

April 29, 2022

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

**Regarding: Notice of Exempt Modification – AT&T Site CT2112 / FA# 10071312**  
**Address: 623 Honeyspot Rd, Stratford, CT 06115**

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC (“AT&T”) currently maintains a wireless telecommunications facility on an existing +/- 107’ monopole tower at the above-referenced address, latitude 41.1768811, longitude -73.1461661. Said monopole tower is owned by John and Deborah Becker.

AT&T desires to modify its existing telecommunications facility by removing and replacing twelve (12) antennae, adding six (6) remote radio units, swapping one (1) surge arrester and accompanying feedlines and mount replacements as more particularly detailed and described on the enclosed Construction Drawings prepared by Hudson Design Group, LLC, last revised March 30, 2022. The centerline height of the existing antennas is and will remain at 90 feet. This modification may include B2, B5, B17, B14, B29, B30, B66 & n77 hardware that is 4G(LTE) and/or 5G NR capable through remote software configuration and either or both services may be turned on or off at various times.

Please accept this letter as notification pursuant to R.C.S.A §16-50j-73 for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the following individuals: The Honorable Laura R. Hoydick, Mayor of the Town of Stratford, as elected official. Daniel Brennan, Zoning Enforcement Officer and Susmitha Attota Town Planner of the Town of Stratford. John and Deborah Becker, as tower and and property owner.

The planned modifications to the facility fall 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 modifications 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. *Please see the RF emissions calculation for AT&T's modified facility enclosed herewith.*

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

6. The existing structure and its foundation can support the proposed loading. *Please see the structural analysis dated April 27, 2022, and prepared by Hudson Design Group, LLC, enclosed herewith.*

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

Sincerely,

*Evan Renwick*

Evan Renwick  
Site Acquisition Specialist  
Centerline Communications, LLC  
750 West Center Street, Suite 301  
West Bridgewater, MA 02379  
erenwick@clinellc.com

Enclosures: Exhibit 1 – Construction Drawings  
Exhibit 2 – Property Card and GIS  
Exhibit 3 – Structural Analysis  
Exhibit 4 – Mount Analysis  
Exhibit 5 – RF Emissions Analysis Report Evaluation  
Exhibit 6 – Original Tower Approval  
Exhibit 7 – Notice Delivery Confirmations

cc: The Honorable Laura R. Hoydick, Mayor, Town of Stratford, as elected official.  
Daniel Brennan, Zoning Enforcement Officer  
Susmitha Attota, Town Planner  
John and Deborah Becker, property/tower owner

# EXHIBIT 1

**PROJECT INFORMATION**

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

- PROPOSED HEAVY DUTY V-FRAME SECTOR MOUNT (SITEPRO1 #VFA14-H10-2120) (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- NEW AT&T ANTENNAS: QD6616-7 @POSITION 2 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T ANTENNAS: AIR6419 N77G STACKED @POSITION 3 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T ANTENNAS: AIR6449 N77D STACKED @POSITION 3 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T ANTENNAS: DMP65R-BU6DA @POSITION 4 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS-4449 B5/B12 (700) (TOTAL OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS-4415 B25 (AWS) (TOTAL OF 1 PER SECTOR, TOTAL OF 3)
- NEW SURGE ARRESTOR (DC9-48-60-24-8C-EV)
- NEW (1) #6 AWG DC POWER TRUNKS, (1) 24 PAIR FIBER TRUNKS & (6) Y-CABLES.

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:

- INSTALL (1) 6648 + XCEDE CABLE IN EXISTING LTE RACK.
- EXISTING (3) DC12'S IN EXISTING RACK.
- FINAL BBU: 1X6601/1X5216/1XXMU03/1X6630+IDLE/6648 + XCEDE
- INSTALL (4) -48V RECTIFIERS IN EXISTING POWERPLANT (TOTAL OF (10) -48V RECTIFIERS).
- INSTALL NEW RACK OF (2) STRINGS OF BATTERIES NEXT TO POWERPLANT
- DECOM +24V POWERPLANT AND BATTERY RACK WITH 105AH BATTERIES; REWIRE TO 48V POWERPLANT

ITEMS TO BE REMOVED:

- EXISTING AT&T ANTENNA: 7770 @POSITION 1 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T ANTENNA: AM-X-CD-16-65-00T-RET @POSITION 2 (TYP. OF 1 FOR SECTOR, TOTAL OF 3)
- EXISTING AT&T ANTENNA: 800-10965 ANTENNA @POSITION 3 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T ANTENNA: QS66512-2 ANTENNA @ POSITION 4 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T SURGE: DC6-48-60-18-8F (TOTAL OF 1 PER BETA SECTOR)
- EXISTING AT&T DIPLEXER: DBCT108F1V92 (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- EXISTING AT&T TRIPLEXER: TPX-070821 (TYP. OF 4 PER SECTOR, TOTAL OF 12).
- EXISTING AT&T TMA: LGP12104 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T DIPLEXER: 782-10250 (TYP. OF 2 PER SECTOR, TOTAL OF 6).

ITEMS TO REMAIN:

- (9) RRU'S, (3) RRUS-E2 B29 (IN EQUIPMENT SHELTER), (2) SURGE ARRESTORS, (6) COAX CABLES, (6) DC POWER & (2) FIBER.

SITE ADDRESS: 623 HONEYSPOOT ROAD  
STRATFORD, CT 06615

LATITUDE: 41.1768811° N, 41° 10' 36.77" N

LONGITUDE: 73.1461661° W, 73° 8' 46.19" W

TYPE OF SITE: MONOPOLE / INDOOR EQUIPMENT

STRUCTURE HEIGHT: 107'-0"±

RAD CENTER: 90'-0"±

CURRENT USE: TELECOMMUNICATIONS FACILITY

PROPOSED USE: TELECOMMUNICATIONS FACILITY

**DRAWING INDEX**

SHEET NO.	DESCRIPTION	REV.
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**SITE NUMBER: CT2112**

**SITE NAME: STRATFORD**

**FA CODE: 10071312**

**PACE ID: MRCTB052179, MRCTB051389, MRCTB0866, MRCTB050878, MRCTB062464**

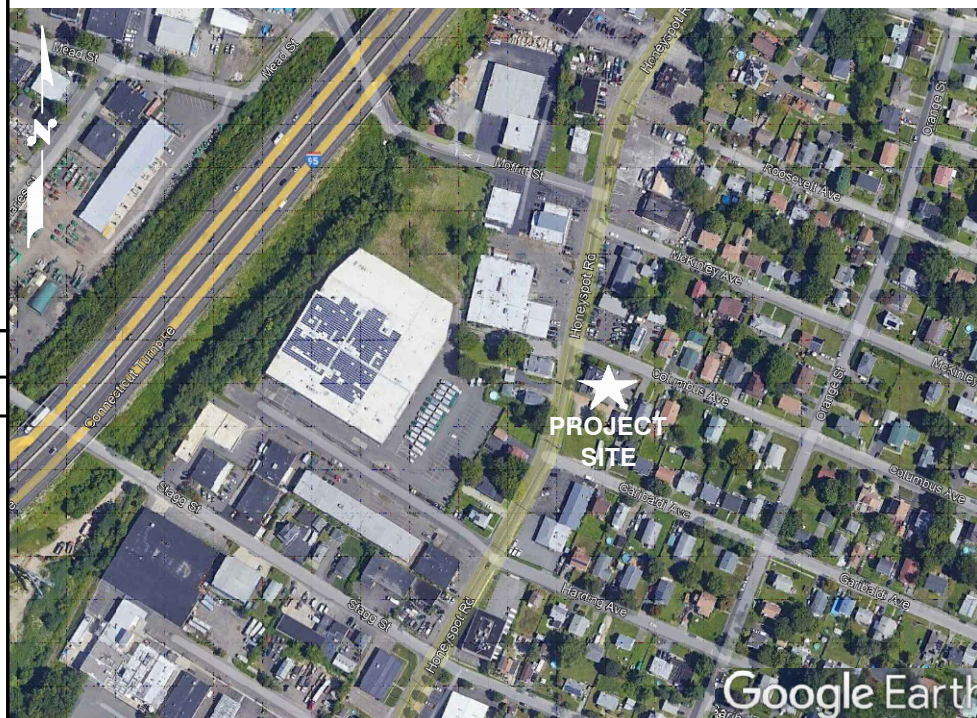
**PROJECT: 5G NR 1SR CBAND, BBU RECONFIGURATION, 4TXRX ANTENNA RETROFIT 2021 UPGRADE**

**ISSUED FOR PERMITTING**

**VICINITY MAP**

**DIRECTIONS TO SITE:**

START OUT GOING EAST ON ENTERPRISE DR TOWARD CAPITAL BLVD. TURN LEFT ONTO CAPITAL BLVD. TURN LEFT ONTO WEST ST. MERGE ONTO I-91 S VIA THE RAMP ON THE LEFT TOWARD NEW HAVEN. MERGE ONTO CT-15 S VIA EXIT 17 TOWARD E MAIN ST. TAKE EXIT 54 TOWARD I-95/MILFORD/US-1. MERGE ONTO MILFORD PKWY. MERGE ONTO I-95 S VIA EXIT 2B TOWARD BRIDGEPORT. TAKE THE SOUTH AVE EXIT, EXIT 31. STAY STRAIGHT TO GO ONTO SPADA BLVD. TAKE THE 1ST LEFT ONTO HONEYSPOOT RD. 623 HONEYSPOOT RD IS ON THE LEFT.



**GENERAL NOTES**

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

**72 HOURS**



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

**UNDERGROUND SERVICE ALERT**

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

**CENTERLINE COMMUNICATIONS**  
750 WEST CENTER STREET, SUITE #301 WEST BRIDGEWATER, MA 02379

**SITE NUMBER: CT2112  
SITE NAME: STRATFORD**

623 HONEYSPOOT ROAD  
STRATFORD, CT 06615  
FAIRFIELD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP
1	03/30/22	ISSUED FOR PERMITTING	EB	AT	DPH
0	03/16/22	ISSUED FOR REVIEW	ME	AT	DPH
A	12/22/21	ISSUED FOR REVIEW	EB	AT	DPH

SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: EB

**AT&T**

TITLE SHEET  
5G NR 1SR CBAND, BBU RECONFIGURATION, 4TXRX ANTENNA RETROFIT 2021 UPGRADE

SITE NUMBER: CT2112  
DRAWING NUMBER: T-1  
REV: 1



**GROUNDING NOTES**

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81 STANDARDS) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS AND #2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

**GENERAL NOTES**

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:  
 CONTRACTOR – CENTERLINE  
 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	CL	CENTER LINE	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

750 WEST CENTER STREET, SUITE #301  
WEST BRIDGEWATER, MA 02379

**SITE NUMBER: CT2112  
 SITE NAME: STRATFORD**

623 HONEYSPOOT ROAD  
STRATFORD, CT 06615  
FAIRFIELD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP
1	03/30/22	ISSUED FOR PERMITTING	MB	AT	DPH
0	03/16/22	ISSUED FOR REVIEW	MB	AT	DPH
A	12/22/21	ISSUED FOR REVIEW	MB	AT	DPH

SCALE: AS SHOWN    DESIGNED BY: AT    DRAWN BY: EB

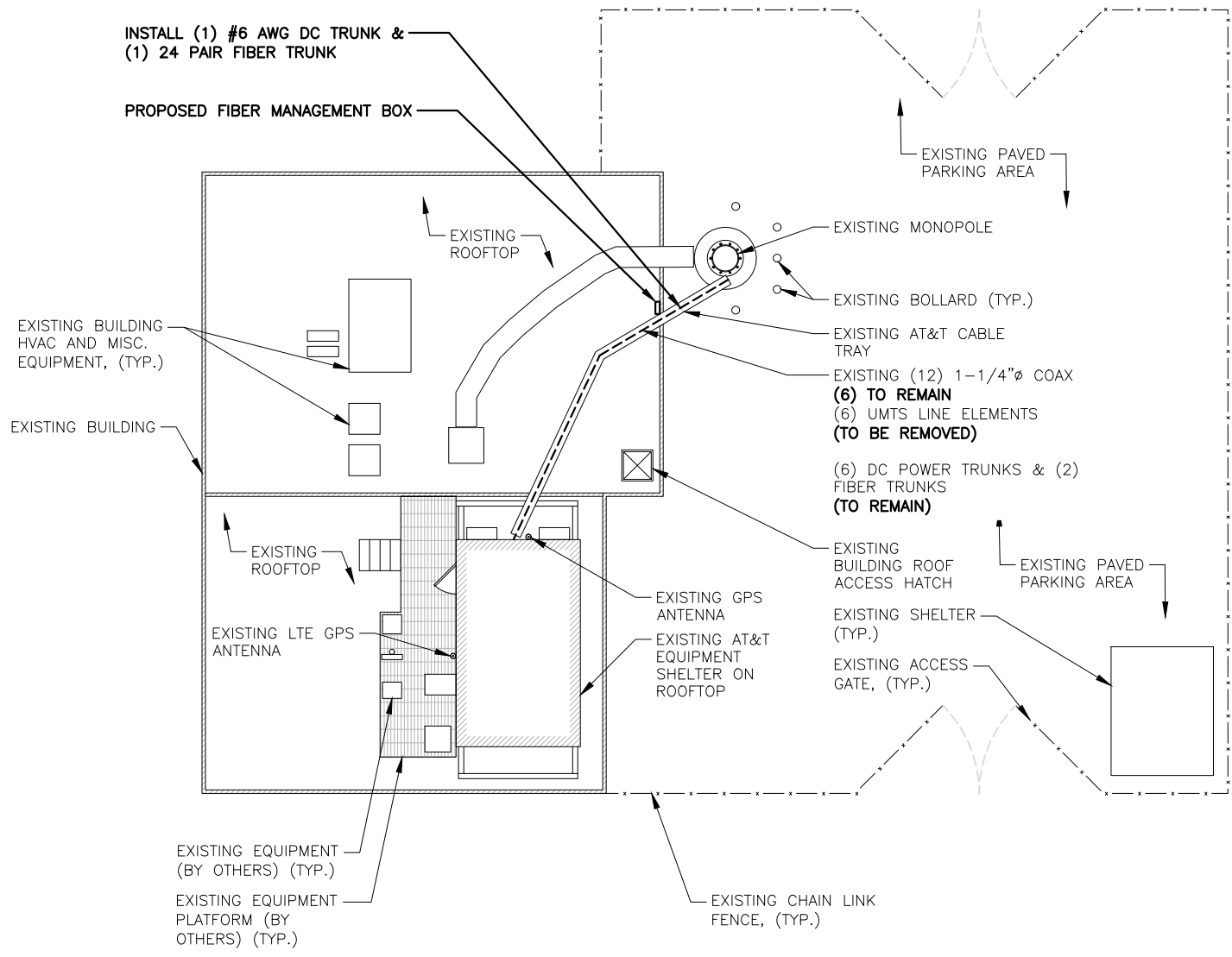
**AT&T**

GENERAL NOTES  
 500R 1SR CBAND, BBU RECONFIGURATION, 4TXRX  
 ANTENNA RETROFIT 2021 UPGRADE

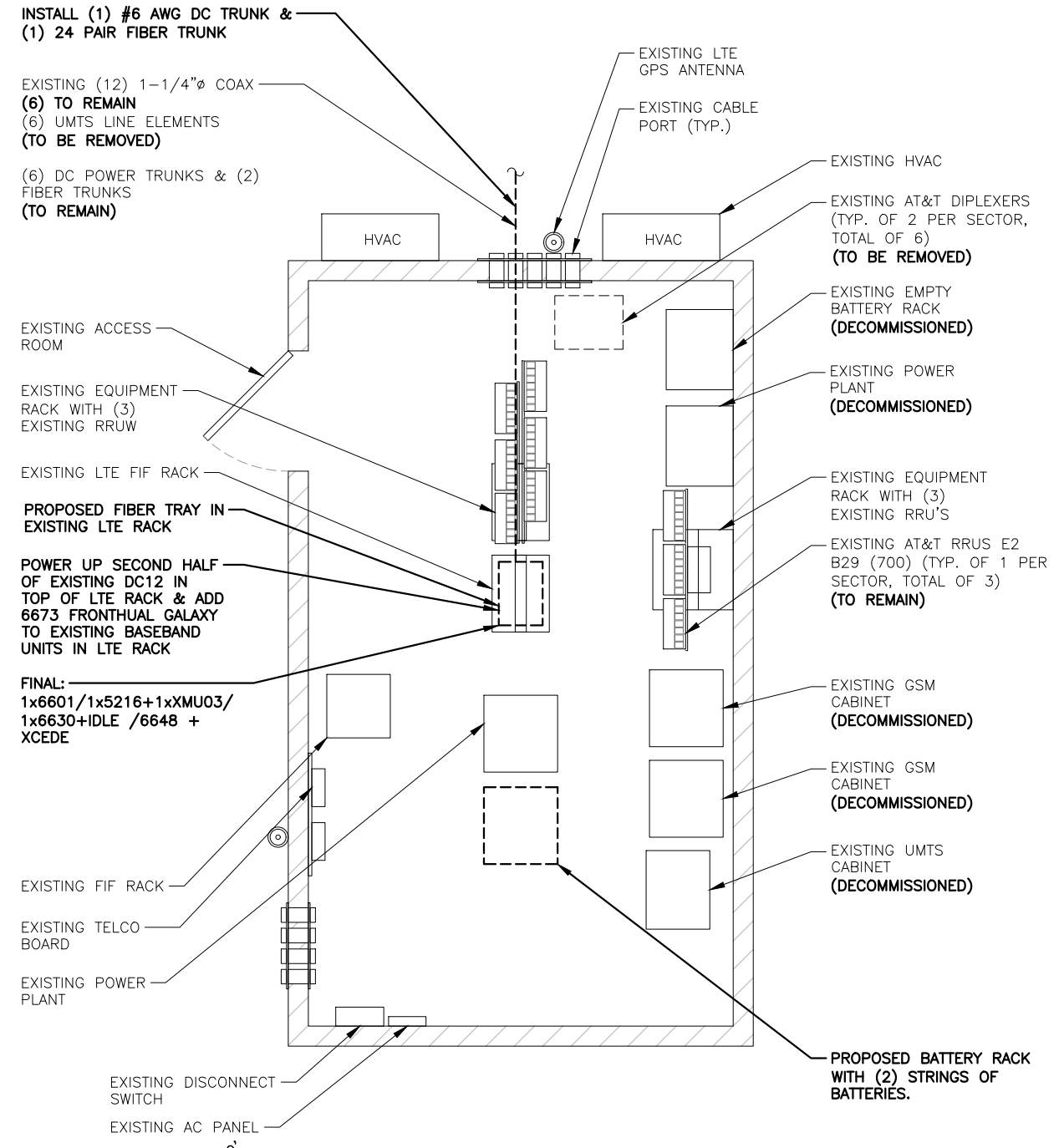
SITE NUMBER	DRAWING NUMBER	REV
CT2112	GN-1	1

**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: FEBRUARY 10, 2022

**NOTE:**  
REFER TO THE FINAL RFDS SHEET DATED: MARCH 25, 2022 FOR FINAL ANTENNA SETTINGS.



**ROOF/COMPOUND PLAN** 1  
22x34 SCALE: 1/8"=1'-0"  
11x17 SCALE: 1/16"=1'-0"  
0 4'-0" 8'-0" 16'-0" 24'-0"



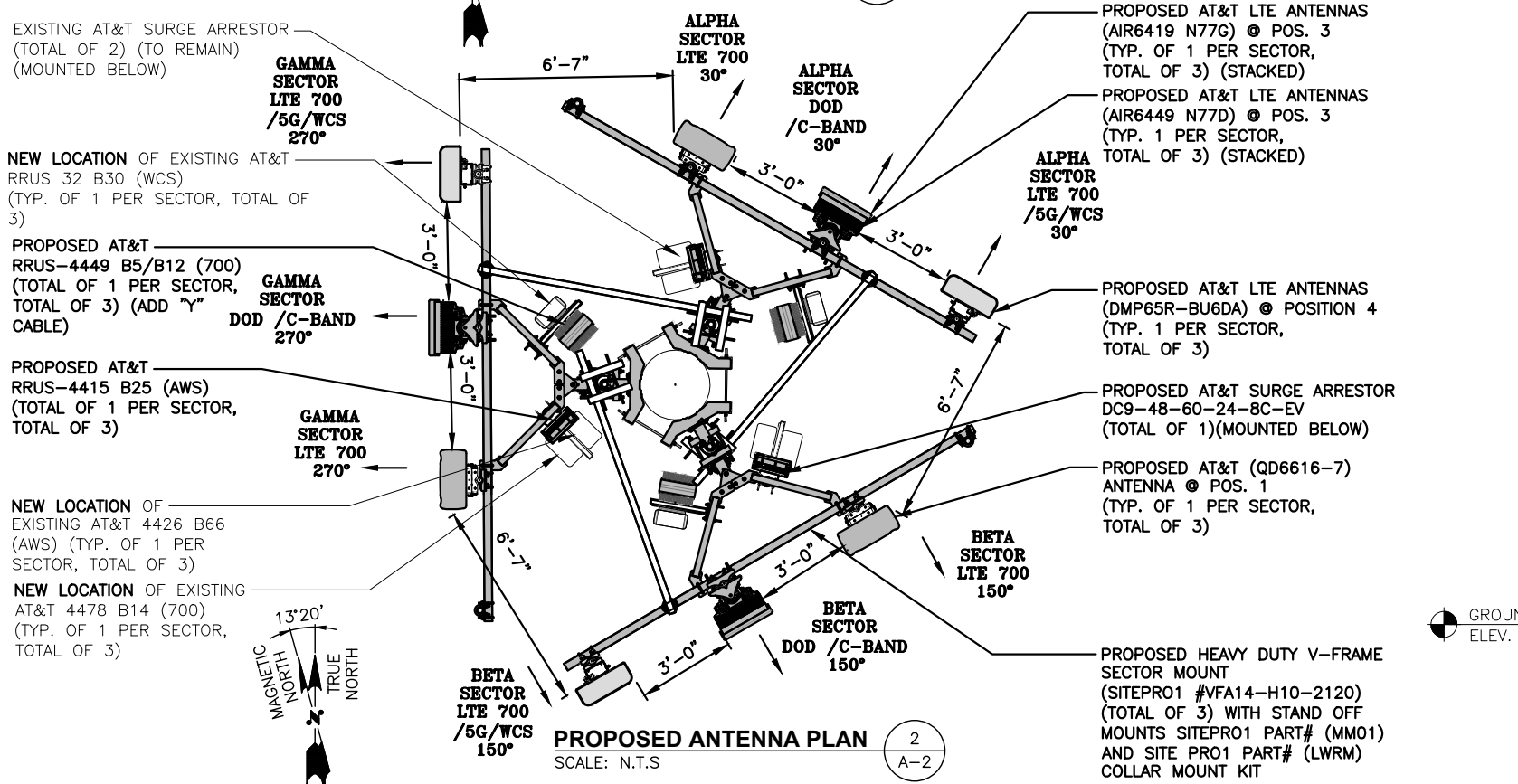
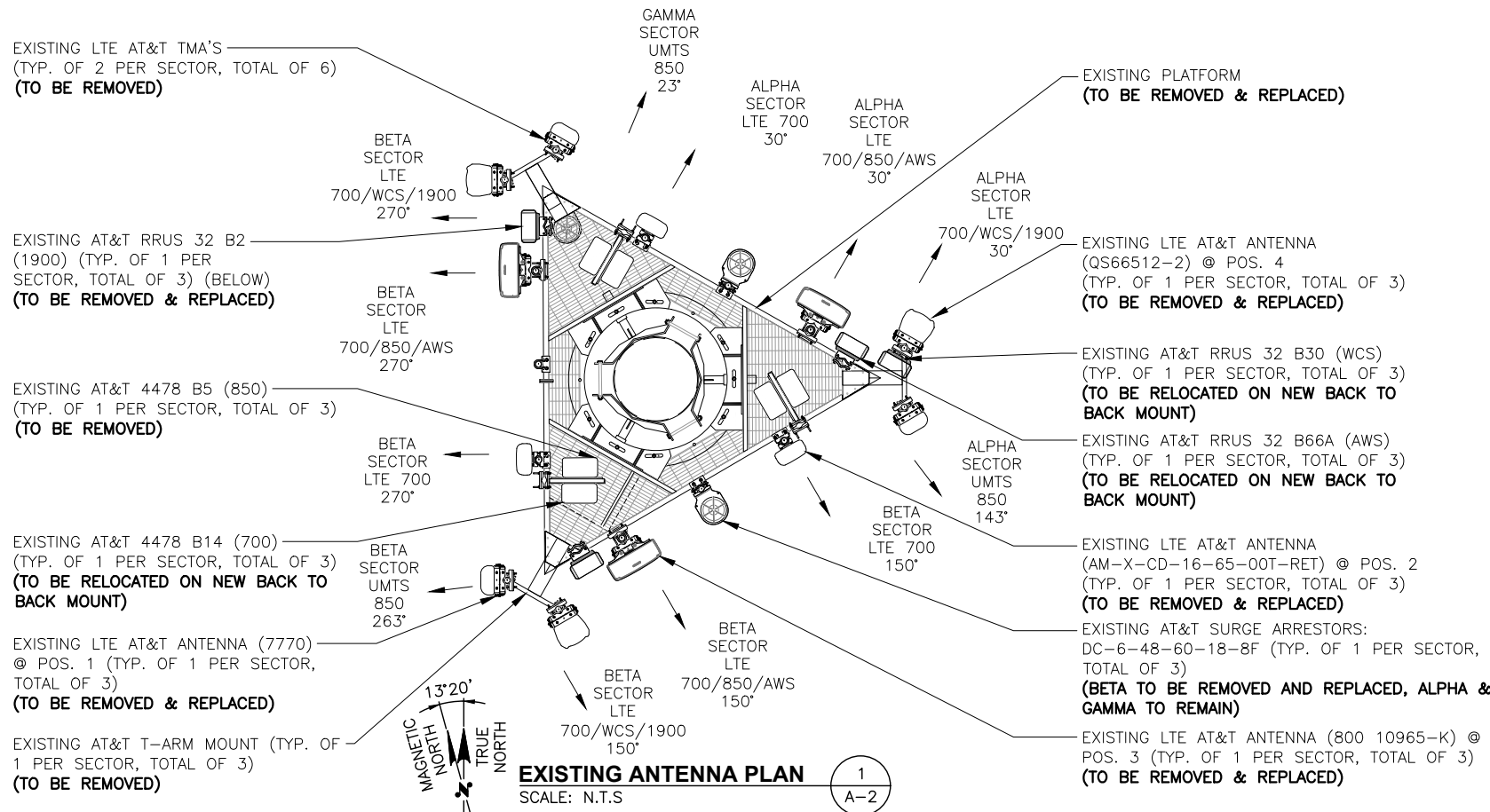
**EQUIPMENT PLAN** 2  
22x34 SCALE: 1/2"=1'-0"  
11x17 SCALE: 1/4"=1'-0"  
0 2'-0" 4'-0" 6'-0"

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SCALE: AS SHOWN  
DESIGNED BY: AT  
DRAWN BY: EB

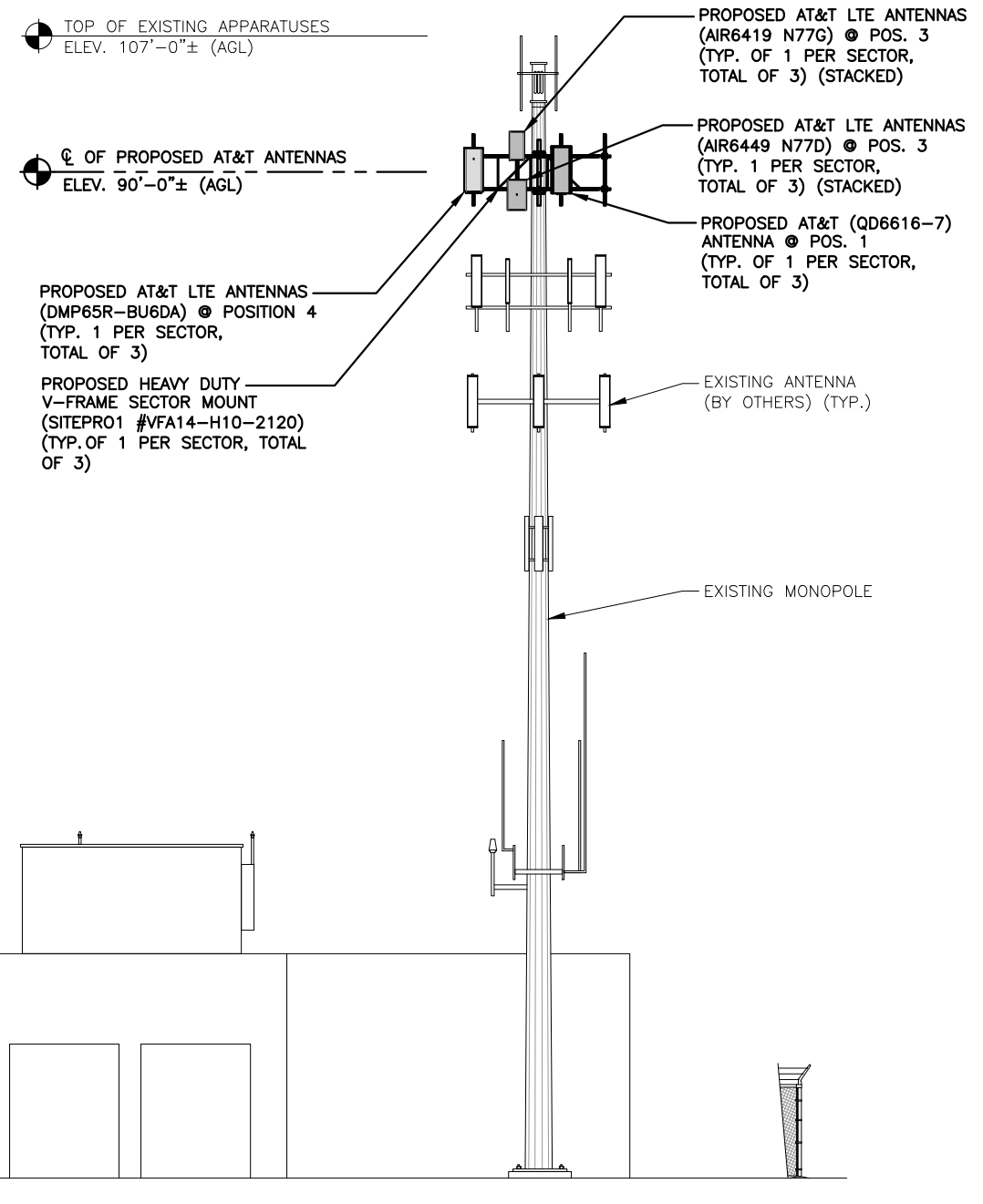
SITE NUMBER	DRAWING NUMBER	REV
CT2112	A-1	1

**AT&T**  
ROOF/COMPOUND & EQUIPMENT PLANS  
5G NR BAND, BBU RECONFIGURATION, 4TXX  
ANTENNA RETROFIT 2021 UPGRADE



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

**CENTERLINE COMMUNICATIONS**  
750 WEST CENTER STREET, SUITE #301  
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SCALE: AS SHOWN    DESIGNED BY: AT    DRAWN BY: EB

**AT&T**  
ANTENNA PLANS & ELEVATION  
500NR 1SR CBAND, BBU RECONFIGURATION, 4TXRX  
ANTENNA RETROFIT 2021 UPGRADE  
SITE NUMBER: CT2112    DRAWING NUMBER: A-2    REV: 1



**ANTENNA SCHEDULE**

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA CL HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	-	-	-	-	-	-	-	-	-	-	-
A2	PROPOSED	LTE 1900/AWS	QD6616-7	72"x22"x9.6"	90'-0"±	30°	-	(E)(1) 4478 B14 (700) (E)(1) 4426 B66 (AWS) (E)(G)(1) RRUS-E2 B29 (700) (P)(1) 4415 B25 (1900)	16.5"x13.4"x5.9"	(2)(E)1-1/4 COAX	(E) (1) RAYCAP DC6-48-60-18-8F
A3	PROPOSED	DoD CBAND	AIR6419 N77G AIR6449 N77D	31.1"x16.1"x7.3" 30.4"x15.9"x8.1"	90'-0"±	30°	-	-	-	(E)(2) DC POWER & (1) FIBER	-
A4	PROPOSED	LTE 700/850	DMP65R-BU6DA	71.2"x20.7"x7.7"	90'-0"±	30°	-	(P)(1) 4449 B5/B12 (850/700) (E)(1) RRUS-32 B30 (WCS)	17.9"x13.9"x9.44"	(P)(1) Y-CABLE	-
B1	-	-	-	-	-	-	-	-	-	-	-
B2	PROPOSED	LTE 1900/AWS	QD6616-7	72"x22"x9.6"	90'-0"±	150°	-	(E)(1) 4478 B14 (700) (E)(1) 4426 B66 (AWS) (E)(G)(1) RRUS-E2 B29 (700) (P)(1) 4415 B25 (1900)	16.5"x13.4"x5.9"	(2)(E)1-1/4 COAX	(P) (1) RAYCAP DC9-48-60-24-8C-EV
B3	PROPOSED	DoD CBAND	AIR6419 N77G AIR6449 N77D	31.1"x16.1"x7.3" 30.4"x15.9"x8.1"	90'-0"±	150°	-	-	-	(P)(1) 6AWG DC TRUNK (P)(1) 24PAIR FIBER (E)(2) DC POWER	-
B4	PROPOSED	LTE 700/850	DMP65R-BU6DA	71.2"x20.7"x7.7"	90'-0"±	150°	-	(P)(1) 4449 B5/B12 (850/700) (E)(1) RRUS-32 B30 (WCS)	17.9"x13.9"x9.44"	(P)(1) Y-CABLE	-
C1	-	-	-	-	-	-	-	-	-	-	-
C2	PROPOSED	LTE 1900/AWS	QD6616-7	72"x22"x9.6"	90'-0"±	270°	-	(E)(1) 4478 B14 (700) (E)(1) 4426 B66 (AWS) (E)(G)(1) RRUS-E2 B29 (700) (P)(1) 4415 B25 (1900)	16.5"x13.4"x5.9"	(2)(E)1-1/4 COAX	(E) (1) RAYCAP DC6-48-60-18-8F
C3	PROPOSED	DoD CBAND	AIR6419 N77G AIR6449 N77D	31.1"x16.1"x7.3" 30.4"x15.9"x8.1"	90'-0"±	270°	-	-	-	(E)(2) DC POWER & (1) FIBER	-
C4	PROPOSED	LTE 700/850	DMP65R-BU6DA	71.2"x20.7"x7.7"	90'-0"±	270°	-	(P)(1) 4449 B5/B12 (850/700) (E)(1) RRUS-32 B30 (WCS)	17.9"x13.9"x9.44"	(P)(1) Y-CABLE	-

**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: FEBRUARY 10, 2022

**NOTE:**  
REFER TO THE FINAL RFDS SHEET DATED: MARCH 25, 2022 FOR FINAL ANTENNA SETTINGS.

**RRU CHART**

QUANTITY	MODEL	SIZE (L x W x D)
P(3)	4449 B5/B12 (850/700)	14.9"x13.2"x5.8"
P(3)	4415 B25 (1900)	14.9"x13.2"x5.8"
E(3)	4478 B14 (700)	18.1"x13.4"x8.3"
E(3)	4426 B66 (AWS)	18.1"x13.4"x8.3"
E(3)	RRUS-E2 B29 (700)	20.0"x20.4"x9.5"
E(3)	RRUS-32 B30 (WCS)	27.2"x12.1"x7.0"

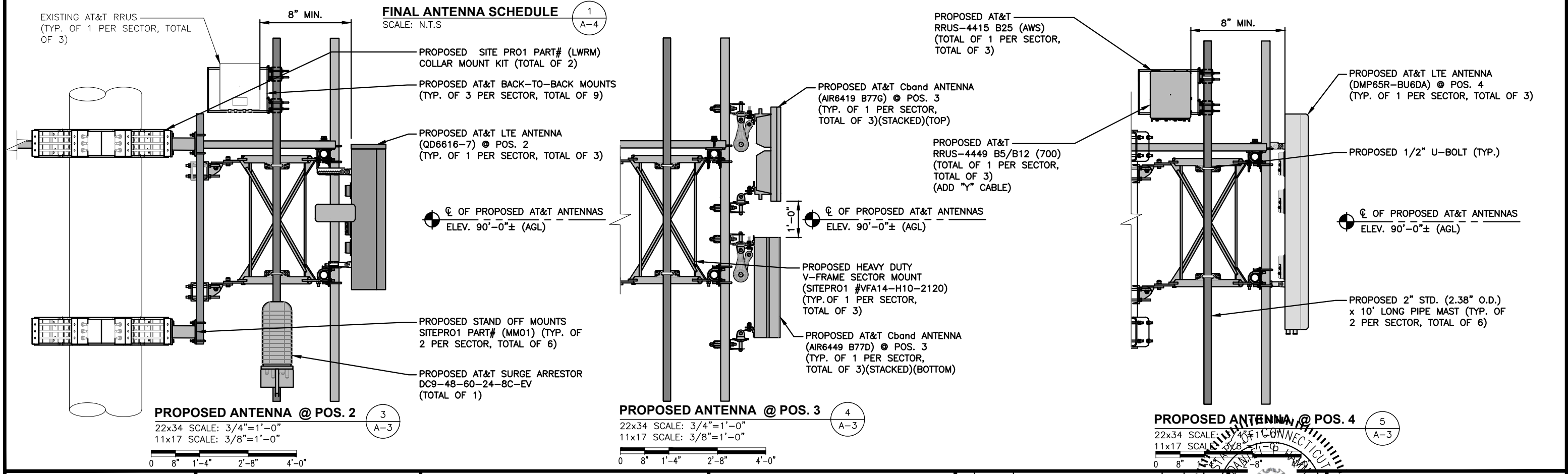
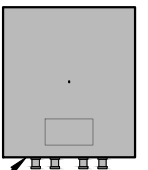
**NOTE:**  
MOUNT PER MANUFACTURER'S SPECIFICATIONS

**NOTE:**  
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

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

**NOTE:**  
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

**PROPOSED RRUS DETAIL** (2)  
SCALE: N.T.S



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

**CENTERLINE COMMUNICATIONS**  
750 WEST CENTER STREET, SUITE #301  
WEST BRIDGEWATER, MA 02379

**SITE NUMBER: CT2112**  
**SITE NAME: STRATFORD**  
  
623 HONEYSPOOT ROAD  
STRATFORD, CT 06615  
FAIRFIELD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP
1	03/30/22	ISSUED FOR PERMITTING	MB	AT	DPH
0	03/16/22	ISSUED FOR REVIEW	ME	AT	DPH
A	12/22/21	ISSUED FOR REVIEW	EP	AT	DPH

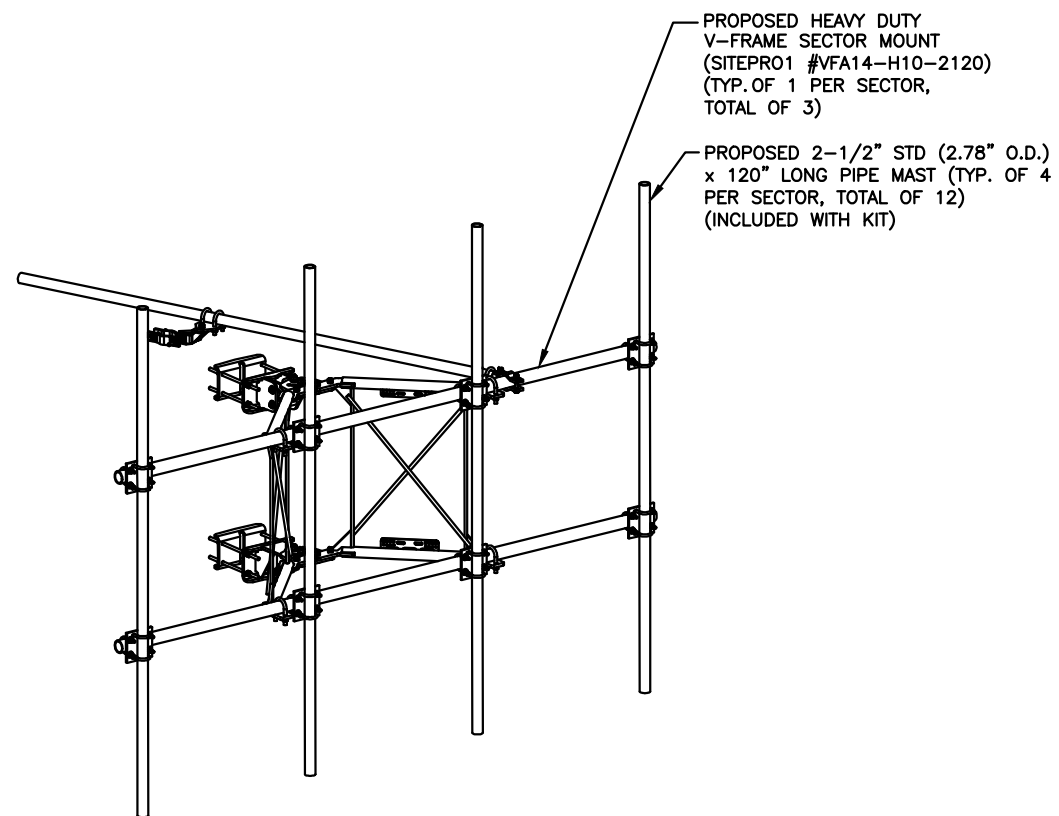
SCALE: AS SHOWN  
DESIGNED BY: AT  
DRAWN BY: EB

**AT&T**  
DETAILS  
500NR 4SR CBAND, BBU RECONFIGURATION, 4TXRX  
ANTENNA RETROFIT 2021 UPGRADE  
SITE NUMBER: CT2112  
DRAWING NUMBER: A-3  
REV: 1



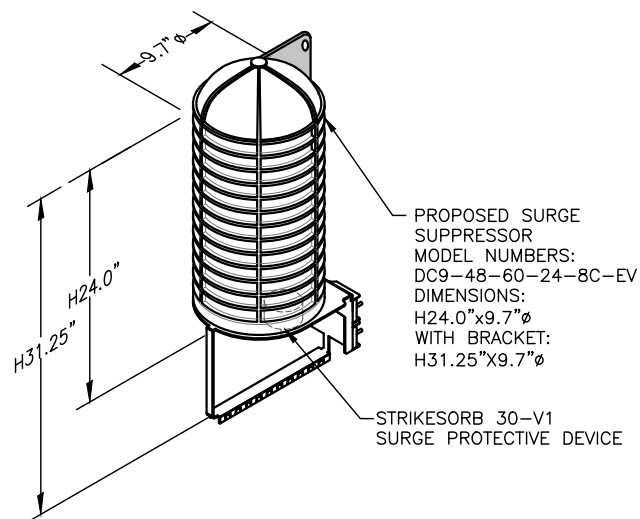
**NOTE:**  
 AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY HUDSON DESIGN GROUP, LLC. DATED: FEBRUARY 10, 2022

**NOTE:**  
 REFER TO THE FINAL RFDS SHEET DATED: MARCH 25, 2022 FOR FINAL ANTENNA SETTINGS.



**PROPOSED MOUNT (SITEPRO1 #VFA14-H10-2120) DETAIL**  
 SCALE: N.T.S.

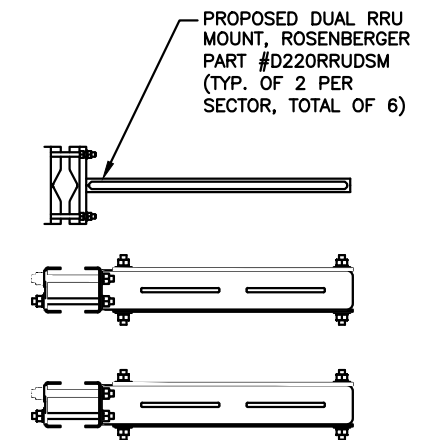
1  
A-4



NOTE:  
 MOUNT PER MANUFACTURER'S SPECIFICATIONS.

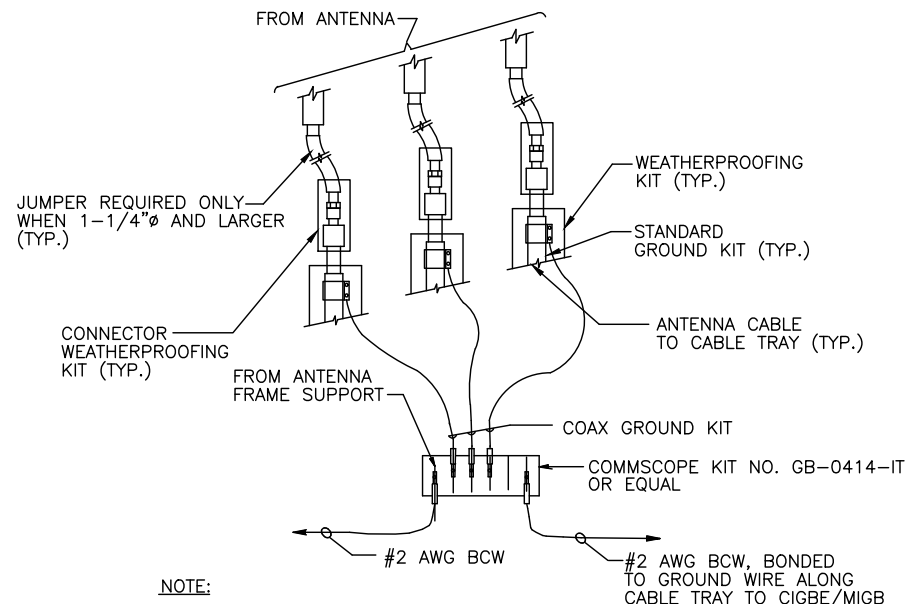
**DC SURGE SUPPRESSOR DETAIL**  
 22x34 SCALE: 1/8"=1'-0"  
 11x17 SCALE: 1/16"=1'-0"

2  
A-4



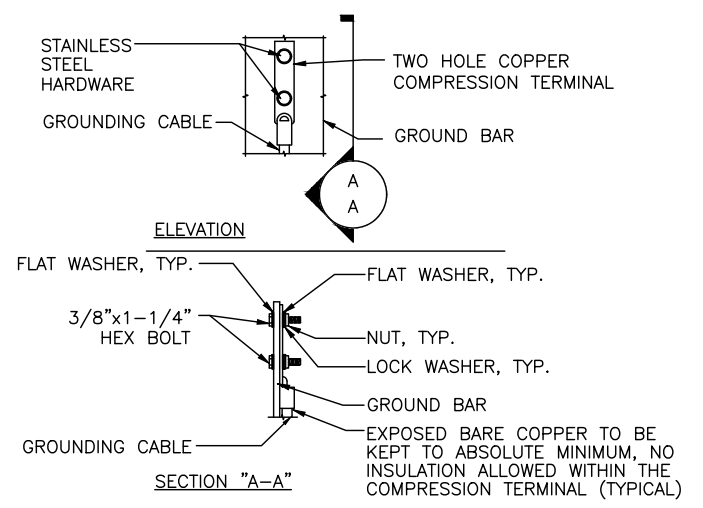
**BACK TO BACK RRU MOUNT DETAIL**  
 SCALE: N.T.S.

3  
A-4



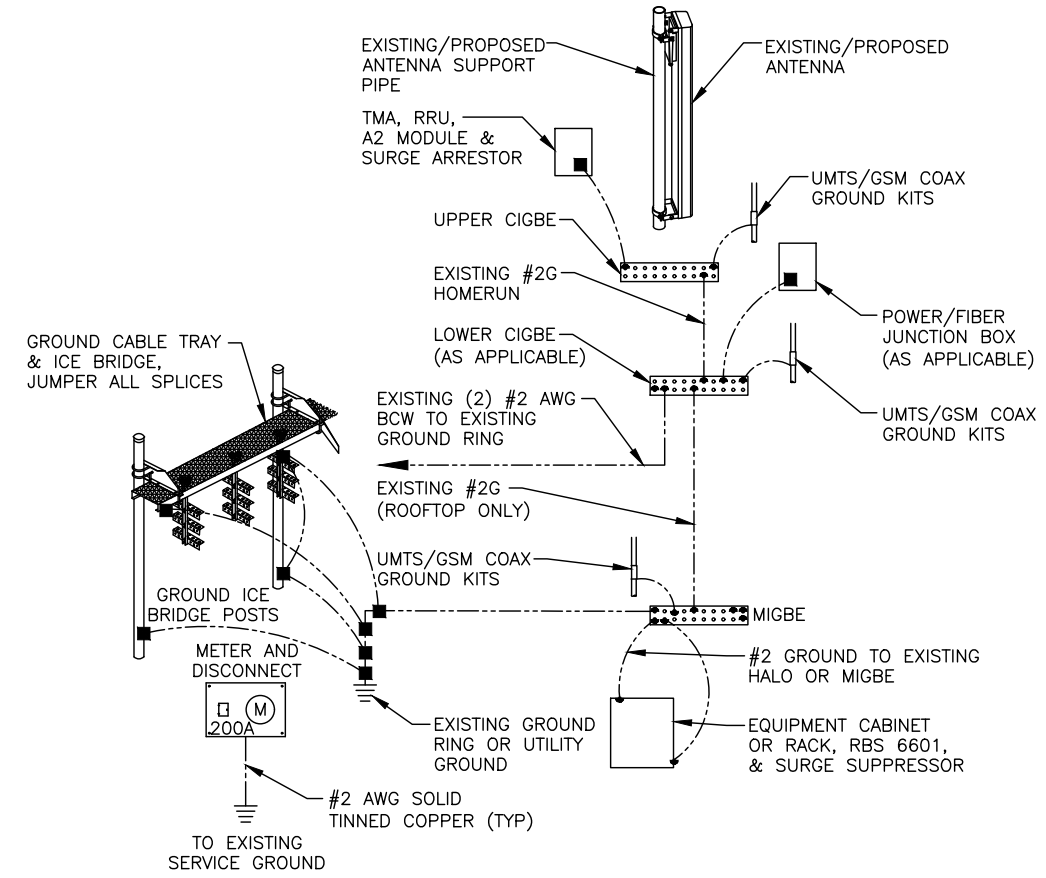
NOTE:  
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE.

**GROUND WIRE TO GROUND BAR CONNECTION DETAIL** 1  
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



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

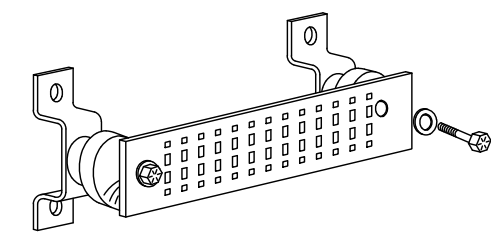
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

**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**

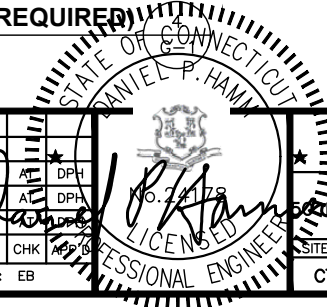
- INTERIOR GROUND RING (#2 AWG)
- EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2 AWG)
- METALLIC COLD WATER PIPE (IF AVAILABLE) (#2 AWG)
- BUILDING STEEL (IF AVAILABLE) (#2 AWG)

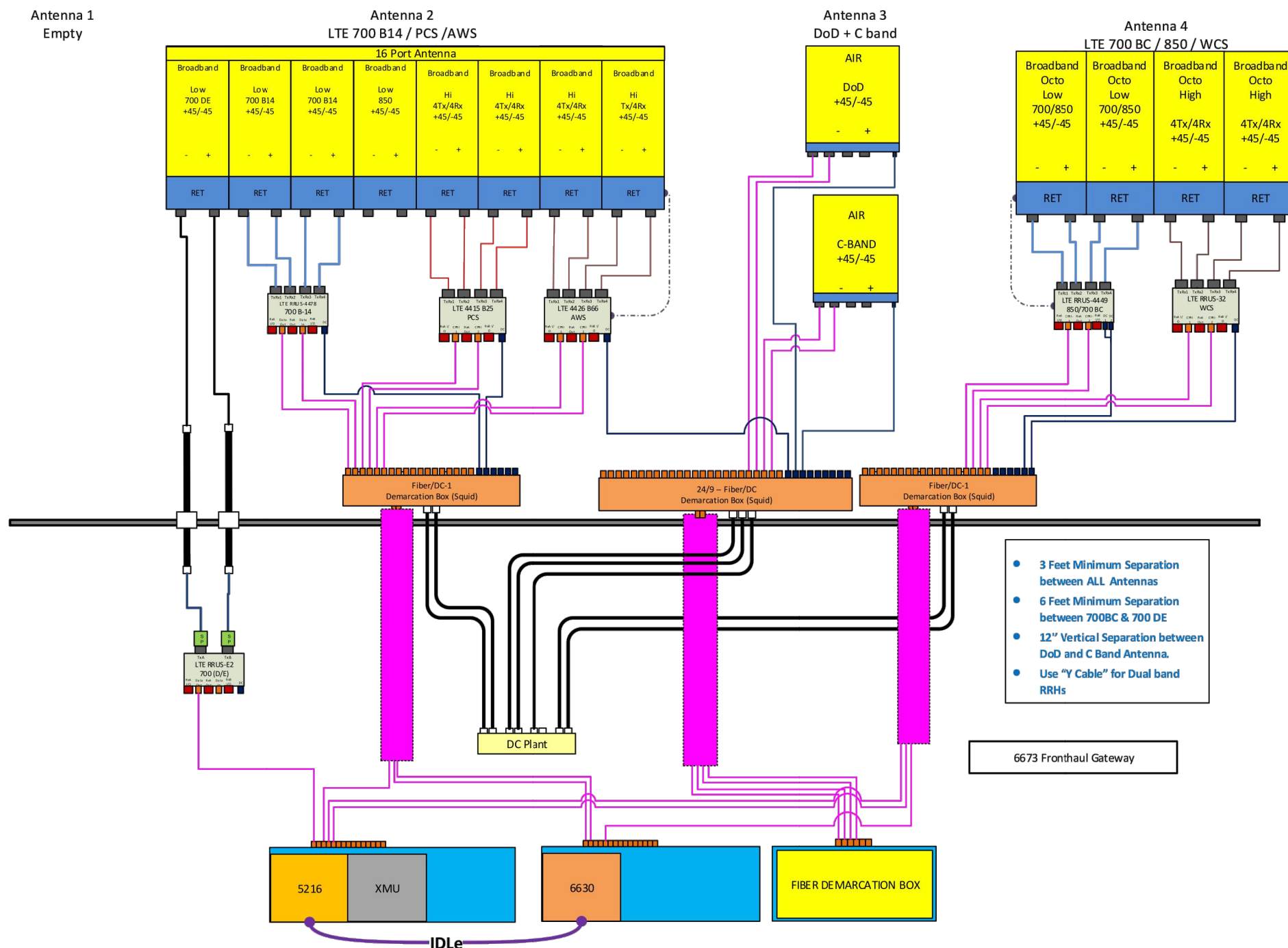


**GROUND BAR - DETAIL (AS REQUIRED)**  
SCALE: N.T.S.

NO.	DATE	REVISIONS	BY	CHK	APP
1	03/30/22	ISSUED FOR PERMITTING	MB	AT	DPH
0	03/16/22	ISSUED FOR REVIEW	MB	AT	DPH
A	12/22/21	ISSUED FOR REVIEW	MB	AT	DPH

SCALE: AS SHOWN    DESIGNED BY: AT    DRAWN BY: EB





**RF PLUMBING DIAGRAM**  
SCALE: N.T.S.

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

**NOTE:**  
REFER TO THE FINAL RFDS SHEET DATED: MARCH 25, 2022 FOR FINAL ANTENNA SETTINGS.

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	03/30/22	ISSUED FOR PERMITTING	MB	AT	DPH
0	03/16/22	ISSUED FOR REVIEW	MB	AT	DPH
A	12/22/21	ISSUED FOR REVIEW	EB	AT	DPH

SCALE: AS SHOWN    DESIGNED BY: AT    DRAWN BY: EB

AT&T		
RF PLUMBING DIAGRAM		
5G NR 1SR CBAND, BBU RECONFIGURATION, 4TXRX ANTENNA RETROFIT 2021 UPGRADE		
SITE NUMBER	DRAWING NUMBER	REV
CT2112	RF-1	1

# EXHIBIT 2



# 623 HONEYSPOD RD

**Location** 623 HONEYSPOD RD

**Mblu** 30/6 12/ 6/ /

**Acct#** 0795100

**Owner** BECKER LLC

**PBN**

**Assessment** \$802,690

**Appraisal** \$1,146,700

**PID** 8228

**Building Count** 1

## Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2019	\$932,200	\$214,500	\$1,146,700

Assessment			
Valuation Year	Improvements	Land	Total
2019	\$652,540	\$150,150	\$802,690

## Owner of Record

**Owner** BECKER LLC

**Sale Price** \$0

**Co-Owner**

**Certificate**

**Address** 951 BEAVER DAM RD  
STRATFORD, CT 06614

**Book** 3374

**Page** 0243

**Sale Date** 04/20/2010

**Instrument** 04

## Ownership History

Ownership History						
Owner	Sale Price	Certificate	Instrument	Sale Date	Book	Page
BECKER LLC	\$0		04	04/20/2010	3374	0243
BECKER JOHN & DEBORAH (SV)	\$54,000		UNKQ	07/17/1984	0597	0087
TOTH JOHN S & CAROL A (SV)	\$47,000		UNKQ	09/24/1982	0573	0794
PAOLA FRANK & ROSALIE (SV)	\$24,000		UNKQ	03/21/1969	0448	0174


## Building Information

## Building 1 : Section 1

**Year Built:** 1985  
**Living Area:** 2,616  
**Building Percent Good:** 74

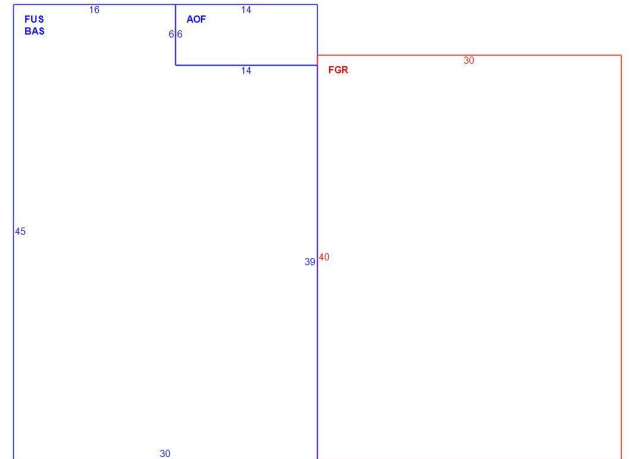
Building Attributes	
Field	Description
STYLE	Telephone Bldg
MODEL	Commercial
Stories:	1 Story
Occupancy	1.00
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Built Up
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Vinyl/Asphalt
Interior Floor 2	Concr-Finished
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Partial
Struct Class	
Bldg Use	Tel Rel Tw
Usrflid 215	
Usrflid 216	
Usrflid 217	
Usrflid 218	
Usrflid 219	
1st Floor Use:	434
Heat/AC	Heat/AC Pkgs
Frame Type	Masonry
Baths/Plumbing	Average
Ceiling/Wall	Ceil & Walls
Rooms/Prtns	Average
Wall Height	10.00
% Comm Wall	

## Building Photo

 Building Photo

([http://images.vgsi.com/photos/StratfordCTPhotos///0088/IMG\\_0057\\_8816](http://images.vgsi.com/photos/StratfordCTPhotos///0088/IMG_0057_8816))

## Building Layout



(ParcelSketch.ashx?pid=8228&bid=8228)

Building Sub-Areas (sq ft)			<u>Legend</u>
Code	Description	Gross Area	Living Area
BAS	First Floor	1,266	1,266
FUS	Finished Upper Story	1,266	1,266
AOF	Office Area	84	84
FGR	Garage	1,200	0
		3,816	2,616

## Extra Features

Extra Features

Legend

Code	Description	Size	Value	Bldg #
A/C	Air Condition	1866.00 S.F.	\$3,600	1
MEZ1	Mezzanine - Unfin	144.00 S.F.	\$1,500	1

## Land

### Land Use

**Use Code** 322  
**Description** Gar/Off  
**Zone** CA  
**Neighborhood** 100  
**Alt Land Appr** No  
**Category**

### Land Line Valuation

**Size (Acres)** 0.22  
**Frontage** 0  
**Depth** 0  
**Assessed Value** \$150,150  
**Appraised Value** \$214,500

## Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
PAV	Paving	AS	Asphalt	4000.00 S.F.	\$4,000	1
CTR	Cell Recievers			4.00 Units	\$698,000	1

## Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2020	\$932,200	\$214,500	\$1,146,700
2019	\$932,200	\$214,500	\$1,146,700
2018	\$930,200	\$195,000	\$1,125,200

Assessment			
Valuation Year	Improvements	Land	Total
2020	\$652,540	\$150,150	\$802,690
2019	\$652,540	\$150,150	\$802,690
2018	\$651,140	\$136,500	\$787,640



Legend

Streetname

Roadways

- Local
- Collector
- Minor Collector
- Minor Arterial
- Major Collector
- PA Other
- PA Other Expwy
- PA Interstate

71.0 0 35.49 71.0 Feet

WGS\_1984\_Web\_Mercator\_Auxiliary\_Sphere  
Created by Greater Bridgeport Regional Council

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION





# EXHIBIT 3

# STRUCTURAL ANALYSIS REPORT

For

**SITE NUMBER: CT2112**  
**SITE NAME: STRATFORD**

623 Honeyspot Road  
Stratford, CT 06615

## Antennas Mounted on the Monopole



Prepared for:



Dated: April 27, 2022

Prepared by:



45 Beechwood Drive  
North Andover, MA 01845  
(P) 978.557.5553 (F) 978.336.5586  
[www.hudsondesigngroupllc.com](http://www.hudsondesigngroupllc.com)



**HUDSON**  
Design Group LLC

### **SCOPE OF WORK:**

Hudson Design Group LLC (HDG) has been authorized by AT&T to conduct a structural evaluation of the 103' monopole supporting the proposed AT&T's antennas located at elevation 90' above the ground level.

This report represents this office's findings, conclusions and recommendations pertaining to the support of AT&T's existing and proposed antennas listed below.

The following documents were used for our reference:

- Tower Structural Analysis prepared by Paul J. Ford & Company dated February 4, 2021.
- Tower Mapping Report prepared by ProVertic LLC dated April 14, 2022.

### **CONCLUSION SUMMARY:**

Based on our evaluation, we have determined that the existing tower **is in conformance** with the ANSI/TIA-222-H Standard for the loading considered under the criteria listed in this report. The tower structure is rated at **98.2 %** - (Pole Section-L2 from EL.64' to EL.90' Controlling).

### **FOUNDATION SUMMARY:**

Based on our evaluation, we have determined that the existing foundation **is in conformance** with the ANSI/TIA-222-H Standard for the loading considered under the criteria listed in this report. The foundation is rated at **68.9 %** - (Moment Capacity Controlling).



**APPURTENANCES CONFIGURATION:**

Tenant	Appurtenances	Elev.	Mount
	(3) 5' T-Arm	101'	Monopole
AT&T	(3) B14 4478 RRH's	90'	<b>Sector Frame</b>
AT&T	(3) 4426 B66 RRH's	90'	<b>Sector Frame</b>
AT&T	(3) RRUS-E2 B29 RRH's	90'	<b>Sector Frame</b>
AT&T	(3) RRUS 32 B30 RRH's	90'	<b>Sector Frame</b>
AT&T	(2) DC6-48-60-18-8F Surge Arrestors	90'	<b>Sector Frame</b>
AT&T	<b>(3) QD6616-7 Antennas</b>	90'	<b>Sector Frame</b>
AT&T	<b>(3) AIR 6419 Antennas</b>	90'	<b>Sector Frame</b>
AT&T	<b>(3) AIR 6449 Antennas</b>	90'	<b>Sector Frame</b>
AT&T	<b>(3) DMP65R-BU6DA Antennas</b>	90'	<b>Sector Frame</b>
AT&T	<b>(3) 4415 B25 RRH's</b>	90'	<b>Sector Frame</b>
AT&T	<b>(3) 4449 B5/B12 RRH's</b>	90'	<b>Sector Frame</b>
AT&T	<b>(1) DC9-48-60-24-8C-EV Surge Arrestors</b>	90'	<b>Sector Frame</b>
	(6) MX06FRO660-03 Antennas	82'	Platform
	(3) BXA-70063-6CF Antennas	82'	Platform
	(3) VZS01 Antennas	82'	Platform
	(3) B2/B66A RRH-BR049 RRH's	82'	Platform
	(3) B5/B13 RRH-BR04C RRH's	82'	Platform
	(2) Junction Boxes	82'	Platform
	(3) APXVAALL24_43-U-NA20 Antennas	72'	Platform
	(3) AIR6449 B41 Antennas	72'	Platform
	(3) VV-65A-R1 Antennas	72'	Platform
	(3) 4480 B71+B85 RRH's	72'	Platform
	(3) 4460 B25+B66 RRH's	72'	Platform
	(1) 20' Omni	42'	T-Arm Mount
	(2) 10' Omni	36'	T-Arm Mount
	(3) 10' Omni	34'	T-Arm Mount
	(1) GPS	30'	T-Arm Mount

*\*Proposed AT&T Appurtenances shown in Bold.*

**AT&T EXISTING/PROPOSED COAX CABLES:**

Tenant	Coax Cables	Elev.	Mount
AT&T	(6) 1 1/4" Cables	90'	Inside Monopole
AT&T	(6) DC Power Cables	90'	Inside Monopole
AT&T	(2) Fiber Cable	90'	Inside Monopole
AT&T	<b>(1) DC Power Cables</b>	90'	Inside Monopole
AT&T	<b>(1) Fiber Cable</b>	90'	Inside Monopole

*\*Proposed AT&T Coax Cables shown in Bold.*



**ANALYSIS RESULTS SUMMARY:**

<b>Component</b>	<b>Max. Stress Ratio</b>	<b>Elev. of Component (ft)</b>	<b>Pass/Fail</b>	<b>Comments</b>
<b>Pole Section-L1</b>	12.9 %	90 – 102.92	PASS	
<b>Pole Section-L2</b>	<b>98.9 %</b>	64 – 90	PASS	<b>Controlling</b>
<b>Pole Section-L3</b>	60.7 %	45.08 - 64	PASS	
<b>Pole Section-L4</b>	59.2 %	0 – 45.08	PASS	
<b>Base Plate &amp; Anchor Bolts</b>	86.1 %	-	PASS	

**FOUNDATION RESULTS SUMMARY:**

	<b>Stress Ratio</b>	<b>Pass/Fail</b>	<b>Comments</b>
<b>Bearing</b>	5.3 %	PASS	
<b>Moment Capacity</b>	<b>68.9 %</b>	PASS	<b>Controlling</b>



**HUDSON**  
Design Group LLC

### **DESIGN CRITERIA:**

1. EIA/TIA-222-H Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

County: Fairfield

Ultimate Wind Speed: 125 mph (3 second gust)

Structural Class: II

Exposure Category: C

Topographic Category: 1

Nominal Ice Thickness: 1 inch

2. Approximate height above grade to proposed antennas: 90'

**\*Calculations and referenced documents are attached.**

### **ASSUMPTIONS:**

1. The appurtenances configuration is as stated in this report. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
2. The monopole and foundation are properly constructed and maintained. 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. The support mounts and platforms are not analyzed and are considered adequate to support the loading. The analysis is limited to the primary support structure itself.

### **SUPPORT RECOMMENDATIONS:**

HDG recommends that the proposed antennas, RRHs and surge arrestor be mounted on the proposed sector frames supported by the monopole.

Reference HDG's Latest Construction Drawings for all component and connection requirements (attached).



**HUDSON**  
Design Group LLC



**Photo 1:** Photo illustrating the Tower with Appurtenances shown.

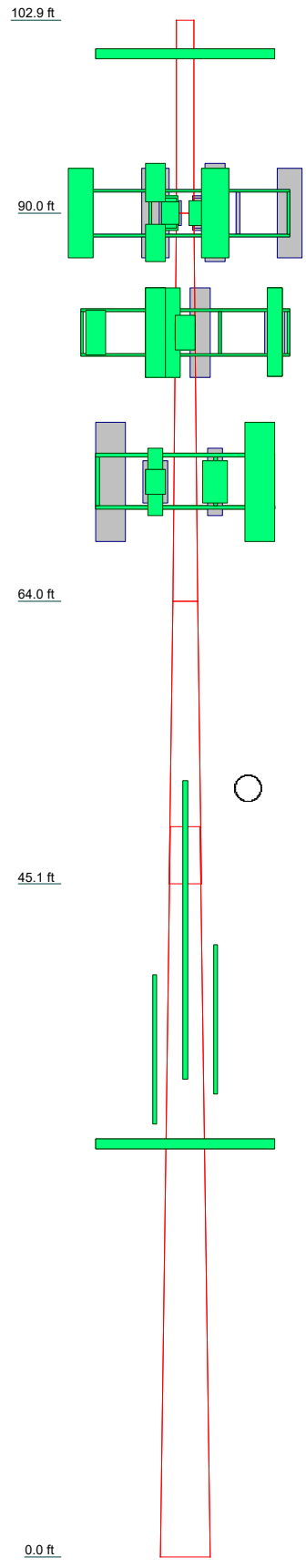




**HUDSON**  
Design Group LLC

## CALCULATIONS

Section	1	2	3	4
Length (ft)	12.92	26.00	18.92	48.92
Number of Sides	1	18	18	18
Thickness (in)	0.2500	0.2650	0.4880	0.5500
Socket Length (ft)			3.84	
Top Dia (in)	13.0000	13.0000	20.8125	24.6028
Bot Dia (in)	13.0000	20.8125	26.7925	40.0000
Grade	A53-B-35			
Weight (lb)	13230.4			



### DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(3) 5' T-Arm Mount	101	MX06FRO660-03 Antenna w/ Mounting Pipe	82
B14 4478 RRH	90	MX06FRO660-03 Antenna w/ Mounting Pipe	82
B14 4478 RRH	90	BXA-70063-6CF Antenna w/ Mounting Pipe	82
4426 B66 RRH	90	BXA-70063-6CF Antenna w/ Mounting Pipe	82
4426 B66 RRH	90	BXA-70063-6CF Antenna w/ Mounting Pipe	82
4426 B66 RRH	90	BXA-70063-6CF Antenna w/ Mounting Pipe	82
RRUS-E2 B29	90	VZS01 Antenna w/ Mounting Pipe	82
RRUS-E2 B29	90	VZS01 Antenna w/ Mounting Pipe	82
RRUS-E2 B29	90	VZS01 Antenna w/ Mounting Pipe	82
RRUS 32 B30 RRH	90	B2/B66A RRH-BR049 RRH	82
RRUS 32 B30 RRH	90	B2/B66A RRH-BR049 RRH	82
RRUS 32 B30 RRH	90	B2/B66A RRH-BR049 RRH	82
Squid Surge Arrestor	90	B5/B13 RRH-BR04C RRH	82
Squid Surge Arrestor	90	B5/B13 RRH-BR04C RRH	82
VFA14-H10-2120 Sector Frame	90	B5/B13 RRH-BR04C RRH	82
VFA14-H10-2120 Sector Frame	90	B5/B13 RRH-BR04C RRH	82
VFA14-H10-2120 Sector Frame	90	B5/B13 RRH-BR04C RRH	82
QD6616-7 Antenna w/ Mounting Pipe	90	Junction Box	82
QD6616-7 Antenna w/ Mounting Pipe	90	Junction Box	82
QD6616-7 Antenna w/ Mounting Pipe	90	4460 B25+B66 RRH	72
AIR 6419 Antenna w/ Mounting Pipe (ATI)	90	10' Quad-Cornered Telescoping Platform w/ Walkway and Handrail (T-Mobile)	72
AIR 6419 Antenna w/ Mounting Pipe (ATI)	90	APXVAALL24_43-U-NA20 Antenna w/ Mounting Pipe	72
AIR 6419 Antenna w/ Mounting Pipe (ATI)	90	APXVAALL24_43-U-NA20 Antenna w/ Mounting Pipe	72
AIR 6449 Antenna (ATI)	90	APXVAALL24_43-U-NA20 Antenna w/ Mounting Pipe	72
AIR 6449 Antenna (ATI)	90	APXVAALL24_43-U-NA20 Antenna w/ Mounting Pipe	72
AIR 6449 Antenna (ATI)	90	APXVAALL24_43-U-NA20 Antenna w/ Mounting Pipe	72
DMP65R-BU6DA Antenna w/ Mounting Pipe	90	AIR6449 B41 Antenna w/ Mounting Pipe (T-Mobile)	72
DMP65R-BU6DA Antenna w/ Mounting Pipe	90	AIR6449 B41 Antenna w/ Mounting Pipe (T-Mobile)	72
DMP65R-BU6DA Antenna w/ Mounting Pipe	90	AIR6449 B41 Antenna w/ Mounting Pipe (T-Mobile)	72
4415 B25 RRH	90	VV-65A-R1 Antenna w/ Mounting Pipe	72
4415 B25 RRH	90	VV-65A-R1 Antenna w/ Mounting Pipe	72
4415 B25 RRH	90	VV-65A-R1 Antenna w/ Mounting Pipe	72
4449 B5/B12 RRH	90	4480 B71+B85 RRH	72
4449 B5/B12 RRH	90	4480 B71+B85 RRH	72
4449 B5/B12 RRH	90	4480 B71+B85 RRH	72
4449 B5/B12 RRH	90	4480 B71+B85 RRH	72
Squid Surge Arrestor	90	4460 B25+B66 RRH	72
14' Platform	82	4460 B25+B66 RRH	72
MX06FRO660-03 Antenna w/ Mounting Pipe	82	Omni 3"x20'	42
MX06FRO660-03 Antenna w/ Mounting Pipe	82	(2) Omni 3"x10'	36
MX06FRO660-03 Antenna w/ Mounting Pipe	82	(3) Omni 3"x10'	34
MX06FRO660-03 Antenna w/ Mounting Pipe	82	GPS	30
MX06FRO660-03 Antenna w/ Mounting Pipe	82	5' T-Arm Mount	28
MX06FRO660-03 Antenna w/ Mounting Pipe	82	14' T-Arm Mount	28

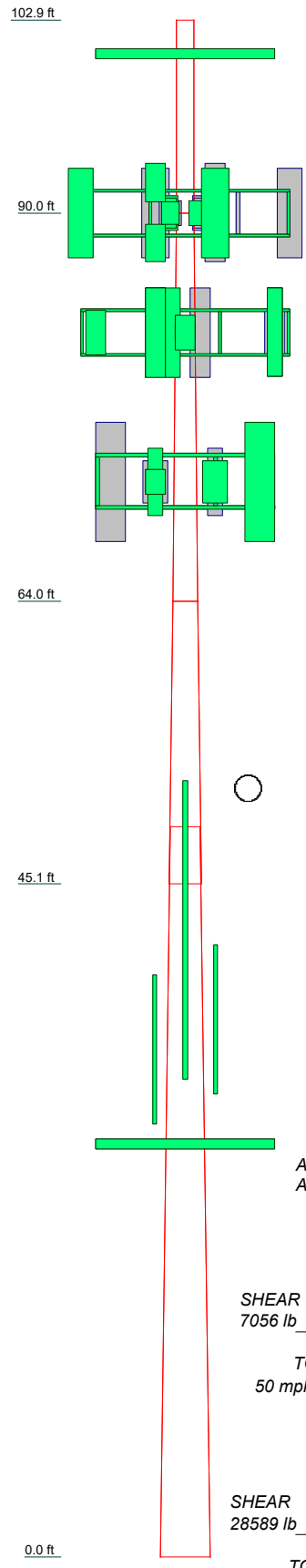
### MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-35	35 ksi	63 ksi	A572-65	65 ksi	80 ksi

<b>Hudson Design Group</b>		Job: <b>Monopole</b>	
45 Beechwood Drive		Project: <b>CT2112</b>	
North Andover, MA 01845		Client: <b>AT&amp;T</b>	Drawn by: <b>ID</b>
Phone: (978) 557-5553		Code: <b>TIA-222-H</b>	Date: <b>04/27/22</b>
FAX: (978) 336-5586		Path:	App'd:
		Scale: <b>NTS</b>	
		Dwg No. <b>E-1</b>	

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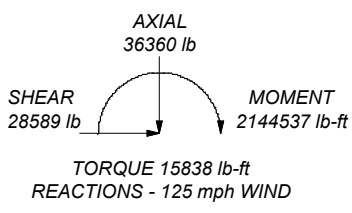
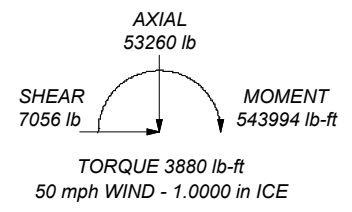
Section	1	2	3	4
Length (ft)	12.92	26.00	18.92	48.92
Number of Sides	1	18	18	18
Thickness (in)	0.2500	0.2650	0.4880	0.5500
Socket Length (ft)			3.84	24.6028
Top Dia (in)	13.0000	13.0000	20.8125	40.0000
Bot Dia (in)	13.0000	20.8125	26.7925	
Grade	A53-B-35			
Weight (lb)	440.2	1238.4	2324.9	9226.9



### TOWER DESIGN NOTES

1. Tower designed for Exposure C to the TIA-222-H Standard.
2. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
3. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. TOWER RATING: 98.9%

ALL REACTIONS ARE FACTORED



<b>Hudson Design Group</b>			Job: <b>Monopole</b>
45 Beechwood Drive			Project: <b>CT2112</b>
North Andover, MA 01845			Client: <b>AT&amp;T</b>
Phone: (978) 557-5553			Drawn by: <b>ID</b>
FAX: (978) 336-5586			Date: <b>04/27/22</b>
			App'd:
			Scale: <b>NTS</b>
			Dwg No. <b>E-1</b>

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<b>tnxTower</b>  <b>Hudson Design Group</b> 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586	<b>Job</b>	Monopole	<b>Page</b>	1 of 13
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## Tower Input Data

The tower is a monopole.

This tower is designed using the TIA-222-H standard.

The following design criteria apply:

Tower base elevation above sea level: 0.00 ft.

Basic wind speed of 125 mph.

Risk Category II.

Exposure Category C.

Simplified Topographic Factor Procedure for wind speed-up calculations is used.

Topographic Category: 1.

Crest Height: 0.00 ft.

Nominal ice thickness of 1.0000 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 50 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

Stress ratio used in pole design is 1.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

## Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	102.92-90.00	12.92	0.00	Round	13.0000	13.0000	0.2500		A53-B-35 (35 ksi)
L2	90.00-64.00	26.00	0.00	18	13.0000	20.8125	0.2650	1.0600	A572-65 (65 ksi)
L3	64.00-45.08	18.92	3.84	18	20.8125	26.7925	0.4880	1.9520	A572-65 (65 ksi)
L4	45.08-0.00	48.92		18	24.6028	40.0000	0.5500	2.2000	A572-65 (65 ksi)

## Tapered Pole Properties

Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	I/C in <sup>3</sup>	J in <sup>4</sup>	It/Q in <sup>2</sup>	w in	w/t
L1	13.0000	10.0138	203.5623	4.5087	6.5000	31.3173	407.1246	5.0039	0.0000	0
	13.0000	10.0138	203.5623	4.5087	6.5000	31.3173	407.1246	5.0039	0.0000	0
L2	13.1597	10.7115	219.4760	4.5209	6.6040	33.2338	439.2409	5.3568	1.8216	6.874
	21.0927	17.2827	921.8648	7.2944	10.5727	87.1925	1844.9425	8.6430	3.1966	12.063
L3	21.0583	31.4809	1642.9480	7.2152	10.5727	155.3946	3288.0577	15.7434	2.8041	5.746
	27.1305	40.7434	3561.6755	9.3381	13.6106	261.6841	7128.0375	20.3755	3.8566	7.903
L4	26.1247	41.9890	3069.0501	8.5387	12.4982	245.5589	6142.1386	20.9985	3.3621	6.113
	40.5322	68.8679	13540.9173	14.0048	20.3200	666.3837	27099.6520	34.4405	6.0720	11.04

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Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor $A_f$	Adjust. Factor $A_r$	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft <sup>2</sup>	in					in	in	in
L1 102.92-90.00				1	1	1			
L2 90.00-64.00				1	1	1			
L3 64.00-45.08				1	1	1			
L4 45.08-0.00				1	1	1			

### Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement	Total Number	Number Per Row	Start/End Position	Width or Diameter	Perimeter	Weight
				ft				in	in	plf
6X24 Hybrid Cables (T-Mobile)	C	Yes	Surface Ar (CaAa)	72.00 - 0.00	3	3	0.000 0.000	2.0000		3.50

### Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement	Total Number		$C_{AA}$	Weight
					ft			ft <sup>2</sup> /ft	plf
** 1 5/8 (Verizon)	C	No	Yes	Inside Pole	82.00 - 0.00	2	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	1.04 1.04 1.04
7/8	C	No	Yes	Inside Pole	82.00 - 0.00	6	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.54 0.54 0.54
** 1 1/4	C	No	Yes	Inside Pole	28.00 - 0.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.66 0.66 0.66
1/2	C	No	Yes	Inside Pole	28.00 - 0.00	8	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.25 0.25 0.25
** 1 1/4 (AT&T)	C	No	Yes	Inside Pole	90.00 - 0.00	6	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.66 0.66 0.66
DC Cable	C	No	Yes	Inside Pole	90.00 - 0.00	6	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.88 0.88 0.88
Fiber Cable (1-1/4")	C	No	Yes	Inside Pole	90.00 - 0.00	2	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.48 0.48 0.48
** DC Cable (AT&T (Proposed))	C	No	Yes	Inside Pole	90.00 - 0.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.88 0.88 0.88
Fiber Cable (1-1/4")	C	No	Yes	Inside Pole	90.00 - 0.00	1	No Ice 1/2" Ice	0.00 0.00	0.48 0.48

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Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C <sub>AA</sub> ft <sup>2</sup> /ft	Weight plf
							1" Ice 0.00	0.48

### Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>	Weight lb
L1	102.92-90.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
		D	0.000	0.000	0.000	0.000	0.00
L2	90.00-64.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	4.800	0.000	480.09
		D	0.000	0.000	0.000	0.000	0.00
L3	64.00-45.08	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	11.352	0.000	517.86
		D	0.000	0.000	0.000	0.000	0.00
L4	45.08-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	27.048	0.000	1308.36
		D	0.000	0.000	0.000	0.000	0.00

### Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>	Weight lb
L1	102.92-90.00	A	1.113	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
		D		0.000	0.000	0.000	0.000	0.00
L2	90.00-64.00	A	1.087	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	8.174	0.000	545.28
		D		0.000	0.000	0.000	0.000	0.00
L3	64.00-45.08	A	1.051	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	19.160	0.000	666.44
		D		0.000	0.000	0.000	0.000	0.00
L4	45.08-0.00	A	0.960	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	45.652	0.000	1662.38
		D		0.000	0.000	0.000	0.000	0.00

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### Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L2	1	6X24 Hybrid Cables	64.00 - 72.00	1.0000	1.0000
L3	1	6X24 Hybrid Cables	45.08 - 64.00	1.0000	1.0000
L4	1	6X24 Hybrid Cables	0.00 - 45.08	1.0000	1.0000

### Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight lb
10' Quad-Cornered Telescoping Platform w/ Walkway and Handrail (T-Mobile)	D	None		0.0000	72.00	No Ice 34.79 1/2" Ice 45.30 1" Ice 56.56	39.39 49.71 61.10	2861.00 3638.00 4711.00
APXVAALL24_43-U-NA20 Antenna w/ Mounting Pipe	D	From Face	3.00 -5.00 0.00	0.0000	72.00	No Ice 20.24 1/2" Ice 20.89 1" Ice 21.55	10.79 12.21 13.49	157.20 290.89 435.20
APXVAALL24_43-U-NA20 Antenna w/ Mounting Pipe	C	From Face	3.00 -5.00 0.00	0.0000	72.00	No Ice 20.24 1/2" Ice 20.89 1" Ice 21.55	10.79 12.21 13.49	157.20 290.89 435.20
APXVAALL24_43-U-NA20 Antenna w/ Mounting Pipe	B	From Face	3.00 -5.00 0.00	0.0000	72.00	No Ice 20.24 1/2" Ice 20.89 1" Ice 21.55	10.79 12.21 13.49	157.20 290.89 435.20
AIR6449 B41 Antenna w/ Mounting Pipe (T-Mobile)	D	From Face	3.00 -2.00 0.00	0.0000	72.00	No Ice 6.42 1/2" Ice 7.00 1" Ice 7.50	3.89 4.62 5.22	124.90 179.59 240.17
AIR6449 B41 Antenna w/ Mounting Pipe (T-Mobile)	C	From Face	3.00 -2.00 0.00	0.0000	72.00	No Ice 6.42 1/2" Ice 7.00 1" Ice 7.50	3.89 4.62 5.22	124.90 179.59 240.17
AIR6449 B41 Antenna w/ Mounting Pipe (T-Mobile)	B	From Face	3.00 -2.00 0.00	0.0000	72.00	No Ice 6.42 1/2" Ice 7.00 1" Ice 7.50	3.89 4.62 5.22	124.90 179.59 240.17
VV-65A-R1 Antenna w/ Mounting Pipe	D	From Face	3.00 2.00 0.00	0.0000	72.00	No Ice 6.27 1/2" Ice 6.75 1" Ice 7.21	4.16 5.00 5.71	45.90 95.54 151.68
VV-65A-R1 Antenna w/ Mounting Pipe	C	From Face	3.00 2.00 0.00	0.0000	72.00	No Ice 6.27 1/2" Ice 6.75 1" Ice 7.21	4.16 5.00 5.71	45.90 95.54 151.68
VV-65A-R1 Antenna w/ Mounting Pipe	B	From Face	3.00 2.00 0.00	0.0000	72.00	No Ice 6.27 1/2" Ice 6.75 1" Ice 7.21	4.16 5.00 5.71	45.90 95.54 151.68
4480 B71+B85 RRH	D	From Face	2.00 2.00 0.00	0.0000	72.00	No Ice 2.42 1/2" Ice 2.61 1" Ice 2.81	1.20 1.35 1.51	93.00 112.12 134.14
4480 B71+B85 RRH	C	From Face	2.00 2.00 0.00	0.0000	72.00	No Ice 2.42 1/2" Ice 2.61 1" Ice 2.81	1.20 1.35 1.51	93.00 112.12 134.14
4480 B71+B85 RRH	D	From Face	2.00 2.00	0.0000	72.00	No Ice 2.42 1/2" Ice 2.61	1.20 1.35	93.00 112.12



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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight	
			Horz	Vert						
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	lb	
4460 B25+B66 RRH	D	From Face	0.00		0.0000	72.00	1" Ice	2.81	1.51	134.14
			2.00				No Ice	2.14	1.69	104.00
			-5.00				1/2" Ice	2.32	1.85	126.16
			0.00				1" Ice	2.51	2.02	151.36
4460 B25+B66 RRH	C	From Face	2.00		0.0000	72.00	No Ice	2.14	1.69	104.00
			-5.00				1/2" Ice	2.32	1.85	126.16
			0.00				1" Ice	2.51	2.02	151.36
			2.00				No Ice	2.14	1.69	104.00
4460 B25+B66 RRH	B	From Face	2.00		0.0000	72.00	No Ice	2.14	1.69	104.00
			-5.00				1/2" Ice	2.32	1.85	126.16
			0.00				1" Ice	2.51	2.02	151.36
			2.00				No Ice	2.14	1.69	104.00
**										
14' Platform	D	None			0.0000	82.00	No Ice	29.00	29.50	2200.00
							1/2" Ice	36.50	37.00	2950.00
							1" Ice	47.00	47.00	3950.00
MX06FRO660-03 Antenna w/ Mounting Pipe	D	From Face	3.00		0.0000	82.00	No Ice	9.89	8.76	99.90
			1.00				1/2" Ice	10.36	9.71	184.62
			0.00				1" Ice	10.84	10.53	277.53
MX06FRO660-03 Antenna w/ Mounting Pipe	C	From Face	3.00		0.0000	82.00	No Ice	9.89	8.76	99.90
			1.00				1/2" Ice	10.36	9.71	184.62
			0.00				1" Ice	10.84	10.53	277.53
MX06FRO660-03 Antenna w/ Mounting Pipe	B	From Face	3.00		0.0000	82.00	No Ice	9.89	8.76	99.90
			1.00				1/2" Ice	10.36	9.71	184.62
			0.00				1" Ice	10.84	10.53	277.53
MX06FRO660-03 Antenna w/ Mounting Pipe	D	From Face	3.00		0.0000	82.00	No Ice	9.89	8.76	99.90
			2.00				1/2" Ice	10.36	9.71	184.62
			0.00				1" Ice	10.84	10.53	277.53
MX06FRO660-03 Antenna w/ Mounting Pipe	D	From Face	3.00		0.0000	82.00	No Ice	9.89	8.76	99.90
			2.00				1/2" Ice	10.36	9.71	184.62
			0.00				1" Ice	10.84	10.53	277.53
MX06FRO660-03 Antenna w/ Mounting Pipe	D	From Face	3.00		0.0000	82.00	No Ice	9.89	8.76	99.90
			2.00				1/2" Ice	10.36	9.71	184.62
			0.00				1" Ice	10.84	10.53	277.53
BXA-70063-6CF Antenna w/ Mounting Pipe	D	From Face	3.00		0.0000	82.00	No Ice	7.64	6.04	41.90
			-6.00				1/2" Ice	8.10	6.98	102.68
			0.00				1" Ice	8.56	7.80	171.06
BXA-70063-6CF Antenna w/ Mounting Pipe	D	From Face	3.00		0.0000	82.00	No Ice	7.64	6.04	41.90
			-6.00				1/2" Ice	8.10	6.98	102.68
			0.00				1" Ice	8.56	7.80	171.06
BXA-70063-6CF Antenna w/ Mounting Pipe	D	From Face	3.00		0.0000	82.00	No Ice	7.64	6.04	41.90
			-6.00				1/2" Ice	8.10	6.98	102.68
			0.00				1" Ice	8.56	7.80	171.06
VZS01 Antenna w/ Mounting Pipe	D	From Face	3.00		0.0000	82.00	No Ice	5.43	3.27	109.00
			6.00				1/2" Ice	5.97	3.99	154.17
			0.00				1" Ice	6.46	4.59	204.90
VZS01 Antenna w/ Mounting Pipe	C	From Face	3.00		0.0000	82.00	No Ice	5.43	3.27	109.00
			6.00				1/2" Ice	5.97	3.99	154.17
			0.00				1" Ice	6.46	4.59	204.90
VZS01 Antenna w/ Mounting Pipe	B	From Face	3.00		0.0000	82.00	No Ice	5.43	3.27	109.00
			6.00				1/2" Ice	5.97	3.99	154.17
			0.00				1" Ice	6.46	4.59	204.90
B2/B66A RRH-BR049 RRH	D	From Face	2.00		0.0000	82.00	No Ice	1.88	1.25	98.00
			0.00				1/2" Ice	2.05	1.39	116.34
			0.00				1" Ice	2.22	1.54	137.47
B2/B66A RRH-BR049 RRH	C	From Face	2.00		0.0000	82.00	No Ice	1.88	1.25	98.00
			0.00				1/2" Ice	2.05	1.39	116.34
			0.00				1" Ice	2.22	1.54	137.47
B2/B66A RRH-BR049 RRH	B	From Face	2.00		0.0000	82.00	No Ice	1.88	1.25	98.00

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	lb
			0.00			1/2" Ice	2.05	1.39	116.34
			0.00			1" Ice	2.22	1.54	137.47
B5/B13 RRH-BR04C RRH	D	From Face	2.00	0.0000	82.00	No Ice	1.88	1.01	82.00
			0.00			1/2" Ice	2.05	1.14	98.43
			0.00			1" Ice	2.22	1.28	117.53
B5/B13 RRH-BR04C RRH	C	From Face	2.00	0.0000	82.00	No Ice	1.88	1.01	82.00
			0.00			1/2" Ice	2.05	1.14	98.43
			0.00			1" Ice	2.22	1.28	117.53
B5/B13 RRH-BR04C RRH	B	From Face	2.00	0.0000	82.00	No Ice	1.88	1.01	82.00
			0.00			1/2" Ice	2.05	1.14	98.43
			0.00			1" Ice	2.22	1.28	117.53
Junction Box	D	From Face	2.00	0.0000	82.00	No Ice	3.78	2.51	32.00
			0.00			1/2" Ice	4.03	2.72	63.40
			0.00			1" Ice	4.29	2.94	98.56
Junction Box	C	From Face	2.00	0.0000	82.00	No Ice	3.78	2.51	32.00
			0.00			1/2" Ice	4.03	2.72	63.40
			0.00			1" Ice	4.29	2.94	98.56
**									
(3) 5' T-Arm Mount	D	None		0.0000	101.00	No Ice	1.67	0.61	357.00
						1/2" Ice	2.08	0.76	373.00
						1" Ice	2.49	0.92	394.00
Omni 3"x20'	D	From Face	3.00	0.0000	42.00	No Ice	6.00	6.00	50.00
			0.00			1/2" Ice	8.03	8.03	93.17
			0.00			1" Ice	10.08	10.08	149.01
(2) Omni 3"x10'	D	From Face	3.00	0.0000	36.00	No Ice	3.00	3.00	50.00
			-2.00			1/2" Ice	4.03	4.03	71.79
			0.00			1" Ice	5.03	5.03	100.14
(3) Omni 3"x10'	D	From Face	3.00	0.0000	34.00	No Ice	3.00	3.00	50.00
			2.00			1/2" Ice	4.03	4.03	71.79
			0.00			1" Ice	5.03	5.03	100.14
GPS	D	From Face	3.00	0.0000	30.00	No Ice	0.21	0.21	5.00
			1.00			1/2" Ice	0.32	0.32	7.52
			0.00			1" Ice	0.44	0.44	11.31
5' T-Arm Mount	D	From Face	0.00	0.0000	28.00	No Ice	1.67	0.61	357.00
			0.00			1/2" Ice	2.08	0.76	373.00
			0.00			1" Ice	2.49	0.92	394.00
14' T-Arm Mount	D	From Face	0.00	0.0000	28.00	No Ice	3.50	1.60	340.00
			0.00			1/2" Ice	5.25	2.40	410.00
			0.00			1" Ice	7.88	3.60	490.00
**									
B14 4478 RRH	D	From Face	1.00	0.0000	90.00	No Ice	2.02	1.25	60.00
			-1.00			1/2" Ice	2.20	1.40	77.66
			0.00			1" Ice	2.39	1.56	98.08
B14 4478 RRH	C	From Face	1.00	0.0000	90.00	No Ice	2.02	1.25	60.00
			-1.00			1/2" Ice	2.20	1.40	77.66
			0.00			1" Ice	2.39	1.56	98.08
B14 4478 RRH	B	From Face	1.00	0.0000	90.00	No Ice	2.02	1.25	60.00
			-1.00			1/2" Ice	2.20	1.40	77.66
			0.00			1" Ice	2.39	1.56	98.08
4426 B66 RRH	D	From Face	1.00	0.0000	90.00	No Ice	2.14	1.69	104.00
			-1.00			1/2" Ice	2.32	1.85	126.16
			0.00			1" Ice	2.51	2.02	151.36
4426 B66 RRH	C	From Face	1.00	0.0000	90.00	No Ice	2.14	1.69	104.00
			-1.00			1/2" Ice	2.32	1.85	126.16
			0.00			1" Ice	2.51	2.02	151.36
4426 B66 RRH	B	From Face	1.00	0.0000	90.00	No Ice	2.14	1.69	104.00
			-1.00			1/2" Ice	2.32	1.85	126.16

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight	
			Horz	Vert						
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	lb	
RRUS-E2 B29	D	From Face	0.00		0.0000	90.00	1" Ice	2.51	2.02	151.36
			1.00				No Ice	3.15	1.29	53.00
			-1.00				1/2" Ice	3.36	1.44	76.22
RRUS-E2 B29	C	From Face	0.00		0.0000	90.00	1" Ice	3.59	1.60	102.64
			1.00				No Ice	3.15	1.29	53.00
			-1.00				1/2" Ice	3.36	1.44	76.22
RRUS-E2 B29	B	From Face	0.00		0.0000	90.00	1" Ice	3.59	1.60	102.64
			1.00				No Ice	3.15	1.29	53.00
			-1.00				1/2" Ice	3.36	1.44	76.22
RRUS 32 B30 RRH	D	From Face	0.00		0.0000	90.00	1" Ice	3.59	1.60	102.64
			1.00				No Ice	2.74	1.67	60.00
			1.00				1/2" Ice	2.96	1.86	81.11
RRUS 32 B30 RRH	C	From Face	0.00		0.0000	90.00	1" Ice	3.19	2.05	105.42
			1.00				No Ice	2.74	1.67	60.00
			1.00				1/2" Ice	2.96	1.86	81.11
RRUS 32 B30 RRH	B	From Face	0.00		0.0000	90.00	1" Ice	3.19	2.05	105.42
			1.00				No Ice	2.74	1.67	60.00
			1.00				1/2" Ice	2.96	1.86	81.11
Squid Surge Arrestor	D	From Face	0.00		0.0000	90.00	1" Ice	3.19	2.05	105.42
			1.00				No Ice	0.81	0.81	33.00
			1.00				1/2" Ice	1.30	1.30	48.38
Squid Surge Arrestor	C	From Face	0.00		0.0000	90.00	1" Ice	1.48	1.48	66.11
			1.00				No Ice	0.81	0.81	33.00
			1.00				1/2" Ice	1.30	1.30	48.38
**			0.00							
VFA14-H10-2120 Sector Frame	D	From Face	3.00		0.0000	90.00	No Ice	14.40	9.20	672.00
			0.00				1/2" Ice	21.40	14.60	826.00
			0.00				1" Ice	27.70	19.50	1048.00
VFA14-H10-2120 Sector Frame	C	From Face	3.00		0.0000	90.00	No Ice	14.40	9.20	672.00
			0.00				1/2" Ice	21.40	14.60	826.00
			0.00				1" Ice	27.70	19.50	1048.00
VFA14-H10-2120 Sector Frame	B	From Face	3.00		0.0000	90.00	No Ice	14.40	9.20	672.00
			0.00				1/2" Ice	21.40	14.60	826.00
			0.00				1" Ice	27.70	19.50	1048.00
QD6616-7 Antenna w/ Mounting Pipe	D	From Face	3.00		0.0000	90.00	No Ice	14.05	8.70	159.20
			-2.00				1/2" Ice	14.77	9.99	264.27
			0.00				1" Ice	15.45	11.12	378.32
QD6616-7 Antenna w/ Mounting Pipe	C	From Face	3.00		0.0000	90.00	No Ice	14.05	8.70	159.20
			-2.00				1/2" Ice	14.77	9.99	264.27
			0.00				1" Ice	15.45	11.12	378.32
QD6616-7 Antenna w/ Mounting Pipe	B	From Face	3.00		0.0000	90.00	No Ice	14.05	8.70	159.20
			-2.00				1/2" Ice	14.77	9.99	264.27
			0.00				1" Ice	15.45	11.12	378.32
AIR 6419 Antenna w/ Mounting Pipe (AT&T)	D	From Face	3.00		0.0000	90.00	No Ice	4.97	3.43	87.90
			2.00				1/2" Ice	5.52	4.14	132.90
			2.00				1" Ice	6.00	4.73	183.30
AIR 6419 Antenna w/ Mounting Pipe (AT&T)	C	From Face	3.00		0.0000	90.00	No Ice	4.97	3.43	87.90
			2.00				1/2" Ice	5.52	4.14	132.90
			2.00				1" Ice	6.00	4.73	183.30
AIR 6419 Antenna w/ Mounting Pipe (AT&T)	B	From Face	3.00		0.0000	90.00	No Ice	4.97	3.43	87.90
			2.00				1/2" Ice	5.52	4.14	132.90
			2.00				1" Ice	6.00	4.73	183.30
AIR 6449 Antenna (AT&T)	D	From Face	3.00		0.0000	90.00	No Ice	4.05	2.74	82.00
			2.00				1/2" Ice	4.32	2.97	115.62
			-2.00				1" Ice	4.59	3.20	153.14
AIR 6449 Antenna (AT&T)	C	From Face	3.00		0.0000	90.00	No Ice	4.05	2.74	82.00

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight lb
			2.00			1/2" Ice 4.32	2.97	115.62
			-2.00			1" Ice 4.59	3.20	153.14
AIR 6449 Antenna (AT&T)	B	From Face	3.00	0.0000	90.00	No Ice 4.05	2.74	82.00
			2.00			1/2" Ice 4.32	2.97	115.62
			-2.00			1" Ice 4.59	3.20	153.14
DMP65R-BU6DA Antenna w/ Mounting Pipe	D	From Face	3.00	0.0000	90.00	No Ice 12.73	7.04	101.90
			7.00			1/2" Ice 13.23	7.99	191.74
			0.00			1" Ice 13.73	8.82	289.91
DMP65R-BU6DA Antenna w/ Mounting Pipe	C	From Face	3.00	0.0000	90.00	No Ice 12.73	7.04	101.90
			7.00			1/2" Ice 13.23	7.99	191.74
			0.00			1" Ice 13.73	8.82	289.91
DMP65R-BU6DA Antenna w/ Mounting Pipe	B	From Face	3.00	0.0000	90.00	No Ice 12.73	7.04	101.90
			7.00			1/2" Ice 13.23	7.99	191.74
			0.00			1" Ice 13.73	8.82	289.91
4415 B25 RRH	D	From Face	1.00	0.0000	90.00	No Ice 1.84	0.82	46.00
			1.00			1/2" Ice 2.01	0.94	60.07
			0.00			1" Ice 2.19	1.07	76.66
4415 B25 RRH	C	From Face	1.00	0.0000	90.00	No Ice 1.84	0.82	46.00
			1.00			1/2" Ice 2.01	0.94	60.07
			0.00			1" Ice 2.19	1.07	76.66
4415 B25 RRH	B	From Face	1.00	0.0000	90.00	No Ice 1.84	0.82	46.00
			1.00			1/2" Ice 2.01	0.94	60.07
			0.00			1" Ice 2.19	1.07	76.66
4449 B5/B12 RRH	D	From Face	1.00	0.0000	90.00	No Ice 1.97	1.40	7.20
			1.00			1/2" Ice 2.15	1.56	25.68
			0.00			1" Ice 2.33	1.72	46.97
4449 B5/B12 RRH	C	From Face	1.00	0.0000	90.00	No Ice 1.97	1.40	7.20
			1.00			1/2" Ice 2.15	1.56	25.68
			0.00			1" Ice 2.33	1.72	46.97
4449 B5/B12 RRH	B	From Face	1.00	0.0000	90.00	No Ice 1.97	1.40	7.20
			1.00			1/2" Ice 2.15	1.56	25.68
			0.00			1" Ice 2.33	1.72	46.97
Squid Surge Arrestor	B	From Face	1.00	0.0000	90.00	No Ice 0.81	0.81	33.00
			1.00			1/2" Ice 1.30	1.30	48.38
			0.00			1" Ice 1.48	1.48	66.11
**								

## Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 90 deg - No Ice
5	0.9 Dead+1.0 Wind 90 deg - No Ice
6	1.2 Dead+1.0 Wind 180 deg - No Ice
7	0.9 Dead+1.0 Wind 180 deg - No Ice
8	1.2 Dead+1.0 Ice+1.0 Temp
9	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
10	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp

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Comb. No.	Description
11	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
12	Dead+Wind 0 deg - Service
13	Dead+Wind 90 deg - Service
14	Dead+Wind 180 deg - Service

### Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
L1	102.92 - 90	Pole	Max Tension	8	0.01	0.63	0.33
			Max. Compression	8	-2182.03	-107.96	-50.01
			Max. Mx	4	-1732.85	-7521.75	-40.01
			Max. My	6	-1723.35	-73.43	-7700.52
			Max. Vy	4	886.17	-7521.75	-40.01
			Max. Vx	6	904.45	-73.43	-7700.52
			Max. Torque	2			0.08
L2	90 - 64	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-32383.38	-19827.70	-8285.13
			Max. Mx	4	-17788.32	-412903.73	-2602.92
			Max. My	6	-17455.86	-8716.95	-458392.49
			Max. Vy	4	21330.83	-412903.73	-2602.92
			Max. Vx	6	23963.53	-8716.95	-458392.49
			Max. Torque	6			16195.85
L3	64 - 45.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-35649.03	-20346.67	-8549.81
			Max. Mx	4	-20815.47	-739881.38	-2852.93
			Max. My	6	-20580.72	-9115.90	-824906.61
			Max. Vy	4	22097.27	-739881.38	-2852.93
			Max. Vx	6	24709.60	-9115.90	-824906.61
			Max. Torque	6			16158.01
L4	45.08 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-53259.59	-20650.27	-13252.09
			Max. Mx	4	-36338.33	-1927633.6	-5566.79
			Max. My	6	-36333.33	-9310.87	-2144516.9
			Max. Vy	4	25989.19	-1927633.6	-5566.79
			Max. Vx	6	28623.05	-9310.87	-2144516.9
			Max. Torque	2			-16622.77

### Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Pole	Max. Vert	8	53259.59	0.80	0.40
	Max. H <sub>x</sub>	1	30300.42	0.86	0.34
	Max. H <sub>z</sub>	2	36360.50	-0.00	28588.53
	Max. M <sub>x</sub>	2	2133167.66	-0.00	28588.53
	Max. M <sub>z</sub>	4	1927633.64	-25958.17	-0.01
	Max. Torsion	6	15837.11	-0.00	-28588.53
	Min. Vert	7	27270.37	-0.00	-28588.50

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Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
	Min. H <sub>x</sub>	5	27270.37	-25958.21	-0.00
	Min. H <sub>z</sub>	6	36360.50	-0.00	-28588.53
	Min. M <sub>x</sub>	6	-2144517.01	-0.00	-28588.53
	Min. M <sub>z</sub>	7	6824.82	-0.00	-28588.50
	Min. Torsion	2	-15837.66	-0.00	28588.53

### Tower Mast Reaction Summary

Load Combination	Vertical lb	Shear <sub>x</sub> lb	Shear <sub>z</sub> lb	Overturning Moment, M <sub>x</sub> lb-ft	Overturning Moment, M <sub>z</sub> lb-ft	Torque lb-ft
Dead Only	30300.42	-0.86	-0.34	4671.10	-7714.46	-1.53
1.2 Dead+1.0 Wind 0 deg - No Ice	36360.50	0.00	-28588.53	-2133167.66	-9308.93	15837.66
0.9 Dead+1.0 Wind 0 deg - No Ice	27270.37	0.00	-28588.50	-2113946.52	-6826.26	15670.45
1.2 Dead+1.0 Wind 90 deg - No Ice	36360.49	25958.17	0.01	5562.93	-1927633.64	14693.84
0.9 Dead+1.0 Wind 90 deg - No Ice	27270.37	25958.21	0.00	4108.26	-1906634.12	14670.12
1.2 Dead+1.0 Wind 180 deg - No Ice	36360.50	0.00	28588.53	2144517.01	-9306.25	-15837.11
0.9 Dead+1.0 Wind 180 deg - No Ice	27270.37	0.00	28588.50	2122324.74	-6824.82	-15669.32
1.2 Dead+1.0 Ice+1.0 Temp	53259.59	-0.80	-0.40	13252.09	-20650.27	-9.67
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	53259.59	-0.05	-7055.63	-516968.80	-20730.15	3861.08
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	53259.59	6639.05	-0.02	13288.93	-515942.98	3141.95
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	53259.59	-0.02	7055.88	543598.64	-20730.07	-3879.71
Dead+Wind 0 deg - Service	30300.41	-0.02	-5904.56	-435021.48	-7802.34	3286.78
Dead+Wind 90 deg - Service	30300.41	5362.34	-0.00	4707.83	-402189.44	3054.98
Dead+Wind 180 deg - Service	30300.41	-0.01	5904.82	444469.96	-7802.97	-3289.71

### Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
1	0.00	-30300.42	0.00	0.86	30300.42	0.34	0.003%
2	0.00	-36360.50	-28588.57	-0.00	36360.50	28588.53	0.000%
3	0.00	-27270.37	-28588.57	-0.00	27270.37	28588.50	0.000%
4	25958.27	-36360.50	0.00	-25958.17	36360.49	-0.01	0.000%
5	25958.27	-27270.37	0.00	-25958.21	27270.37	-0.00	0.000%
6	0.00	-36360.50	28588.57	-0.00	36360.50	-28588.53	0.000%
7	0.00	-27270.37	28588.57	-0.00	27270.37	-28588.50	0.000%
8	0.00	-53259.60	0.00	0.80	53259.59	0.40	0.002%
9	0.00	-53259.60	-7056.07	0.05	53259.59	7055.63	0.001%
10	6639.53	-53259.60	0.00	-6639.05	53259.59	0.02	0.001%
11	0.00	-53259.60	7056.07	0.02	53259.59	-7055.88	0.000%
12	0.00	-30300.42	-5904.97	0.02	30300.41	5904.56	0.001%
13	5362.74	-30300.42	0.00	-5362.34	30300.41	0.00	0.001%
14	0.00	-30300.42	5904.97	0.01	30300.41	-5904.82	0.001%

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### Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	9	0.00000001	0.00005080
2	Yes	17	0.00000001	0.00005537
3	Yes	16	0.00000001	0.00010864
4	Yes	16	0.00000001	0.00011714
5	Yes	16	0.00000001	0.00008603
6	Yes	17	0.00000001	0.00005585
7	Yes	16	0.00000001	0.00010935
8	Yes	11	0.00000001	0.00009177
9	Yes	14	0.00000001	0.00014224
10	Yes	14	0.00000001	0.00012401
11	Yes	15	0.00000001	0.00006777
12	Yes	13	0.00000001	0.00014371
13	Yes	13	0.00000001	0.00011277
14	Yes	14	0.00000001	0.00006205

### Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	102.92 - 90	14.911	14	1.3633	0.0637
L2	90 - 64	11.233	14	1.3524	0.0637
L3	64 - 45.08	5.012	14	0.8222	0.0170
L4	48.92 - 0	2.811	14	0.5742	0.0088

### Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
101.00	(3) 5' T-Arm Mount	14	14.358	1.3689	0.0646	16009
90.00	B14 4478 RRH	14	11.233	1.3524	0.0638	6248
82.00	14' Platform	14	9.076	1.2357	0.0523	4026
72.00	10' Quad-Cornered Telescoping Platform w/ Walkway and Handrail	14	6.646	1.0076	0.0312	2718
42.00	Omni 3"X20'	14	2.100	0.4819	0.0076	4015
36.00	(2) Omni 3"x10'	14	1.600	0.4060	0.0066	4684
34.00	(3) Omni 3"x10'	14	1.455	0.3815	0.0062	4959
30.00	GPS	14	1.192	0.3334	0.0055	5620
28.00	5' T-Arm Mount	14	1.074	0.3098	0.0052	6022

### Maximum Tower Deflections - Design Wind

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	102.92 - 90	71.179	6	6.4551	0.3076
L2	90 - 64	53.789	6	6.4012	0.3075
L3	64 - 45.08	24.141	6	3.9570	0.0818
L4	48.92 - 0	13.543	6	2.7673	0.0424

### Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
101.00	(3) 5' T-Arm Mount	6	68.566	6.4798	0.3113	4552
90.00	B14 4478 RRH	6	53.789	6.4012	0.3075	1714
82.00	14' Platform	6	43.548	5.8670	0.2522	937
72.00	10' Quad-Cornered Telescoping Platform w/ Walkway and Handrail	6	31.962	4.8192	0.1502	589
42.00	Omni 3"X20'	6	10.113	2.3193	0.0368	833
36.00	(2) Omni 3"x10'	6	7.703	1.9520	0.0318	971
34.00	(3) Omni 3"x10'	6	7.002	1.8333	0.0301	1028
30.00	GPS	6	5.738	1.6012	0.0267	1164
28.00	5' T-Arm Mount	6	5.169	1.4875	0.0251	1247

### Compression Checks

### Pole Design Data

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> lb	φP <sub>n</sub> lb	Ratio $\frac{P_u}{\phi P_n}$
L1	102.92 - 90 (1)	TP13x13x0.25	12.92	102.92	273.9	10.0138	-1723.35	30149.20	0.057
L2	90 - 64 (2)	TP20.8125x13x0.265	26.00	102.92	169.3	17.2827	-17455.90	136196.00	0.128
L3	64 - 45.08 (3)	TP26.7925x20.8125x0.488	18.92	102.92	138.7	38.8634	-20580.70	456672.00	0.045
L4	45.08 - 0 (4)	TP40x24.6028x0.55	48.92	102.92	137.7	44.0988	-22106.90	525263.00	0.042

### Pole Bending Design Data

Section No.	Elevation ft	Size	M <sub>ux</sub> lb-ft	φM <sub>ux</sub> lb-ft	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	M <sub>uy</sub> lb-ft	φM <sub>uy</sub> lb-ft	Ratio $\frac{M_{uy}}{\phi M_{uy}}$
L1	102.92 - 90 (1)	TP13x13x0.25	7700.88	106695.00	0.072	0.00	106695.00	0.000
L2	90 - 64 (2)	TP20.8125x13x0.265	458475.00	539830.83	0.849	0.00	539830.83	0.000
L3	64 - 45.08 (3)	TP26.7925x20.8125x0.488	824956.67	1472791.67	0.560	0.00	1472791.67	0.000
L4	45.08 - 0 (4)	TP40x24.6028x0.55	920366.67	1678733.33	0.548	0.00	1678733.33	0.000



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### Pole Shear Design Data

Section No.	Elevation ft	Size	Actual $V_u$ lb	$\phi V_n$ lb	Ratio $\frac{V_u}{\phi V_n}$	Actual $T_u$ lb-ft	$\phi T_n$ lb-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	102.92 - 90 (1)	TP13x13x0.25	904.50	94630.70	0.010	0.08	106077.50	0.000
L2	90 - 64 (2)	TP20.8125x13x0.265	23963.60	303312.00	0.079	16161.75	545793.33	0.030
L3	64 - 45.08 (3)	TP26.7925x20.8125x0.488	24709.60	682053.00	0.036	16127.42	1498691.67	0.011
L4	45.08 - 0 (4)	TP40x24.6028x0.55	25155.30	796814.00	0.032	16120.67	1712150.00	0.009

### Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	102.92 - 90 (1)	0.057	0.072	0.000	0.010	0.000	0.129	1.000	4.8.2 ✓
L2	90 - 64 (2)	0.128	0.849	0.000	0.079	0.030	0.989	1.000	4.8.2 ✓
L3	64 - 45.08 (3)	0.045	0.560	0.000	0.036	0.011	0.607	1.000	4.8.2 ✓
L4	45.08 - 0 (4)	0.042	0.548	0.000	0.032	0.009	0.592	1.000	4.8.2 ✓

### Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$\phi P_{allow}$ lb	% Capacity	Pass Fail
L1	102.92 - 90	Pole	TP13x13x0.25	1	-1723.35	30149.20	12.9	Pass
L2	90 - 64	Pole	TP20.8125x13x0.265	2	-17455.90	136196.00	98.9	Pass
L3	64 - 45.08	Pole	TP26.7925x20.8125x0.488	3	-20580.70	456672.00	60.7	Pass
L4	45.08 - 0	Pole	TP40x24.6028x0.55	4	-22106.90	525263.00	59.2	Pass
Summary								
Pole (L2)							98.9	Pass
<b>RATING =</b>							<b>98.9</b>	<b>Pass</b>

## Stiffened or Unstiffened, UngROUTed, Circular Base Plate - Any Rod Material

Assumption: Clear space between bottom of leveling nut and top of concrete **not** exceeding (1)\*(Rod Diameter)

### Site Data

BU#:	0
Site Name:	CT2112 - STRATFORD
App #:	0
Pole Manufacturer:	Other

### Anchor Rod Data

Qty:	10	
Diam:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	48	in

### Plate Data

Diam:	53.5	in
Thick:	1.75	in
Grade:	60	ksi
Single-Rod B-eff:	12.70	in

### Stiffener Data (Welding at both sides)

Config:	3	*
Weld Type:	Both	
Groove Depth:	0.5	in **
Groove Angle:	45	degrees
Fillet H. Weld:	0.3125	in
Fillet V. Weld:	0.3125	in
Width:	6.875	in
Height:	14	in
Thick:	0.75	in
Notch:	1	in
Grade:	50	ksi
Weld str.:	70	ksi
Clear Space between	6	in

### Pole Data

Diam:	40	in
Thick:	0.55	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None

### Reactions

Mu:	2145	ft-kips
Axial, Pu:	36	kips
Shear, Vu:	29	kips
Eta Factor, η	0.5	TIA G (Fig. 4-4)

If No stiffeners, Criteria: **AISC LRFD** <-Only Applicable to Unstiffened Cases

### Anchor Rod Results

Max Rod (Cu+ Vu/η): 223.8 Kips  
 Allowable Axial,  $\Phi * F_u * A_{net}$ : 260.0 Kips  
 Anchor Rod Stress Ratio: 86.1% **Pass**

Stiffened
AISC LRFD
$\phi * T_n$

### Base Plate Results

Base Plate Stress:  
 Allowable Plate Stress:  
 Base Plate Stress Ratio:

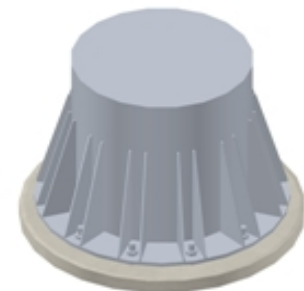
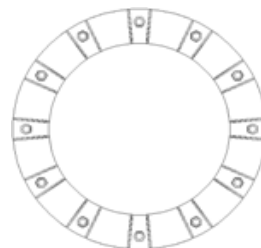
Stiffened
AISC LRFD
$\phi * F_y$
Y.L. Length: N/A, Roark

### Stiffener Results

Horizontal Weld : 56.0% **Pass**  
 Vertical Weld: 49.1% **Pass**  
 Plate Flex+Shear,  $f_b/F_b + (f_v/F_v)^2$ : 19.5% **Pass**  
 Plate Tension+Shear,  $f_t/F_t + (f_v/F_v)^2$ : 42.4% **Pass**  
 Plate Comp. (AISC Bracket): 51.7% **Pass**

### Pole Results

Pole Punching Shear Check: 10.8% **Pass**



\* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

\*\* Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

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## Foundation

**Foundation name:** Tower Foundation  
**Foundation type:** Caisson

## Geometry and Materials

**Caisson:**

Diameter D 6.00 ft  
Caisson length L 16.00 ft  
Base area 28.27 ft<sup>2</sup>

**Levels:**

Pier above ground h 1.00 ft  
Foundation level hf 15.00 ft  
Frost depth fd 3.50 ft  
Ground water level hw -

**Concrete:**

Strength f'c 4.0 ksi  
Unit weight 0.15 kcf

**Parameters:**

Caisson unit skin friction and unit end bearing stress are defined No  
End bearing capacity factors Nc and Nq are defined No

**Soils:**

#	Name	$\Phi$	Cu	Kp	$\gamma$ .dry	$\gamma$ .sat	fs	qb	Top level
1	Clay Custom 1	0.00	1.00 ksf	1	100.0 pcf	100.0 pcf	0.0 ksf	0.0 ksf	0.00 ft
2	Clay Custom 2	0.00	14.40 ksf	1	110.0 pcf	170.0 pcf	0.0 ksf	0.0 ksf	9.00 ft

- $\Phi$  - internal friction angle
- Cu - soil cohesion
- Kp - coefficient of passive pressure
- $\gamma$ .dry - dry soil density
- $\gamma$ .sat - saturated soil density
- fs - external skin friction (unit value)
- qb - end bearing stress (unit value)

**Soils:**

#	Name	$\epsilon$	Kt	$\Xi$	Nc	Nq
1	Clay Custom 1	0.00	1.00	0.50	9.00	1.00
2	Clay Custom 2	0.00	1.00	0.50	9.00	1.00

- $\delta$  - friction angle between soil and the pile

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- Kt - coefficient for lateral earth pressure  
 $\alpha$  - adhesion factor  
Nc - pile Bearing capacity factor Nc  
Nq - pile Bearing capacity factor Nq

**Loads:**

#	Name	Description	P	Vx	Vz	Mz	Mx
1	Dead Only	TIA-222-H load combination	30.3 kip	0.0 kip	0.0 kip	7.7 kip-ft	-4.7 kip-ft
2	1.2 Dead+1.0 Wind 0 deg - No Ice	TIA-222-H load combination	36.4 kip	0.0 kip	28.6 kip	9.3 kip-ft	2133.2 kip-ft
3	0.9 Dead+1.0 Wind 0 deg - No Ice	TIA-222-H load combination	27.3 kip	0.0 kip	28.6 kip	6.8 kip-ft	2113.9 kip-ft
4	1.2 Dead+1.0 Wind 90 deg - No Ice	TIA-222-H load combination	36.4 kip	-26.0 kip	0.0 kip	1927.6 kip-ft	-5.6 kip-ft
5	0.9 Dead+1.0 Wind 90 deg - No Ice	TIA-222-H load combination	27.3 kip	-26.0 kip	0.0 kip	1906.6 kip-ft	-4.1 kip-ft
6	1.2 Dead+1.0 Wind 180 deg - No Ice	TIA-222-H load combination	36.4 kip	0.0 kip	-28.6 kip	9.3 kip-ft	-2144.5 kip-ft
7	0.9 Dead+1.0 Wind 180 deg - No Ice	TIA-222-H load combination	27.3 kip	0.0 kip	-28.6 kip	6.8 kip-ft	-2122.3 kip-ft
8	1.2 Dead+1.0 Ice+1.0 Temp	TIA-222-H load combination	53.3 kip	0.0 kip	0.0 kip	20.7 kip-ft	-13.3 kip-ft
9	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	TIA-222-H load combination	53.3 kip	0.0 kip	7.1 kip	20.7 kip-ft	517.0 kip-ft
10	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	TIA-222-H load combination	53.3 kip	-6.6 kip	0.0 kip	515.9 kip-ft	-13.3 kip-ft
11	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	TIA-222-H load combination	53.3 kip	0.0 kip	-7.1 kip	20.7 kip-ft	-543.6 kip-ft
12	Dead+Wind 0 deg - Service	TIA-222-H load combination	30.3 kip	0.0 kip	5.9 kip	7.8 kip-ft	435.0 kip-ft
13	Dead+Wind 90 deg - Service	TIA-222-H load combination	30.3 kip	-5.4 kip	0.0 kip	402.2 kip-ft	-4.7 kip-ft
14	Dead+Wind 180 deg - Service	TIA-222-H load combination	30.3 kip	0.0 kip	-5.9 kip	7.8 kip-ft	-444.5 kip-ft

**Uplift capacity**

**Resistance factors**

Resistance factor for shaft resistance of caisson - Uplift	0.35
Load factor for foundation weight	0.750
Load factor for soil weight	0.750

**Details for maximum uplift force:**

Number of critical combination	1
Maximum uplift force from critical combination	0.00 kip
Shaft resistance of caisson due to skin friction	866.14 kip
Weight of caisson	69.58 kip
Weight of soil (for belled caissons)	0.00 kip
Allowable uplift resistance	355.33 kip

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Ratio = Maximum uplift force / Uplift resistance 0

### Bearing capacity

**Resistance factors**

Resistance factor for shaft resistance of caisson - Bearing 0.45  
 Resistance factor for base resistance of caisson - Bearing 0.4

**Details for maximum compression force:**

Number of critical combination 8  
 Maximum compression force from critical combination 53.26 kip  
 Shaft resistance of caisson due to skin friction 187.55 kip  
 Base resistance 2320.76 kip  
 Allowable bearing resistance 1012.70 kip  
 Ratio = Maximum compression / Compression resistance 0.053

### Maximum moment along Caisson (P-Y)

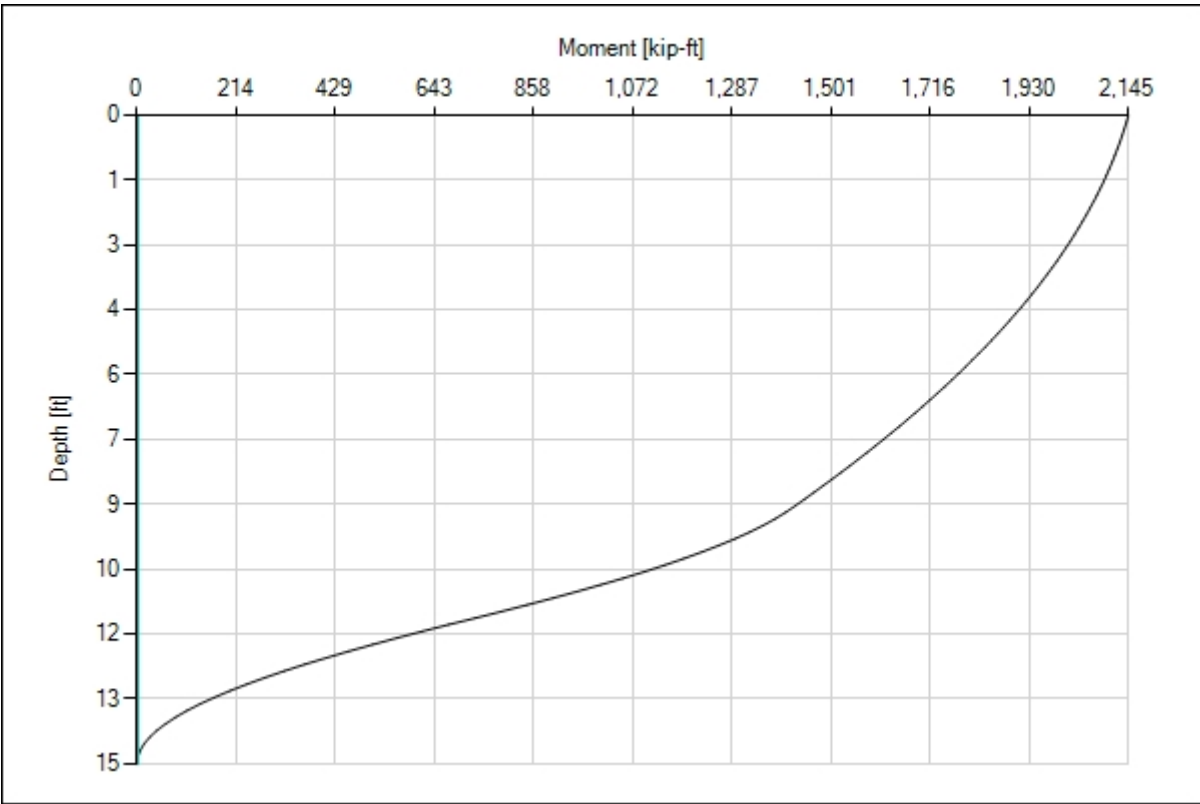
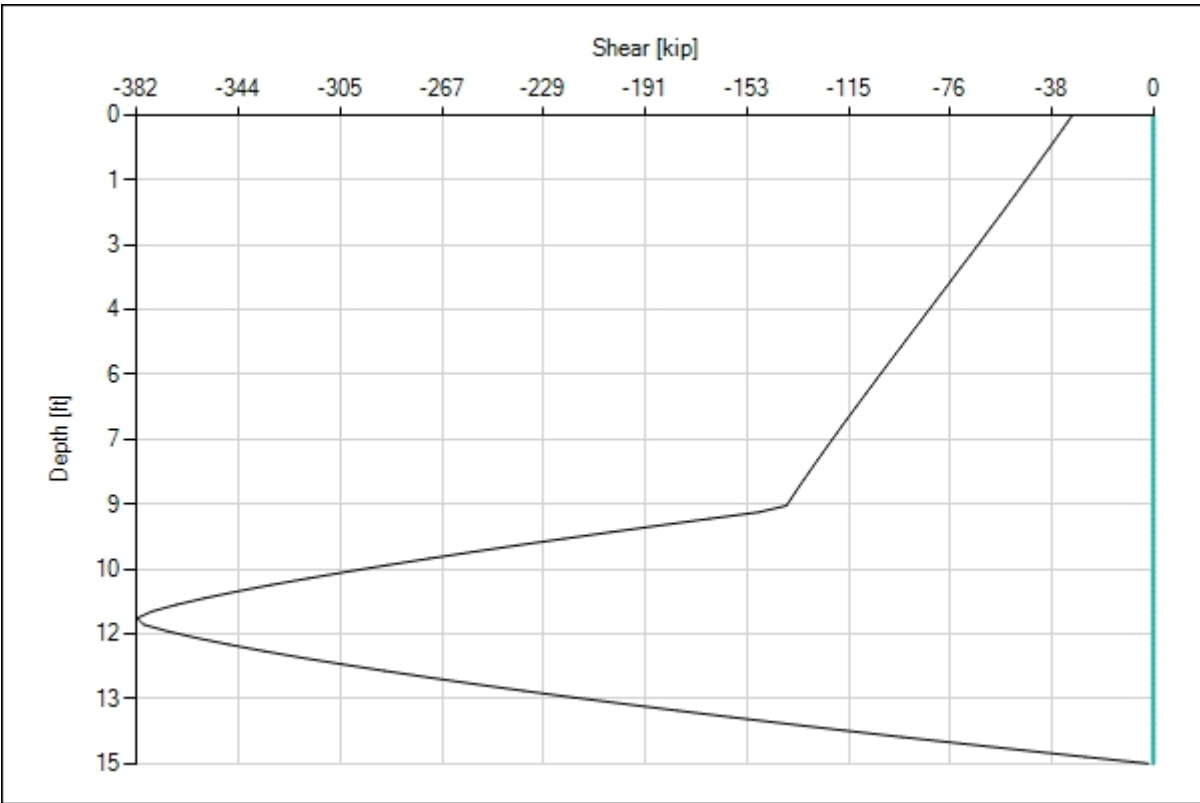
**Results for the critical load:**

Number of critical combination 6  
 Max moment in caisson Mmax 2144.54 kip-ft

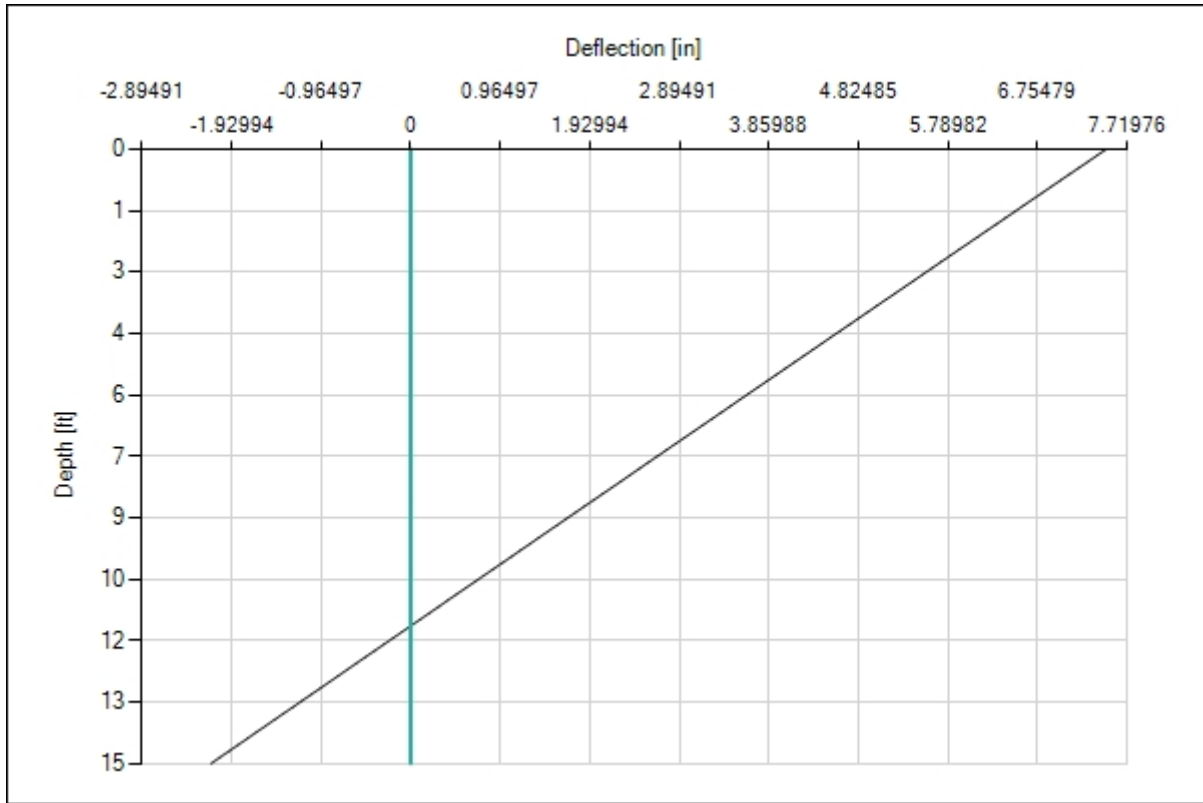
**Shear and Moments along Caisson:**

Level	Shear	Moment	Deflection
0.0 ft	-30.57 kip	2144.54 kip-ft	7.497 in
1.7 ft	-50.19 kip	2083.97 kip-ft	6.407 in
3.3 ft	-70.51 kip	1990.06 kip-ft	5.319 in
5.0 ft	-91.17 kip	1861.92 kip-ft	4.233 in
6.7 ft	-111.65 kip	1699.41 kip-ft	3.149 in
8.3 ft	-131.25 kip	1503.36 kip-ft	2.067 in
10.0 ft	-255.67 kip	1222.55 kip-ft	0.986 in
11.7 ft	-379.37 kip	674.22 kip-ft	-0.093 in
13.3 ft	-217.98 kip	167.11 kip-ft	-1.172 in
14.8 ft	-1.96 kip	0.00 kip-ft	-2.153 in

<b><i>tnxFoundation</i></b>	Job:	CT2112	Date:
	Client:	AT&T;	4/28/2022 8:44:18 AM



<b><i>tnxFoundation</i></b>	Job:	CT2112	Date:
	Client:	AT&T;	4/28/2022 8:44:18 AM



### Caisson Flexure

**Data:**

Resistance factor for tension		0.9
Concrete cover		3.50 in
Steel strength of vertical bars	fy	60.00 ksi
Number of vertical bars		14
Diameter of vertical bars		1.41 in
Area of one bar		1.56 in <sup>2</sup>

**Reinforcement ratio:**

Reinforcement area		21.86 in <sup>2</sup>
Reinforcement ratio		0.005
Min reinforcement ratio		0.002
Verification: Reinforcement ratio > Min reinforcement ratio		OK

**Results for the critical load:**

Max moment in caisson	Mu	2144.54 kip-ft
Vertical load	Pu	36.36 kip
Caisson moment capacity	Mn	3112.59 kip-ft
Ratio = Mu / Mn		0.689



# EXHIBIT 4

December 10, 2021  
**February 10, 2022 (Rev.1)**



Centerline Communications  
750 West Center Street, Suite #301  
West Bridgewater, MA 02379

RE:      Site Number:                    CT2112  
            FA Number:                     10071312  
            PACE Number:                    MRCTB050878  
            PT Number:                      2051A0Z7X2  
            Site Name:                        STRATFORD  
            Site Address:                    623 Honeyspot Road  
   Stratford, CT 06615

To Whom It May Concern:

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

- (3) B14 4478 RRH's (18.1"x13.4"x8.3" – Wt. = 60 lbs. /each)
- (3) 4426 B66 RRH's (14.9"x13.2"x5.8" – Wt. = 49 lbs. /each)
- (3) RRUS-E2 B29 RRH's (20.4"x18.5"x7.5" – Wt. = 53 lbs. /each)
- (3) RRUS-32 B30 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (2) DC6-48-60-18 Surge Arrestors (24.0"x9.7"Ø – Wt. = 33 lbs.)
- **(3) QD6616-7 Antennas (72.0"x22.0"x9.6" – Wt. = 130 lbs. /each)**
- **(3) AIR6449 Antennas (30.4"x15.9"x8.1" – Wt. = 82 lbs. /each)**
- **(3) AIR6419 Antennas (28.0"x15.7"x6.7" – Wt. = 66 lbs. /each)**
- **(3) DMP65R-BU6DA Antennas (71.2"x20.7"x7.7" – Wt. = 80 lbs. /each)**
- **(3) 4415 B25 RRH's (16.5"x13.4"x5.9" – Wt. = 46 lbs. /each)**
- **(3) B5/B12 4449 RRH's (17.9"x13.2"x9.4" – Wt. = 73 lbs. /each)**
- **(1) DC9-48-60-24-8C-EV Surge Arrestor (24.0"x9.7"Ø – Wt. = 33 lbs.)**

*\*Proposed equipment shown in bold.*

Mount fabrication drawings prepared by SitePro1 P/N VFA14-H10-2120, dated December 7, 2020, P/N LWRM, dated August 24, 2012, and P/N MM01, dated May 10, 2010, were used to perform this analysis.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-H, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2015 with 2018 Connecticut State Building Code, and AT&T Mount Technical Directive – R16.
- HDG considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-H and Appendix N of the Connecticut State Building Code, the max basic wind speed for this site is equal to 125 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 1.11 in was used for this analysis.
- HDG considers this site to be exposure category C; tower is located near large, flat, open, terrain/grasslands.
- HDG considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- HDG considers this site to have a spectral response acceleration parameter at short periods,  $S_s$ , of 0.201 and a spectral response acceleration parameter at a period of 1 second,  $S_1$ , of 0.064.
- The mount has been analyzed with load combinations consisting of 500 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 4.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.
- The proposed mounts are secured to the existing monopole with ring mounts and threaded rods. HDG considers the threaded rods to be the governing connection member.

Based on our evaluation, we have determined that the (3) Proposed SitePro1 VFA14-H10-2120 mounts, (2) Proposed SitePro1 LWRM ring mounts, (6) Proposed SitePro1 MM01 standoffs **ARE CAPABLE** of supporting the proposed installation.

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Proposed Mount Rating	142	LC30	97%	PASS

Reference Documents:

- Fabrication drawings prepared by SitePro1 P/N VFA14-H10-2120, dated December 7, 2020.
- Fabrication drawings prepared by SitePro1 P/N LWRM, dated August 24, 2012.
- Fabrication drawings prepared by SitePro1 P/N MM01, dated May 10, 2010.

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 proposed mounts have 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:**

*\*Existing mount to be removed and replaced.*









**HUDSON**  
Design Group LLC

## Wind & Ice Calculations



Date: 2/9/2022  
 Project Name: STRATFORD  
 Project No.: CT2112  
 Designed By: KM Checked By: MSC



**2.6.5.2 Velocity Pressure Coeff:**

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

$K_z =$  **1.238**

$z =$  90 (ft)  
 $z_g =$  900 (ft)  
 $\alpha =$  9.5

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

**Table 2-4**

Exposure	Z <sub>g</sub>	α	K <sub>zmin</sub>	K <sub>c</sub>
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 <sub>t</sub>	f
2	0.43	1.25
3	0.53	2.0
4	0.72	1.5

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

$K_h = e^{(f * z / H)}$

$K_{zt} =$  **1**

*(If Category 1 then K<sub>zt</sub>=1.0)*

Category = **1**

$K_h =$  1  
 $K_c =$  1 (from Table 2-4)  
 $K_t =$  0 (from Table 2-5)  
 $f =$  0 (from Table 2-5)  
 $z =$  90  
 $z_s =$  4 (Mean elevation of base of structure above sea level)  
 $H =$  0 (Ht. of the crest above surrounding terrain)  
 $K_{zt} =$  1.00 (from 2.6.6.2.1)  
 $K_e =$  1.00 (from 2.6.8)

**2.6.10 Design Ice Thickness**

Max Ice Thickness =  
 Importance Factor =

$t_i =$  1.00 in  
 $I =$  1.0 (from Table 2-3)  
 $K_{iz} =$  1.11 (from Sec. 2.6.10)

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

$t_{iz} =$  1.11 in

Date: 2/9/2022  
 Project Name: STRATFORD  
 Project No.: CT2112  
 Designed By: KM Checked By: MSC



**2.6.9 Gust Effect Factor**

2.6.9.1 Self Supporting Lattice Structures

G<sub>h</sub> = 1.0 Latticed Structures > 600 ft

G<sub>h</sub> = 0.85 Latticed Structures 450 ft or less

G<sub>h</sub> = 0.85 + 0.15 [h/150 - 3.0]

h= ht. of structure

h= 102

G<sub>h</sub>= 0.85

2.6.9.2 Guyed Masts

G<sub>h</sub>= 0.85

2.6.9.3 Pole Structures

G<sub>h</sub>= 1.1

2.6.9 Appurtenances

G<sub>h</sub>= 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<sub>h</sub>= 1.35

G<sub>h</sub>= 1.00

**2.6.11.2 Design Wind Force on Appurtenances**

**F= q<sub>z</sub>\*G<sub>h</sub>\*(EPA)<sub>A</sub>**

q<sub>z</sub>= 0.00256\*K<sub>z</sub>\*K<sub>zt</sub>\*K<sub>s</sub>\*K<sub>e</sub>\*K<sub>d</sub>\*V<sub>max</sub><sup>2</sup>

K<sub>z</sub>= 1.238 (from 2.6.5.2)

K<sub>zt</sub>= 1.0 (from 2.6.6.2.1)

K<sub>s</sub>= 1.0 (from 2.6.7)

K<sub>e</sub>= 1.00 (from 2.6.8)

K<sub>d</sub>= 0.95 (from Table 2-2)

V<sub>max</sub>= 125 mph (Ultimate Wind Speed)

V<sub>max (ice)</sub>= 50 mph

V<sub>30</sub>= 30 mph

q <sub>z</sub> =	47.03
q <sub>z (ice)</sub> =	7.53
q <sub>z (30)</sub> =	2.71

**Table 2-2**

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

Date: 2/9/2022  
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Determine  $C_a$ :

Table 2-9

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

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

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

Ice Thickness = 1.11 in      Angle = 0 (deg)      Equivalent Angle = 180 (deg)

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	$C_a$	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
QD6616-7 Antenna	72.0	22.0	9.6	11.00	3.27	1.23	639	116	37
AIR6449 Antenna	30.4	15.9	8.1	3.36	1.91	1.20	189	37	11
AIR6419 Antenna	28.0	15.7	6.7	3.05	1.78	1.20	172	34	10
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.44	1.24	598	109	34
B14 4478 RRH	18.1	13.4	8.3	1.68	1.35	1.20	95	20	5
B14 4478 RRH (Side)	18.1	8.3	13.4	1.04	0.00	1.20	59	13	3
4426 B66 RRH	14.9	13.2	5.8	1.37	1.13	1.20	77	17	4
4426 B66 RRH (Side)	14.9	5.8	13.2	0.60	0.00	1.20	34	9	2
4415 B25 RRH	16.5	13.5	6.3	1.55	1.22	1.20	87	18	5
4415 B25 RRH (Side)	16.5	6.3	13.5	0.72	0.00	1.20	41	10	2
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.36	1.20	93	19	5
B5/B12 4449 RRH (Side)	17.9	9.4	13.2	1.17	0.00	1.20	66	15	4
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	2.25	1.20	129	26	7
RRUS-32 B30 RRH (Shielded)	27.2	0.0	12.1	0.00	0.00	1.20	0	4	0
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	53	11	3
PL 11-1/4x5/8	0.6	12.0	-	0.05	0.05	1.25	3		
PL 3-1/2x5/8	0.6	12.0	-	0.05	0.05	1.25	3		
HSS 4x4	4.0	12.0	-	0.33	0.33	1.25	20		
3" Pipe	3.5	12.0	-	0.29	0.29	1.20	16		
2-1/2" Pipe	2.9	12.0	-	0.24	0.24	1.20	14		
2" Pipe	2.4	12.0	-	0.20	0.20	1.20	11		
3/4" Round Bar	0.8	12.0	-	0.06	0.06	1.20	4		
5/8" Round Bar	0.6	12.0	-	0.05	0.05	1.20	3		

Date: 2/9/2022  
 Project Name: STRATFORD  
 Project No.: CT2112  
 Designed By: KM Checked By: MSC



WIND LOADS

Angle = 30 (deg)

Ice Thickness = 1.11 in.

Equivalent Angle = 210 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio (normal)	Aspect Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	639	320	559
AIR6449 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	189	101	167
AIR6419 Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	172	78	149
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	598	264	514
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	95	59	86
B14 4478 RRH (Side)	18.1	6.7	13.4	0.84	1.68	2.70	1.35	1.21	1.20	48	95	60
4426 866 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	77	34	66
4426 866 RRH (Side)	14.9	6.6	13.2	0.68	1.37	2.26	1.13	1.20	1.20	39	77	48
4415 825 RRH	16.5	13.5	6.3	1.55	0.72	1.22	2.62	1.20	1.21	87	41	76
4415 825 RRH (Side)	16.5	6.3	13.5	0.72	1.55	2.62	1.22	1.21	1.20	41	87	53
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	93	66	86
B5/B12 4449 RRH (Side)	17.9	9.4	13.2	1.17	1.64	0.00	1.36	1.20	1.20	66	93	73
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	129	78	116
RRUS-32 B30 RRH (Shielded)	27.2	0.0	12.1	0.00	2.29	0.00	2.25	1.20	1.20	0	129	32

WIND LOADS WITH ICE:

QD6616-7 Antenna	74.2	24.2	11.8	12.48	6.09	3.07	6.28	1.23	1.37	115	63	102
AIR6449 Antenna	32.6	18.1	10.3	4.10	2.34	1.80	3.16	1.20	1.23	37	22	33
AIR6419 Antenna	30.2	17.9	8.9	3.76	1.87	1.69	3.39	1.20	1.24	34	17	30
DMP65R-BU6DA Antenna	73.4	22.9	9.9	11.68	5.05	3.20	7.41	1.23	1.41	108	54	95
B14 4478 RRH	20.3	15.6	10.5	2.20	1.48	1.30	1.93	1.20	1.20	20	13	18
B14 4478 RRH (Side)	20.3	7.8	15.6	1.10	2.20	2.60	1.30	1.20	1.20	10	20	12
4426 866 RRH	17.1	15.4	8.0	1.83	0.95	1.11	2.14	1.20	1.20	17	9	15
4426 866 RRH (Side)	17.1	7.7	15.4	0.92	1.83	2.22	1.11	1.20	1.20	8	17	10
4415 825 RRH	18.7	15.7	8.5	2.04	1.11	1.19	2.20	1.20	1.20	18	10	16
4415 825 RRH (Side)	18.7	8.5	15.7	1.11	2.04	2.20	1.19	1.20	1.20	10	18	12
B5/B12 4449 RRH	20.1	15.4	11.6	2.15	1.62	1.30	1.73	1.20	1.20	19	15	18
B5/B12 4449 RRH (Side)	20.1	11.6	15.4	1.62	2.15	1.73	1.30	1.20	1.20	15	19	16
RRUS-32 B30 RRH	29.4	14.3	9.2	2.92	1.88	2.06	3.19	1.20	1.23	26	17	24
RRUS-32 B30 RRH (Shielded)	29.4	2.2	14.3	0.45	2.92	13.30	2.06	1.61	1.20	5	26	11

WIND LOADS AT 30 MPH:

QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	37	18	32
AIR6449 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	11	6	10
AIR6419 Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	10	4	9
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	34	15	30
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	5	3	5
B14 4478 RRH (Side)	18.1	6.7	13.4	0.84	1.68	2.70	1.35	1.21	1.20	3	5	3
4426 866 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	4	2	4
4426 866 RRH (Side)	14.9	6.6	13.2	0.68	1.37	2.26	1.13	1.20	1.20	2	4	3
4415 825 RRH	16.5	13.5	6.3	1.55	0.72	1.22	2.62	1.20	1.21	5	2	4
4415 825 RRH (Side)	16.5	6.8	13.5	0.77	1.55	2.44	1.22	1.20	1.20	3	5	3
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	5	4	5
B5/B12 4449 RRH (Side)	17.9	6.6	13.2	0.82	1.64	2.71	1.36	1.21	1.20	3	5	3
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	7	5	7
RRUS-32 B30 RRH (Shielded)	27.2	6.1	12.1	1.14	2.29	4.50	2.25	1.29	1.20	4	7	5

Date: 2/9/2022  
 Project Name: STRATFORD  
 Project No.: CT2112  
 Designed By: KM Checked By: MSC



WIND LOADS

Angle = 60 (deg)

Ice Thickness = 1.11 in.

Equivalent Angle = 240 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio (normal)	Aspect Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	639	320	400
AIR6449 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	189	101	123
AIR6419 Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	172	78	102
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	598	264	348
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	95	59	68
B14 4478 RRH (Side)	18.1	10.1	13.4	1.26	1.68	1.80	1.35	1.20	1.20	71	95	89
4426 866 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	77	34	45
4426 866 RRH (Side)	14.9	9.9	13.2	1.02	1.37	1.51	1.13	1.20	1.20	58	77	72
4415 825 RRH	16.5	13.5	6.3	1.55	0.72	1.22	2.62	1.20	1.21	87	41	53
4415 825 RRH (Side)	16.5	6.3	13.5	0.72	1.55	2.62	1.22	1.21	1.20	41	87	76
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	93	66	73
B5/B12 4449 RRH (Side)	17.9	9.4	13.2	1.17	1.64	0.00	1.36	1.20	1.20	66	93	86
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	129	78	91
RRUS-32 B30 RRH (Shielded)	27.2	0.0	12.1	0.00	2.29	0.00	2.25	1.20	1.20	0	129	97

WIND LOADS WITH ICE:

QD6616-7 Antenna	74.2	24.2	11.8	12.48	6.09	3.07	6.28	1.23	1.37	115	63	76
AIR6449 Antenna	32.6	18.1	10.3	4.10	2.34	1.80	3.16	1.20	1.23	37	22	25
AIR6419 Antenna	30.2	17.9	8.9	3.76	1.87	1.69	3.39	1.20	1.24	34	17	22
DMP65R-BU6DA Antenna	73.4	22.9	9.9	11.68	5.05	3.20	7.41	1.23	1.41	108	54	67
B14 4478 RRH	20.3	15.6	10.5	2.20	1.48	1.30	1.93	1.20	1.20	20	13	15
B14 4478 RRH (Side)	20.3	11.7	15.6	1.65	2.20	1.73	1.30	1.20	1.20	15	20	19
4426 866 RRH	17.1	15.4	8.0	1.83	0.95	1.11	2.14	1.20	1.20	17	9	11
4426 866 RRH (Side)	17.1	11.6	15.4	1.37	1.83	1.48	1.11	1.20	1.20	12	17	16
4415 825 RRH	18.7	15.7	8.5	2.04	1.11	1.19	2.20	1.20	1.20	18	10	12
4415 825 RRH (Side)	18.7	8.5	15.7	1.11	2.04	2.20	1.19	1.20	1.20	10	18	16
B5/B12 4449 RRH	20.1	15.4	11.6	2.15	1.62	1.30	1.73	1.20	1.20	19	15	16
B5/B12 4449 RRH (Side)	20.1	11.6	15.4	1.62	2.15	1.73	1.30	1.20	1.20	15	19	18
RRUS-32 B30 RRH	29.4	14.3	9.2	2.92	1.88	2.06	3.19	1.20	1.23	26	17	20
RRUS-32 B30 RRH (Shielded)	29.4	2.2	14.3	0.45	2.92	13.30	2.06	1.61	1.20	5	26	21

WIND LOADS AT 30 MPH:

QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	37	18	23
AIR6449 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	11	6	7
AIR6419 Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	10	4	6
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	34	15	20
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	5	3	4
B14 4478 RRH (Side)	18.1	10.1	13.4	1.26	1.68	1.80	1.35	1.20	1.20	4	5	5
4426 866 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	4	2	3
4426 866 RRH (Side)	14.9	9.9	13.2	1.02	1.37	1.51	1.13	1.20	1.20	3	4	4
4415 825 RRH	16.5	13.5	6.3	1.55	0.72	1.22	2.62	1.20	1.21	5	2	3
4415 825 RRH (Side)	16.5	10.1	13.5	1.16	1.55	1.63	1.22	1.20	1.20	4	5	5
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	5	4	4
B5/B12 4449 RRH (Side)	17.9	9.9	13.2	1.23	1.64	1.81	1.36	1.20	1.20	4	5	5
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	7	5	5
RRUS-32 B30 RRH (Shielded)	27.2	9.1	12.1	1.71	2.29	3.00	2.25	1.22	1.20	6	7	7

Date: 2/9/2022  
 Project Name: STRATFORD  
 Project No.: CT2112  
 Designed By: KM Checked By: MSC



WIND LOADS

Angle = 90 (deg)

Ice Thickness = 1.11 in.

Equivalent Angle = 270 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio (normal)	Aspect Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	639	320	320
AIR6449 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	189	101	101
AIR6419 Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	172	78	78
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	598	264	264
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	95	59	59
B14 4478 RRH (Side)	18.1	8.3	13.4	1.04	1.68	0.00	1.35	1.20	1.20	59	95	95
4426 866 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	77	34	34
4426 866 RRH (Side)	14.9	5.8	13.2	0.60	1.37	0.00	1.13	1.20	1.20	34	77	77
4415 825 RRH	16.5	13.5	6.3	1.55	0.72	1.22	2.62	1.20	1.21	87	41	41
4415 825 RRH (Side)	16.5	6.3	13.5	0.72	1.55	2.62	1.22	1.21	1.20	41	87	87
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	93	66	66
B5/B12 4449 RRH (Side)	17.9	9.4	13.2	1.17	1.64	0.00	1.36	1.20	1.20	66	93	93
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	129	78	78
RRUS-32 B30 RRH (Shielded)	27.2	0.0	12.1	0.00	2.29	0.00	2.25	1.20	1.20	0	129	129

WIND LOADS WITH ICE:

QD6616-7 Antenna	74.2	24.2	11.8	12.48	6.09	3.07	6.28	1.23	1.37	115	63	63
AIR6449 Antenna	32.6	18.1	10.3	4.10	2.34	1.80	3.16	1.20	1.23	37	22	22
AIR6419 Antenna	30.2	17.9	8.9	3.76	1.87	1.69	3.39	1.20	1.24	34	17	17
DMP65R-BU6DA Antenna	73.4	22.9	9.9	11.68	5.05	3.20	7.41	1.23	1.41	108	54	54
B14 4478 RRH	20.3	15.6	10.5	2.20	1.48	1.30	1.93	1.20	1.20	20	13	13
B14 4478 RRH (Side)	20.3	10.5	15.6	1.48	2.20	1.93	1.30	1.20	1.20	13	20	20
4426 866 RRH	17.1	15.4	8.0	1.83	0.95	1.11	2.14	1.20	1.20	17	9	9
4426 866 RRH (Side)	17.1	8.0	15.4	0.95	1.83	2.14	1.11	1.20	1.20	9	17	17
4415 825 RRH	18.7	15.7	8.5	2.04	1.11	1.19	2.20	1.20	1.20	18	10	10
4415 825 RRH (Side)	18.7	8.5	15.7	1.11	2.04	2.20	1.19	1.20	1.20	10	18	18
B5/B12 4449 RRH	20.1	15.4	11.6	2.15	1.62	1.30	1.73	1.20	1.20	19	15	15
B5/B12 4449 RRH (Side)	20.1	11.6	15.4	1.62	2.15	1.73	1.30	1.20	1.20	15	19	19
RRUS-32 B30 RRH	29.4	14.3	9.2	2.92	1.88	2.06	3.19	1.20	1.23	26	17	17
RRUS-32 B30 RRH (Shielded)	29.4	2.2	14.3	0.45	2.92	13.30	2.06	1.61	1.20	5	26	26

WIND LOADS AT 30 MPH:

QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	37	18	18
AIR6449 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	11	6	6
AIR6419 Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	10	4	4
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	34	15	15
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	5	3	3
B14 4478 RRH (Side)	18.1	8.3	13.4	1.04	1.68	0.00	1.35	1.20	1.20	3	5	5
4426 866 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	4	2	2
4426 866 RRH (Side)	14.9	5.8	13.2	0.60	1.37	0.00	1.13	1.20	1.20	2	4	4
4415 825 RRH	16.5	13.5	6.3	1.55	0.72	1.22	2.62	1.20	1.21	5	2	2
4415 825 RRH (Side)	16.5	6.3	13.5	0.72	1.55	0.00	1.22	1.20	1.20	2	5	5
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	5	4	4
B5/B12 4449 RRH (Side)	17.9	9.4	13.2	1.17	1.64	0.00	1.36	1.20	1.20	4	5	5
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	7	5	5
RRUS-32 B30 RRH (Shielded)	27.2	0.0	12.1	0.00	2.29	0.00	2.25	1.20	1.20	0	7	7

Date: 2/9/2022  
 Project Name: STRATFORD  
 Project No.: CT2112  
 Designed By: KM Checked By: MSC



WIND LOADS

Angle = 120 (deg)

Ice Thickness = 1.11 in.

Equivalent Angle = 300 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio (normal)	Aspect Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	639	320	400
AIR6449 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	189	101	123
AIR6419 Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	172	78	102
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	598	264	348
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	95	59	68
B14 4478 RRH (Side)	18.1	10.1	13.4	1.26	1.68	1.80	1.35	1.20	1.20	71	95	89
4426 866 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	77	34	45
4426 866 RRH (Side)	14.9	9.9	13.2	1.02	1.37	1.51	1.13	1.20	1.20	58	77	72
4415 825 RRH	16.5	13.5	6.3	1.55	0.72	1.22	2.62	1.20	1.21	87	41	53
4415 825 RRH (Side)	16.5	6.3	13.5	0.72	1.55	2.62	1.22	1.21	1.20	41	87	76
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	93	66	73
B5/B12 4449 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	66	93	86
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	129	78	91
RRUS-32 B30 RRH (Shielded)	27.2	0.0	12.1	0.00	2.29	0.00	2.25	1.20	1.20	0	129	97

WIND LOADS WITH ICE:

QD6616-7 Antenna	74.2	24.2	11.8	12.48	6.09	3.07	6.28	1.23	1.37	115	63	76
AIR6449 Antenna	32.6	18.1	10.3	4.10	2.34	1.80	3.16	1.20	1.23	37	22	25
AIR6419 Antenna	30.2	17.9	8.9	3.76	1.87	1.69	3.39	1.20	1.24	34	17	22
DMP65R-BU6DA Antenna	73.4	22.9	9.9	11.68	5.05	3.20	7.41	1.23	1.41	108	54	67
B14 4478 RRH	20.3	15.6	10.5	2.20	1.48	1.30	1.93	1.20	1.20	20	13	15
B14 4478 RRH (Side)	20.3	11.7	15.6	1.65	2.20	1.73	1.30	1.20	1.20	15	20	19
4426 866 RRH	17.1	15.4	8.0	1.83	0.95	1.11	2.14	1.20	1.20	17	9	11
4426 866 RRH (Side)	17.1	11.6	15.4	1.37	1.83	1.48	1.11	1.20	1.20	12	17	16
4415 825 RRH	18.7	15.7	8.5	2.04	1.11	1.19	2.20	1.20	1.20	18	10	12
4415 825 RRH (Side)	18.7	11.8	15.7	1.53	2.04	1.59	1.19	1.20	1.20	14	18	17
B5/B12 4449 RRH	20.1	15.4	11.6	2.15	1.62	1.30	1.73	1.20	1.20	19	15	16
B5/B12 4449 RRH (Side)	20.1	11.6	15.4	1.61	2.15	1.74	1.30	1.20	1.20	15	19	18
RRUS-32 B30 RRH	29.4	14.3	9.2	2.92	1.88	2.06	3.19	1.20	1.23	26	17	20
RRUS-32 B30 RRH (Shielded)	29.4	10.7	14.3	2.19	2.92	2.74	2.06	1.21	1.20	20	26	25

WIND LOADS AT 30 MPH:

QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	37	18	23
AIR6449 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	11	6	7
AIR6419 Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	10	4	6
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	34	15	20
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	5	3	4
B14 4478 RRH (Side)	18.1	10.1	13.4	1.26	1.68	1.80	1.35	1.20	1.20	4	5	5
4426 866 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	4	2	3
4426 866 RRH (Side)	14.9	9.9	13.2	1.02	1.37	1.51	1.13	1.20	1.20	3	4	4
4415 825 RRH	16.5	13.5	6.3	1.55	0.72	1.22	2.62	1.20	1.21	5	2	3
4415 825 RRH (Side)	16.5	10.1	13.5	1.16	1.55	1.63	1.22	1.20	1.20	4	5	5
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	5	4	4
B5/B12 4449 RRH (Side)	17.9	9.9	13.2	1.23	1.64	1.81	1.36	1.20	1.20	4	5	5
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	7	5	5
RRUS-32 B30 RRH (Shielded)	27.2	9.1	12.1	1.71	2.29	3.00	2.25	1.22	1.20	6	7	7



Date: 2/9/2022  
 Project Name: STRATFORD  
 Project No.: CT2112  
 Designed By: KM Checked By: MSC



WIND LOADS

Angle = 150 (deg) Ice Thickness = 1.11 in. Equivalent Angle = 330 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio (normal)	Aspect Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	639	320	559
AIR6449 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	189	101	167
AIR6419 Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	172	78	149
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	598	264	514
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	95	59	86
B14 4478 RRH (Side)	18.1	6.7	13.4	0.84	1.68	2.70	1.35	1.21	1.20	48	95	60
4426 866 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	77	34	66
4426 866 RRH (Side)	14.9	6.6	13.2	0.68	1.37	2.26	1.13	1.20	1.20	39	77	48
4415 825 RRH	16.5	13.5	6.3	1.55	0.72	1.22	2.62	1.20	1.21	87	41	76
4415 825 RRH (Side)	16.5	6.3	13.5	0.72	1.55	2.62	1.22	1.21	1.20	41	87	53
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	93	66	86
B5/B12 4449 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	66	93	73
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	129	78	116
RRUS-32 B30 RRH (Shielded)	27.2	0.0	12.1	0.00	2.29	0.00	2.25	1.20	1.20	0	129	32

WIND LOADS WITH ICE:

QD6616-7 Antenna	74.2	24.2	11.8	12.48	6.09	3.07	6.28	1.23	1.37	115	63	102
AIR6449 Antenna	32.6	18.1	10.3	4.10	2.34	1.80	3.16	1.20	1.23	37	22	33
AIR6419 Antenna	30.2	17.9	8.9	3.76	1.87	1.69	3.39	1.20	1.24	34	17	30
DMP65R-BU6DA Antenna	73.4	22.9	9.9	11.68	5.05	3.20	7.41	1.23	1.41	108	54	95
B14 4478 RRH	20.3	15.6	10.5	2.20	1.48	1.30	1.93	1.20	1.20	20	13	18
B14 4478 RRH (Side)	20.3	7.8	15.6	1.10	2.20	2.60	1.30	1.20	1.20	10	20	12
4426 866 RRH	17.1	15.4	8.0	1.83	0.95	1.11	2.14	1.20	1.20	17	9	15
4426 866 RRH (Side)	17.1	7.7	15.4	0.92	1.83	2.22	1.11	1.20	1.20	8	17	10
4415 825 RRH	18.7	15.7	8.5	2.04	1.11	1.19	2.20	1.20	1.20	18	10	16
4415 825 RRH (Side)	18.7	8.5	15.7	1.11	2.04	2.20	1.19	1.20	1.20	10	18	12
B5/B12 4449 RRH	20.1	15.4	11.6	2.15	1.62	1.30	1.73	1.20	1.20	19	15	18
B5/B12 4449 RRH (Side)	20.1	7.7	15.4	1.08	2.15	2.61	1.30	1.20	1.20	10	19	12
RRUS-32 B30 RRH	29.4	14.3	9.2	2.92	1.88	2.06	3.19	1.20	1.23	26	17	24
RRUS-32 B30 RRH (Shielded)	29.4	7.2	14.3	1.46	2.92	4.11	2.06	1.27	1.20	14	26	17

WIND LOADS AT 30 MPH:

QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	37	18	32
AIR6449 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	11	6	10
AIR6419 Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	10	4	9
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	34	15	30
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	5	3	5
B14 4478 RRH (Side)	18.1	6.7	13.4	0.84	1.68	2.70	1.35	1.21	1.20	3	5	3
4426 866 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	4	2	4
4426 866 RRH (Side)	14.9	6.6	13.2	0.68	1.37	2.26	1.13	1.20	1.20	2	4	3
4415 825 RRH	16.5	13.5	6.3	1.55	0.72	1.22	2.62	1.20	1.21	5	2	4
4415 825 RRH (Side)	16.5	6.3	13.5	0.72	1.55	2.62	1.22	1.21	1.20	2	5	3
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	5	4	5
B5/B12 4449 RRH (Side)	17.9	6.6	13.2	0.82	1.64	2.71	1.36	1.21	1.20	3	5	3
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	7	5	7
RRUS-32 B30 RRH (Shielded)	27.2	6.1	12.1	1.14	2.29	4.50	2.25	1.29	1.20	4	7	5

Date: 2/9/2022

Project Name: STRATFORD

Project No.: CT2112

Designed By: KM      Checked By: MSC



### ICE WEIGHT CALCULATIONS

Thickness of ice: 1.11 in.

Density of ice: 56 pcf

#### QD6616-7 Antenna

Weight of ice based on total radial SF area:

Height (in): 72.0

Width (in): 22.0

Depth (in): 9.6

Total weight of ice on object: 204 lbs

Weight of object: 130.0 lbs

Combined weight of ice and object: 334 lbs

#### AIR6449 Antenna

Weight of ice based on total radial SF area:

Height (in): 30.4

Width (in): 15.9

Depth (in): 8.1

Total weight of ice on object: 65 lbs

Weight of object: 82.0 lbs

Combined weight of ice and object: 147 lbs

#### AIR6419 Antenna

Weight of ice based on total radial SF area:

Height (in): 28.0

Width (in): 15.7

Depth (in): 6.7

Total weight of ice on object: 58 lbs

Weight of object: 66.0 lbs

Combined weight of ice and object: 124 lbs

#### DMP65R-BU6DA Antenna

Weight of ice based on total radial SF area:

Height (in): 71.2

Width (in): 20.7

Depth (in): 7.7

Total weight of ice on object: 187 lbs

Weight of object: 80.0 lbs

Combined weight of ice and object: 267 lbs

#### B14 4478 RRH

Weight of ice based on total radial SF area:

Height (in): 18.1

Width (in): 13.4

Depth (in): 8.3

Total weight of ice on object: 35 lbs

Weight of object: 60.0 lbs

Combined weight of ice and object: 95 lbs

#### 4415 B25 RRH

Weight of ice based on total radial SF area:

Height (in): 16.5

Width (in): 13.4

Depth (in): 5.9

Total weight of ice on object: 29 lbs

Weight of object: 46.0 lbs

Combined weight of ice and object: 75 lbs

#### 4426 B66 RRH

Weight of ice based on total radial SF area:

Height (in): 14.9

Width (in): 13.2

Depth (in): 5.8

Total weight of ice on object: 26 lbs

Weight of object: 49.0 lbs

Combined weight of ice and object: 75 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: 35 lbs

Weight of object: 73.0 lbs

Combined weight of ice and object: 108 lbs

Date: 2/9/2022

Project Name: STRATFORD

Project No.: CT2112

Designed By: KM Checked By: MSC



**RRUS-32 B30 RRH**

Weight of ice based on total radial SF area:

Height (in): 27.2

Width (in): 12.1

Depth (in): 7.0

Total weight of ice on object: 46 lbs

Weight of object: 60.0 lbs

Combined weight of ice and object: 106 lbs

**PL 11-1/4x5/8**

Weight of ice based on total radial SF area:

Height (in): 11.25

Width (in): 0.625

Per foot weight of ice on object: 17 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: 9 plf

**2-1/2" pipe**

Per foot weight of ice:

diameter (in): 2.88

Per foot weight of ice on object: 5 plf

**3/4" Round Bar**

Per foot weight of ice:

diameter (in): 0.75

Per foot weight of ice on object: 3 plf

**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: 29 lbs

Weight of object: 33 lbs

Combined weight of ice and object: 62 lbs

**PL 3-1/2x5/8**

Weight of ice based on total radial SF area:

Height (in): 3.5

Width (in): 0.625

Per foot weight of ice on object: 6 plf

**3" Pipe**

Per foot weight of ice:

diameter (in): 3.5

Per foot weight of ice on object: 6 plf

**2" pipe**

Per foot weight of ice:

diameter (in): 2.38

Per foot weight of ice on object: 5 plf

**5/8" Round Bar**

Per foot weight of ice:

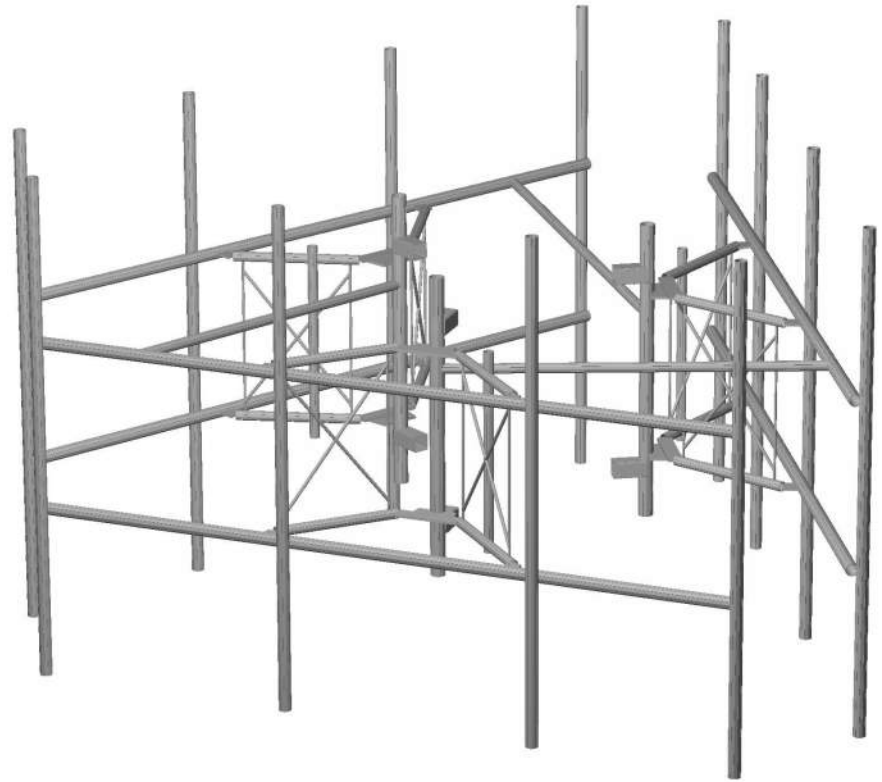
diameter (in): 0.625

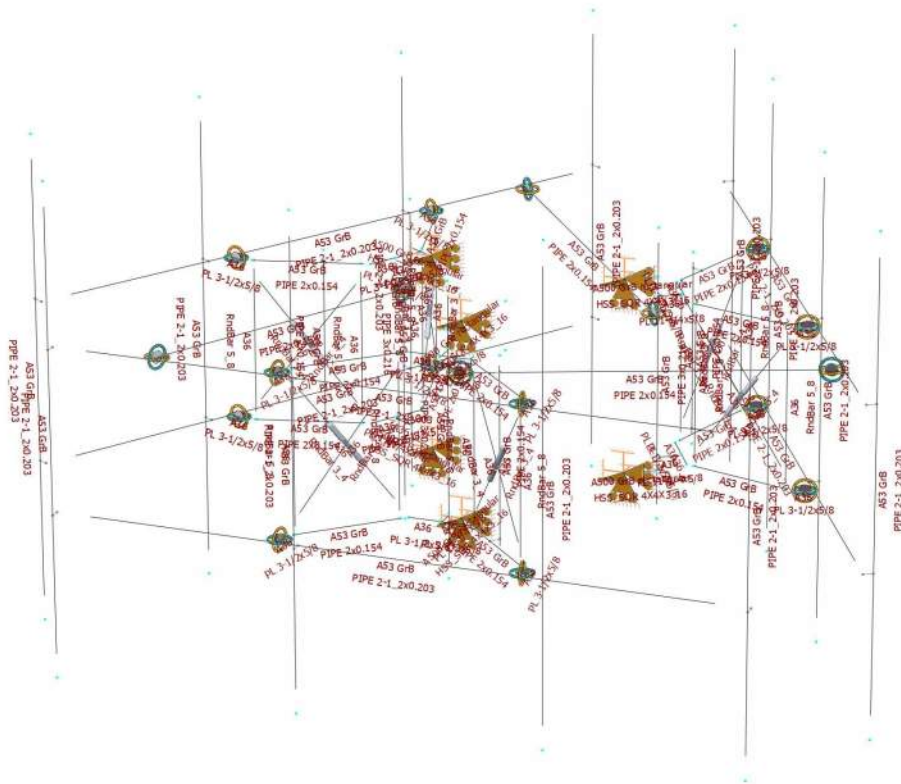
Per foot weight of ice on object: 2 plf







**HUDSON**  
Design Group LLC

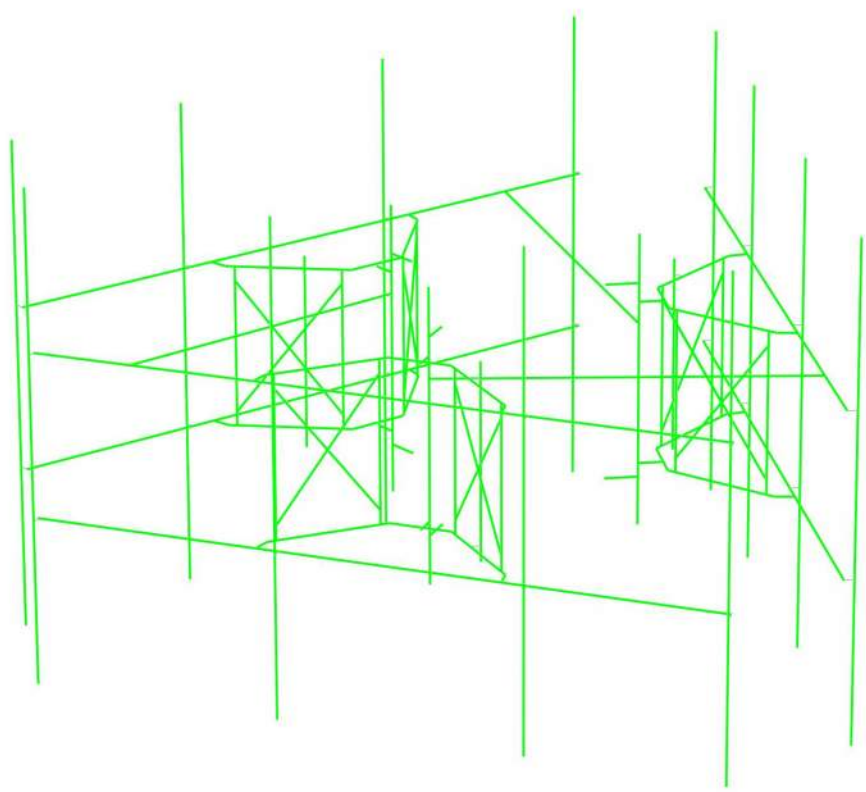
**Mount Calculations  
(Proposed Conditions)**



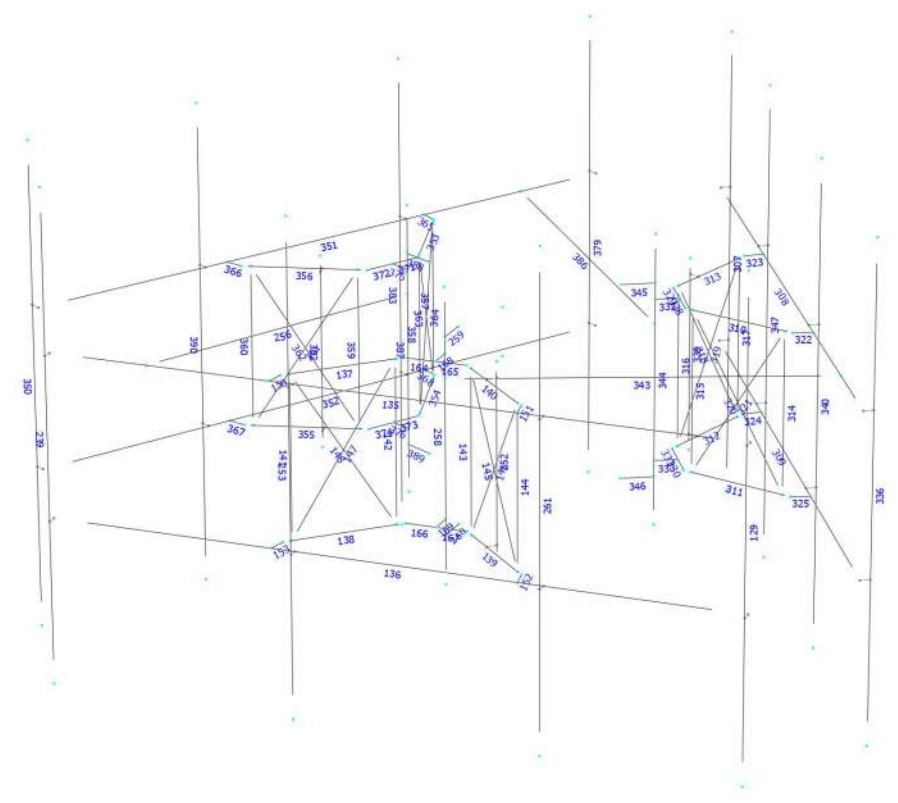


Design status

-  Not designed
-  Error on design
-  Design O.K.
-  With warnings







## Load data

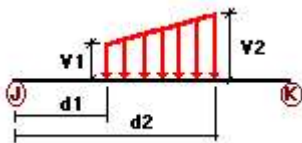
### GLOSSARY

Comb : Indicates if load condition is a load combination

### Load Conditions

Condition	Description	Comb.	Category
DL	Dead Load	No	DL
W0	Wind Load 0/60/120 deg	No	WIND
W30	Wind Load 30/90/150 deg	No	WIND
Di	Ice Load	No	LL
Wi0	Ice Wind Load 0/60/120 deg	No	WIND
Wi30	Ice Wind Load 30/90/150 deg	No	WIND
WL0	WL 30 mph 0/60/120 deg	No	WIND
WL30	WL 30 mph 30/90/150 deg	No	WIND
LL1	250 lb Live Load Center of Mount	No	LL
LL2	250 lb Live Load End of Mount	No	LL
LLa1	500 lb Live Load Antenna 1	No	LL
LLa2	500 lb Live Load Antenna 2	No	LL
LLa3	500 lb Live Load Antenna 3	No	LL
LLa4	500 lb Live Load Antenna 4	No	LL

### Distributed force on members



Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
W0	129	z	-0.014	-0.014	0.00	No	100.00	Yes
	135	z	-0.014	-0.014	0.00	No	100.00	Yes
	136	z	-0.014	-0.014	0.00	No	100.00	Yes
	137	z	-0.014	-0.014	0.00	No	100.00	Yes
	138	z	-0.014	-0.014	0.00	No	100.00	Yes
	139	z	-0.014	-0.014	0.00	No	100.00	Yes
	140	z	-0.014	-0.014	0.00	No	100.00	Yes
	141	z	-0.003	-0.003	0.00	No	100.00	Yes
	142	z	-0.003	-0.003	0.00	No	100.00	Yes
	143	z	-0.003	-0.003	0.00	No	100.00	Yes
	144	z	-0.003	-0.003	0.00	No	100.00	Yes
	145	z	-0.004	-0.004	0.00	No	100.00	Yes
	146	z	-0.004	-0.004	0.00	No	100.00	Yes
	147	z	-0.004	-0.004	0.00	No	100.00	Yes
	148	z	-0.004	-0.004	0.00	No	100.00	Yes
	150	z	-0.003	-0.003	0.00	No	100.00	Yes

151	z	-0.003	-0.003	0.00	No	100.00	Yes
152	z	-0.003	-0.003	0.00	No	100.00	Yes
153	z	-0.003	-0.003	0.00	No	100.00	Yes
164	z	-0.003	-0.003	0.00	No	100.00	Yes
165	z	-0.003	-0.003	0.00	No	100.00	Yes
166	z	-0.003	-0.003	0.00	No	100.00	Yes
167	z	-0.003	-0.003	0.00	No	100.00	Yes
252	z	-0.014	-0.014	0.00	No	100.00	Yes
256	z	-0.014	-0.014	0.00	No	100.00	Yes
258	z	-0.016	-0.016	0.00	No	100.00	Yes
307	z	-0.014	-0.014	0.00	No	100.00	Yes
308	z	-0.014	-0.014	0.00	No	100.00	Yes
309	z	-0.014	-0.014	0.00	No	100.00	Yes
310	z	-0.014	-0.014	0.00	No	100.00	Yes
311	z	-0.014	-0.014	0.00	No	100.00	Yes
312	z	-0.014	-0.014	0.00	No	100.00	Yes
313	z	-0.014	-0.014	0.00	No	100.00	Yes
314	z	-0.003	-0.003	0.00	No	100.00	Yes
315	z	-0.003	-0.003	0.00	No	100.00	Yes
316	z	-0.003	-0.003	0.00	No	100.00	Yes
317	z	-0.003	-0.003	0.00	No	100.00	Yes
318	z	-0.004	-0.004	0.00	No	100.00	Yes
319	z	-0.004	-0.004	0.00	No	100.00	Yes
320	z	-0.004	-0.004	0.00	No	100.00	Yes
321	z	-0.004	-0.004	0.00	No	100.00	Yes
322	z	-0.003	-0.003	0.00	No	100.00	Yes
323	z	-0.003	-0.003	0.00	No	100.00	Yes
324	z	-0.003	-0.003	0.00	No	100.00	Yes
325	z	-0.003	-0.003	0.00	No	100.00	Yes
328	z	-0.003	-0.003	0.00	No	100.00	Yes
329	z	-0.003	-0.003	0.00	No	100.00	Yes
330	z	-0.003	-0.003	0.00	No	100.00	Yes
331	z	-0.003	-0.003	0.00	No	100.00	Yes
332	z	-0.003	-0.003	0.00	No	100.00	Yes
333	z	-0.003	-0.003	0.00	No	100.00	Yes
336	z	-0.014	-0.014	0.00	No	100.00	Yes
339	z	-0.014	-0.014	0.00	No	100.00	Yes
340	z	-0.014	-0.014	0.00	No	100.00	Yes
343	z	-0.014	-0.014	0.00	No	100.00	Yes
344	z	-0.016	-0.016	0.00	No	100.00	Yes
345	z	-0.02	-0.02	0.00	No	100.00	Yes
346	z	-0.02	-0.02	0.00	No	100.00	Yes
347	z	-0.014	-0.014	0.00	No	100.00	Yes
350	z	-0.014	-0.014	0.00	No	100.00	Yes
351	z	-0.014	-0.014	0.00	No	100.00	Yes
352	z	-0.014	-0.014	0.00	No	100.00	Yes
353	z	-0.014	-0.014	0.00	No	100.00	Yes
354	z	-0.014	-0.014	0.00	No	100.00	Yes
355	z	-0.014	-0.014	0.00	No	100.00	Yes
356	z	-0.014	-0.014	0.00	No	100.00	Yes
357	z	-0.003	-0.003	0.00	No	100.00	Yes
358	z	-0.003	-0.003	0.00	No	100.00	Yes
359	z	-0.003	-0.003	0.00	No	100.00	Yes
360	z	-0.003	-0.003	0.00	No	100.00	Yes
361	z	-0.004	-0.004	0.00	No	100.00	Yes
362	z	-0.004	-0.004	0.00	No	100.00	Yes
363	z	-0.004	-0.004	0.00	No	100.00	Yes
364	z	-0.004	-0.004	0.00	No	100.00	Yes
365	z	-0.003	-0.003	0.00	No	100.00	Yes
366	z	-0.003	-0.003	0.00	No	100.00	Yes

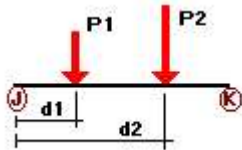
	367	z	-0.003	-0.003	0.00	No	100.00	Yes
	368	z	-0.003	-0.003	0.00	No	100.00	Yes
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	372	z	-0.003	-0.003	0.00	No	100.00	Yes
	373	z	-0.003	-0.003	0.00	No	100.00	Yes
	374	z	-0.003	-0.003	0.00	No	100.00	Yes
	375	z	-0.003	-0.003	0.00	No	100.00	Yes
	376	z	-0.003	-0.003	0.00	No	100.00	Yes
	379	z	-0.014	-0.014	0.00	No	100.00	Yes
	382	z	-0.014	-0.014	0.00	No	100.00	Yes
	383	z	-0.014	-0.014	0.00	No	100.00	Yes
	386	z	-0.014	-0.014	0.00	No	100.00	Yes
	387	z	-0.016	-0.016	0.00	No	100.00	Yes
	388	z	-0.02	-0.02	0.00	No	100.00	Yes
	389	z	-0.02	-0.02	0.00	No	100.00	Yes
	390	z	-0.014	-0.014	0.00	No	100.00	Yes
W30	129	x	-0.014	-0.014	0.00	No	100.00	Yes
	137	x	-0.014	-0.014	0.00	No	100.00	Yes
	138	x	-0.014	-0.014	0.00	No	100.00	Yes
	139	x	-0.014	-0.014	0.00	No	100.00	Yes
	140	x	-0.014	-0.014	0.00	No	100.00	Yes
	141	x	-0.003	-0.003	0.00	No	100.00	Yes
	142	x	-0.003	-0.003	0.00	No	100.00	Yes
	143	x	-0.003	-0.003	0.00	No	100.00	Yes
	144	x	-0.003	-0.003	0.00	No	100.00	Yes
	145	x	-0.004	-0.004	0.00	No	100.00	Yes
	146	x	-0.004	-0.004	0.00	No	100.00	Yes
	147	x	-0.004	-0.004	0.00	No	100.00	Yes
	148	x	-0.004	-0.004	0.00	No	100.00	Yes
	150	x	-0.003	-0.003	0.00	No	100.00	Yes
	151	x	-0.003	-0.003	0.00	No	100.00	Yes
	152	x	-0.003	-0.003	0.00	No	100.00	Yes
	153	x	-0.003	-0.003	0.00	No	100.00	Yes
	164	x	-0.003	-0.003	0.00	No	100.00	Yes
	165	x	-0.003	-0.003	0.00	No	100.00	Yes
	166	x	-0.003	-0.003	0.00	No	100.00	Yes
	167	x	-0.003	-0.003	0.00	No	100.00	Yes
	168	x	-0.003	-0.003	0.00	No	100.00	Yes
	169	x	-0.003	-0.003	0.00	No	100.00	Yes
	239	x	-0.014	-0.014	0.00	No	100.00	Yes
	252	x	-0.014	-0.014	0.00	No	100.00	Yes
	253	x	-0.014	-0.014	0.00	No	100.00	Yes
	256	x	-0.014	-0.014	0.00	No	100.00	Yes
	258	x	-0.016	-0.016	0.00	No	100.00	Yes
	259	x	-0.02	-0.02	0.00	No	100.00	Yes
	260	x	-0.02	-0.02	0.00	No	100.00	Yes
	261	x	-0.014	-0.014	0.00	No	100.00	Yes
	307	x	-0.014	-0.014	0.00	No	100.00	Yes
	308	x	-0.014	-0.014	0.00	No	100.00	Yes
	309	x	-0.014	-0.014	0.00	No	100.00	Yes
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325	x	-0.003	-0.003	0.00	No	100.00	Yes
328	x	-0.003	-0.003	0.00	No	100.00	Yes
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330	x	-0.003	-0.003	0.00	No	100.00	Yes
331	x	-0.003	-0.003	0.00	No	100.00	Yes
332	x	-0.003	-0.003	0.00	No	100.00	Yes
333	x	-0.003	-0.003	0.00	No	100.00	Yes
339	x	-0.014	-0.014	0.00	No	100.00	Yes
343	x	-0.014	-0.014	0.00	No	100.00	Yes
344	x	-0.016	-0.016	0.00	No	100.00	Yes
345	x	-0.02	-0.02	0.00	No	100.00	Yes
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351	x	-0.014	-0.014	0.00	No	100.00	Yes
352	x	-0.014	-0.014	0.00	No	100.00	Yes
353	x	-0.014	-0.014	0.00	No	100.00	Yes
354	x	-0.014	-0.014	0.00	No	100.00	Yes
355	x	-0.014	-0.014	0.00	No	100.00	Yes
356	x	-0.014	-0.014	0.00	No	100.00	Yes
357	x	-0.003	-0.003	0.00	No	100.00	Yes
358	x	-0.003	-0.003	0.00	No	100.00	Yes
359	x	-0.003	-0.003	0.00	No	100.00	Yes
360	x	-0.003	-0.003	0.00	No	100.00	Yes
361	x	-0.004	-0.004	0.00	No	100.00	Yes
362	x	-0.004	-0.004	0.00	No	100.00	Yes
363	x	-0.004	-0.004	0.00	No	100.00	Yes
364	x	-0.004	-0.004	0.00	No	100.00	Yes
365	x	-0.003	-0.003	0.00	No	100.00	Yes
366	x	-0.003	-0.003	0.00	No	100.00	Yes
367	x	-0.003	-0.003	0.00	No	100.00	Yes
368	x	-0.003	-0.003	0.00	No	100.00	Yes
371	x	-0.003	-0.003	0.00	No	100.00	Yes
372	x	-0.003	-0.003	0.00	No	100.00	Yes
373	x	-0.003	-0.003	0.00	No	100.00	Yes
374	x	-0.003	-0.003	0.00	No	100.00	Yes
375	x	-0.003	-0.003	0.00	No	100.00	Yes
376	x	-0.003	-0.003	0.00	No	100.00	Yes
379	x	-0.014	-0.014	0.00	No	100.00	Yes
382	x	-0.014	-0.014	0.00	No	100.00	Yes
383	x	-0.014	-0.014	0.00	No	100.00	Yes
386	x	-0.014	-0.014	0.00	No	100.00	Yes
387	x	-0.016	-0.016	0.00	No	100.00	Yes
388	x	-0.02	-0.02	0.00	No	100.00	Yes
389	x	-0.02	-0.02	0.00	No	100.00	Yes
390	x	-0.014	-0.014	0.00	No	100.00	Yes
Di 129	y	-0.005	-0.005	0.00	No	100.00	Yes
135	y	-0.005	-0.005	0.00	No	100.00	Yes
136	y	-0.005	-0.005	0.00	No	100.00	Yes
137	y	-0.005	-0.005	0.00	No	100.00	Yes
138	y	-0.005	-0.005	0.00	No	100.00	Yes
139	y	-0.005	-0.005	0.00	No	100.00	Yes
140	y	-0.005	-0.005	0.00	No	100.00	Yes
141	y	-0.002	-0.002	0.00	No	100.00	Yes
142	y	-0.002	-0.002	0.00	No	100.00	Yes
143	y	-0.002	-0.002	0.00	No	100.00	Yes

144	y	-0.002	-0.002	0.00	No	100.00	Yes
145	y	-0.003	-0.003	0.00	No	100.00	Yes
146	y	-0.003	-0.003	0.00	No	100.00	Yes
147	y	-0.003	-0.003	0.00	No	100.00	Yes
148	y	-0.003	-0.003	0.00	No	100.00	Yes
150	y	-0.006	-0.006	0.00	No	100.00	Yes
151	y	-0.006	-0.006	0.00	No	100.00	Yes
152	y	-0.006	-0.006	0.00	No	100.00	Yes
153	y	-0.006	-0.006	0.00	No	100.00	Yes
164	y	-0.006	-0.006	0.00	No	100.00	Yes
165	y	-0.006	-0.006	0.00	No	100.00	Yes
166	y	-0.006	-0.006	0.00	No	100.00	Yes
167	y	-0.006	-0.006	0.00	No	100.00	Yes
168	y	-0.017	-0.017	0.00	No	100.00	Yes
169	y	-0.017	-0.017	0.00	No	100.00	Yes
239	y	-0.005	-0.005	0.00	No	100.00	Yes
252	y	-0.005	-0.005	0.00	No	100.00	Yes
253	y	-0.005	-0.005	0.00	No	100.00	Yes
256	y	-0.005	-0.005	0.00	No	100.00	Yes
258	y	-0.006	-0.006	0.00	No	100.00	Yes
259	y	-0.009	-0.009	0.00	No	100.00	Yes
260	y	-0.009	-0.009	0.00	No	100.00	Yes
261	y	-0.005	-0.005	0.00	No	100.00	Yes
307	y	-0.005	-0.005	0.00	No	100.00	Yes
308	y	-0.005	-0.005	0.00	No	100.00	Yes
309	y	-0.005	-0.005	0.00	No	100.00	Yes
310	y	-0.005	-0.005	0.00	No	100.00	Yes
311	y	-0.005	-0.005	0.00	No	100.00	Yes
312	y	-0.005	-0.005	0.00	No	100.00	Yes
313	y	-0.005	-0.005	0.00	No	100.00	Yes
314	y	-0.002	-0.002	0.00	No	100.00	Yes
315	y	-0.002	-0.002	0.00	No	100.00	Yes
316	y	-0.002	-0.002	0.00	No	100.00	Yes
317	y	-0.002	-0.002	0.00	No	100.00	Yes
318	y	-0.003	-0.003	0.00	No	100.00	Yes
319	y	-0.003	-0.003	0.00	No	100.00	Yes
320	y	-0.003	-0.003	0.00	No	100.00	Yes
321	y	-0.003	-0.003	0.00	No	100.00	Yes
322	y	-0.006	-0.006	0.00	No	100.00	Yes
323	y	-0.006	-0.006	0.00	No	100.00	Yes
324	y	-0.006	-0.006	0.00	No	100.00	Yes
325	y	-0.006	-0.006	0.00	No	100.00	Yes
328	y	-0.006	-0.006	0.00	No	100.00	Yes
329	y	-0.006	-0.006	0.00	No	100.00	Yes
330	y	-0.006	-0.006	0.00	No	100.00	Yes
331	y	-0.006	-0.006	0.00	No	100.00	Yes
332	y	-0.017	-0.017	0.00	No	100.00	Yes
333	y	-0.017	-0.017	0.00	No	100.00	Yes
336	y	-0.005	-0.005	0.00	No	100.00	Yes
339	y	-0.005	-0.005	0.00	No	100.00	Yes
340	y	-0.005	-0.005	0.00	No	100.00	Yes
343	y	-0.005	-0.005	0.00	No	100.00	Yes
344	y	-0.006	-0.006	0.00	No	100.00	Yes
345	y	-0.009	-0.009	0.00	No	100.00	Yes
346	y	-0.009	-0.009	0.00	No	100.00	Yes
347	y	-0.005	-0.005	0.00	No	100.00	Yes
350	y	-0.005	-0.005	0.00	No	100.00	Yes
351	y	-0.005	-0.005	0.00	No	100.00	Yes
352	y	-0.005	-0.005	0.00	No	100.00	Yes
353	y	-0.005	-0.005	0.00	No	100.00	Yes

354	y	-0.005	-0.005	0.00	No	100.00	Yes
355	y	-0.005	-0.005	0.00	No	100.00	Yes
356	y	-0.005	-0.005	0.00	No	100.00	Yes
357	y	-0.002	-0.002	0.00	No	100.00	Yes
358	y	-0.002	-0.002	0.00	No	100.00	Yes
359	y	-0.002	-0.002	0.00	No	100.00	Yes
360	y	-0.002	-0.002	0.00	No	100.00	Yes
361	y	-0.003	-0.003	0.00	No	100.00	Yes
362	y	-0.003	-0.003	0.00	No	100.00	Yes
363	y	-0.003	-0.003	0.00	No	100.00	Yes
364	y	-0.003	-0.003	0.00	No	100.00	Yes
365	y	-0.006	-0.006	0.00	No	100.00	Yes
366	y	-0.006	-0.006	0.00	No	100.00	Yes
367	y	-0.006	-0.006	0.00	No	100.00	Yes
368	y	-0.006	-0.006	0.00	No	100.00	Yes
371	y	-0.006	-0.006	0.00	No	100.00	Yes
372	y	-0.006	-0.006	0.00	No	100.00	Yes
373	y	-0.006	-0.006	0.00	No	100.00	Yes
374	y	-0.006	-0.006	0.00	No	100.00	Yes
375	y	-0.017	-0.017	0.00	No	100.00	Yes
376	y	-0.017	-0.017	0.00	No	100.00	Yes
379	y	-0.005	-0.005	0.00	No	100.00	Yes
382	y	-0.005	-0.005	0.00	No	100.00	Yes
383	y	-0.005	-0.005	0.00	No	100.00	Yes
386	y	-0.005	-0.005	0.00	No	100.00	Yes
387	y	-0.006	-0.006	0.00	No	100.00	Yes
388	y	-0.009	-0.009	0.00	No	100.00	Yes
389	y	-0.009	-0.009	0.00	No	100.00	Yes
390	y	-0.005	-0.005	0.00	No	100.00	Yes

### Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	239	y	-0.04	2.50	No
		y	-0.04	7.50	No
		y	-0.073	1.50	No
		y	-0.046	1.50	No
		y	-0.06	5.00	No
	252	y	-0.033	2.00	No
	253	y	-0.041	2.00	No
		y	-0.041	4.00	No
		y	-0.033	6.00	No
	261	y	-0.033	8.00	No
		y	-0.065	2.50	No
		y	-0.065	7.50	No
		y	-0.06	1.50	No
	336	y	-0.049	1.50	No
y		-0.04	2.50	No	
	y	-0.04	7.50	No	



	y	-0.073	1.50	No	
	y	-0.046	1.50	No	
	y	-0.06	5.00	No	
339	y	-0.033	2.00	No	
340	y	-0.041	2.00	No	
	y	-0.041	4.00	No	
	y	-0.033	6.00	No	
	y	-0.033	8.00	No	
347	y	-0.065	2.50	No	
	y	-0.065	7.50	No	
	y	-0.06	1.50	No	
	y	-0.049	1.50	No	
379	y	-0.04	2.50	No	
	y	-0.04	7.50	No	
	y	-0.073	1.50	No	
	y	-0.046	1.50	No	
	y	-0.06	5.00	No	
382	y	-0.033	2.00	No	
383	y	-0.041	2.00	No	
	y	-0.041	4.00	No	
	y	-0.033	6.00	No	
	y	-0.033	8.00	No	
390	y	-0.065	2.50	No	
	y	-0.065	7.50	No	
	y	-0.06	1.50	No	
	y	-0.049	1.50	No	
W0	239	z	-0.299	2.50	No
		z	-0.299	7.50	No
		z	-0.041	1.50	No
		z	-0.066	1.50	No
252	z	-0.053	2.00	No	
253	z	-0.095	2.00	No	
	z	-0.095	4.00	No	
	z	-0.086	6.00	No	
	z	-0.086	8.00	No	
261	z	-0.32	2.50	No	
	z	-0.32	7.50	No	
	z	-0.059	1.50	No	
	z	-0.034	1.50	No	
336	z	-0.174	2.50	No	
	z	-0.174	7.50	No	
	z	-0.086	1.50	No	
	z	-0.097	5.00	No	
339	z	-0.053	2.00	No	
340	z	-0.062	2.00	No	
	z	-0.062	4.00	No	
	z	-0.051	6.00	No	
	z	-0.051	8.00	No	
347	z	-0.20	2.50	No	
	z	-0.20	7.50	No	
	z	-0.089	1.50	No	
379	z	-0.174	2.50	No	
	z	-0.174	7.50	No	
	z	-0.086	1.50	No	
	z	-0.097	5.00	No	
382	z	-0.053	2.00	No	
383	z	-0.062	2.00	No	
	z	-0.062	4.00	No	
	z	-0.051	6.00	No	
	z	-0.051	8.00	No	

	390	z	-0.20	2.50	No
		z	-0.20	7.50	No
W30	239	z	-0.089	1.50	No
		x	-0.132	2.50	No
		x	-0.132	7.50	No
		x	-0.093	1.50	No
		x	-0.129	5.00	No
	252	x	-0.053	2.00	No
	253	x	-0.051	2.00	No
		x	-0.051	4.00	No
		x	-0.039	6.00	No
		x	-0.039	8.00	No
	261	x	-0.16	2.50	No
		x	-0.16	7.50	No
		x	-0.095	1.50	No
	336	x	-0.257	2.50	No
		x	-0.257	7.50	No
x		-0.073	1.50	No	
	x	-0.032	5.00	No	
339	x	-0.053	2.00	No	
340	x	-0.084	2.00	No	
	x	-0.084	4.00	No	
	x	-0.075	6.00	No	
	x	-0.075	8.00	No	
347	x	-0.28	2.50	No	
	x	-0.28	7.50	No	
	x	-0.06	1.50	No	
379	x	-0.257	2.50	No	
	x	-0.257	7.50	No	
	x	-0.073	1.50	No	
	x	-0.032	5.00	No	
382	x	-0.053	2.00	No	
383	x	-0.084	2.00	No	
	x	-0.084	4.00	No	
	x	-0.075	6.00	No	
	x	-0.075	8.00	No	
390	x	-0.28	2.50	No	
	x	-0.28	7.50	No	
	x	-0.06	1.50	No	
Di	239	y	-0.094	2.50	No
		y	-0.094	7.50	No
		y	-0.035	1.50	No
		y	-0.029	1.50	No
		y	-0.046	5.00	No
	252	y	-0.029	2.00	No
	253	y	-0.041	2.00	No
		y	-0.041	4.00	No
		y	-0.033	6.00	No
		y	-0.033	8.00	No
	261	y	-0.102	2.50	No
		y	-0.102	7.50	No
		y	-0.035	1.50	No
		y	-0.026	1.50	No
	336	y	-0.094	2.50	No
y		-0.094	7.50	No	
y		-0.035	1.50	No	
	y	-0.029	1.50	No	
	y	-0.046	5.00	No	
339	y	-0.029	2.00	No	
340	y	-0.041	2.00	No	

		y	-0.041	4.00	No
		y	-0.033	6.00	No
		y	-0.033	8.00	No
	347	y	-0.102	2.50	No
		y	-0.102	7.50	No
		y	-0.035	1.50	No
		y	-0.026	1.50	No
	379	y	-0.094	2.50	No
		y	-0.094	7.50	No
		y	-0.035	1.50	No
		y	-0.029	1.50	No
		y	-0.046	5.00	No
	382	y	-0.029	2.00	No
	383	y	-0.041	2.00	No
		y	-0.041	4.00	No
		y	-0.033	6.00	No
		y	-0.033	8.00	No
	390	y	-0.102	2.50	No
		y	-0.102	7.50	No
		y	-0.035	1.50	No
		y	-0.026	1.50	No
Wi0	239	z	-0.055	2.50	No
		z	-0.055	7.50	No
		z	-0.01	1.50	No
		z	-0.015	1.50	No
		z	-0.004	5.00	No
	252	z	-0.011	2.00	No
	253	z	-0.019	2.00	No
		z	-0.019	4.00	No
		z	-0.017	6.00	No
		z	-0.017	8.00	No
	261	z	-0.058	2.50	No
		z	-0.058	7.50	No
		z	-0.013	1.50	No
		z	-0.009	1.50	No
	336	z	-0.034	2.50	No
		z	-0.034	7.50	No
		z	-0.018	1.50	No
		z	-0.021	5.00	No
	339	z	-0.011	2.00	No
	340	z	-0.013	2.00	No
		z	-0.013	4.00	No
		z	-0.011	6.00	No
		z	-0.011	8.00	No
	347	z	-0.038	2.50	No
		z	-0.038	7.50	No
		z	-0.019	1.50	No
	379	z	-0.034	2.50	No
		z	-0.034	7.50	No
		z	-0.018	1.50	No
		z	-0.021	5.00	No
	382	z	-0.011	2.00	No
	383	z	-0.013	2.00	No
		z	-0.013	4.00	No
		z	-0.011	6.00	No
		z	-0.011	8.00	No
	390	z	-0.038	2.50	No
		z	-0.038	7.50	No
		z	-0.019	1.50	No
Wi30	239	x	-0.027	2.50	No

	x	-0.027	7.50	No
	x	-0.019	1.50	No
	x	-0.026	5.00	No
252	x	-0.011	2.00	No
253	x	-0.011	2.00	No
	x	-0.011	4.00	No
	x	-0.009	6.00	No
	x	-0.009	8.00	No
261	x	-0.032	2.50	No
	x	-0.032	7.50	No
	x	-0.02	1.50	No
336	x	-0.048	2.50	No
	x	-0.048	7.50	No
	x	-0.016	1.50	No
	x	-0.011	5.00	No
339	x	-0.011	2.00	No
340	x	-0.017	2.00	No
	x	-0.017	4.00	No
	x	-0.015	6.00	No
	x	-0.015	8.00	No
347	x	-0.051	2.50	No
	x	-0.051	7.50	No
	x	-0.012	1.50	No
379	x	-0.048	2.50	No
	x	-0.048	7.50	No
	x	-0.016	1.50	No
	x	-0.011	5.00	No
382	x	-0.011	2.00	No
383	x	-0.017	2.00	No
	x	-0.017	4.00	No
	x	-0.015	6.00	No
	x	-0.015	8.00	No
390	x	-0.051	2.50	No
	x	-0.051	7.50	No
	x	-0.012	1.50	No
WLO 239	z	-0.017	2.50	No
	z	-0.017	7.50	No
	z	-0.002	1.50	No
	z	-0.004	1.50	No
252	z	-0.003	2.00	No
253	z	-0.006	2.00	No
	z	-0.006	4.00	No
	z	-0.005	6.00	No
	z	-0.005	8.00	No
261	z	-0.019	2.50	No
	z	-0.019	7.50	No
	z	-0.003	1.50	No
	z	-0.002	1.50	No
336	z	-0.01	2.50	No
	z	-0.01	7.50	No
	z	-0.005	1.50	No
	z	-0.007	5.00	No
339	z	-0.003	2.00	No
340	z	-0.004	2.00	No
	z	-0.004	4.00	No
	z	-0.003	6.00	No
	z	-0.003	8.00	No
347	z	-0.012	2.50	No
	z	-0.012	7.50	No
	z	-0.005	1.50	No

	379	z	-0.01	2.50	No
		z	-0.01	7.50	No
		z	-0.005	1.50	No
		z	-0.007	5.00	No
	382	z	-0.003	2.00	No
	383	z	-0.004	2.00	No
		z	-0.004	4.00	No
		z	-0.003	6.00	No
		z	-0.003	8.00	No
	390	z	-0.012	2.50	No
		z	-0.012	7.50	No
		z	-0.005	1.50	No
WL30	239	x	-0.008	2.50	No
		x	-0.008	7.50	No
		x	-0.005	1.50	No
		x	-0.007	5.00	No
	252	x	-0.003	2.00	No
	253	x	-0.003	2.00	No
		x	-0.003	4.00	No
		x	-0.002	6.00	No
		x	-0.002	8.00	No
	261	x	-0.009	2.50	No
		x	-0.009	7.50	No
		x	-0.005	1.50	No
	336	x	-0.015	2.50	No
		x	-0.015	7.50	No
		x	-0.003	1.50	No
		x	-0.005	5.00	No
	339	x	-0.003	2.00	No
	340	x	-0.005	2.00	No
		x	-0.005	4.00	No
		x	-0.005	6.00	No
		x	-0.005	8.00	No
	347	x	-0.016	2.50	No
		x	-0.016	7.50	No
		x	-0.003	1.50	No
	379	x	-0.015	2.50	No
		x	-0.015	7.50	No
		x	-0.003	1.50	No
		x	-0.005	5.00	No
	382	x	-0.003	2.00	No
	383	x	-0.005	2.00	No
		x	-0.005	4.00	No
		x	-0.005	6.00	No
		x	-0.005	8.00	No
	390	x	-0.016	2.50	No
		x	-0.016	7.50	No
		x	-0.003	1.50	No
LL1	135	y	-0.25	50.00	Yes
LL2	135	y	-0.25	100.00	Yes
LLa1	129	y	-0.50	50.00	Yes
LLa2	261	y	-0.50	50.00	Yes
LLa3	253	y	-0.50	50.00	Yes
LLa4	239	y	-0.50	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	500 lb Live Load Antenna 1	No	0.00	0.00	0.00
LLa2	500 lb Live Load Antenna 2	No	0.00	0.00	0.00
LLa3	500 lb Live Load Antenna 3	No	0.00	0.00	0.00
LLa4	500 lb Live Load Antenna 4	No	0.00	0.00	0.00

### Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
W0	0.00	0.00	0.00
W30	0.00	0.00	0.00
Di	0.00	0.00	0.00
Wi0	0.00	0.00	0.00
Wi30	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LLa1	0.00	0.00	0.00
LLa2	0.00	0.00	0.00
LLa3	0.00	0.00	0.00
LLa4	0.00	0.00	0.00

## Steel Code Check

**Report: Summary - Group by member**

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

- LC1=1.2DL+W0
- LC2=1.2DL+W30
- LC3=1.2DL-W0
- LC4=1.2DL-W30
- LC5=0.9DL+W0
- LC6=0.9DL+W30
- LC7=0.9DL-W0
- LC8=0.9DL-W30
- LC9=1.2DL+Di+Wi0
- LC10=1.2DL+Di+Wi30
- LC11=1.2DL+Di-Wi0
- LC12=1.2DL+Di-Wi30
- LC13=1.4DL
- LC14=1.2DL+1.6LL1
- LC15=1.2DL+1.6LL2
- LC16=1.2DL+W0+1.6LLa1
- LC17=1.2DL+W30+1.6LLa1
- LC18=1.2DL-W0+1.6LLa1
- LC19=1.2DL-W30+1.6LLa1
- LC20=1.2DL+W0+1.6LLa2
- LC21=1.2DL+W30+1.6LLa2
- LC22=1.2DL-W0+1.6LLa2
- LC23=1.2DL-W30+1.6LLa2
- LC24=1.2DL+W0+1.6LLa3
- LC25=1.2DL+W30+1.6LLa3
- LC26=1.2DL-W0+1.6LLa3
- LC27=1.2DL-W30+1.6LLa3
- LC28=1.2DL+W0+1.6LLa4
- LC29=1.2DL+W30+1.6LLa4
- LC30=1.2DL-W0+1.6LLa4
- LC31=1.2DL-W30+1.6LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	<b>HSS_SQR 4X4X3_16</b>	<b>259</b>	LC2 at 100.00%	0.34	OK	Eq. H1-1b
		<b>260</b>	LC4 at 100.00%	0.31	OK	Eq. H1-1b
		<b>345</b>	LC4 at 100.00%	0.37	OK	Eq. H1-1b
		<b>346</b>	LC1 at 100.00%	0.31	OK	Eq. H1-1b
		<b>388</b>	LC1 at 100.00%	<b>0.41</b>	<b>OK</b>	Eq. H1-1b
		<b>389</b>	LC3 at 100.00%	0.35	OK	Eq. H1-1b
	<b>PIPE 2-1_2x0.203</b>	<b>129</b>	LC18 at 33.33%	0.48	OK	Eq. H1-1b
		<b>135</b>	LC29 at 31.25%	0.79	OK	Eq. H1-1b
		<b>136</b>	LC28 at 31.25%	<b>0.79</b>	<b>OK</b>	Eq. H1-1b
		<b>239</b>	LC29 at 33.33%	0.70	OK	Eq. H1-1b
		<b>253</b>	LC28 at 33.33%	0.29	OK	Eq. H1-1b
		<b>261</b>	LC19 at 33.33%	0.38	OK	Eq. H1-1b
		<b>307</b>	LC1 at 33.33%	0.10	OK	Eq. H1-1b
		<b>308</b>	LC4 at 31.25%	0.65	OK	Eq. H1-1b
		<b>309</b>	LC2 at 31.25%	0.66	OK	Eq. H1-1b
		<b>336</b>	LC11 at 33.33%	0.44	OK	Eq. H1-1b
		<b>340</b>	LC11 at 64.58%	0.21	OK	Eq. H1-1b
		<b>347</b>	LC1 at 33.33%	0.26	OK	Eq. H1-1b

	350	LC2 at 33.33%	0.10	OK	Eq. H1-1b
	351	LC1 at 31.25%	0.77	OK	Eq. H1-1b
	352	LC3 at 31.25%	0.62	OK	Eq. H1-1b
	379	LC9 at 33.33%	0.43	OK	Eq. H1-1b
	383	LC4 at 64.58%	0.23	OK	Eq. H1-1b
	390	LC2 at 33.33%	0.23	OK	Eq. H1-1b
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<i>PIPE 2x0.154</i>	137	LC2 at 93.75%	0.72	OK	Eq. H1-1b
	138	LC4 at 93.75%	0.63	OK	Eq. H1-1b
	139	LC17 at 93.75%	0.42	OK	Eq. H1-1b
	140	LC19 at 93.75%	0.47	OK	Eq. H1-1b
	252	LC16 at 8.33%	0.21	OK	Eq. H1-1b
	256	LC30 at 0.00%	0.14	OK	Eq. H3-1
	310	LC4 at 93.75%	0.76	OK	Eq. H1-1b
	311	LC2 at 93.75%	0.64	OK	Eq. H1-1b
	312	LC3 at 93.75%	0.43	OK	Eq. H1-1b
	313	LC4 at 93.75%	0.36	OK	Eq. H1-1b
	339	LC2 at 8.33%	0.07	OK	Eq. H1-1b
	343	LC3 at 50.00%	0.15	OK	Eq. H1-1b
	353	LC1 at 93.75%	<b>0.85</b>	<b>OK</b>	Eq. H1-1b
	354	LC3 at 93.75%	0.73	OK	Eq. H1-1b
	355	LC3 at 100.00%	0.44	OK	Eq. H1-1b
	356	LC3 at 93.75%	0.44	OK	Eq. H1-1b
	382	LC4 at 89.58%	0.07	OK	Eq. H1-1b
	386	LC4 at 100.00%	0.13	OK	Sec. E1
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<i>PIPE 3x0.216</i>	258	LC2 at 82.29%	0.39	OK	Eq. H3-6
	344	LC4 at 82.29%	0.53	OK	Eq. H3-6
	387	LC1 at 82.29%	<b>0.61</b>	<b>OK</b>	Eq. H3-6
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<i>PL 11-1/4x5/8</i>	168	LC10 at 100.00%	0.34	OK	Eq. H1-1b
	169	LC12 at 100.00%	0.23	OK	Eq. H1-1b
	332	LC12 at 100.00%	0.34	OK	Eq. H1-1b
	333	LC9 at 100.00%	0.23	OK	Eq. H1-1b
	375	LC9 at 100.00%	<b>0.34</b>	<b>OK</b>	Eq. H1-1b
	376	LC10 at 100.00%	0.23	OK	Eq. H1-1b
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<i>PL 3-1/2x5/8</i>	150	LC29 at 100.00%	0.63	OK	Eq. H1-1b
	151	LC16 at 100.00%	0.50	OK	Eq. H1-1b
	152	LC18 at 100.00%	0.60	OK	Eq. H1-1b
	153	LC30 at 100.00%	0.78	OK	Eq. H1-1b
	164	LC30 at 100.00%	<b>0.96</b>	<b>OK</b>	Eq. H1-1b
	165	LC18 at 0.00%	0.70	OK	Eq. H1-1b
	166	LC29 at 100.00%	0.89	OK	Eq. H1-1b
	167	LC16 at 0.00%	0.67	OK	Eq. H1-1b
	322	LC11 at 100.00%	0.48	OK	Eq. H1-1b
	323	LC3 at 100.00%	0.27	OK	Eq. H1-1b
	324	LC9 at 100.00%	0.24	OK	Eq. H1-1b
	325	LC9 at 100.00%	0.59	OK	Eq. H1-1b
	328	LC9 at 100.00%	0.76	OK	Eq. H1-1b
	329	LC12 at 0.00%	0.41	OK	Eq. H1-1b
	330	LC11 at 100.00%	0.70	OK	Eq. H1-1b
	331	LC2 at 0.00%	0.40	OK	Eq. H1-1b
	365	LC9 at 100.00%	0.48	OK	Eq. H1-1b
	366	LC4 at 100.00%	0.35	OK	Eq. H1-1b
	367	LC2 at 100.00%	0.29	OK	Eq. H1-1b
	368	LC10 at 100.00%	0.59	OK	Eq. H1-1b
	371	LC10 at 100.00%	0.76	OK	Eq. H1-1b
	372	LC9 at 0.00%	0.41	OK	Eq. H1-1b
	373	LC12 at 100.00%	0.70	OK	Eq. H1-1b
	374	LC11 at 0.00%	0.38	OK	Eq. H1-1b
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<i>RndBar 3_4</i>	145	LC16 at 100.00%	0.34	OK	Eq. H1-1a
	146	LC16 at 0.00%	0.25	OK	Eq. H1-1b



<b>147</b>	LC30 at 0.00%	<b>0.66</b>	<b>OK</b>	Eq. H1-1a
<b>148</b>	LC31 at 100.00%	0.57	OK	Eq. H1-1b
<b>318</b>	LC2 at 0.00%	0.12	OK	Eq. H1-1b
<b>319</b>	LC3 at 0.00%	0.13	OK	Eq. H1-1b
<b>320</b>	LC12 at 100.00%	0.46	OK	Eq. H1-1a
<b>321</b>	LC9 at 100.00%	0.40	OK	Eq. H1-1b
<b>361</b>	LC3 at 0.00%	0.13	OK	Eq. H1-1b
<b>362</b>	LC1 at 0.00%	0.13	OK	Eq. H1-1b
<b>363</b>	LC10 at 100.00%	0.46	OK	Eq. H1-1a
<b>364</b>	LC10 at 100.00%	0.40	OK	Eq. H1-1b

***RndBar 5\_8***

<b>141</b>	LC31 at 87.50%	0.96	OK	Eq. H1-1a
<b>142</b>	LC30 at 87.50%	<b>0.97</b>	<b>OK</b>	Eq. H1-1a
<b>143</b>	LC16 at 87.50%	0.81	OK	Eq. H1-1a
<b>144</b>	LC16 at 87.50%	0.74	OK	Eq. H1-1a
<b>314</b>	LC9 at 87.50%	0.74	OK	Eq. H1-1a
<b>315</b>	LC9 at 87.50%	0.71	OK	Eq. H1-1a
<b>316</b>	LC10 at 87.50%	0.35	OK	Eq. H1-1a
<b>317</b>	LC3 at 50.00%	0.38	OK	Eq. H1-1a
<b>357</b>	LC11 at 87.50%	0.74	OK	Eq. H1-1a
<b>358</b>	LC10 at 87.50%	0.72	OK	Eq. H1-1a
<b>359</b>	LC12 at 87.50%	0.36	OK	Eq. H1-1a
<b>360</b>	LC4 at 50.00%	0.46	OK	Eq. H1-1a

## 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
211	0.00	0.00	2.00	0
212	-0.6362	0.00	2.4783	0
213	0.00	-3.3333	2.00	0
214	-0.6362	-3.3333	2.4783	0
215	0.6362	-3.3333	2.4783	0
216	0.6362	0.00	2.4783	0
217	7.00	-6.6667	4.83	0
218	7.00	3.3333	4.83	0
227	-2.4126	0.00	4.2374	0
228	-2.4126	-3.3333	4.2374	0
229	2.4126	-3.3333	4.2374	0
230	2.4126	0.00	4.2374	0
231	-2.2835	0.00	4.1096	0
232	-2.2835	-3.3333	4.1096	0
233	-0.7653	0.00	2.6062	0
234	-0.7653	-3.3333	2.6062	0
235	0.7653	0.00	2.6062	0
236	0.7653	-3.3333	2.6062	0
237	2.2835	0.00	4.1096	0
238	2.2835	-3.3333	4.1096	0
245	-2.4792	0.00	4.63	0
246	2.4792	0.00	4.63	0
247	2.4792	-3.3333	4.63	0

248	-2.4792	-3.3333	4.63	0
267	0.00	0.00	2.4783	0
268	0.00	-3.3333	2.4783	0
404	-7.00	-6.6667	4.83	0
405	-7.00	3.3333	4.83	0
425	1.4213	-3.6667	2.9573	0
427	1.4213	0.3333	2.9573	0
429	-2.00	-6.6667	4.83	0
430	-2.00	3.3333	4.83	0
435	-5.00	0.00	4.63	0
436	-2.5981	-0.50	-2.50	0
440	0.00	-4.6667	2.00	0
441	0.00	1.3333	2.00	0
442	0.00	-3.6667	2.00	0
443	0.00	0.3333	2.00	0
444	0.00	0.3333	1.3333	0
445	0.00	-3.6667	1.3333	0
446	3.00	-6.6667	4.83	0
447	3.00	3.3333	4.83	0
452	0.00	0.00	-1.00	0
515	2.5981	0.00	-2.50	0
516	3.3304	0.00	-2.1882	0
517	2.5981	-3.3333	-2.50	0
518	3.3304	-3.3333	-2.1882	0
519	2.6942	-3.3333	-3.2901	0
520	2.6942	0.00	-3.2901	0
521	1.5489	-6.6667	-9.9772	0
522	1.5489	3.3333	-9.9772	0
527	5.742	0.00	-1.5293	0
528	5.742	-3.3333	-1.5293	0
529	3.3294	-3.3333	-5.7081	0
530	3.3294	0.00	-5.7081	0
531	5.5668	0.00	-1.5772	0
532	5.5668	-3.3333	-1.5772	0
533	3.5057	0.00	-2.1404	0
534	3.5057	-3.3333	-2.1404	0
535	2.7404	0.00	-3.4658	0
536	2.7404	-3.3333	-3.4658	0
537	3.2833	0.00	-5.5324	0
538	3.2833	-3.3333	-5.5324	0
539	6.1153	0.00	-1.668	0
540	3.6361	0.00	-5.962	0
541	3.6361	-3.3333	-5.962	0
542	6.1153	-3.3333	-1.668	0
545	3.0123	0.00	-2.7392	0
546	3.0123	-3.3333	-2.7392	0
551	8.5489	-6.6667	2.1472	0
552	8.5489	3.3333	2.1472	0
555	2.7165	-3.6667	-4.2096	0
556	2.7165	0.3333	-4.2096	0
557	6.0489	-6.6667	-2.1829	0
558	6.0489	3.3333	-2.1829	0
563	7.3757	0.00	0.5151	0
564	0.00	-0.50	2.00	0
565	2.5981	-4.6667	-2.50	0
566	2.5981	1.3333	-2.50	0
567	2.5981	-3.6667	-2.50	0
568	2.5981	0.3333	-2.50	0
569	2.0207	0.3333	-2.1667	0
570	2.0207	-3.6667	-2.1667	0

571	3.5489	-6.6667	-6.5131	0
572	3.5489	3.3333	-6.5131	0
577	-2.5981	0.00	-2.50	0
578	-2.6942	0.00	-3.2901	0
579	-2.5981	-3.3333	-2.50	0
580	-2.6942	-3.3333	-3.2901	0
581	-3.3304	-3.3333	-2.1882	0
582	-3.3304	0.00	-2.1882	0
583	-8.5489	-6.6667	2.1472	0
584	-8.5489	3.3333	2.1472	0
589	-3.3294	0.00	-5.7081	0
590	-3.3294	-3.3333	-5.7081	0
591	-5.742	-3.3333	-1.5293	0
592	-5.742	0.00	-1.5293	0
593	-3.2833	0.00	-5.5324	0
594	-3.2833	-3.3333	-5.5324	0
595	-2.7404	0.00	-3.4658	0
596	-2.7404	-3.3333	-3.4658	0
597	-3.5057	0.00	-2.1404	0
598	-3.5057	-3.3333	-2.1404	0
599	-5.5668	0.00	-1.5772	0
600	-5.5668	-3.3333	-1.5772	0
601	-3.6361	0.00	-5.962	0
602	-6.1153	0.00	-1.668	0
603	-6.1153	-3.3333	-1.668	0
604	-3.6361	-3.3333	-5.962	0
607	-3.0123	0.00	-2.7392	0
608	-3.0123	-3.3333	-2.7392	0
613	-1.5489	-6.6667	-9.9772	0
614	-1.5489	3.3333	-9.9772	0
617	-4.1378	-3.6667	-1.7477	0
618	-4.1378	0.3333	-1.7477	0
619	-4.0489	-6.6667	-5.6471	0
620	-4.0489	3.3333	-5.6471	0
625	-2.3757	0.00	-8.1451	0
626	2.5981	-0.50	-2.50	0
627	-2.5981	-4.6667	-2.50	0
628	-2.5981	1.3333	-2.50	0
629	-2.5981	-3.6667	-2.50	0
630	-2.5981	0.3333	-2.50	0
631	-2.0207	0.3333	-2.1667	0
632	-2.0207	-3.6667	-2.1667	0
633	-6.5489	-6.6667	-1.3169	0
634	-6.5489	3.3333	-1.3169	0
639	0.00	-1.00	-1.00	0

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## Restraints

Node	TX	TY	TZ	RX	RY	RZ
444	1	1	1	1	1	1
445	1	1	1	1	1	1
569	1	1	1	1	1	1
570	1	1	1	1	1	1
631	1	1	1	1	1	1
632	1	1	1	1	1	1

## Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	Ig factor
129	218	217		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
135	223	224		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
136	225	226		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
137	227	212		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
138	228	214		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
139	229	215		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
140	230	216		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
141	231	232		RndBar 5_8	A36	0.00	0.00	0.00
142	233	234		RndBar 5_8	A36	0.00	0.00	0.00
143	235	236		RndBar 5_8	A36	0.00	0.00	0.00
144	237	238		RndBar 5_8	A36	0.00	0.00	0.00
145	235	238		RndBar 3_4	A36	0.00	0.00	0.00
146	236	237		RndBar 3_4	A36	0.00	0.00	0.00
147	232	233		RndBar 3_4	A36	0.00	0.00	0.00
148	231	234		RndBar 3_4	A36	0.00	0.00	0.00
150	227	245		PL 3-1/2x5/8	A36	0.00	0.00	0.00
151	230	246		PL 3-1/2x5/8	A36	0.00	0.00	0.00
152	229	247		PL 3-1/2x5/8	A36	0.00	0.00	0.00
153	228	248		PL 3-1/2x5/8	A36	0.00	0.00	0.00
164	212	267		PL 3-1/2x5/8	A36	0.00	0.00	0.00
165	267	216		PL 3-1/2x5/8	A36	0.00	0.00	0.00
166	214	268		PL 3-1/2x5/8	A36	0.00	0.00	0.00
167	268	215		PL 3-1/2x5/8	A36	0.00	0.00	0.00
168	267	211		PL 11-1/4x5/8	A36	11.25	9.25	0.00
169	268	213		PL 11-1/4x5/8	A36	11.25	9.25	0.00
239	405	404		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
252	427	425		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
253	430	429		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
256	435	436		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
258	440	441		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
259	443	444		HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
260	442	445		HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
261	447	446		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
307	522	521		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
308	523	524		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
309	525	526		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
310	527	516		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
311	528	518		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
312	529	519		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
313	530	520		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
314	531	532		RndBar 5_8	A36	0.00	0.00	0.00
315	533	534		RndBar 5_8	A36	0.00	0.00	0.00
316	535	536		RndBar 5_8	A36	0.00	0.00	0.00
317	537	538		RndBar 5_8	A36	0.00	0.00	0.00
318	535	538		RndBar 3_4	A36	0.00	0.00	0.00
319	536	537		RndBar 3_4	A36	0.00	0.00	0.00
320	532	533		RndBar 3_4	A36	0.00	0.00	0.00
321	531	534		RndBar 3_4	A36	0.00	0.00	0.00
322	527	539		PL 3-1/2x5/8	A36	0.00	0.00	0.00
323	530	540		PL 3-1/2x5/8	A36	0.00	0.00	0.00
324	529	541		PL 3-1/2x5/8	A36	0.00	0.00	0.00

325	528	542	PL 3-1/2x5/8	A36	0.00	0.00	0.00
328	516	545	PL 3-1/2x5/8	A36	0.00	0.00	0.00
329	545	520	PL 3-1/2x5/8	A36	0.00	0.00	0.00
330	518	546	PL 3-1/2x5/8	A36	0.00	0.00	0.00
331	546	519	PL 3-1/2x5/8	A36	0.00	0.00	0.00
332	545	515	PL 11-1/4x5/8	A36	11.25	9.25	0.00
333	546	517	PL 11-1/4x5/8	A36	11.25	9.25	0.00
336	552	551	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
339	556	555	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
340	558	557	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
343	563	564	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
344	565	566	PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
345	568	569	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
346	567	570	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
347	572	571	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
350	584	583	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
351	585	586	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
352	587	588	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
353	589	578	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
354	590	580	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
355	591	581	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
356	592	582	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
357	593	594	RndBar 5_8	A36	0.00	0.00	0.00
358	595	596	RndBar 5_8	A36	0.00	0.00	0.00
359	597	598	RndBar 5_8	A36	0.00	0.00	0.00
360	599	600	RndBar 5_8	A36	0.00	0.00	0.00
361	597	600	RndBar 3_4	A36	0.00	0.00	0.00
362	598	599	RndBar 3_4	A36	0.00	0.00	0.00
363	594	595	RndBar 3_4	A36	0.00	0.00	0.00
364	593	596	RndBar 3_4	A36	0.00	0.00	0.00
365	589	601	PL 3-1/2x5/8	A36	0.00	0.00	0.00
366	592	602	PL 3-1/2x5/8	A36	0.00	0.00	0.00
367	591	603	PL 3-1/2x5/8	A36	0.00	0.00	0.00
368	590	604	PL 3-1/2x5/8	A36	0.00	0.00	0.00
371	578	607	PL 3-1/2x5/8	A36	0.00	0.00	0.00
372	607	582	PL 3-1/2x5/8	A36	0.00	0.00	0.00
373	580	608	PL 3-1/2x5/8	A36	0.00	0.00	0.00
374	608	581	PL 3-1/2x5/8	A36	0.00	0.00	0.00
375	607	577	PL 11-1/4x5/8	A36	11.25	9.25	0.00
376	608	579	PL 11-1/4x5/8	A36	11.25	9.25	0.00
379	614	613	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
382	618	617	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
383	620	619	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
386	625	626	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
387	627	628	PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
388	630	631	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
389	629	632	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
390	634	633	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00

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## Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
129	315.00	0	0.00	0.00	0.00
141	0.00	2	0.00	0.00	1.00
142	0.00	2	0.00	0.00	1.00
143	0.00	2	0.00	0.00	1.00
144	0.00	2	0.00	0.00	1.00
150	90.00	0	0.00	0.00	0.00
151	90.00	0	0.00	0.00	0.00
152	90.00	0	0.00	0.00	0.00
153	90.00	0	0.00	0.00	0.00
164	90.00	0	0.00	0.00	0.00
165	90.00	0	0.00	0.00	0.00
166	90.00	0	0.00	0.00	0.00
167	90.00	0	0.00	0.00	0.00
168	90.00	0	0.00	0.00	0.00
169	90.00	0	0.00	0.00	0.00
239	315.00	0	0.00	0.00	0.00
253	315.00	0	0.00	0.00	0.00
261	315.00	0	0.00	0.00	0.00
307	0.00	2	-0.9659	0.00	-0.2588
314	0.00	2	0.866	0.00	-0.50
315	0.00	2	0.866	0.00	-0.50
316	0.00	2	0.866	0.00	-0.50
317	0.00	2	0.866	0.00	-0.50
322	90.00	0	0.00	0.00	0.00
323	90.00	0	0.00	0.00	0.00
324	90.00	0	0.00	0.00	0.00
325	90.00	0	0.00	0.00	0.00
328	90.00	0	0.00	0.00	0.00
329	90.00	0	0.00	0.00	0.00
330	90.00	0	0.00	0.00	0.00
331	90.00	0	0.00	0.00	0.00
332	90.00	0	0.00	0.00	0.00
333	90.00	0	0.00	0.00	0.00
336	0.00	2	-0.9659	0.00	-0.2588
339	0.00	2	-0.50	0.00	-0.866
340	0.00	2	-0.9659	0.00	-0.2588
344	0.00	2	0.50	0.00	0.866
347	0.00	2	-0.9659	0.00	-0.2588
350	0.00	2	0.2588	0.00	0.9659
357	0.00	2	-0.866	0.00	-0.50
358	0.00	2	-0.866	0.00	-0.50
359	0.00	2	-0.866	0.00	-0.50
360	0.00	2	-0.866	0.00	-0.50
365	90.00	0	0.00	0.00	0.00
366	90.00	0	0.00	0.00	0.00
367	90.00	0	0.00	0.00	0.00
368	90.00	0	0.00	0.00	0.00
371	90.00	0	0.00	0.00	0.00
372	90.00	0	0.00	0.00	0.00
373	90.00	0	0.00	0.00	0.00
374	90.00	0	0.00	0.00	0.00
375	90.00	0	0.00	0.00	0.00
376	90.00	0	0.00	0.00	0.00
379	0.00	2	0.2588	0.00	0.9659
382	0.00	2	-0.50	0.00	0.866
383	0.00	2	0.2588	0.00	0.9659
387	0.00	2	0.50	0.00	-0.866
390	0.00	2	0.2588	0.00	0.9659

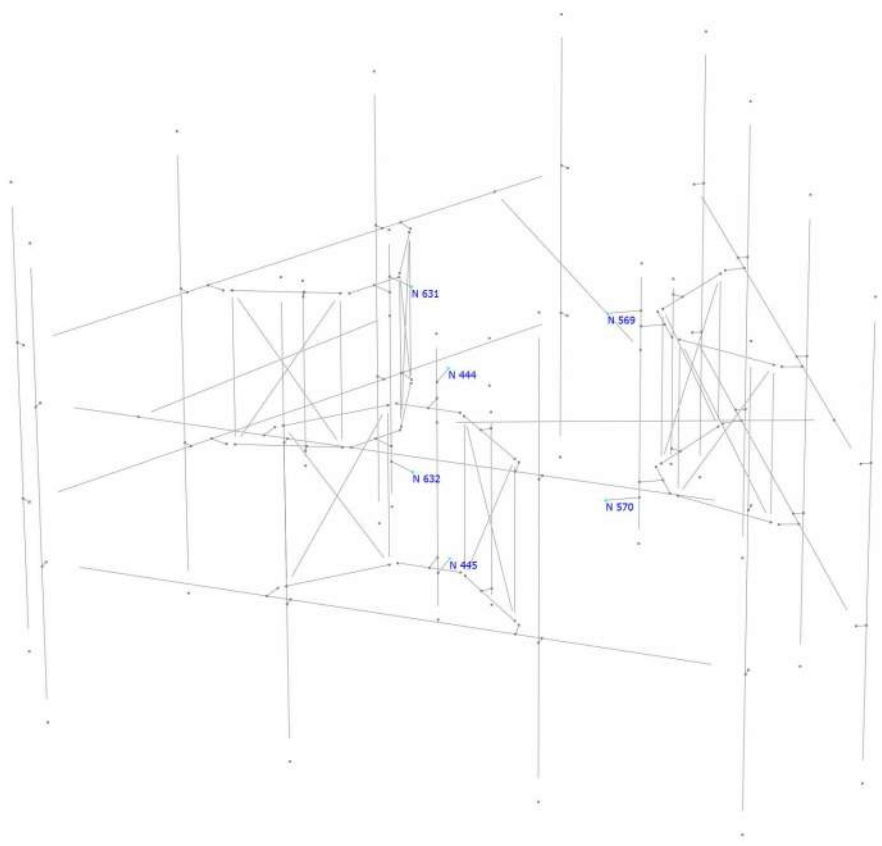
## Rigid end offsets

Member	DJX [in]	DJY [in]	DJZ [in]	DKX [in]	DKY [in]	DKZ [in]
145	0.00	-3.50	0.00	0.00	3.50	0.00
146	0.00	3.50	0.00	0.00	-3.50	0.00
147	0.00	3.50	0.00	0.00	-3.50	0.00
148	0.00	-3.50	0.00	0.00	3.50	0.00
168	0.00	-0.625	0.00	0.00	-0.625	0.00
169	0.00	-0.625	0.00	0.00	-0.625	0.00
318	0.00	-3.50	0.00	0.00	3.50	0.00
319	0.00	3.50	0.00	0.00	-3.50	0.00
320	0.00	3.50	0.00	0.00	-3.50	0.00
321	0.00	-3.50	0.00	0.00	3.50	0.00
332	0.00	-0.625	0.00	0.00	-0.625	0.00
333	0.00	-0.625	0.00	0.00	-0.625	0.00
361	0.00	-3.50	0.00	0.00	3.50	0.00
362	0.00	3.50	0.00	0.00	-3.50	0.00
363	0.00	3.50	0.00	0.00	-3.50	0.00
364	0.00	-3.50	0.00	0.00	3.50	0.00
375	0.00	-0.625	0.00	0.00	-0.625	0.00
376	0.00	-0.625	0.00	0.00	-0.625	0.00

## Hinges

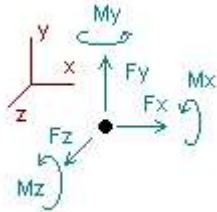
Member	Node-J				Node-K				TOR	AXL	Axial rigidity
	M33	M22	V3	V2	M33	M22	V3	V2			
146	0	0	0	0	0	0	0	0	0	0	Tension only
148	0	0	0	0	0	0	0	0	0	0	Tension only
150	1	1	0	0	0	0	0	0	0	0	Full
151	1	1	0	0	0	0	0	0	0	0	Full
152	1	1	0	0	0	0	0	0	0	0	Full
153	1	1	0	0	0	0	0	0	0	0	Full
256	1	1	0	0	1	1	0	0	0	0	Full
319	0	0	0	0	0	0	0	0	0	0	Tension only
321	0	0	0	0	0	0	0	0	0	0	Tension only
322	1	1	0	0	0	0	0	0	0	0	Full
323	1	1	0	0	0	0	0	0	0	0	Full
324	1	1	0	0	0	0	0	0	0	0	Full
325	1	1	0	0	0	0	0	0	0	0	Full
343	1	1	0	0	1	1	0	0	0	0	Full
362	0	0	0	0	0	0	0	0	0	0	Tension only
364	0	0	0	0	0	0	0	0	0	0	Tension only
365	1	1	0	0	0	0	0	0	0	0	Full
366	1	1	0	0	0	0	0	0	0	0	Full
367	1	1	0	0	0	0	0	0	0	0	Full
368	1	1	0	0	0	0	0	0	0	0	Full
386	1	1	0	0	1	1	0	0	0	0	Full





## Analysis result

### Reactions



Direction of positive forces and moments

Node	Forces [Kip]			Moments [Kip*ft]		
	FX	FY	FZ	MX	MY	MZ
<b>Condition LC1=1.2DL+W0</b>						
444	-0.35338	0.29499	0.01399	-0.42640	-0.94734	-0.30209
445	-0.49463	1.09331	2.13416	-0.25635	-0.87202	0.18982
569	-0.23127	0.84816	1.17096	0.01839	-1.48574	0.52264
570	1.18514	0.76979	0.87969	0.40596	-2.12555	0.27520
631	0.61192	1.09525	3.21056	-0.41846	3.09640	-0.54830
632	-0.71778	0.47078	0.36506	0.48183	1.86982	-0.12927
SUM	0.00000	4.57229	7.77441	-0.19503	-0.46443	0.00801
<b>Condition LC2=1.2DL+W30</b>						
444	2.07397	0.88183	-1.68056	-0.28325	2.51296	0.44808
445	0.56507	0.61352	0.93644	-0.30790	1.55961	-0.25174
569	0.85820	0.29858	1.09660	-0.26858	-2.14513	0.70133
570	2.27124	1.11890	-0.00470	0.46171	-1.99125	0.07686
631	1.26218	1.07874	0.55712	0.23366	-0.36840	-0.35744
632	0.54229	0.58072	-0.90490	0.17269	-1.40779	-0.45680
SUM	7.57293	4.57229	0.00000	0.00832	-1.83999	0.16029
<b>Condition LC3=1.2DL-W0</b>						
444	1.17660	1.23278	-2.05678	-0.33381	1.49723	0.36340
445	-0.28832	0.42772	-0.12056	-0.44804	0.21760	-0.15666
569	-1.95987	0.68107	-0.86442	0.41535	2.04352	0.10236
570	0.95054	0.74843	-1.20960	-0.02625	1.47447	0.31794
631	0.75524	0.43478	-1.47284	0.74599	-2.55300	-0.13839
632	-0.63418	1.04751	-2.05020	-0.15953	-2.52892	-0.49725
SUM	0.00000	4.57229	-7.77441	0.19373	0.15089	-0.00860
<b>Condition LC4=1.2DL-W30</b>						
444	-1.24854	0.64807	-0.37256	-0.47484	-1.96256	-0.38680
445	-1.34786	0.90433	1.07746	-0.39563	-2.21442	0.28501
569	-3.04156	1.23036	-0.78459	0.70060	2.68988	-0.07332
570	-0.13573	0.40159	-0.32375	-0.08024	1.33350	0.51622
631	0.09634	0.44941	1.18325	0.09134	0.92794	-0.33107
632	-1.89559	0.93853	-0.77980	0.15106	0.75940	-0.16884
SUM	-7.57293	4.57229	0.00000	-0.00770	1.53376	-0.15881

Condition **LC5=0.9DL+W0**

444	-0.45592	0.10329	0.27106	-0.33128	-1.01630	-0.30955
445	-0.39690	0.90297	1.88161	-0.16824	-0.79114	0.18570
569	0.04166	0.65729	1.13218	-0.03539	-1.55458	0.44446
570	0.91843	0.58033	0.92081	0.35862	-2.04345	0.20118
631	0.44211	0.90427	2.99302	-0.45909	3.02705	-0.46215
632	-0.54937	0.28106	0.57574	0.44159	1.95168	-0.05094
SUM	0.00000	3.42922	7.77441	-0.19379	-0.42674	0.00871

Condition **LC6=0.9DL+W30**

444	1.97072	0.69058	-1.42432	-0.18820	2.44371	0.44028
445	0.66321	0.42355	0.68487	-0.21985	1.64115	-0.25605
569	1.13184	0.10697	1.05681	-0.32248	-2.21388	0.62272
570	2.00377	0.92868	0.03703	0.41419	-1.91013	0.00263
631	1.09257	0.88805	0.34022	0.19294	-0.43725	-0.27176
632	0.71082	0.39139	-0.69461	0.13230	-1.32536	-0.37877
SUM	7.57293	3.42922	0.00000	0.00891	-1.80176	0.15905

Condition **LC7=0.9DL-W0**

444	1.07313	1.04211	-1.80145	-0.23916	1.42804	0.35562
445	-0.19018	0.23838	-0.37147	-0.36023	0.29998	-0.16084
569	-1.68605	0.48958	-0.90342	0.36106	1.97419	0.02382
570	0.68329	0.55821	-1.16863	-0.07405	1.55567	0.24379
631	0.58432	0.24340	-1.68991	0.70496	-2.62180	-0.05255
632	-0.46451	0.85754	-1.83953	-0.20006	-2.44754	-0.41911
SUM	0.00000	3.42922	-7.77441	0.19251	0.18853	-0.00927

Condition **LC8=0.9DL-W30**

444	-1.35133	0.45696	-0.11642	-0.38011	-2.03145	-0.39426
445	-1.25011	0.71462	0.82557	-0.30775	-2.13271	0.28101
569	-2.76845	1.03960	-0.82259	0.64638	2.62049	-0.15144
570	-0.40220	0.21212	-0.28338	-0.12785	1.41563	0.44225
631	-0.07479	0.25773	0.96554	0.05038	0.85861	-0.24481
632	-1.72605	0.74818	-0.56873	0.11069	0.84028	-0.09038
SUM	-7.57293	3.42922	0.00000	-0.00827	1.57085	-0.15763

Condition **LC9=1.2DL+Di+W10**

444	0.74872	1.23904	-1.66640	-0.63765	0.44180	0.02189
445	-0.80565	1.30871	1.83639	-0.57560	-0.68598	0.05703
569	-1.80275	1.29089	0.27216	0.34608	0.34198	0.55240
570	1.90366	1.29062	-0.07005	0.34852	-0.87758	0.49156
631	1.05380	1.33283	1.93291	0.17426	0.92874	-0.62167
632	-1.09778	1.24923	-1.42300	0.31213	-0.44537	-0.50077
SUM	0.00000	7.71133	0.88200	-0.03226	-0.29641	0.00045

Condition **LC10=1.2DL+Di+W30**

444	1.08919	1.31074	-1.84587	-0.62520	0.87230	0.13186
445	-0.69569	1.25965	1.70485	-0.58424	-0.45363	-0.00490
569	-1.71277	1.23515	0.30356	0.30305	0.27203	0.56962
570	2.02324	1.31632	-0.14480	0.36076	-0.83461	0.46199
631	1.12607	1.31559	1.54216	0.27570	0.47269	-0.59141
632	-0.97203	1.27388	-1.55990	0.27035	-0.82063	-0.54328
SUM	0.85800	7.71133	0.00000	0.00042	-0.49185	0.02389

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

444	0.92795	1.33978	-1.83793	-0.63958	0.69330	0.10286
445	-0.78846	1.25334	1.59528	-0.60360	-0.65309	0.00975
569	-2.07059	1.28796	0.02789	0.40060	0.79319	0.49130
570	1.86533	1.27141	-0.26526	0.29889	-0.46154	0.49626
631	1.14285	1.24604	1.27138	0.35632	0.20616	-0.54681
632	-1.07707	1.31280	-1.67337	0.21963	-0.89387	-0.55384

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SUM	0.00000	7.71133	-0.88200	0.03226	-0.31585	-0.00047
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Condition **LC12=1.2DL+Di-Wi30**

444	0.58758	1.26813	-1.65863	-0.65201	0.26274	-0.00709
445	-0.89841	1.30236	1.72682	-0.59494	-0.88556	0.07167
569	-2.16046	1.34370	-0.00336	0.44360	0.86288	0.47413
570	1.74573	1.24574	-0.19050	0.28668	-0.50459	0.52583
631	1.07041	1.26323	1.66216	0.25484	0.66256	-0.57708
632	-1.20285	1.28816	-1.53649	0.26142	-0.51840	-0.51131

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SUM	-0.85800	7.71133	0.00000	-0.00042	-0.12036	-0.02385
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Condition **LC13=1.4DL**

444	0.48047	0.89213	-1.19566	-0.44267	0.32244	0.03564
445	-0.45679	0.88598	1.17479	-0.41060	-0.37995	0.01933
569	-1.27571	0.89213	0.18172	0.25220	0.32244	0.36554
570	1.24579	0.88598	-0.19181	0.22204	-0.37995	0.34592
631	0.79523	0.89213	1.01393	0.19047	0.32244	-0.40118
632	-0.78900	0.88598	-0.98298	0.18856	-0.37995	-0.36526

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SUM	0.00000	5.33433	0.00000	0.00000	-0.17252	0.00000
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Condition **LC14=1.2DL+1.6LL1**

444	0.41151	0.96609	-1.30210	-0.48171	0.27868	0.02884
445	-0.39233	0.95823	1.28759	-0.44658	-0.31480	0.01701
569	-1.09346	0.76468	0.15580	0.21614	0.27640	0.31328
570	1.06780	0.75942	-0.16444	0.19034	-0.32549	0.29655
631	0.68198	0.76510	0.86598	0.16433	0.27475	-0.34304
632	-0.67551	0.75877	-0.84283	0.16114	-0.32589	-0.31351

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SUM	0.00000	4.97229	0.00000	-0.19634	-0.13634	-0.00088
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Condition **LC15=1.2DL+1.6LL2**

444	-0.31118	0.96647	-1.28295	-0.48220	-0.24188	-0.01700
445	0.32518	0.95939	1.28888	-0.44991	0.29132	-0.01986
569	-1.09503	0.76490	0.15623	0.21614	0.27274	0.31301
570	1.06760	0.75907	-0.16444	0.19029	-0.32874	0.29645
631	0.68595	0.76508	0.84779	0.17106	0.26390	-0.33897
632	-0.67252	0.75737	-0.84550	0.15812	-0.32862	-0.31550

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SUM	0.00000	4.97229	0.00000	-0.19650	-0.07127	-0.08189
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Condition **LC16=1.2DL+Wl0+1.6LLa1**

444	-1.06273	1.15368	-1.56098	-0.57625	-0.78395	-0.08016
445	1.04095	1.16706	1.65355	-0.53530	0.87934	-0.05199
569	-1.05684	0.76563	0.19251	0.20814	0.20211	0.32185
570	1.07309	0.76160	-0.13472	0.19772	-0.39443	0.29568
631	0.67756	0.77812	0.92442	0.15197	0.35864	-0.34530
632	-0.67204	0.74620	-0.81078	0.16837	-0.26389	-0.31000

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SUM	0.00000	5.37229	0.26400	-0.38535	-0.00218	-0.16991
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Condition **LC17=1.2DL+WL30+1.6LLa1**

444	-0.96435	1.17546	-1.61371	-0.57280	-0.66168	-0.04788
445	1.07201	1.15216	1.61167	-0.53825	0.94500	-0.06994
569	-1.03089	0.74836	0.20351	0.19461	0.18061	0.32678
570	1.11320	0.76954	-0.15744	0.20151	-0.38229	0.28605
631	0.69641	0.77323	0.80805	0.18242	0.22201	-0.33682
632	-0.63038	0.75353	-0.85208	0.15616	-0.38235	-0.32317

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SUM	0.25600	5.37229	0.00000	-0.37634	-0.07870	-0.16499
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Condition **LC18=1.2DL-WL0+1.6LLa1**

444	-1.00770	1.18485	-1.61402	-0.57692	-0.70869	-0.05550
445	1.04660	1.14935	1.57575	-0.54417	0.89178	-0.06609
569	-1.13640	0.76463	0.12075	0.22413	0.33608	0.30361
570	1.06170	0.75583	-0.19413	0.18276	-0.26961	0.29701
631	0.70197	0.75276	0.73322	0.20412	0.14683	-0.32398
632	-0.66617	0.76487	-0.88558	0.14157	-0.39904	-0.32528

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SUM	0.00000	5.37229	-0.26400	-0.36851	-0.00265	-0.17021
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Condition **LC19=1.2DL-WL30+1.6LLa1**

444	-1.10607	1.16307	-1.56131	-0.58037	-0.83096	-0.08777
445	1.01554	1.16424	1.61763	-0.54121	0.82611	-0.04813
569	-1.16234	0.78190	0.10977	0.23766	0.35755	0.29869
570	1.02159	0.74789	-0.17142	0.17897	-0.28176	0.30665
631	0.68310	0.75764	0.84960	0.17367	0.28349	-0.33245
632	-0.70783	0.75754	-0.84428	0.15378	-0.28056	-0.31210

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SUM	-0.25600	5.37229	0.00000	-0.37751	0.07387	-0.17513
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Condition **LC20=1.2DL+WL0+1.6LLa2**

444	-0.23112	1.15776	-1.59673	-0.57269	-0.14392	-0.01687
445	0.22005	1.16019	1.65103	-0.53225	0.07940	-0.00497
569	-1.05484	0.76535	0.19194	0.20816	0.20684	0.32219
570	1.07335	0.76205	-0.13472	0.19778	-0.39024	0.29582
631	0.67013	0.77819	0.95827	0.13944	0.37884	-0.35286
632	-0.67758	0.74875	-0.80578	0.17399	-0.25883	-0.30630

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SUM	0.00000	5.37229	0.26400	-0.38556	-0.12790	-0.06298
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Condition **LC21=1.2DL+WL30+1.6LLa2**

444	-0.13274	1.17954	-1.64941	-0.56925	-0.02153	0.01542
445	0.25112	1.14529	1.60905	-0.53521	0.14505	-0.02293
569	-1.02889	0.74807	0.20293	0.19463	0.18535	0.32712
570	1.11346	0.76999	-0.15744	0.20157	-0.37810	0.28618
631	0.68897	0.77332	0.84194	0.16988	0.24224	-0.34440
632	-0.63592	0.75608	-0.84708	0.16179	-0.37729	-0.31947

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SUM	0.25600	5.37229	0.00000	-0.37658	-0.20427	-0.05807
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Condition **LC22=1.2DL-WL0+1.6LLa2**

444	-0.17611	1.18892	-1.64976	-0.57334	-0.06850	0.00781
445	0.22570	1.14245	1.57316	-0.54110	0.09192	-0.01907
569	-1.13440	0.76434	0.12018	0.22415	0.34082	0.30395
570	1.06196	0.75628	-0.19413	0.18282	-0.26542	0.29715
631	0.69455	0.75287	0.76712	0.19159	0.16706	-0.33156
632	-0.67171	0.76743	-0.88057	0.14719	-0.39397	-0.32158

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SUM	0.00000	5.37229	-0.26400	-0.36870	-0.12809	-0.06330
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Condition **LC23=1.2DL-WL30+1.6LLa2**

444	-0.27447	1.16715	-1.59709	-0.57678	-0.19090	-0.02447
445	0.19463	1.15735	1.61513	-0.53814	0.02627	-0.00111
569	-1.16034	0.78161	0.10919	0.23768	0.36228	0.29903
570	1.02185	0.74834	-0.17142	0.17903	-0.27756	0.30678
631	0.67569	0.75774	0.88346	0.16114	0.30369	-0.34002
632	-0.71337	0.76010	-0.83928	0.15940	-0.27550	-0.30840

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SUM	-0.25600	5.37229	0.00000	-0.37768	-0.05170	-0.06820
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Condition **LC24=1.2DL+WL0+1.6LLa3**

444	0.79236	1.15618	-1.60158	-0.57105	0.48454	0.03459
445	-0.80448	1.16145	1.65311	-0.52468	-0.56479	0.04198
569	-1.05295	0.76507	0.19148	0.20815	0.21109	0.32253
570	1.07360	0.76246	-0.13470	0.19785	-0.38646	0.29593
631	0.67002	0.77752	0.96123	0.13839	0.38037	-0.35366
632	-0.67855	0.74960	-0.80555	0.17448	-0.25837	-0.30587

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SUM	0.00000	5.37229	0.26400	-0.37685	-0.13362	0.03550
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Condition **LC25=1.2DL+WL30+1.6LLa3**

444	0.89075	1.17793	-1.65408	-0.56765	0.60697	0.06689
445	-0.77343	1.14656	1.61095	-0.52766	-0.49917	0.02403
569	-1.02700	0.74780	0.20248	0.19461	0.18960	0.32746
570	1.11371	0.77041	-0.15741	0.20164	-0.37432	0.28629
631	0.68886	0.77266	0.84490	0.16883	0.24377	-0.34520
632	-0.63690	0.75694	-0.84684	0.16228	-0.37683	-0.31905

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SUM	0.25600	5.37229	0.00000	-0.36794	-0.20998	0.04042
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Condition **LC26=1.2DL-WL0+1.6LLa3**

444	0.84738	1.18731	-1.65450	-0.57170	0.55999	0.05928
445	-0.79885	1.14367	1.57513	-0.53353	-0.55227	0.02790
569	-1.13251	0.76406	0.11972	0.22413	0.34507	0.30429
570	1.06221	0.75669	-0.19411	0.18289	-0.26163	0.29726
631	0.69445	0.75224	0.77008	0.19054	0.16858	-0.33238
632	-0.67269	0.76831	-0.88033	0.14769	-0.39351	-0.32117

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SUM	0.00000	5.37229	-0.26400	-0.35996	-0.13378	0.03518
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Condition **LC27=1.2DL-WL30+1.6LLa3**

444	0.74900	1.16556	-1.60201	-0.57509	0.43755	0.02699
445	-0.82990	1.15857	1.61729	-0.53055	-0.61790	0.04584
569	-1.15845	0.78134	0.10874	0.23766	0.36653	0.29936
570	1.02210	0.74875	-0.17139	0.17910	-0.27378	0.30689
631	0.67559	0.75710	0.88641	0.16010	0.30522	-0.34083
632	-0.71434	0.76097	-0.83904	0.15990	-0.27504	-0.30798

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SUM	-0.25600	5.37229	0.00000	-0.36888	-0.05741	0.03026
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Condition **LC28=1.2DL+WL0+1.6LLa4**

444	1.80643	1.16175	-1.66701	-0.55060	1.20458	0.10338
445	-1.80314	1.15248	1.66560	-0.50127	-1.49700	0.09249
569	-1.05062	0.76473	0.19095	0.20812	0.21628	0.32294
570	1.07391	0.76297	-0.13468	0.19794	-0.38180	0.29607
631	0.68129	0.75004	1.01517	0.12041	0.40156	-0.37186
632	-0.70787	0.78031	-0.80605	0.18357	-0.25021	-0.29581

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SUM	0.00000	5.37229	0.26400	-0.34184	-0.30659	0.14721
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Condition **LC29=1.2DL+WL30+1.6LLa4**

444	1.90454	1.18345	-1.71935	-0.54721	1.32666	0.13568
445	-1.77179	1.13754	1.62326	-0.50426	-1.43118	0.07455
569	-1.02467	0.74746	0.20195	0.19459	0.19479	0.32787
570	1.11402	0.77092	-0.15739	0.20173	-0.36966	0.28643
631	0.70012	0.74524	0.89887	0.15085	0.26498	-0.36343
632	-0.66622	0.78768	-0.84733	0.17138	-0.36866	-0.30901

SUM      0.25600      5.37229      0.00000      -0.33291      -0.38307      0.15210

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

444	1.86122	1.19270	-1.71953	-0.55120	1.27981	0.12806
445	-1.79734	1.13455	1.58735	-0.51007	-1.48452	0.07842
569	-1.13017	0.76372	0.11919	0.22410	0.35026	0.30470
570	1.06252	0.75720	-0.19409	0.18298	-0.25698	0.29740
631	0.70578	0.72494	0.82393	0.17266	0.18971	-0.35065
632	-0.70201	0.79917	-0.88086	0.15680	-0.38537	-0.31119

SUM      0.00000      5.37229      -0.26400      -0.32472      -0.30709      0.14675

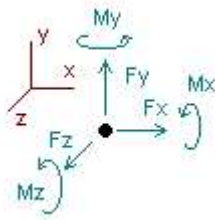
Condition **LC31=1.2DL-WL30+1.6LLa4**

444	1.76312	1.17100	-1.66720	-0.55458	1.15772	0.09576
445	-1.82869	1.14949	1.62970	-0.50708	-1.55035	0.09636
569	-1.15611	0.78100	0.10821	0.23764	0.37172	0.29977
570	1.02241	0.74927	-0.17137	0.17919	-0.26912	0.30703
631	0.68693	0.72973	0.94024	0.14221	0.32632	-0.35908
632	-0.74367	0.79180	-0.83957	0.16899	-0.26689	-0.29799

SUM      -0.25600      5.37229      0.00000      -0.33364      -0.23060      0.14186

**Envelope for nodal reactions**

Note.- **Ic** is the controlling load condition



*Direction of positive forces and moments*

Envelope of nodal reactions for :

- LC1=1.2DL+W0
- LC2=1.2DL+W30
- LC3=1.2DL-W0
- LC4=1.2DL-W30
- LC5=0.9DL+W0
- LC6=0.9DL+W30
- LC7=0.9DL-W0
- LC8=0.9DL-W30
- LC9=1.2DL+Di+W0
- LC10=1.2DL+Di+W30
- LC11=1.2DL+Di-W0
- LC12=1.2DL+Di-W30
- LC13=1.4DL

LC14=1.2DL+1.6LL1  
 LC15=1.2DL+1.6LL2  
 LC16=1.2DL+WLO+1.6LLa1  
 LC17=1.2DL+WL30+1.6LLa1  
 LC18=1.2DL-WLO+1.6LLa1  
 LC19=1.2DL-WL30+1.6LLa1  
 LC20=1.2DL+WLO+1.6LLa2  
 LC21=1.2DL+WL30+1.6LLa2  
 LC22=1.2DL-WLO+1.6LLa2  
 LC23=1.2DL-WL30+1.6LLa2  
 LC24=1.2DL+WLO+1.6LLa3  
 LC25=1.2DL+WL30+1.6LLa3  
 LC26=1.2DL-WLO+1.6LLa3  
 LC27=1.2DL-WL30+1.6LLa3  
 LC28=1.2DL+WLO+1.6LLa4  
 LC29=1.2DL+WL30+1.6LLa4  
 LC30=1.2DL-WLO+1.6LLa4  
 LC31=1.2DL-WL30+1.6LLa4

Node	Forces						Moments						
		Fx [Kip]	lc	Fy [Kip]	lc	Fz [Kip]	lc	Mx [Kip*ft]	lc	My [Kip*ft]	lc	Mz [Kip*ft]	lc
444	Max	2.074	LC2	1.340	LC11	0.271	LC5	-0.18820	LC6	2.51296	LC2	0.44808	LC2
	Min	-1.351	LC8	0.103	LC5	-2.057	LC3	-0.65201	LC12	-2.03145	LC8	-0.39426	LC8
445	Max	1.072	LC17	1.309	LC9	2.134	LC1	-0.16824	LC5	1.64115	LC6	0.28501	LC4
	Min	-1.829	LC31	0.238	LC7	-0.371	LC7	-0.60360	LC11	-2.21442	LC4	-0.25605	LC6
569	Max	1.132	LC6	1.344	LC12	1.171	LC1	0.70060	LC4	2.68988	LC4	0.70133	LC2
	Min	-3.042	LC4	0.107	LC6	-0.903	LC7	-0.32248	LC6	-2.21388	LC6	-0.15144	LC8
570	Max	2.271	LC2	1.316	LC10	0.921	LC5	0.46171	LC2	1.55567	LC7	0.52583	LC12
	Min	-0.402	LC8	0.212	LC8	-1.210	LC3	-0.12785	LC8	-2.12555	LC1	0.00263	LC6
631	Max	1.262	LC2	1.333	LC9	3.211	LC1	0.74599	LC3	3.09640	LC1	-0.05255	LC7
	Min	-0.075	LC8	0.243	LC7	-1.690	LC7	-0.45909	LC5	-2.62180	LC7	-0.62167	LC9
632	Max	0.711	LC6	1.313	LC11	0.576	LC5	0.48183	LC1	1.95168	LC5	-0.05094	LC5
	Min	-1.896	LC4	0.281	LC5	-2.050	LC3	-0.20006	LC7	-2.52892	LC3	-0.55384	LC11



Date: 2/9/2022  
 Project Name: STRATFORD  
 Project No.: CT2112  
 Designed By: KM Checked By: MSC



**CHECK CONNECTION CAPACITY (Worst Case)**

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

**Bolt Type =** A36 5/8" Threaded Rod

**Allowable Tensile Load =**

$F_{Tall} =$  6673 lbs.

**Allowable Shear Load =**

$F_{vall} =$  4004 lbs.

**TENSILE FORCES**

**Reaction**  $F =$  1171 lbs. (See Bentley Output)

**SHEAR FORCES**

**Reactions in X direction:** 3042 lbs. (See Bentley Output)

**Reactions in Y direction:** 1344 lbs. (See Bentley Output)

**Resultant:** 3326 lbs.

**No. of Supports =** 1

**No. of Bolts / Support =** 3

**Tension Design Load /Bolts =**

$f_t =$  390.33 lbs. < 6673 lbs. **Therefore, OK !**

**Shear Design Load / Bolts=**

$f_v =$  1108.56 lbs. < 4004 lbs. **Therefore, OK !**

**CHECK COMBINED TENSION AND SHEAR**

$f_t / F_T$	+	$f_v / F_v$	$\leq$	1.0	
0.058	+	0.277	=	0.335	< 1.0 <b>Therefore, OK !</b>

# EXHIBIT 5



# Radio Frequency Exposure Analysis Report

April 1, 2022

Centerline on behalf of AT&T  
Centerline Communications Project Number: 566485

AT&T Site Name: STRATFORD  
Site Number: CT2112  
FA#: 10071312  
USID: 60398

Site Address: 623 HONEYSPOOT ROAD, STRATFORD, CT 06615

## Site Compliance Summary

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AT&T Compliance Status:	Compliant
Cumulative Calculated Power Density (Ground Level):	5.52712 $\mu\text{W}/\text{cm}^2$
Cumulative General Population % MPE (Ground Level):	0.67417%



April 1, 2022

Centerline  
Attn: Jennifer Iliades, Project Manager  
750 W Center St, Suite 301  
West Bridgewater, MA 02379

#### RF Exposure Analysis for Site: **STRATFORD**

Centerline Communications, LLC (“Centerline”) was contracted to analyze the proposed AT&T facility at **623 HONEYSPOD ROAD, STRATFORD, CT 06615** for the purpose of determining whether the predictive exposure from the proposed facility is within specified federal limits.

All information used in this report was analyzed as a percentage of the Maximum Permissible Exposure (% MPE) limits as detailed in 47 CFR § 1.1310 as well as Federal Communications Commission (FCC) OET Bulletin 65 Edition 97-01. The FCC MPE limits are typically expressed in units of milliwatts per square centimeter ( $\text{mW}/\text{cm}^2$ ) or microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The exposure limits vary depending upon the frequencies being utilized. The General Population/Uncontrolled MPE limit (in  $\text{mW}/\text{cm}^2$ ) for frequencies between 300 and 1500 is defined as frequency (in MHz) divided by 1500 ( $f_{\text{MHz}}/1500$ ). Frequencies between 1500 and 100,000 MHz have a General Population/Uncontrolled MPE limit of  $1 \text{ mW}/\text{cm}^2$  ( $1000 \mu\text{W}/\text{cm}^2$ ). The calculated power density at each sample point divided by the limit at each calculated frequency provides a result in % MPE. Summing the calculated % MPE from all contributors provides a cumulative % MPE at a particular sample point. Wireless carriers use different frequency bands with varying MPE limits; therefore, it is useful to report results in terms of % MPE as opposed to power density.

All results were compared to the FCC radio frequency exposure rules as detailed in 47 CFR § 1.1307(b) to determine compliance with the MPE limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits, as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means. Additional details can be found in FCC OET 65.



## **Calculation Methodology**

Centerline Communications, LLC has performed theoretical modeling of the site using a software tool, RoofMaster®, which incorporates calculation methodologies detailed in FCC OET 65. RoofMaster® uses a cylindrical model for conservative power density predictions within the near field of the antenna where the antenna pattern has not truly formed yet. Within this area power density values tend to decrease based upon an inverse distance function. At the point where it is appropriate for modeling to change from near-field calculations to far-field calculations, the power decreases inversely with the square of the distance. The modeling is based on worst-case assumptions in terms of transmitter power and duty cycle. No losses were included in the power calculations unless they were specifically provided for the project.

In OET 65, a far field model is presented to calculate the spatial peak power density. The RoofMaster® implementation of this model incorporates antenna manufacturer's horizontal and vertical pattern data to determine the power density in all directions. This model yields the power density at a single point in space. In order to determine the spatial power density for comparison to the FCC limits, the average of several points calculated within the human profile (0-6') must be conducted. RoofMaster® calculates seven power density values between 0-6' above the specified study plane and performs a linear spatial average.



## **Data & Results**

The following table details the antennas and operating parameters for the AT&T antenna system as well as any other antenna systems at the site. This is based on antenna information provided by the client and data compiled from other sources where necessary. The data below was input into Roofmaster® to perform the theoretical exposure calculations at the ground level.

The theoretical calculations performed in Roofmaster® determine the cumulative exposure at all sample points at ground level (0-6' spatial average). The results from highest cumulative sample point at ground level surrounding the site are displayed in the table below. The contribution from directional antennas to the maximum cumulative totals varies greatly depending on location; therefore, the contribution from one antenna sector at the highest calculated exposure point may be greater or less than other sectors since sectorized directional antennas are pointed in different directions and there is not much overlapping exposure.

The contribution to the cumulative power density and % MPE for each antenna/frequency band is listed in the table. The cumulative power density and cumulative % MPE are displayed at the bottom of the table.



**Maximum Calculated Cumulative Power Density (Location: approximately 67' southeast of site)**

Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/Channel (watts)	ERP (watts)	Calculated Power Density ( $\mu\text{W}/\text{cm}^2$ )	General Population MPE Limit ( $\mu\text{W}/\text{cm}^2$ )	General Population % MPE
AT&T A 1	QUINTEL QD6616-7 V1	700	11.97	90.00	4.00	30.00	1889.26	0.00047	466.67	0.00010
AT&T A 1	QUINTEL QD6616-7 V1	1900	15.12	90.00	4.00	30.00	3896.65	0.00002	1000.00	0.00000
AT&T A 1	QUINTEL QD6616-7 V1	2100	15.62	90.00	4.00	30.00	4381.08	0.00040	1000.00	0.00004
AT&T A 1	QUINTEL QD6616-7 V1	700	11.97	90.00	2.00	30.00	944.63	0.00024	466.67	0.00005
AT&T A 2	ERICSSON SON_AIR6449	3700	23.55	92.10	1.00	54.20	12274.37	0.00449	1000.00	0.00045
AT&T A 2	ERICSSON SON_AIR6419	3400	23.55	92.10	1.00	54.00	12229.08	0.00449	1000.00	0.00045
AT&T A 3	ERICSSON SON_AIR6419	3400	23.55	88.00	1.00	108.40	24548.74	0.01075	1000.00	0.00108
AT&T A 4	CCI DMP65R-BU6D	700	11.75	90.00	4.00	30.00	1795.48	0.00058	466.67	0.00012
AT&T A 4	CCI DMP65R-BU6D	850	11.45	90.00	4.00	30.00	1675.64	0.00046	566.67	0.00008
AT&T A 4	CCI DMP65R-BU6D	2300	14.15	90.00	4.00	18.00	1872.11	0.00024	1000.00	0.00002
AT&T B 5	QUINTEL QD6616-7 V1	700	11.97	90.00	4.00	30.00	1889.26	0.00020	466.67	0.00004
AT&T B 5	QUINTEL QD6616-7 V1	1900	15.12	90.00	4.00	30.00	3896.65	0.00002	1000.00	0.00000
AT&T B 5	QUINTEL QD6616-7 V1	2100	15.62	90.00	4.00	30.00	4381.08	0.00003	1000.00	0.00000
AT&T B 5	QUINTEL QD6616-7 V1	700	11.97	90.00	2.00	30.00	944.63	0.00010	466.67	0.00002
AT&T B 6	ERICSSON SON_AIR6449	3700	23.55	92.10	1.00	54.20	12274.37	0.00084	1000.00	0.00008
AT&T B 6	ERICSSON SON_AIR6419	3400	23.55	92.10	1.00	54.00	12229.08	0.00084	1000.00	0.00008
AT&T B 7	ERICSSON SON_AIR6419	3400	23.55	88.00	1.00	108.40	24548.74	0.00185	1000.00	0.00019
AT&T B 8	CCI DMP65R-BU6D	700	11.75	90.00	4.00	30.00	1795.48	0.00013	466.67	0.00003
AT&T B 8	CCI DMP65R-BU6D	850	11.45	90.00	4.00	30.00	1675.64	0.00006	566.67	0.00001
AT&T B 8	CCI DMP65R-BU6D	2300	14.15	90.00	4.00	18.00	1872.11	0.00001	1000.00	0.00000
AT&T C 9	QUINTEL QD6616-7 V1	700	11.97	90.00	4.00	30.00	1889.26	0.14175	466.67	0.03038
AT&T C 9	QUINTEL QD6616-7 V1	1900	15.12	90.00	4.00	30.00	3896.65	0.15887	1000.00	0.01589
AT&T C 9	QUINTEL QD6616-7 V1	2100	15.62	90.00	4.00	30.00	4381.08	0.16331	1000.00	0.01633
AT&T C 9	QUINTEL QD6616-7 V1	700	11.97	90.00	2.00	30.00	944.63	0.07091	466.67	0.01520
AT&T C 10	ERICSSON SON_AIR6449	3700	23.55	92.10	1.00	54.20	12274.37	0.87259	1000.00	0.08726
AT&T C 10	ERICSSON SON_AIR6419	3400	23.55	92.10	1.00	54.00	12229.08	0.87259	1000.00	0.08726
AT&T C 11	ERICSSON SON_AIR6419	3400	23.55	88.00	1.00	108.40	24548.74	1.90144	1000.00	0.19014
AT&T C 12	CCI DMP65R-BU6D	700	11.75	90.00	4.00	30.00	1795.48	0.16075	466.67	0.03445
AT&T C 12	CCI DMP65R-BU6D	850	11.45	90.00	4.00	30.00	1675.64	0.15946	566.67	0.02814
AT&T C 12	CCI DMP65R-BU6D	2300	14.15	90.00	4.00	18.00	1872.11	0.13149	1000.00	0.01315
Unknown A 13	GENERIC PANEL 6FT	850	12.62	80.00	1.00	45.00	822.65	0.00001	566.67	0.00000
Unknown A 14	GENERIC PANEL 6FT	850	12.62	80.00	1.00	45.00	822.65	0.00001	566.67	0.00000
Unknown A 15	GENERIC PANEL 6FT	850	12.62	80.00	1.00	45.00	822.65	0.00002	566.67	0.00000
Unknown A 16	GENERIC PANEL 6FT	850	12.62	80.00	1.00	45.00	822.65	0.00003	566.67	0.00001



Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density ( $\mu\text{W}/\text{cm}^2$ )	General Population MPE Limit ( $\mu\text{W}/\text{cm}^2$ )	General Population % MPE
Unknown B 17	GENERIC PANEL 6FT	850	12.62	80.00	1.00	45.00	822.65	0.00006	566.67	0.00001
Unknown B 18	GENERIC PANEL 6FT	850	12.62	80.00	1.00	45.00	822.65	0.00005	566.67	0.00001
Unknown B 19	GENERIC PANEL 6FT	850	12.62	80.00	1.00	45.00	822.65	0.00003	566.67	0.00001
Unknown B 20	GENERIC PANEL 6FT	850	12.62	80.00	1.00	45.00	822.65	0.00010	566.67	0.00002
Unknown C 21	GENERIC PANEL 6FT	850	12.62	80.00	1.00	45.00	822.65	0.08091	566.67	0.01428
Unknown C 22	GENERIC PANEL 6FT	850	12.62	80.00	1.00	45.00	822.65	0.08213	566.67	0.01449
Unknown C 23	GENERIC PANEL 6FT	850	12.62	80.00	1.00	45.00	822.65	0.07266	566.67	0.01282
Unknown C 24	GENERIC PANEL 6FT	850	12.62	80.00	1.00	45.00	822.65	0.06886	566.67	0.01215
Unknown A 25	GENERIC PANEL 6FT	850	12.62	70.00	1.00	45.00	822.65	0.00002	566.67	0.00000
Unknown A 26	GENERIC PANEL 6FT	850	12.62	70.00	1.00	45.00	822.65	0.00001	566.67	0.00000
Unknown A 27	GENERIC PANEL 6FT	850	12.62	70.00	1.00	45.00	822.65	0.00001	566.67	0.00000
Unknown B 28	GENERIC PANEL 6FT	850	12.62	70.00	1.00	45.00	822.65	0.00016	566.67	0.00003
Unknown B 29	GENERIC PANEL 6FT	850	12.62	70.00	1.00	45.00	822.65	0.00009	566.67	0.00002
Unknown B 30	GENERIC PANEL 6FT	850	12.62	70.00	1.00	45.00	822.65	0.00006	566.67	0.00001
Unknown C 31	GENERIC PANEL 6FT	850	12.62	70.00	1.00	45.00	822.65	0.11157	566.67	0.01969
Unknown C 32	GENERIC PANEL 6FT	850	12.62	70.00	1.00	45.00	822.65	0.10821	566.67	0.01910
Unknown C 33	GENERIC PANEL 6FT	850	12.62	70.00	1.00	45.00	822.65	0.09671	566.67	0.01707
Unknown A 34	GENERIC PANEL 6FT	850	12.62	60.10	1.00	75.00	1371.08	0.00015	566.67	0.00003
Unknown B 35	GENERIC PANEL 6FT	850	12.62	60.10	1.00	75.00	1371.08	0.00050	566.67	0.00009
Unknown C 36	GENERIC PANEL 6FT	850	12.62	60.10	1.00	75.00	1371.08	0.24539	566.67	0.04330
							<b>Cumulative Power Density:</b>	<b>5.52712 <math>\mu\text{W}/\text{cm}^2</math></b>	<b>Cumulative % MPE:</b>	<b>0.67417%</b>





## Summary

The theoretical calculations performed for this analysis yielded cumulative power density totals in all areas at ground level that are within the allowable federal limits for public exposure to RF energy. Therefore, the site is **Compliant** FCC rules and regulations.

Katrina Styx  
RF EME Technical Writer  
Centerline Communications, LLC

# EXHIBIT 6

BUREAU of BUILDING INSPECTION  
TOWN OF STRATFORD



# BUILDING PERMIT

*Mail to:*

Nelson Communications Services, Inc.  
PO Box 1936  
Conway, NH 03818

Bl'dg Permit # 11918 ..... Issued ... 8/21/01  
Inspector's Est. Value \$ 41,494.30 .....  
Fee Paid \$ 436.72 ..... Rec. # 18264

THIS IS TO CERTIFY THAT ..... Nelson Communications Services, Inc. ....

has been granted permission to ..... Construct new telecommunications site .....

At ..... 627 Honeyagot Road .....

Remarks ..... John & Deborah Becker, owners .....

Signed ..... John V. Carroll ..... *Building Official*

*Building Inspector's Office Hours* — 8:30 to 10:00 A.M. and 1:00 to 2:00 P.M.

ROOM 210

TOWN HALL

PHONE: 385-4010



# CERTIFICATE OF OCCUPANCY

Issued 11-14-01

Mail to:

Nelson Communications Services, Inc.  
PO Box 1936  
Conway, NH 03818

Bl'dg Permit # 11918..... Issued .. 8/21/01.  
Inspector's Est. Value \$... 41,494.30 .....  
Fee Paid \$... 436.72..... Rec. #... 18264.....

THIS IS TO CERTIFY THAT ..... Nelson Communications Services, Inc. ....

has been granted permission to occupy ..... Wireless telecommunications site .....

At ..... 627 Honeyspot Road .....

Remarks ..... John & Deborah Becker, owners .....

The above described building has been examined by the Building official and/or his agent and found to be in substantial conformity with the Town Zoning and Building Codes. Permission is hereby granted to occupy same.

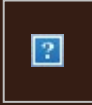
Signed ..... Building Official

**Building Inspector's Office Hours—8:30 to 10:00 A.M. and 1:00 to 2:00 P.M.**

Room 210                      Town Hall                      Phone: 385-4010  
2725 Main Street  
Stratford, CT 06615

# EXHIBIT 7

**From:** [UPS](#)  
**To:** [Evan Renwick](#)  
**Subject:** UPS Delivery Notification, Tracking Number 1Z9Y45030330315537  
**Date:** Saturday, April 30, 2022 12:54:28 PM



## Hello, your package has been delivered.

**Delivery Date:** Saturday, 04/30/2022

**Delivery Time:** 12:51 PM

**Left At:** FRONT DOOR



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## CENTERLINE SITE ACQUISITION

<b>Tracking Number:</b>	<a href="#">1Z9Y45030330315537</a>
<b>Ship To:</b>	JOHN AND DEBORAH BECKER 951 BEAVER DAM ROAD STRATFORD, CT 066141150 US
<b>Number of Packages:</b>	1
<b>UPS Service:</b>	UPS Ground
<b>Package Weight:</b>	1.0 LBS
<b>Reference Number:</b>	CT2112-CSC JOHN & DEBORAH B



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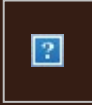
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**From:** [UPS](#)  
**To:** [Evan Renwick](#)  
**Subject:** UPS Delivery Notification, Tracking Number 1Z9Y45030330399920  
**Date:** Monday, May 2, 2022 10:09:24 AM

---



## Hello, your package has been delivered.

**Delivery Date:** Monday, 05/02/2022

**Delivery Time:** 10:08 AM

**Left At:** RECEIVER

**Signed by:** REC

## CENTERLINE SITE ACQUISITION

<b>Tracking Number:</b>	<a href="#">1Z9Y45030330399920</a>
<b>Ship To:</b>	OFFICE OF THE MAYOR 2725 MAIN STREET STRATFORD, CT 066155818 US
<b>Number of Packages:</b>	1
<b>UPS Service:</b>	UPS Ground
<b>Package Weight:</b>	1.0 LBS
<b>Reference Number:</b>	CT2112_CSC MAYOR

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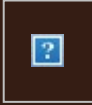
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**From:** [UPS](#)  
**To:** [Evan Renwick](#)  
**Subject:** UPS Delivery Notification, Tracking Number 1Z9Y45030320524142  
**Date:** Monday, May 2, 2022 10:15:23 AM

---



## Hello, your package has been delivered.

**Delivery Date:** Monday, 05/02/2022

**Delivery Time:** 10:13 AM

**Left At:** RECEIVER

**Signed by:** REC



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## CENTERLINE SITE ACQUISITION

<b>Tracking Number:</b>	<a href="#">1Z9Y45030320524142</a>
<b>Ship To:</b>	PLANNING & ZONING DEPARTMENT 2725 MAIN STREET ROOM 113 & 118 STRATFORD TOWN HALL STRATFORD, CT 066155818 US
<b>Number of Packages:</b>	1
<b>UPS Service:</b>	UPS Ground
<b>Package Weight:</b>	1.0 LBS
<b>Reference Number:</b>	CT2112-CSC TOWN PLANNER



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**From:** [UPS](#)  
**To:** [Evan Renwick](#)  
**Subject:** UPS Delivery Notification, Tracking Number 1Z9Y45030321925752  
**Date:** Monday, May 2, 2022 10:15:23 AM

---



## Hello, your package has been delivered.

**Delivery Date:** Monday, 05/02/2022

**Delivery Time:** 10:13 AM

**Left At:** RECEIVER

**Signed by:** REC



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## CENTERLINE SITE ACQUISITION

<b>Tracking Number:</b>	<a href="#">1Z9Y45030321925752</a>
<b>Ship To:</b>	PLANNING & ZONING DEPARTMENT 2725 MAIN STREET RM 113 & 118 STRATFORD TOWN HALL STRATFORD, CT 066155818 US
<b>Number of Packages:</b>	1
<b>UPS Service:</b>	UPS Ground
<b>Package Weight:</b>	1.0 LBS
<b>Reference Number:</b>	CT2112_CSC ZEO



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