ POS. 3 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T (2) DC POWER.
- EXISTING AT&T AT&T DC POWER PLANT.

ITEMS TO REMAIN:

- EXISTING AT&T ANTENNAS (7770) @ POS. 1 (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- EXISTING AT&T SURGE ARRESTOR (TOTAL OF 1)
- EXISTING AT&T TMA'S (LGP17201) (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- (12) 1-5/8" COAX CABLES & (1) FIBER RUN.

SITE ADDRESS: 7 EXETER DRIVE  
STERLING, CT 06377

LATITUDE: 41.714027° N, 41° 42' 50.50" N  
LONGITUDE: 71.822722° W, 71° 49' 21.80" W

TYPE OF SITE: MONOPOLE / INDOOR EQUIPMENT

STRUCTURE HEIGHT: 140'-0"±  
RAD CENTER: 130'-0"±

CURRENT USE: TELECOMMUNICATIONS FACILITY  
PROPOSED USE: TELECOMMUNICATIONS FACILITY

**DRAWING INDEX**

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

**SBA SITE #: CT11560**  
**FCC SITE #: 1261045**



**SITE NUMBER: CT2369**

**SITE NAME: STERLING CT EXETER DR**

**FA CODE: 10113182**

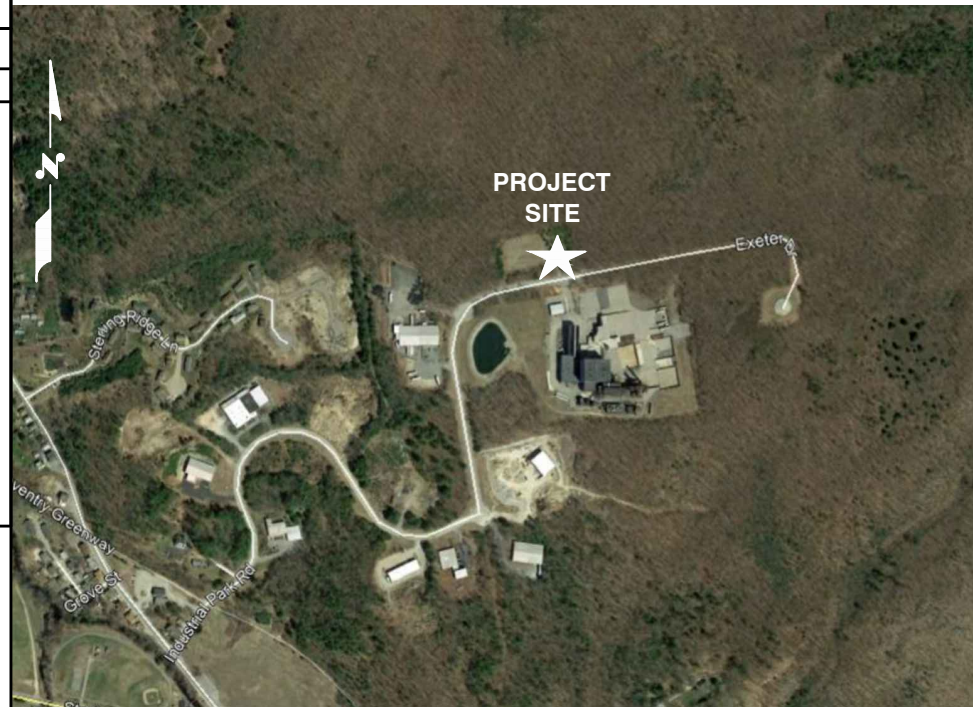
**PACE ID: MRCTB048849, MRCTB048887, MRCTB048951**

**PROJECT: LTE 3C\_4C\_4TX4RX\_5G 2020 UPGRADE**

**VICINITY MAP**

**DIRECTIONS TO SITE:**

START OUT GOING NORTHEAST ON ENTERPRISE DR TOWARD CAPITOL BLVD. 0.4 MI TURN LEFT ONTO CAPITOL BLVD. 0.2 MI TURN LEFT ONTO WEST ST. 0.2 MI TAKE RAMP LEFT FOR I-91 N. 4.5 MI AT EXIT 25, TAKE RAMP RIGHT FOR CT-3 NORTH TOWARD GLASTONBURY. 2.4 MI TAKE RAMP RIGHT FOR CT-2 EAST TOWARD NORWICH. 31.9 MI KEEP STRAIGHT ONTO CT-2 E / CT-32 S. 0.8 MI AT EXIT 28N, TAKE RAMP RIGHT FOR I-395 NORTH TOWARD PROVIDENCE. 18.6 MI TAKE RAMP RIGHT. 0.3 MI TURN LEFT ONTO CT-14 W / E MAIN ST. 0.1 MI ROAD NAME CHANGES TO CT-14 E / WARD AVE. 0.7 MI TURN LEFT ONTO CT-14 / S MAIN ST. 3.4 MI TURN LEFT ONTO MAIN ST. 438 FT TURN RIGHT ONTO INDUSTRIAL PARK RD. 0.5 MI TURN LEFT ONTO INDUSTRIAL PARK RD N. 0.2 MI ROAD NAME CHANGES TO EXETER DR. 74 FT ARRIVE AT 7 EXETER DR, STERLING, CT 06377.



**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 TOLL FREE 1-800-922-4455  
OR CALL 811

**UNDERGROUND SERVICE ALERT**

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

12 INDUSTRIAL WAY  
SALEM, NH 03079

**SITE NUMBER: CT2369**  
**SITE NAME: STERLING CT EXETER DR**  
**SBA SITE # ID: CT11560**  
**FCC SITE #: 1261045**  
7 EXETER DRIVE  
STERLING, CT 06377  
WINDHAM COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	11/03/20	ISSUED FOR CONSTRUCTION	AM	HC	DPH
A	10/16/20	ISSUED FOR REVIEW	AM	HC	DPH

SCALE: AS SHOWN    DESIGNED BY: HC    DRAWN BY: AM

SITE NUMBER	DRAWING NUMBER	REV
CT2369	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) LIGHTNING 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 (ANTENNA)	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		



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



12 INDUSTRIAL WAY  
 SALEM, NH 03079

**SITE NUMBER: CT2369**  
**SITE NAME: STERLING CT EXETER DR**  
**SBA SITE # ID: CT11560**  
**FCC SITE #: 1261045**  
 7 EXETER DRIVE  
 STERLING, CT 06377  
 WINDHAM COUNTY

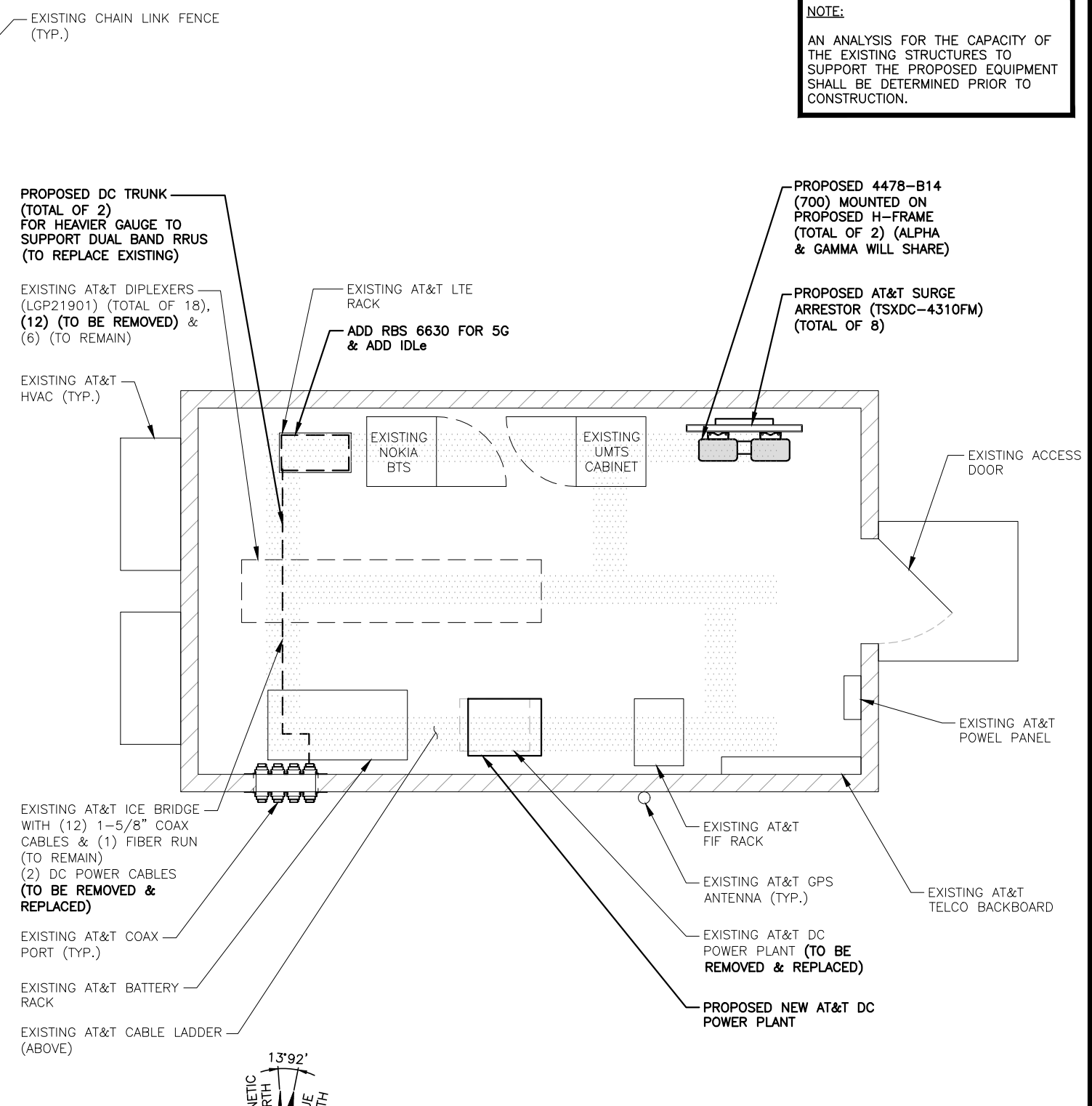
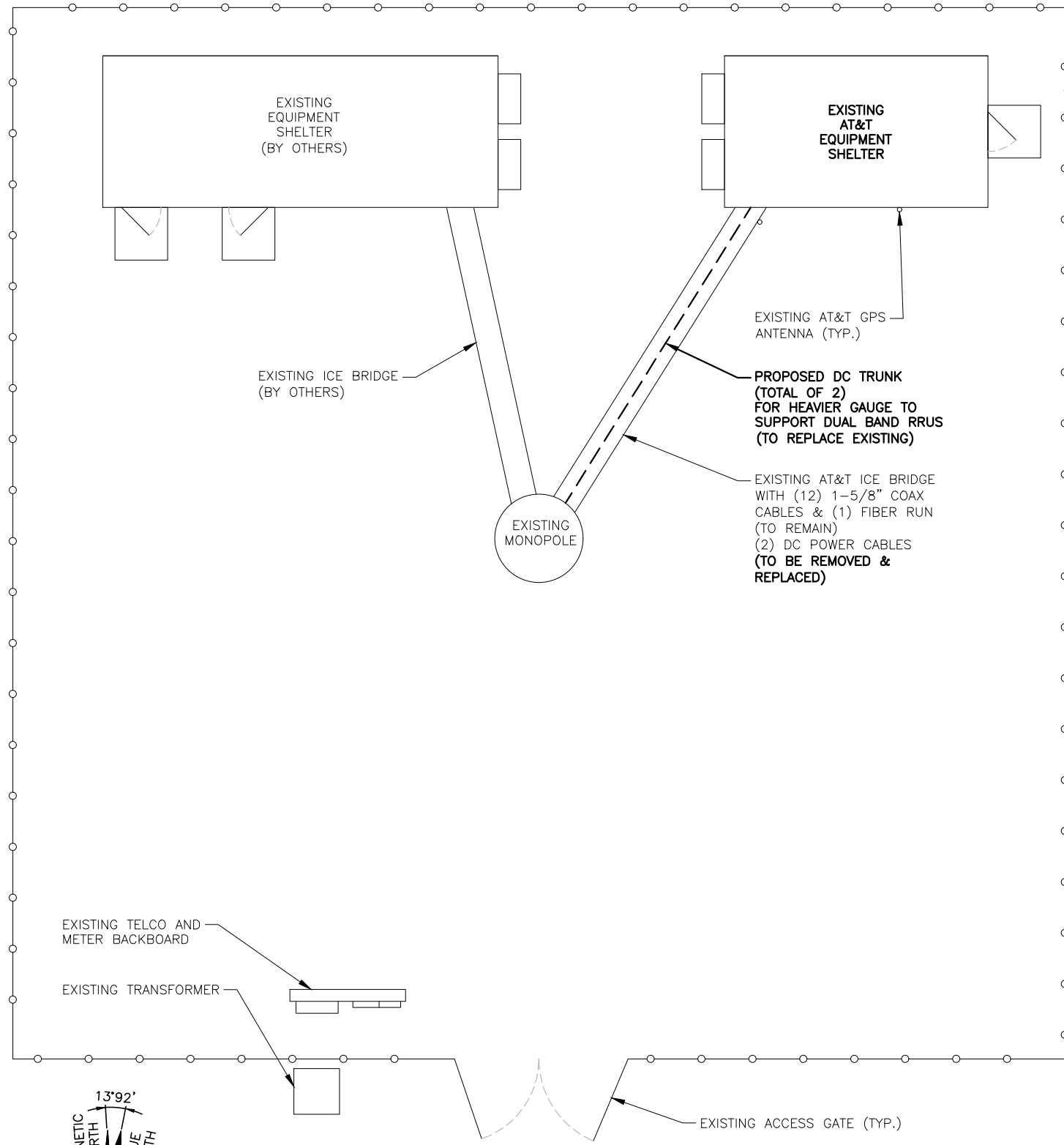


500 ENTERPRISE DRIVE, SUITE 3A  
 ROCKY HILL, CT 06067

1		11/03/20	ISSUED FOR CONSTRUCTION	AM	HC	DPH		AT&T	
A		10/16/20	ISSUED FOR REVIEW	AM	HC	DPH		GENERAL NOTES	
NO.	DATE	REVISIONS		BY	CHK	APP'D	LTE 3C_4C_4TX4RX_5G 2020 UPGRADE		
SCALE: AS SHOWN		DESIGNED BY: HC		DRAWN BY: AM		SITE NUMBER		DRAWING NUMBER	REV
						CT2369		GN-1	1

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

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



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



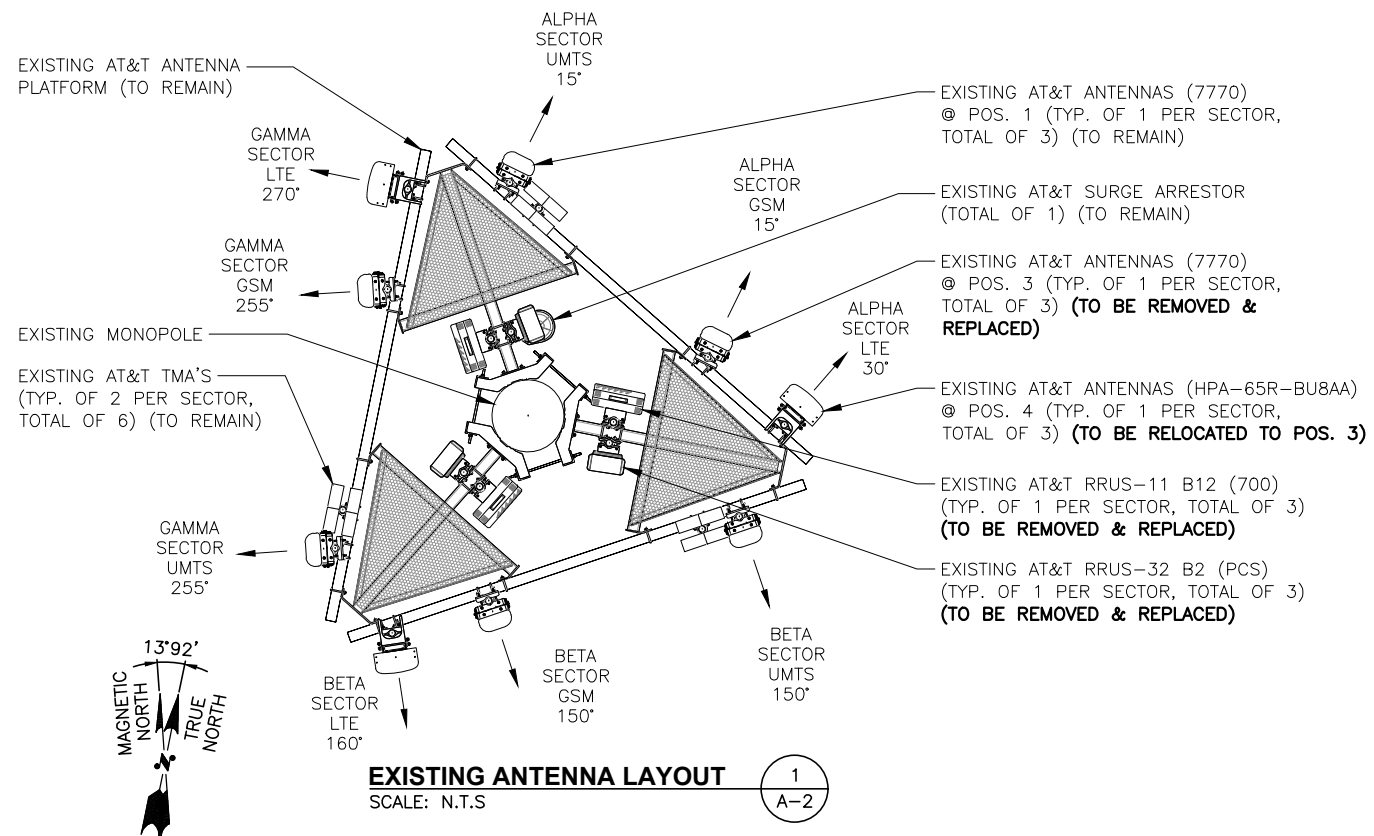
**EQUIPMENT PLAN**  
22x34 SCALE: 1/2"=1'-0"  
11x17 SCALE: 1/4"=1'-0"



NO.	DATE	REVISIONS	BY	CHK	APP'D
1	11/03/20	ISSUED FOR CONSTRUCTION	AM	HC	DPH
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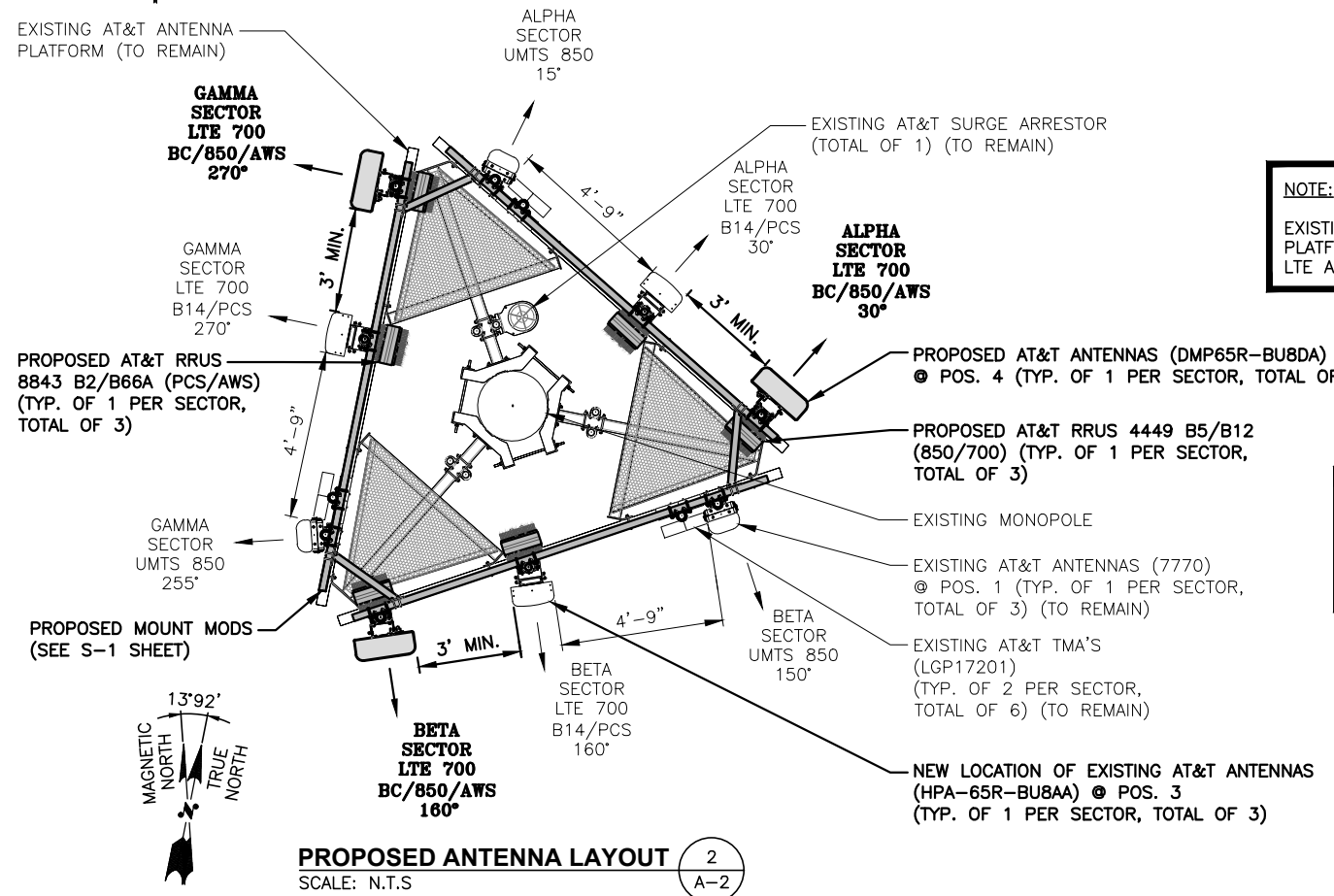
SCALE: AS SHOWN DESIGNED BY: HC DRAWN BY: AM





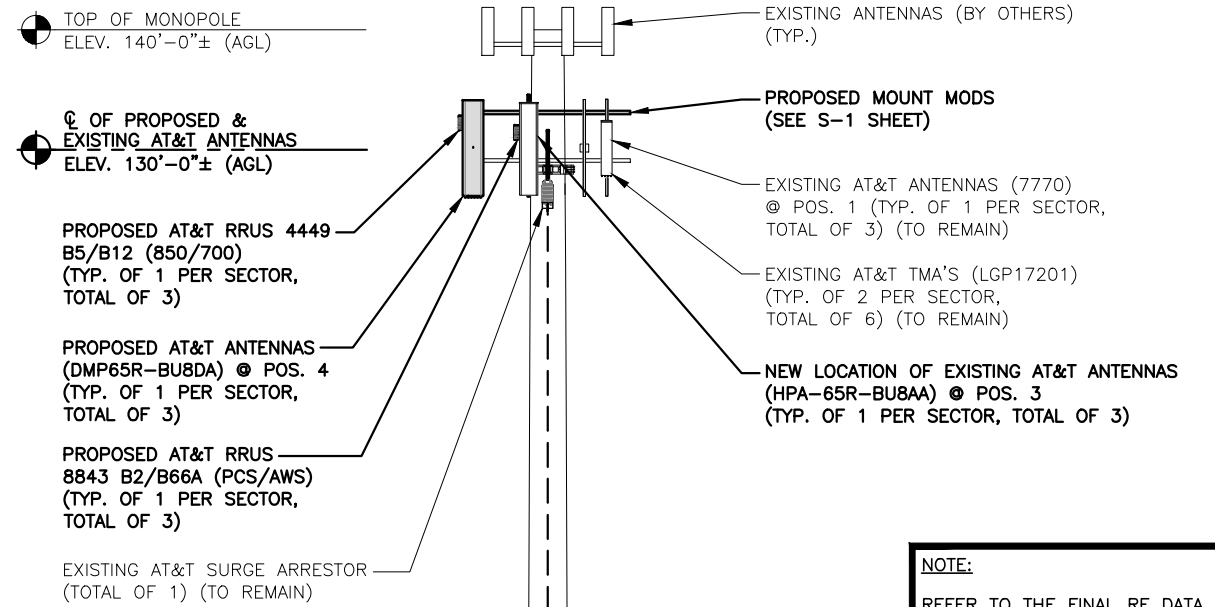
**EXISTING ANTENNA LAYOUT**  
SCALE: N.T.S.

1  
A-2



**PROPOSED ANTENNA LAYOUT**  
SCALE: N.T.S.

2  
A-2



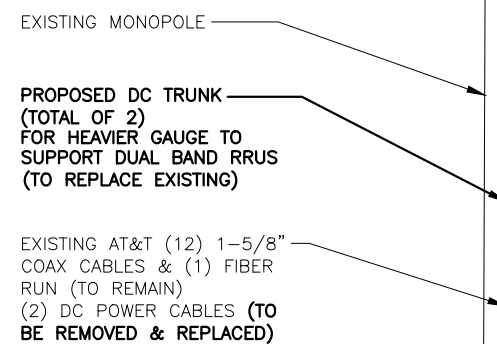
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REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

**NOTE:**  
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: OCTOBER 16, 2020

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

**NOTE:**  
EXISTING ANTENNA MOUNTING PLATFORM TO BE ROTATED TO MATCH LTE ALPHA & GAMMA AZIMUTHS

**NOTE:**  
EXISTING PIPE MOUNT TO BE MOVED IN POSITION 3 AS NEEDED TO ACCOMMODATE A MINIMUM SEPARATION OF 3'-0" BETWEEN ANTENNA POSITIONS 3 & 4.



**NOTE:**  
GROUND EQUIPMENT NOT SHOWN FOR CLARITY

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

3  
A-2

**HGD 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: CT2369**  
**SITE NAME: STERLING CT EXETER DR**  
**SBA SITE # ID: CT11560**  
**FCC SITE #: 1261045**  
7 EXETER DRIVE  
STERLING, CT 06377  
WINDHAM COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	11/03/20	ISSUED FOR CONSTRUCTION	AM	HC	DPH
A	10/16/20	ISSUED FOR REVIEW	AM	HC	DPH

SCALE: AS SHOWN    DESIGNED BY: HC    DRAWN BY: AM

**DANIEL P. HAMM**  
No. 24178  
LICENSED PROFESSIONAL ENGINEER

**AT&T**  
**ANTENNA LAYOUTS & ELEVATION**  
**LTE 3C\_4C\_4TX4RX\_5G 2020 UPGRADE**  
SITE NUMBER: CT2369    DRAWING NUMBER: A-2    REV: 1

**ANTENNA SCHEDULE**

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA $\phi$ H EIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	FREQUENCY	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	EXISTING	UMTS 850	7770	55X11X5	130'-0"±	15°	(2)(E) LGP17201 (2)(E)(G) LGP21901	-	-	-	(2)1-5/8" COAX	(E) (1) RAYCAP DC6-48-60-18-8F
A2	-	-	-	-	-	-	-	-	-	-	-	
A3	EXISTING	LTE 700 B14/PCS	HPA-65R-BU8AA	96X11.7X7.6	130'-0"±	30°	-	(P)(1)(G) RRUS 4478 B14 (P)(1) RRUS 8843 B2/B66A	(700) (AWS/PCS)	18.1"x13.4"x8.3" 14.9"x13.2"x10.9"	(2)1-5/8" COAX	
A4	PROPOSED	LTE 700 BC/850/AWS	DMP65R-BU8DA	96.0X20.7X7.7	130'-0"±	30°	-	(P)(1) RRUS 4449 B5/B12	(850/700)	14.9"x13.2"x10.4"	(P)(2) DC & (E)(1) FIBER	
B1	EXISTING	UMTS 850	7770	55X11X5	130'-0"±	150°	(2)(E) LGP17201 (2)(E)(G) LGP21901	-	-	-	(2)1-5/8" COAX	SHARED
B2	-	-	-	-	-	-	-	-	-	-	-	
B3	EXISTING	LTE 700 B14/PCS	HPA-65R-BU8AA	96X11.7X7.6	130'-0"±	160°	-	(P)(1)(G) RRUS 4478 B14 (P)(1) RRUS 8843 B2/B66A	(700) (AWS/PCS)	18.1"x13.4"x8.3" 14.9"x13.2"x10.9"	(2)1-5/8" COAX	
B4	PROPOSED	LTE 700 BC/850/AWS	DMP65R-BU8DA	96.0X20.7X7.7	130'-0"±	160°	-	(P)(1) RRUS 4449 B5/B12	(850/700)	14.9"x13.2"x10.4"	-	
C1	EXISTING	UMTS 850	7770	55X11X5	130'-0"±	255°	(2)(E) LGP17201 (2)(E)(G) LGP21901	-	-	-	(2)1-5/8" COAX	SHARED
C2	-	-	-	-	-	-	-	-	-	-	-	
C3	EXISTING	LTE 700 B14/PCS	HPA-65R-BU8AA	96X11.7X7.6	130'-0"±	270°	-	(P)(1) RRUS 8843 B2/B66A	(AWS/PCS)	14.9"x13.2"x10.9"	(2)1-5/8" COAX	
C4	PROPOSED	LTE 700 BC/850/AWS	DMP65R-BU8DA	96.0X20.7X7.7	130'-0"±	270°	-	(P)(1) RRUS 4449 B5/B12	(850/700)	14.9"x13.2"x10.4"	-	

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

NOTE:  
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:  
HUDSON DESIGN GROUP, LLC.  
DATED: OCTOBER 16, 2020

NOTE:  
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**FINAL ANTENNA SCHEDULE**

SCALE: N.T.S.

1  
A-3

RRU CHART		
QUANTITY	MODEL	SIZE (L x W x D)
3(P)	4449 B5/B12 (850/700)	14.9"x13.2"x10.4"
3(P)	8843 B2/B66A (AWS/PCS)	14.9"x13.2"x10.9"
2(P)(G)	4478 B14 (700)	18.1"x13.4"x8.3"

NOTE:  
MOUNT PER MANUFACTURER'S SPECIFICATIONS

NOTE:

SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

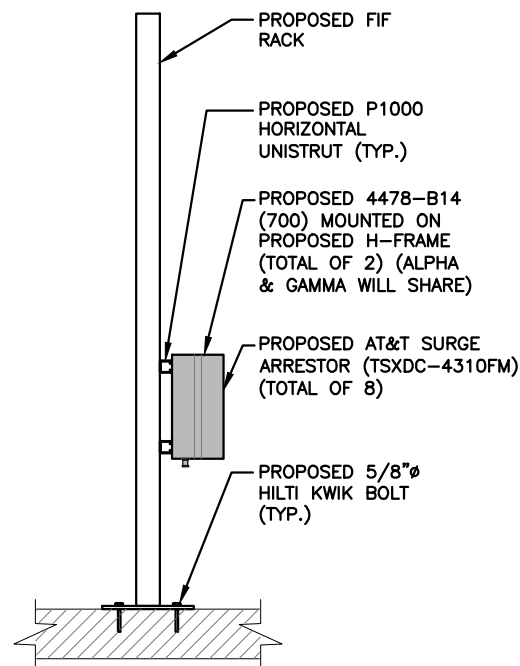
PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

NOTE:  
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

**PROPOSED RRUS DETAIL**

SCALE: N.T.S.

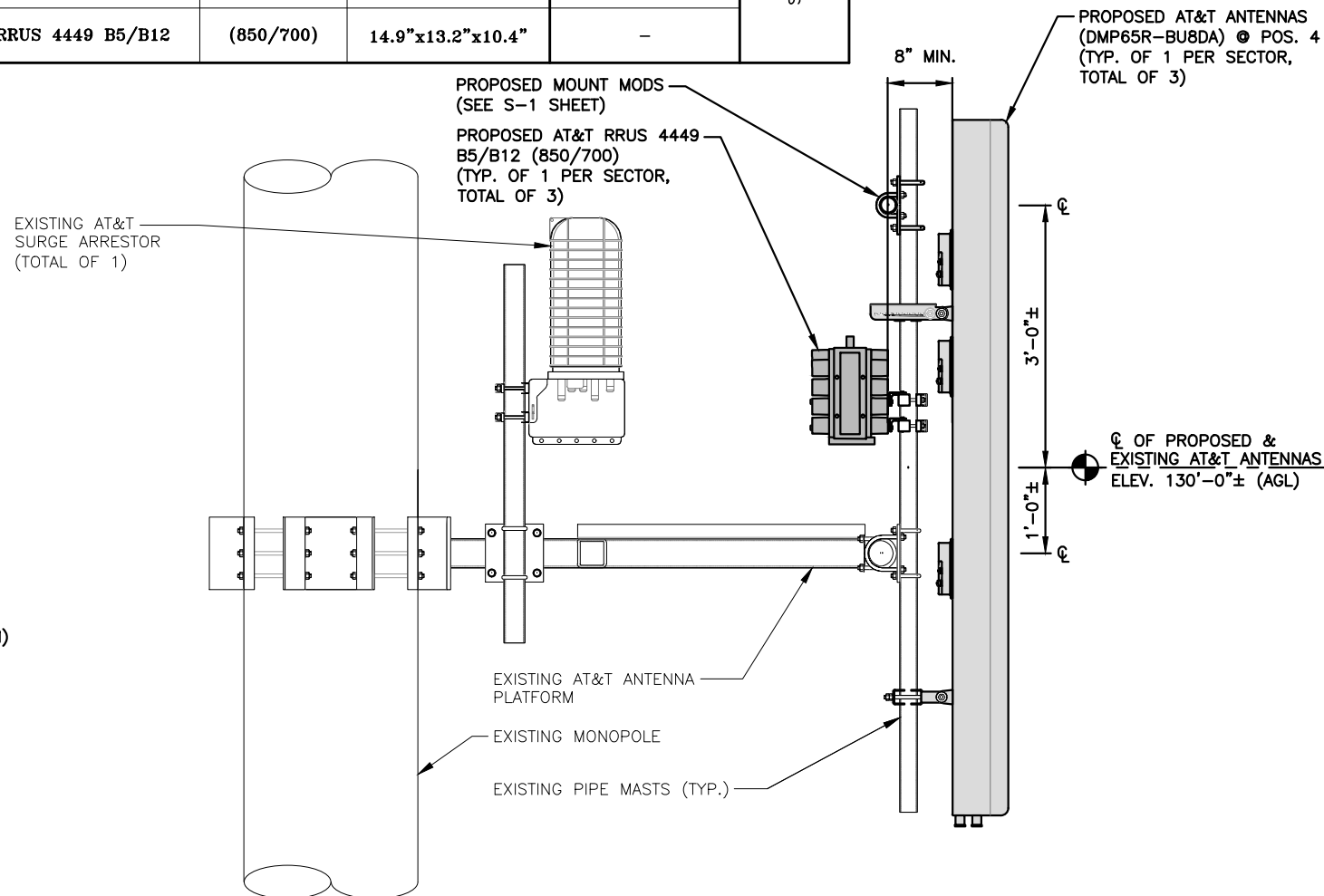
2  
A-3



**PROPOSED EQUIPMENT RACK DETAIL**

SCALE: N.T.S.

3  
A-3



**PROPOSED LTE ANTENNA MOUNTING DETAIL**

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

4  
A-3



**STRUCTURAL NOTES:**

- 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.
- 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.
- 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".
- STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
- 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.
- 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.
- 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.
- 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.
- 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 LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
- 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 D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL". 14TH EDITION.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
- 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 PERFORMANCE 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 <sup>1</sup>
N/A	MATERIAL SPECIFICATIONS REPORT <sup>2</sup>
N/A	FABRICATOR NDE INSPECTION
N/A	PACKING SLIPS <sup>3</sup>

ADDITIONAL TESTING AND INSPECTIONS:

**DURING CONSTRUCTION**

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
<b>REQUIRED</b>	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS <sup>4</sup>
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION <sup>5</sup>
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
<b>REQUIRED</b>	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS <sup>6</sup>
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
<b>REQUIRED</b>	PHOTOGRAPHS

ADDITIONAL TESTING AND INSPECTIONS:

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

12 INDUSTRIAL WAY  
SALEM, NH 03079

**SITE NUMBER: CT2369**  
**SITE NAME: STERLING CT EXETER DR**  
**SBA SITE # ID: CT11560**  
**FCC SITE #: 1261045**  
7 EXETER DRIVE  
STERLING, CT 06377  
WINDHAM COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	11/03/20	ISSUED FOR CONSTRUCTION	AM	HC	DPH
A	10/16/20	ISSUED FOR REVIEW	AM	HC	DPH

SCALE: AS SHOWN    DESIGNED BY: HC    DRAWN BY: AM

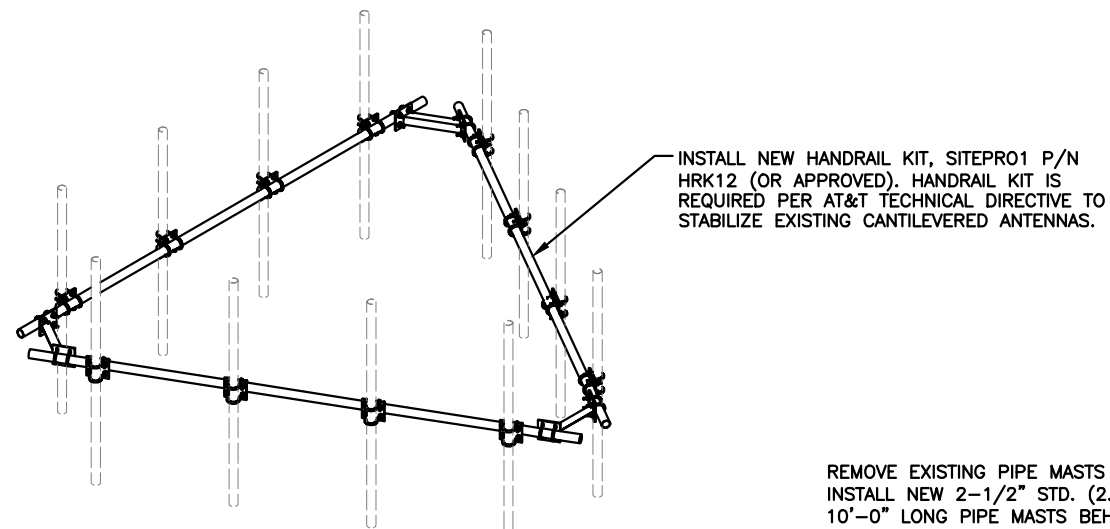
AT&T  
DETAILS  
LTE 3C\_4C\_4TX4RX\_5G 2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT2369	SN-1	1

**NOTE:**  
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**NOTE:**  
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HUDSON DESIGN GROUP, LLC.  
DATED: OCTOBER 16, 2020

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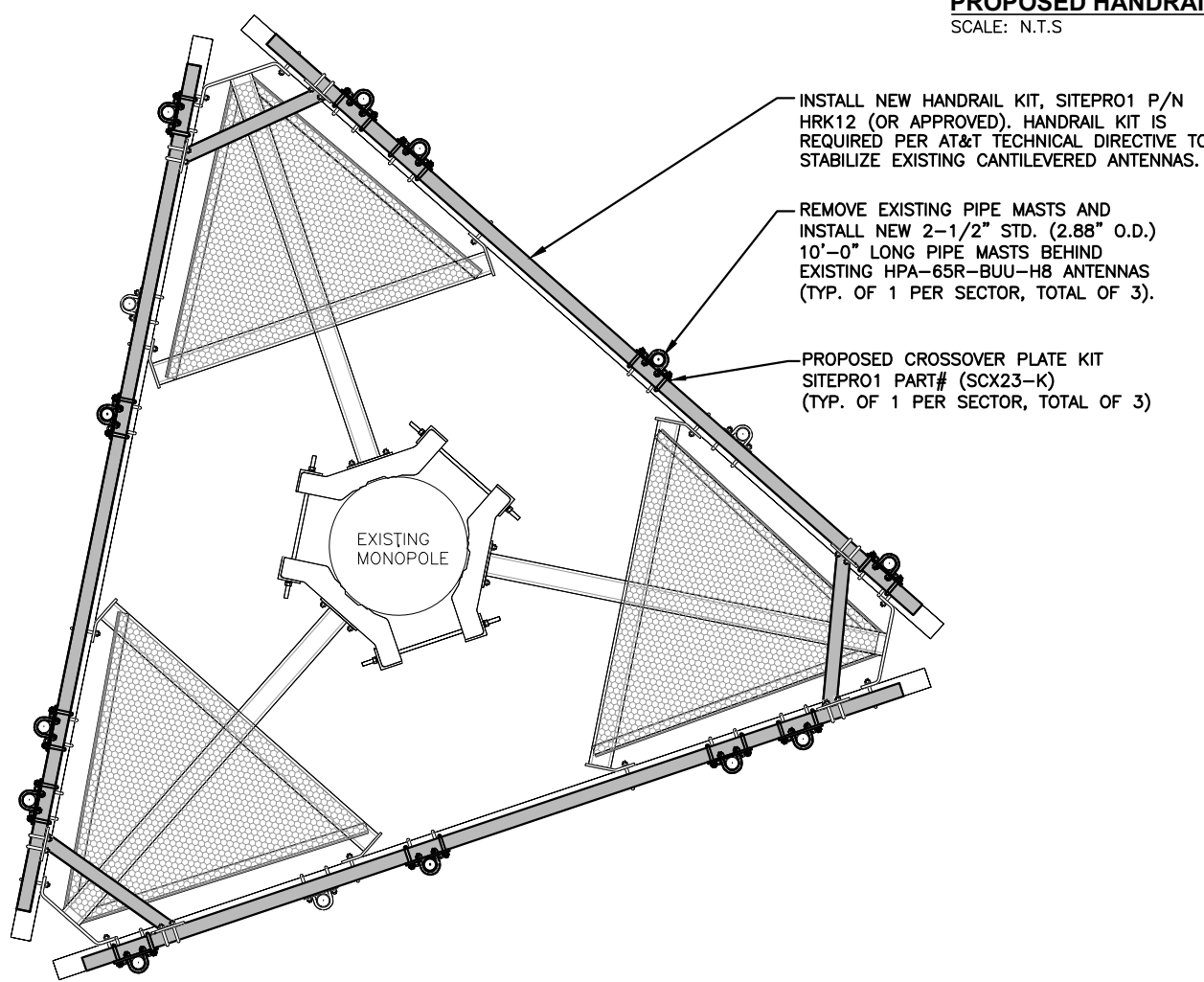
**PROPOSED HANDRAIL KIT DETAIL** 2  
SCALE: N.T.S. S-1

INSTALL NEW HANDRAIL KIT, SITEPRO1 P/N HRK12 (OR APPROVED). HANDRAIL KIT IS REQUIRED PER AT&T TECHNICAL DIRECTIVE TO STABILIZE EXISTING CANTILEVERED ANTENNAS.

REMOVE EXISTING PIPE MASTS AND INSTALL NEW 2-1/2" STD. (2.88" O.D.) 10'-0" LONG PIPE MASTS BEHIND EXISTING HPA-65R-BUU-H8 ANTENNAS (TYP. OF 1 PER SECTOR, TOTAL OF 3).

INSTALL NEW HANDRAIL KIT, SITEPRO1 P/N HRK12 (OR APPROVED). HANDRAIL KIT IS REQUIRED PER AT&T TECHNICAL DIRECTIVE TO STABILIZE EXISTING CANTILEVERED ANTENNAS.

NEW LOCATION OF EXISTING AT&T ANTENNAS (HPA-65R-BUU-H8) @ POS. 3 (TYP. OF 1 PER SECTOR, TOTAL OF 3)



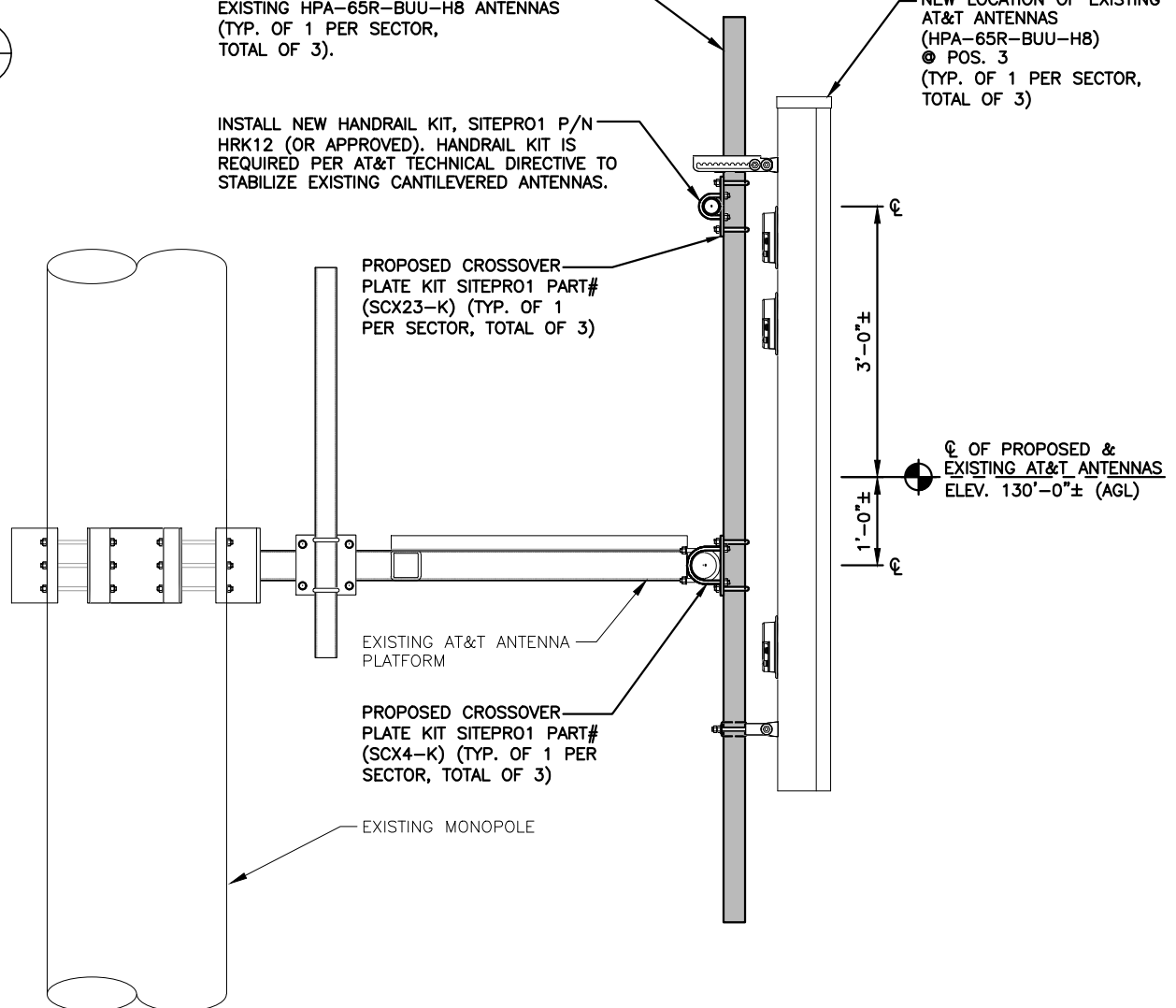
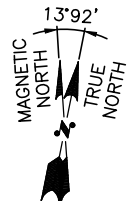
**PROPOSED MOUNT MODIFICATIONS PLAN** 1  
22x34 SCALE: 3/4"=1'-0"  
11x17 SCALE: 3/8"=1'-0" S-1

INSTALL NEW HANDRAIL KIT, SITEPRO1 P/N HRK12 (OR APPROVED). HANDRAIL KIT IS REQUIRED PER AT&T TECHNICAL DIRECTIVE TO STABILIZE EXISTING CANTILEVERED ANTENNAS.

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PROPOSED CROSSOVER PLATE KIT SITEPRO1 PART# (SCX23-K) (TYP. OF 1 PER SECTOR, TOTAL OF 3)

EXISTING MONOPOLE



**PROPOSED MOUNT MODIFICATIONS DETAIL** 3  
22x34 SCALE: 1"=1'-0"  
11x17 SCALE: 1/2"=1'-0" S-1

PROPOSED CROSSOVER PLATE KIT SITEPRO1 PART# (SCX23-K) (TYP. OF 1 PER SECTOR, TOTAL OF 3)

PROPOSED CROSSOVER PLATE KIT SITEPRO1 PART# (SCX4-K) (TYP. OF 1 PER SECTOR, TOTAL OF 3)

EXISTING MONOPOLE

EXISTING AT&T ANTENNA PLATFORM

☉ OF PROPOSED & EXISTING AT&T ANTENNAS ELEV. 130'-0"± (AGL)

**HGD 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

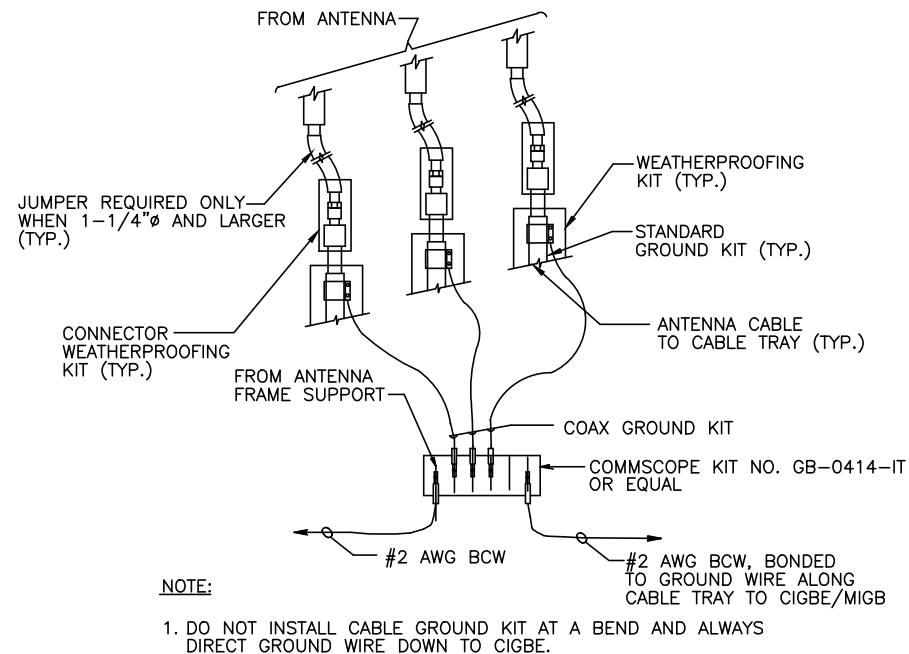
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SITE NAME: STERLING CT EXETER DR  
SBA SITE # ID: CT11560  
FCC SITE #: 1261045  
7 EXETER DRIVE STERLING, CT 06377 WINDHAM COUNTY

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

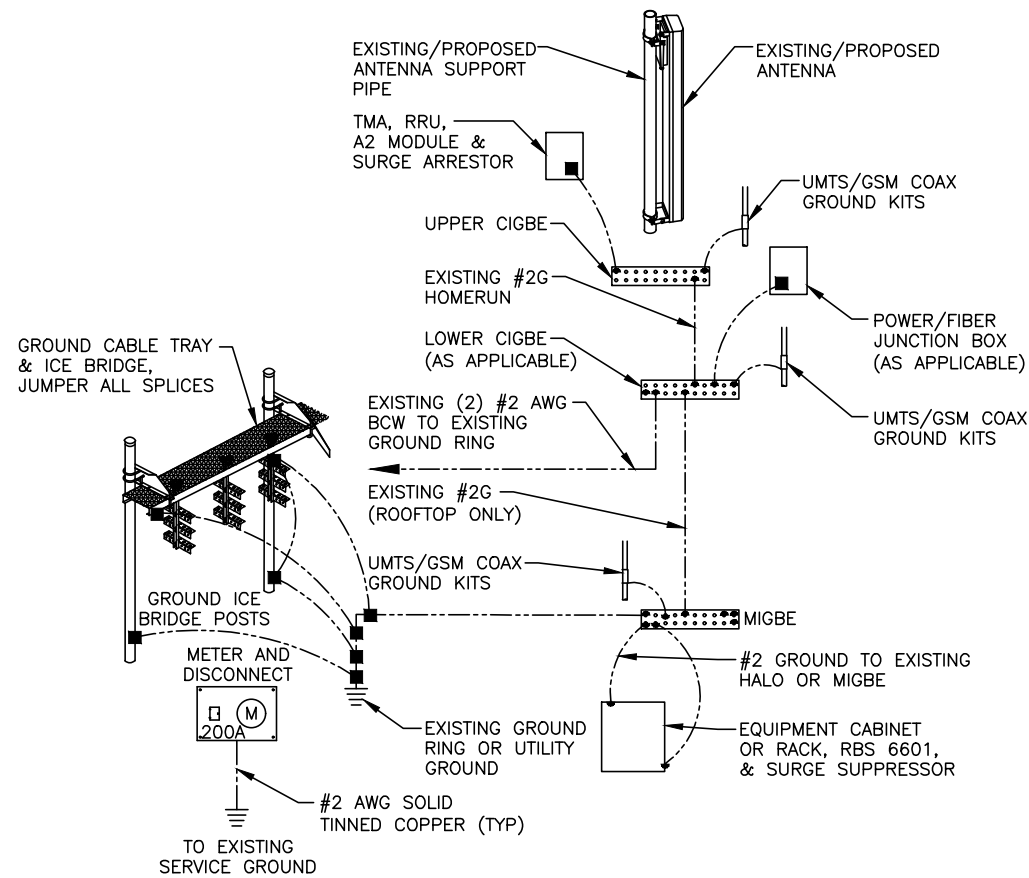
1	11/03/20	ISSUED FOR CONSTRUCTION	AM	HC	DPH
A	10/16/20	ISSUED FOR REVIEW	AM	HC	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: HC	DRAWN BY: AM		

**Daniel P. Hamm**  
No. 24178  
LICENSED PROFESSIONAL ENGINEER

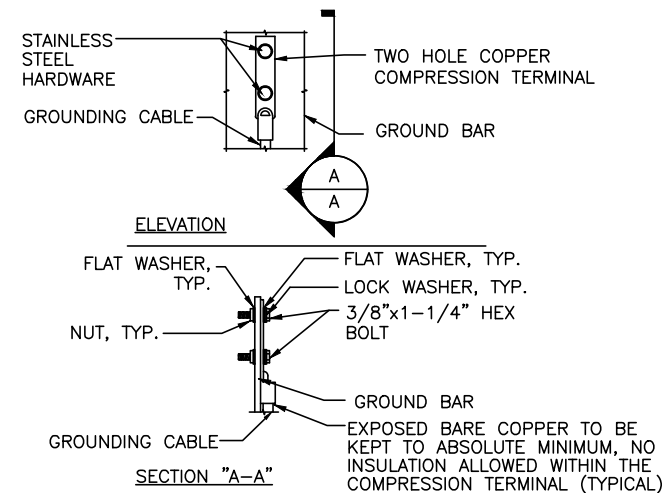
AT&T  
DETAILS  
LTE 3C\_4C\_4TX4RX\_5G 2020 UPGRADE  
SITE NUMBER: CT2369  
DRAWING NUMBER: S-1  
REV: 1



**GROUND WIRE TO GROUND BAR CONNECTION DETAIL** 1  
SCALE: N.T.S. G-1



**GROUNDING RISER DIAGRAM** 2  
SCALE: N.T.S. 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** 3  
SCALE: N.T.S. G-1

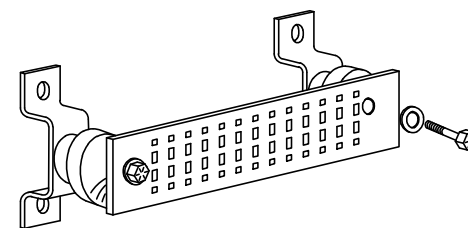
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

**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)** 4  
SCALE: N.T.S. G-1





**Tower Engineering Solutions**

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

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## **Structural Analysis Report**

**Existing 140 ft Nudd Corporation Monopole**

**Customer Name: SBA Communications Corp**

**Customer Site Number: CT11560-A**

**Customer Site Name: Sterling 6, CT**

**Carrier Name: AT&T (App#: 141066, V1)**

**Carrier Site ID / Name: CT2369 / Sterling 6, CT**

**Site Location: 24 Exeter Drive**

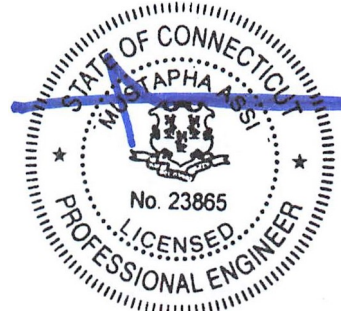
**Sterling, Connecticut**

**Windham County**

**Latitude: 41.714047**

**Longitude: -71.822735**

Exp.01/31/2021



### **Analysis Result:**

**Max Structural Usage: 63.7% [Pass]**

11/03/2020

**Max Foundation Usage: 42.0% [Pass]**

**Additional Usage Caused by Mount Modification: +0.8%**

**Report Prepared By: Younus Alkarawi**



**Tower Engineering Solutions**

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## **Structural Analysis Report**

**Existing 140 ft Nudd Corporation Monopole**

**Customer Name: SBA Communications Corp**

**Customer Site Number: CT11560-A**

**Customer Site Name: Sterling 6, CT**

**Carrier Name: AT&T (App#: 141066, V1)**

**Carrier Site ID / Name: CT2369 / Sterling 6, CT**

**Site Location: 24 Exeter Drive**

**Sterling, Connecticut**

**Windham County**

**Latitude: 41.714047**

**Longitude: -71.822735**

### **Analysis Result:**

**Max Structural Usage: 63.7% [Pass]**

**Max Foundation Usage: 42.0% [Pass]**

**Additional Usage Caused by Mount Modification: +0.8%**

**Report Prepared By: Younus Alkarawi**

## Introduction

The purpose of this report is to summarize the analysis results on the 140 ft Nudd Corporation 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

<b>Tower Drawings</b>	Monopole original structural design report prepared by Fred A. Nudd, Corp. Dated 03-17-2008. Drawing No 308-13078-1. Project No 308-13078. Monopole previous structural report prepared by FDH Engineering, Inc. Dated 03-24-2015. Project No 15BHJV1400.
<b>Foundation Drawing</b>	Monopole original foundation design prepared by Fred A. Nudd, Corp. Dated 03-17-2008. Drawing No 308-13078-2. Project No 308-13078.
<b>Geotechnical Report</b>	Soil properties obtained from Monopole original structural design report prepared by Fred A. Nudd, Corp. Dated 03-17-2008. Drawing No 308-13078-1. Project No 308-13078
<b>Modification Drawings</b>	N/A
<b>Mount Analysis</b>	AT&T MA by SAI Communications# 2051A0WKHH, Dated 10/16/2020

## 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.

<b>Wind Speed Used in the Analysis:</b>	Ultimate Design Wind Speed $V_{ult} = 135.0$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 105.0$ mph (3-Sec. Gust)
<b>Wind Speed with Ice:</b>	50 mph (3-Sec. Gust) with 1" radial ice concurrent
<b>Operational Wind Speed:</b>	60 mph + 0" Radial ice
<b>Standard/Codes:</b>	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
<b>Exposure Category:</b>	B
<b>Structure Class:</b>	II
<b>Topographic Category:</b>	1
<b>Crest Height:</b>	0 ft
<b>Seismic Parameters:</b>	$S_s = 0.17$ , $S_1 = 0.061$

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	140.0	6	RFS FD9R6004/2C-3L	Low Profile Platform	(12) 1 5/8" (1) 1 5/8" Fiber	Verizon
2	137.0	2	Antel - BXA-70080/6CF - Panel			
3		4	Antel - BXA-70063/6CF - Panel			
4		6	Commscope - HBXX-6517DS-A2M - Panel			
5		3	ALU RRH2x60-AWS			
6		3	ALU RRH2X60-PCS			
7		1	RFS Celwave DB-T1-6Z-8AB-OZ			
-	130.0	9	Powerwave - 7770 - Panel	Low Profile Platform Universal Ring Mount (Valmont LWRM)	(12) 1 5/8" (1) 3" Conduit (2) 3/4" DC (1) 7/16" Fiber	AT&T
-		3	Cci - HPA-65R-BUU-H8 (92.4" x 14.8" x 7.4"   68 lbs.) - Panel			
-		12	Powerwave LGP21401 - TMA			
-		6	Powerwave LGP21901 - Diplexer			
-		3	Ericsson RRUS-11 (17.8x17.3x7.2)			
-		3	Ericsson RRUS-32 (29.9" x 13.3" x 9.5"   77 lbs.)			
-		1	Raycap DC6-48-60-18-8F - DC SS			



## 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
8	130.0	6	Powerwave 7770- Panel	Modified Low Profile Platform (Valmont LWRM) W/ (1) SitePro1 HRK12 (Handrail Kit), (3) 2 1/2" standard (Pipe Masts) & (3) SitePro1 SCX4-K (Crossover Plate Kit)	(12) 1 5/8" (1) 7/16" Fiber* (2) 1" DC Power*	AT&T
9		3	Cci HPA-65R-BU8AA- Panel			
10		3	Cci DMP65R-BU8DA- Panel			
11		6	Powerwave LGP21401 --TMA			
12		6	Powerwave LGP17201 TMA			
13		6	Powerwave LGP21901- Diplexer			
14		3	Ericsson RRUS 8843 B2 B66A			
15		3	Ericsson RRUS 4449 B5/B12			
16		1	Raycap DC6-48-60-18-8F- OVP			

\* DC/fiber lines will be run outside.

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:	<b>38.6%</b>	<b>49.5%</b>	<b>63.7%</b>
Pass/Fail	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

## **Foundations**

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	2635.1	26.6	46.9

The foundation has been analyzed using the supplied documents and was found adequate. Therefore, no modification to the foundation will be required. Geotechnical soil parameters were obtained from the original foundation calculations included with the referenced tower and foundation design drawings.

### **Operational Condition (Rigidity):**

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 0.3854 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 EIA/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 38.57% at 25.0ft

**Structure:** CT11560-A-SBA  
**Site Name:** Sterling 6, CT  
**Height:** 140.00 (ft)  
**Base Elev:** 1.000 (ft)

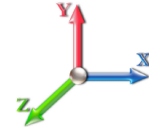
**Code:** EIA/TIA-222-G  
**Exposure:** B  
**Gh:** 1.1

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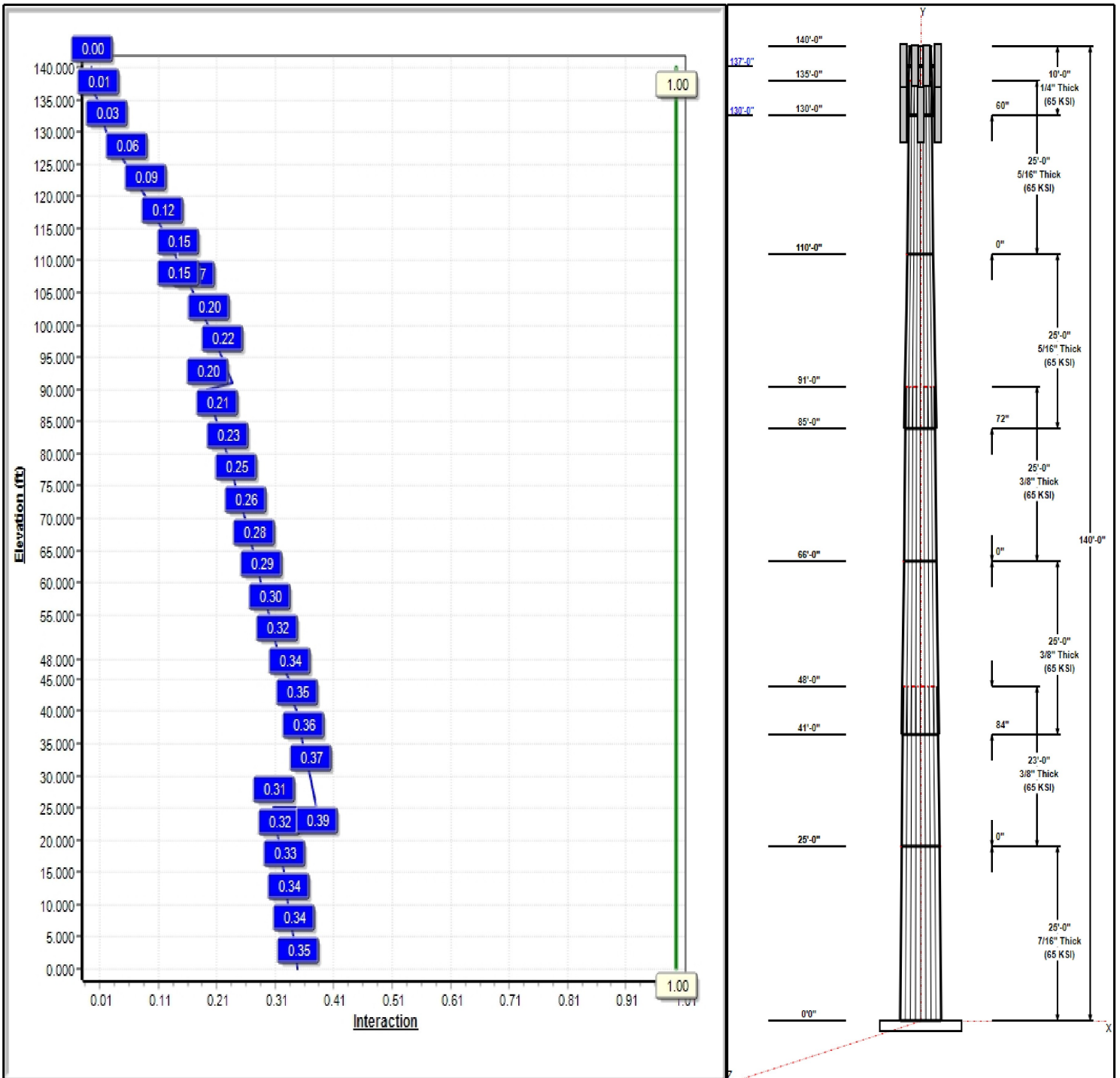
**Dead Load Factor:** 1.20  
**Wind Load Factor:** 1.60

**Load Case : 1.2D + 1.6W 105 mph Wind**



**Iterations:** 19

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## Structure: CT11560-A-SBA

**Type:** Tapered  
**Site Name:** Sterling 6, CT  
**Height:** 140.00 (ft)  
**Base Elev:** 1.00 (ft)

**Base Shape:** 18 Sided  
**Taper:** 0.23518

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### Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	25.00	58.62	64.50	0.438		0.23518	65
2	23.00	53.21	58.62	0.375	Butt	0.23518	65
3	25.00	49.73	55.61	0.375	Slip	0.23518	65
4	25.00	43.85	49.73	0.375	Butt	0.23518	65
5	25.00	40.01	45.88	0.313	Slip	0.23518	65
6	25.00	34.13	40.01	0.313	Butt	0.23518	65
7	10.00	33.45	35.80	0.250	Slip	0.23518	65

### Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
137.00	137.00	3	ALU RRH2x60-AWS	Verizon
137.00	137.00	3	ALU RRH2X60-PCS	Verizon
137.00	140.00	6	RFS FD9R6004/2C-3L	Verizon
137.00	137.00	1	RFS Celwave	Verizon
137.00	137.00	1	Low Profile Platform	Verizon
137.00	137.00	2	Antel BXA-70080/6CF	Verizon
137.00	137.00	4	Antel BXA-70063/6CF	Verizon
137.00	137.00	6	Commscope	Verizon
130.00	130.00	6	7770.00	AT&T
130.00	130.00	6	Powerwave LGP21401 -	AT&T
130.00	130.00	1	DC6-48-60-18-8F	AT&T
130.00	130.00	1	Low Profile Platform	AT&T
130.00	130.00	6	Powerwave LGP21901 -	AT&T
130.00	130.00	3	HPA-65R-BU8AA	AT&T
130.00	130.00	3	DMP65R-BU8DA	AT&T
130.00	130.00	1	HRK12 (Handrail Kit)	AT&T
130.00	130.00	6	LGP17201	AT&T
130.00	130.00	3	RRUS 8843 B2 B66A	AT&T
130.00	130.00	3	RRUS 4449 B5/B12	AT&T

### Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
3.00	137.00	Inside	1 5/8" Coax	Verizon
3.00	137.00	Inside	1 5/8" Fiber	Verizon
3.00	130.00	Inside	1 5/8" Coax	AT&T
3.00	130.00	Outside	1" DC Power	AT&T
3.00	130.00	Outside	7/16" Fiber	AT&T

### Anchor Bolts

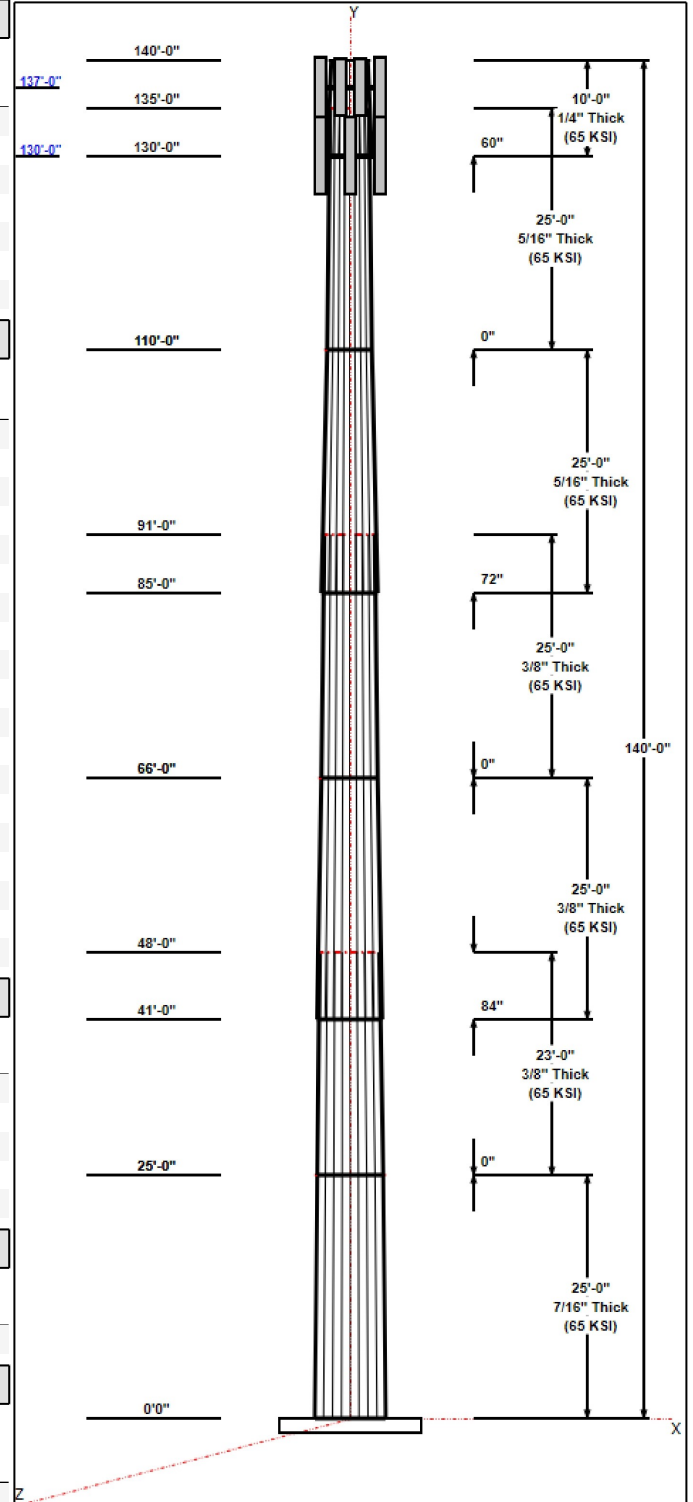
Qty	Specifications	Grade (ksi)	Arrangement
20	2.00" F1554 105	105.0	Radial

### Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.0000	78.0	50.0	Round

### Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 105 mph Wind	2635.1	26.6	46.9



## Structure: CT11560-A-SBA

**Type:** Tapered  
**Site Name:** Sterling 6, CT  
**Height:** 140.00 (ft)  
**Base Elev:** 1.00 (ft)

**Base Shape:** 18 Sided  
**Taper:** 0.23518

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0.9D + 1.6W 102 mph Wind	2475.3	25.1	35.2
1.2D + 1.0Di + 1.0Wi 50 mph Wind	676.3	6.9	78.6
1.2D + 1.0E	211.5	1.9	46.9
0.9D + 1.0E	210.5	1.9	35.2
1.0D + 1.0W 60 mph Wind	536.2	5.4	39.1

# Structure: CT11560-A-SBA - Coax Line Placement

**Type:** Monopole  
**Site Name:** Sterling 6, CT  
**Height:** 140.00 (ft)

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## Shaft Properties

<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	25.000	0.4375	65		0.00	7,220
2	18	23.000	0.3750	65	Flange	0.00	5,174
3	18	25.000	0.3750	65	Slip	84.00	5,295
4	18	25.000	0.3750	65	Flange	0.00	4,699
5	18	25.000	0.3125	65	Slip	72.00	3,597
6	18	25.000	0.3125	65	Flange	0.00	3,101
7	18	10.000	0.2500	65	Slip	60.00	928
<b>Total Shaft Weight:</b>							<b>30,014</b>

Bottom

Top

Sec. No.	Dia (in)	Elev (ft)	Area (sqin)	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Taper
1	64.50	0.00	88.96	46124.76	24.59	147.43	58.62	25.00	80.79	34555.0	22.22	133.9	0.235179
2	58.62	25.00	69.32	29714.17	26.15	156.32	53.21	48.00	62.89	22180.7	23.61	141.9	0.235179
3	55.61	41.00	65.74	25337.51	24.74	148.29	49.73	66.00	58.74	18076.8	21.97	132.6	0.235179
4	49.73	66.00	58.74	18076.82	21.97	132.61	43.85	91.00	51.74	12355.4	19.21	116.9	0.235179
5	45.88	85.00	45.20	11860.36	24.48	146.83	40.01	110.00	39.37	7836.67	21.16	128.0	0.235179
6	40.01	110.0	39.37	7836.67	21.16	128.02	34.13	135.00	33.54	4844.63	17.84	109.2	0.235179
7	35.80	130.0	28.21	4504.73	23.84	143.21	33.45	140.00	26.34	3668.59	22.18	133.8	0.235179

## Load Summary

<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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### Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	137.00	ALU RRH2x60-AWS	3	60.00	3.50	0.67	175.42	4.544	0.67	0.00	0.00
2	137.00	ALU RRH2X60-PCS	3	55.00	2.20	0.67	175.43	3.066	0.67	0.00	0.00
3	137.00	RFS FD9R6004/2C-3L	6	3.10	0.36	1.00	13.71	0.946	1.00	0.00	3.00
4	137.00	RFS Celwave DB-T1-6Z-8AB-0Z	1	44.00	4.80	1.00	245.17	5.980	1.00	0.00	0.00
5	137.00	Low Profile Platform	1	1500.00	22.00	1.00	3230.72	45.353	1.00	0.00	0.00
6	137.00	Antel BXA-70080/6CF	2	18.00	5.84	0.88	184.52	8.993	0.88	0.00	0.00
7	137.00	Antel BXA-70063/6CF	4	17.00	7.57	0.70	204.38	11.225	0.70	0.00	0.00
8	137.00	Commscope HBXX-6517DS-A2M	6	40.80	8.55	0.77	273.84	12.409	0.77	0.00	0.00
9	130.00	7770.00	6	27.00	5.50	0.73	217.76	6.930	0.73	0.00	0.00
10	130.00	Powerwave LGP21401 - TMA	6	17.50	1.29	1.00	58.32	2.389	1.00	0.00	0.00
11	130.00	DC6-48-60-18-8F	1	32.80	1.30	1.00	116.68	2.114	1.00	0.00	0.00
12	130.00	Low Profile Platform	1	1500.00	22.00	1.00	3221.74	45.232	1.00	0.00	0.00
13	130.00	Powerwave LGP21901 - Diplexer	6	31.00	1.67	0.75	88.02	5.185	0.75	0.00	0.00
14	130.00	HPA-65R-BU8AA	3	54.00	11.23	0.86	424.82	13.432	0.86	0.00	0.00
15	130.00	DMP65R-BU8DA	3	95.70	17.87	0.72	700.82	20.233	0.72	0.00	0.00
16	130.00	HRK12 (Handrail Kit)	1	261.72	10.00	1.00	670.28	22.856	1.00	0.00	0.00
17	130.00	LGP17201	6	10.00	1.95	1.00	26.22	3.261	1.00	0.00	0.00
18	130.00	RRUS 8843 B2 B66A	3	72.00	1.64	0.67	133.62	2.294	0.67	0.00	0.00
19	130.00	RRUS 4449 B5/B12	3	71.00	1.97	0.67	141.22	2.690	0.67	0.00	0.00
<b>Totals:</b>			<b>65</b>	<b>5,442.02</b>			<b>17,992.32</b>				

### Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
3.00	137.00	(12) 1 5/8" Coax	0.00	Inside
3.00	137.00	(1) 1 5/8" Fiber	0.00	Inside
3.00	130.00	(12) 1 5/8" Coax	0.00	Inside
3.00	130.00	(2) 1" DC Power	1.00	Outside
3.00	130.00	(1) 7/16" Fiber	0.44	Outside

## Shaft Section Properties

<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Increment Length:** 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.4375	64.500	88.956	46124.8	24.59	147.43	72.5	1408.	0.0
5.00		0.4375	63.324	87.323	43631.2	24.11	144.74	73.0	1357.	1499.6
10.00		0.4375	62.148	85.690	41229.1	23.64	142.05	73.6	1306.	1471.8
15.00		0.4375	60.972	84.057	38916.9	23.16	139.37	74.2	1257.	1444.0
20.00		0.4375	59.796	82.424	36692.8	22.69	136.68	74.7	1208.	1416.2
25.00	Top - Section 1	0.4375	58.621	80.792	34555.1	22.22	133.99	75.3	1161.	1388.5
25.00	Bot - Section 2	0.3750	58.621	69.324	29714.2	25.92	156.32	70.6	998.4	
30.00		0.3750	57.445	67.925	27950.6	25.60	153.19	71.3	958.3	1167.6
35.00		0.3750	56.269	66.525	26258.2	25.05	150.05	71.9	919.1	1143.8
40.00		0.3750	55.093	65.126	24635.6	24.49	146.91	72.6	880.7	1119.9
41.00	Bot - Section 3	0.3750	54.858	64.846	24319.3	24.38	146.29	72.7	873.2	221.1
45.00		0.3750	53.917	63.726	23081.2	23.94	143.78	73.2	843.2	1762.2
48.00	Top - Section 2	0.3750	53.961	63.779	23138.8	23.96	143.90	0.0	0.0	1301.6
50.00		0.3750	53.491	63.219	22534.8	23.74	142.64	73.5	829.8	432.1
55.00		0.3750	52.315	61.820	21071.0	23.19	139.51	74.1	793.3	1063.7
60.00		0.3750	51.139	60.420	19672.1	22.64	136.37	74.8	757.7	1039.9
65.00		0.3750	49.963	59.020	18336.5	22.08	133.24	75.4	722.8	1016.1
66.00	Top - Section 3	0.3750	49.728	58.741	18076.8	21.97	132.61	75.6	716.0	200.4
66.00	Bot - Section 4	0.3750	49.728	58.741	18076.8	21.97	132.61	75.6	716.0	
70.00		0.3750	48.788	57.621	17062.7	21.53	130.10	76.1	688.8	791.9
75.00		0.3750	47.612	56.221	15849.4	20.98	126.96	76.7	655.7	968.4
80.00		0.3750	46.436	54.822	14694.9	20.42	123.83	77.4	623.3	944.6
85.00	Bot - Section 5	0.3750	45.260	53.422	13598.0	19.87	120.69	78.0	591.8	920.8
90.00		0.3750	44.084	52.023	12557.0	19.32	117.56	78.7	561.0	1656.1
91.00	Top - Section 4	0.3125	44.474	43.801	10792.4	23.68	142.32	0.0	0.0	326.0
95.00		0.3125	43.533	42.868	10117.3	23.15	139.31	74.2	457.7	589.8
100.00		0.3125	42.357	41.702	9313.8	22.49	135.54	74.9	433.1	719.4
105.00		0.3125	41.181	40.535	8554.0	21.83	131.78	75.7	409.1	699.6
110.00	Top - Section 5	0.3125	40.005	39.369	7836.7	21.16	128.02	76.5	385.8	679.7
110.00	Bot - Section 6	0.3125	40.005	39.369	7836.7	21.16	128.02	76.5	385.8	
115.00		0.3125	38.829	38.203	7160.6	20.50	124.25	77.3	363.2	659.9
120.00		0.3125	37.654	37.036	6524.6	19.84	120.49	78.1	341.3	640.1
125.00		0.3125	36.478	35.870	5927.4	19.17	116.73	78.9	320.1	620.2
130.00	Bot - Section 7	0.3125	35.302	34.704	5367.8	18.51	112.97	79.6	299.5	600.4
135.00	Top - Section 6	0.2500	34.626	27.276	4072.4	23.01	138.50	0.0	0.0	1052.5
137.00		0.2500	34.156	26.903	3907.5	22.68	136.62	74.7	225.3	184.4
140.00		0.2500	33.450	26.343	3668.6	22.18	133.80	75.3	216.0	271.8

**30014.2**

## Wind Loading - Shaft

<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Page:</b> 8
	<b>Struct Class:</b> II	



**Load Case:** 1.2D + 1.6W 105 mph Wind

**Iterations** 19

**Dead Load Factor** 1.20

**Wind Load Factor** 1.60



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	0.70	18.769	20.65	479.47	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	18.769	20.65	470.73	0.650	0.000	5.00	27.041	17.58	580.6	0.0	1799.5
10.00		1.00	0.70	18.769	20.65	461.99	0.650	0.000	5.00	26.543	17.25	569.9	0.0	1766.2
15.00		1.00	0.70	18.769	20.65	453.25	0.650	0.000	5.00	26.046	16.93	559.2	0.0	1732.8
20.00		1.00	0.70	18.769	20.65	444.51	0.650	0.000	5.00	25.548	16.61	548.6	0.0	1699.5
25.00	Top - Section 1	1.00	0.70	18.769	20.65	435.77	0.650	0.000	5.00	25.051	16.28	537.9	0.0	1666.2
30.00		1.00	0.71	18.962	20.86	429.21	0.650	0.000	5.00	24.553	15.96	532.6	0.0	1401.1
35.00		1.00	0.74	19.789	21.77	429.50	0.650	0.000	5.00	24.056	15.64	544.6	0.0	1372.5
40.00		1.00	0.77	20.538	22.59	428.41	0.650	0.000	5.00	23.558	15.31	553.5	0.0	1343.9
41.00	Bot - Section 3	1.00	0.77	20.680	22.75	428.06	0.650	0.000	1.00	4.652	3.02	110.1	0.0	265.4
45.00		1.00	0.79	21.225	23.35	426.22	0.650	0.000	4.00	18.663	12.13	453.2	0.0	2114.6
48.00	Top - Section 2	1.00	0.81	21.612	23.77	424.46	0.650	0.000	3.00	13.788	8.96	340.9	0.0	1561.9
50.00		1.00	0.82	21.860	24.05	429.13	0.650	0.000	2.00	9.093	5.91	227.4	0.0	518.6
55.00		1.00	0.84	22.452	24.70	425.34	0.650	0.000	5.00	22.383	14.55	574.9	0.0	1276.4
60.00		1.00	0.86	23.007	25.31	420.89	0.650	0.000	5.00	21.886	14.23	576.0	0.0	1247.9
65.00		1.00	0.88	23.531	25.88	415.87	0.650	0.000	5.00	21.388	13.90	575.8	0.0	1219.3
66.00	Top - Section 3	1.00	0.88	23.632	26.00	414.80	0.650	0.000	1.00	4.218	2.74	114.0	0.0	240.4
70.00		1.00	0.90	24.027	26.43	410.34	0.650	0.000	4.00	16.673	10.84	458.3	0.0	950.3
75.00		1.00	0.91	24.499	26.95	404.36	0.650	0.000	5.00	20.393	13.26	571.5	0.0	1162.1
80.00		1.00	0.93	24.949	27.44	397.98	0.650	0.000	5.00	19.895	12.93	567.8	0.0	1133.6
85.00	Bot - Section 5	1.00	0.95	25.380	27.92	391.24	0.650	0.000	5.00	19.398	12.61	563.2	0.0	1105.0
90.00		1.00	0.96	25.793	28.37	384.16	0.650	0.000	5.00	19.165	12.46	565.5	0.0	1987.4
91.00	Top - Section 4	1.00	0.96	25.873	28.46	382.71	0.650	0.000	1.00	3.773	2.45	111.7	0.0	391.2
95.00		1.00	0.98	26.190	28.81	382.27	0.650	0.000	4.00	14.894	9.68	446.2	0.0	707.8
100.00		1.00	0.99	26.573	29.23	374.65	0.650	0.000	5.00	18.170	11.81	552.3	0.0	863.3
105.00		1.00	1.00	26.942	29.64	366.78	0.650	0.000	5.00	17.672	11.49	544.7	0.0	839.5
110.00	Top - Section 5	1.00	1.02	27.299	30.03	358.66	0.650	0.000	5.00	17.175	11.16	536.4	0.0	815.7
115.00		1.00	1.03	27.645	30.41	350.31	0.650	0.000	5.00	16.677	10.84	527.4	0.0	791.9
120.00		1.00	1.04	27.980	30.78	341.76	0.650	0.000	5.00	16.180	10.52	517.9	0.0	768.1
125.00		1.00	1.06	28.306	31.14	333.01	0.650	0.000	5.00	15.682	10.19	507.8	0.0	744.3
130.00	Bot - Section 7	1.00	1.07	28.622	31.48	324.07	0.650	0.000	5.00	15.185	9.87	497.2	0.0	720.4
135.00	Top - Section 6	1.00	1.08	28.930	31.82	314.95	0.650	0.000	5.00	14.899	9.68	493.1	0.0	1263.0
137.00	Appurtenance(s)	1.00	1.08	29.051	31.96	315.89	0.650	0.000	2.00	5.820	3.78	193.4	0.0	221.2
140.00		1.00	1.09	29.230	32.15	310.31	0.650	0.000	3.00	8.581	5.58	286.9	0.0	326.1
<b>Totals:</b>									<b>140.00</b>			<b>15,340.8</b>		<b>36,017.0</b>

## Discrete Appurtenance Forces

<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



**Load Case:** 1.2D + 1.6W 105 mph Wind

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.60



**Iterations** 19

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	137.00	Antel BXA-70063/6CF	4	29.051	31.956	0.56	0.80	16.96	81.60	0.000	0.000	867.01	0.00	0.00
2	137.00	Antel BXA-70080/6CF	2	29.051	31.956	0.70	0.80	8.22	43.20	0.000	0.000	420.43	0.00	0.00
3	137.00	Low Profile Platform	1	29.051	31.956	1.00	1.00	22.00	1800.00	0.000	0.000	1124.87	0.00	0.00
4	137.00	RFS Celwave	1	29.051	31.956	1.00	1.00	4.80	52.80	0.000	0.000	245.43	0.00	0.00
5	137.00	RFS FD9R6004/2C-3L	6	29.230	32.153	0.80	0.80	1.73	22.32	0.000	3.000	88.90	0.00	266.69
6	137.00	ALU RRH2X60-PCS	3	29.051	31.956	0.54	0.80	3.54	198.00	0.000	0.000	180.88	0.00	0.00
7	137.00	ALU RRH2x60-AWS	3	29.051	31.956	0.54	0.80	5.63	216.00	0.000	0.000	287.76	0.00	0.00
8	137.00	Commscope	6	29.051	31.956	0.62	0.80	31.60	293.76	0.000	0.000	1615.76	0.00	0.00
9	130.00	RRUS 4449 B5/B12	3	28.622	31.485	0.50	0.75	2.97	255.60	0.000	0.000	149.60	0.00	0.00
10	130.00	Powerwave LGP21901 -	6	28.622	31.485	0.56	0.75	5.64	223.20	0.000	0.000	283.93	0.00	0.00
11	130.00	RRUS 8843 B2 B66A	3	28.622	31.485	0.50	0.75	2.47	259.20	0.000	0.000	124.54	0.00	0.00
12	130.00	LGP17201	6	28.622	31.485	0.75	0.75	8.77	72.00	0.000	0.000	442.05	0.00	0.00
13	130.00	HRK12 (Handrail Kit)	1	28.622	31.485	1.00	1.00	10.00	314.06	0.000	0.000	503.76	0.00	0.00
14	130.00	DMP65R-BU8DA	3	28.622	31.485	0.54	0.75	28.95	344.52	0.000	0.000	1458.34	0.00	0.00
15	130.00	HPA-65R-BU8AA	3	28.622	31.485	0.65	0.75	21.73	194.40	0.000	0.000	1094.66	0.00	0.00
16	130.00	Low Profile Platform	1	28.622	31.485	1.00	1.00	22.00	1800.00	0.000	0.000	1108.26	0.00	0.00
17	130.00	DC6-48-60-18-8F	1	28.622	31.485	1.00	1.00	1.30	39.36	0.000	0.000	65.49	0.00	0.00
18	130.00	Powerwave LGP21401 -	6	28.622	31.485	0.75	0.75	5.81	126.00	0.000	0.000	292.43	0.00	0.00
19	130.00	7770.00	6	28.622	31.485	0.55	0.75	18.07	194.40	0.000	0.000	910.16	0.00	0.00
<b>Totals:</b>									<b>6,530.42</b>			<b>11,264.25</b>		

## Total Applied Force Summary

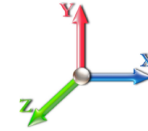
<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.2D + 1.6W 105 mph Wind

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.60



**Iterations** 19

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		580.61	1866.90	0.00	0.00
10.00		569.93	1934.65	0.00	0.00
15.00		559.25	1901.31	0.00	0.00
20.00		548.57	1867.98	0.00	0.00
25.00		537.88	1834.64	0.00	0.00
30.00		532.61	1569.56	0.00	0.00
35.00		544.60	1540.99	0.00	0.00
40.00		553.52	1512.41	0.00	0.00
41.00		110.06	299.05	0.00	0.00
45.00		453.15	2249.37	0.00	0.00
48.00		340.89	1663.02	0.00	0.00
50.00		227.38	585.97	0.00	0.00
55.00		574.91	1444.92	0.00	0.00
60.00		576.04	1416.34	0.00	0.00
65.00		575.76	1387.77	0.00	0.00
66.00		114.03	274.12	0.00	0.00
70.00		458.28	1085.07	0.00	0.00
75.00		571.55	1330.62	0.00	0.00
80.00		567.85	1302.05	0.00	0.00
85.00		563.21	1273.47	0.00	0.00
90.00		565.50	2155.83	0.00	0.00
91.00		111.69	424.88	0.00	0.00
95.00		446.25	842.58	0.00	0.00
100.00		552.35	1031.79	0.00	0.00
105.00		544.69	1007.98	0.00	0.00
110.00		536.37	984.17	0.00	0.00
115.00		527.43	960.36	0.00	0.00
120.00		517.91	936.54	0.00	0.00
125.00		507.82	912.73	0.00	0.00
130.00	(39) attachments	6930.43	4711.66	0.00	0.00
135.00		493.10	1344.16	0.00	0.00
137.00	(26) attachments	5024.46	2961.36	0.00	266.69
140.00		286.95	326.13	0.00	0.00
	<b>Totals:</b>	<b>26,605.01</b>	<b>46,940.41</b>	<b>0.00</b>	<b>266.69</b>

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.2D + 1.6W 105 mph Wind

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.60



**Iterations** 19

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)
5.00	1" DC Power	Yes	2.00	0.000	2.00	0.33	0.00	0.015	0.000	18.769	0.00	4.80
5.00	7/16" Fiber	Yes	2.00	0.000	0.44	0.07	0.00	0.015	0.000	18.769	0.00	0.19
10.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.038	0.000	18.769	0.00	12.00
10.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.038	0.000	18.769	0.00	0.48
15.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.039	0.000	18.769	0.00	12.00
15.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.039	0.000	18.769	0.00	0.48
20.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.040	0.000	18.769	0.00	12.00
20.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.040	0.000	18.769	0.00	0.48
25.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.041	0.000	18.769	0.00	12.00
25.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.041	0.000	18.769	0.00	0.48
30.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.041	0.000	18.962	0.00	12.00
30.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.041	0.000	18.962	0.00	0.48
35.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.042	0.000	19.789	0.00	12.00
35.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.042	0.000	19.789	0.00	0.48
40.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.043	0.000	20.538	0.00	12.00
40.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.043	0.000	20.538	0.00	0.48
41.00	1" DC Power	Yes	1.00	0.000	2.00	0.17	0.00	0.044	0.000	20.680	0.00	2.40
41.00	7/16" Fiber	Yes	1.00	0.000	0.44	0.04	0.00	0.044	0.000	20.680	0.00	0.10
45.00	1" DC Power	Yes	4.00	0.000	2.00	0.67	0.00	0.044	0.000	21.225	0.00	9.60
45.00	7/16" Fiber	Yes	4.00	0.000	0.44	0.15	0.00	0.044	0.000	21.225	0.00	0.38
48.00	1" DC Power	Yes	3.00	0.000	2.00	0.50	0.00	0.045	0.000	21.612	0.00	7.20
48.00	7/16" Fiber	Yes	3.00	0.000	0.44	0.11	0.00	0.045	0.000	21.612	0.00	0.29
50.00	1" DC Power	Yes	2.00	0.000	2.00	0.33	0.00	0.045	0.000	21.860	0.00	4.80
50.00	7/16" Fiber	Yes	2.00	0.000	0.44	0.07	0.00	0.045	0.000	21.860	0.00	0.19
55.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.045	0.000	22.452	0.00	12.00
55.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.045	0.000	22.452	0.00	0.48
60.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.046	0.000	23.007	0.00	12.00
60.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.046	0.000	23.007	0.00	0.48
65.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.048	0.000	23.531	0.00	12.00
65.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.048	0.000	23.531	0.00	0.48
66.00	1" DC Power	Yes	1.00	0.000	2.00	0.17	0.00	0.048	0.000	23.632	0.00	2.40
66.00	7/16" Fiber	Yes	1.00	0.000	0.44	0.04	0.00	0.048	0.000	23.632	0.00	0.10
70.00	1" DC Power	Yes	4.00	0.000	2.00	0.67	0.00	0.049	0.000	24.027	0.00	9.60
70.00	7/16" Fiber	Yes	4.00	0.000	0.44	0.15	0.00	0.049	0.000	24.027	0.00	0.38
75.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.050	0.000	24.499	0.00	12.00
75.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.050	0.000	24.499	0.00	0.48
80.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.051	0.000	24.949	0.00	12.00
80.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.051	0.000	24.949	0.00	0.48
85.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.052	0.000	25.380	0.00	12.00
85.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.052	0.000	25.380	0.00	0.48
90.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.054	0.000	25.793	0.00	12.00
90.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.054	0.000	25.793	0.00	0.48
91.00	1" DC Power	Yes	1.00	0.000	2.00	0.17	0.00	0.055	0.000	25.873	0.00	2.40
91.00	7/16" Fiber	Yes	1.00	0.000	0.44	0.04	0.00	0.055	0.000	25.873	0.00	0.10
95.00	1" DC Power	Yes	4.00	0.000	2.00	0.67	0.00	0.055	0.000	26.190	0.00	9.60
95.00	7/16" Fiber	Yes	4.00	0.000	0.44	0.15	0.00	0.055	0.000	26.190	0.00	0.38
100.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.056	0.000	26.573	0.00	12.00

## Linear Appurtenance Segment Forces (Factored)

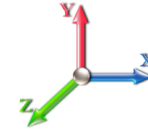
<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.2D + 1.6W 105 mph Wind

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.60



**Iterations** 19

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)
100.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.056	0.000	26.573	0.00	0.48
105.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.058	0.000	26.942	0.00	12.00
105.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.058	0.000	26.942	0.00	0.48
110.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.059	0.000	27.299	0.00	12.00
110.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.059	0.000	27.299	0.00	0.48
115.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.061	0.000	27.645	0.00	12.00
115.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.061	0.000	27.645	0.00	0.48
120.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.063	0.000	27.980	0.00	12.00
120.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.063	0.000	27.980	0.00	0.48
125.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.065	0.000	28.306	0.00	12.00
125.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.065	0.000	28.306	0.00	0.48
130.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.067	0.000	28.622	0.00	12.00
130.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.067	0.000	28.622	0.00	0.48
<b>Totals:</b>											<b>0.0</b>	<b>317.0</b>



## Calculated Forces

<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

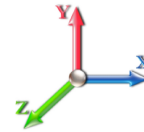


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**Load Case:** 1.2D + 1.6W 105 mph Wind

**Iterations** 19

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.60



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	-46.92	-26.64	0.00	-2635.1	0.00	2635.13	5803.10	2901.55	15291.3	7657.05	0.00	0.000	0.000	0.352
5.00	-45.02	-26.12	0.00	-2501.9	0.00	2501.94	5740.39	2870.20	14846.6	7434.33	0.04	-0.079	0.000	0.344
10.00	-43.05	-25.60	0.00	-2371.3	0.00	2371.35	5676.04	2838.02	14403.7	7212.59	0.17	-0.159	0.000	0.336
15.00	-41.12	-25.10	0.00	-2243.3	0.00	2243.33	5610.05	2805.03	13963.1	6991.95	0.38	-0.238	0.000	0.328
20.00	-39.22	-24.59	0.00	-2117.8	0.00	2117.85	5542.43	2771.21	13524.9	6772.52	0.67	-0.318	0.000	0.320
25.00	-37.35	-24.10	0.00	-1994.8	0.00	1994.89	5473.16	2736.58	13089.3	6554.42	1.05	-0.398	0.000	0.311
25.00	-37.35	-24.10	0.00	-1994.8	0.00	1994.89	4407.37	2203.68	10563.1	5289.42	1.05	-0.398	0.000	0.386
30.00	-35.75	-23.60	0.00	-1874.4	0.00	1874.41	4358.14	2179.07	10232.9	5124.08	1.51	-0.477	0.000	0.374
35.00	-34.18	-23.10	0.00	-1756.3	0.00	1756.39	4307.28	2153.64	9903.77	4959.25	2.06	-0.570	0.000	0.362
40.00	-32.65	-22.56	0.00	-1640.8	0.00	1640.89	4254.78	2127.39	9575.87	4795.05	2.70	-0.662	0.000	0.350
41.00	-32.33	-22.48	0.00	-1618.3	0.00	1618.32	4244.08	2122.04	9510.46	4762.30	2.85	-0.681	0.000	0.348
45.00	-30.07	-22.03	0.00	-1528.4	0.00	1528.43	4200.64	2100.32	9249.48	4631.61	3.45	-0.754	0.000	0.337
48.00	-28.39	-21.69	0.00	-1462.3	0.00	1462.34	4202.72	2101.36	9261.79	4637.78	3.94	-0.809	0.000	0.322
50.00	-27.78	-21.48	0.00	-1418.9	0.00	1418.97	4180.63	2090.32	9131.68	4572.63	4.29	-0.846	0.000	0.317
55.00	-26.32	-20.92	0.00	-1311.5	0.00	1311.57	4124.26	2062.13	8807.72	4410.41	5.22	-0.933	0.000	0.304
60.00	-24.88	-20.36	0.00	-1206.9	0.00	1206.95	4066.25	2033.13	8485.83	4249.22	6.24	-1.018	0.000	0.290
65.00	-23.49	-19.78	0.00	-1105.1	0.00	1105.15	4006.61	2003.30	8166.25	4089.20	7.36	-1.101	0.000	0.276
66.00	-23.20	-19.68	0.00	-1085.3	0.00	1085.38	3994.48	1997.24	8102.64	4057.34	7.59	-1.118	0.000	0.273
66.00	-23.20	-19.68	0.00	-1085.3	0.00	1085.38	3994.48	1997.24	8102.64	4057.34	7.59	-1.118	0.000	0.273
70.00	-22.10	-19.22	0.00	-1006.6	0.00	1006.67	3945.32	1972.66	7849.23	3930.45	8.55	-1.184	0.000	0.262
75.00	-20.76	-18.65	0.00	-910.55	0.00	910.55	3882.40	1941.20	7534.99	3773.10	9.84	-1.264	0.000	0.247
80.00	-19.44	-18.08	0.00	-817.29	0.00	817.29	3817.84	1908.92	7223.78	3617.26	11.20	-1.342	0.000	0.231
85.00	-18.16	-17.51	0.00	-726.88	0.00	726.88	3751.64	1875.82	6915.84	3463.06	12.65	-1.416	0.000	0.215
90.00	-16.01	-16.90	0.00	-639.32	0.00	639.32	3683.80	1841.90	6611.41	3310.62	14.17	-1.488	0.000	0.198
91.00	-15.58	-16.79	0.00	-622.42	0.00	622.42	2899.19	1449.59	5264.94	2636.38	14.49	-1.502	0.000	0.242
95.00	-14.73	-16.34	0.00	-555.26	0.00	555.26	2861.52	1430.76	5085.06	2546.31	15.77	-1.556	0.000	0.223
100.00	-13.69	-15.77	0.00	-473.57	0.00	473.57	2812.95	1406.48	4861.78	2434.50	17.44	-1.629	0.000	0.200
105.00	-12.68	-15.21	0.00	-394.71	0.00	394.71	2762.75	1381.37	4640.48	2323.69	19.18	-1.695	0.000	0.175
110.00	-11.70	-14.66	0.00	-318.64	0.00	318.64	2710.91	1355.45	4421.40	2213.98	20.99	-1.754	0.000	0.148
110.00	-11.70	-14.66	0.00	-318.64	0.00	318.64	2710.91	1355.45	4421.40	2213.98	20.99	-1.754	0.000	0.148
115.00	-10.75	-14.11	0.00	-245.35	0.00	245.35	2657.43	1328.71	4204.77	2105.51	22.86	-1.805	0.000	0.121
120.00	-9.82	-13.57	0.00	-174.79	0.00	174.79	2602.31	1301.16	3990.84	1998.39	24.77	-1.847	0.000	0.091
125.00	-8.92	-13.04	0.00	-106.95	0.00	106.95	2545.56	1272.78	3779.85	1892.74	26.72	-1.878	0.000	0.060
130.00	-4.44	-5.95	0.00	-41.77	0.00	41.77	2487.16	1243.58	3572.03	1788.67	28.70	-1.896	0.000	0.025
135.00	-3.11	-5.42	0.00	-11.99	0.00	11.99	1824.83	912.42	2579.10	1291.47	30.69	-1.903	0.000	0.011
137.00	-0.32	-0.30	0.00	-0.89	0.00	0.89	1809.31	904.66	2521.92	1262.84	31.49	-1.904	0.000	0.001
140.00	0.00	-0.29	0.00	0.00	0.00	0.00	1785.54	892.77	2436.62	1220.12	32.68	-1.904	0.000	0.000

## Wind Loading - Shaft

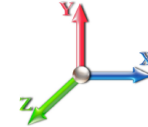
<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 0.9D + 1.6W 102 mph Wind

**Dead Load Factor** 0.90  
**Wind Load Factor** 1.60



**Iterations** 19

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	0.70	17.712	19.48	465.78	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	17.712	19.48	457.28	0.650	0.000	5.00	27.041	17.58	547.9	0.0	1349.6
10.00		1.00	0.70	17.712	19.48	448.79	0.650	0.000	5.00	26.543	17.25	537.8	0.0	1324.6
15.00		1.00	0.70	17.712	19.48	440.30	0.650	0.000	5.00	26.046	16.93	527.7	0.0	1299.6
20.00		1.00	0.70	17.712	19.48	431.81	0.650	0.000	5.00	25.548	16.61	517.7	0.0	1274.6
25.00	Top - Section 1	1.00	0.70	17.712	19.48	423.32	0.650	0.000	5.00	25.051	16.28	507.6	0.0	1249.6
30.00		1.00	0.71	17.894	19.68	416.95	0.650	0.000	5.00	24.553	15.96	502.6	0.0	1050.8
35.00		1.00	0.74	18.675	20.54	417.23	0.650	0.000	5.00	24.056	15.64	513.9	0.0	1029.4
40.00		1.00	0.77	19.382	21.32	416.17	0.650	0.000	5.00	23.558	15.31	522.3	0.0	1008.0
41.00	Bot - Section 3	1.00	0.77	19.515	21.47	415.83	0.650	0.000	1.00	4.652	3.02	103.9	0.0	199.0
45.00		1.00	0.79	20.029	22.03	414.04	0.650	0.000	4.00	18.663	12.13	427.6	0.0	1585.9
48.00	Top - Section 2	1.00	0.81	20.394	22.43	412.33	0.650	0.000	3.00	13.788	8.96	321.7	0.0	1171.5
50.00		1.00	0.82	20.629	22.69	416.87	0.650	0.000	2.00	9.093	5.91	214.6	0.0	388.9
55.00		1.00	0.84	21.187	23.31	413.19	0.650	0.000	5.00	22.383	14.55	542.5	0.0	957.3
60.00		1.00	0.86	21.711	23.88	408.87	0.650	0.000	5.00	21.886	14.23	543.6	0.0	935.9
65.00		1.00	0.88	22.206	24.43	403.99	0.650	0.000	5.00	21.388	13.90	543.3	0.0	914.5
66.00	Top - Section 3	1.00	0.88	22.301	24.53	402.95	0.650	0.000	1.00	4.218	2.74	107.6	0.0	180.3
70.00		1.00	0.90	22.674	24.94	398.62	0.650	0.000	4.00	16.673	10.84	432.5	0.0	712.7
75.00		1.00	0.91	23.119	25.43	392.81	0.650	0.000	5.00	20.393	13.26	539.4	0.0	871.6
80.00		1.00	0.93	23.544	25.90	386.61	0.650	0.000	5.00	19.895	12.93	535.9	0.0	850.2
85.00	Bot - Section 5	1.00	0.95	23.950	26.35	380.06	0.650	0.000	5.00	19.398	12.61	531.5	0.0	828.7
90.00		1.00	0.96	24.340	26.77	373.19	0.650	0.000	5.00	19.165	12.46	533.6	0.0	1490.5
91.00	Top - Section 4	1.00	0.96	24.416	26.86	371.78	0.650	0.000	1.00	3.773	2.45	105.4	0.0	293.4
95.00		1.00	0.98	24.715	27.19	371.35	0.650	0.000	4.00	14.894	9.68	421.1	0.0	530.8
100.00		1.00	0.99	25.076	27.58	363.95	0.650	0.000	5.00	18.170	11.81	521.2	0.0	647.5
105.00		1.00	1.00	25.425	27.97	356.30	0.650	0.000	5.00	17.672	11.49	514.0	0.0	629.6
110.00	Top - Section 5	1.00	1.02	25.762	28.34	348.41	0.650	0.000	5.00	17.175	11.16	506.2	0.0	611.8
115.00		1.00	1.03	26.088	28.70	340.30	0.650	0.000	5.00	16.677	10.84	497.7	0.0	593.9
120.00		1.00	1.04	26.404	29.04	331.99	0.650	0.000	5.00	16.180	10.52	488.7	0.0	576.0
125.00		1.00	1.06	26.712	29.38	323.49	0.650	0.000	5.00	15.682	10.19	479.2	0.0	558.2
130.00	Bot - Section 7	1.00	1.07	27.010	29.71	314.81	0.650	0.000	5.00	15.185	9.87	469.2	0.0	540.3
135.00	Top - Section 6	1.00	1.08	27.301	30.03	305.96	0.650	0.000	5.00	14.899	9.68	465.3	0.0	947.3
137.00	Appurtenance(s)	1.00	1.08	27.415	30.16	306.86	0.650	0.000	2.00	5.820	3.78	182.5	0.0	165.9
140.00		1.00	1.09	27.584	30.34	301.45	0.650	0.000	3.00	8.581	5.58	270.8	0.0	244.6
<b>Totals:</b>									<b>140.00</b>			<b>14,476.7</b>		<b>27,012.8</b>

## Discrete Appurtenance Forces

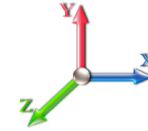
<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 0.9D + 1.6W 102 mph Wind

**Dead Load Factor** 0.90  
**Wind Load Factor** 1.60



**Iterations** 19

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	137.00	Antel BXA-70063/6CF	4	27.415	30.156	0.56	0.80	16.96	61.20	0.000	0.000	818.17	0.00	0.00		
2	137.00	Antel BXA-70080/6CF	2	27.415	30.156	0.70	0.80	8.22	32.40	0.000	0.000	396.75	0.00	0.00		
3	137.00	Low Profile Platform	1	27.415	30.156	1.00	1.00	22.00	1350.00	0.000	0.000	1061.51	0.00	0.00		
4	137.00	RFS Celwave	1	27.415	30.156	1.00	1.00	4.80	39.60	0.000	0.000	231.60	0.00	0.00		
5	137.00	RFS FD9R6004/2C-3L	6	27.584	30.342	0.80	0.80	1.73	16.74	0.000	3.000	83.89	0.00	251.67		
6	137.00	ALU RRH2X60-PCS	3	27.415	30.156	0.54	0.80	3.54	148.50	0.000	0.000	170.69	0.00	0.00		
7	137.00	ALU RRH2x60-AWS	3	27.415	30.156	0.54	0.80	5.63	162.00	0.000	0.000	271.55	0.00	0.00		
8	137.00	Commscope	6	27.415	30.156	0.62	0.80	31.60	220.32	0.000	0.000	1524.75	0.00	0.00		
9	130.00	RRUS 4449 B5/B12	3	27.010	29.711	0.50	0.75	2.97	191.70	0.000	0.000	141.18	0.00	0.00		
10	130.00	Powerwave LGP21901 -	6	27.010	29.711	0.56	0.75	5.64	167.40	0.000	0.000	267.94	0.00	0.00		
11	130.00	RRUS 8843 B2 B66A	3	27.010	29.711	0.50	0.75	2.47	194.40	0.000	0.000	117.53	0.00	0.00		
12	130.00	LGP17201	6	27.010	29.711	0.75	0.75	8.77	54.00	0.000	0.000	417.15	0.00	0.00		
13	130.00	HRK12 (Handrail Kit)	1	27.010	29.711	1.00	1.00	10.00	235.55	0.000	0.000	475.38	0.00	0.00		
14	130.00	DMP65R-BU8DA	3	27.010	29.711	0.54	0.75	28.95	258.39	0.000	0.000	1376.20	0.00	0.00		
15	130.00	HPA-65R-BU8AA	3	27.010	29.711	0.65	0.75	21.73	145.80	0.000	0.000	1033.00	0.00	0.00		
16	130.00	Low Profile Platform	1	27.010	29.711	1.00	1.00	22.00	1350.00	0.000	0.000	1045.84	0.00	0.00		
17	130.00	DC6-48-60-18-8F	1	27.010	29.711	1.00	1.00	1.30	29.52	0.000	0.000	61.80	0.00	0.00		
18	130.00	Powerwave LGP21401 -	6	27.010	29.711	0.75	0.75	5.81	94.50	0.000	0.000	275.96	0.00	0.00		
19	130.00	7770.00	6	27.010	29.711	0.55	0.75	18.07	145.80	0.000	0.000	858.89	0.00	0.00		
<b>Totals:</b>									<b>4,897.82</b>							<b>10,629.77</b>

## Total Applied Force Summary

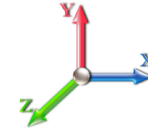
<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 0.9D + 1.6W 102 mph Wind

**Dead Load Factor** 0.90  
**Wind Load Factor** 1.60



**Iterations** 19

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		547.91	1400.18	0.00	0.00
10.00		537.83	1450.99	0.00	0.00
15.00		527.75	1425.99	0.00	0.00
20.00		517.67	1400.98	0.00	0.00
25.00		507.59	1375.98	0.00	0.00
30.00		502.61	1177.17	0.00	0.00
35.00		513.92	1155.74	0.00	0.00
40.00		522.35	1134.31	0.00	0.00
41.00		103.86	224.29	0.00	0.00
45.00		427.63	1687.03	0.00	0.00
48.00		321.69	1247.27	0.00	0.00
50.00		214.58	439.48	0.00	0.00
55.00		542.53	1083.69	0.00	0.00
60.00		543.59	1062.26	0.00	0.00
65.00		543.32	1040.83	0.00	0.00
66.00		107.61	205.59	0.00	0.00
70.00		432.47	813.80	0.00	0.00
75.00		539.36	997.96	0.00	0.00
80.00		535.86	976.53	0.00	0.00
85.00		531.48	955.10	0.00	0.00
90.00		533.64	1616.87	0.00	0.00
91.00		105.39	318.66	0.00	0.00
95.00		421.11	631.93	0.00	0.00
100.00		521.24	773.84	0.00	0.00
105.00		514.01	755.99	0.00	0.00
110.00		506.16	738.13	0.00	0.00
115.00		497.73	720.27	0.00	0.00
120.00		488.74	702.41	0.00	0.00
125.00		479.22	684.55	0.00	0.00
130.00	(39) attachments	6540.06	3533.75	0.00	0.00
135.00		465.32	1008.12	0.00	0.00
137.00	(26) attachments	4741.45	2221.02	0.00	251.67
140.00		270.78	244.60	0.00	0.00
<b>Totals:</b>		<b>25,106.45</b>	<b>35,205.31</b>	<b>0.00</b>	<b>251.67</b>

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 0.9D + 1.6W 102 mph Wind

**Dead Load Factor** 0.90  
**Wind Load Factor** 1.60



**Iterations** 19

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)
5.00	1" DC Power	Yes	2.00	0.000	2.00	0.33	0.00	0.015	0.000	17.712	0.00	3.60
5.00	7/16" Fiber	Yes	2.00	0.000	0.44	0.07	0.00	0.015	0.000	17.712	0.00	0.14
10.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.038	0.000	17.712	0.00	9.00
10.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.038	0.000	17.712	0.00	0.36
15.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.039	0.000	17.712	0.00	9.00
15.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.039	0.000	17.712	0.00	0.36
20.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.040	0.000	17.712	0.00	9.00
20.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.040	0.000	17.712	0.00	0.36
25.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.041	0.000	17.712	0.00	9.00
25.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.041	0.000	17.712	0.00	0.36
30.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.041	0.000	17.894	0.00	9.00
30.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.041	0.000	17.894	0.00	0.36
35.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.042	0.000	18.675	0.00	9.00
35.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.042	0.000	18.675	0.00	0.36
40.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.043	0.000	19.382	0.00	9.00
40.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.043	0.000	19.382	0.00	0.36
41.00	1" DC Power	Yes	1.00	0.000	2.00	0.17	0.00	0.044	0.000	19.515	0.00	1.80
41.00	7/16" Fiber	Yes	1.00	0.000	0.44	0.04	0.00	0.044	0.000	19.515	0.00	0.07
45.00	1" DC Power	Yes	4.00	0.000	2.00	0.67	0.00	0.044	0.000	20.029	0.00	7.20
45.00	7/16" Fiber	Yes	4.00	0.000	0.44	0.15	0.00	0.044	0.000	20.029	0.00	0.29
48.00	1" DC Power	Yes	3.00	0.000	2.00	0.50	0.00	0.045	0.000	20.394	0.00	5.40
48.00	7/16" Fiber	Yes	3.00	0.000	0.44	0.11	0.00	0.045	0.000	20.394	0.00	0.22
50.00	1" DC Power	Yes	2.00	0.000	2.00	0.33	0.00	0.045	0.000	20.629	0.00	3.60
50.00	7/16" Fiber	Yes	2.00	0.000	0.44	0.07	0.00	0.045	0.000	20.629	0.00	0.14
55.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.045	0.000	21.187	0.00	9.00
55.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.045	0.000	21.187	0.00	0.36
60.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.046	0.000	21.711	0.00	9.00
60.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.046	0.000	21.711	0.00	0.36
65.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.048	0.000	22.206	0.00	9.00
65.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.048	0.000	22.206	0.00	0.36
66.00	1" DC Power	Yes	1.00	0.000	2.00	0.17	0.00	0.048	0.000	22.301	0.00	1.80
66.00	7/16" Fiber	Yes	1.00	0.000	0.44	0.04	0.00	0.048	0.000	22.301	0.00	0.07
70.00	1" DC Power	Yes	4.00	0.000	2.00	0.67	0.00	0.049	0.000	22.674	0.00	7.20
70.00	7/16" Fiber	Yes	4.00	0.000	0.44	0.15	0.00	0.049	0.000	22.674	0.00	0.29
75.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.050	0.000	23.119	0.00	9.00
75.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.050	0.000	23.119	0.00	0.36
80.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.051	0.000	23.544	0.00	9.00
80.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.051	0.000	23.544	0.00	0.36
85.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.052	0.000	23.950	0.00	9.00
85.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.052	0.000	23.950	0.00	0.36
90.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.054	0.000	24.340	0.00	9.00
90.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.054	0.000	24.340	0.00	0.36
91.00	1" DC Power	Yes	1.00	0.000	2.00	0.17	0.00	0.055	0.000	24.416	0.00	1.80
91.00	7/16" Fiber	Yes	1.00	0.000	0.44	0.04	0.00	0.055	0.000	24.416	0.00	0.07
95.00	1" DC Power	Yes	4.00	0.000	2.00	0.67	0.00	0.055	0.000	24.715	0.00	7.20
95.00	7/16" Fiber	Yes	4.00	0.000	0.44	0.15	0.00	0.055	0.000	24.715	0.00	0.29
100.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.056	0.000	25.076	0.00	9.00

## Linear Appurtenance Segment Forces (Factored)

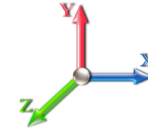
<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 0.9D + 1.6W 102 mph Wind

**Dead Load Factor** 0.90  
**Wind Load Factor** 1.60



**Iterations** 19

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)
100.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.056	0.000	25.076	0.00	0.36
105.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.058	0.000	25.425	0.00	9.00
105.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.058	0.000	25.425	0.00	0.36
110.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.059	0.000	25.762	0.00	9.00
110.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.059	0.000	25.762	0.00	0.36
115.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.061	0.000	26.088	0.00	9.00
115.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.061	0.000	26.088	0.00	0.36
120.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.063	0.000	26.404	0.00	9.00
120.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.063	0.000	26.404	0.00	0.36
125.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.065	0.000	26.712	0.00	9.00
125.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.065	0.000	26.712	0.00	0.36
130.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.067	0.000	27.010	0.00	9.00
130.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.067	0.000	27.010	0.00	0.36
<b>Totals:</b>											<b>0.0</b>	<b>237.7</b>

## Calculated Forces

<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 0.9D + 1.6W 102 mph Wind

**Iterations** 19

**Dead Load Factor** 0.90  
**Wind Load Factor** 1.60



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	-35.19	-25.13	0.00	-2475.3	0.00	2475.34	5803.10	2901.55	15291.3	7657.05	0.00	0.000	0.000	0.329
5.00	-33.76	-24.62	0.00	-2349.6	0.00	2349.69	5740.39	2870.20	14846.6	7434.33	0.04	-0.074	0.000	0.322
10.00	-32.28	-24.13	0.00	-2226.5	0.00	2226.57	5676.04	2838.02	14403.7	7212.59	0.16	-0.149	0.000	0.314
15.00	-30.82	-23.63	0.00	-2105.9	0.00	2105.94	5610.05	2805.03	13963.1	6991.95	0.36	-0.224	0.000	0.307
20.00	-29.39	-23.15	0.00	-1987.7	0.00	1987.77	5542.43	2771.21	13524.9	6772.52	0.63	-0.299	0.000	0.299
25.00	-27.99	-22.67	0.00	-1872.0	0.00	1872.03	5473.16	2736.58	13089.3	6554.42	0.98	-0.373	0.000	0.291
25.00	-27.99	-22.67	0.00	-1872.0	0.00	1872.03	4407.37	2203.68	10563.1	5289.42	0.98	-0.373	0.000	0.360
30.00	-26.78	-22.20	0.00	-1758.6	0.00	1758.68	4358.14	2179.07	10232.9	5124.08	1.42	-0.448	0.000	0.349
35.00	-25.60	-21.71	0.00	-1647.7	0.00	1647.71	4307.28	2153.64	9903.77	4959.25	1.93	-0.535	0.000	0.338
40.00	-24.45	-21.20	0.00	-1539.1	0.00	1539.15	4254.78	2127.39	9575.87	4795.05	2.54	-0.621	0.000	0.327
41.00	-24.21	-21.11	0.00	-1517.9	0.00	1517.95	4244.08	2122.04	9510.46	4762.30	2.67	-0.639	0.000	0.325
45.00	-22.51	-20.69	0.00	-1433.5	0.00	1433.51	4200.64	2100.32	9249.48	4631.61	3.24	-0.708	0.000	0.315
48.00	-21.25	-20.37	0.00	-1371.4	0.00	1371.45	4202.72	2101.36	9261.79	4637.78	3.70	-0.760	0.000	0.301
50.00	-20.79	-20.17	0.00	-1330.7	0.00	1330.71	4180.63	2090.32	9131.68	4572.63	4.02	-0.794	0.000	0.296
55.00	-19.69	-19.64	0.00	-1229.8	0.00	1229.88	4124.26	2062.13	8807.72	4410.41	4.90	-0.875	0.000	0.284
60.00	-18.61	-19.10	0.00	-1131.7	0.00	1131.70	4066.25	2033.13	8485.83	4249.22	5.86	-0.955	0.000	0.271
65.00	-17.56	-18.55	0.00	-1036.2	0.00	1036.20	4006.61	2003.30	8166.25	4089.20	6.90	-1.033	0.000	0.258
66.00	-17.35	-18.45	0.00	-1017.6	0.00	1017.65	3994.48	1997.24	8102.64	4057.34	7.12	-1.049	0.000	0.255
66.00	-17.35	-18.45	0.00	-1017.6	0.00	1017.65	3994.48	1997.24	8102.64	4057.34	7.12	-1.049	0.000	0.255
70.00	-16.52	-18.03	0.00	-943.83	0.00	943.83	3945.32	1972.66	7849.23	3930.45	8.03	-1.111	0.000	0.244
75.00	-15.51	-17.49	0.00	-853.70	0.00	853.70	3882.40	1941.20	7534.99	3773.10	9.23	-1.186	0.000	0.230
80.00	-14.53	-16.95	0.00	-766.26	0.00	766.26	3817.84	1908.92	7223.78	3617.26	10.51	-1.259	0.000	0.216
85.00	-13.56	-16.41	0.00	-681.52	0.00	681.52	3751.64	1875.82	6915.84	3463.06	11.87	-1.329	0.000	0.200
90.00	-11.95	-15.85	0.00	-599.46	0.00	599.46	3683.80	1841.90	6611.41	3310.62	13.30	-1.396	0.000	0.184
91.00	-11.62	-15.74	0.00	-583.61	0.00	583.61	2899.19	1449.59	5264.94	2636.38	13.59	-1.409	0.000	0.225
95.00	-10.99	-15.32	0.00	-520.64	0.00	520.64	2861.52	1430.76	5085.06	2546.31	14.80	-1.460	0.000	0.208
100.00	-10.21	-14.79	0.00	-444.06	0.00	444.06	2812.95	1406.48	4861.78	2434.50	16.36	-1.528	0.000	0.186
105.00	-9.45	-14.26	0.00	-370.13	0.00	370.13	2762.75	1381.37	4640.48	2323.69	18.00	-1.590	0.000	0.163
110.00	-8.72	-13.74	0.00	-298.81	0.00	298.81	2710.91	1355.45	4421.40	2213.98	19.69	-1.646	0.000	0.138
110.00	-8.72	-13.74	0.00	-298.81	0.00	298.81	2710.91	1355.45	4421.40	2213.98	19.69	-1.646	0.000	0.138
115.00	-8.00	-13.23	0.00	-230.10	0.00	230.10	2657.43	1328.71	4204.77	2105.51	21.44	-1.694	0.000	0.112
120.00	-7.31	-12.73	0.00	-163.94	0.00	163.94	2602.31	1301.16	3990.84	1998.39	23.24	-1.733	0.000	0.085
125.00	-6.63	-12.23	0.00	-100.32	0.00	100.32	2545.56	1272.78	3779.85	1892.74	25.07	-1.761	0.000	0.056
130.00	-3.30	-5.58	0.00	-39.17	0.00	39.17	2487.16	1243.58	3572.03	1788.67	26.93	-1.778	0.000	0.023
135.00	-2.31	-5.09	0.00	-11.26	0.00	11.26	1824.83	912.42	2579.10	1291.47	28.79	-1.785	0.000	0.010
137.00	-0.24	-0.28	0.00	-0.83	0.00	0.83	1809.31	904.66	2521.92	1262.84	29.54	-1.786	0.000	0.001
140.00	0.00	-0.27	0.00	0.00	0.00	0.00	1785.54	892.77	2436.62	1220.12	30.66	-1.786	0.000	0.000

## Wind Loading - Shaft

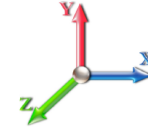
<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.00



**Iterations** 18

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	0.70	4.256	4.68	0.00	1.200	1.410	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	4.256	4.68	0.00	1.200	1.687	5.00	28.446	34.14	159.8	686.8	2486.3
10.00		1.00	0.70	4.256	4.68	0.00	1.200	1.792	5.00	28.037	33.64	157.5	717.7	2483.9
15.00		1.00	0.70	4.256	4.68	0.00	1.200	1.860	5.00	27.596	33.12	155.0	732.2	2465.0
20.00		1.00	0.70	4.256	4.68	0.00	1.200	1.912	5.00	27.141	32.57	152.5	738.9	2438.4
25.00	Top - Section 1	1.00	0.70	4.256	4.68	0.00	1.200	1.953	5.00	26.678	32.01	149.9	740.9	2407.1
30.00		1.00	0.71	4.300	4.73	0.00	1.200	1.988	5.00	26.210	31.45	148.8	739.9	2140.9
35.00		1.00	0.74	4.487	4.94	0.00	1.200	2.017	5.00	25.737	30.88	152.4	736.5	2109.0
40.00		1.00	0.77	4.657	5.12	0.00	1.200	2.044	5.00	25.261	30.31	155.3	731.4	2075.4
41.00	Bot - Section 3	1.00	0.77	4.689	5.16	0.00	1.200	2.049	1.00	4.993	5.99	30.9	146.0	411.4
45.00		1.00	0.79	4.813	5.29	0.00	1.200	2.068	4.00	20.041	24.05	127.3	587.7	2702.3
48.00	Top - Section 2	1.00	0.81	4.901	5.39	0.00	1.200	2.081	3.00	14.828	17.79	95.9	438.2	2000.1
50.00		1.00	0.82	4.957	5.45	0.00	1.200	2.089	2.00	9.789	11.75	64.0	290.9	809.4
55.00		1.00	0.84	5.091	5.60	0.00	1.200	2.109	5.00	24.140	28.97	162.2	718.7	1995.2
60.00		1.00	0.86	5.217	5.74	0.00	1.200	2.127	5.00	23.658	28.39	162.9	709.5	1957.3
65.00		1.00	0.88	5.336	5.87	0.00	1.200	2.144	5.00	23.174	27.81	163.2	699.5	1918.8
66.00	Top - Section 3	1.00	0.88	5.359	5.89	0.00	1.200	2.147	1.00	4.576	5.49	32.4	139.5	379.9
70.00		1.00	0.90	5.448	5.99	0.00	1.200	2.159	4.00	18.112	21.73	130.3	551.1	1501.4
75.00		1.00	0.91	5.555	6.11	0.00	1.200	2.174	5.00	22.205	26.65	162.8	677.8	1840.0
80.00		1.00	0.93	5.657	6.22	0.00	1.200	2.188	5.00	21.719	26.06	162.2	666.2	1799.8
85.00	Bot - Section 5	1.00	0.95	5.755	6.33	0.00	1.200	2.201	5.00	21.232	25.48	161.3	654.2	1759.2
90.00		1.00	0.96	5.849	6.43	0.00	1.200	2.214	5.00	21.009	25.21	162.2	650.4	2637.8
91.00	Top - Section 4	1.00	0.96	5.867	6.45	0.00	1.200	2.216	1.00	4.143	4.97	32.1	129.6	520.8
95.00		1.00	0.98	5.939	6.53	0.00	1.200	2.225	4.00	16.378	19.65	128.4	510.1	1217.9
100.00		1.00	0.99	6.026	6.63	0.00	1.200	2.237	5.00	20.034	24.04	159.3	624.6	1487.9
105.00		1.00	1.00	6.109	6.72	0.00	1.200	2.248	5.00	19.545	23.45	157.6	611.2	1450.7
110.00	Top - Section 5	1.00	1.02	6.190	6.81	0.00	1.200	2.258	5.00	19.056	22.87	155.7	597.5	1413.2
115.00		1.00	1.03	6.269	6.90	0.00	1.200	2.268	5.00	18.567	22.28	153.6	583.6	1375.5
120.00		1.00	1.04	6.345	6.98	0.00	1.200	2.277	5.00	18.078	21.69	151.4	569.4	1337.5
125.00		1.00	1.06	6.419	7.06	0.00	1.200	2.287	5.00	17.588	21.11	149.0	555.0	1299.3
130.00	Bot - Section 7	1.00	1.07	6.490	7.14	0.00	1.200	2.296	5.00	17.098	20.52	146.5	540.4	1260.8
135.00	Top - Section 6	1.00	1.08	6.560	7.22	0.00	1.200	2.304	5.00	16.819	20.18	145.6	532.8	1795.8
137.00	Appurtenance(s)	1.00	1.08	6.588	7.25	0.00	1.200	2.308	2.00	6.589	7.91	57.3	210.7	431.9
140.00		1.00	1.09	6.628	7.29	0.00	1.200	2.313	3.00	9.737	11.68	85.2	310.7	636.8
<b>Totals:</b>									<b>140.00</b>			<b>4,370.7</b>		<b>54,546.7</b>



## Discrete Appurtenance Forces

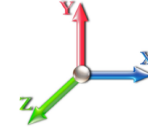
<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.00



**Iterations** 18

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	137.00	Antel BXA-70063/6CF	4	6.588	7.246	0.56	0.80	25.14	668.71	0.000	0.000	182.19	0.00	0.00	
2	137.00	Antel BXA-70080/6CF	2	6.588	7.246	0.70	0.80	12.66	304.23	0.000	0.000	91.76	0.00	0.00	
3	137.00	Low Profile Platform	1	6.588	7.246	1.00	1.00	45.35	3230.72	0.000	0.000	328.65	0.00	0.00	
4	137.00	RFS Celwave	1	6.588	7.246	1.00	1.00	5.98	253.97	0.000	0.000	43.34	0.00	0.00	
5	137.00	RFS FD9R6004/2C-3L	6	6.628	7.291	0.80	0.80	4.54	72.20	0.000	3.000	33.11	0.00	99.34	
6	137.00	ALU RRH2X60-PCS	3	6.588	7.246	0.54	0.80	4.93	559.30	0.000	0.000	35.73	0.00	0.00	
7	137.00	ALU RRH2x60-AWS	3	6.588	7.246	0.54	0.80	7.31	501.96	0.000	0.000	52.94	0.00	0.00	
8	137.00	Commscope	6	6.588	7.246	0.62	0.80	45.86	1389.62	0.000	0.000	332.35	0.00	0.00	
9	130.00	RRUS 4449 B5/B12	3	6.490	7.139	0.50	0.75	4.06	425.45	0.000	0.000	28.95	0.00	0.00	
10	130.00	Powerwave LGP21901 -	6	6.490	7.139	0.56	0.75	17.50	705.11	0.000	0.000	124.93	0.00	0.00	
11	130.00	RRUS 8843 B2 B66A	3	6.490	7.139	0.50	0.75	3.46	408.06	0.000	0.000	24.68	0.00	0.00	
12	130.00	LGP17201	6	6.490	7.139	0.75	0.75	14.67	-22.10	0.000	0.000	104.76	0.00	0.00	
13	130.00	HRK12 (Handrail Kit)	1	6.490	7.139	1.00	1.00	22.86	984.34	0.000	0.000	163.18	0.00	0.00	
14	130.00	DMP65R-BU8DA	3	6.490	7.139	0.54	0.75	32.78	1927.09	0.000	0.000	234.01	0.00	0.00	
15	130.00	HPA-65R-BU8AA	3	6.490	7.139	0.65	0.75	25.99	1306.85	0.000	0.000	185.56	0.00	0.00	
16	130.00	Low Profile Platform	1	6.490	7.139	1.00	1.00	45.23	3221.74	0.000	0.000	322.93	0.00	0.00	
17	130.00	DC6-48-60-18-8F	1	6.490	7.139	1.00	1.00	2.11	106.54	0.000	0.000	15.09	0.00	0.00	
18	130.00	Powerwave LGP21401 -	6	6.490	7.139	0.75	0.75	10.75	348.70	0.000	0.000	76.76	0.00	0.00	
19	130.00	7770.00	6	6.490	7.139	0.55	0.75	22.77	1338.96	0.000	0.000	162.53	0.00	0.00	
<b>Totals:</b>									<b>17,731.44</b>						<b>2,543.46</b>

## Total Applied Force Summary

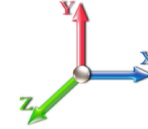
<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.00



**Iterations** 18

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		159.81	2574.39	0.00	0.00
10.00		157.51	2709.50	0.00	0.00
15.00		155.03	2694.34	0.00	0.00
20.00		152.48	2670.56	0.00	0.00
25.00		149.88	2641.62	0.00	0.00
30.00		148.75	2377.46	0.00	0.00
35.00		152.45	2347.29	0.00	0.00
40.00		155.30	2315.19	0.00	0.00
41.00		30.91	459.43	0.00	0.00
45.00		127.32	2895.32	0.00	0.00
48.00		95.92	2145.33	0.00	0.00
50.00		64.05	906.46	0.00	0.00
55.00		162.23	2238.89	0.00	0.00
60.00		162.92	2202.17	0.00	0.00
65.00		163.22	2164.67	0.00	0.00
66.00		32.37	429.13	0.00	0.00
70.00		130.26	1698.91	0.00	0.00
75.00		162.83	2087.72	0.00	0.00
80.00		162.19	2048.42	0.00	0.00
85.00		161.29	2008.63	0.00	0.00
90.00		162.20	2888.02	0.00	0.00
91.00		32.08	570.84	0.00	0.00
95.00		128.39	1418.74	0.00	0.00
100.00		159.34	1739.64	0.00	0.00
105.00		157.62	1703.13	0.00	0.00
110.00		155.71	1666.32	0.00	0.00
115.00		153.64	1629.22	0.00	0.00
120.00		151.40	1591.85	0.00	0.00
125.00		149.01	1554.24	0.00	0.00
130.00	(39) attachments	1589.87	12267.12	0.00	0.00
135.00		145.64	1876.93	0.00	0.00
137.00	(26) attachments	1157.37	7445.10	0.00	99.34
140.00		85.19	636.80	0.00	0.00
	<b>Totals:</b>	<b>6,914.19</b>	<b>78,603.37</b>	<b>0.00</b>	<b>99.34</b>

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

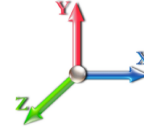


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**Load Case:** 1.2D + 1.0Di + 1.0Wi 50 mph Wind

**Iterations** 18

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.00



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)
5.00	1" DC Power	Yes	2.00	0.000	2.00	0.90	0.00	0.015	0.000	4.256	0.00	17.33
5.00	7/16" Fiber	Yes	2.00	0.000	0.44	0.64	0.00	0.015	0.000	4.256	0.00	8.33
10.00	1" DC Power	Yes	5.00	0.000	2.00	2.33	0.00	0.038	0.000	4.256	0.00	46.39
10.00	7/16" Fiber	Yes	5.00	0.000	0.44	1.68	0.00	0.038	0.000	4.256	0.00	23.24
15.00	1" DC Power	Yes	5.00	0.000	2.00	2.38	0.00	0.039	0.000	4.256	0.00	48.44
15.00	7/16" Fiber	Yes	5.00	0.000	0.44	1.73	0.00	0.039	0.000	4.256	0.00	24.89
20.00	1" DC Power	Yes	5.00	0.000	2.00	2.43	0.00	0.040	0.000	4.256	0.00	50.03
20.00	7/16" Fiber	Yes	5.00	0.000	0.44	1.78	0.00	0.040	0.000	4.256	0.00	26.15
25.00	1" DC Power	Yes	5.00	0.000	2.00	2.46	0.00	0.041	0.000	4.256	0.00	51.32
25.00	7/16" Fiber	Yes	5.00	0.000	0.44	1.81	0.00	0.041	0.000	4.256	0.00	27.20
30.00	1" DC Power	Yes	5.00	0.000	2.00	2.49	0.00	0.041	0.000	4.300	0.00	52.42
30.00	7/16" Fiber	Yes	5.00	0.000	0.44	1.84	0.00	0.041	0.000	4.300	0.00	28.09
35.00	1" DC Power	Yes	5.00	0.000	2.00	2.51	0.00	0.042	0.000	4.487	0.00	53.39
35.00	7/16" Fiber	Yes	5.00	0.000	0.44	1.86	0.00	0.042	0.000	4.487	0.00	28.88
40.00	1" DC Power	Yes	5.00	0.000	2.00	2.54	0.00	0.043	0.000	4.657	0.00	54.25
40.00	7/16" Fiber	Yes	5.00	0.000	0.44	1.89	0.00	0.043	0.000	4.657	0.00	29.58
41.00	1" DC Power	Yes	1.00	0.000	2.00	0.51	0.00	0.044	0.000	4.689	0.00	10.88
41.00	7/16" Fiber	Yes	1.00	0.000	0.44	0.38	0.00	0.044	0.000	4.689	0.00	5.94
45.00	1" DC Power	Yes	4.00	0.000	2.00	2.05	0.00	0.044	0.000	4.813	0.00	44.02
45.00	7/16" Fiber	Yes	4.00	0.000	0.44	1.53	0.00	0.044	0.000	4.813	0.00	24.17
48.00	1" DC Power	Yes	3.00	0.000	2.00	1.54	0.00	0.045	0.000	4.901	0.00	33.28
48.00	7/16" Fiber	Yes	3.00	0.000	0.44	1.15	0.00	0.045	0.000	4.901	0.00	18.34
50.00	1" DC Power	Yes	2.00	0.000	2.00	1.03	0.00	0.045	0.000	4.957	0.00	22.30
50.00	7/16" Fiber	Yes	2.00	0.000	0.44	0.77	0.00	0.045	0.000	4.957	0.00	12.32
55.00	1" DC Power	Yes	5.00	0.000	2.00	2.59	0.00	0.045	0.000	5.091	0.00	56.40
55.00	7/16" Fiber	Yes	5.00	0.000	0.44	1.94	0.00	0.045	0.000	5.091	0.00	31.33
60.00	1" DC Power	Yes	5.00	0.000	2.00	2.61	0.00	0.046	0.000	5.217	0.00	57.00
60.00	7/16" Fiber	Yes	5.00	0.000	0.44	1.96	0.00	0.046	0.000	5.217	0.00	31.83
65.00	1" DC Power	Yes	5.00	0.000	2.00	2.62	0.00	0.048	0.000	5.336	0.00	57.57
65.00	7/16" Fiber	Yes	5.00	0.000	0.44	1.97	0.00	0.048	0.000	5.336	0.00	32.30
66.00	1" DC Power	Yes	1.00	0.000	2.00	0.52	0.00	0.048	0.000	5.359	0.00	11.54
66.00	7/16" Fiber	Yes	1.00	0.000	0.44	0.39	0.00	0.048	0.000	5.359	0.00	6.48
70.00	1" DC Power	Yes	4.00	0.000	2.00	2.11	0.00	0.049	0.000	5.448	0.00	46.49
70.00	7/16" Fiber	Yes	4.00	0.000	0.44	1.59	0.00	0.049	0.000	5.448	0.00	26.19
75.00	1" DC Power	Yes	5.00	0.000	2.00	2.65	0.00	0.050	0.000	5.555	0.00	58.61
75.00	7/16" Fiber	Yes	5.00	0.000	0.44	2.00	0.00	0.050	0.000	5.555	0.00	33.15
80.00	1" DC Power	Yes	5.00	0.000	2.00	2.66	0.00	0.051	0.000	5.657	0.00	59.09
80.00	7/16" Fiber	Yes	5.00	0.000	0.44	2.01	0.00	0.051	0.000	5.657	0.00	33.55
85.00	1" DC Power	Yes	5.00	0.000	2.00	2.67	0.00	0.052	0.000	5.755	0.00	59.55
85.00	7/16" Fiber	Yes	5.00	0.000	0.44	2.02	0.00	0.052	0.000	5.755	0.00	33.92
90.00	1" DC Power	Yes	5.00	0.000	2.00	2.68	0.00	0.054	0.000	5.849	0.00	59.98
90.00	7/16" Fiber	Yes	5.00	0.000	0.44	2.03	0.00	0.054	0.000	5.849	0.00	34.28
91.00	1" DC Power	Yes	1.00	0.000	2.00	0.54	0.00	0.055	0.000	5.867	0.00	12.01
91.00	7/16" Fiber	Yes	1.00	0.000	0.44	0.41	0.00	0.055	0.000	5.867	0.00	6.87
95.00	1" DC Power	Yes	4.00	0.000	2.00	2.15	0.00	0.055	0.000	5.939	0.00	48.32
95.00	7/16" Fiber	Yes	4.00	0.000	0.44	1.63	0.00	0.055	0.000	5.939	0.00	27.70
100.00	1" DC Power	Yes	5.00	0.000	2.00	2.70	0.00	0.056	0.000	6.026	0.00	60.79

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



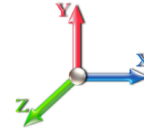
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**Load Case:** 1.2D + 1.0Di + 1.0Wi 50 mph Wind

**Iterations** 18

**Dead Load Factor** 1.20

**Wind Load Factor** 1.00



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)
100.00	7/16" Fiber	Yes	5.00	0.000	0.44	2.05	0.00	0.056	0.000	6.026	0.00	34.95
105.00	1" DC Power	Yes	5.00	0.000	2.00	2.71	0.00	0.058	0.000	6.109	0.00	61.17
105.00	7/16" Fiber	Yes	5.00	0.000	0.44	2.06	0.00	0.058	0.000	6.109	0.00	35.26
110.00	1" DC Power	Yes	5.00	0.000	2.00	2.71	0.00	0.059	0.000	6.190	0.00	61.54
110.00	7/16" Fiber	Yes	5.00	0.000	0.44	2.06	0.00	0.059	0.000	6.190	0.00	35.57
115.00	1" DC Power	Yes	5.00	0.000	2.00	2.72	0.00	0.061	0.000	6.269	0.00	61.89
115.00	7/16" Fiber	Yes	5.00	0.000	0.44	2.07	0.00	0.061	0.000	6.269	0.00	35.86
120.00	1" DC Power	Yes	5.00	0.000	2.00	2.73	0.00	0.063	0.000	6.345	0.00	62.23
120.00	7/16" Fiber	Yes	5.00	0.000	0.44	2.08	0.00	0.063	0.000	6.345	0.00	36.14
125.00	1" DC Power	Yes	5.00	0.000	2.00	2.74	0.00	0.065	0.000	6.419	0.00	62.56
125.00	7/16" Fiber	Yes	5.00	0.000	0.44	2.09	0.00	0.065	0.000	6.419	0.00	36.42
130.00	1" DC Power	Yes	5.00	0.000	2.00	2.75	0.00	0.067	0.000	6.490	0.00	62.88
130.00	7/16" Fiber	Yes	5.00	0.000	0.44	2.10	0.00	0.067	0.000	6.490	0.00	36.68
<b>Totals:</b>											<b>0.0</b>	<b>2,249.3</b>

## Calculated Forces

<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

**Iterations** 18

**Dead Load Factor** 1.20  
**Wind Load 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	-78.60	-6.93	0.00	-676.26	0.00	676.26	5803.10	2901.55	15291.3	7657.05	0.00	0.000	0.000	0.102
5.00	-76.03	-6.79	0.00	-641.62	0.00	641.62	5740.39	2870.20	14846.6	7434.33	0.01	-0.020	0.000	0.100
10.00	-73.31	-6.66	0.00	-607.64	0.00	607.64	5676.04	2838.02	14403.7	7212.59	0.04	-0.041	0.000	0.097
15.00	-70.62	-6.53	0.00	-574.33	0.00	574.33	5610.05	2805.03	13963.1	6991.95	0.10	-0.061	0.000	0.095
20.00	-67.94	-6.40	0.00	-541.69	0.00	541.69	5542.43	2771.21	13524.9	6772.52	0.17	-0.081	0.000	0.092
25.00	-65.30	-6.27	0.00	-509.70	0.00	509.70	5473.16	2736.58	13089.3	6554.42	0.27	-0.102	0.000	0.090
25.00	-65.30	-6.27	0.00	-509.70	0.00	509.70	4407.37	2203.68	10563.1	5289.42	0.27	-0.102	0.000	0.111
30.00	-62.92	-6.14	0.00	-478.36	0.00	478.36	4358.14	2179.07	10232.9	5124.08	0.39	-0.122	0.000	0.108
35.00	-60.57	-6.00	0.00	-447.67	0.00	447.67	4307.28	2153.64	9903.77	4959.25	0.53	-0.146	0.000	0.104
40.00	-58.26	-5.86	0.00	-417.65	0.00	417.65	4254.78	2127.39	9575.87	4795.05	0.69	-0.169	0.000	0.101
41.00	-57.80	-5.84	0.00	-411.79	0.00	411.79	4244.08	2122.04	9510.46	4762.30	0.73	-0.174	0.000	0.100
45.00	-54.90	-5.72	0.00	-388.44	0.00	388.44	4200.64	2100.32	9249.48	4631.61	0.88	-0.193	0.000	0.097
48.00	-52.75	-5.62	0.00	-371.30	0.00	371.30	4202.72	2101.36	9261.79	4637.78	1.01	-0.207	0.000	0.093
50.00	-51.84	-5.57	0.00	-360.05	0.00	360.05	4180.63	2090.32	9131.68	4572.63	1.10	-0.216	0.000	0.091
55.00	-49.60	-5.42	0.00	-332.20	0.00	332.20	4124.26	2062.13	8807.72	4410.41	1.34	-0.238	0.000	0.087
60.00	-47.40	-5.26	0.00	-305.11	0.00	305.11	4066.25	2033.13	8485.83	4249.22	1.60	-0.259	0.000	0.083
65.00	-45.24	-5.10	0.00	-278.80	0.00	278.80	4006.61	2003.30	8166.25	4089.20	1.88	-0.281	0.000	0.079
66.00	-44.81	-5.07	0.00	-273.70	0.00	273.70	3994.48	1997.24	8102.64	4057.34	1.94	-0.285	0.000	0.079
66.00	-44.81	-5.07	0.00	-273.70	0.00	273.70	3994.48	1997.24	8102.64	4057.34	1.94	-0.285	0.000	0.079
70.00	-43.11	-4.95	0.00	-253.40	0.00	253.40	3945.32	1972.66	7849.23	3930.45	2.18	-0.301	0.000	0.075
75.00	-41.02	-4.79	0.00	-228.66	0.00	228.66	3882.40	1941.20	7534.99	3773.10	2.51	-0.322	0.000	0.071
80.00	-38.97	-4.63	0.00	-204.72	0.00	204.72	3817.84	1908.92	7223.78	3617.26	2.86	-0.341	0.000	0.067
85.00	-36.96	-4.47	0.00	-181.59	0.00	181.59	3751.64	1875.82	6915.84	3463.06	3.23	-0.360	0.000	0.062
90.00	-34.07	-4.29	0.00	-159.26	0.00	159.26	3683.80	1841.90	6611.41	3310.62	3.61	-0.378	0.000	0.057
91.00	-33.50	-4.26	0.00	-154.97	0.00	154.97	2899.19	1449.59	5264.94	2636.38	3.69	-0.381	0.000	0.070
95.00	-32.08	-4.13	0.00	-137.93	0.00	137.93	2861.52	1430.76	5085.06	2546.31	4.02	-0.395	0.000	0.065
100.00	-30.34	-3.97	0.00	-117.28	0.00	117.28	2812.95	1406.48	4861.78	2434.50	4.44	-0.413	0.000	0.059
105.00	-28.64	-3.81	0.00	-97.44	0.00	97.44	2762.75	1381.37	4640.48	2323.69	4.88	-0.429	0.000	0.052
110.00	-26.97	-3.64	0.00	-78.41	0.00	78.41	2710.91	1355.45	4421.40	2213.98	5.34	-0.444	0.000	0.045
110.00	-26.97	-3.64	0.00	-78.41	0.00	78.41	2710.91	1355.45	4421.40	2213.98	5.34	-0.444	0.000	0.045
115.00	-25.34	-3.48	0.00	-60.19	0.00	60.19	2657.43	1328.71	4204.77	2105.51	5.81	-0.456	0.000	0.038
120.00	-23.75	-3.32	0.00	-42.77	0.00	42.77	2602.31	1301.16	3990.84	1998.39	6.30	-0.466	0.000	0.031
125.00	-22.20	-3.16	0.00	-26.16	0.00	26.16	2545.56	1272.78	3779.85	1892.74	6.79	-0.474	0.000	0.023
130.00	-9.95	-1.47	0.00	-10.35	0.00	10.35	2487.16	1243.58	3572.03	1788.67	7.29	-0.478	0.000	0.010
135.00	-8.07	-1.31	0.00	-2.99	0.00	2.99	1824.83	912.42	2579.10	1291.47	7.79	-0.480	0.000	0.007
137.00	-0.64	-0.09	0.00	-0.27	0.00	0.27	1809.31	904.66	2521.92	1262.84	7.99	-0.480	0.000	0.001
140.00	0.00	-0.09	0.00	0.00	0.00	0.00	1785.54	892.77	2436.62	1220.12	8.29	-0.480	0.000	0.000

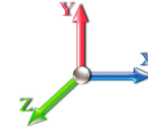
## Seismic Segment Forces (Factored)

<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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<b>Load Case:</b> 1.2D + 1.0E				<b>Iterations</b> 17
<b>Gust Response Factor</b>	1.10	<b>Sds</b>	0.18	<b>Ss</b> 0.17
<b>Dead Load Factor</b>	1.20	<b>Seismic Load Factor</b>	1.00	<b>S1</b> 0.06
<b>Wind Load Factor</b>	0.00	<b>Structure Frequency (f1)</b>	0.60	<b>SA</b> 0.06
				<b>Seismic Importance Factor</b> 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.01	0.00	0.00	
5.00		1499.5	0.00	0.04	0.02	20.27	
10.00		1471.8	0.01	0.06	0.03	28.03	
15.00		1444.0	0.02	0.07	0.04	31.82	
20.00		1416.2	0.04	0.07	0.04	33.65	
25.00	Top - Section 1	1388.4	0.06	0.07	0.04	34.64	
30.00		1167.5	0.09	0.07	0.04	30.32	
35.00		1143.7	0.12	0.07	0.03	30.83	
40.00		1119.9	0.16	0.07	0.03	31.17	
41.00	Bot - Section 3	221.13	0.17	0.07	0.03	6.19	
45.00		1762.1	0.20	0.06	0.02	50.03	
48.00	Top - Section 2	1301.6	0.23	0.06	0.02	37.02	
50.00		432.15	0.25	0.06	0.02	12.23	
55.00		1063.7	0.30	0.05	0.01	28.93	
60.00		1039.8	0.35	0.03	0.01	25.68	
65.00		1016.0	0.41	0.01	0.01	20.90	
66.00	Top - Section 3	200.36	0.43	0.01	0.01	3.92	
70.00		791.90	0.48	-0.01	0.01	11.77	
75.00		968.45	0.55	-0.03	0.01	7.75	
80.00		944.64	0.62	-0.06	0.02	0.86	
85.00	Bot - Section 5	920.83	0.70	-0.09	0.03	-4.75	
90.00		1656.1	0.79	-0.11	0.05	-14.60	
91.00	Top - Section 4	325.99	0.80	-0.11	0.06	-2.98	
95.00		589.83	0.88	-0.12	0.08	-5.21	
100.00		719.43	0.97	-0.12	0.12	-3.06	
105.00		699.58	1.07	-0.09	0.17	3.85	
110.00	Top - Section 5	679.74	1.17	-0.02	0.23	14.13	
115.00		659.90	1.28	0.09	0.32	27.57	
120.00		640.05	1.39	0.27	0.42	43.91	
125.00		620.21	1.51	0.52	0.55	62.85	
130.00	Bot - Section 7	3785.9	1.63	0.88	0.71	530.23	
135.00	Top - Section 6	1052.5	1.76	1.36	0.91	194.54	
137.00	Appurtenance(s)	2440.7	1.81	1.59	1.00	499.05	
140.00		271.78	1.89	1.98	1.14	64.08	
<b>Totals:</b>		<b>35,456.2</b>				<b>1,855.6</b>	<b>Total Wind: 26,605.0</b>

Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

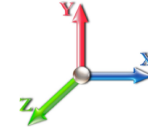
## Calculated Forces

<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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<b>Load Case:</b> 1.2D + 1.0E		<b>Iterations</b> 17
<b>Gust Response Factor</b> 1.10	<b>Sds</b> 0.18	<b>Ss</b> 0.17
<b>Dead Load Factor</b> 1.20	<b>Seismic Load Factor</b> 1.00	<b>S1</b> 0.06
<b>Wind Load Factor</b> 0.00	<b>Structure Frequency (f1)</b> 0.60	<b>SA</b> 0.06
	<b>Seismic Importance Factor</b> 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	-46.94	-1.89	0.00	-211.54	0.00	211.54	5803.10	2901.55	15291.3	7657.05	0.00	0.00	0.00	0.036
5.00	-45.07	-1.87	0.00	-202.10	0.00	202.10	5740.39	2870.20	14846.6	7434.33	0.00	-0.01	0.035	
10.00	-43.14	-1.85	0.00	-192.73	0.00	192.73	5676.04	2838.02	14403.7	7212.59	0.01	-0.01	0.034	
15.00	-41.24	-1.82	0.00	-183.49	0.00	183.49	5610.05	2805.03	13963.1	6991.95	0.03	-0.02	0.034	
20.00	-39.37	-1.79	0.00	-174.38	0.00	174.38	5542.43	2771.21	13524.9	6772.52	0.05	-0.03	0.033	
25.00	-37.53	-1.76	0.00	-165.42	0.00	165.42	5473.16	2736.58	13089.3	6554.42	0.08	-0.03	0.032	
25.00	-37.53	-1.76	0.00	-165.42	0.00	165.42	4407.37	2203.68	10563.1	5289.42	0.08	-0.03	0.040	
30.00	-35.96	-1.73	0.00	-156.61	0.00	156.61	4358.14	2179.07	10232.9	5124.08	0.12	-0.04	0.039	
35.00	-34.42	-1.71	0.00	-147.94	0.00	147.94	4307.28	2153.64	9903.77	4959.25	0.17	-0.05	0.038	
40.00	-32.91	-1.68	0.00	-139.41	0.00	139.41	4254.78	2127.39	9575.87	4795.05	0.22	-0.05	0.037	
41.00	-32.61	-1.67	0.00	-137.73	0.00	137.73	4244.08	2122.04	9510.46	4762.30	0.23	-0.06	0.037	
45.00	-30.36	-1.62	0.00	-131.04	0.00	131.04	4200.64	2100.32	9249.48	4631.61	0.28	-0.06	0.036	
48.00	-28.70	-1.59	0.00	-126.18	0.00	126.18	4202.72	2101.36	9261.79	4637.78	0.32	-0.07	0.034	
50.00	-28.11	-1.58	0.00	-123.00	0.00	123.00	4180.63	2090.32	9131.68	4572.63	0.35	-0.07	0.034	
55.00	-26.67	-1.55	0.00	-115.12	0.00	115.12	4124.26	2062.13	8807.72	4410.41	0.43	-0.08	0.033	
60.00	-25.25	-1.52	0.00	-107.38	0.00	107.38	4066.25	2033.13	8485.83	4249.22	0.52	-0.09	0.031	
65.00	-23.86	-1.50	0.00	-99.76	0.00	99.76	4006.61	2003.30	8166.25	4089.20	0.61	-0.09	0.030	
66.00	-23.59	-1.50	0.00	-98.26	0.00	98.26	3994.48	1997.24	8102.64	4057.34	0.63	-0.09	0.030	
66.00	-23.59	-1.50	0.00	-98.26	0.00	98.26	3994.48	1997.24	8102.64	4057.34	0.63	-0.09	0.030	
70.00	-22.50	-1.49	0.00	-92.26	0.00	92.26	3945.32	1972.66	7849.23	3930.45	0.71	-0.10	0.029	
75.00	-21.17	-1.48	0.00	-84.81	0.00	84.81	3882.40	1941.20	7534.99	3773.10	0.82	-0.11	0.028	
80.00	-19.87	-1.48	0.00	-77.40	0.00	77.40	3817.84	1908.92	7223.78	3617.26	0.94	-0.12	0.027	
85.00	-18.60	-1.48	0.00	-70.00	0.00	70.00	3751.64	1875.82	6915.84	3463.06	1.06	-0.12	0.025	
90.00	-16.44	-1.48	0.00	-62.59	0.00	62.59	3683.80	1841.90	6611.41	3310.62	1.19	-0.13	0.023	
91.00	-16.02	-1.48	0.00	-61.12	0.00	61.12	2899.19	1449.59	5264.94	2636.38	1.22	-0.13	0.029	
95.00	-15.17	-1.48	0.00	-55.21	0.00	55.21	2861.52	1430.76	5085.06	2546.31	1.33	-0.14	0.027	
100.00	-14.14	-1.48	0.00	-47.82	0.00	47.82	2812.95	1406.48	4861.78	2434.50	1.48	-0.14	0.025	
105.00	-13.13	-1.47	0.00	-40.44	0.00	40.44	2762.75	1381.37	4640.48	2323.69	1.63	-0.15	0.022	
110.00	-12.15	-1.46	0.00	-33.09	0.00	33.09	2710.91	1355.45	4421.40	2213.98	1.79	-0.16	0.019	
110.00	-12.15	-1.46	0.00	-33.09	0.00	33.09	2710.91	1355.45	4421.40	2213.98	1.79	-0.16	0.019	
115.00	-11.19	-1.43	0.00	-25.81	0.00	25.81	2657.43	1328.71	4204.77	2105.51	1.96	-0.16	0.016	
120.00	-10.25	-1.38	0.00	-18.68	0.00	18.68	2602.31	1301.16	3990.84	1998.39	2.13	-0.17	0.013	
125.00	-9.34	-1.32	0.00	-11.78	0.00	11.78	2545.56	1272.78	3779.85	1892.74	2.31	-0.17	0.010	
130.00	-4.63	-0.77	0.00	-5.20	0.00	5.20	2487.16	1243.58	3572.03	1788.67	2.49	-0.17	0.005	
135.00	-3.29	-0.57	0.00	-1.34	0.00	1.34	1824.83	912.42	2579.10	1291.47	2.66	-0.17	0.003	
137.00	-0.33	-0.07	0.00	-0.20	0.00	0.20	1809.31	904.66	2521.92	1262.84	2.74	-0.17	0.000	
140.00	0.00	-0.06	0.00	0.00	0.00	0.00	1785.54	892.77	2436.62	1220.12	2.85	-0.17	0.000	

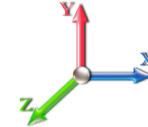
## Seismic Segment Forces (Factored)

<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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<b>Load Case:</b> 0.9D + 1.0E				<b>Iterations</b> 17
<b>Gust Response Factor</b>	1.10	<b>Sds</b>	0.18	<b>Ss</b> 0.17
<b>Dead Load Factor</b>	0.90	<b>Seismic Load Factor</b>	1.00	<b>S1</b> 0.06
<b>Wind Load Factor</b>	0.00	<b>Structure Frequency (f1)</b>	0.60	<b>SA</b> 0.06
				<b>Seismic Importance Factor</b> 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.01	0.00	0.00	
5.00		1499.5	0.00	0.04	0.02	20.27	
10.00		1471.8	0.01	0.06	0.03	28.03	
15.00		1444.0	0.02	0.07	0.04	31.82	
20.00		1416.2	0.04	0.07	0.04	33.65	
25.00	Top - Section 1	1388.4	0.06	0.07	0.04	34.64	
30.00		1167.5	0.09	0.07	0.04	30.32	
35.00		1143.7	0.12	0.07	0.03	30.83	
40.00		1119.9	0.16	0.07	0.03	31.17	
41.00	Bot - Section 3	221.13	0.17	0.07	0.03	6.19	
45.00		1762.1	0.20	0.06	0.02	50.03	
48.00	Top - Section 2	1301.6	0.23	0.06	0.02	37.02	
50.00		432.15	0.25	0.06	0.02	12.23	
55.00		1063.7	0.30	0.05	0.01	28.93	
60.00		1039.8	0.35	0.03	0.01	25.68	
65.00		1016.0	0.41	0.01	0.01	20.90	
66.00	Top - Section 3	200.36	0.43	0.01	0.01	3.92	
70.00		791.90	0.48	-0.01	0.01	11.77	
75.00		968.45	0.55	-0.03	0.01	7.75	
80.00		944.64	0.62	-0.06	0.02	0.86	
85.00	Bot - Section 5	920.83	0.70	-0.09	0.03	-4.75	
90.00		1656.1	0.79	-0.11	0.05	-14.60	
91.00	Top - Section 4	325.99	0.80	-0.11	0.06	-2.98	
95.00		589.83	0.88	-0.12	0.08	-5.21	
100.00		719.43	0.97	-0.12	0.12	-3.06	
105.00		699.58	1.07	-0.09	0.17	3.85	
110.00	Top - Section 5	679.74	1.17	-0.02	0.23	14.13	
115.00		659.90	1.28	0.09	0.32	27.57	
120.00		640.05	1.39	0.27	0.42	43.91	
125.00		620.21	1.51	0.52	0.55	62.85	
130.00	Bot - Section 7	3785.9	1.63	0.88	0.71	530.23	
135.00	Top - Section 6	1052.5	1.76	1.36	0.91	194.54	
137.00	Appurtenance(s)	2440.7	1.81	1.59	1.00	499.05	
140.00		271.78	1.89	1.98	1.14	64.08	
<b>Totals:</b>		<b>35,456.2</b>				<b>1,855.6</b>	<b>Total Wind: 26,605.0</b>

Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required



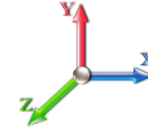
## Calculated Forces

<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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<b>Load Case:</b> 0.9D + 1.0E						<b>Iterations</b> 17
<b>Gust Response Factor</b>	1.10			<b>Sds</b>	0.18	<b>Ss</b> 0.17
<b>Dead Load Factor</b>	0.90	<b>Seismic Load Factor</b>	1.00	<b>Sd1</b>	0.10	<b>S1</b> 0.06
<b>Wind Load Factor</b>	0.00	<b>Structure Frequency (f1)</b>	0.60	<b>SA</b>	0.06	<b>Seismic Importance Factor</b> 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	-35.21	-1.89	0.00	-210.51	0.00	210.51	5803.10	2901.55	15291.3	7657.05	0.00	0.00	0.00	0.034
5.00	-33.80	-1.87	0.00	-201.07	0.00	201.07	5740.39	2870.20	14846.6	7434.33	0.00	-0.01	0.00	0.033
10.00	-32.35	-1.85	0.00	-191.71	0.00	191.71	5676.04	2838.02	14403.7	7212.59	0.01	-0.01	0.00	0.032
15.00	-30.93	-1.82	0.00	-182.48	0.00	182.48	5610.05	2805.03	13963.1	6991.95	0.03	-0.02	0.00	0.032
20.00	-29.53	-1.79	0.00	-173.39	0.00	173.39	5542.43	2771.21	13524.9	6772.52	0.05	-0.03	0.00	0.031
25.00	-28.15	-1.75	0.00	-164.46	0.00	164.46	5473.16	2736.58	13089.3	6554.42	0.08	-0.03	0.00	0.030
25.00	-28.15	-1.75	0.00	-164.46	0.00	164.46	4407.37	2203.68	10563.1	5289.42	0.08	-0.03	0.00	0.037
30.00	-26.97	-1.73	0.00	-155.69	0.00	155.69	4358.14	2179.07	10232.9	5124.08	0.12	-0.04	0.00	0.037
35.00	-25.82	-1.70	0.00	-147.05	0.00	147.05	4307.28	2153.64	9903.77	4959.25	0.17	-0.05	0.00	0.036
40.00	-24.68	-1.67	0.00	-138.56	0.00	138.56	4254.78	2127.39	9575.87	4795.05	0.22	-0.05	0.00	0.035
41.00	-24.46	-1.66	0.00	-136.89	0.00	136.89	4244.08	2122.04	9510.46	4762.30	0.23	-0.06	0.00	0.035
45.00	-22.77	-1.61	0.00	-130.23	0.00	130.23	4200.64	2100.32	9249.48	4631.61	0.28	-0.06	0.00	0.034
48.00	-21.52	-1.58	0.00	-125.39	0.00	125.39	4202.72	2101.36	9261.79	4637.78	0.32	-0.07	0.00	0.032
50.00	-21.08	-1.57	0.00	-122.23	0.00	122.23	4180.63	2090.32	9131.68	4572.63	0.35	-0.07	0.00	0.032
55.00	-20.00	-1.54	0.00	-114.40	0.00	114.40	4124.26	2062.13	8807.72	4410.41	0.43	-0.08	0.00	0.031
60.00	-18.94	-1.51	0.00	-106.71	0.00	106.71	4066.25	2033.13	8485.83	4249.22	0.51	-0.08	0.00	0.030
65.00	-17.90	-1.49	0.00	-99.14	0.00	99.14	4006.61	2003.30	8166.25	4089.20	0.61	-0.09	0.00	0.029
66.00	-17.69	-1.49	0.00	-97.64	0.00	97.64	3994.48	1997.24	8102.64	4057.34	0.63	-0.09	0.00	0.028
66.00	-17.69	-1.49	0.00	-97.64	0.00	97.64	3994.48	1997.24	8102.64	4057.34	0.63	-0.09	0.00	0.028
70.00	-16.88	-1.48	0.00	-91.68	0.00	91.68	3945.32	1972.66	7849.23	3930.45	0.71	-0.10	0.00	0.028
75.00	-15.88	-1.47	0.00	-84.29	0.00	84.29	3882.40	1941.20	7534.99	3773.10	0.82	-0.11	0.00	0.026
80.00	-14.90	-1.47	0.00	-76.93	0.00	76.93	3817.84	1908.92	7223.78	3617.26	0.93	-0.11	0.00	0.025
85.00	-13.95	-1.47	0.00	-69.58	0.00	69.58	3751.64	1875.82	6915.84	3463.06	1.06	-0.12	0.00	0.024
90.00	-12.33	-1.47	0.00	-62.23	0.00	62.23	3683.80	1841.90	6611.41	3310.62	1.19	-0.13	0.00	0.022
91.00	-12.01	-1.47	0.00	-60.76	0.00	60.76	2899.19	1449.59	5264.94	2636.38	1.21	-0.13	0.00	0.027
95.00	-11.38	-1.47	0.00	-54.89	0.00	54.89	2861.52	1430.76	5085.06	2546.31	1.32	-0.14	0.00	0.026
100.00	-10.61	-1.47	0.00	-47.55	0.00	47.55	2812.95	1406.48	4861.78	2434.50	1.47	-0.14	0.00	0.023
105.00	-9.85	-1.46	0.00	-40.22	0.00	40.22	2762.75	1381.37	4640.48	2323.69	1.62	-0.15	0.00	0.021
110.00	-9.11	-1.45	0.00	-32.91	0.00	32.91	2710.91	1355.45	4421.40	2213.98	1.78	-0.16	0.00	0.018
110.00	-9.11	-1.45	0.00	-32.91	0.00	32.91	2710.91	1355.45	4421.40	2213.98	1.78	-0.16	0.00	0.018
115.00	-8.39	-1.42	0.00	-25.67	0.00	25.67	2657.43	1328.71	4204.77	2105.51	1.95	-0.16	0.00	0.015
120.00	-7.69	-1.37	0.00	-18.58	0.00	18.58	2602.31	1301.16	3990.84	1998.39	2.12	-0.16	0.00	0.012
125.00	-7.00	-1.31	0.00	-11.72	0.00	11.72	2545.56	1272.78	3779.85	1892.74	2.29	-0.17	0.00	0.009
130.00	-3.47	-0.77	0.00	-5.17	0.00	5.17	2487.16	1243.58	3572.03	1788.67	2.47	-0.17	0.00	0.004
135.00	-2.46	-0.57	0.00	-1.34	0.00	1.34	1824.83	912.42	2579.10	1291.47	2.65	-0.17	0.00	0.002
137.00	-0.24	-0.06	0.00	-0.19	0.00	0.19	1809.31	904.66	2521.92	1262.84	2.72	-0.17	0.00	0.000
140.00	0.00	-0.06	0.00	0.00	0.00	0.00	1785.54	892.77	2436.62	1220.12	2.83	-0.17	0.00	0.000

## Wind Loading - Shaft

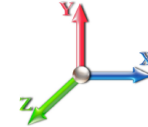
<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.0D + 1.0W 60 mph Wind

**Dead Load Factor** 1.00  
**Wind Load Factor** 1.00



**Iterations** 18

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	0.70	6.129	6.74	273.99	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	6.129	6.74	268.99	0.650	0.000	5.00	27.041	17.58	118.5	0.0	1499.6
10.00		1.00	0.70	6.129	6.74	264.00	0.650	0.000	5.00	26.543	17.25	116.3	0.0	1471.8
15.00		1.00	0.70	6.129	6.74	259.00	0.650	0.000	5.00	26.046	16.93	114.1	0.0	1444.0
20.00		1.00	0.70	6.129	6.74	254.01	0.650	0.000	5.00	25.548	16.61	112.0	0.0	1416.2
25.00	Top - Section 1	1.00	0.70	6.129	6.74	249.01	0.650	0.000	5.00	25.051	16.28	109.8	0.0	1388.5
30.00		1.00	0.71	6.192	6.81	245.26	0.650	0.000	5.00	24.553	15.96	108.7	0.0	1167.6
35.00		1.00	0.74	6.462	7.11	245.43	0.650	0.000	5.00	24.056	15.64	111.1	0.0	1143.8
40.00		1.00	0.77	6.706	7.38	244.81	0.650	0.000	5.00	23.558	15.31	113.0	0.0	1119.9
41.00	Bot - Section 3	1.00	0.77	6.753	7.43	244.60	0.650	0.000	1.00	4.652	3.02	22.5	0.0	221.1
45.00		1.00	0.79	6.931	7.62	243.55	0.650	0.000	4.00	18.663	12.13	92.5	0.0	1762.2
48.00	Top - Section 2	1.00	0.81	7.057	7.76	242.55	0.650	0.000	3.00	13.788	8.96	69.6	0.0	1301.6
50.00		1.00	0.82	7.138	7.85	245.22	0.650	0.000	2.00	9.093	5.91	46.4	0.0	432.1
55.00		1.00	0.84	7.331	8.06	243.05	0.650	0.000	5.00	22.383	14.55	117.3	0.0	1063.7
60.00		1.00	0.86	7.513	8.26	240.51	0.650	0.000	5.00	21.886	14.23	117.6	0.0	1039.9
65.00		1.00	0.88	7.684	8.45	237.64	0.650	0.000	5.00	21.388	13.90	117.5	0.0	1016.1
66.00	Top - Section 3	1.00	0.88	7.717	8.49	237.03	0.650	0.000	1.00	4.218	2.74	23.3	0.0	200.4
70.00		1.00	0.90	7.846	8.63	234.48	0.650	0.000	4.00	16.673	10.84	93.5	0.0	791.9
75.00		1.00	0.91	8.000	8.80	231.06	0.650	0.000	5.00	20.393	13.26	116.6	0.0	968.4
80.00		1.00	0.93	8.147	8.96	227.42	0.650	0.000	5.00	19.895	12.93	115.9	0.0	944.6
85.00	Bot - Section 5	1.00	0.95	8.287	9.12	223.56	0.650	0.000	5.00	19.398	12.61	114.9	0.0	920.8
90.00		1.00	0.96	8.422	9.26	219.52	0.650	0.000	5.00	19.165	12.46	115.4	0.0	1656.1
91.00	Top - Section 4	1.00	0.96	8.448	9.29	218.69	0.650	0.000	1.00	3.773	2.45	22.8	0.0	326.0
95.00		1.00	0.98	8.552	9.41	218.44	0.650	0.000	4.00	14.894	9.68	91.1	0.0	589.8
100.00		1.00	0.99	8.677	9.54	214.09	0.650	0.000	5.00	18.170	11.81	112.7	0.0	719.4
105.00		1.00	1.00	8.797	9.68	209.59	0.650	0.000	5.00	17.672	11.49	111.2	0.0	699.6
110.00	Top - Section 5	1.00	1.02	8.914	9.81	204.95	0.650	0.000	5.00	17.175	11.16	109.5	0.0	679.7
115.00		1.00	1.03	9.027	9.93	200.18	0.650	0.000	5.00	16.677	10.84	107.6	0.0	659.9
120.00		1.00	1.04	9.136	10.05	195.29	0.650	0.000	5.00	16.180	10.52	105.7	0.0	640.1
125.00		1.00	1.06	9.243	10.17	190.29	0.650	0.000	5.00	15.682	10.19	103.6	0.0	620.2
130.00	Bot - Section 7	1.00	1.07	9.346	10.28	185.18	0.650	0.000	5.00	15.185	9.87	101.5	0.0	600.4
135.00	Top - Section 6	1.00	1.08	9.447	10.39	179.97	0.650	0.000	5.00	14.899	9.68	100.6	0.0	1052.5
137.00	Appurtenance(s)	1.00	1.08	9.486	10.43	180.51	0.650	0.000	2.00	5.820	3.78	39.5	0.0	184.4
140.00		1.00	1.09	9.545	10.50	177.32	0.650	0.000	3.00	8.581	5.58	58.6	0.0	271.8
<b>Totals:</b>									<b>140.00</b>			<b>3,130.8</b>		<b>30,014.2</b>

## Discrete Appurtenance Forces

<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

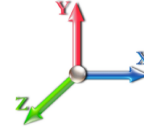


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**Load Case:** 1.0D + 1.0W 60 mph Wind

**Iterations** 18

**Dead Load Factor** 1.00  
**Wind Load Factor** 1.00



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	137.00	Antel BXA-70063/6CF	4	9.486	10.435	0.56	0.80	16.96	68.00	0.000	0.000	176.94	0.00	0.00
2	137.00	Antel BXA-70080/6CF	2	9.486	10.435	0.70	0.80	8.22	36.00	0.000	0.000	85.80	0.00	0.00
3	137.00	Low Profile Platform	1	9.486	10.435	1.00	1.00	22.00	1500.00	0.000	0.000	229.56	0.00	0.00
4	137.00	RFS Celwave	1	9.486	10.435	1.00	1.00	4.80	44.00	0.000	0.000	50.09	0.00	0.00
5	137.00	RFS FD9R6004/2C-3L	6	9.545	10.499	0.80	0.80	1.73	18.60	0.000	3.000	18.14	0.00	54.43
6	137.00	ALU RRH2X60-PCS	3	9.486	10.435	0.54	0.80	3.54	165.00	0.000	0.000	36.91	0.00	0.00
7	137.00	ALU RRH2x60-AWS	3	9.486	10.435	0.54	0.80	5.63	180.00	0.000	0.000	58.73	0.00	0.00
8	137.00	Commscope	6	9.486	10.435	0.62	0.80	31.60	244.80	0.000	0.000	329.75	0.00	0.00
9	130.00	RRUS 4449 B5/B12	3	9.346	10.281	0.50	0.75	2.97	213.00	0.000	0.000	30.53	0.00	0.00
10	130.00	Powerwave LGP21901 -	6	9.346	10.281	0.56	0.75	5.64	186.00	0.000	0.000	57.94	0.00	0.00
11	130.00	RRUS 8843 B2 B66A	3	9.346	10.281	0.50	0.75	2.47	216.00	0.000	0.000	25.42	0.00	0.00
12	130.00	LGP17201	6	9.346	10.281	0.75	0.75	8.77	60.00	0.000	0.000	90.21	0.00	0.00
13	130.00	HRK12 (Handrail Kit)	1	9.346	10.281	1.00	1.00	10.00	261.72	0.000	0.000	102.81	0.00	0.00
14	130.00	DMP65R-BU8DA	3	9.346	10.281	0.54	0.75	28.95	287.10	0.000	0.000	297.62	0.00	0.00
15	130.00	HPA-65R-BU8AA	3	9.346	10.281	0.65	0.75	21.73	162.00	0.000	0.000	223.40	0.00	0.00
16	130.00	Low Profile Platform	1	9.346	10.281	1.00	1.00	22.00	1500.00	0.000	0.000	226.18	0.00	0.00
17	130.00	DC6-48-60-18-8F	1	9.346	10.281	1.00	1.00	1.30	32.80	0.000	0.000	13.36	0.00	0.00
18	130.00	Powerwave LGP21401 -	6	9.346	10.281	0.75	0.75	5.81	105.00	0.000	0.000	59.68	0.00	0.00
19	130.00	7770.00	6	9.346	10.281	0.55	0.75	18.07	162.00	0.000	0.000	185.75	0.00	0.00
<b>Totals:</b>									<b>5,442.02</b>			<b>2,298.83</b>		

## Total Applied Force Summary

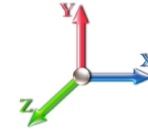
<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.0D + 1.0W 60 mph Wind

**Dead Load Factor** 1.00  
**Wind Load Factor** 1.00



**Iterations** 18

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		118.49	1555.75	0.00	0.00
10.00		116.31	1612.21	0.00	0.00
15.00		114.13	1584.43	0.00	0.00
20.00		111.95	1556.65	0.00	0.00
25.00		109.77	1528.87	0.00	0.00
30.00		108.70	1307.97	0.00	0.00
35.00		111.14	1284.16	0.00	0.00
40.00		112.96	1260.35	0.00	0.00
41.00		22.46	249.21	0.00	0.00
45.00		92.48	1874.47	0.00	0.00
48.00		69.57	1385.85	0.00	0.00
50.00		46.40	488.31	0.00	0.00
55.00		117.33	1204.10	0.00	0.00
60.00		117.56	1180.29	0.00	0.00
65.00		117.50	1156.47	0.00	0.00
66.00		23.27	228.44	0.00	0.00
70.00		93.53	904.22	0.00	0.00
75.00		116.64	1108.85	0.00	0.00
80.00		115.89	1085.04	0.00	0.00
85.00		114.94	1061.23	0.00	0.00
90.00		115.41	1796.53	0.00	0.00
91.00		22.79	354.07	0.00	0.00
95.00		91.07	702.15	0.00	0.00
100.00		112.72	859.83	0.00	0.00
105.00		111.16	839.98	0.00	0.00
110.00		109.46	820.14	0.00	0.00
115.00		107.64	800.30	0.00	0.00
120.00		105.70	780.45	0.00	0.00
125.00		103.64	760.61	0.00	0.00
130.00	(39) attachments	1414.37	3926.39	0.00	0.00
135.00		100.63	1120.14	0.00	0.00
137.00	(26) attachments	1025.40	2467.80	0.00	54.43
140.00		58.56	271.78	0.00	0.00
	<b>Totals:</b>	<b>5,429.59</b>	<b>39,117.01</b>	<b>0.00</b>	<b>54.43</b>

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

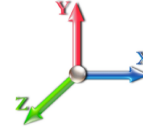


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**Load Case:** 1.0D + 1.0W 60 mph Wind

**Iterations** 18

**Dead Load Factor** 1.00  
**Wind Load Factor** 1.00



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)
5.00	1" DC Power	Yes	2.00	0.000	2.00	0.33	0.00	0.015	0.000	6.129	0.00	4.00
5.00	7/16" Fiber	Yes	2.00	0.000	0.44	0.07	0.00	0.015	0.000	6.129	0.00	0.16
10.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.038	0.000	6.129	0.00	10.00
10.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.038	0.000	6.129	0.00	0.40
15.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.039	0.000	6.129	0.00	10.00
15.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.039	0.000	6.129	0.00	0.40
20.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.040	0.000	6.129	0.00	10.00
20.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.040	0.000	6.129	0.00	0.40
25.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.041	0.000	6.129	0.00	10.00
25.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.041	0.000	6.129	0.00	0.40
30.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.041	0.000	6.192	0.00	10.00
30.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.041	0.000	6.192	0.00	0.40
35.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.042	0.000	6.462	0.00	10.00
35.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.042	0.000	6.462	0.00	0.40
40.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.043	0.000	6.706	0.00	10.00
40.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.043	0.000	6.706	0.00	0.40
41.00	1" DC Power	Yes	1.00	0.000	2.00	0.17	0.00	0.044	0.000	6.753	0.00	2.00
41.00	7/16" Fiber	Yes	1.00	0.000	0.44	0.04	0.00	0.044	0.000	6.753	0.00	0.08
45.00	1" DC Power	Yes	4.00	0.000	2.00	0.67	0.00	0.044	0.000	6.931	0.00	8.00
45.00	7/16" Fiber	Yes	4.00	0.000	0.44	0.15	0.00	0.044	0.000	6.931	0.00	0.32
48.00	1" DC Power	Yes	3.00	0.000	2.00	0.50	0.00	0.045	0.000	7.057	0.00	6.00
48.00	7/16" Fiber	Yes	3.00	0.000	0.44	0.11	0.00	0.045	0.000	7.057	0.00	0.24
50.00	1" DC Power	Yes	2.00	0.000	2.00	0.33	0.00	0.045	0.000	7.138	0.00	4.00
50.00	7/16" Fiber	Yes	2.00	0.000	0.44	0.07	0.00	0.045	0.000	7.138	0.00	0.16
55.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.045	0.000	7.331	0.00	10.00
55.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.045	0.000	7.331	0.00	0.40
60.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.046	0.000	7.513	0.00	10.00
60.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.046	0.000	7.513	0.00	0.40
65.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.048	0.000	7.684	0.00	10.00
65.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.048	0.000	7.684	0.00	0.40
66.00	1" DC Power	Yes	1.00	0.000	2.00	0.17	0.00	0.048	0.000	7.717	0.00	2.00
66.00	7/16" Fiber	Yes	1.00	0.000	0.44	0.04	0.00	0.048	0.000	7.717	0.00	0.08
70.00	1" DC Power	Yes	4.00	0.000	2.00	0.67	0.00	0.049	0.000	7.846	0.00	8.00
70.00	7/16" Fiber	Yes	4.00	0.000	0.44	0.15	0.00	0.049	0.000	7.846	0.00	0.32
75.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.050	0.000	8.000	0.00	10.00
75.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.050	0.000	8.000	0.00	0.40
80.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.051	0.000	8.147	0.00	10.00
80.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.051	0.000	8.147	0.00	0.40
85.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.052	0.000	8.287	0.00	10.00
85.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.052	0.000	8.287	0.00	0.40
90.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.054	0.000	8.422	0.00	10.00
90.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.054	0.000	8.422	0.00	0.40
91.00	1" DC Power	Yes	1.00	0.000	2.00	0.17	0.00	0.055	0.000	8.448	0.00	2.00
91.00	7/16" Fiber	Yes	1.00	0.000	0.44	0.04	0.00	0.055	0.000	8.448	0.00	0.08
95.00	1" DC Power	Yes	4.00	0.000	2.00	0.67	0.00	0.055	0.000	8.552	0.00	8.00
95.00	7/16" Fiber	Yes	4.00	0.000	0.44	0.15	0.00	0.055	0.000	8.552	0.00	0.32
100.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.056	0.000	8.677	0.00	10.00

## Linear Appurtenance Segment Forces (Factored)

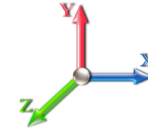
<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.0D + 1.0W 60 mph Wind

**Dead Load Factor** 1.00  
**Wind Load Factor** 1.00



**Iterations** 18

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)
100.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.056	0.000	8.677	0.00	0.40
105.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.058	0.000	8.797	0.00	10.00
105.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.058	0.000	8.797	0.00	0.40
110.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.059	0.000	8.914	0.00	10.00
110.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.059	0.000	8.914	0.00	0.40
115.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.061	0.000	9.027	0.00	10.00
115.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.061	0.000	9.027	0.00	0.40
120.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.063	0.000	9.136	0.00	10.00
120.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.063	0.000	9.136	0.00	0.40
125.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.065	0.000	9.243	0.00	10.00
125.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.065	0.000	9.243	0.00	0.40
130.00	1" DC Power	Yes	5.00	0.000	2.00	0.83	0.00	0.067	0.000	9.346	0.00	10.00
130.00	7/16" Fiber	Yes	5.00	0.000	0.44	0.18	0.00	0.067	0.000	9.346	0.00	0.40
<b>Totals:</b>											<b>0.0</b>	<b>264.2</b>

## Calculated Forces

<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	<b>11/3/2020</b>
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

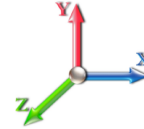


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**Load Case:** 1.0D + 1.0W 60 mph Wind

**Iterations** 18

**Dead Load Factor** 1.00  
**Wind Load 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	-39.12	-5.43	0.00	-536.20	0.00	536.20	5803.10	2901.55	15291.3	7657.05	0.00	0.000	0.000	0.077
5.00	-37.56	-5.33	0.00	-509.03	0.00	509.03	5740.39	2870.20	14846.6	7434.33	0.01	-0.016	0.000	0.075
10.00	-35.95	-5.22	0.00	-482.39	0.00	482.39	5676.04	2838.02	14403.7	7212.59	0.03	-0.032	0.000	0.073
15.00	-34.36	-5.11	0.00	-456.29	0.00	456.29	5610.05	2805.03	13963.1	6991.95	0.08	-0.048	0.000	0.071
20.00	-32.80	-5.01	0.00	-430.72	0.00	430.72	5542.43	2771.21	13524.9	6772.52	0.14	-0.065	0.000	0.070
25.00	-31.27	-4.91	0.00	-405.67	0.00	405.67	5473.16	2736.58	13089.3	6554.42	0.21	-0.081	0.000	0.068
25.00	-31.27	-4.91	0.00	-405.67	0.00	405.67	4407.37	2203.68	10563.1	5289.42	0.21	-0.081	0.000	0.084
30.00	-29.96	-4.81	0.00	-381.14	0.00	381.14	4358.14	2179.07	10232.9	5124.08	0.31	-0.097	0.000	0.081
35.00	-28.68	-4.70	0.00	-357.11	0.00	357.11	4307.28	2153.64	9903.77	4959.25	0.42	-0.116	0.000	0.079
40.00	-27.42	-4.59	0.00	-333.60	0.00	333.60	4254.78	2127.39	9575.87	4795.05	0.55	-0.135	0.000	0.076
41.00	-27.17	-4.57	0.00	-329.01	0.00	329.01	4244.08	2122.04	9510.46	4762.30	0.58	-0.138	0.000	0.075
45.00	-25.29	-4.48	0.00	-310.72	0.00	310.72	4200.64	2100.32	9249.48	4631.61	0.70	-0.153	0.000	0.073
48.00	-23.90	-4.41	0.00	-297.27	0.00	297.27	4202.72	2101.36	9261.79	4637.78	0.80	-0.165	0.000	0.070
50.00	-23.42	-4.37	0.00	-288.45	0.00	288.45	4180.63	2090.32	9131.68	4572.63	0.87	-0.172	0.000	0.069
55.00	-22.21	-4.25	0.00	-266.61	0.00	266.61	4124.26	2062.13	8807.72	4410.41	1.06	-0.190	0.000	0.066
60.00	-21.03	-4.14	0.00	-245.33	0.00	245.33	4066.25	2033.13	8485.83	4249.22	1.27	-0.207	0.000	0.063
65.00	-19.87	-4.02	0.00	-224.64	0.00	224.64	4006.61	2003.30	8166.25	4089.20	1.50	-0.224	0.000	0.060
66.00	-19.64	-4.00	0.00	-220.62	0.00	220.62	3994.48	1997.24	8102.64	4057.34	1.54	-0.227	0.000	0.059
66.00	-19.64	-4.00	0.00	-220.62	0.00	220.62	3994.48	1997.24	8102.64	4057.34	1.54	-0.227	0.000	0.059
70.00	-18.74	-3.91	0.00	-204.62	0.00	204.62	3945.32	1972.66	7849.23	3930.45	1.74	-0.241	0.000	0.057
75.00	-17.63	-3.79	0.00	-185.08	0.00	185.08	3882.40	1941.20	7534.99	3773.10	2.00	-0.257	0.000	0.054
80.00	-16.54	-3.67	0.00	-166.13	0.00	166.13	3817.84	1908.92	7223.78	3617.26	2.28	-0.273	0.000	0.050
85.00	-15.48	-3.56	0.00	-147.75	0.00	147.75	3751.64	1875.82	6915.84	3463.06	2.57	-0.288	0.000	0.047
90.00	-13.69	-3.44	0.00	-129.96	0.00	129.96	3683.80	1841.90	6611.41	3310.62	2.88	-0.302	0.000	0.043
91.00	-13.33	-3.41	0.00	-126.53	0.00	126.53	2899.19	1449.59	5264.94	2636.38	2.95	-0.305	0.000	0.053
95.00	-12.63	-3.32	0.00	-112.88	0.00	112.88	2861.52	1430.76	5085.06	2546.31	3.21	-0.316	0.000	0.049
100.00	-11.77	-3.21	0.00	-96.28	0.00	96.28	2812.95	1406.48	4861.78	2434.50	3.55	-0.331	0.000	0.044
105.00	-10.93	-3.09	0.00	-80.25	0.00	80.25	2762.75	1381.37	4640.48	2323.69	3.90	-0.345	0.000	0.038
110.00	-10.11	-2.98	0.00	-64.78	0.00	64.78	2710.91	1355.45	4421.40	2213.98	4.27	-0.357	0.000	0.033
110.00	-10.11	-2.98	0.00	-64.78	0.00	64.78	2710.91	1355.45	4421.40	2213.98	4.27	-0.357	0.000	0.033
115.00	-9.31	-2.87	0.00	-49.89	0.00	49.89	2657.43	1328.71	4204.77	2105.51	4.65	-0.367	0.000	0.027
120.00	-8.53	-2.76	0.00	-35.54	0.00	35.54	2602.31	1301.16	3990.84	1998.39	5.04	-0.376	0.000	0.021
125.00	-7.77	-2.65	0.00	-21.75	0.00	21.75	2545.56	1272.78	3779.85	1892.74	5.43	-0.382	0.000	0.015
130.00	-3.85	-1.21	0.00	-8.49	0.00	8.49	2487.16	1243.58	3572.03	1788.67	5.84	-0.385	0.000	0.006
135.00	-2.73	-1.10	0.00	-2.44	0.00	2.44	1824.83	912.42	2579.10	1291.47	6.24	-0.387	0.000	0.003
137.00	-0.27	-0.06	0.00	-0.18	0.00	0.18	1809.31	904.66	2521.92	1262.84	6.40	-0.387	0.000	0.000
140.00	0.00	-0.06	0.00	0.00	0.00	0.00	1785.54	892.77	2436.62	1220.12	6.65	-0.387	0.000	0.000

## Final Analysis Summary

<b>Structure:</b> CT11560-A-SBA	<b>Code:</b> EIA/TIA-222-G	11/3/2020
<b>Site Name:</b> Sterling 6, CT	<b>Exposure:</b> B	
<b>Height:</b> 140.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 1.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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### 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	26.6	0.00	46.92	0.00	0.00	2635.13
0.9D + 1.6W 102 mph Wind	25.1	0.00	35.19	0.00	0.00	2475.34
1.2D + 1.0Di + 1.0Wi 50 mph Wind	6.9	0.00	78.60	0.00	0.00	676.26
1.2D + 1.0E	1.9	0.00	46.94	0.00	0.00	211.54
0.9D + 1.0E	1.9	0.00	35.21	0.00	0.00	210.51
1.0D + 1.0W 60 mph Wind	5.4	0.00	39.12	0.00	0.00	536.20

### 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	-37.35	-24.10	0.00	-1994.8	0.00	-1994.8	5473.16	2736.5	13089.3	6554.42	25.00	0.386
0.9D + 1.6W 102 mph Wind	-27.99	-22.67	0.00	-1872.0	0.00	-1872.0	5473.16	2736.5	13089.3	6554.42	25.00	0.360
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-65.30	-6.27	0.00	-509.70	0.00	-509.70	5473.16	2736.5	13089.3	6554.42	25.00	0.111
1.2D + 1.0E	-37.53	-1.76	0.00	-165.42	0.00	-165.42	5473.16	2736.5	13089.3	6554.42	25.00	0.040
0.9D + 1.0E	-28.15	-1.75	0.00	-164.46	0.00	-164.46	5473.16	2736.5	13089.3	6554.42	25.00	0.037
1.0D + 1.0W 60 mph Wind	-31.27	-4.91	0.00	-405.67	0.00	-405.67	5473.16	2736.5	13089.3	6554.42	25.00	0.084





# Monopole Mat Foundation Design

Date

11/3/2020

<b>Customer Name:</b>	AT&T	<b>EIA/TIA Standard:</b>	EIA-222-G
<b>Site Name:</b>		<b>Structure Height (Ft.):</b>	140
<b>Site Number:</b>	CT11560-A-SBA	<b>Engineer Name:</b>	T. Alajaj
<b>Engr. Number:</b>	99344	<b>Engineer Login ID:</b>	

**Foundation Info Obtained from:**

Drawings/Calculations
Monopole
Analysis

**Structure Type:**

**Analysis or Design?**

**Base Reactions (Factored):**

Axial Load (Kips):	46.9	Shear Force (Kips):	26.6
Uplift Force (Kips):	0.0	Moment (Kips-ft):	2635.1

Allowable overstress %: 5.0%

**Foundation Geometries:**

Diameter of Pier (ft.):	7.0	Mods required -Yes/No ?:	No
Pier Height A. G. (ft.):	1.00	Depth of Base BG (ft.):	5.5
Length of Pad (ft.):	31	Thickness of Pad (ft.):	2.50
		Width of Pad (ft.):	31

Final Length of pad (ft)	31.0	Final width of pad (ft):	31.0
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**Material Properties and Rebar Info:**

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	9	Tie / Stirrup Size #:	5	
Qty. of Vertical Rebars:	60	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	9	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf

Rebar at the bottom of the concrete pad:

Qty. of Rebar in Pad (L):	30	Qty. of Rebar in Pad (W):	30
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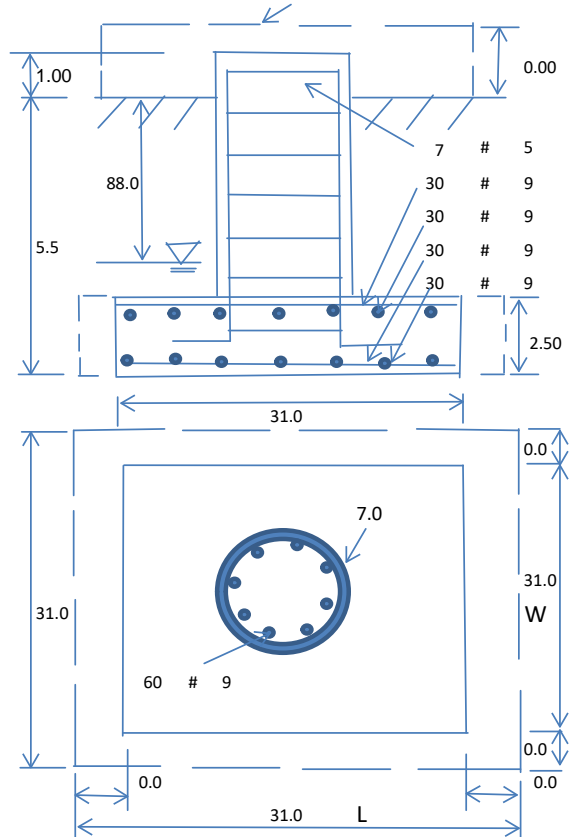
Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	30	Qty. of Rebar in Pad (W):	30
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Apply 1.35 factor for e/w Per G: 1.35

**Soil Design Parameters:**

Soil Unit Weight (pcf):	120.0	Soil Buoyant Weight:	50.0	Pcf	Angle from Top of Pad:	30
Water Table B.G.S. (ft):	88.0	Unit Weight of Water:	62.4	pcf	Angle from Bottm of Pad:	25
Ultimate Bearing Pressure (psf):	44891	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):	Yes		Reduction factor on the maximum soil bearing pressure:	1.00
Consider soil hor. resist. for OTM.:	No					



<b>Foundation Analysis and Design:</b>	Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	2767.55	Total Dry Soil Weight (Kips):	332.11	
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00	
Total Effective Soil Weight (Kips):	332.11	Weight from the Concrete Block at Top (K):	0.00	
Total Dry Concrete Volume (cu. Ft.):	2556.44	Total Dry Concrete Weight (Kips):	383.47	
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00	
Total Effective Concrete Weight (Kips):	383.47	Total Vertical Load on Base (Kips):	762.47	

**Check Soil Capacities:**

Calculated Maxium Net Soil Pressure under the base (psf):	1182	< Allowable Factored Soil Bearing (psf):	33668	0.04	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	10709.2	> Design Factored Momont (kips-ft):	2808	0.26	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	3.81				OK!

Load/  
Capacity  
Ratio

**Check the capacities of Reinforcing Concrete:**

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75
Strength reduction factor (Axial compression):	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):	0.31		
Calculated Moment Capacity (Mn,Kips-Ft):	9417.5	> Design Factored Moment (Mu, Kips-F	2741.5	0.29	OK!
Calculated Shear Capacity (Kips):	663.6	> Design Factored Shear (Kips):	26.6	0.04	OK!
Calculated Tension Capacity (Tn, Kips):	3240.0	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	7268.8	> Design Factored Axial Load (Pu Kips):	46.9	0.01	OK!
Moment & Axial Strength Combination:	0.29	OK! Check Tie Spacing (Design/Required):	1	OK!	
Pier Reinforcement Ratio:	0.011	Reinforcement Ratio is satisfied per ACI			

**(2).Concrete Pad:**

One-Way Design Shear Capacity (L-Direction, Kips):	808.0	> One-Way Factored Shear (L-D. Kips):	211.6	0.26	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	808.0	> One-Way Factored Shear (W-D., Kips)	211.6	0.26	OK!
One-Way Design Shear Capacity (Corner-Corner, Kips):	845.4	> One-Way Factored Shear (C-C, Kips):	191.5	0.23	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct. ):	0.0031	OK! Lower Steel Pad Reinf. Ratio (W-Direc	0.0031		
Lower Steel Pad Moment Capacity (L-Direction, Kips-ft):	3441.0	> Moment at Bottom ( L-Dir. K-Ft):	1424.7	0.41	OK!
Lower Steel Pad Moment Capacity (W-Direction, Kips-ft):	3441.0	> Moment at Bottom ( W-Dir. K-Ft):	1424.7	0.41	OK!
Lower Steel Pad Moment Capacity (Corner-Corner, K-ft):	4831.9	> Moment at Bottom ( C-C Dir. K-Ft):	2014.8	0.42	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct. ):	0.0031	OK! Upper Steel Reinf. Ratio (W-Dir. ):	0.0031		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	3441.0	> Moment at the top (L-Dir K-Ft):	516.2	0.15	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	3441.0	> Moment at the top (W-Dir K-Ft):	516.2	0.15	OK!
Upper Steel Pad Moment Capacity (Corner-Corner, K-ft):	4831.9	> Moment at the top (C-C Dir. K-Ft):	481.8	0.10	OK!

**(3).Check Punching Shear Capacity due to Moment in the Pier:**

Moment transferred by punching shear:	1054.0	k-ft.	Max. factored shear stress $v_{u,CD}$ :	1.9	Psi
Max. factored shear stress $v_{u,AB}$ :	10.1	Psi	Factored shear Strength $\phi v_n$ :	164.3	Psi
Max. factored shear stress $v_u$ :	10.1	Psi	Check Usage of Punching Shear Capacity:	0.06	OK!

October 16, 2020



SAI Communications  
12 Industrial Way  
Salem NH, 03079

RE:      Site Number:                    CT2369 (LTE 3C/4C/5G)  
            FA Number:                     10113182  
            PACE Number:                    MRCTB048887  
            PT Number:                      2051A0WKHH  
            Site Name:                        STERLING CT EXETER DR  
            Site Address:                    7 Exeter Drive  
   Sterling, CT 06377

To Whom It May Concern:

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

- (3) 7770 Antennas (55.0"x11.0"x5.0" - Wt. = 35 lbs. /each)
- (3) HPA-65R-BU8AA Antennas (96.0"x11.7"x7.6" - Wt. = 54 lbs. /each)
- (6) LGP17201 TMA's (14.4"x13.9"x3.7" - Wt. = 31 lbs. /each)
- (1) Squid Surge Arrestor (24.0"x9.7"  $\Phi$  - Wt. = 33 lbs. /each)
- **(3) DMP65R-BU8DA Antennas (96.0"x20.7"x7.7" - Wt. = 96 lbs. /each)**
- **(3) B2/B66A 8843 RRH's (14.9"x13.2"x10.9" - Wt. = 72 lbs. /each)**
- **(3) B5/B12 4449 RRH's (17.9"x13.2"x9.4" - Wt. = 73 lbs. /each)**

*\*Proposed equipment shown in bold*

No original structural design documents or fabrication drawings were available for the existing mount. B+T GRP conducted a survey climb and mapping of the existing AT&T antenna mount on January 15, 2018.

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 – R13.
- 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 1.15 in was used for this analysis.
- HDG considers this site to be exposure category B; tower is located in an urban/suburban or wooded area with numerous closely spaced obstructions.
- HDG considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- HDG considers this site to have a spectral response acceleration parameter at short periods,  $S_s$ , of 0.170 and a spectral response acceleration parameter at a period of 1 second,  $S_1$ , of 0.061.
- The mount has been analyzed with load combinations consisting of 250 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 4.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.
- The existing mount is secured to the existing monopole with a ring mount. The connection is considered OK by visual inspection.

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

- **Install new handrail kit, SitePro1 P/N HRK12 (or approved equal). Handrail kit is required per AT&T Technical Directive to stabilize existing cantilevered antennas.**
- **Remove existing pipe masts and install new 2-1/2" std. (2.88" O.D.) pipe masts behind existing HPA-65R-BU8AA Antennas (typ. of 1 per sector, total of 3).**

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing (LTE 3C/4C/5G) Mount Rating	62	LC2	78%	PASS
Modified (LTE 3C/4C/5G) Mount Rating	82	LC8	89%	PASS

Reference Documents:

- Mount mapping report prepared by B+T GRP dated January 24, 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 mount must be tightened and re-plumbed prior to the installation of new appurtenances.
6. HDG performed a localized analysis on the mount itself and not on the supporting tower structure.

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

Respectfully Submitted,  
Hudson Design Group LLC

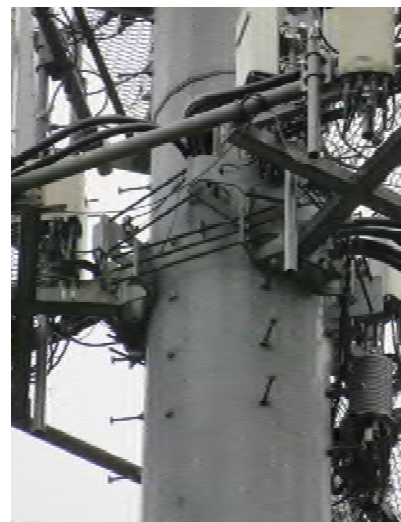
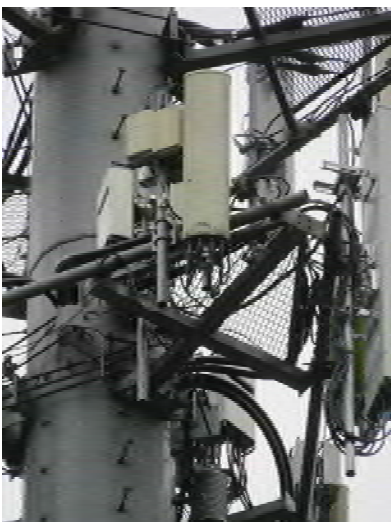


Michael Cabral  
Vice President



Daniel P. Hamm, PE  
Principal

FIELD PHOTOS:





**HUDSON**  
Design Group LLC

## Wind & Ice Calculations

Date: 10/16/2020  
 Project Name: STERLING CT EXETER DR  
 Project No.: CT2369  
 Designed By: LBW Checked By: MSC



**2.6.5.2 Velocity Pressure Coeff:**

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

$K_z =$  **1.065**       $z =$  130 (ft)  
 $z_g =$  1200 (ft)  
 $\alpha =$  7.0

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

**Table 2-4**

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

**2.6.6.2 Topographic Factor:**

**Table 2-5**

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

$$K_{zt} = [1 + (K_c K_t / K_h)]^2$$

$$K_h = e^{(fz/H)}$$

$K_{zt} =$  #DIV/0!

$K_h =$  #DIV/0!

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

$K_c =$  0.9 (from Table 2-4)

$K_t =$  0 (from Table 2-5)

$f =$  0 (from Table 2-5)

Category = **1**

$z =$  130

$z_s =$  550 (Mean elevation of base of structure above sea level)

$H =$  0 (Ht. of the crest above surrounding terrain)

$K_{zt} =$  1.00 (from 2.6.6.2.1)

$K_e =$  0.98 (from 2.6.8)

**2.6.10 Design Ice Thickness**

Max Ice Thickness =

$t_i =$  1.00 in

Importance Factor =

$I =$  1.0 (from Table 2-3)

$K_{iz} =$  1.15 (from Sec. 2.6.10)

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

$t_{iz} =$  1.15 in



Date: 10/16/2020  
 Project Name: STERLING CT EXETER DR  
 Project No.: CT2369  
 Designed By: LBW Checked By: MSC



**2.6.9 Gust Effect Factor**

2.6.9.1 Self Supporting Lattice Structures

$G_h = 1.0$  Latticed Structures > 600 ft

$G_h = 0.85$  Latticed Structures 450 ft or less

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

$h =$  142  $G_h =$  0.85

2.6.9.2 Guyed Masts  $G_h =$  0.85

2.6.9.3 Pole Structures  $G_h =$  1.1

2.6.9 Appurtenances  $G_h =$  1.0

2.6.9.4 Structures Supported on Other Structures

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

$G_h =$  1.35  $G_h =$  1.00

**2.6.11.2 Design Wind Force on Appurtenances**

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

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

$q_z =$	<b>46.28</b>
$q_{z(ice)} =$	<b>6.35</b>
$q_{z(30)} =$	<b>2.29</b>

$K_z =$	1.065 (from 2.6.5.2)
$K_{zt} =$	1.0 (from 2.6.6.2.1)
$K_s =$	1.0 (from 2.6.7)
$K_e =$	0.98 (from 2.6.8)
$K_d =$	<span style="background-color: yellow;">0.95</span> (from Table 2-2)
$V_{max} =$	135 mph (Ultimate Wind Speed)
$V_{max(ice)} =$	<span style="background-color: yellow;">50</span> mph
$V_{30} =$	30 mph

**Table 2-2**

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

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Determine Ca:

**Table 2-9**

Force Coefficients (Ca) for Appurtenances				
Member Type		Aspect Ratio ≤ 2.5	Aspect Ratio = 7	Aspect Ratio ≥ 25
		Ca	Ca	Ca
Flat		1.2	1.4	2.0
Square/Rectangular HSS		1.2 - 2.8(r <sub>s</sub> ) ≥ 0.85	1.4 - 4.0(r <sub>s</sub> ) ≥ 0.90	2.0 - 6.0(r <sub>s</sub> ) ≥ 1.25
Round	<b>C &lt; 39</b> (Subcritical)	0.7	0.8	1.2
	<b>39 ≤ C ≤ 78</b> (Transitional)	4.14/(C <sup>0.485</sup> )	3.66/(C <sup>0.415</sup> )	46.8/(C <sup>1.0</sup> )
	<b>C &gt; 78</b> (Supercritical)	0.5	0.6	0.6

Aspect Ratio is the overall length/width ratio in the plane normal to the wind direction.  
 (Aspect ratio is independent of the spacing between support points of a linear appurtenance,  
 Note: Linear interpolation may be used for aspect ratios other than those shown.

Ice Thickness = **1.15 in**      Angle = **0 (deg)**      Equivalent Angle = **180 (deg)**

<u>Appurtenances</u>	<u>Height</u>	<u>Width</u>	<u>Depth</u>	<u>Flat Area</u>	<u>Aspect Ratio</u>	<u>Ca</u>	<u>Force (lbs)</u>	<u>Force (lbs) (w/ Ice)</u>	<u>Force (lbs) (30 mph)</u>
7770 Antenna	55.0	11.0	5.0	4.20	5.00	1.31	255	44	13
HPA-65R-BU8AA Antenna	96.0	11.7	7.6	7.80	8.21	1.44	520	87	26
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	4.64	1.30	827	129	41
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.20	76	14	4
B2/B66A 8843 RRH (Shielded)	14.9	1.5	10.9	0.16	9.93	1.50	11	4	1
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.36	1.20	91	17	5
LGP17201 TMA	14.4	3.7	13.9	0.37	3.89	1.26	22	6	1
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	52	10	3
2" Pipe	2.4	12.0		0.20	0.20	1.20	11	4	1
2-1/2" Pipe	2.9	12.0		0.24	0.24	1.20	13	4	1
3" Pipe	3.5	12.0		0.29	0.29	1.20	16	4	1
2x2 Angle	2.0	12.0		0.17	0.17	2.00	15	5	1
HSS 4x4	4.0	12.0		0.33	0.33	1.25	19	5	1
6x1/2 Plate	6.0	12.0		0.50	0.50	2.00	46	10	2

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**WIND LOADS**

Angle = **30** (deg)

Ice Thickness = **1.15** in.

Equivalent Angle = **210** (deg)

**WIND LOADS WITH NO ICE:**

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	255	136	225
HPA-65R-BU8AA Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	520	372	483
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	827	376	714
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	76	63	73
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	38	63	44
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	91	65	85
LGP17201 TMA	14.4	3.7	13.9	0.37	1.39	3.89	1.04	1.26	1.20	22	77	36

**WIND LOADS WITH ICE:**

7770 Antenna	57.3	13.3	7.3	5.29	2.90	4.31	7.86	1.28	1.43	43	26	39
HPA-65R-BU8AA Antenna	98.3	14.0	9.9	9.55	6.75	7.02	9.93	1.40	1.50	85	64	80
DMP65R-BU8DA Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	127	65	112
B2/B66A 8843 RRH	17.2	15.5	13.2	1.85	1.58	1.11	1.30	1.20	1.20	14	12	14
B2/B66A 8843 RRH (Shielded)	17.2	7.7	13.2	0.93	1.58	2.22	1.30	1.20	1.20	7	12	8
B5/B12 4449 RRH	20.2	15.5	11.7	2.17	1.64	1.30	1.73	1.20	1.20	17	12	16
LGP17201 TMA	16.7	6.0	16.2	0.69	1.88	2.79	1.03	1.21	1.20	5	14	8

**WIND LOADS AT 30 MPH:**

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	13	7	11
HPA-65R-BU8AA Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	26	18	24
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	41	19	35
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	3	4
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	2	3	2
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	5	3	4
LGP17201 TMA	14.4	3.7	13.9	0.37	1.39	3.89	1.04	1.26	1.20	1	4	2

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**WIND LOADS**

Angle = **60** (deg)      Ice Thickness = **1.15** in.      Equivalent Angle = **240** (deg)

**WIND LOADS WITH NO ICE:**

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	255	136	165
HPA-65R-BU8AA Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	520	372	409
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	827	376	489
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	76	63	66
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	57	63	61
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	91	65	71
LGP17201 TMA	14.4	3.7	13.9	0.37	1.39	3.89	1.04	1.26	1.20	22	77	63

**WIND LOADS WITH ICE:**

7770 Antenna	57.3	13.3	7.3	5.29	2.90	4.31	7.86	1.28	1.43	43	26	30
HPA-65R-BU8AA Antenna	98.3	14.0	9.9	9.55	6.75	7.02	9.93	1.40	1.50	85	64	69
DMP65R-BU8DA Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	127	65	80
B2/B66A 8843 RRH	17.2	15.5	13.2	1.85	1.58	1.11	1.30	1.20	1.20	14	12	13
B2/B66A 8843 RRH (Shielded)	17.2	11.6	13.2	1.39	1.58	1.48	1.30	1.20	1.20	11	12	12
B5/B12 4449 RRH	20.2	15.5	11.7	2.17	1.64	1.30	1.73	1.20	1.20	17	12	14
LGP17201 TMA	16.7	6.0	16.2	0.69	1.88	2.79	1.03	1.21	1.20	5	14	12

**WIND LOADS AT 30 MPH:**

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	13	7	8
HPA-65R-BU8AA Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	26	18	20
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	41	19	24
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	3	3
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	3	3	3
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	5	3	4
LGP17201 TMA	14.4	3.7	13.9	0.37	1.39	3.89	1.04	1.26	1.20	1	4	3

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**WIND LOADS**

Angle = **90** (deg)      Ice Thickness = **1.15** in.      Equivalent Angle = **270** (deg)

**WIND LOADS WITH NO ICE:**

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	255	136	136
HPA-65R-BU8AA Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	520	372	372
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	827	376	376
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	76	63	63
B2/B66A 8843 RRH (Shielded)	14.9	1.5	10.9	0.16	1.13	9.93	1.37	1.50	1.20	11	63	63
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	91	65	65
LGP17201 TMA	14.4	3.7	13.9	0.37	1.39	3.89	1.04	1.26	1.20	22	77	77

**WIND LOADS WITH ICE:**

7770 Antenna	57.3	13.3	7.3	5.29	2.90	4.31	7.86	1.28	1.43	43	26	26
HPA-65R-BU8AA Antenna	98.3	14.0	9.9	9.55	6.75	7.02	9.93	1.40	1.50	85	64	64
DMP65R-BU8DA Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	127	65	65
B2/B66A 8843 RRH	17.2	15.5	13.2	1.85	1.58	1.11	1.30	1.20	1.20	14	12	12
B2/B66A 8843 RRH (Shielded)	17.2	3.8	13.2	0.45	1.58	4.53	1.30	1.29	1.20	4	12	12
B5/B12 4449 RRH	20.2	15.5	11.7	2.17	1.64	1.30	1.73	1.20	1.20	17	12	12
LGP17201 TMA	16.7	6.0	16.2	0.69	1.88	2.79	1.03	1.21	1.20	5	14	14

**WIND LOADS AT 30 MPH:**

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	13	7	7
HPA-65R-BU8AA Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	26	18	18
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	41	19	19
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	3	3
B2/B66A 8843 RRH (Shielded)	14.9	1.5	10.9	0.16	1.13	9.93	1.37	1.50	1.20	1	3	3
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	5	3	3
LGP17201 TMA	14.4	3.7	13.9	0.37	1.39	3.89	1.04	1.26	1.20	1	4	4

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**WIND LOADS**

Angle = **120** (deg)      Ice Thickness = **1.15** in.      Equivalent Angle = **300** (deg)

**WIND LOADS WITH NO ICE:**

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	255	136	165
HPA-65R-BU8AA Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	520	372	409
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	827	376	489
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	76	63	66
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	57	63	61
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	91	65	71
LGP17201 TMA	14.4	3.7	13.9	0.37	1.39	3.89	1.04	1.26	1.20	22	77	63

**WIND LOADS WITH ICE:**

7770 Antenna	57.3	13.3	7.3	5.29	2.90	4.31	7.86	1.28	1.43	43	26	30
HPA-65R-BU8AA Antenna	98.3	14.0	9.9	9.55	6.75	7.02	9.93	1.40	1.50	85	64	69
DMP65R-BU8DA Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	127	65	80
B2/B66A 8843 RRH	17.2	15.5	13.2	1.85	1.58	1.11	1.30	1.20	1.20	14	12	13
B2/B66A 8843 RRH (Shielded)	17.2	11.6	13.2	1.39	1.58	1.48	1.30	1.20	1.20	11	12	12
B5/B12 4449 RRH	20.2	15.5	11.7	2.17	1.64	1.30	1.73	1.20	1.20	17	12	14
LGP17201 TMA	16.7	6.0	16.2	0.69	1.88	2.79	1.03	1.21	1.20	5	14	12

**WIND LOADS AT 30 MPH:**

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	13	7	8
HPA-65R-BU8AA Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	26	18	20
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	41	19	24
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	3	3
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	3	3	3
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	5	3	4
LGP17201 TMA	14.4	3.7	13.9	0.37	1.39	3.89	1.04	1.26	1.20	1	4	3

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**WIND LOADS**

Angle = 150 (deg)      Ice Thickness = 1.15 in.      Equivalent Angle = 330 (deg)

**WIND LOADS WITH NO ICE:**

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	255	136	225
HPA-65R-BU8AA Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	520	372	483
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	827	376	714
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	76	63	73
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	38	63	44
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	91	65	85
LGP17201 TMA	14.4	3.7	13.9	0.37	1.39	3.89	1.04	1.26	1.20	22	77	36

**WIND LOADS WITH ICE:**

7770 Antenna	57.3	13.3	7.3	5.29	2.90	4.31	7.86	1.28	1.43	43	26	39
HPA-65R-BU8AA Antenna	98.3	14.0	9.9	9.55	6.75	7.02	9.93	1.40	1.50	85	64	80
DMP65R-BU8DA Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	127	65	112
B2/B66A 8843 RRH	17.2	15.5	13.2	1.85	1.58	1.11	1.30	1.20	1.20	14	12	14
B2/B66A 8843 RRH (Shielded)	17.2	7.7	13.2	0.93	1.58	2.22	1.30	1.20	1.20	7	12	8
B5/B12 4449 RRH	20.2	15.5	11.7	2.17	1.64	1.30	1.73	1.20	1.20	17	12	16
LGP17201 TMA	16.7	6.0	16.2	0.69	1.88	2.79	1.03	1.21	1.20	5	14	8

**WIND LOADS AT 30 MPH:**

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	13	7	11
HPA-65R-BU8AA Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	26	18	24
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	41	19	35
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	3	4
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	2	3	2
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	5	3	4
LGP17201 TMA	14.4	3.7	13.9	0.37	1.39	3.89	1.04	1.26	1.20	1	4	2

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**ICE WEIGHT CALCULATIONS**

Thickness of ice: 1.15 in.  
 Density of ice: 56 pcf

**7770 Antenna**

Weight of ice based on total radial SF area:  
 Height (in): 55.0  
 Width (in): 11.0  
 Depth (in): 5.0  
 Total weight of ice on object: 85 lbs  
 Weight of object: 35.0 lbs  
**Combined weight of ice and object: 120 lbs**

**HPA-65R-BU8AA Antenna**

Weight of ice based on total radial SF area:  
 Height (in): 96.0  
 Width (in): 11.7  
 Depth (in): 7.6  
 Total weight of ice on object: 170 lbs  
 Weight of object: 54.0 lbs  
**Combined weight of ice and object: 224 lbs**

**DMP65R-BU8DA Antenna**

Weight of ice based on total radial SF area:  
 Height (in): 96.0  
 Width (in): 20.7  
 Depth (in): 7.7  
 Total weight of ice on object: 261 lbs  
 Weight of object: 96.0 lbs  
**Combined weight of ice and object: 357 lbs**

**B2/B66A 8843 RRH**

Weight of ice based on total radial SF area:  
 Height (in): 14.9  
 Width (in): 13.2  
 Depth (in): 10.9  
 Total weight of ice on object: 32 lbs  
 Weight of object: 72.0 lbs  
**Combined weight of ice and object: 104 lbs**

**B5/B12 4449 RRH**

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

**LGP17201 TMA**

Weight of ice based on total radial SF area:  
 Height (in): 14.4  
 Width (in): 3.7  
 Depth (in): 13.9  
 Total weight of ice on object: 26 lbs  
 Weight of object: 31.0 lbs  
**Combined weight of ice and object: 57 lbs**

**Squid Surge Arrestor**

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

**2" pipe**

Per foot weight of ice:  
 diameter (in): 2.38  
**Per foot weight of ice on object: 5 plf**

**L 2x2 Angles**

Weight of ice based on total radial SF area:  
 Height (in): 2  
 Width (in): 2  
**Per foot weight of ice on object: 6 plf**

**2-1/2" pipe**

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

**PL 6x1/2**

Weight of ice based on total radial SF area:  
 Height (in): 6  
 Width (in): 0.5  
**Per foot weight of ice on object: 10 plf**

**HSS 4x4**

Weight of ice based on total radial SF area:  
 Height (in): 4  
 Width (in): 4  
**Per foot weight of ice on object: 10 plf**

**3" Pipe**

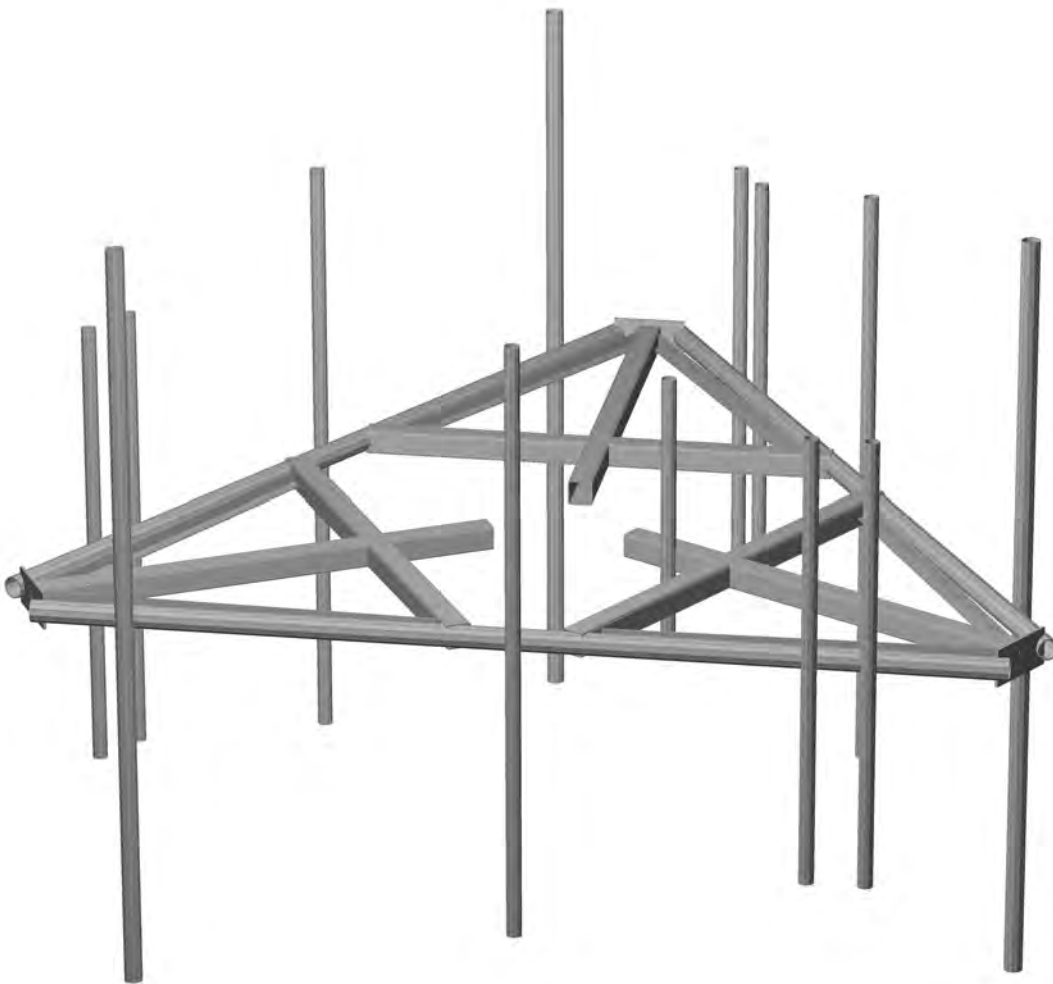
Per foot weight of ice:  
 diameter (in): 3.5  
**Per foot weight of ice on object: 7 plf**

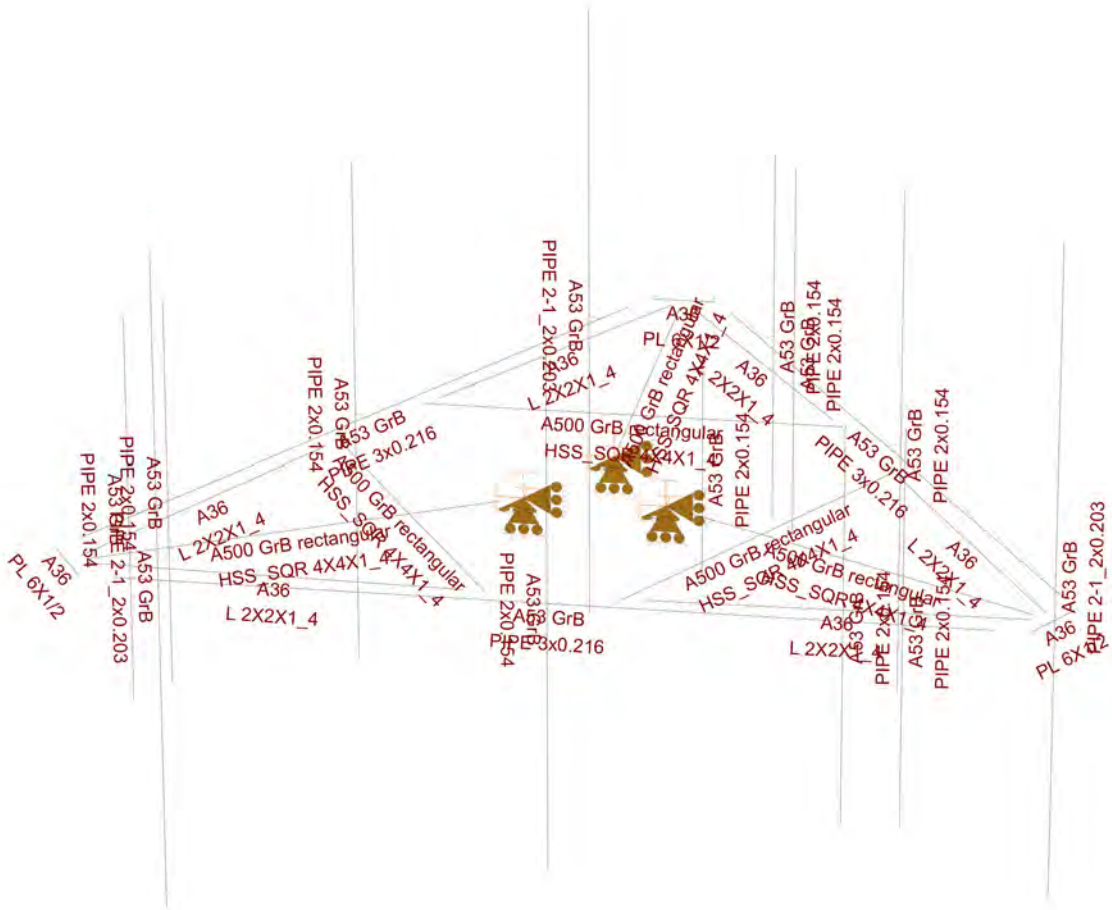


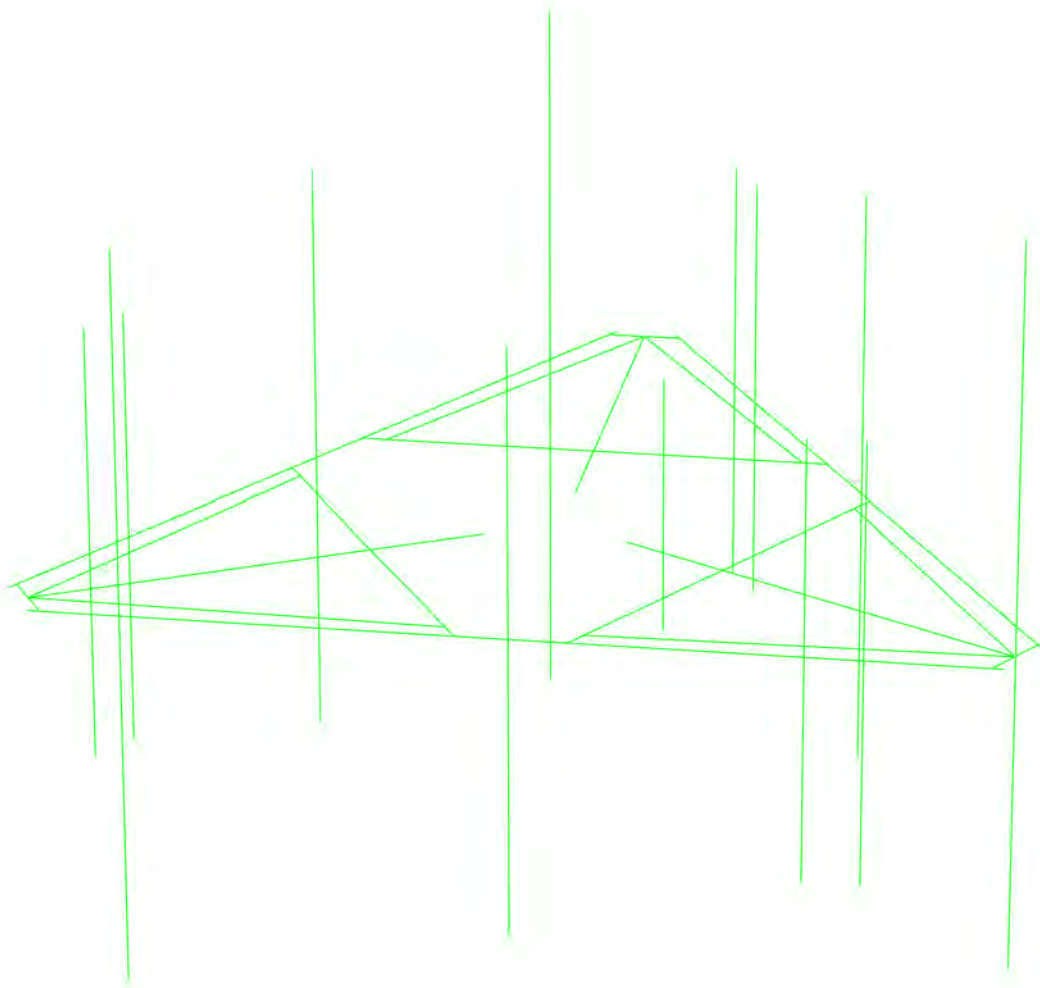


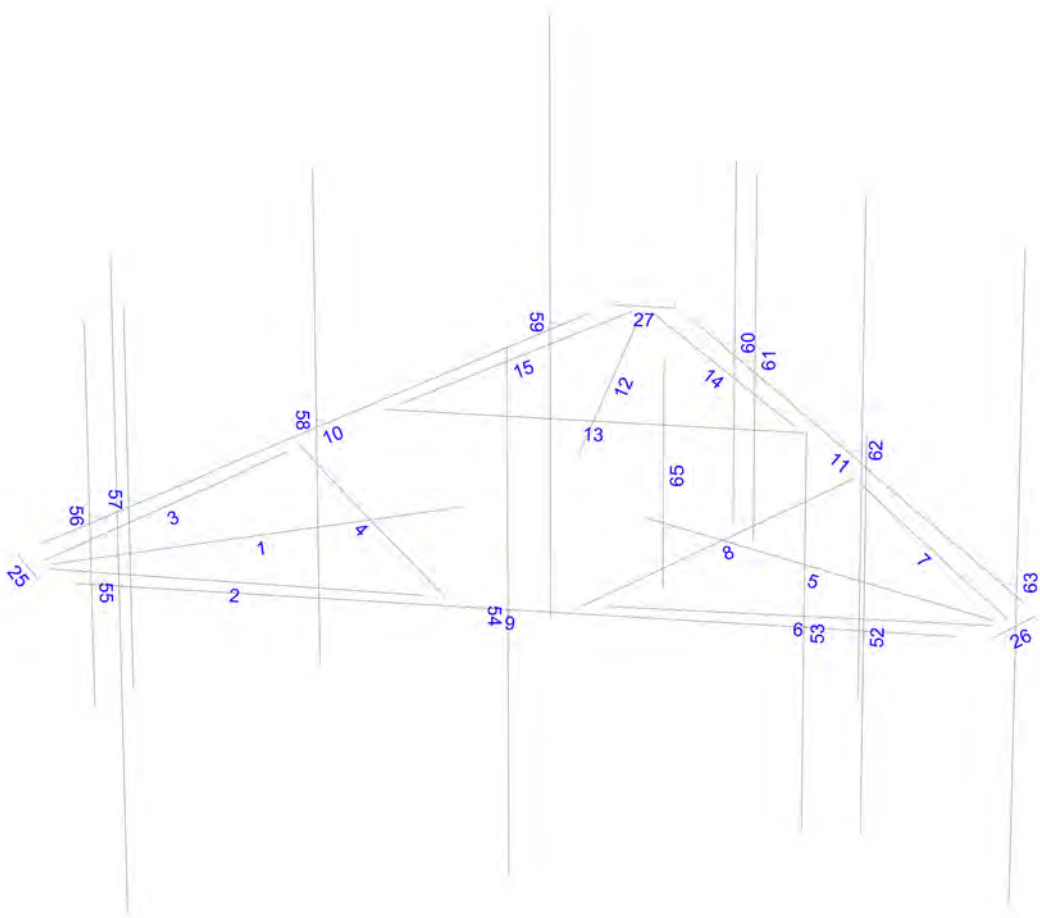
**HUDSON**  
Design Group LLC

**Mount Calculations  
(Existing Conditions)**









Current Date: 10/16/2020 11:27 AM

Units system: English

File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT2369\LTE 3C-4C-5G\CT2369 (LTE 3C-4C-5G).retx

## Load data

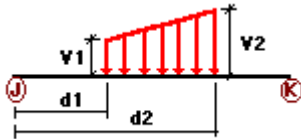
### GLOSSARY

Comb : Indicates if load condition is a load combination

### Load Conditions

Condition	Description	Comb.	Category
DL	Dead Load	No	DL
W0	Wind Load 0/60/120 deg	No	WIND
W30	Wind Load 30/90/150 deg	No	WIND
Di	Ice Load	No	LL
Wi0	Ice Wind Load 0/60/120 deg	No	WIND
Wi30	Ice Wind Load 30/90/150 deg	No	WIND
WL0	WL 30 mph 0/60/120 deg	No	WIND
WL30	WL 30 mph 30/90/150 deg	No	WIND
LL1	250 lb Live Load Center of Mount	No	LL
LL2	250 lb Live Load End of Mount	No	LL
LLa1	250 lb Live Load Antenna 1	No	LL
LLa2	250 lb Live Load Antenna 2	No	LL
LLa3	250 lb Live Load Antenna 3	No	LL

### Distributed force on members

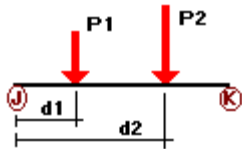


Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%	
DL	1	y	-0.01	0.00	0.00	No	0.00	No	
	2	y	-0.01	0.00	0.00	No	0.00	No	
	3	y	-0.01	0.00	0.00	No	0.00	No	
	4	y	-0.01	0.00	0.00	No	0.00	No	
	5	y	-0.01	0.00	0.00	No	0.00	No	
	6	y	-0.01	0.00	0.00	No	0.00	No	
	7	y	-0.01	0.00	0.00	No	0.00	No	
	8	y	-0.01	0.00	0.00	No	0.00	No	
	12	y	-0.01	0.00	0.00	No	0.00	No	
	13	y	-0.01	0.00	0.00	No	0.00	No	
	14	y	-0.01	0.00	0.00	No	0.00	No	
	15	y	-0.01	0.00	0.00	No	0.00	No	
	W0	1	z	-0.019	0.00	0.00	No	0.00	No
		2	z	-0.015	0.00	0.00	No	0.00	No
		3	z	-0.015	0.00	0.00	No	0.00	No

	4	z	-0.019	0.00	0.00	No	0.00	No
	5	z	-0.019	0.00	0.00	No	0.00	No
	6	z	-0.015	0.00	0.00	No	0.00	No
	7	z	-0.015	0.00	0.00	No	0.00	No
	8	z	-0.019	0.00	0.00	No	0.00	No
	9	z	-0.016	0.00	0.00	No	0.00	No
	10	z	-0.016	0.00	0.00	No	0.00	No
	11	z	-0.016	0.00	0.00	No	0.00	No
	12	z	-0.019	0.00	0.00	No	0.00	No
	13	z	-0.019	0.00	0.00	No	0.00	No
	14	z	-0.015	0.00	0.00	No	0.00	No
	15	z	-0.015	0.00	0.00	No	0.00	No
	25	z	-0.046	0.00	0.00	No	0.00	No
	26	z	-0.046	0.00	0.00	No	0.00	No
	27	z	-0.046	0.00	0.00	No	0.00	No
	53	z	-0.011	0.00	0.00	No	0.00	No
	56	z	-0.011	0.00	0.00	No	0.00	No
	57	z	-0.011	0.00	0.00	No	0.00	No
	58	z	-0.011	0.00	0.00	No	0.00	No
	59	z	-0.013	0.00	0.00	No	0.00	No
	60	z	-0.011	0.00	0.00	No	0.00	No
	61	z	-0.011	0.00	0.00	No	0.00	No
	62	z	-0.011	0.00	0.00	No	0.00	No
	63	z	-0.013	0.00	0.00	No	0.00	No
	65	z	-0.011	0.00	0.00	No	0.00	No
W30	1	x	-0.019	0.00	0.00	No	0.00	No
	2	x	-0.015	0.00	0.00	No	0.00	No
	3	x	-0.015	0.00	0.00	No	0.00	No
	4	x	-0.019	0.00	0.00	No	0.00	No
	5	x	-0.019	0.00	0.00	No	0.00	No
	6	x	-0.015	0.00	0.00	No	0.00	No
	7	x	-0.015	0.00	0.00	No	0.00	No
	8	x	-0.019	0.00	0.00	No	0.00	No
	10	x	-0.016	0.00	0.00	No	0.00	No
	11	x	-0.016	0.00	0.00	No	0.00	No
	12	x	-0.019	0.00	0.00	No	0.00	No
	13	x	-0.019	0.00	0.00	No	0.00	No
	14	x	-0.015	0.00	0.00	No	0.00	No
	15	x	-0.015	0.00	0.00	No	0.00	No
	25	x	-0.046	0.00	0.00	No	0.00	No
	26	x	-0.046	0.00	0.00	No	0.00	No
	27	x	-0.046	0.00	0.00	No	0.00	No
	52	x	-0.011	0.00	0.00	No	0.00	No
	53	x	-0.011	0.00	0.00	No	0.00	No
	54	x	-0.011	0.00	0.00	No	0.00	No
	55	x	-0.013	0.00	0.00	No	0.00	No
	56	x	-0.011	0.00	0.00	No	0.00	No
	57	x	-0.011	0.00	0.00	No	0.00	No
	58	x	-0.011	0.00	0.00	No	0.00	No
	59	x	-0.013	0.00	0.00	No	0.00	No
	60	x	-0.011	0.00	0.00	No	0.00	No
	61	x	-0.011	0.00	0.00	No	0.00	No
	62	x	-0.011	0.00	0.00	No	0.00	No
	63	x	-0.013	0.00	0.00	No	0.00	No
	65	x	-0.011	0.00	0.00	No	0.00	No
Di	1	y	-0.01	0.00	0.00	No	0.00	No
	2	y	-0.006	0.00	0.00	No	0.00	No
	3	y	-0.006	0.00	0.00	No	0.00	No
	4	y	-0.01	0.00	0.00	No	0.00	No
	5	y	-0.01	0.00	0.00	No	0.00	No

6	y	-0.006	0.00	0.00	No	0.00	No
7	y	-0.006	0.00	0.00	No	0.00	No
8	y	-0.01	0.00	0.00	No	0.00	No
9	y	-0.007	0.00	0.00	No	0.00	No
10	y	-0.007	0.00	0.00	No	0.00	No
11	y	-0.007	0.00	0.00	No	0.00	No
12	y	-0.01	0.00	0.00	No	0.00	No
13	y	-0.01	0.00	0.00	No	0.00	No
14	y	-0.006	0.00	0.00	No	0.00	No
15	y	-0.006	0.00	0.00	No	0.00	No
25	y	-0.01	0.00	0.00	No	0.00	No
26	y	-0.01	0.00	0.00	No	0.00	No
27	y	-0.01	0.00	0.00	No	0.00	No
52	y	-0.005	0.00	0.00	No	0.00	No
53	y	-0.005	0.00	0.00	No	0.00	No
54	y	-0.005	0.00	0.00	No	0.00	No
55	y	-0.006	0.00	0.00	No	0.00	No
56	y	-0.005	0.00	0.00	No	0.00	No
57	y	-0.005	0.00	0.00	No	0.00	No
58	y	-0.005	0.00	0.00	No	0.00	No
59	y	-0.006	0.00	0.00	No	0.00	No
60	y	-0.005	0.00	0.00	No	0.00	No
61	y	-0.005	0.00	0.00	No	0.00	No
62	y	-0.005	0.00	0.00	No	0.00	No
63	y	-0.006	0.00	0.00	No	0.00	No
65	y	-0.005	0.00	0.00	No	0.00	No

### Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%	
DL	52	y	-0.018	1.00	No	
		y	-0.018	4.50	No	
	53	y	-0.062	1.00	No	
		54	y	-0.027	0.50	No
			y	-0.027	7.50	No
	55	y	-0.072	1.50	No	
		y	-0.048	1.50	No	
		y	-0.048	8.50	No	
	56	y	-0.073	0.50	No	
		y	-0.018	1.00	No	
		y	-0.018	4.50	No	
	57	y	-0.062	1.00	No	
58		y	-0.027	0.50	No	
		y	-0.027	7.50	No	
59	y	-0.072	1.50	No		
	y	-0.048	1.50	No		
	y	-0.048	8.50	No		
60	y	-0.073	0.50	No		
	y	-0.018	1.00	No		



		y	-0.018	4.50	No
	61	y	-0.062	1.00	No
	62	y	-0.027	0.50	No
		y	-0.027	7.50	No
		y	-0.072	1.50	No
	63	y	-0.048	1.50	No
		y	-0.048	8.50	No
		y	-0.073	0.50	No
W0	65	y	-0.033	50.00	Yes
	52	z	-0.128	1.00	No
		z	-0.128	4.50	No
	53	z	-0.022	1.00	No
	54	z	-0.26	0.50	No
		z	-0.26	7.50	No
		z	-0.011	1.50	No
	55	z	-0.414	1.50	No
		z	-0.414	8.50	No
		z	-0.091	0.50	No
	56	z	-0.083	1.00	No
		z	-0.083	4.50	No
	57	z	-0.063	1.00	No
	58	z	-0.205	0.50	No
		z	-0.205	7.50	No
		z	-0.061	1.50	No
	59	z	-0.245	1.50	No
		z	-0.245	8.50	No
		z	-0.071	0.50	No
	60	z	-0.083	1.00	No
		z	-0.083	4.50	No
	61	z	-0.063	1.00	No
	62	z	-0.205	0.50	No
		z	-0.205	7.50	No
		z	-0.061	1.50	No
	63	z	-0.245	1.50	No
		z	-0.245	8.50	No
		z	-0.071	0.50	No
	65	z	-0.052	50.00	Yes
W30	52	x	-0.068	1.00	No
		x	-0.068	4.50	No
	53	x	-0.077	1.00	No
	54	x	-0.187	0.50	No
		x	-0.187	7.50	No
		x	-0.063	1.50	No
	55	x	-0.188	1.50	No
		x	-0.188	8.50	No
		x	-0.065	0.50	No
	56	x	-0.113	1.00	No
		x	-0.113	4.50	No
	57	x	-0.036	1.00	No
	58	x	-0.242	0.50	No
		x	-0.242	7.50	No
		x	-0.044	1.50	No
	59	x	-0.358	1.50	No
		x	-0.358	8.50	No
		x	-0.085	0.50	No
	60	x	-0.113	1.00	No
		x	-0.113	4.50	No
	61	x	-0.036	1.00	No
	62	x	-0.242	0.50	No
		x	-0.242	7.50	No

		x	-0.044	1.50	No
	63	x	-0.358	1.50	No
		x	-0.358	8.50	No
		x	-0.085	0.50	No
	65	x	-0.052	50.00	Yes
Di	52	y	-0.043	1.00	No
		y	-0.043	4.50	No
	53	y	-0.052	1.00	No
	54	y	-0.085	0.50	No
		y	-0.085	7.50	No
		y	-0.032	1.50	No
	55	y	-0.131	1.50	No
		y	-0.131	8.50	No
		y	-0.036	0.50	No
	56	y	-0.043	1.00	No
		y	-0.043	4.50	No
	57	y	-0.052	1.00	No
	58	y	-0.085	0.50	No
		y	-0.085	7.50	No
		y	-0.032	1.50	No
	59	y	-0.131	1.50	No
		y	-0.131	8.50	No
		y	-0.036	0.50	No
	60	y	-0.043	1.00	No
		y	-0.043	4.50	No
	61	y	-0.052	1.00	No
	62	y	-0.085	0.50	No
		y	-0.085	7.50	No
		y	-0.032	1.50	No
	63	y	-0.131	1.50	No
		y	-0.131	8.50	No
		y	-0.036	0.50	No
Wi0	65	y	-0.03	50.00	Yes
	52	z	-0.023	1.00	No
		z	-0.023	4.50	No
	53	z	-0.006	1.00	No
	54	z	-0.044	0.50	No
		z	-0.044	7.50	No
		z	-0.004	1.50	No
	55	z	-0.065	1.50	No
		z	-0.065	8.50	No
		z	-0.017	0.50	No
	56	z	-0.016	1.00	No
		z	-0.016	4.50	No
	57	z	-0.012	1.00	No
	58	z	-0.035	0.50	No
		z	-0.035	7.50	No
		z	-0.012	1.50	No
	59	z	-0.041	1.50	No
		z	-0.041	8.50	No
		z	-0.014	0.50	No
	60	z	-0.016	1.00	No
		z	-0.016	4.50	No
	61	z	-0.012	1.00	No
	62	z	-0.035	0.50	No
		z	-0.035	7.50	No
		z	-0.012	1.50	No
	63	z	-0.041	1.50	No
		z	-0.041	8.50	No
		z	-0.014	0.50	No

Wi30	65	z	-0.01	50.00	Yes		
	52	x	-0.014	1.00	No		
		x	-0.014	4.50	No		
		53	x	-0.014	1.00	No	
		54	x	-0.033	0.50	No	
			x	-0.033	7.50	No	
			x	-0.012	1.50	No	
		55	x	-0.033	1.50	No	
			x	-0.033	8.50	No	
			x	-0.012	0.50	No	
		56	x	-0.02	1.00	No	
			x	-0.02	4.50	No	
		57	x	-0.008	1.00	No	
		58	x	-0.04	0.50	No	
			x	-0.04	7.50	No	
			x	-0.008	1.50	No	
		59	x	-0.056	1.50	No	
			x	-0.056	8.50	No	
			x	-0.016	0.50	No	
		60	x	-0.02	1.00	No	
			x	-0.02	4.50	No	
		61	x	-0.008	1.00	No	
		62	x	-0.04	0.50	No	
			x	-0.04	7.50	No	
			x	-0.008	1.50	No	
		63	x	-0.056	1.50	No	
			x	-0.056	8.50	No	
			x	-0.016	0.50	No	
	WLO	65	x	-0.01	50.00	Yes	
		52	z	-0.007	1.00	No	
			z	-0.007	4.50	No	
			53	z	-0.001	1.00	No
			54	z	-0.013	0.50	No
			z	-0.013	7.50	No	
			z	-0.001	1.50	No	
		55	z	-0.021	1.50	No	
			z	-0.021	8.50	No	
			z	-0.005	0.50	No	
		56	z	-0.005	1.00	No	
			z	-0.005	4.50	No	
		57	z	-0.003	1.00	No	
		58	z	-0.011	0.50	No	
			z	-0.011	7.50	No	
			z	-0.003	1.50	No	
		59	z	-0.013	1.50	No	
			z	-0.013	8.50	No	
			z	-0.004	0.50	No	
		60	z	-0.005	1.00	No	
			z	-0.005	4.50	No	
		61	z	-0.003	1.00	No	
		62	z	-0.011	0.50	No	
			z	-0.011	7.50	No	
			z	-0.003	1.50	No	
		63	z	-0.013	1.50	No	
			z	-0.013	8.50	No	
			z	-0.004	0.50	No	
WL30		65	z	-0.003	50.00	Yes	
		52	x	-0.004	1.00	No	
			x	-0.004	4.50	No	
		53	x	-0.004	1.00	No	

	54	x	-0.01	0.50	No
		x	-0.01	7.50	No
		x	-0.003	1.50	No
	55	x	-0.01	1.50	No
		x	-0.01	8.50	No
		x	-0.003	0.50	No
	56	x	-0.006	1.00	No
		x	-0.006	4.50	No
	57	x	-0.002	1.00	No
	58	x	-0.012	0.50	No
		x	-0.012	7.50	No
		x	-0.002	1.50	No
	59	x	-0.018	1.50	No
		x	-0.018	8.50	No
		x	-0.004	0.50	No
	60	x	-0.006	1.00	No
		x	-0.006	4.50	No
	61	x	-0.002	1.00	No
	62	x	-0.012	0.50	No
		x	-0.012	7.50	No
		x	-0.002	1.50	No
	63	x	-0.018	1.50	No
		x	-0.018	8.50	No
		x	-0.004	0.50	No
	65	x	-0.003	50.00	Yes
LL1	9	y	-0.25	50.00	Yes
LL2	9	y	-0.25	0.00	Yes
LLa1	52	y	-0.25	50.00	Yes
LLa2	53	y	-0.25	50.00	Yes
LLa3	54	y	-0.25	50.00	Yes

### Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	-1.00	0.00
W0	Wind Load 0/60/120 deg	No	0.00	0.00	0.00
W30	Wind Load 30/90/150 deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
Wi0	Ice Wind Load 0/60/120 deg	No	0.00	0.00	0.00
Wi30	Ice Wind Load 30/90/150 deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0/60/120 deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30/90/150 deg	No	0.00	0.00	0.00
LL1	250 lb Live Load Center of Mount	No	0.00	0.00	0.00
LL2	250 lb Live Load End of Mount	No	0.00	0.00	0.00
LLa1	250 lb Live Load Antenna 1	No	0.00	0.00	0.00
LLa2	250 lb Live Load Antenna 2	No	0.00	0.00	0.00
LLa3	250 lb Live Load Antenna 3	No	0.00	0.00	0.00

### Earthquake (Dynamic analysis only)

<b>Condition</b>	<b>a/g</b>	<b>Ang.</b> [Deg]	<b>Damp.</b> [%]
DL	0.00	0.00	0.00
W0	0.00	0.00	0.00
W30	0.00	0.00	0.00
Di	0.00	0.00	0.00
Wi0	0.00	0.00	0.00
Wi30	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LLa1	0.00	0.00	0.00
LLa2	0.00	0.00	0.00
LLa3	0.00	0.00	0.00



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## Steel Code Check

Report: Summary - Group by member

**Load conditions to be included in design :**

- LC1=1.2DL+W0
- LC2=1.2DL+W30
- LC3=1.2DL-W0
- LC4=1.2DL-W30
- LC5=0.9DL+W0
- LC6=0.9DL+W30
- LC7=0.9DL-W0
- LC8=0.9DL-W30
- LC9=1.2DL+Di+Wi0
- LC10=1.2DL+Di+Wi30
- LC11=1.2DL+Di-Wi0
- LC12=1.2DL+Di-Wi30
- LC13=1.2DL
- LC15=1.2DL+1.5LL1
- LC16=1.2DL+1.5LL2
- LC17=1.2DL+W0+1.5LLa1
- LC18=1.2DL+W0+1.5LLa2
- LC19=1.2DL-W0+1.5LLa1
- LC20=1.2DL-W0+1.5LLa2
- LC21=1.2DL+W0+1.5LLa1
- LC22=1.2DL+W0+1.5LLa2
- LC23=1.2DL-W0+1.5LLa1
- LC24=1.2DL-W0+1.5LLa2
- LC25=1.2DL+W0+1.5LLa3
- LC26=1.2DL+W0+1.5LLa1
- LC27=1.2DL-W0+1.5LLa3
- LC28=1.2DL-W0+1.5LLa1

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	<b>HSS_SQR 4X4X1_4</b>	<b>1</b>	LC11 at 100.00%	<b>0.53</b>	<b>OK</b>	Eq. H1-1b
		<b>4</b>	LC11 at 50.00%	0.21	OK	Eq. H1-1b
		<b>5</b>	LC12 at 100.00%	0.53	OK	Eq. H1-1b
		<b>8</b>	LC11 at 50.00%	0.21	OK	Eq. H1-1b
		<b>12</b>	LC12 at 0.00%	0.53	OK	Eq. H1-1b
		<b>13</b>	LC9 at 50.00%	0.22	OK	Eq. H1-1b
	<b>L 2X2X1_4</b>	<b>2</b>	LC3 at 100.00%	0.48	OK	Eq. H2-1
		<b>3</b>	LC2 at 100.00%	0.42	OK	Eq. H2-1
		<b>6</b>	LC3 at 100.00%	0.40	OK	Eq. H2-1
		<b>7</b>	LC4 at 100.00%	<b>0.51</b>	<b>OK</b>	Eq. H2-1
		<b>14</b>	LC1 at 0.00%	0.36	OK	Eq. H2-1
		<b>15</b>	LC1 at 0.00%	0.42	OK	Eq. H2-1
	<b>PIPE 2-1_2x0.203</b>	<b>55</b>	LC3 at 46.88%	<b>0.72</b>	<b>OK</b>	Eq. H1-1b
		<b>59</b>	LC4 at 46.88%	0.69	OK	Eq. H1-1b
		<b>63</b>	LC4 at 46.88%	0.69	OK	Eq. H1-1b
	<b>PIPE 2x0.154</b>	<b>52</b>	LC3 at 46.88%	0.19	OK	Eq. H1-1b
		<b>53</b>	LC2 at 46.88%	0.15	OK	Eq. H1-1b
		<b>54</b>	LC3 at 50.00%	0.73	OK	Eq. H1-1b

<b>56</b>	LC2 at 46.88%	0.20	OK	Eq. H1-1b
<b>57</b>	LC1 at 46.88%	0.13	OK	Eq. H1-1b
<b>58</b>	LC2 at 46.88%	0.78	OK	Eq. H1-1b
<b>60</b>	LC2 at 46.88%	0.20	OK	Eq. H1-1b
<b>61</b>	LC1 at 46.88%	0.13	OK	Eq. H1-1b
<b>62</b>	LC2 at 46.88%	<b>0.78</b>	<b>OK</b>	Eq. H1-1b
<b>65</b>	LC4 at 68.75%	0.05	OK	Eq. H1-1b

**PIPE 3x0.216**

<b>9</b>	LC11 at 55.56%	0.38	OK	Eq. H1-1b
<b>10</b>	LC10 at 44.44%	<b>0.39</b>	<b>OK</b>	Eq. H1-1b
<b>11</b>	LC12 at 55.56%	0.38	OK	Eq. H1-1b

**PL 6X1/2**

<b>25</b>	LC3 at 50.00%	0.14	OK	Eq. H1-1b
<b>26</b>	LC4 at 50.00%	<b>0.17</b>	<b>OK</b>	Eq. H1-1b
<b>27</b>	LC1 at 50.00%	0.16	OK	Eq. H1-1b



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## Geometry data

### GLOSSARY

- Cb22, Cb33 : Moment gradient coefficients
- Cm22, Cm33 : Coefficients applied to bending term in interaction formula
- d0 : Tapered member section depth at J end of member
- DJX : Rigid end offset distance measured from J node in axis X
- DJY : Rigid end offset distance measured from J node in axis Y
- DJZ : Rigid end offset distance measured from J node in axis Z
- DKX : Rigid end offset distance measured from K node in axis X
- DKY : Rigid end offset distance measured from K node in axis Y
- DKZ : Rigid end offset distance measured from K node in axis Z
- dL : Tapered member section depth at K end of member
- Ig factor : Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members
- K22 : Effective length factor about axis 2
- K33 : Effective length factor about axis 3
- L22 : Member length for calculation of axial capacity
- L33 : Member length for calculation of axial capacity
- LB pos : Lateral unbraced length of the compression flange in the positive side of local axis 2
- LB neg : Lateral unbraced length of the compression flange in the negative side of local axis 2
- RX : Rotation about X
- RY : Rotation about Y
- RZ : Rotation about Z
- TO : 1 = Tension only member 0 = Normal member
- TX : Translation in X
- TY : Translation in Y
- TZ : Translation in Z

### Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
2	-0.7253	0.00	4.0896	0
3	-6.0833	0.00	4.0896	0
4	-6.25	0.00	4.0896	0
5	-6.3333	0.00	3.6565	0
6	-6.5833	0.00	3.2236	0
7	-3.7376	0.00	-1.128	0
8	-3.9043	0.00	-1.4166	0
9	-0.892	0.00	3.8009	0
10	-6.6667	0.00	3.3679	0
11	-3.179	0.00	-2.6729	0
12	-2.8457	0.00	-2.6729	0
13	-0.50	0.00	-7.3131	0
14	-0.4167	0.00	-7.4574	0
17	0.7253	0.00	4.0896	0
18	6.0833	0.00	4.0896	0
19	6.25	0.00	4.0896	0
20	6.3333	0.00	3.6566	0
21	6.5833	0.00	3.2236	0
22	3.7376	0.00	-1.128	0
23	3.9043	0.00	-1.4166	0
24	0.892	0.00	3.8009	0



25	6.6667	0.00	3.3679	0
26	3.179	0.00	-2.6729	0
27	2.8457	0.00	-2.6729	0
28	0.50	0.00	-7.3131	0
29	0.4167	0.00	-7.4574	0
32	0.00	0.00	-7.3131	0
51	-5.9649	3.00	1.7523	0
53	-1.2149	5.00	-6.4749	0
63	-5.9649	-3.00	1.7523	0
67	-1.2149	-5.00	-6.4749	0
69	0.9427	0.00	0.5443	0
70	0.00	0.00	-1.0885	0
71	-0.9427	0.00	0.5443	0
72	-5.5899	3.00	1.1028	0
73	-3.7149	4.00	-2.1448	0
82	-5.5899	-3.00	1.1028	0
83	-3.7149	-4.00	-2.1448	0
84	-5.7917	0.00	1.8523	0
92	1.4649	3.00	-6.0419	0
93	6.2149	5.00	2.1853	0
94	1.4649	-3.00	-6.0419	0
95	6.2149	-5.00	2.1853	0
96	1.8399	3.00	-5.3924	0
97	3.7149	4.00	-2.1448	0
98	1.8399	-3.00	-5.3924	0
99	3.7149	-4.00	-2.1448	0
108	4.50	3.00	4.2896	0
109	-5.00	5.00	4.2896	0
110	4.50	-3.00	4.2896	0
111	-5.00	-5.00	4.2896	0
112	3.75	3.00	4.2896	0
113	0.00	4.00	4.2896	0
114	3.75	-3.00	4.2896	0
115	0.00	-4.00	4.2896	0
127	1.5056	2.50	1.1003	0
128	1.5056	-1.00	1.1003	0

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## Restraints

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Node	TX	TY	TZ	RX	RY	RZ
69	1	1	1	1	1	1
70	1	1	1	1	1	1
71	1	1	1	1	1	1

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## Members

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Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	Ig factor
1	5	71		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
2	5	9		L 2X2X1_4	A36	0.00	0.00	0.00
3	5	7		L 2X2X1_4	A36	0.00	0.00	0.00
4	8	2		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
5	20	69		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
6	20	24		L 2X2X1_4	A36	0.00	0.00	0.00
7	20	22		L 2X2X1_4	A36	0.00	0.00	0.00
8	23	17		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
9	4	19		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
10	10	14		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
11	29	25		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
12	70	32		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
13	11	26		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
14	27	32		L 2X2X1_4	A36	0.00	0.00	0.00
15	12	32		L 2X2X1_4	A36	0.00	0.00	0.00
25	6	3		PL 6X1/2	A36	0.00	0.00	0.00
26	18	21		PL 6X1/2	A36	0.00	0.00	0.00
27	28	13		PL 6X1/2	A36	0.00	0.00	0.00
52	108	110		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
53	112	114		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
54	113	115		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
55	109	111		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
56	51	63		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
57	72	82		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
58	73	83		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
59	53	67		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
60	92	94		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
61	96	98		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
62	97	99		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
63	93	95		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
65	127	128		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

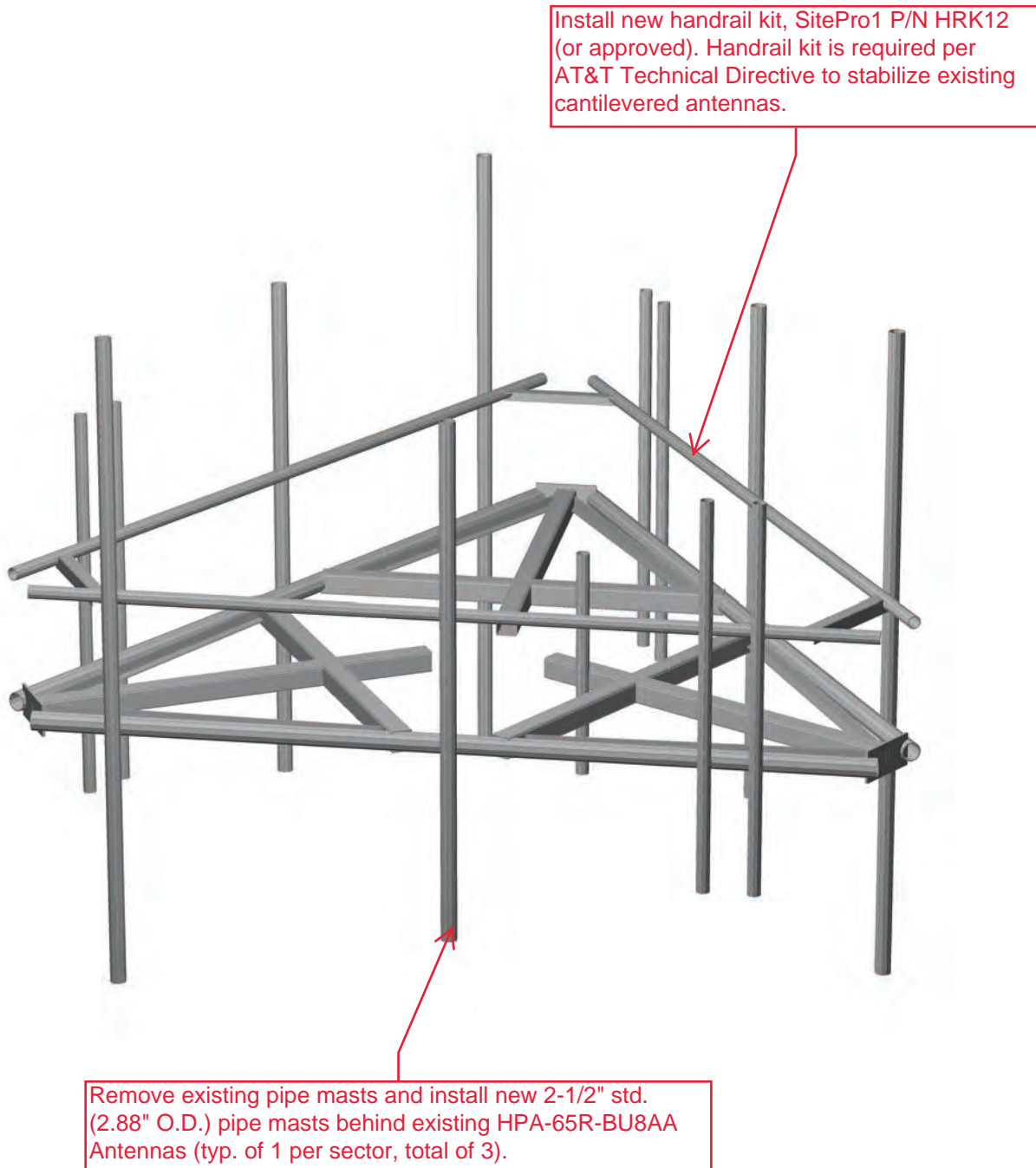
### Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
2	270.00	0	0.00	0.00	0.00
4	180.00	0	0.00	0.00	0.00
7	270.00	0	0.00	0.00	0.00
8	90.00	0	0.00	0.00	0.00
13	90.00	0	0.00	0.00	0.00
14	270.00	0	0.00	0.00	0.00
52	0.00	2	1.00	0.00	0.00
53	0.00	2	1.00	0.00	0.00
54	0.00	2	1.00	0.00	0.00
55	0.00	2	1.00	0.00	0.00
56	0.00	2	1.00	0.00	0.00
57	0.00	2	1.00	0.00	0.00
58	0.00	2	1.00	0.00	0.00
59	0.00	2	1.00	0.00	0.00
60	0.00	2	1.00	0.00	0.00
61	0.00	2	1.00	0.00	0.00
62	0.00	2	1.00	0.00	0.00
63	0.00	2	1.00	0.00	0.00

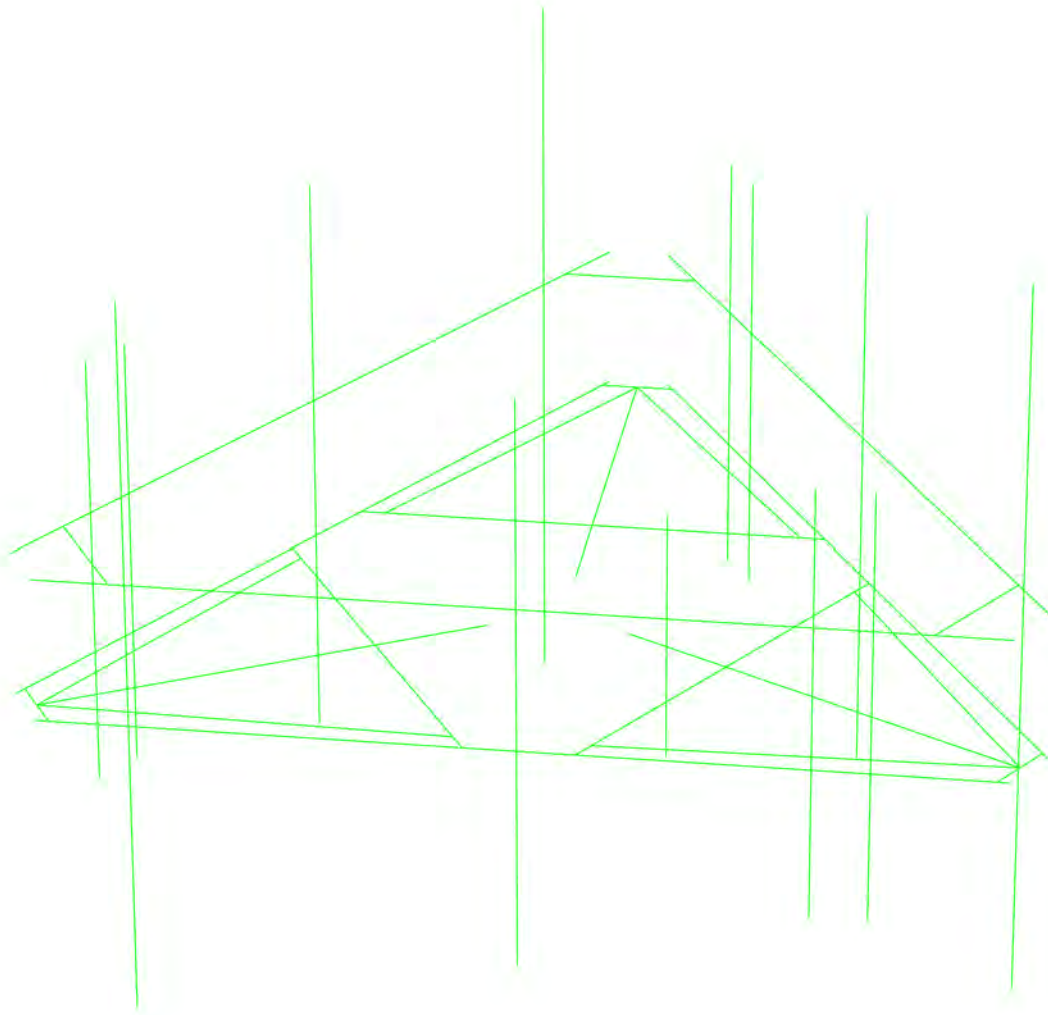


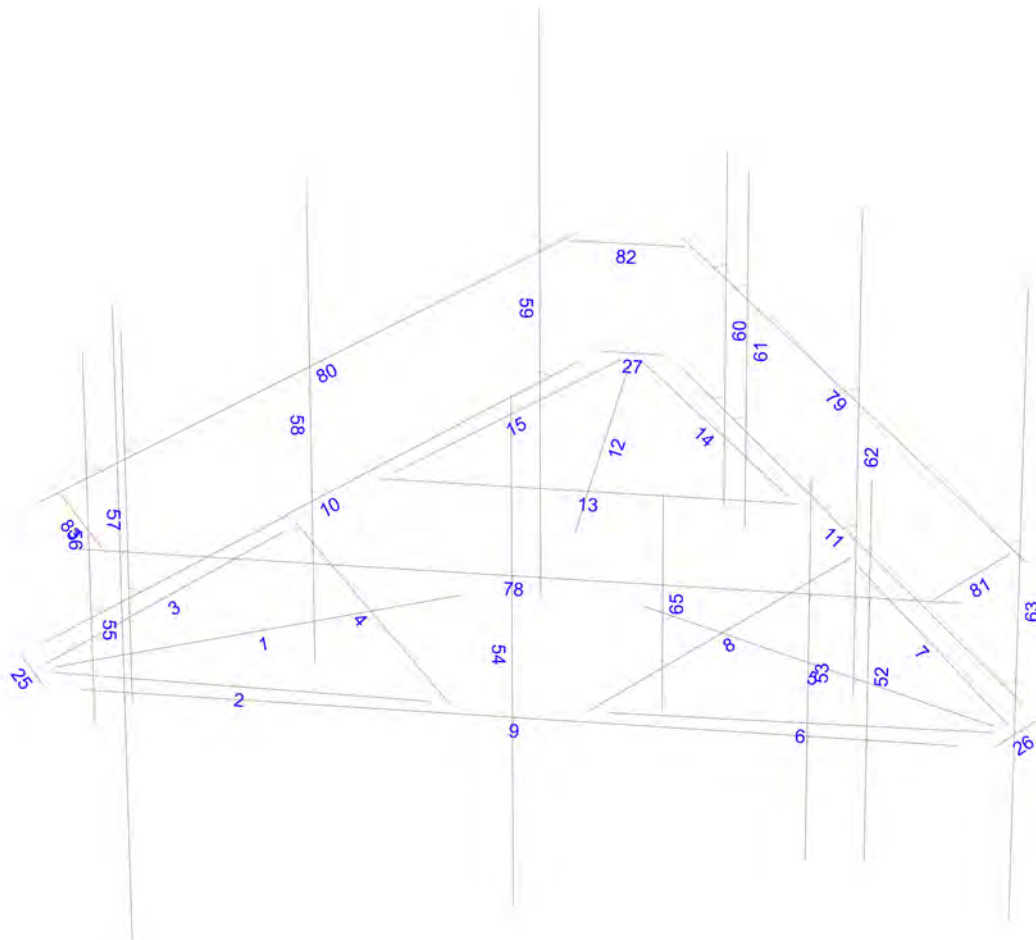
**HUDSON**  
Design Group LLC

**Mount Calculations  
(Modified Conditions)**









## Load data

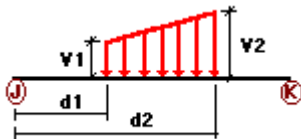
### GLOSSARY

Comb : Indicates if load condition is a load combination

### Load Conditions

Condition	Description	Comb.	Category
DL	Dead Load	No	DL
W0	Wind Load 0/60/120 deg	No	WIND
W30	Wind Load 30/90/150 deg	No	WIND
Di	Ice Load	No	LL
Wi0	Ice Wind Load 0/60/120 deg	No	WIND
Wi30	Ice Wind Load 30/90/150 deg	No	WIND
WL0	WL 30 mph 0/60/120 deg	No	WIND
WL30	WL 30 mph 30/90/150 deg	No	WIND
LL1	250 lb Live Load Center of Mount	No	LL
LL2	250 lb Live Load End of Mount	No	LL
LLa1	250 lb Live Load Antenna 1	No	LL
LLa2	250 lb Live Load Antenna 2	No	LL
LLa3	250 lb Live Load Antenna 3	No	LL

### Distributed force on members



Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%	
DL	1	y	-0.01	0.00	0.00	No	0.00	No	
	2	y	-0.01	0.00	0.00	No	0.00	No	
	3	y	-0.01	0.00	0.00	No	0.00	No	
	4	y	-0.01	0.00	0.00	No	0.00	No	
	5	y	-0.01	0.00	0.00	No	0.00	No	
	6	y	-0.01	0.00	0.00	No	0.00	No	
	7	y	-0.01	0.00	0.00	No	0.00	No	
	8	y	-0.01	0.00	0.00	No	0.00	No	
	12	y	-0.01	0.00	0.00	No	0.00	No	
	13	y	-0.01	0.00	0.00	No	0.00	No	
	14	y	-0.01	0.00	0.00	No	0.00	No	
	15	y	-0.01	0.00	0.00	No	0.00	No	
	W0	1	z	-0.019	0.00	0.00	No	0.00	No
		2	z	-0.015	0.00	0.00	No	0.00	No
		3	z	-0.015	0.00	0.00	No	0.00	No

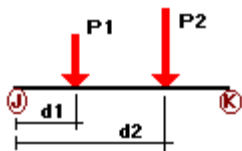


	4	z	-0.019	0.00	0.00	No	0.00	No
	5	z	-0.019	0.00	0.00	No	0.00	No
	6	z	-0.015	0.00	0.00	No	0.00	No
	7	z	-0.015	0.00	0.00	No	0.00	No
	8	z	-0.019	0.00	0.00	No	0.00	No
	9	z	-0.016	0.00	0.00	No	0.00	No
	10	z	-0.016	0.00	0.00	No	0.00	No
	11	z	-0.016	0.00	0.00	No	0.00	No
	12	z	-0.019	0.00	0.00	No	0.00	No
	13	z	-0.019	0.00	0.00	No	0.00	No
	14	z	-0.015	0.00	0.00	No	0.00	No
	15	z	-0.015	0.00	0.00	No	0.00	No
	25	z	-0.046	0.00	0.00	No	0.00	No
	26	z	-0.046	0.00	0.00	No	0.00	No
	27	z	-0.046	0.00	0.00	No	0.00	No
	53	z	-0.011	0.00	0.00	No	0.00	No
	56	z	-0.011	0.00	0.00	No	0.00	No
	57	z	-0.011	0.00	0.00	No	0.00	No
	58	z	-0.013	0.00	0.00	No	0.00	No
	59	z	-0.013	0.00	0.00	No	0.00	No
	60	z	-0.011	0.00	0.00	No	0.00	No
	61	z	-0.011	0.00	0.00	No	0.00	No
	62	z	-0.013	0.00	0.00	No	0.00	No
	63	z	-0.013	0.00	0.00	No	0.00	No
	65	z	-0.011	0.00	0.00	No	0.00	No
	78	z	-0.011	0.00	0.00	No	0.00	No
	79	z	-0.011	0.00	0.00	No	0.00	No
	80	z	-0.011	0.00	0.00	No	0.00	No
	81	z	-0.019	0.00	0.00	No	0.00	No
	82	z	-0.019	0.00	0.00	No	0.00	No
	83	z	-0.019	0.00	0.00	No	0.00	No
W30	1	x	-0.019	0.00	0.00	No	0.00	No
	2	x	-0.015	0.00	0.00	No	0.00	No
	3	x	-0.015	0.00	0.00	No	0.00	No
	4	x	-0.019	0.00	0.00	No	0.00	No
	5	x	-0.019	0.00	0.00	No	0.00	No
	6	x	-0.015	0.00	0.00	No	0.00	No
	7	x	-0.015	0.00	0.00	No	0.00	No
	8	x	-0.019	0.00	0.00	No	0.00	No
	10	x	-0.016	0.00	0.00	No	0.00	No
	11	x	-0.016	0.00	0.00	No	0.00	No
	12	x	-0.019	0.00	0.00	No	0.00	No
	13	x	-0.019	0.00	0.00	No	0.00	No
	14	x	-0.015	0.00	0.00	No	0.00	No
	15	x	-0.015	0.00	0.00	No	0.00	No
	25	x	-0.046	0.00	0.00	No	0.00	No
	26	x	-0.046	0.00	0.00	No	0.00	No
	27	x	-0.046	0.00	0.00	No	0.00	No
	52	x	-0.011	0.00	0.00	No	0.00	No
	53	x	-0.011	0.00	0.00	No	0.00	No
	54	x	-0.011	0.00	0.00	No	0.00	No
	55	x	-0.013	0.00	0.00	No	0.00	No
	56	x	-0.011	0.00	0.00	No	0.00	No
	57	x	-0.011	0.00	0.00	No	0.00	No
	58	x	-0.013	0.00	0.00	No	0.00	No
	59	x	-0.013	0.00	0.00	No	0.00	No
	60	x	-0.011	0.00	0.00	No	0.00	No
	61	x	-0.011	0.00	0.00	No	0.00	No
	62	x	-0.013	0.00	0.00	No	0.00	No
	63	x	-0.013	0.00	0.00	No	0.00	No

	65	x	-0.011	0.00	0.00	No	0.00	No
	79	x	-0.011	0.00	0.00	No	0.00	No
	80	x	-0.011	0.00	0.00	No	0.00	No
	81	x	-0.019	0.00	0.00	No	0.00	No
	82	x	-0.019	0.00	0.00	No	0.00	No
	83	x	-0.019	0.00	0.00	No	0.00	No
Di	1	y	-0.01	0.00	0.00	No	0.00	No
	2	y	-0.006	0.00	0.00	No	0.00	No
	3	y	-0.006	0.00	0.00	No	0.00	No
	4	y	-0.01	0.00	0.00	No	0.00	No
	5	y	-0.01	0.00	0.00	No	0.00	No
	6	y	-0.006	0.00	0.00	No	0.00	No
	7	y	-0.006	0.00	0.00	No	0.00	No
	8	y	-0.01	0.00	0.00	No	0.00	No
	9	y	-0.007	0.00	0.00	No	0.00	No
	10	y	-0.007	0.00	0.00	No	0.00	No
	11	y	-0.007	0.00	0.00	No	0.00	No
	12	y	-0.01	0.00	0.00	No	0.00	No
	13	y	-0.01	0.00	0.00	No	0.00	No
	14	y	-0.006	0.00	0.00	No	0.00	No
	15	y	-0.006	0.00	0.00	No	0.00	No
	25	y	-0.01	0.00	0.00	No	0.00	No
	26	y	-0.01	0.00	0.00	No	0.00	No
	27	y	-0.01	0.00	0.00	No	0.00	No
	52	y	-0.005	0.00	0.00	No	0.00	No
	53	y	-0.005	0.00	0.00	No	0.00	No
	54	y	-0.005	0.00	0.00	No	0.00	No
	55	y	-0.006	0.00	0.00	No	0.00	No
	56	y	-0.005	0.00	0.00	No	0.00	No
	57	y	-0.005	0.00	0.00	No	0.00	No
	58	y	-0.006	0.00	0.00	No	0.00	No
	59	y	-0.006	0.00	0.00	No	0.00	No
	60	y	-0.005	0.00	0.00	No	0.00	No
	61	y	-0.005	0.00	0.00	No	0.00	No
	62	y	-0.006	0.00	0.00	No	0.00	No
	63	y	-0.006	0.00	0.00	No	0.00	No
	65	y	-0.005	0.00	0.00	No	0.00	No
	78	y	-0.005	0.00	0.00	No	0.00	No
	79	y	-0.005	0.00	0.00	No	0.00	No
	80	y	-0.005	0.00	0.00	No	0.00	No
	81	y	-0.007	0.00	0.00	No	0.00	No
	82	y	-0.007	0.00	0.00	No	0.00	No
	83	y	-0.007	0.00	0.00	No	0.00	No

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### Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	52	y	-0.018	1.50	No
		y	-0.018	5.00	No
	53	y	-0.062	1.00	No
		54	y	-0.027	0.50
	y		-0.027	7.50	No
	y		-0.072	1.50	No
	55	y	-0.048	1.50	No
		y	-0.048	8.50	No
		y	-0.073	0.50	No
	56	y	-0.018	1.50	No
		y	-0.018	5.00	No
	57	y	-0.062	1.00	No
		58	y	-0.027	0.50
	y		-0.027	7.50	No
	y		-0.072	1.50	No
	59	y	-0.048	1.50	No
		y	-0.048	8.50	No
		y	-0.073	0.50	No
	60	y	-0.018	1.50	No
		y	-0.018	5.00	No
	61	y	-0.062	1.00	No
		62	y	-0.027	0.50
	y		-0.027	7.50	No
	y		-0.072	1.50	No
	63	y	-0.048	1.50	No
		y	-0.048	8.50	No
		y	-0.073	0.50	No
	65	y	-0.033	50.00	Yes
		W0 52	z	-0.128	1.50
	z		-0.128	5.00	No
	53	z	-0.022	1.00	No
		54	z	-0.26	0.50
	z		-0.26	7.50	No
	z		-0.011	1.50	No
	55	z	-0.414	1.50	No
z		-0.414	8.50	No	
z		-0.091	0.50	No	
56	z	-0.083	1.50	No	
	z	-0.083	5.00	No	
57	z	-0.063	1.00	No	
	58	z	-0.205	0.50	No
z		-0.205	7.50	No	
z		-0.061	1.50	No	
59	z	-0.245	1.50	No	
	z	-0.245	8.50	No	
	z	-0.071	0.50	No	
60	z	-0.083	1.50	No	
	z	-0.083	5.00	No	
61	z	-0.063	1.00	No	
	62	z	-0.205	0.50	No
z		-0.205	7.50	No	
z		-0.061	1.50	No	
63	z	-0.245	1.50	No	
	z	-0.245	8.50	No	
	z	-0.071	0.50	No	
65	z	-0.052	50.00	Yes	
	W30 52	x	-0.068	1.50	No
x		-0.068	5.00	No	
53	x	-0.077	1.00	No	
	54	x	-0.187	0.50	No

		x	-0.187	7.50	No
		x	-0.063	1.50	No
55		x	-0.188	1.50	No
		x	-0.188	8.50	No
		x	-0.065	0.50	No
56		x	-0.113	1.50	No
		x	-0.113	5.00	No
57		x	-0.036	1.00	No
58		x	-0.242	0.50	No
		x	-0.242	7.50	No
		x	-0.044	1.50	No
59		x	-0.358	1.50	No
		x	-0.358	8.50	No
		x	-0.085	0.50	No
60		x	-0.113	1.50	No
		x	-0.113	5.00	No
61		x	-0.036	1.00	No
62		x	-0.242	0.50	No
		x	-0.242	7.50	No
		x	-0.044	1.50	No
63		x	-0.358	1.50	No
		x	-0.358	8.50	No
		x	-0.085	0.50	No
65		x	-0.052	50.00	Yes
Di	52	y	-0.043	1.50	No
		y	-0.043	5.00	No
53		y	-0.052	1.00	No
54		y	-0.085	0.50	No
		y	-0.085	7.50	No
		y	-0.032	1.50	No
55		y	-0.131	1.50	No
		y	-0.131	8.50	No
		y	-0.036	0.50	No
56		y	-0.043	1.50	No
		y	-0.043	5.00	No
57		y	-0.052	1.00	No
58		y	-0.085	0.50	No
		y	-0.085	7.50	No
		y	-0.032	1.50	No
59		y	-0.131	1.50	No
		y	-0.131	8.50	No
		y	-0.036	0.50	No
60		y	-0.043	1.50	No
		y	-0.043	5.00	No
61		y	-0.052	1.00	No
62		y	-0.085	0.50	No
		y	-0.085	7.50	No
		y	-0.032	1.50	No
63		y	-0.131	1.50	No
		y	-0.131	8.50	No
		y	-0.036	0.50	No
65		y	-0.03	50.00	Yes
Wi0	52	z	-0.023	1.50	No
		z	-0.023	5.00	No
53		z	-0.006	1.00	No
54		z	-0.044	0.50	No
		z	-0.044	7.50	No
		z	-0.004	1.50	No
55		z	-0.065	1.50	No
		z	-0.065	8.50	No

		z	-0.017	0.50	No
	56	z	-0.016	1.50	No
		z	-0.016	5.00	No
	57	z	-0.012	1.00	No
	58	z	-0.035	0.50	No
		z	-0.035	7.50	No
		z	-0.012	1.50	No
	59	z	-0.041	1.50	No
		z	-0.041	8.50	No
		z	-0.014	0.50	No
	60	z	-0.016	1.50	No
		z	-0.016	5.00	No
	61	z	-0.012	1.00	No
	62	z	-0.035	0.50	No
		z	-0.035	7.50	No
		z	-0.012	1.50	No
	63	z	-0.041	1.50	No
		z	-0.041	8.50	No
		z	-0.014	0.50	No
	65	z	-0.01	50.00	Yes
Wi30	52	x	-0.014	1.50	No
		x	-0.014	5.00	No
	53	x	-0.014	1.00	No
	54	x	-0.033	0.50	No
		x	-0.033	7.50	No
		x	-0.012	1.50	No
	55	x	-0.033	1.50	No
		x	-0.033	8.50	No
		x	-0.012	0.50	No
	56	x	-0.02	1.50	No
		x	-0.02	5.00	No
	57	x	-0.008	1.00	No
	58	x	-0.04	0.50	No
		x	-0.04	7.50	No
		x	-0.008	1.50	No
	59	x	-0.056	1.50	No
		x	-0.056	8.50	No
		x	-0.016	0.50	No
	60	x	-0.02	1.50	No
		x	-0.02	5.00	No
	61	x	-0.008	1.00	No
	62	x	-0.04	0.50	No
		x	-0.04	7.50	No
		x	-0.008	1.50	No
	63	x	-0.056	1.50	No
		x	-0.056	8.50	No
		x	-0.016	0.50	No
	65	x	-0.01	50.00	Yes
WLO	52	z	-0.007	1.50	No
		z	-0.007	5.00	No
	53	z	-0.001	1.00	No
	54	z	-0.013	0.50	No
		z	-0.013	7.50	No
		z	-0.001	1.50	No
	55	z	-0.021	1.50	No
		z	-0.021	8.50	No
		z	-0.005	0.50	No
	56	z	-0.005	1.50	No
		z	-0.005	5.00	No
	57	z	-0.003	1.00	No

	58	z	-0.011	0.50	No
		z	-0.011	7.50	No
		z	-0.003	1.50	No
	59	z	-0.013	1.50	No
		z	-0.013	8.50	No
		z	-0.004	0.50	No
	60	z	-0.005	1.50	No
		z	-0.005	5.00	No
	61	z	-0.003	1.00	No
	62	z	-0.011	0.50	No
		z	-0.011	7.50	No
		z	-0.003	1.50	No
	63	z	-0.013	1.50	No
		z	-0.013	8.50	No
		z	-0.004	0.50	No
	65	z	-0.003	50.00	Yes
WL30	52	x	-0.004	1.50	No
		x	-0.004	5.00	No
	53	x	-0.004	1.00	No
	54	x	-0.01	0.50	No
		x	-0.01	7.50	No
		x	-0.003	1.50	No
	55	x	-0.01	1.50	No
		x	-0.01	8.50	No
		x	-0.003	0.50	No
	56	x	-0.006	1.50	No
		x	-0.006	5.00	No
	57	x	-0.002	1.00	No
	58	x	-0.012	0.50	No
		x	-0.012	7.50	No
		x	-0.002	1.50	No
	59	x	-0.018	1.50	No
		x	-0.018	8.50	No
		x	-0.004	0.50	No
	60	x	-0.006	1.50	No
		x	-0.006	5.00	No
	61	x	-0.002	1.00	No
	62	x	-0.012	0.50	No
		x	-0.012	7.50	No
		x	-0.002	1.50	No
	63	x	-0.018	1.50	No
		x	-0.018	8.50	No
		x	-0.004	0.50	No
	65	x	-0.003	50.00	Yes
LL1	9	y	-0.25	50.00	Yes
LL2	9	y	-0.25	0.00	Yes
LLa1	52	y	-0.25	50.00	Yes
LLa2	53	y	-0.25	50.00	Yes
LLa3	54	y	-0.25	50.00	Yes

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### Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	-1.00	0.00
W0	Wind Load 0/60/120 deg	No	0.00	0.00	0.00
W30	Wind Load 30/90/150 deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
Wi0	Ice Wind Load 0/60/120 deg	No	0.00	0.00	0.00
Wi30	Ice Wind Load 30/90/150 deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0/60/120 deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30/90/150 deg	No	0.00	0.00	0.00
LL1	250 lb Live Load Center of Mount	No	0.00	0.00	0.00
LL2	250 lb Live Load End of Mount	No	0.00	0.00	0.00
LLa1	250 lb Live Load Antenna 1	No	0.00	0.00	0.00
LLa2	250 lb Live Load Antenna 2	No	0.00	0.00	0.00
LLa3	250 lb Live Load Antenna 3	No	0.00	0.00	0.00

### Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
W0	0.00	0.00	0.00
W30	0.00	0.00	0.00
Di	0.00	0.00	0.00
Wi0	0.00	0.00	0.00
Wi30	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LLa1	0.00	0.00	0.00
LLa2	0.00	0.00	0.00
LLa3	0.00	0.00	0.00



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## Steel Code Check

**Report: Summary - Group by member**

**Load conditions to be included in design :**

- LC1=1.2DL+W0
- LC2=1.2DL+W30
- LC3=1.2DL-W0
- LC4=1.2DL-W30
- LC5=0.9DL+W0
- LC6=0.9DL+W30
- LC7=0.9DL-W0
- LC8=0.9DL-W30
- LC9=1.2DL+Di+Wi0
- LC10=1.2DL+Di+Wi30
- LC11=1.2DL+Di-Wi0
- LC12=1.2DL+Di-Wi30
- LC13=1.2DL
- LC15=1.2DL+1.5LL1
- LC16=1.2DL+1.5LL2
- LC17=1.2DL+W0+1.5LLa1
- LC18=1.2DL+W30+1.5LLa1
- LC19=1.2DL-W0+1.5LLa1
- LC20=1.2DL-W30+1.5LLa1
- LC21=1.2DL+W0+1.5LLa2
- LC22=1.2DL+W30+1.5LLa2
- LC23=1.2DL-W0+1.5LLa2
- LC24=1.2DL-W30+1.5LLa2
- LC25=1.2DL+W0+1.5LLa3
- LC26=1.2DL+W30+1.5LLa3
- LC27=1.2DL-W0+1.5LLa3
- LC28=1.2DL-W30+1.5LLa3

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	<b>HSS_SQR 4X4X1_4</b>	<b>1</b>	LC3 at 100.00%	0.53	OK	Eq. H1-1b
		<b>4</b>	LC2 at 48.44%	0.27	OK	Eq. H1-1b
		<b>5</b>	LC4 at 100.00%	0.51	OK	Eq. H1-1b
		<b>8</b>	LC4 at 48.44%	0.27	OK	Eq. H1-1b
		<b>12</b>	LC1 at 0.00%	<b>0.53</b>	<b>OK</b>	Eq. H1-1b
		<b>13</b>	LC1 at 50.00%	0.26	OK	Eq. H1-1b
	<b>L 2-1_2X2-1_2X3_16</b>	<b>81</b>	LC4 at 0.00%	0.62	OK	Eq. H2-1
		<b>82</b>	LC8 at 100.00%	<b>0.89</b>	<b>OK</b>	Eq. H2-1
		<b>83</b>	LC5 at 100.00%	0.88	OK	Eq. H2-1
	<b>L 2X2X1_4</b>	<b>2</b>	LC3 at 100.00%	0.40	OK	Eq. H2-1
		<b>3</b>	LC2 at 100.00%	0.41	OK	Eq. H2-1
		<b>6</b>	LC3 at 100.00%	0.36	OK	Eq. H2-1
		<b>7</b>	LC4 at 100.00%	<b>0.43</b>	<b>OK</b>	Eq. H2-1
		<b>14</b>	LC1 at 0.00%	0.37	OK	Eq. H2-1
		<b>15</b>	LC1 at 0.00%	0.37	OK	Eq. H2-1
	<b>PIPE 2-1_2x0.203</b>	<b>54</b>	LC1 at 60.42%	0.56	OK	Eq. H1-1b
		<b>55</b>	LC1 at 58.33%	0.60	OK	Eq. H1-1b
		<b>58</b>	LC4 at 60.42%	0.61	OK	Eq. H1-1b



	<b>59</b>	LC2 at 58.33%	0.57	OK	Eq. H1-1b
	<b>62</b>	LC2 at 60.42%	<b>0.64</b>	<b>OK</b>	Eq. H1-1b
	<b>63</b>	LC2 at 58.33%	0.58	OK	Eq. H1-1b
<hr/>					
<b>PIPE 2x0.154</b>	<b>52</b>	LC2 at 64.58%	0.36	OK	Eq. H1-1b
	<b>53</b>	LC2 at 64.58%	0.39	OK	Eq. H1-1b
	<b>56</b>	LC1 at 33.33%	0.46	OK	Eq. H1-1b
	<b>57</b>	LC1 at 33.33%	0.46	OK	Eq. H1-1b
	<b>60</b>	LC4 at 33.33%	0.49	OK	Eq. H1-1b
	<b>61</b>	LC4 at 64.58%	0.47	OK	Eq. H1-1b
	<b>65</b>	LC4 at 56.25%	0.03	OK	Eq. H1-1b
	<b>78</b>	LC3 at 9.82%	0.52	OK	Eq. H3-6
	<b>79</b>	LC2 at 10.71%	0.47	OK	Eq. H1-1b
	<b>80</b>	LC2 at 9.82%	<b>0.54</b>	<b>OK</b>	Eq. H3-6
<hr/>					
<b>PIPE 3x0.216</b>	<b>9</b>	LC3 at 43.75%	<b>0.30</b>	<b>OK</b>	Eq. H1-1b
	<b>10</b>	LC9 at 55.56%	0.29	OK	Eq. H1-1b
	<b>11</b>	LC12 at 55.56%	0.30	OK	Eq. H1-1b
<hr/>					
<b>PL 6X1/2</b>	<b>25</b>	LC2 at 46.88%	0.14	OK	Eq. H1-1b
	<b>26</b>	LC4 at 50.00%	0.15	OK	Eq. H1-1b
	<b>27</b>	LC1 at 50.00%	<b>0.16</b>	<b>OK</b>	Eq. H1-1b

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## Geometry data

### GLOSSARY

- Cb22, Cb33 : Moment gradient coefficients
- Cm22, Cm33 : Coefficients applied to bending term in interaction formula
- d0 : Tapered member section depth at J end of member
- DJX : Rigid end offset distance measured from J node in axis X
- DJY : Rigid end offset distance measured from J node in axis Y
- DJZ : Rigid end offset distance measured from J node in axis Z
- DKX : Rigid end offset distance measured from K node in axis X
- DKY : Rigid end offset distance measured from K node in axis Y
- DKZ : Rigid end offset distance measured from K node in axis Z
- dL : Tapered member section depth at K end of member
- Ig factor : Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members
- K22 : Effective length factor about axis 2
- K33 : Effective length factor about axis 3
- L22 : Member length for calculation of axial capacity
- L33 : Member length for calculation of axial capacity
- LB pos : Lateral unbraced length of the compression flange in the positive side of local axis 2
- LB neg : Lateral unbraced length of the compression flange in the negative side of local axis 2
- RX : Rotation about X
- RY : Rotation about Y
- RZ : Rotation about Z
- TO : 1 = Tension only member 0 = Normal member
- TX : Translation in X
- TY : Translation in Y
- TZ : Translation in Z

### Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
2	-0.7253	0.00	4.0896	0
3	-6.0833	0.00	4.0896	0
4	-6.25	0.00	4.0896	0
5	-6.3333	0.00	3.6565	0
6	-6.5833	0.00	3.2236	0
7	-3.7376	0.00	-1.128	0
8	-3.9043	0.00	-1.4166	0
9	-0.892	0.00	3.8009	0
10	-6.6667	0.00	3.3679	0
11	-3.179	0.00	-2.6729	0
12	-2.8457	0.00	-2.6729	0
13	-0.50	0.00	-7.3131	0
14	-0.4167	0.00	-7.4574	0
17	0.7253	0.00	4.0896	0
18	6.0833	0.00	4.0896	0
19	6.25	0.00	4.0896	0
20	6.3333	0.00	3.6566	0
21	6.5833	0.00	3.2236	0
22	3.7376	0.00	-1.128	0
23	3.9043	0.00	-1.4166	0
24	0.892	0.00	3.8009	0

25	6.6667	0.00	3.3679	0
26	3.179	0.00	-2.6729	0
27	2.8457	0.00	-2.6729	0
28	0.50	0.00	-7.3131	0
29	0.4167	0.00	-7.4574	0
32	0.00	0.00	-7.3131	0
51	-5.9649	4.00	1.7523	0
53	-1.2149	6.00	-6.4749	0
63	-5.9649	-2.00	1.7523	0
67	-1.2149	-4.00	-6.4749	0
69	0.9427	0.00	0.5443	0
70	0.00	0.00	-1.0885	0
71	-0.9427	0.00	0.5443	0
72	-5.5899	4.00	1.1028	0
73	-3.7149	5.00	-2.1448	0
82	-5.5899	-2.00	1.1028	0
83	-3.7149	-3.00	-2.1448	0
92	1.4649	4.00	-6.0419	0
93	6.2149	6.00	2.1853	0
94	1.4649	-2.00	-6.0419	0
95	6.2149	-4.00	2.1853	0
96	1.8399	4.00	-5.3924	0
97	3.7149	5.00	-2.1448	0
98	1.8399	-2.00	-5.3924	0
99	3.7149	-3.00	-2.1448	0
108	4.50	4.00	4.2896	0
109	-5.00	6.00	4.2896	0
110	4.50	-2.00	4.2896	0
111	-5.00	-4.00	4.2896	0
112	3.75	4.00	4.2896	0
113	0.00	5.00	4.2896	0
114	3.75	-2.00	4.2896	0
115	0.00	-3.00	4.2896	0
127	1.5056	2.00	1.1003	0
128	1.5056	-1.50	1.1003	0
137	6.25	2.00	4.0896	0
138	-6.25	2.00	4.0896	0
147	-0.4167	2.00	-7.4574	0
148	0.4167	2.00	-7.4574	0
157	6.6667	2.00	3.3679	0
158	-6.6667	2.00	3.3679	0
159	-5.25	2.00	4.0896	0
160	5.25	2.00	4.0896	0
161	-0.9167	2.00	-6.5914	0
162	-6.1667	2.00	2.5018	0
164	0.9167	2.00	-6.5914	0

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## Restraints

Node	TX	TY	TZ	RX	RY	RZ
69	1	1	1	1	1	1
70	1	1	1	1	1	1
71	1	1	1	1	1	1

## Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	Ig factor
1	5	71		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
2	5	9		L 2X2X1_4	A36	0.00	0.00	0.00
3	5	7		L 2X2X1_4	A36	0.00	0.00	0.00
4	8	2		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
5	20	69		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
6	20	24		L 2X2X1_4	A36	0.00	0.00	0.00
7	20	22		L 2X2X1_4	A36	0.00	0.00	0.00
8	23	17		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
9	4	19		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
10	10	14		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
11	29	25		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
12	70	32		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
13	11	26		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
14	27	32		L 2X2X1_4	A36	0.00	0.00	0.00
15	12	32		L 2X2X1_4	A36	0.00	0.00	0.00
25	6	3		PL 6X1/2	A36	0.00	0.00	0.00
26	18	21		PL 6X1/2	A36	0.00	0.00	0.00
27	28	13		PL 6X1/2	A36	0.00	0.00	0.00
52	108	110		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
53	112	114		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
54	113	115		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
55	109	111		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
56	51	63		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
57	72	82		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
58	73	83		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
59	53	67		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
60	92	94		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
61	96	98		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
62	97	99		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
63	93	95		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
65	127	128		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
78	138	137		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
79	157	148		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
80	147	158		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
81	160	163		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
82	164	161		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
83	162	159		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00

## Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
2	270.00	0	0.00	0.00	0.00
4	180.00	0	0.00	0.00	0.00
7	270.00	0	0.00	0.00	0.00
8	90.00	0	0.00	0.00	0.00
13	90.00	0	0.00	0.00	0.00
14	270.00	0	0.00	0.00	0.00
52	0.00	2	1.00	0.00	0.00
53	0.00	2	1.00	0.00	0.00
54	0.00	2	1.00	0.00	0.00
55	0.00	2	1.00	0.00	0.00
56	0.00	2	1.00	0.00	0.00
57	0.00	2	1.00	0.00	0.00
58	0.00	2	1.00	0.00	0.00

59	0.00	2	1.00	0.00	0.00
60	0.00	2	1.00	0.00	0.00
61	0.00	2	1.00	0.00	0.00
62	0.00	2	1.00	0.00	0.00
63	0.00	2	1.00	0.00	0.00
65	0.00	2	1.00	0.00	0.00
81	180.00	0	0.00	0.00	0.00
82	180.00	0	0.00	0.00	0.00
83	180.00	0	0.00	0.00	0.00

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**STRUCTURAL NOTES:**

- 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.
- 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.
- 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".
- STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
- 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.
- 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.
- 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.
- 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.
- 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 LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
- 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 D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL". 14TH EDITION.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
- 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	
<b>BEFORE CONSTRUCTION</b>	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
N/A	ENGINEER OF RECORD APPROVED SHOP DRAWINGS <sup>1</sup>
N/A	MATERIAL SPECIFICATIONS REPORT <sup>2</sup>
N/A	FABRICATOR NDE INSPECTION
N/A	PACKING SLIPS <sup>3</sup>
ADDITIONAL TESTING AND INSPECTIONS:	
<b>DURING CONSTRUCTION</b>	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
<b>REQUIRED</b>	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS <sup>4</sup>
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION <sup>5</sup>
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:	
<b>AFTER CONSTRUCTION</b>	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
<b>REQUIRED</b>	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS <sup>6</sup>
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
<b>REQUIRED</b>	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	



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



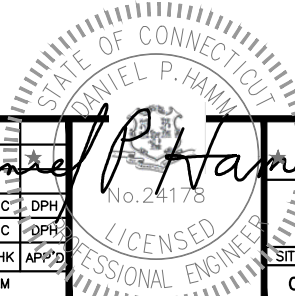
12 INDUSTRIAL WAY  
SALEM, NH 03079

**SITE NUMBER: CT2369**  
**SITE NAME: STERLING CT EXETER DR**  
**SBA SITE # ID: CT11560**  
**FCC SITE #: 1261045**  
 7 EXETER DRIVE  
 STERLING, CT 06377  
 WINDHAM COUNTY



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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	11/03/20	ISSUED FOR CONSTRUCTION	AM	HC	DPH
A	10/16/20	ISSUED FOR REVIEW	AM	HC	DPH
SCALE: AS SHOWN		DESIGNED BY: HC	DRAWN BY: AM		



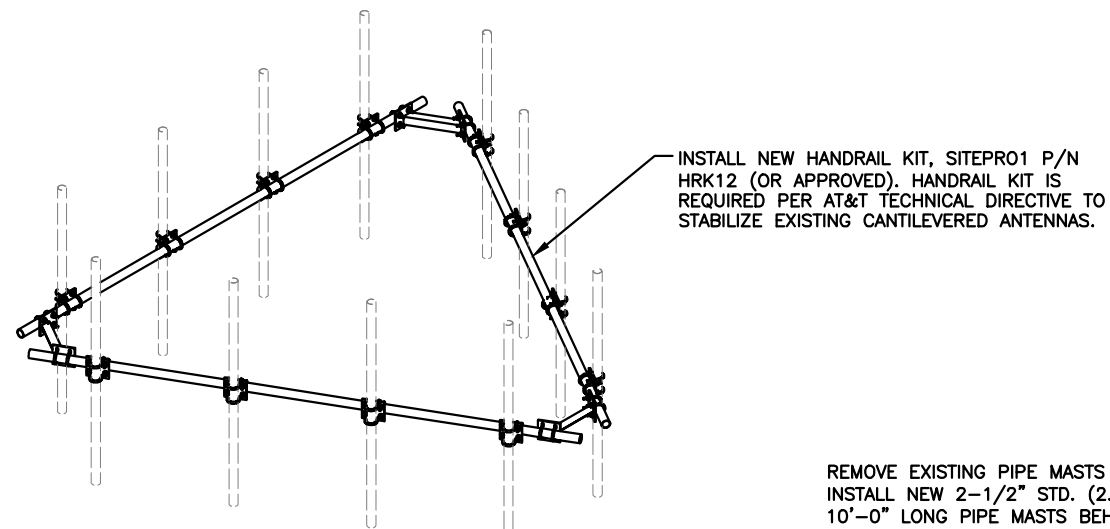
AT&T  
 DETAILS  
**LTE 3C\_4C\_4TX4RX\_5G 2020 UPGRADE**

SITE NUMBER	DRAWING NUMBER	REV
CT2369	SN-1	1

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

**NOTE:**  
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:  
HUDSON DESIGN GROUP, LLC.  
DATED: OCTOBER 16, 2020

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



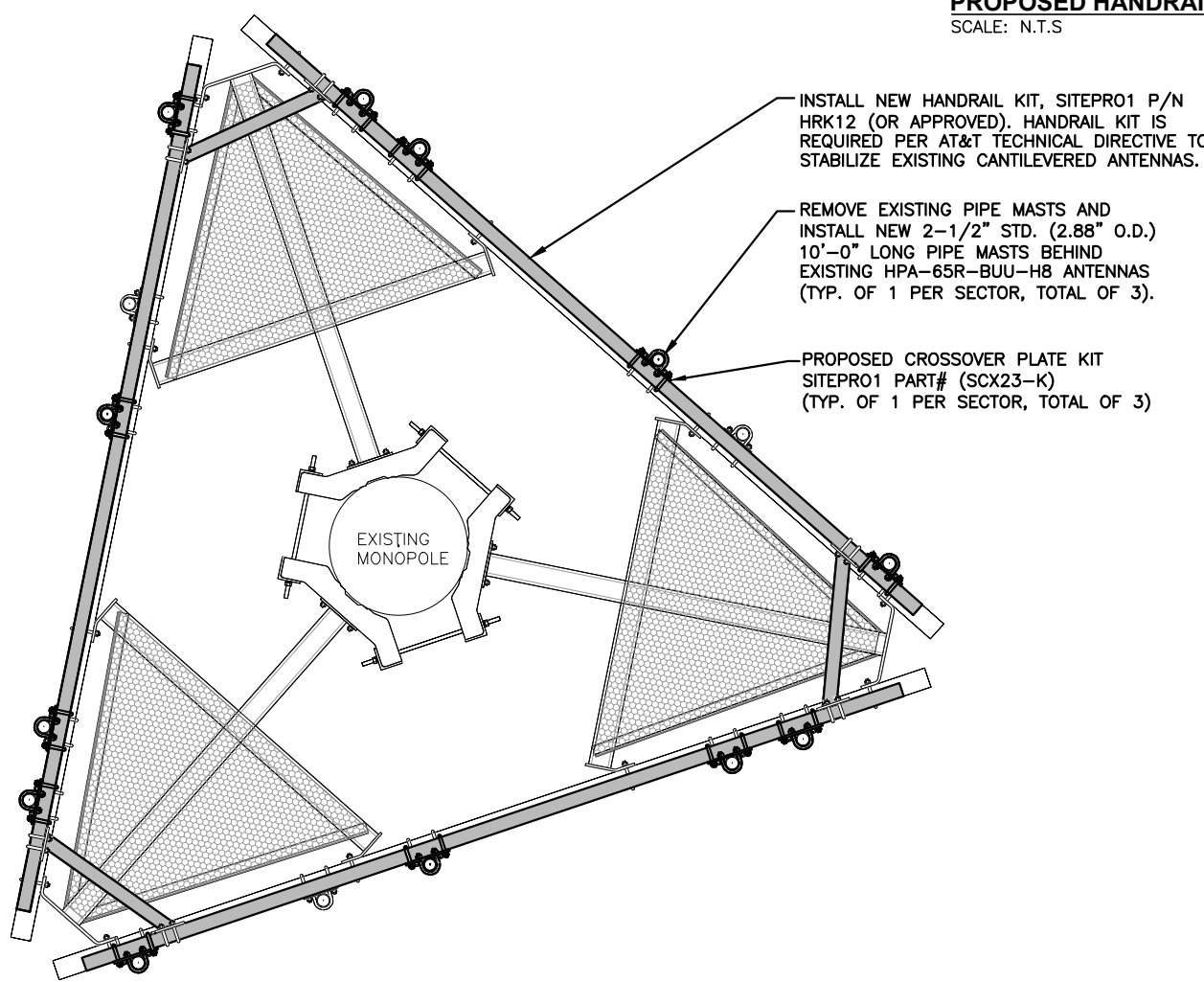
**PROPOSED HANDRAIL KIT DETAIL** 2  
SCALE: N.T.S. S-1

INSTALL NEW HANDRAIL KIT, SITEPRO1 P/N HRK12 (OR APPROVED). HANDRAIL KIT IS REQUIRED PER AT&T TECHNICAL DIRECTIVE TO STABILIZE EXISTING CANTILEVERED ANTENNAS.

REMOVE EXISTING PIPE MASTS AND INSTALL NEW 2-1/2" STD. (2.88" O.D.) 10'-0" LONG PIPE MASTS BEHIND EXISTING HPA-65R-BUU-H8 ANTENNAS (TYP. OF 1 PER SECTOR, TOTAL OF 3).

INSTALL NEW HANDRAIL KIT, SITEPRO1 P/N HRK12 (OR APPROVED). HANDRAIL KIT IS REQUIRED PER AT&T TECHNICAL DIRECTIVE TO STABILIZE EXISTING CANTILEVERED ANTENNAS.

NEW LOCATION OF EXISTING AT&T ANTENNAS (HPA-65R-BUU-H8) @ POS. 3 (TYP. OF 1 PER SECTOR, TOTAL OF 3)

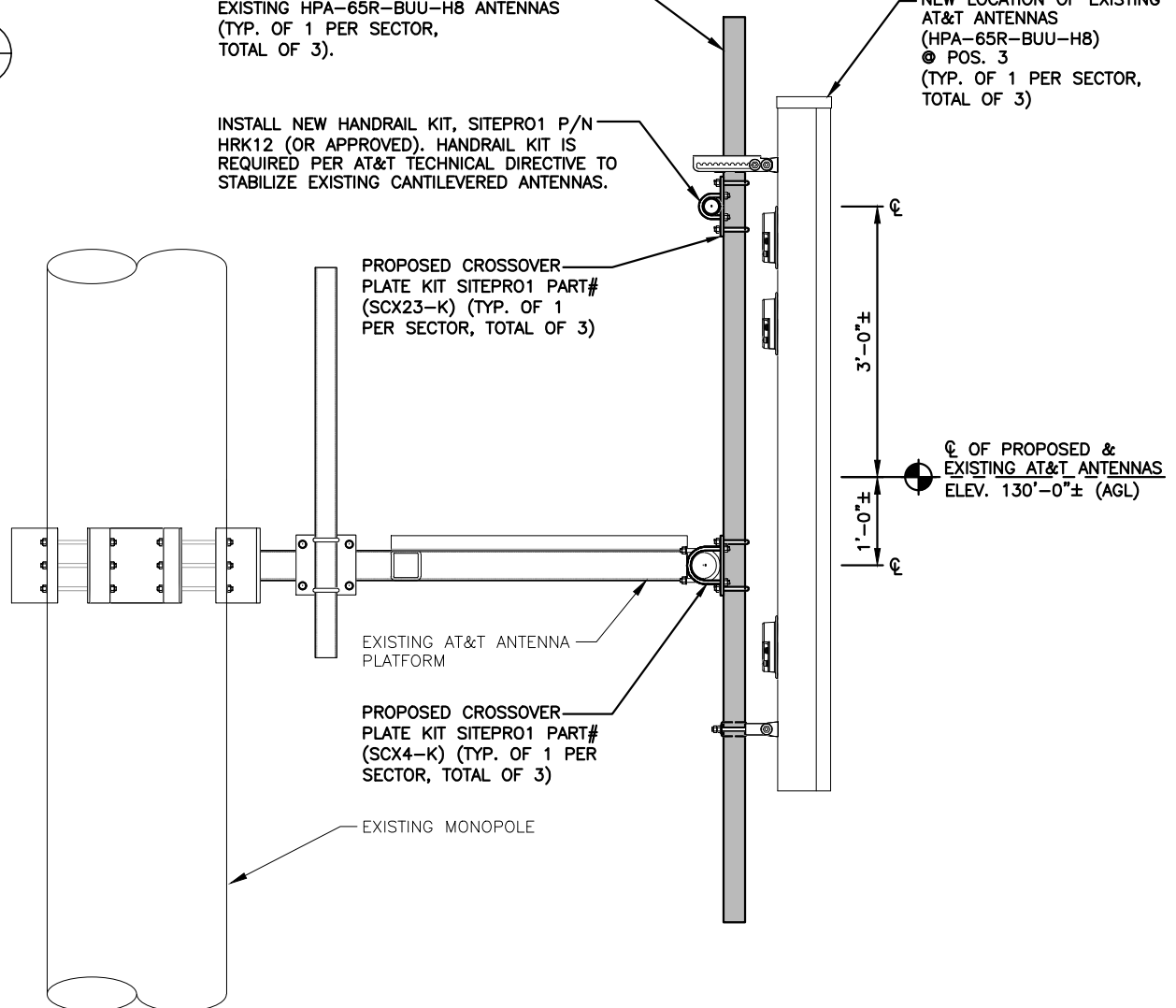
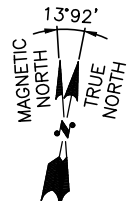


**PROPOSED MOUNT MODIFICATIONS PLAN** 1  
22x34 SCALE: 3/4"=1'-0"  
11x17 SCALE: 3/8"=1'-0" S-1

INSTALL NEW HANDRAIL KIT, SITEPRO1 P/N HRK12 (OR APPROVED). HANDRAIL KIT IS REQUIRED PER AT&T TECHNICAL DIRECTIVE TO STABILIZE EXISTING CANTILEVERED ANTENNAS.

REMOVE EXISTING PIPE MASTS AND INSTALL NEW 2-1/2" STD. (2.88" O.D.) 10'-0" LONG PIPE MASTS BEHIND EXISTING HPA-65R-BUU-H8 ANTENNAS (TYP. OF 1 PER SECTOR, TOTAL OF 3).

PROPOSED CROSSOVER PLATE KIT SITEPRO1 PART# (SCX23-K) (TYP. OF 1 PER SECTOR, TOTAL OF 3)



**PROPOSED MOUNT MODIFICATIONS DETAIL** 3  
22x34 SCALE: 1"=1'-0"  
11x17 SCALE: 1/2"=1'-0" S-1

PROPOSED CROSSOVER PLATE KIT SITEPRO1 PART# (SCX23-K) (TYP. OF 1 PER SECTOR, TOTAL OF 3)

EXISTING AT&T ANTENNA PLATFORM

PROPOSED CROSSOVER PLATE KIT SITEPRO1 PART# (SCX4-K) (TYP. OF 1 PER SECTOR, TOTAL OF 3)

EXISTING MONOPOLE

☉ OF PROPOSED & EXISTING AT&T ANTENNAS ELEV. 130'-0"± (AGL)

**HG 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: CT2369  
SITE NAME: STERLING CT EXETER DR  
SBA SITE # ID: CT11560  
FCC SITE #: 1261045  
7 EXETER DRIVE  
STERLING, CT 06377  
WINDHAM COUNTY

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

1	11/03/20	ISSUED FOR CONSTRUCTION	AM	HC	DPH
A	10/16/20	ISSUED FOR REVIEW	AM	HC	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: HC	DRAWN BY: AM		

*Daniel P. Hamm*  
No. 24178  
LICENSED PROFESSIONAL ENGINEER

AT&T  
DETAILS  
LTE 3C\_4C\_4TX4RX\_5G 2020 UPGRADE  
SITE NUMBER: CT2369  
DRAWING NUMBER: S-1  
REV: 1

**Situs : 5 EXETER DR**

**Map ID: 00045300**

**Class : Municipal**

Card: 1 of 1

Printed: March 9, 2016

**CURRENT OWNER**  
  
STERLING TOWN OF  
  
PO BOX 157  
ONECO CT 06373

**GENERAL INFORMATION**  
  
Living Units  
Neighborhood 200  
Alternate Id 03842-017-IP16  
Vol / Pg 40/15  
District  
Zoning  
Class 200

**Property Notes**  
  
7 EXETER DRIVE=CELL TOWER  
ADDRESS ASSIGNED TO TOWER  
146/21 - LEASE AMENDMENT

**Land Information**

Type	Size	Influence Factors	Influence %	Value
Primary	AC 2.0000			40,000
Excess	AC 6.3100			15,780

Total Acres: 8.31  
Spot: Location:

**Assessment Information**

	Assessed	Appraised	Cost	Income	
<b>Land</b>	39,050	55,780	55,780	0	55,780
<b>Building</b>	27,890	39,840	39,840	0	39,840
<b>Total</b>	66,930	95,620	95,620	0	95,620

**Manual Override Reason**  
**Base Date of Value** 10-01-2012  
**Effective Date of Value** 10-01-2016

**Value Flag** COST APPROACH  
**Gross Building:**

**Entrance Information**

Date	ID	Entry Code	Source
08/24/12	JS	Data Mailer/Field Check	Ow ner

**Permit Information**

Date Issued	Number	Price	Purpose	% Complet
07/09/15	15-59	15,000	CFX Bell Atlantic/Verizon Wireless Rep	
10/15/12	12-78	25,000	CAL At&T Site Modification	100
12/15/08	08-90	6,800	COB Wire (?) Equipment Shelter	100
05/27/08	08-38	125,000	COB Cell Tow er (2 Permits) Cingular To	100

**Sales/Ownership History**

Transfer Date	Price	Type	Validity	Deed Reference	Deed Type	Grantee



Situs : 5 EXETER DR

Parcel Id: 00045300

Class: Municipal

Card: 1 of 1

Printed: March 9, 2016

**Dwelling Information**

Style	Year Built
Story height	Eff Year Built
Attic	Year Remodeled
Exterior Walls	Amenities
Masonry Trim x	In-law Apt No
Color	

**Basement**

Basement	# Car Bsm't Gar
FBLA Size x	FBLA Type
Rec Rm Size x	Rec Rm Type

**Heating & Cooling**

**Fireplaces**

Heat Type	Stacks
Fuel Type	Openings
System Type	Pre-Fab

**Room Detail**

Bedrooms	Full Baths
Family Rooms	Half Baths
Kitchens	Extra Fixtures
Total Rooms	
Kitchen Type	Bath Type
Kitchen Remod	Bath Remod

**Adjustments**

Int vs Ext	Unfinished Area
Cathedral Ceiling x	Unheated Area

**Grade & Depreciation**

Grade C	Market Adj
Condition	Functional
CDU AVERAGE	Economic
Cost & Design 0	% Good Ovr
% Complete	

**Dwelling Computations**

Base Price	% Good
Plumbing	% Good Override
Basement	Functional
Heating	Economic
Attic	% Complete
Other Features 0	C&D Factor
	Adj Factor
Subtotal	Additions

Ground Floor Area	Dwelling Value
Total Living Area	

**Building Notes**

**Outbuilding Data**

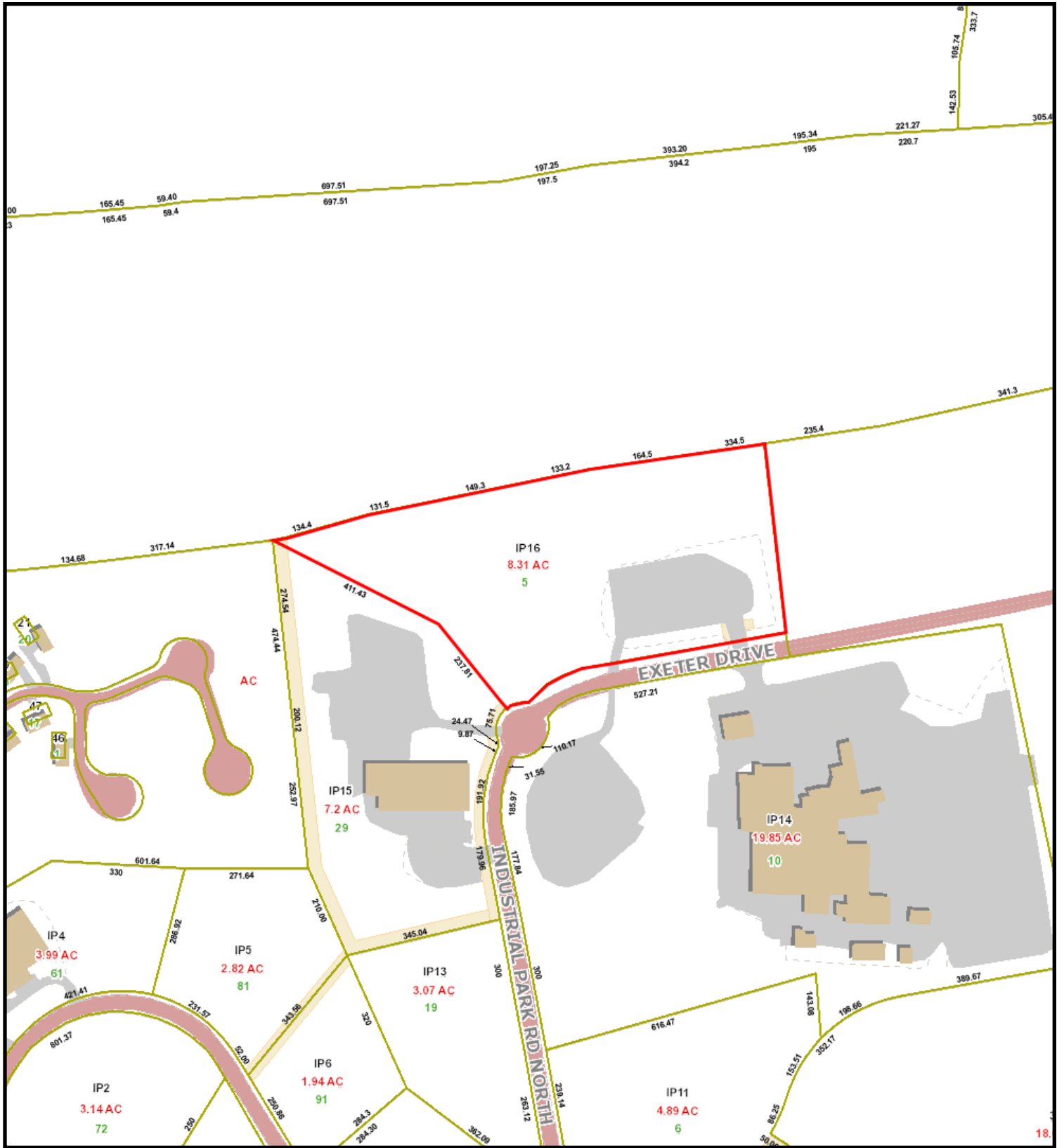
Type	Size 1	Size 2	Area	Qty	Yr Blt	Grade	Condition	Value
Br/St Shed	16 x	12	192	1	2008	C	A	39,840

**Condominium / Mobile Home Information**

Complex Name	
Condo Model	
Unit Number	
Unit Level	Unit Location
Unit Parking	Unit View
Model (MH)	Model Make (MH)

**Addition Details**

Line #	Low	1st	2nd	3rd	Value



## 5 Exeter Dr

9/30/2020 6:51:58 PM

Scale: 1"=300'

Scale is approximate

The information depicted on this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analyses.



**DOCKET NO. 345** - MCF Communications bg, Inc. and Celco Partnership d/b/a Verizon Wireless application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located off Exeter Drive in Sterling, Connecticut.

Connecticut

Siting

Council

February 14, 2008

### 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 Public Need, as provided by General Statutes § 16-50k, be issued to MCF Communications bg, Inc. (MCF) and Celco Partnership d/b/a Verizon Wireless (Verizon Wireless), hereinafter referred to as the Certificate Holder, for a telecommunications facility at Exeter Drive, Sterling, 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 constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of Verizon Wireless and other entities, both public and private, but such tower shall not exceed a height of 140 feet above ground level. The height at the top of the Certificate Holder's antennas shall not exceed 140 feet above ground level.
2. Such tower shall incorporate a yield point to eliminate the potential fall radius onto the adjacent property and Exeter Drive.
3. 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 Sterling for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
  - a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line; and
  - b) construction plans for site clearing, grading, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.
4. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

5. 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.
6. 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.
7. The Certificate Holder shall provide reasonable space on the tower for no compensation for any Town of Sterling public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.
8. 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.
9. Any request for extension of the time period referred to in Condition 8 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 Sterling. Any proposed modifications to this Decision and Order shall likewise be so served.
10. 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.
11. The Certificate Holder shall remove any nonfunctioning antenna, and associated antenna mounting equipment, within 60 days of the date the antenna ceased to function.
12. 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, the Council hereby directs 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 Norwich Bulletin and The Hartford Courant.

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 to this proceeding are:

**Applicant**

MCF Communications bg, Inc. and  
Cellco Partnership d/b/a Verizon Wireless

**Its Representative**

Kenneth C. Baldwin, Esq.  
Robinson and Cole LLP  
Hartford, CT 06103-3597  
(860) 275-8200

Brad Gannon  
MCF Communications bg, Inc.  
733 Turnpike Street, Suite 105  
North Andover, MA 01845

Sandy Carter  
Regulatory Manager  
Verizon Wireless  
99 East River Drive  
East Hartford, CT 06108



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

T + 561.995.7670  
F + 561.995.7626

[sbasite.com](http://sbasite.com)

## LETTER OF AUTHORIZATION

**SBA Site ID:** CT11560-A, Sterling 6, CT

**Property Located at:** 24 Exeter Drive, Sterling, CT, 06377

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**THE CITY/COUNTY OF:** Sterling / Windham

### 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 Town of Sterling a Municipal Corp..

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

A handwritten signature in black ink, appearing to read "Jason Silberstein", is written over a light blue horizontal line.

Jason Silberstein

Executive VP, Site Leasing

Date: 11/13/2020



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SAI GROUP  
39 WESTVIEW DR  
MERIDEN CT 06450-4723

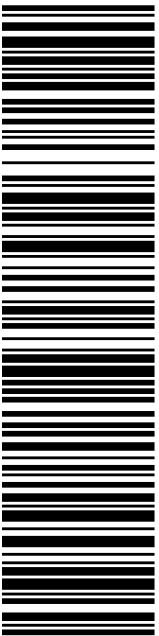
**0005**

**R777**

SHIP

TO: HONORABLE RUSSELL M GRAY, 1ST SELECTMAN  
STERLING TOWN HALL 1ST SELECTMANS OFFICE  
1183 PLAINFIELD PIKE  
ONECO CT 06373

**USPS TRACKING #**



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Electronic Rate Approved #038555749

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Expected Delivery Date: 11/16/20

SAI GROUP  
39 WESTVIEW DR  
MERIDEN CT 06450-4723

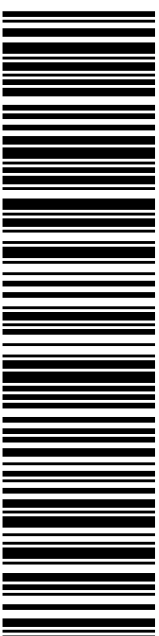
**0005**

**C006**

SHIP

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

**USPS TRACKING #**



**9405 5036 9930 0126 1483 95**

Electronic Rate Approved #038555749



## Hollis Redding

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**To:** Michael McNamara  
**Subject:** AT&T Wireless Exempt Mod filing SBA site # CT11560-A-01/Sterling 5 AT&T ID CT2369

Mike-

Attached please find an Exempt Modification which will be filed with the CT Siting Council on November 13, 2020.

Thank you. Have a great weekend. Hollis

Hollis M. Redding



SAI Communications LLC  
Mobile: 860-834-6964  
[hredding@saigrp.com](mailto:hredding@saigrp.com)