SAI Group
12 Industrial Way
Salem, NH 03079
603-421-0470

November 17, 2023

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

Notice of Exempt Modification – New Cingular Wireless PCS, LLC (AT&T) – CT2118
555 Main Street, Stamford, CT 06901
N 41.05338889
W 73.53564722

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 235' level of the rooftop mounted self-support tower at 555 Main Street, Stamford, CT (555 East Main Street per Stamford GIS). The tower is owned by Everest Infrastructure and the property is owned by SNET. AT&T now intends to replace six (6) antennas and add three (3) antennas. This modification may include B2, B5, B17, B14, B29, B30, B66 & n77 hardware that is 4G (LTE) and/or 5GNR capable through remote software configuration and either or both services may be turned on or off at various times.

AT&T Planned Modifications:

Remove:
(3) Ericsson RRUS-11 B5
(6) Triplexers
(4) Diplexers
(2) TMAs
(8) Coax (1-5/8")

Remove and Replace:
(2) CCI OPA-65R-LCUU-H4 Antennas (REMOVE) - (2) Ericsson AIR 6419 B77G Antennas (REPLACE)
(1) CCI HPA-45R-BUU-H6 Antenna (REMOVE) - (1) Ericsson AIR 6419 B77G Antenna (REPLACE)
(1) KATHREIN 800-10964 K Antenna (REMOVE) - (1) QUINTEL QD4616-7 Antenna (REPLACE)
(1) ANDREW P65-15-XLH-RR Antenna (REMOVE) - (1) ANDREW DMP65R-BU4DA Antenna (REPLACE)
(1) CCI TPA-45R-KU6A Antennas (REMOVE) - (1) CCT TPA-45R-KU66A-K Antennas (REPLACE)
(3) ERICSSON RRUS-11 B12 (REMOVE) - (3) ERICSSON 4449 B5/B12 RRU (REPLACE)
(3) RAYCAP Surge Units (REMOVE) - (3) RAYCAP C9-48-60-24-BC-EV Surge Units (REPLACE)
(3) FIBER Lines (REMOVE) - (3) FIBER Lines (24 pair) (REPLACE)

Install New:
(3) Ericsson AIR 6449 B77D Antennas

Existing to Remain:
(3) CCI HPA-45R-BUU-H6
(1) CCI TPA-45R-KU6A
(3) Ericsson RRUS-32 B30
(3) Ericsson 4478 B14 RRU
(3) Ericsson RRUS-32 B66A
(3) Ericsson RRUS-32 B2
(4) Coax (1-5/8")
(6) DC Lines

AT&T's use of this facility was approved by the Connecticut Siting Council in Petition # 154 on February 19, 1986. The approval included no conditions that could feasibly be violated by this proposed modification, including total facility height and mounting restrictions. This modification therefore complies with the aforementioned approvals.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 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 Mayor Caroline Simmons and the Stamford Land Use Bureau, as well as the property and tower 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).

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

2. The proposed modifications will not require the 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 replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

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

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

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).

Please feel free to call me at (860) 670-9068 with any questions regarding this matter. Thank you for your consideration.

Sincerely,

Mark Roberts

Mark Roberts
Consultant for SAI
Mark.Roberts@QCDevelopment.net

Attachments

Cc: Mayor Caroline Simmons - Elected Official
Ralph Blessing – Land Use Bureau Chief
SNET - Property Owner
Everest Infrastructure – Tower Owner

Exhibit A

Original Facility Approval

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

1 CENTRAL PARK PLAZA • NEW BRITAIN, CONN. 06051

PHONE: 827-2604

Petition No. 154
Southern New England Telephone Company
Stamford, Connecticut

Southern New England Telephone Company (SNET) is petitioning the Siting Council (Council) for a ruling that no certificate of environmental compatibility and public need (certificate) is required for SNET's proposed addition of up to six cellular telephone antennas to its existing tower in Stamford, Connecticut. This 125' self-supporting tower is located on the roof of SNET's Central Office at 555 Main Street in Stamford. This Tower was the subject of a previous Council ruling, Petition No. 128. On May 22, 1985, Chairperson Gloria Dibble Pond, Dr. William H. Smith and Robert K. Erling of the Council conducted a field review of SNET's petition to add a 10' dish antenna to this tower. The Council subsequently ruled that no certificate was required for the addition of this dish.

SNET states that because of the tall buildings in metropolitan Stamford, cellular system customers are experiencing weak signals and impaired transmissions in the Stamford area. The addition of a cellular site in downtown Stamford would alleviate the problems now being experienced.

SNET proposes to add four transmit and two receive antennas to the existing Stamford tower, thus precluding the necessity of constructing an additional tower in this area. The additional 13' whip antennas would be mounted on brackets near the top of the tower and would not project above the existing lightning rod and obstruction light which is the highest point on this tower. Maximum power densities at the base of the tower are calculated to be 0.00866 mW/cm^2, which is some 300 times lower than the American National Standards Institute of 2.933 milliwatts per square centimeter for this frequency. This cell site has been designed to interface with adjacent SNET cell sites in Stamford and Norwalk and has been frequency coordinated with the NYNEX cellular system.

SNET asserts that the proposed addition does not constitute a modification of an existing facility as defined in the Connecticut General Statutes, (CGS), Section 16-50i(d), and that no certificate is required pursuant to Section 16-50k of this CGS, as the proposed modification would not have substantial adverse environmental effect.

Mr. Donald Chapman of SNET confirmed to Staff that only FCC notification is necessary.

Robert K. Erling
Siting Analyst
2/19/86

RKE/cp

Exhibit B

Property Card

555 EAST MAIN STREET

Location	555 EAST MAIN STREET	**Mblu**	002/ 1817/ / /
Acct#	002-1817	**Owner**	SOUTHERN NEW ENGLAND TELEPHONE CO
Assessment	$2,892,460	**Appraisal**	$4,132,090
PID	7840	**Building Count**	1

Legal Description

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$2,638,190	$1,493,900	$4,132,090
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$1,846,730	$1,045,730	$2,892,460

Owner of Record

Owner	SOUTHERN NEW ENGLAND TELEPHONE CO	**Sale Price**	$0
Co-Owner	C/O FRONTIER COMMINICATIONS	**Book & Page**	1251/0285
Address	PO BOX 2629 ADDISON, TX 75001	**Sale Date**	02/28/1972
		Instrument	25

Ownership History

Ownership History				
Owner	**Sale Price**	**Book & Page**	**Instrument**	**Sale Date**
SOUTHERN NEW ENGLAND TELEPHONE CO	$0	1251/0285	25	02/28/1972

Building Information

Building 1 : Section 1

Year Built: 1971
Living Area: 30,436

Building Attributes

Field	Description
Style:	Telephone Bldg
Model	Comm/Ind
Grade	C
Stories:	2
Occupancy	1.00
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	T&G/Rubber
Interior Wall 1	Drywall/Plaste
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	
Heating Fuel	Gas/LP
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	Industrial MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	300C
Heat/AC	Heat/AC Pkgs
Frame Type	FireProofSteel
Baths/Plumbing	Average
Ceiling/Wall	Sus-Ceil&Wall
Rooms/Prtns	Average
Wall Height	18.00
% Comn Wall	13.00

Building Photo

(https://images.vgsi.com/photos/StamfordCTPhotos//\00\13\04\22.jpg)

Building Layout

(ParcelSketch.ashx?pid=7840&bid=7840)

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	15,218	15,218
FUS	Upper Story, Finished	15,218	15,218
UBM	Basement, Unfinished	15,218	0
		45,654	30,436

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Stamford, CT Tax Maps

555 EAST MAIN STREET

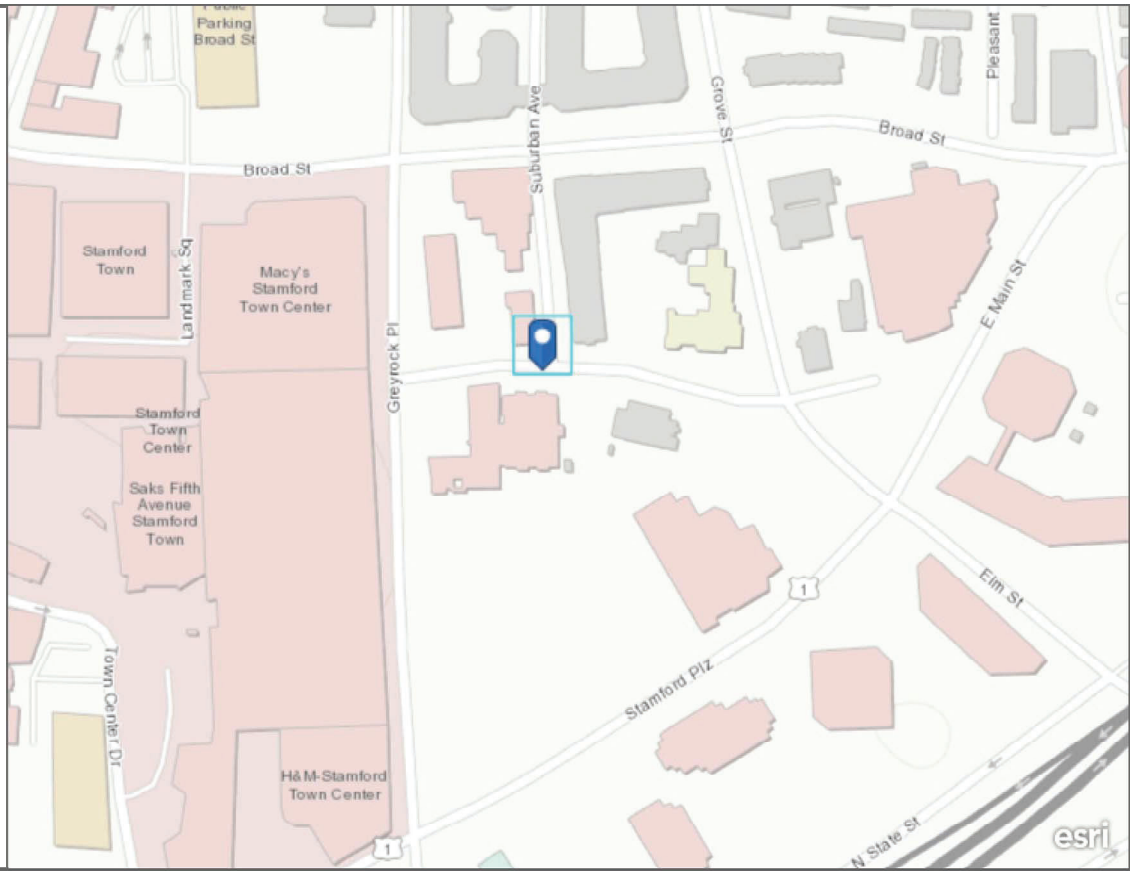


Exhibit C

Construction Drawings

PROJECT INFORMATION

SCOPE OF WORK:	ITEMS TO BE MOUNTED ON THE EXISTING ROOF TOP: • NEW AT&T ANTENNAS: AIR6419 B77G (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T ANTENNAS: AIR6449 B77D (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T ANTENNAS: OD4616-7 (TOTAL OF 1 PER GAMMA SECTOR). • NEW AT&T ANTENNAS: DMP65R-BU4DA (TOTAL OF 1 PER GAMMA SECTOR). • NEW AT&T ANTENNAS: TPA-45R-KU6AA-K (TOTAL OF 1 PER BETA SECTOR). • EXISTING AT&T RRUS: 4478 B14 (700) (TOTAL OF 1 PER BETA SECTOR). (TO BE RELOCATED @ POS. 4) • NEW AT&T RRUS: 4449 B5/B12 (700/850) (TYP. OF 1 PER SECTOR, TOTAL OF 3) • EXISTING AT&T RRUS: 4478 B14 (700) (TOTAL OF 1 PER GAMMA SECTOR). (TO BE RELOCATED @ POS. 2) • EXISTING AT&T RRUS: RRUS-32 B66A (AWS) (TOTAL OF 1 PER BETA SECTOR). (TO BE RELOCATED @ POS. 4) • EXISTING AT&T RRUS: RRUS-32 B66A (AWS) (TOTAL OF 1 PER GAMMA SECTOR). (TO BE RELOCATED @ POS. 2) • EXISTING AT&T RRUS: RRUS-32 B2 (PCS) (TOTAL OF 1 PER GAMMA SECTOR). (TO BE RELOCATED @ POS. 2) • EXISTING AT&T RRUS: RRUS-32 B30 (WCS) (TOTAL OF 1 PER GAMMA SECTOR). (TO BE RELOCATED @ POS. 4) • NEW AT&T SURGE ARRESTOR DC9-48-60-24-8C-EV (TOTAL OF 3) • NEW AT&T (3) AWG 6 DC POWER CABLES & (3) 24 PAIRS OF FIBER RUNS. • NEW AT&T (3) Y-CABLES ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION: • ADD (1) 6651 + XCEDE IDLE CABLE • ADD (3) RECTIFIERS. ITEMS TO BE REMOVED: • EXISTING AT&T ANTENNAS: TPA-45R-KU6A (TOTAL OF 1, PER BETA SECTOR). • EXISTING AT&T ANTENNAS: HPA-45R-BUU-H6 (TOTAL OF 1, PER BETA SECTOR). • EXISTING AT&T ANTENNAS: P65-15-XLH-RR (TOTAL OF 1, PER GAMMA SECTOR). • EXISTING AT&T ANTENNAS: OPA-65R-LCUU-H4 (TOTAL OF 2, PER GAMMA SECTOR). • EXISTING AT&T ANTENNAS: 800 10964 K (TOTAL OF 1, PER GAMMA SECTOR). • EXISTING AT&T RRUS: RRUS-11 B5 (TYP. OF 1 PER SECTOR, TOTAL OF 3). • EXISTING AT&T RRUS: RRUS-11 B12 (TYP. OF 1 PER SECTOR, TOTAL OF 3). • EXISTING AT&T RRUS: RRUS-E2 B29 (TOTAL OF 1 PER BETA SECTOR). • EXISTING AT&T SURGE ARRESTOR: DC6-48-60-18-8F (TOTAL OF 3) • EXISTING AT&T TRIPLEXER: TPX-070821 (TYP. OF 2 PER BETA SECTOR & 4 PER GAMMA SECTOR, TOTAL OF 6) • EXISTING AT&T DIPLEXER: DBC0135F3V92 (TYP. OF 1 PER ALPHA & BETA SECTOR, TOTAL OF 2) • EXISTING AT&T DIPLEXER: LGP13519 (TOTAL OF 2, PER GAMMA SECTOR) • EXISTING AT&T TMA'S: LGP17401 (TOTAL OF 2, PER GAMMA SECTOR) • EXISTING AT&T COAX: (8) 1-5/8" COAX • EXISTING AT&T FIBER: (3) FIBER • EXISTING AT&T (1) 5216 ITEMS TO REMAIN: • (4) ANTENNAS, (14) RRU'S, (4) COAX CABLES & (6) DC POWER
SITE ADDRESS:	555 MAIN STREET STAMFORD, CT 06901
LATITUDE:	41.0534639° N, 41° 3' 12.47" N
LONGITUDE:	-73.5356661° W, 73° 32' 8.39" W
TYPE OF SITE:	ROOF TOP / INDOOR EQUIPMENT
STRUCTURE HEIGHT:	250'-0"±
RAD CENTER:	235'-0"±(LTE), ALPHA: 227'-5"± (3.45 GHZ), 227'-9"± (C-Band) ;BETA: 236'-9"± (3.45 GHZ), 236'-9"± (C-BAND); GAMMA: 236'-9"± (3.45 GHZ), 232'-2"± (C-Band)
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	2
GN-1	GENERAL NOTES	2
A-1	ROOFTOP & EQUIPMENT PLANS	2
A-2	EXISTING ANTENNA LAYOUT	2
A-3	PROPOSED ANTENNA LAYOUT	2
A-4	ELEVATION	2
A-5	DETAILS	2
A-6	DETAILS	2
A-7	DETAILS	2
A-8	PENETRATION DETAILS	2
SN-1	STRUCTURAL NOTES	2
G-1	GROUNDING DETAILS	2
RF-1	RF PLUMBING DIAGRAM	2
RF-2	RF PLUMBING DIAGRAM	2
RF-3	RF PLUMBING DIAGRAM	2

at&t

SITE NUMBER: CTL02118

SITE NAME: STAMFORD CENTRAL SBC CO

FA CODE: 10034983

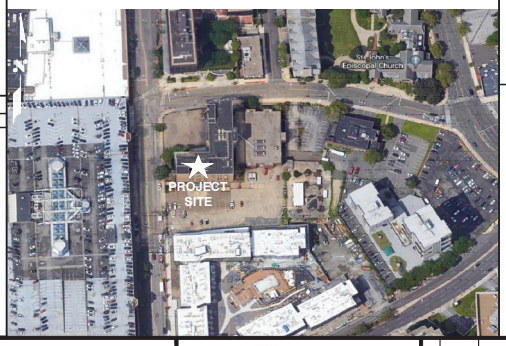
PACE ID: MRCTB057961, MRCTB057874, MRCTB052132, MRCTB051135, MRCTB050840, MRCTB050845, MRCTB051445

PROJECT: 5G NR 1SR CBAND_4TXRX ANTENNA RETROFIT_5G NR SOFTWARE UPGRADE_BBU ADD

VICINITY MAP

DIRECTIONS TO SITE:

START OUT GOING WEST ON COCHITUATE RD/MA-30 TOWARD BURR ST. 0.02 MI. MAKE A U-TURN AT BURR ST ONTO COCHITUATE RD/MA-30. 0.05 MI. MERGE ONTO I-90 W/MASSACHUSETTS TPKE W TOWARD SPRINGFIELD/BOSTON (PORTIONS TOLL). 38.8 MI. MERGE ONTO I-84 W/WILBUR CROSS HWY S VIA EXIT 9 TOWARD US-20/HARTFORD/NEW YORK CITY (PORTIONS TOLL) (CROSSING INTO CONNECTICUT). 41.7 MI. KEEP LEFT TO TAKE CT-15 S/WILBUR CROSS HWY S VIA EXIT 57 TOWARD I-91 S/CHARTER OAK BR/NY CITY. 2.0 MI. MERGE ONTO I-91 S VIA EXIT 86 TOWARD NEW HAVEN/NY CITY. 17.1 MI. MERGE ONTO CT-15 S VIA EXIT 17 TOWARD E MAIN ST. 30.2 MI. MERGE ONTO CT-8 S VIA EXIT 52 TOWARD BRIDGEPORT. 5.9 MI. MERGE ONTO I-95 S TOWARD NY CITY. 20.4 MI. TAKE THE ELM ST EXIT, EXIT 8. 0.6 MI. TURN RIGHT ONTO ELM ST. 0.1 MI. ELM ST BECOMES MAIN ST. 0.05 MI. TURN LEFT TO STAY ON MAIN ST. 0.1 MI. 555 MAIN ST 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.
5. NOTE TO GENERAL CONTRACTOR: (PRIOR TO CONSTRUCTION COMPLETION)

   TEP NORTHEAST (TEP OPCO, LLC.) TO PERFORM POST/CLIMB AND INSPECTION TO CONFIRM PROPOSED INSTALLATION COMPLIES WITH THE RECORD STAMPED DRAWINGS AND STRUCTURAL REPORTS PRIOR TO SUBMITTING FCCA (FINAL CONSTRUCTION CONTROL AFFIDAVIT). GC IS RESPONSIBLE FOR COORDINATING INSPECTIONS WITH TEP NORTHEAST (TEP OPCO, LLC.) PRIOR TO CONSTRUCTION BEING COMPLETED.

72 HOURS

CALL BEFORE YOU DIG

CALL TOLL FREE 1-800-922-4455

OR CALL 811

UNDERGROUND SERVICE ALERT

TEP NORTHEAST
TEP OPCO, LLC
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
TEL: (978) 557-5553

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL02118
SITE NAME: STAMFORD CENTRAL SBC CO

555 MAIN STREET
STAMFORD, CT 06901
FAIRFIELD COUNTY

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

NO.	DATE	REVISIONS	BY	APP'D
2	03/30/23	ISSUED FOR CONSTRUCTION	YH	DRH
1	03/14/23	ISSUED FOR CONSTRUCTION	AM	DRH
A	02/16/23	ISSUED FOR REVIEW	AM	DRH
A	09/20/22	ISSUED FOR REVIEW	YH	DRH

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

STATE OF CONNECTICUT · DANIEL P. HAMM · 16,748 · LICENSED PROFESSIONAL ENGINEER

AT&T

TITLE SHEET
5G NR 1SR CBAND_4TXRX ANTENNA RETROFIT_5G NR SOFTWARE UPGRADE_BBU ADD

SITE NUMBER	DRAWING NUMBER	REV
CTL02118	T-1	2

GROUNDING NOTES

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

GENERAL NOTES

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

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

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR–ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (F_y = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (F_y = 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 2021 WITH 2022 CT STATE BUILDING CODE AMENDMENTS
    ELECTRICAL CODE: 2020 NATIONAL ELECTRICAL CODE (NFPA 70–2020)

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

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

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

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

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

ABBREVIATIONS

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

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SALEM, NH 03079

SITE NUMBER: CTL02118
SITE NAME: STAMFORD CENTRAL SBC CO
555 MAIN STREET
STAMFORD, CT 06901
FAIRFIELD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	03/30/23	ISSUED FOR CONSTRUCTION	YH	HC	DPH
1	03/14/23	ISSUED FOR CONSTRUCTION	AM	HC	DPH
A	02/16/23	ISSUED FOR REVIEW	AM	HC	DPH
A	09/20/22	ISSUED FOR REVIEW	YH	HC	DPH

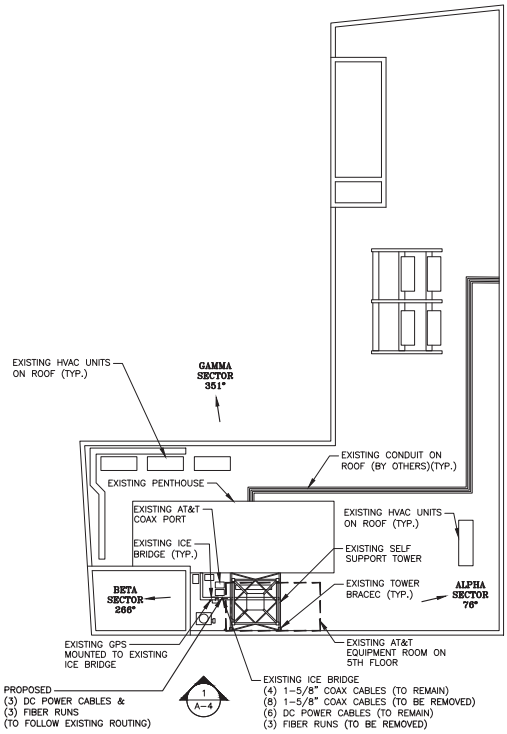
SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: PS

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

AT&T

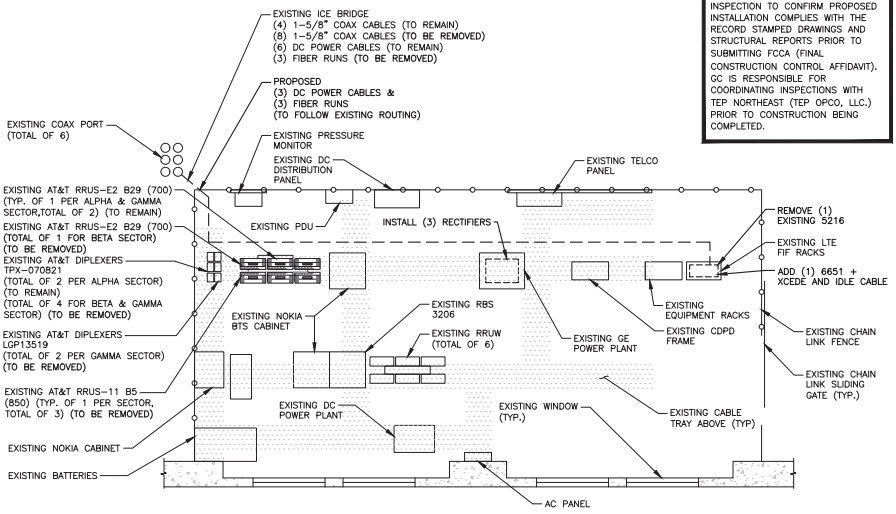
GENERAL NOTES
5G NR 1SR CBAND_4TXRX ANTENNA
RETROFIT_5G NR SOFTWARE UPGRADE_BBU ADD

SITE NUMBER	DRAWING NUMBER	REV
CTL02118	GN–1	2



ROOFTOP PLAN (1 / A-1)
22x34 SCALE: 1/16"=1'-0"
11x17 SCALE: 1/32"=1'-0"

0 8'-0" 16'-0" 32'-0" 48'-0"



EQUIPMENT PLAN (2 / A-1)
22x34 SCALE: 3/8"=1'-0"
11x17 SCALE: 3/16"=1'-0"

0 1'-4" 2'-8" 8'-0"

NOTE:

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

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:
TEP OPCO, LLC.
DATED: FEBRUARY 28, 2023

NOTE TO GENERAL CONTRACTOR: (PRIOR TO CONSTRUCTION COMPLETION)

TEP NORTHEAST (TEP OPCO, LLC.) TO PERFORM POST/CLIMB AND INSPECTION TO CONFIRM PROPOSED INSTALLATION COMPLIES WITH THE RECORD STAMPED DRAWINGS AND STRUCTURAL REPORTS PRIOR TO SUBMITTING FCCA (FINAL CONSTRUCTION CONTROL AFFIDAVIT). GC IS RESPONSIBLE FOR COORDINATING INSPECTIONS WITH TEP NORTHEAST (TEP OPCO, LLC.) PRIOR TO CONSTRUCTION BEING COMPLETED.

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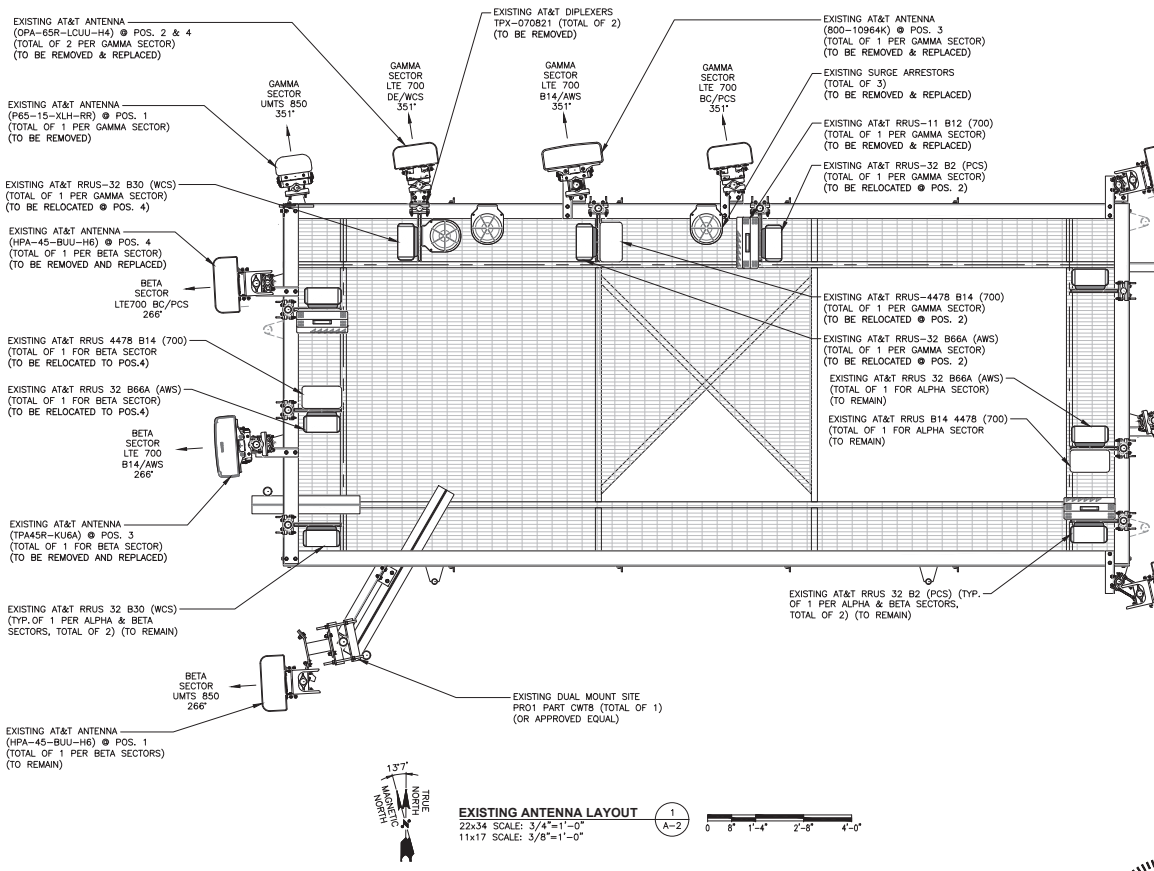
SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: AS

STATE OF CONNECTICUT
DANIEL P. HAMM
LICENSED PROFESSIONAL ENGINEER
05.24.23

AT&T

ROOFTOP & EQUIPMENT PLANS
5G NR 1SR CBAND_4TXRX ANTENNA
RETROFIT_5G NR SOFTWARE UPGRADE_BBU ADD

SITE NUMBER	DRAWING NUMBER	REV
CTL02118	A-1	2



EXISTING ANTENNA LAYOUT (1 / A-2)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
0 8" 1'-4" 2'-8" 4'-0"

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A	09/20/22	ISSUED FOR REVIEW	YH	DRH

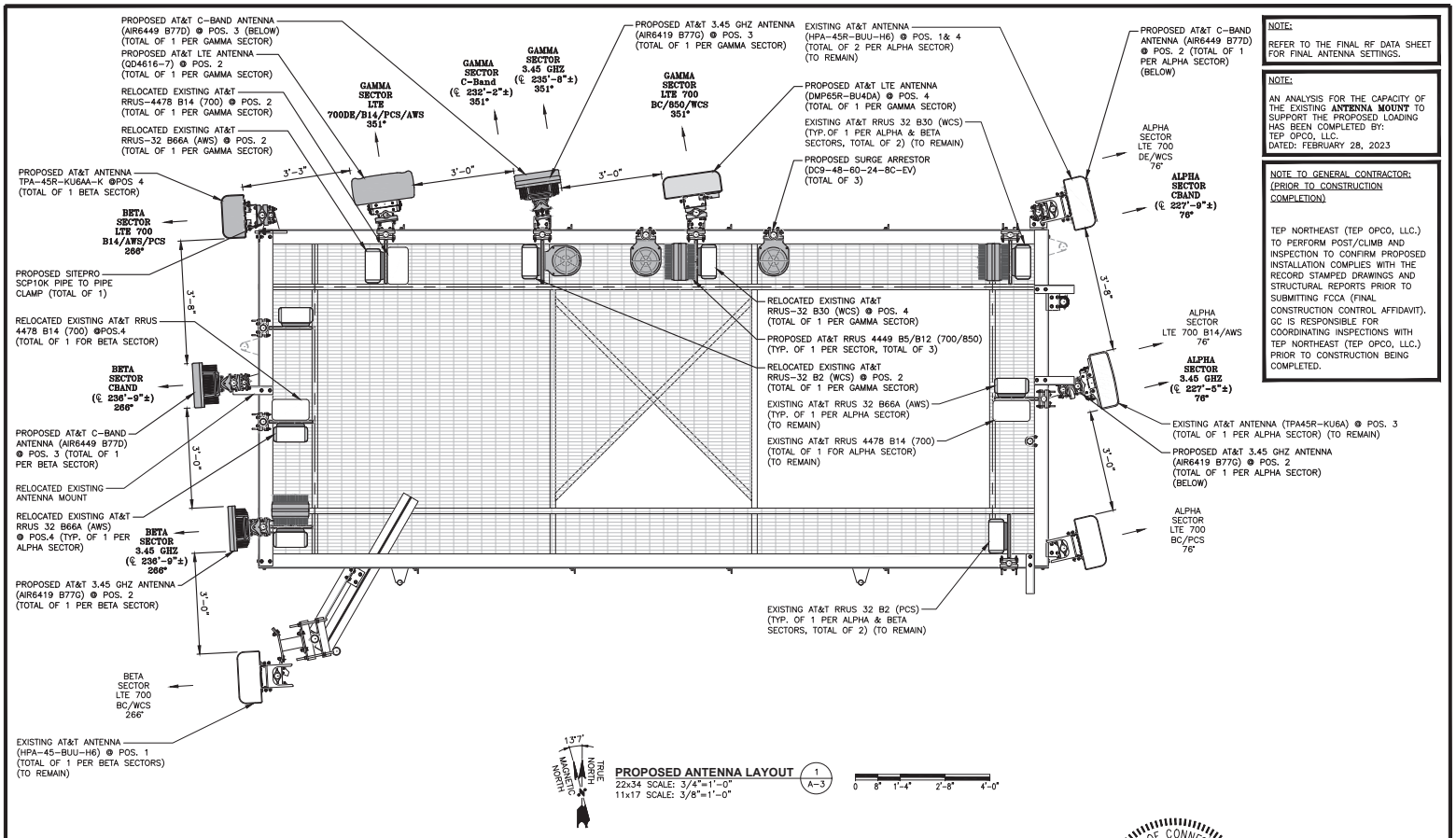
SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: PS

STATE OF CONNECTICUT — DANIEL P. HAMM — LICENSED PROFESSIONAL ENGINEER — 16.24.28

AT&T

EXISTING ANTENNA LAYOUT
5G NR 1SR CBAND_4TXRX ANTENNA
RETROFIT_5G NR SOFTWARE UPGRADE_BBU ADD

SITE NUMBER	DRAWING NUMBER	REV
CTL02118	A-2	2



PROPOSED ANTENNA LAYOUT (1 / A-3)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"

0 8" 1'-4" 2'-8" 4'-0"

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

NOTE:
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DATED: FEBRUARY 28, 2023

NOTE TO GENERAL CONTRACTOR: (PRIOR TO CONSTRUCTION COMPLETION)

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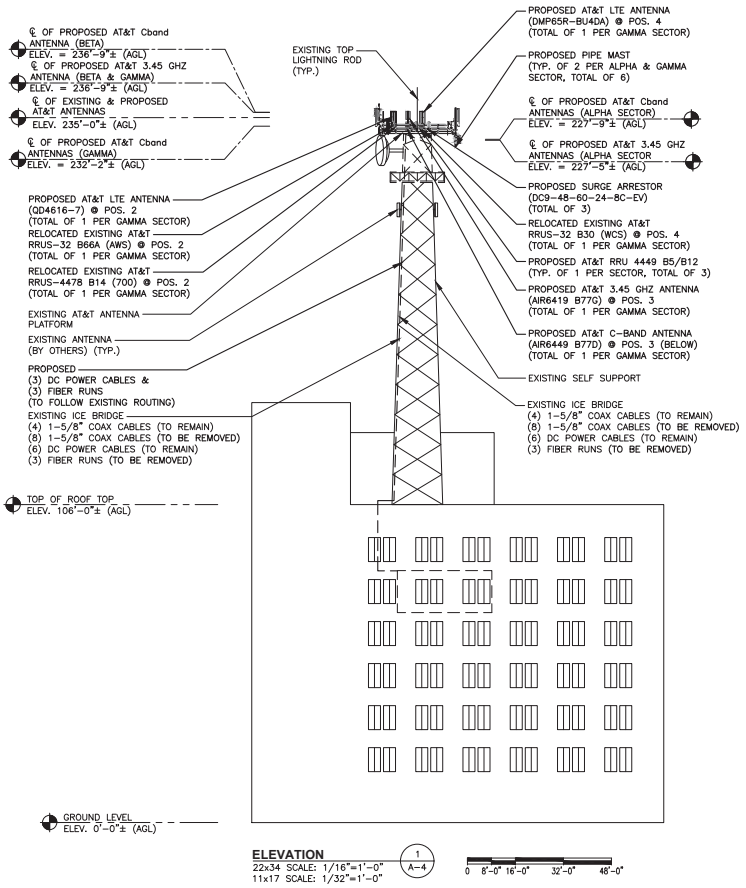
STATE OF CONNECTICUT · DANIEL P. HAMM · LICENSED PROFESSIONAL ENGINEER · 16,741

AT&T

PROPOSED ANTENNA LAYOUT
5G NR 1SR CBAND_4TXRX ANTENNA
RETROFIT_5G NR SOFTWARE UPGRADE_BBU ADD

SITE NUMBER	DRAWING NUMBER	REV
CTL02118	A-3	2



ELEVATION
22x34 SCALE: 1/16"=1'-0"
11x17 SCALE: 1/32"=1'-0"
1 A-4

0 8'-0" 16'-0" 32'-0" 48'-0"

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

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STATE OF CONNECTICUT — DANIEL P. HAMM — LICENSED PROFESSIONAL ENGINEER
05.24.23

AT&T

ELEVATION
5G NR 1SR CBAND_4TXRX ANTENNA
RETROFIT_5G NR SOFTWARE UPGRADE_BBU ADD

SITE NUMBER	DRAWING NUMBER	REV
CTL02118	A-4	2

ANTENNA SCHEDULE

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	ANTENNA TIP HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	EXISTING	LTE 700 DE/WCS	HPA-45R-BUU-H6	72.0X18.9X8.3	235'-0"±	238'-0"±	76°	(G)(E)(2) TPX-070821	(E)(1) RRUS-32 B30 (WCS) (G)(E)(1) RRUS-E2 B29 (700)	–	(2)1-5/8 COAX	(P) (1) RAYCAP DC9-48-60-24-8C-EV
A2	**PROPOSED**	**CBAND 3.45 GHZ**	**AIR6449 B77D AIR6419 B77G**	**30.4X15.9X8.1 31.1X16.1X7.3**	**227'-9"± 227'-5"±**	**229'-0"± 228'-9"±**	**76°**	–	–	–	(E)(2) DC POWER **(P)(1) FIBER (P)(1) DC POWER**	
A3	EXISTING	LTE 700 B14/AWS	TPA45R-KU6A	78.3X15.4X8.2	235'-0"±	238'-3"±	76°	–	(E)(1) 4478 B14 (700) (E)(1) RRUS-32 B66A (AWS)	–	–	
A4	EXISTING	LTE 700 BC/PCS	HPA-45R-BUU-H6	72.0X18.9X8.3	235'-0"±	238'-0"±	76°	–	**(P)(1) 4449 B5/B12 (700/850)** (E)(1) RRUS-32 B2 (PCS)	**17.9"x13.2"x10.4"** –	**(P)(1) Y-CABLE**	
B1	EXISTING	LTE 700 BC/WCS	HPA-45R-BUU-H6	72.0X18.9X8.3	235'-0"±	238'-0"±	266°	–	**(P)(1) 4449 B5/B12 (700/850)** (E)(1) RRUS-32 B30 (WCS)	**17.9"X13.2"X10.4"** –	**(P)(1) Y-CABLE**	(P) (1) RAYCAP DC9-48-60-24-8C-EV
B2	**PROPOSED**	**3.45 GHZ**	**AIR6419 B77G**	**31.1X16.1X7.3**	**236'-9"±**	**238'-0"±**	**266°**	–	–	–	(E)(2) DC POWER **(P)(1) FIBER (P)(1) DC POWER**	
B3	**PROPOSED**	**CBAND**	**AIR6449 B77D**	**30.4X15.9X8.1**	**236'-9"±**	**238'-0"±**	**266°**	–	–	–	–	
B4	**PROPOSED**	**LTE 700 B14/AWS/PCS**	**TPA-45R-KU6AA-K**	**72.0X18.9X8.3**	**235'-0"±**	**238'-0"±**	**266°**	–	(E)(1) RRUS-32 B2 (PCS) (E)(1) 4478 B14 (700) (E)(1) RRUS-32 B66A (AWS)	–	–	
C1	–	–	–	–	–	–	–	–	–	–	(2)1-5/8 COAX	
C2	**PROPOSED**	**LTE 700 DE /B14 /PCS /AWS**	**QD4616-7**	**51.5X22X9.6**	**235'-0"±**	**237'-0"±**	**351°**	–	(E)(1) 4478 B14 (700) (E)(1) RRUS-32 B2 (PCS) (E)(1) RRUS-32 B66A (AWS) (G)(E)(1) RRUS-E2 B29 (700)	–	(E)(2) DC POWER **(P)(1) FIBER (P)(1) DC POWER**	(P) (1) RAYCAP DC9-48-60-24-8C-EV
C3	**PROPOSED**	**3.45 GHZ C-BAND**	**AIR6419 B77G AIR6449 B77D (STACKED)**	**31.1"X16.1X7.3" 30.4"X15.9"X8.1"**	**235'-8"± 232'-2"±**	**237'-0"± 233'-5"±**	**351°**	–	–	–	–	
C4	**PROPOSED**	**LTE 700 BC/ 850/ WCS**	**DMP65R-BU4DA**	**48X20.7X7.7**	**235'-0"±**	**237'-0"±**	**351°**	–	**(P)(1) 4449 B5/B12 (700/850)** (E)(1) RRUS-32 B30 (WCS)	**17.9"x13.2"x10.4"** –	**(P)(1) Y-CABLE**	

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

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:
TEP OPCO, LLC.
DATED: FEBRUARY 28, 2023

NOTE TO GENERAL CONTRACTOR:
(PRIOR TO CONSTRUCTION COMPLETION)

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RRU CHART

QUANTITY	MODEL	SIZE (L x W x D)
P(3)	**4449 B5/B12 (850/700)**	**17.9"x13.2"x10.4"**
E(3)	4478 B14 (700)	18.1"x13.4"x8.3"
E(3)	RRUS-32 B2 (PCS)	27.2"x12.1"x7.0"
E(3)	RRUS-32 B66A (AWS)	27.2"x12.1"x7.0"
E(3)	RRUS-32 B30 (WCS)	27.2"x12.1"x7.0"
E(G)(2)	RRUS-E2 B29 (700)	20.4"x18.5"x7.5"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

FINAL ANTENNA SCHEDULE
SCALE: N.T.S

1 A-5

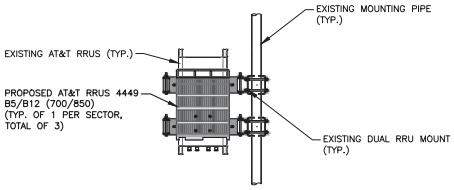
NOTE:
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

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

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

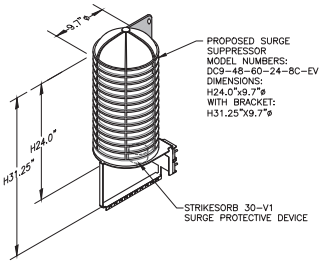
PROPOSED RRUS DETAIL
SCALE: N.T.S

2 A-5



PROPOSED LTE RRU MOUNTING DETAIL
SCALE: N.T.S

3 A-5



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL
SCALE: N.T.S

4 A-5

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

STATE OF CONNECTICUT
DANIEL P. HAMM
LICENSED PROFESSIONAL ENGINEER
15,748
6/30/23

AT&T

DETAILS
5G NR 1SR CBAND_4TXRX ANTENNA
RETROFIT_5G NR SOFTWARE UPGRADE_BBU ADD

SITE NUMBER	DRAWING NUMBER	REV
CTL02118	A-5	2

NOTE:

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TEP OPCO, LLC.
DATED: FEBRUARY 28, 2023

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(PRIOR TO CONSTRUCTION COMPLETION)

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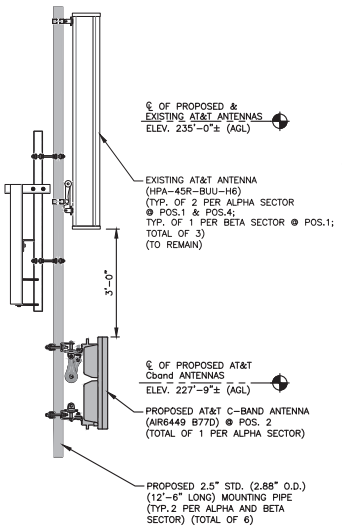
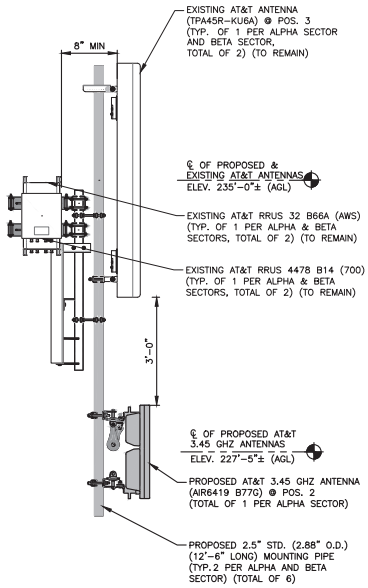
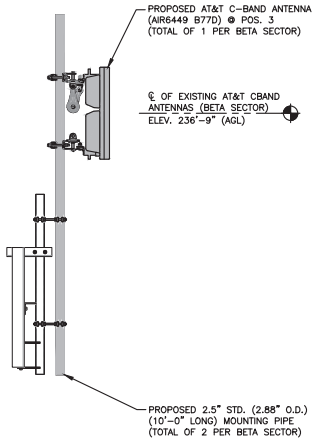


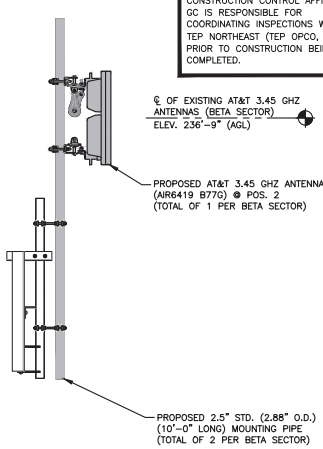
PROPOSED LTE & C-BAND ANTENNA MOUNTING DETAIL (ALPHA SECTOR) (1 / A-6)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
0 8" 1'-4" 2'-8" 4'-0"



PROPOSED LTE & 3.45 GHZ ANTENNA MOUNTING DETAIL (ALPHA SECTOR) (2 / A-6)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
0 8" 1'-4" 2'-8" 4'-0"



PROPOSED C-BAND ANTENNA MOUNTING DETAIL (BETA SECTOR) (3 / A-6)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
0 8" 1'-4" 2'-8" 4'-0"



PROPOSED 3.45 GHZ ANTENNA MOUNTING DETAIL (BETA SECTOR) (4 / A-6)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
0 8" 1'-4" 2'-8" 4'-0"

TEP NORTHEAST
TEP OPCO, LLC
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
TEL: (978) 557-5553

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL02118
SITE NAME: STAMFORD CENTRAL SBC CO

555 MAIN STREET
STAMFORD, CT 06901
FAIRFIELD COUNTY

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

NO.	DATE	REVISIONS	BY	APP'D
2	03/30/23	ISSUED FOR CONSTRUCTION	YH	DRH
1	03/14/23	ISSUED FOR CONSTRUCTION	AM	DRH
A	02/16/23	ISSUED FOR REVIEW	AM	DRH
A	09/20/22	ISSUED FOR REVIEW	YH	DRH

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

STATE OF CONNECTICUT — ANTHONY P. FIANNI — LICENSED PROFESSIONAL ENGINEER — 15734 — 05.24.23

AT&T

DETAILS
5G NR 1SR CBAND_4TXRX ANTENNA
RETROFIT_5G NR SOFTWARE UPGRADE_BBU ADD

SITE NUMBER	DRAWING NUMBER	REV
CTL02118	A-6	2

NOTE:

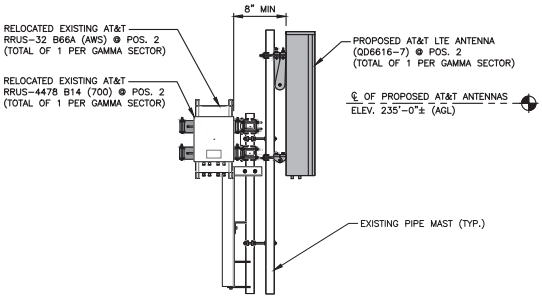
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

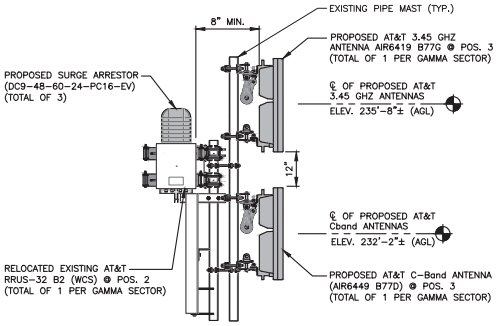
NOTE:

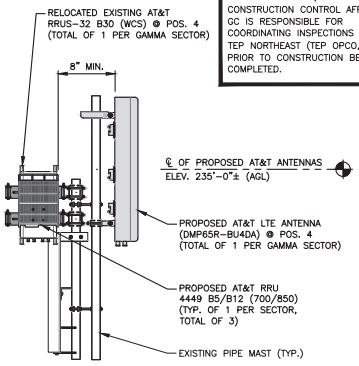
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:
TEP OPCO, LLC.
DATED: FEBRUARY 28, 2023

NOTE TO GENERAL CONTRACTOR:
(PRIOR TO CONSTRUCTION COMPLETION)

TEP NORTHEAST (TEP OPCO, LLC.) TO PERFORM POST/CLIMB AND INSPECTION TO CONFIRM PROPOSED INSTALLATION COMPLIES WITH THE RECORD STAMPED DRAWINGS AND STRUCTURAL REPORTS PRIOR TO SUBMITTING FCCA (FINAL CONSTRUCTION CONTROL AFFIDAVIT). GC IS RESPONSIBLE FOR COORDINATING INSPECTIONS WITH TEP NORTHEAST (TEP OPCO, LLC.) PRIOR TO CONSTRUCTION BEING COMPLETED.







PROPOSED LTE ANTENNA MOUNTING DETAIL (GAMMA SECTOR) (1 / A-7)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
0 8" 1'-4" 2'-8" 4'-0"

PROPOSED C-BAND+ 3.45 GHZ ANTENNAS MOUNTING DETAIL (GAMMA SECTOR) (2 / A-7)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
0 8" 1'-4" 2'-8" 4'-0"

PROPOSED LTE ANTENNA MOUNTING DETAIL (GAMMA SECTOR) (3 / A-7)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
0 8" 1'-4" 2'-8" 4'-0"

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

STATE OF CONNECTICUT — DANIEL P. HAMM — 15,741 — LICENSED PROFESSIONAL ENGINEER

AT&T

DETAILS
5G NR 1SR CBAND_4TXRX ANTENNA
RETROFIT_5G NR SOFTWARE UPGRADE_BBU ADD

SITE NUMBER	DRAWING NUMBER	REV
CTL02118	A-7	2

PACKING MATERIAL: MIN 1-1/2 in. THICKNESS OF MIN 6 pcf MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.

FILL, VOID OR CAVITY MATERIAL – SEALANT: MIN 2 in. THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH THE TOP SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL.

SPECIFIED TECHNOLOGIES INC: SPECSEAL SERIES SSS SEALANT OR SPECSEAL LCI SEALANT.

ONE 2"ø (OR SMALLER) SCHEDULE 40 PVC PIPE TO BE CENTERED WITHIN FIRESTOP SYSTEM. A NOM. ANNULAR SPACE OF 5/16" IS REQUIRED WITHIN THE FIRESTOP SYSTEM PIPE SHALL BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL/FLOOR ASSEMBLY

4 1/2" MIN. AT FLOOR

5 1/2" MIN. AT WALLS

REINFORCED LIGHT WT. CONCRETE OR UL CLASSIFIED CMU.

UL SYSTEM NUMBER: C-AJ-2057
F RATING – 2 HR.

PVC CONDUIT PENETRATION
DETAIL IN CONCRETE OR MASONRY

GROUT ALL VOIDS AROUND SLEEVES

SEALANT

CONDUIT

NOTE:
CORE HOLE 1 1/2" LARGER THAN THE DIAMETER OF THE CONDUIT. CORE DRILLS TO BE SEALED WITH ELASTOMERIC SEALANT

PIPE AND CONDUIT PENETRATION
DETAIL IN NON-RATED PARTITION

FLOOR OR WALL	MIN FLOOR OR WALL THKNS. (in.)	MAX DIAM OF STEEL PIPE OR CONDUIT (in.)	MIN ANNULAR SPACE (in.)	MAX ANNULAR SPACE (in.)	MIN FILL MTL. THKNS (in.)	MIN FORMING MTL THKNS (in.)	F RATING (HOURS)	T RATING (HOURS)
FLOOR	3-3/4	1-1/2	3/8	2-1/8	1	2-3/4	2	0
FLOOR	3-3/4	6	3/8	3/4	1	2-3/4	2	0
FLOOR	3-3/4	6	3/8	1	2	1-3/4	2	0
FLOOR	4-1/2	1-1/2	3/8	2-1/8	1	3-1/2	3	3/4
FLOOR	4-1/2	6	3/8	3/4	1	3-1/2	3	0
FLOOR	4-1/2	6	3/8	1	2	2-1/2	3	0
WALL	5-1/2	1-1/2	3/6	2-1/8	1	3-1/2	3	3/4
WALL	5-1/2	6	3/8	3/4	1	3-1/2	3	0
WALL	6-1/2	1-1/2	3/8	2-1/8	2	2-1/2	3	1
WALL	6-1/2	6	3/8	1	2	2-1/2	3	0

CONCRETE FLOOR OR WALL ASSEMBLY, MINIMUM 3-3/4 in. THICKNESS FLOOR/ MINIMUM 6-1/2 in. WALL

TYPE AS OR TYPE SS: MINIMUM THICKNESS OF SEALANT AS SPECIFIED IN THE TABLE ABOVE, APPLIED WITHIN THE OPENING, FLUSH WITH THE TOP SURFACE OF THE FLOOR OR BOTH SURFACES OF THE WALL.

FORMING MATERIAL: MINERAL WOOL BATT INSULATION (MINIMUM 4.0 pcf) FIRMLY PACKED INTO THE OPENING AS A PERMANENT FORM; SEE TABLE FOR MINIMUM REQUIRED THICKNESS

METALLIC PIPE: STEEL PIPE: 6"ø (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
CONDUIT: 4"ø (OR SMALLER) ELECTRICAL METALLIC TUBING (EMT) OR 6"ø RIGID STEEL CONDUIT.

STEEL SLEEVE (OPTIONAL)

UL SYSTEM NUMBER: C-AJ-1020
F RATING – 3 HR. (FOR PIPES GREATER THAN 4")
F RATING – 2 HR. (FOR PIPES LESS THAN 4")

PIPE AND CONDUIT PENETRATION
DETAIL IN CONCRETE OR MASONRY

WALL HR	MAX DIAM OF THROUGH PENETRANT in.	T RATING HR
1	2	1
1	1-3/4	1
2	2	1
2	1-1/4	1 1/2

THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED.

THROUGH PENETRANTS: ONE 2"ø NONMETALLIC PIPE, CONDUIT OR RACEWAY TO BE CENTERED WITHIN THE FIRESTOP SYSTEM. A NOM ANNULAR SPACE OF 5/16 in. IS REQUIRED WITHIN THE FIRESTOP SYSTEM. PIPE, CONDUIT OR RACEWAY TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF THE FLOOR OR WALL ASSEMBLY.

FILL, VOID OR CAVITY MATERIAL – SEALANT: MIN 5/8 in. THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. ADDITIONAL FILL MATERIAL TO BE INSTALLED SUCH THAT A MIN 1/4 in. THICK CROWN IS FORMED AROUND THE PENETRATING ITEM AND LAPPING 1 in. BEYOND THE PERIPHERY OF THE OPENING.

SPECIFIED TECHNOLOGIES INC: SPECSEAL SERIES SSS SEALANT, SPECSEAL LCI SEALANT.

WOOD OR METAL STUDS

LAYERS OF 5/8" GYPSUM BOARD

UL SYSTEM NUMBER: W-L-2093
F RATING – 1 & 2 HR.

PVC CONDUIT PENETRATION
DETAIL IN GYPSUM WALLBOARD

PACKING MATERIAL: MIN. 1 in. THICKNESS OF MIN. 3.5 pcf FIBERGLASS INSULATION SHALL BE WRAPPED AROUND THE THROUGH-PENETRANT AND SECURED TOGETHER BY MEANS OF NO. 24 AWG STEEL TIE WIRE. PACKING MATERIAL SHALL BE CENTERED AT MID-DEPTH OF OPENING AND RECESSED FROM BOTH SURFACES OF WALL ASSEMBLY REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.

FILL, VOID OR CAVITY MATERIAL – CAULK OR PUTTY: IN 2 HR FIRE RATED ASSEMBLIES MIN 3/4 IN. THICKNESS FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH BOTH SURFACES OF WALL. ADDITIONAL FILL MATERIAL TO BE INSTALLED SUCH THAT A MIN 1/4 in. CROWN IS FORMED AROUND THE PENETRATING ITEM. IN 1 HR FIRE RATED ASSEMBLIES, MIN 5/8 in. THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS ON BOTH SURFACES OF WALL. ADDITIONAL FILL MATERIAL TO BE INSTALLED SUCH THAT A MIN 3/8 in. CROWN IS FORMED AROUND THE PENETRATING ITEM AND LAPPING 1 in. BEYOND THE PERIPHERY OF THE OPENING.

SPECIFIED TECHNOLOGIES INC: SPECSEAL SERIES SSS SEALANT, SPECSEAL LCI SEALANT OR SPECSEAL PUTTY.

ONE 4"ø OR SMALLER METALLIC PIPE OR CONDUIT TO BE CENTERED WITHIN FIRESTOP SYSTEM. PIPE SHALL BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL/FLOOR ASSEMBLY AND HAVE AN ANNULAR SPACE OF 3/4"

LAYERS OF 5/8" THICK GYPSUM WALL BOARD

WOOD OR METAL STUDS

UL SYSTEM NUMBER: W-L-1029
F RATING – 1 & 2 HR.

PIPE AND CONDUIT PENETRATION
DETAIL IN GYPSUM WALLBOARD

ALL CORES THROUGH ELECTRIC ROOMS TO BE FIRE-STOPPED.

USE FULL CONDUIT RUNS THROUGH PENETRATIONS

NOTE:

CABLES IN VERTICAL RUNS. CABLES INSTALLED IN VERTICAL RUNS AND PENETRATING MORE THAN ONE FLOOR, OR CABLES INSTALLED IN VERTICAL RUNS IN A SHAFT, SHALL BE TYPE CMR. FLOOR PENETRATIONS REQUIRING TYPE CMR SHALL CONTAIN ONLY CABLES SUITABLE FOR RISER OR PLENUM USE. LISTED RISER COMMUNICATIONS RACEWAYS AND LISTED PLENUM COMMUNICATIONS RACEWAYS SHALL BE PERMITTED TO BE INSTALLED IN VERTICAL RISER RUNS IN A SHAFT FROM FLOOR TO FLOOR. **ONLY TYPE CMR CABLES SHALL BE PERMITTED TO BE INSTALLED IN THESE RISERS. ONLY CMP CABLES SHALL BE PERMITTED TO BE INSTALLED IN PLENUMS.**

METAL RACEWAYS OR FIREPROOF SHAFTS. LISTED COMMUNICATIONS CABLES SHALL BE ENCASED IN A METAL RACEWAY OR LOCATED IN A FIREPROOF SHAFT HAVING FIRESTOPS AT EACH FLOOR.

PENETRATION DETAILS

22x34 SCALE: N.T.S

1 / A-8

TEP NORTHEAST
TEP OFFICE, LLC
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
TEL: (978) 557-5553

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SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: PS | CHECKED BY: DRH

STATE OF CONNECTICUT
DANIEL P. HAMM
LICENSED PROFESSIONAL ENGINEER
05.24.23

AT&T

PENETRATION DETAILS
5G NR 1SR CBAND_4TXRX ANTENNA
RETROFIT_5G NR SOFTWARE UPGRADE_BBU ADD

SITE NUMBER	DRAWING NUMBER	REV
CTL02118	A-8	2

STRUCTURAL NOTES:

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-H STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
3. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
4. STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
5. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
6. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
7. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
8. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
9. FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
10. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND D1.1 WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL", 14TH EDITION.
11. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
12. UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
13. EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-270 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS 1, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
15. LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
16. WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
17. ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
18. NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
19. SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

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

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

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

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

NOTES:

1. ALL CONNECTIONS TO BE SHOP WELDED & FIELD BOLTED USING 3/4"ø A325-X BOLTS, UNLESS OTHERWISE NOTIFIED.
2. SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED BEFORE ORDERING MATERIAL.
3. SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED PRIOR TO STEEL FABRICATION.
4. VERIFICATION OF EXISTING ROOF CONSTRUCTION IS REQUIRED PRIOR TO THE INSTALLATION OF THE ROOF PLATFORM. ENGINEER OF RECORD IS TO APPROVE EXISTING CONDITIONS IN ORDER TO MOVE FORWARD.
5. CENTERLINE OF PROPOSED STEEL PLATFORM SUPPORT COLUMNS TO BE CENTRALLY LOCATED OVER THE EXISTING BUILDING COLUMNS.
6. EXISTING BRICK MASONRY COLUMNS/BEARING TO BE REPAIRED/REPLACED AT ALL PROPOSED PLATFORM SUPPORT POINTS. ENGINEER OF RECORD TO REVIEW AND APPROVE.

NOTES:

1. REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
2. PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
3. PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
4. HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
5. ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH HAS BEEN BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO DRY HOLES DRILLED USING A CARBIDE BIT INTO CRACKED CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS REQUIRING CERTIFIED INSTALLATIONS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-11 D.9.2.2. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11 D.8.2.4.
6. AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

SPECIAL INSPECTION CHECKLIST

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

TEP NORTHEAST
TEP OFFICE LOCATION
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
TEL: (978) 557-5553

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL02118
SITE NAME: STAMFORD CENTRAL SBC CO

555 MAIN STREET
STAMFORD, CT 06901
FAIRFIELD COUNTY

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

NO.	DATE	REVISIONS	BY	APP'D
2	03/30/23	ISSUED FOR CONSTRUCTION	YH	DRH
1	03/14/23	ISSUED FOR CONSTRUCTION	AM	DRH
A	02/16/23	ISSUED FOR REVIEW	AM	DRH
A	09/20/22	ISSUED FOR REVIEW	MH	DRH

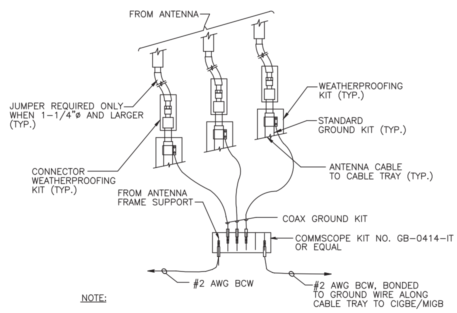
SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: PS | CHECKED BY: MH

STATE OF CONNECTICUT — DANIEL P. HAMM — LICENSED PROFESSIONAL ENGINEER — 15 JAN 2025

AT&T

STRUCTURAL NOTES
5G NR 1SR CBAND_4TXRX ANTENNA RETROFIT_5G NR SOFTWARE UPGRADE_BBU ADD

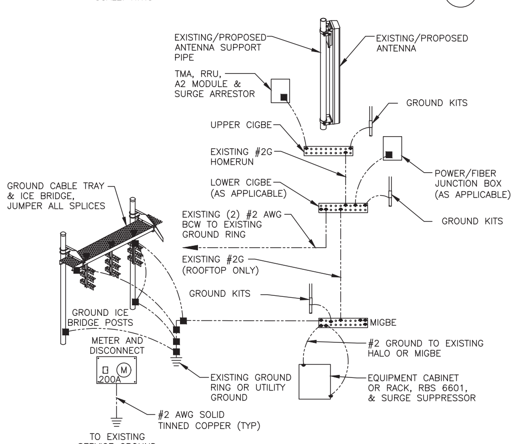
SITE NUMBER	DRAWING NUMBER	REV
CTL02118	SN-1	2



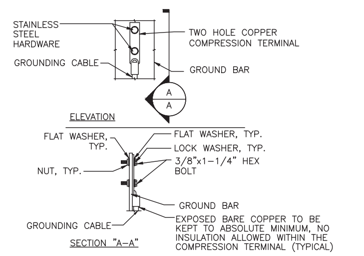
NOTE:

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

GROUND WIRE TO GROUND BAR CONNECTION DETAIL (1 / G-1)
SCALE: N.T.S



GROUNDING RISER DIAGRAM (2 / G-1)
SCALE: N.T.S



NOTES:

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

TYPICAL GROUND BAR CONNECTION DETAIL (3 / G-1)
SCALE: N.T.S

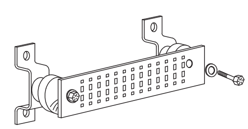
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" – SURGE PRODUCERS

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

SECTION "A" – SURGE ABSORBERS

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



GROUND BAR - DETAIL (AS REQUIRED) (4 / G-1)
SCALE: N.T.S

TEP NORTHEAST
TEP OPCO, LLC
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
TEL: (978) 557-5553

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL02118
SITE NAME: STAMFORD CENTRAL SBC CO

555 MAIN STREET
STAMFORD, CT 06901
FAIRFIELD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	03/30/23	ISSUED FOR CONSTRUCTION	YH	HC	DPH
1	03/14/23	ISSUED FOR CONSTRUCTION	AM	HC	DPH
A	02/16/23	ISSUED FOR REVIEW	AM	HC	DPH
A	09/20/22	ISSUED FOR REVIEW	YH	HC	DPH

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

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

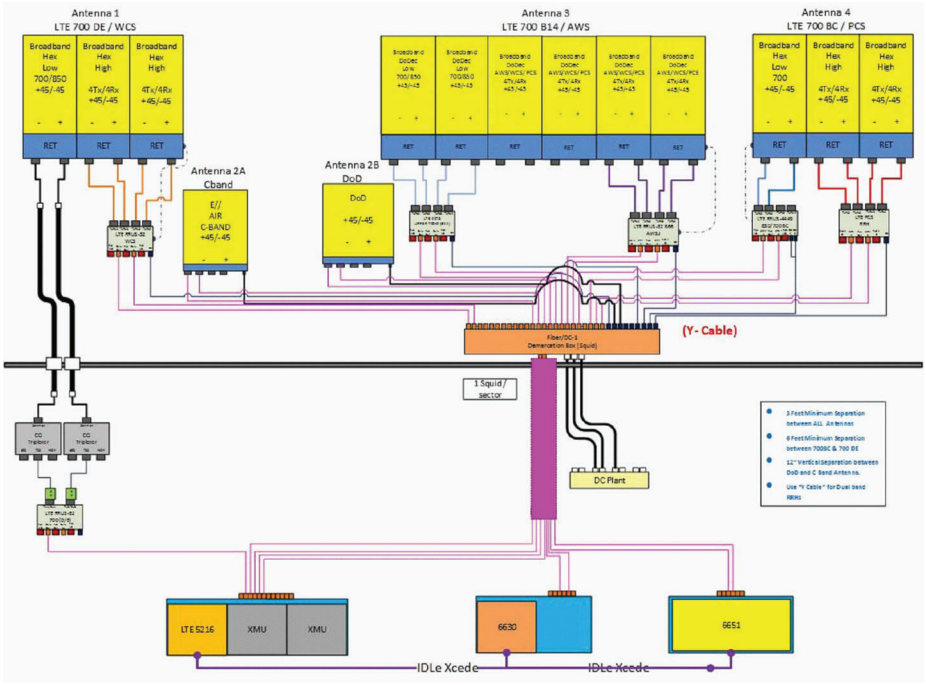
AT&T

GROUNDING DETAILS
5G NR 1SR CBAND_4TXRX ANTENNA
RETROFIT_5G NR SOFTWARE UPGRADE_BBU ADD

SITE NUMBER	DRAWING NUMBER	REV
CTL02118	G–1	2

ALPHA SECTOR

NOTE:
REV: 4
DATED: 03/22/2023
RFDS ID: 4397232



RF PLUMBING DIAGRAM
SCALE: N.T.S
1 / RF-1

NOTE:
1. CONTRACTOR TO CONFIRM ALL PARTS.
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS.
3. RFDS USED FOR REFERENCE.

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

TEP NORTHEAST
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
TEL: (978) 557-5553

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

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A	02/16/23	ISSUED FOR REVIEW	AM	HC	DPH
A	09/20/22	ISSUED FOR REVIEW	YH	HC	DPH

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

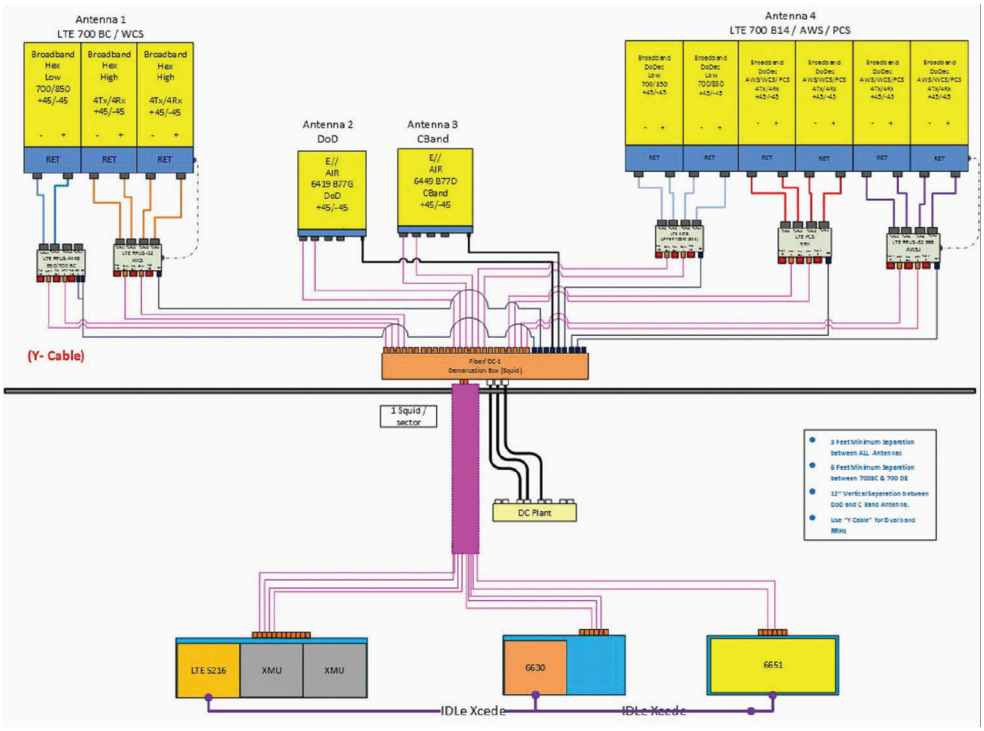
AT&T

RF PLUMBING DIAGRAM
5G NR 1SR CBAND_4TXRX ANTENNA
RETROFIT_5G NR SOFTWARE UPGRADE_BBU ADD

SITE NUMBER	DRAWING NUMBER	REV
CTL02118	RF-1	2

BETA SECTOR

NOTE:
REV: 4
DATED: 03/22/2023
RFDS ID: 4397232



RF PLUMBING DIAGRAM (1 / RF-2)
SCALE: N.T.S

NOTE:
1. CONTRACTOR TO CONFIRM ALL PARTS.
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS.
3. RFDS USED FOR REFERENCE.

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

TEP NORTHEAST
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
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SAI
12 INDUSTRIAL WAY
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NO.	DATE	REVISIONS	BY	CHK	APP'D
2	03/30/23	ISSUED FOR CONSTRUCTION	YH	HC	DPH
1	03/14/23	ISSUED FOR CONSTRUCTION	AM	HC	DPH
A	02/16/23	ISSUED FOR REVIEW	AM	HC	DPH
A	09/20/22	ISSUED FOR REVIEW	YH	HC	DPH

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

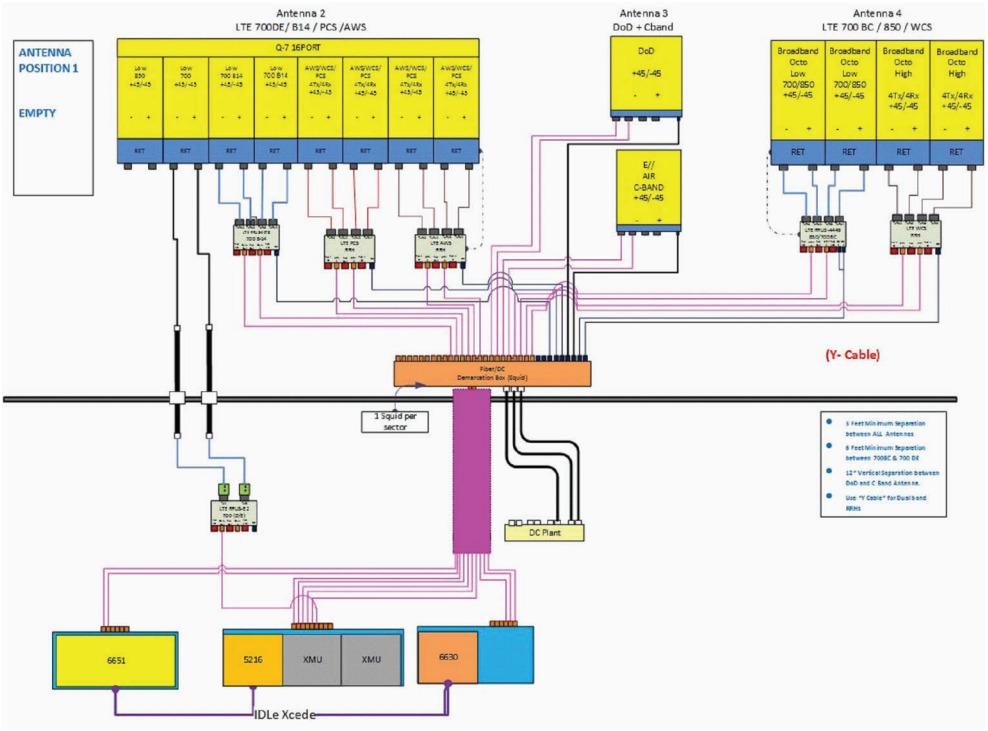
AT&T

RF PLUMBING DIAGRAM
5G NR 1SR CBAND_4TXRX ANTENNA
RETROFIT_5G NR SOFTWARE UPGRADE_BBU ADD

SITE NUMBER	DRAWING NUMBER	REV
CTL02118	RF-2	2

GAMMA SECTOR

NOTE:
REV: 4
DATED: 03/22/2023
RFDS ID: 4397232



RF PLUMBING DIAGRAM (1 / RF–3)
SCALE: N.T.S

NOTE:
1. CONTRACTOR TO CONFIRM ALL PARTS.
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS.
3. RFDS USED FOR REFERENCE.

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

TEP NORTHEAST
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
TEL: (978) 557-5553

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL02118
SITE NAME: STAMFORD CENTRAL SBC CO

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
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1	03/14/23	ISSUED FOR CONSTRUCTION	AM	HC	DPH
A	02/16/23	ISSUED FOR REVIEW	AM	HC	DPH
A	09/20/22	ISSUED FOR REVIEW	YH	HC	DPH

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

AT&T

RF PLUMBING DIAGRAM
5G NR 1SR CBAND_4TXRX ANTENNA
RETROFIT_5G NR SOFTWARE UPGRADE_BBU ADD

SITE NUMBER	DRAWING NUMBER	REV
CTL02118	RF–3	2

Exhibit D

Structural Analysis Report

May 22, 2023

Thomas Rigg
EIP Holdings II
Two Allegheny Center
Pittsburgh, PA 15212
(603) 498-7462

Tower Engineering Professionals
326 Tryon Road
Raleigh, NC 27603
(919) 661-6351
Structures@tepgroup.net

Subject: **Structural Analysis Report**

Carrier Designation:	***AT&T Mobility* Reconfiguration**	
	Carrier Site Number:	CT2118
	Carrier Site Name:	STAMFORD CENTRAL SBC CO
Client Designation:	**Site Number:**	638283
	Site Name:	Stamford #1 CO
Engineering Firm Designation:	**TEP Project Number:**	263252.851970
Site Data:	**555 Main Street, Stamford, Fairfield County, CT 06901** **Latitude *41° 3' 12.4"*, Longitude *-73° 32' 83.09"*** **125 ± Foot - Self-Support Tower**	

Dear Thomas Rigg,

Tower Engineering Professionals is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above-mentioned tower.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the stress level for the tower and foundation structure, under the following load case, to be:

LC1: Existing + Proposed + Reserved Loading **Sufficient Capacity**
Note: See Table 1 for the existing, proposed, and reserved loading

Structure Capacity	Foundation Capacity
71.8%	-

The analysis has been performed in accordance with the ANSI/TIA-222-H Structural Standard for Antenna Supporting Structures, Antennas, and Small Wind Turbine Support Structures and the 2022 Connecticut State Building Code.

All modifications and equipment proposed in this report shall be installed in accordance with the appurtenances listed in Table 1 for the determined available structural capacity to be effective.

We at *Tower Engineering Professionals* appreciate the opportunity of providing our continuing professional services to you and *EIP Holdings II.* If you have any questions or need further assistance on this or any other projects please give us a call.

Structural analysis prepared by: Austin J. Wilson / SDJ

Respectfully submitted by:

Aaron T. Rucker, P.E.

Electronic Copy

05/22/2023

TABLE OF CONTENTS

1) INTRODUCTION

The tower is a 125± Foot Self-Support Tower mapped by Hightower Solutions, Inc. in April of 2015. The original design standard and wind speed were unavailable for review. The tower has been modified per reinforcement drawings prepared by MEI, Inc. in June of 2015. The tower is located on rooftop. The bottom of tower is at 106.5-ft above ground level, bringing the total tower height to 231.5-ft. All information provided to TEP was assumed to be accurate and complete.

2) ANALYSIS CRITERIA

TIA-222 Revision:	ANSI/TIA-222-H
Type of Analysis:	Feasibility Study
Risk Category:	II
Wind Speed:	120 mph (Ultimate)
Exposure Category:	C
Topographic Procedure:	Method 1 (Kzt = 1.0)
Ice Thickness:	1.0 in
Wind Speed with Ice:	50 mph
Seismic Design Category:	B
Seismic Ss:	0.264
Seismic S1:	0.058
Service Wind Speed:	60 mph

Table 1 - Existing, Proposed, and Reserved Antenna and Cable Information

Existing/ Proposed/ Reserved	Mount Level (ft)	Ant CL (ft)	Qty	Antenna Model	Mount Type	Qty Coax	Coax Size	Coax Location	Owner/ Tenant
Proposed	***235.0***	***236.8***	***1***	***Ericsson AIR 6449 B77D***	Platform w/ handrails + Mods	***3*** ***3***	***7/16" Fiber 1" DC***	***B Leg***	***AT&T***
			1	***Ericsson AIR 6419 B77G***					
		235.7	***1***	***Ericsson AIR 6449 B77D***					
		235.0	***1***	***CCI TPA-45R-KU6AA-K***					
			1	***Qunitel QD4616-7***					
			1	***CCI DMP65R-BU4DA***					
			3	***Ericsson 4449 B5/B12***					
			3	***Raycap DC9-48-60-24-8C-EV***					
		232.2	***1***	***Ericsson AIR 6419 B77G***					
		227.8	***1***	***Ericsson AIR 6449 B77D***					
		227.5	***1***	***Ericsson AIR 6419 B77G***					
Existing	235.0	235.0	3	CCI HPA-45R-BUU-H6		4 6	1-5/8 3/4 DC	B Leg	AT&T
			9	Ericsson RRUS 32					
			3	Ericsson Radio 4478					
			1	CCI TPA45R-KU6AA					

Table 1 - Existing, Proposed, and Reserved Antenna and Cable Information - Continued

Existing/ Proposed/ Reserved	Mount Level (ft)	Ant CL (ft)	Qty	Antenna Model	Mount Type	Qty Coax	Coax Size	Coax Location	Owner/ Tenant
To Be Removed	*235.0*	*235.0*	*3*	*CCI HPA-45R-BUU-H6*	-	*8* *3*	*1-5/8* *3/8*	*B Leg*	*AT&T*
			1	*CCI TPA45R-KU6AA*					
			1	*Kathrein 80010964*					
			2	*CCI OPA-65R-LCUU-H6*					
			1	*Powerwave P65-15-XLH-RR*					
			6	*Powerwave LGP21401*					
			2	*CCI TPX-070821*					
			3	*Ericsson RRUS 11 B12*					
			2	*Raycap DC6-48-60-18-8F*					
			1	*Raycap DC6-48-60-18-8C*					
Existing	229.0	229.0	1	1.5'x 2 Element Yagi	Platform	1	1/2	B Leg	Frontier
Existing	223.5	223.5	1	10' Ø HP Dish	Pipe mount	2	EW90	B Leg	Frontier
Existing	221.5	221.5	-	-	-	2	3/8	B Leg	Unknown
Existing	221.0	221.0	1	1' Ø HP Dish	Pipe mount	1	3/8	B Leg	Frontier
Reserved	***206.5***	***210.0***	***3***	***Ericsson AIR6419 B41***	***(3) SitePro VFA12-HD***	***6***	***HCS 6x24***	***DA Face***	***T-Mobile***
Existing	206.5	210.0	3	Ericsson Air 32 KRD901146-1_B66A_B2A		-	-	DA Face	T-Mobile
To Be Removed	*206.5*	*210.0*	*3*	*Ericsson AIR 21 KRC118023-1_B2A_B4p*	*(3) Sector Mounts*	*29* *1* *1*	*1-5/8 Hybrid 1" Ø*	*DA Face*	*T-Mobile*
			3	*Ericsson Generic Twin Style 1B-AWS*					
			3	*Ericsson RRUS 11 B12*					
Reserved	***203.0***	***203.0***	***3***	***RFS APXVAALL24_43-U-NA20***	***(3) SitePro VFA12-HD***	***-***	***-***	***-***	***T-Mobile***
			3	***Ericsson 4480 B71+B85***					
			3	***Ericsson 4460 B25+B66***					
			3	***Commscope SDX1926Q-43***					
To Be Removed	*203.0*	*203.0*	*3*	*Andrew LNX-6516DS-A1M*	*(3) Sector Mounts*	-	-	-	*T-Mobile*
Existing	132.0	132.0	1	4' 7-Element Yagi	Standoff	1	1/2	B Leg	Frontier

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Source
Tower Mapping Report	Hightower Solutions, Inc., dated April 6, 2015 Site No. CT11410A	EIP
Post Modification Inspection	MEI, Inc., dated October 8, 2015 Project No. CT02768S-15V3	EIP
Previous Structural Analysis	MEI, Inc., dated July 9, 2019 Project No. CT02768S-20V0	EIP
Previous Structural Analysis	MEI, Inc., dated May 15, 2020 Project No. CT02768S-19V0	EIP
Tower Inspection Report	Tower Engineering Professionals, Inc., dated May 6, 2021 TEP No. 263252.513145	TEP
Previous Structural Analysis	Tower Engineering Professionals, Inc., dated September 6, 2022 TEP No. 263252.730266	TEP
Correspondence	Correspondence in reference to the existing, proposed, and reserved loading.	EIP

3.1) Analysis Method

tnxTower (version 8.1.1.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Analysis Assumptions

1) The tower and foundation were built and maintained in accordance with the manufacturer's specification.
2) Unless specified by the client or tower mapping, the location of the existing and proposed coax is assumed by TEP and listed in Table 1.
3) All tower components are in sufficient condition to carry their full design capacity.
4) Serviceability with respect to antenna twist, tilt, roll, or lateral translation, is not checked and is left to the carrier or tower owner to ensure conformance.
5) All antenna mounts and mounting hardware are structurally sufficient to carry the full design capacity requirements of appurtenance wind area and weight as provided by the original manufacturer specifications. It is the carrier's responsibility to ensure compliance to the structural limitations of the existing and/or proposed antenna mounts.
6) TEP assumed that tower geometry is correct per previous structural analysis by MEI, Inc., dated July 09, 2019 (Project No. CT02768S-19V0).

This analysis may be affected if any assumptions are not valid or have been made in error. Tower Engineering Professionals should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 3 - Section Capacity (Summary)[1]

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (lb)	øP$_{allow}$ (lb)	% Capacity	Pass / Fail
T1	231.5 - 229	Leg	L4x4x3/8	3	-6669	103181	60.7	Pass
T2	229 - 224.8	Leg	L4x4x3/8	11	-9747	94202	10.3	Pass
T3	224.8 - 220.7	Leg	L4x4x3/8	24	-18334	94856	19.3	Pass
T4	220.7 - 216.5	Leg	L4x4x3/8	40	-23697	94202	25.2	Pass
T5	216.5 - 211.5	Leg	L5x5x1/2	51	-31738	158461	20.0	Pass
T6	211.5 - 206.5	Leg	L5x5x1/2	67	-41898	158461	26.4	Pass
T7	206.5 - 201.5	Leg	L5x5x1/2	84	-53473	158461	33.7	Pass
T8	201.5 - 196.5	Leg	L5x5x1/2	96	-63256	158461	39.9	Pass
T9	196.5 - 191.5	Leg	L5x5x1/2	111	-73925	158461	46.7	Pass
T10	191.5 - 181.5	Leg	L6x6x5/8	123	-82686	244761	33.8	Pass
T11	181.5 - 171.5	Leg	L6x6x5/8	143	90128	206094	43.7	Pass
T12	171.5 - 161.5	Leg	L6x6x5/8	165	-122304	245095	49.9	Pass
T13	161.5 - 151.5	Leg	L6x6x5/8	185	125948	206094	61.1	Pass
T14	151.5 - 141.5	Leg	L6x6x3/4	207	-161896	290753	55.7	Pass
T15	141.5 - 131.5	Leg	L6x6x3/4	227	175317	244162	71.8	Pass
T16	131.5 - 119	Leg	L6x6x7/8	297	-192365	320779	60.0	Pass
T17	119 - 106.5	Leg	L6x6x7/8	335	190349	280858	67.8	Pass
T2	229 - 224.8	Diagonal	2L2 1/2x2 1/2x1/4x3/8	15	4157	66543	6.2	Pass
T3	224.8 - 220.7	Diagonal	2L2 1/2x2 1/2x1/4x3/8	34	3985	66543	6.0	Pass
T4	220.7 - 216.5	Diagonal	2L2 1/2x2 1/2x1/4x3/8	46	5015	66543	7.5	Pass
T5	216.5 - 211.5	Diagonal	L2 1/2x2x1/4	61	-5220	25138	20.8	Pass
T6	211.5 - 206.5	Diagonal	L2 1/2x2x1/4	77	-4856	24335	20.0	Pass
T7	206.5 - 201.5	Diagonal	L2 1/2x2x1/4	89	-6262	23489	26.7	Pass
T8	201.5 - 196.5	Diagonal	L2 1/2x2x1/4	105	-6909	22600	30.6	Pass
T9	196.5 - 191.5	Diagonal	L2 1/2x2x1/4	117	-6861	21652	31.7	Pass
T10	191.5 - 181.5	Diagonal	L3x3x1/4	135	-11512	26128	44.1	Pass
T11	181.5 - 171.5	Diagonal	L3x3x1/4	155	-11437	24824	46.1	Pass
T12	171.5 - 161.5	Diagonal	L3x3x1/4	177	-11609	23537	49.3	Pass
T13	161.5 - 151.5	Diagonal	L3x3x1/4	197	-11896	22283	53.4	Pass
T14	151.5 - 141.5	Diagonal	L3x3x1/4	219	-11270	21076	53.5	Pass
T15	141.5 - 131.5	Diagonal	L3x3x1/4	262	-13074	34876	37.5	Pass
T16	131.5 - 119	Diagonal	2L2 1/2x2 1/2x1/4x3/8	320	-17895	33989	52.6	Pass
T17	119 - 106.5	Diagonal	2L2 1/2x2 1/2x1/4x3/8	377	-18702	57288	32.6	Pass
T15	141.5 - 131.5	Horizontal	L2 1/2x2x1/4	242	-2944	11205	26.3	Pass
T10	191.5 - 181.5	Secondary Horizontal	L2 1/2x2x1/4	140	-1241	14549	8.5	Pass
T11	181.5 - 171.5	Secondary Horizontal	L2 1/2x2x1/4	160	-1544	12035	12.8	Pass
T12	171.5 - 161.5	Secondary Horizontal	L2 1/2x2x3/16	182	-1836	7917	23.2	Pass
T13	161.5 - 151.5	Secondary Horizontal	L2 1/2x2 1/2x1/4	202	-2122	16325	13.0	Pass
T14	151.5 - 141.5	Secondary Horizontal	L2 1/2x2x1/4	224	-2430	7446	32.6	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (lb)	ϕP_{allow} (lb)	% Capacity	Pass / Fail
T1	231.5 - 229	Top Girt	C8x11.5	6	-674	62510	17.0	Pass
T3	224.8 - 220.7	Top Girt	L2 1/2x2 1/2x1/4	25	-1175	23393	5.0	Pass
T5	216.5 - 211.5	Top Girt	C7x9.8	56	-1162	48228	2.4	Pass
T6	211.5 - 206.5	Top Girt	L2 1/2x2x1/4	72	-923	15781	5.8	Pass
T8	201.5 - 196.5	Top Girt	L2 1/2x2 1/2x1/4	99	-949	18273	5.2	Pass
T10	191.5 - 181.5	Top Girt	L2 1/2x2 1/2x1/4	130	-2841	15726	18.1	Pass
T11	181.5 - 171.5	Top Girt	L2 1/2x2 1/2x1/4	150	-5143	13677	37.6	Pass
T12	171.5 - 161.5	Top Girt	L2 1/2x2 1/2x1/4	172	-5768	12004	48.1	Pass
T13	161.5 - 151.5	Top Girt	L2 1/2x2 1/2x1/4	192	-6190	10620	58.3	Pass
T14	151.5 - 141.5	Top Girt	L2 1/2x2 1/2x1/4	214	-5960	9462	63.0	Pass
T15	141.5 - 131.5	Top Girt	L2 1/2x2 1/2x1/4	234	-5885	13327	44.2	Pass
T16	131.5 - 119	Top Girt	2L2 1/2x2 1/2x1/4x3/8	301	-8240	60741	13.6	Pass
T17	119 - 106.5	Top Girt	2L2 1/2x2 1/2x1/4x3/8	341	-8330	57317	14.5	Pass
T15	141.5 - 131.5	Redund Horz 1 Bracing	L2 1/2x2x3/16	247	-2944	21589	13.6	Pass
T16	131.5 - 119	Redund Horz 1 Bracing	L2 1/2x2x3/16	317	-2944	21345	13.8	Pass
T17	119 - 106.5	Redund Horz 1 Bracing	L2 1/2x2x3/16	365	-3210	20739	15.5	Pass
T15	141.5 - 131.5	Redund Diag 1 Bracing	L2 1/2x2x3/16	278	-1986	18797	10.6	Pass
T16	131.5 - 119	Redund Diag 1 Bracing	L2 1/2x2x3/16	318	-3390	7194	47.1	Pass
T17	119 - 106.5	Redund Diag 1 Bracing	L2 1/2x2x3/16	366	-4578	13642	33.6	Pass
T15	141.5 - 131.5	Redund Hip 1 Bracing	L2x2x1/4	249	-13	20506	0.2	Pass
T16	131.5 - 119	Redund Hip 1 Bracing	L2x2x1/4	334	-96	19981	0.5	Pass
T17	119 - 106.5	Redund Hip 1 Bracing	L2x2x1/4	391	-121	17924	0.7	Pass
T17	119 - 106.5	Redund Hip Diagonal 1 Bracing	L2x2x1/4	392	-111	3587	3.1	Pass
T17	119 - 106.5	Redund Sub Horz Bracing	L2 1/2x2x3/16	370	3859	22896	16.9	Pass
T17	119 - 106.5	Redund Sub Diagonal Bracing	L2 1/2x2x3/16	369	-4417	20092	22.0	Pass
T10	191.5 - 181.5	Inner Bracing	L2 1/2x2 1/2x3/16	126	321	30686	1.0	Pass
T12	171.5 - 161.5	Inner Bracing	L2 1/2x2 1/2x3/16	168	620	30686	2.0	Pass
T14	151.5 - 141.5	Inner Bracing	L2x2 1/2x3/16	210	544	27522	2.0	Pass
T16	131.5 - 119	Inner Bracing	L3x3x3/16	304	-47	11654	0.4	Pass
T17	119 - 106.5	Inner Bracing	L3x3x3/16	345	-45	10057	0.4	Pass
							Summary	
						Leg (T15)	71.8	Pass
						Diagonal (T14)	53.5	Pass
						Horizontal (T15)	26.3	Pass
						Secondary Horizontal (T14)	32.6	Pass
						Top Girt (T14)	63.0	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (lb)	ϕP_{allow} (lb)	% Capacity	Pass / Fail
						Redund Horz 1 Bracing (T17)	15.5	Pass
						Redund Diag 1 Bracing (T16)	47.1	Pass
						Redund Hip 1 Bracing (T17)	0.7	Pass
						Redund Hip Diagonal 1 Bracing (T17)	3.1	Pass
						Redund Sub Horz Bracing (T17)	16.9	Pass
						Redund Sub Diagonal Bracing (T17)	22.0	Pass
						Inner Bracing (T12)	2.0	Pass
						Bolt Checks	50.8	Pass
						RATING =	**71.8**	**Pass**

Structure Rating (max from all components) =	**71.8%**

Table 4 - Dish Twist/Sway Results for 60 mph Service Wind Speed

Elevation (ft)	Dish Model	Beam Deflection		
		Deflection (in)	Tilt (deg)	Twist (deg)
223.5	10' Ø HP Dish	1.804	0.1334	0.0150
221.0	1' Ø HP Dish	1.733	0.1314	0.0148

4.1) Recommendations

1) If the load differs from that described in Table 1 of this report or the provisions of this analysis are found to be invalid, another structural analysis should be performed.
2) The tower has sufficient capacity to carry the existing, proposed, and reserved loading. No modifications are required at this time.
3) TEP did not have sufficient information to perform a foundation analysis. Provide TEP with foundation drawings and/or a geotechnical report for this site in order to determine the substructure capacity. If this information is not available, TEP recommends a foundation mapping and/or geotechnical investigation.
4) Prior to acceptance of changed configuration a comprehensive structural analysis shall be performed in order to determine the overall stability and the adequacy of the structural members, foundations and connections.

APPENDIX A

TNX TOWER OUTPUT

SYMBOL LIST

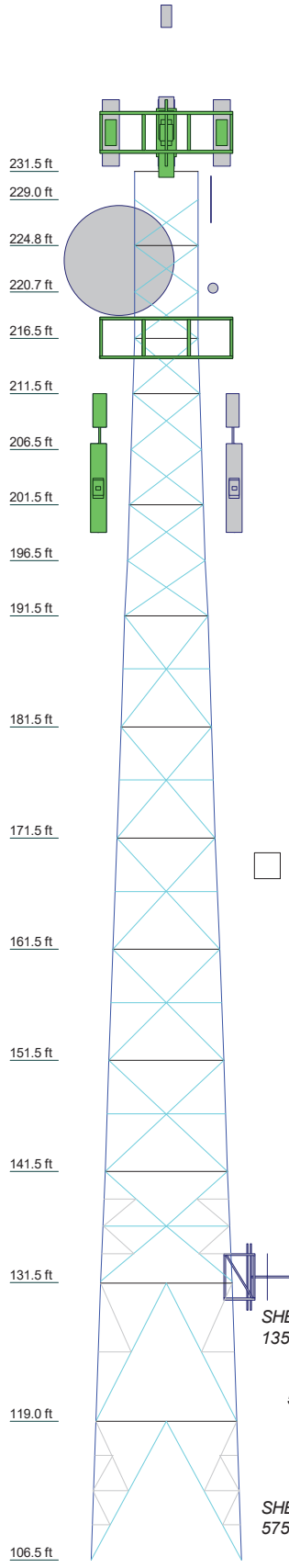
MARK	SIZE	MARK	SIZE
A	C8x11.5	C	L2 1/2x2x1/4
B	L2 1/2x2 1/2x1/4	D	1 @ 2.5

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36	36 ksi	58 ksi			

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 120 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 71.8%



ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 241229 lb
SHEAR: 21435 lb

UPLIFT: -215897 lb
SHEAR: 19919 lb

AXIAL 103228 lb
SHEAR 13589 lb
MOMENT 1048 kip-ft
TORQUE 10 kip-ft
50 mph WIND - 1.0000 in ICE

AXIAL 57955 lb
SHEAR 57553 lb
MOMENT 4359 kip-ft
TORQUE 27 kip-ft
REACTIONS - 120 mph WIND

Section	T17	T16	T15	T14	T13	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	L6x6x7/8		L6x6x3/4			L6x6x5/8					L5x5x1/2				L4x4x3/8		
Leg Grade	A36																
Diagonals	2L2 1/2x2 1/2x1/4x3/8				L3x3x1/4						L2 1/2x2x1/4			2L2 1/2x2 1/2x1/4x3/8			N.A.
Diagonal Grade	A36																N.A.
Top Girts	2L2 1/2x2 1/2x1/4x3/8				L2 1/2x2 1/2x1/4				N.A.	B	N.A.	C	C7x9.8	N.A.	B	N.A.	A
Horizontals	N.A.		L2 1/2x2x1/4					N.A.									
Sec. Horizontals	N.A.			L2 1/2x2x1/4	L2 1/2x2 1/2x1/4	L2 1/2x2x3/16		L2 1/2x2x1/4					N.A.				5.60417
Red. Horizontals	L2 1/2x2x3/16							N.A.									
Red. Diagonals	L2 1/2x2x3/16							N.A.									
Red. Sub-Horizs	L2 1/2x2x3/16						N.A.										
Red. Sub-Diags	L2 1/2x2x3/16						N.A.										
Inner Bracing	L3x3x3/16		N.A.	L2x2 1/2x3/16	N.A.	L2 1/2x2 1/2x3/16	N.A.	L2 1/2x2 1/2x3/16					N.A.				
Face Width (ft)	13.5833	12.6766	11.7699	11.0445	10.3191	9.59373	8.86836	8.14298	7.41761	7.05492	6.69223	6.32954	5.96685	1 @ 4.2	1 @ 4.1	1 @ 4.2	D
# Panels @ (ft)	1 @ 12.5	1 @ 12.4167	2 @ 4.95833	5 @ 10							5 @ 5						
Weight (lb)	25578.7	3936.0	3500.3	2805.5	2231.7	1930.8	1916.1	1825.1	1850.6	606.4	711.3	588.7	670.4	801.5	648.1	735.3	648.1	372.9

Tower Engineering Professionals, Inc.

Tower Engineering Professionals
326 Tryon Road
Raleigh, NC 27603
Phone: (919) 661-6351
FAX: (919) 661-6350

Job:	***Stamford #1 CO (638283)***		
Project:	***TEP No. 263252.851970***		
Client: Everest Infrastructure	Drawn by: Austin J. Wilson	App'd:	
Code: TIA-222-H	Date: 05/22/23	Scale: NTS	
Path: G:\Shared drives\261552 - 263256\263252\P-398726_L-851970_638283_Stamford 1_Structural Analysis\tnx\638283 (Stamford).eri		Dwg No. E-1	

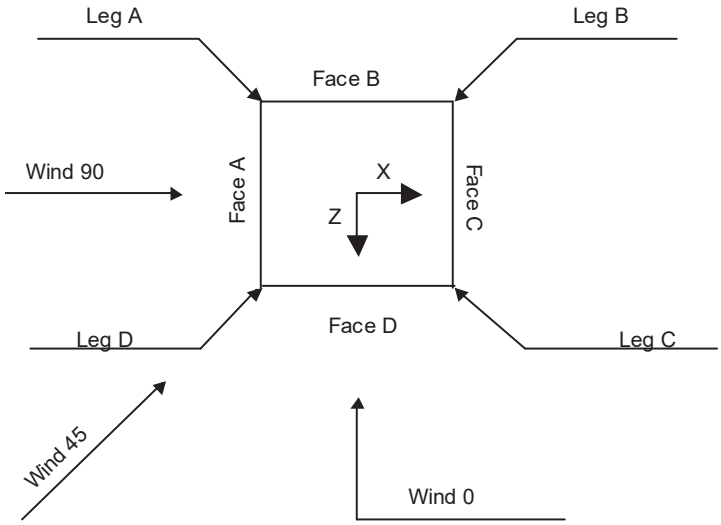
Tower Input Data

The main tower is a 4x free standing tower with an overall height of 231.50 ft above the ground line.
The base of the tower is set at an elevation of 106.50 ft above the ground line.
The face width of the tower is 5.60 ft at the top and 13.58 ft at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower is located in Fairfield County, Connecticut.
Tower base elevation above sea level: 189.66 ft.
Basic wind speed of 120 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.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Tower analysis based on target reliabilities in accordance with Annex S.
Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
Maximum demand-capacity ratio is: 1.05.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned	√	Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area	√	SR Leg Bolts Resist Compression
√	Use Code Stress Ratios		Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice	√	Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients	√	Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-H Bracing Resist. Exemption
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-H Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
√	Secondary Horizontal Braces Leg	√	Sort Capacity Reports By Component		Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
√	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric		Ignore KL/ry For 60 Deg. Angle Legs		Pole Without Linear Attachments
					Pole With Shroud Or No Appurtenances
					Outside and Inside Corner Radii Are Known



Square Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	231.50-229.00			5.60	1	2.50
T2	229.00-224.80			5.60	1	4.20
T3	224.80-220.70			5.60	1	4.10
T4	220.70-216.50			5.60	1	4.20
T5	216.50-211.50			5.60	1	5.00
T6	211.50-206.50			5.97	1	5.00
T7	206.50-201.50			6.33	1	5.00
T8	201.50-196.50			6.69	1	5.00
T9	196.50-191.50			7.05	1	5.00
T10	191.50-181.50			7.42	1	10.00
T11	181.50-171.50			8.14	1	10.00
T12	171.50-161.50			8.87	1	10.00
T13	161.50-151.50			9.59	1	10.00
T14	151.50-141.50			10.32	1	10.00
T15	141.50-131.50			11.04	1	10.00
T16	131.50-119.00			11.77	1	12.50
T17	119.00-106.50			12.68	1	12.50

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	231.50-229.00	2.50	X Brace	No	Yes	0.0000	0.0000
T2	229.00-224.80	4.20	X Brace	No	No	0.0000	0.0000

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T3	224.80-220.70	4.10	X Brace	No	No	0.0000	0.0000
T4	220.70-216.50	4.20	X Brace	No	No	0.0000	0.0000
T5	216.50-211.50	5.00	X Brace	No	Yes	0.0000	0.0000
T6	211.50-206.50	5.00	X Brace	No	Yes	0.0000	0.0000
T7	206.50-201.50	5.00	X Brace	No	No	0.0000	0.0000
T8	201.50-196.50	5.00	X Brace	No	No	0.0000	0.0000
T9	196.50-191.50	5.00	X Brace	No	No	0.0000	0.0000
T10	191.50-181.50	10.00	X Brace	No	Yes	0.0000	0.0000
T11	181.50-171.50	10.00	X Brace	No	Yes	0.0000	0.0000
T12	171.50-161.50	10.00	X Brace	No	Yes	0.0000	0.0000
T13	161.50-151.50	10.00	X Brace	No	Yes	0.0000	0.0000
T14	151.50-141.50	10.00	X Brace	No	Yes	0.0000	0.0000
T15	141.50-131.50	4.96	Double K1	No	Yes	0.0000	1.0000
T16	131.50-119.00	12.42	K1 Down	No	Yes	1.0000	0.0000
T17	119.00-106.50	12.50	K1B Down	No	Yes	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 231.50-229.00	Equal Angle	L4x4x3/8	A36 (36 ksi)	Double Angle		A36 (36 ksi)
T2 229.00-224.80	Equal Angle	L4x4x3/8	A36 (36 ksi)	Double Angle	2L2 1/2x2 1/2x1/4x3/8	A36 (36 ksi)
T3 224.80-220.70	Equal Angle	L4x4x3/8	A36 (36 ksi)	Double Angle	2L2 1/2x2 1/2x1/4x3/8	A36 (36 ksi)
T4 220.70-216.50	Equal Angle	L4x4x3/8	A36 (36 ksi)	Double Angle	2L2 1/2x2 1/2x1/4x3/8	A36 (36 ksi)
T5 216.50-211.50	Equal Angle	L5x5x1/2	A36 (36 ksi)	Single Angle	L2 1/2x2x1/4	A36 (36 ksi)
T6 211.50-206.50	Equal Angle	L5x5x1/2	A36 (36 ksi)	Single Angle	L2 1/2x2x1/4	A36 (36 ksi)
T7 206.50-201.50	Equal Angle	L5x5x1/2	A36 (36 ksi)	Single Angle	L2 1/2x2x1/4	A36 (36 ksi)
T8 201.50-196.50	Equal Angle	L5x5x1/2	A36 (36 ksi)	Single Angle	L2 1/2x2x1/4	A36 (36 ksi)
T9 196.50-191.50	Equal Angle	L5x5x1/2	A36 (36 ksi)	Single Angle	L2 1/2x2x1/4	A36 (36 ksi)
T10 191.50-181.50	Equal Angle	L6x6x5/8	A36 (36 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T11 181.50-171.50	Equal Angle	L6x6x5/8	A36 (36 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T12 171.50-161.50	Equal Angle	L6x6x5/8	A36 (36 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T13 161.50-151.50	Equal Angle	L6x6x5/8	A36 (36 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T14 151.50-141.50	Equal Angle	L6x6x3/4	A36 (36 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T15 141.50-131.50	Equal Angle	L6x6x3/4	A36 (36 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T16 131.50-119.00	Equal Angle	L6x6x7/8	A36 (36 ksi)	Double Angle	2L2 1/2x2 1/2x1/4x3/8	A36 (36 ksi)
T17 119.00-106.50	Equal Angle	L6x6x7/8	A36 (36 ksi)	Double Angle	2L2 1/2x2 1/2x1/4x3/8	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 231.50-229.00	Channel	C8x11.5	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T3 224.80-220.70	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T5 216.50-211.50	Channel	C7x9.8	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T6 211.50-206.50	Single Angle	L2 1/2x2x1/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T8 201.50-196.50	Single Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T10 191.50-181.50	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T11 181.50-171.50	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T12 171.50-161.50	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T13 161.50-151.50	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T14 151.50-141.50	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T15 141.50-131.50	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Single Angle		A36 (36 ksi)
T16 131.50-119.00	Double Angle	2L2 1/2x2 1/2x1/4x3/8	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T17 119.00-106.50	Double Angle	2L2 1/2x2 1/2x1/4x3/8	A36 (36 ksi)	Equal Angle		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T15 141.50-131.50	None	Flat Bar		A36 (36 ksi)	Single Angle	L2 1/2x2x1/4	A36 (36 ksi)
T16 131.50-119.00	None	Flat Bar		A36 (36 ksi)	Double Equal Angle	2L2 1/2x2 1/2x1/4x3/8	A36 (36 ksi)
T17 119.00-106.50	None	Flat Bar		A36 (36 ksi)	Double Equal Angle	2L2 1/2x2 1/2x1/4x3/8	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T10 191.50-181.50	Single Angle	L2 1/2x2x1/4	A36 (36 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T11 181.50-171.50	Single Angle	L2 1/2x2x1/4	A36 (36 ksi)	Single Angle		A36 (36 ksi)
T12 171.50-161.50	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T13 161.50-151.50	Single Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Single Angle		A36 (36 ksi)
T14 151.50-141.50	Single Angle	L2 1/2x2x1/4	A36 (36 ksi)	Single Angle	L2x2 1/2x3/16	A36 (36 ksi)
T16 131.50-119.00	Single Angle		A36 (36 ksi)	Single Angle	L3x3x3/16	A36 (36 ksi)
T17 119.00-106.50	Single Angle		A36 (36 ksi)	Single Angle	L3x3x3/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Redundant Bracing Grade		Redundant Type	Redundant Size	K Factor
T15 141.50-131.50	A36 (36 ksi)	Horizontal (1) Diagonal (1) Hip (1)	Single Angle Single Angle Single Angle	L2 1/2x2x3/16 L2 1/2x2x3/16 L2x2x1/4	1 1 1
T16 131.50-119.00	A36 (36 ksi)	Horizontal (1) Diagonal (1) Hip (1)	Single Angle Single Angle Single Angle	L2 1/2x2x3/16 L2 1/2x2x3/16 L2x2x1/4	1 1 1
T17 119.00-106.50	A36 (36 ksi)	Horizontal (1) Diagonal (1) Sub-Diagonal Sub-Horizontal Hip (1) Hip Diagonal (1)	Single Angle Single Angle Single Angle Single Angle Single Angle Single Angle	L2 1/2x2x3/16 L2 1/2x2x3/16 L2 1/2x2x3/16 L2 1/2x2x3/16 L2x2x1/4 L2x2x1/4	1 1 1 1 1 1

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 231.50-229.00	0.00	0.3750	A36 (36 ksi)	1.03	1	1.05	36.0000	36.0000	36.0000
T2 229.00-224.80	0.00	0.3750	A36 (36 ksi)	1.03	1	1.05	11.0000	36.0000	36.0000
T3 224.80-220.70	0.00	0.3750	A36 (36 ksi)	1.03	1	1.05	11.0000	36.0000	36.0000
T4 220.70-216.50	0.00	0.3750	A36 (36 ksi)	1.03	1	1.05	11.0000	36.0000	36.0000
T5 216.50-211.50	0.00	0.5000	A36 (36 ksi)	1.03	1	1.05	36.0000	36.0000	36.0000
T6	0.00	0.5000	A36	1.03	1	1.05	36.0000	36.0000	36.0000

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
211.50-206.50			(36 ksi)						
T7	0.00	0.5000	A36	1.03	1	1.05	36.0000	36.0000	36.0000
206.50-201.50			(36 ksi)						
T8	0.00	0.5000	A36	1.03	1	1.05	36.0000	36.0000	36.0000
201.50-196.50			(36 ksi)						
T9	0.00	0.5000	A36	1.03	1	1.05	36.0000	36.0000	36.0000
196.50-191.50			(36 ksi)						
T10	0.00	0.6250	A36	1.03	1	1.05	36.0000	36.0000	36.0000
191.50-181.50			(36 ksi)						
T11	0.00	0.6250	A36	1.03	1	1.05	36.0000	36.0000	36.0000
181.50-171.50			(36 ksi)						
T12	0.00	0.6250	A36	1.03	1	1.05	36.0000	36.0000	36.0000
171.50-161.50			(36 ksi)						
T13	0.00	0.6250	A36	1.03	1	1.05	36.0000	36.0000	36.0000
161.50-151.50			(36 ksi)						
T14	0.00	0.7500	A36	1.03	1	1.05	36.0000	36.0000	36.0000
151.50-141.50			(36 ksi)						
T15	0.00	0.7500	A36	1.03	1	1.05	36.0000	36.0000	36.0000
141.50-131.50			(36 ksi)						
T16	0.00	0.8750	A36	1.03	1	1.05	22.2500	23.2500	36.0000
131.50-119.00			(36 ksi)						
T17	0.00	0.8750	A36	1.03	1	1.05	22.2500	23.2500	36.0000
119.00-106.50			(36 ksi)						

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X	X Brace Diags Y	Single Diags X	Single Diags Y	Girts X	Girts Y	Horiz. X	Horiz. Y	Sec. Horiz. X	Sec. Horiz. Y	Inner Brace X	Inner Brace Y
T1	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
231.50-229.00				1	1	1	1	1	1	1	1	1	1	1	1
T2	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
229.00-224.80				1	1	1	1	1	1	1	1	1	1	1	1
T3	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
224.80-220.70				1	1	1	1	1	1	1	1	1	1	1	1
T4	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
220.70-216.50				1	1	1	1	1	1	1	1	1	1	1	1
T5	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
216.50-211.50				1	1	1	1	1	1	1	1	1	1	1	1
T6	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
211.50-206.50				1	1	1	1	1	1	1	1	1	1	1	1
T7	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
206.50-201.50				1	1	1	1	1	1	1	1	1	1	1	1
T8	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
201.50-196.50				1	1	1	1	1	1	1	1	1	1	1	1
T9	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
196.50-191.50				1	1	1	1	1	1	1	1	1	1	1	1
T10	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
191.50-181.50				1	1	1	1	1	1	1	1	1	1	1	1
T11	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
181.50-171.50				1	1	1	1	1	1	1	1	1	1	1	1
T12	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
171.50-161.50				1	1	1	1	1	1	1
T13	Yes	No	1	1	1	1	1	1	1	1
161.50-151.50				1	1	1	1	1	1	1
T14	Yes	No	1	1	1	1	1	1	1	1
151.50-141.50				1	1	1	1	1	1	1
T15	Yes	No	1	1	1	1	1	1	1	1
141.50-131.50				1	1	1	1	1	1	1
T16	Yes	No	1	1	1	1	1	1	1	1
131.50-119.00				1	1	1	1	1	1	1
T17	Yes	No	1	1	1	1	1	1	1	1
119.00-106.50				1	1	1	1	1	1	1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
231.50-229.00														
T2	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
229.00-224.80														
T3	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
224.80-220.70														
T4	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
220.70-216.50														
T5	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
216.50-211.50														
T6	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
211.50-206.50														
T7	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
206.50-201.50														
T8	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
201.50-196.50														
T9	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
196.50-191.50														
T10	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
191.50-181.50														
T11	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
181.50-171.50														
T12	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
171.50-161.50														
T13	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
161.50-151.50														
T14	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
151.50-141.50														
T15	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
141.50-131.50														

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T16 131.50-119.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T17 119.00-106.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 231.50-229.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 229.00-224.80	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 224.80-220.70	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 220.70-216.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 216.50-211.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 211.50-206.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 206.50-201.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 201.50-196.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 196.50-191.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 191.50-181.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T11 181.50-171.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 171.50-161.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T13 161.50-151.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T14 151.50-141.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T15 141.50-131.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T16 131.50-119.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T17 119.00-106.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1	Sleeve DS	0.7500	0	0.7500	0	0.7500	2	0.0000	0	0.6250	0	0.0000	0	0.7500	0
231.50-229.00		A325N		A325N		A325N		A325X		A325N		A325N		A325N	
T2	Sleeve DS	0.7500	0	0.7500	2	0.7500	0	0.0000	0	0.6250	0	0.0000	0	0.7500	0
229.00-224.80		A325N		A325N		A325N		A325X		A325N		A325N		A325N	
T3	Sleeve DS	0.7500	8	0.7500	2	0.7500	2	0.0000	0	0.6250	0	0.0000	0	0.7500	0
224.80-220.70		A325N		A325N		A325N		A325X		A325N		A325N		A325N	
T4	Sleeve DS	0.7500	0	0.7500	2	0.7500	0	0.0000	0	0.6250	0	0.0000	0	0.7500	0
220.70-216.50		A325N		A325N		A325N		A325X		A325N		A325N		A325N	
T5	Sleeve DS	0.7500	0	0.7500	2	0.7500	3	0.0000	0	0.6250	0	0.0000	0	0.7500	0
216.50-211.50		A325N		A325N		A325N		A325X		A325N		A325N		A325N	
T6	Sleeve DS	0.7500	0	0.7500	2	0.7500	2	0.0000	0	0.6250	0	0.0000	0	0.7500	0
211.50-206.50		A325N		A325N		A325N		A325X		A325N		A325N		A325N	
T7	Sleeve DS	0.7500	0	0.7500	2	0.7500	0	0.0000	0	0.6250	0	0.0000	0	0.7500	0
206.50-201.50		A325N		A325N		A325N		A325X		A325N		A325N		A325N	
T8	Sleeve DS	0.7500	12	0.7500	2	0.7500	2	0.0000	0	0.6250	0	0.0000	0	0.7500	0
201.50-196.50		A325N		A325N		A325N		A325X		A325N		A325N		A325N	
T9	Sleeve DS	0.7500	0	0.7500	2	0.7500	0	0.0000	0	0.6250	0	0.0000	0	0.7500	0
196.50-191.50		A325N		A325N		A325N		A325X		A325N		A325N		A325N	
T10	Sleeve DS	0.7500	0	0.7500	2	0.7500	2	0.0000	0	0.6250	0	0.0000	0	0.7500	2
191.50-181.50		A325N		A325N		A325N		A325X		A325N		A325N		A325N	
T11	Sleeve DS	0.7500	16	0.7500	2	0.7500	2	0.0000	0	0.6250	0	0.0000	0	0.7500	2
181.50-171.50		A325N		A325N		A325N		A325X		A325N		A325N		A325N	
T12	Sleeve DS	0.7500	0	0.7500	2	0.7500	2	0.0000	0	0.6250	0	0.0000	0	0.7500	2
171.50-161.50		A325N		A325N		A325N		A325X		A325N		A325N		A325N	
T13	Sleeve DS	0.7500	20	0.7500	2	0.7500	2	0.0000	0	0.6250	0	0.0000	0	0.7500	2
161.50-151.50		A325N		A325N		A325N		A325X		A325N		A325N		A325N	
T14	Sleeve DS	0.7500	0	0.7500	2	0.7500	2	0.0000	0	0.6250	0	0.0000	0	0.7500	2
151.50-141.50		A325N		A325N		A325N		A325X		A325N		A325N		A325N	
T15	Sleeve DS	0.7500	20	0.7500	2	0.7500	2	0.0000	0	0.6250	0	0.7500	2	0.7500	0
141.50-131.50		A325N		A325N		A325N		A325X		A325N		A325N		A325N	
T16	Sleeve DS	0.7500	0	0.7500	2	0.7500	2	0.0000	0	0.6250	0	0.7500	2	0.7500	0
131.50-119.00		A325N		A325N		A325N		A325X		A325N		A325N		A325N	
T17	Sleeve DS	0.7500	28	0.7500	2	0.7500	2	0.0000	0	0.6250	0	0.7500	2	0.7500	0
119.00-106.50		A325N		A325N		A325N		A325X		A325N		A325N		A325N	

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
231.50-229.00	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T2	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
229.00-224.80	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T3	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
224.80-220.70	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
220.70-216.50	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T5	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
216.50-211.50	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T6	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
211.50-206.50	A325N		A325N		A325N		A325N		A325N		A325N		A325N	

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T7	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
206.50-201.50	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T8	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
201.50-196.50	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T9	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
196.50-191.50	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T10	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
191.50-181.50	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T11	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
181.50-171.50	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T12	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
171.50-161.50	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T13	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
161.50-151.50	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T14	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
151.50-141.50	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T15	0.6250	1	0.6250	1	0.6250	2	0.6250	2	0.6250	0	0.6250	2	0.6250	0
141.50-131.50	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T16	0.6250	1	0.6250	1	0.6250	2	0.6250	2	0.6250	0	0.6250	2	0.6250	0
131.50-119.00	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T17	0.6250	1	0.6250	1	0.6250	2	0.6250	2	0.6250	0	0.6250	2	0.6250	2
119.00-106.50	A325N		A325N		A325N		A325N		A325N		A325N		A325N	

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
Climbing Ladder (Af)	B	No	No	Af (CaAa)	231.50 - 106.50	-6.0000	0.45	1	1	3.0000	3.0000		4.00
Safety Line 3/8 *** ****	B	No	No	Ar (CaAa)	231.50 - 106.50	-6.0000	0.45	1	1	0.3750	0.3750		0.22
Feedline Ladder (Af)	B	No	No	Af (CaAa)	212.50 - 111.75	-10.0000	0.4	1	1	3.0000	3.0000		8.40
Feedline Ladder (Af)	D	No	No	Af (CaAa)	206.50 - 108.00	-12.0000	0.4	1	1	3.0000	3.0000		8.40
Feedline Ladder (Af) **	A	No	No	Af (CaAa)	200.50 - 108.00	0.0000	-0.4	1	1	3.0000	3.0000		8.40
EW90(ELLIPTICAL)	B	No	No	Ar (CaAa)	223.50 - 111.50	-5.0000	0.4	2	1	0.5000	1.2800		0.32
LDF7-50A(1-5/8)	C	No	No	Ar (CaAa)	231.50 - 106.50	-18.0000	-0.36	4	4	0.5000	1.9800		0.82
1/2" dia. coax	C	No	No	Ar (CaAa)	132.00 - 111.50	-12.0000	-0.35	2	2	0.5000	0.5000		0.15
1/2" dia. coax	C	No	No	Ar (CaAa)	229.00 - 132.00	-12.0000	-0.35	1	1	0.5000	0.5000		0.15
3/4" DC	C	No	No	Ar (CaAa)	231.50 - 106.50	-12.0000	-0.33	6	3	0.5000	0.7500		1.24
5/8" dia. coax	C	No	No	Ar (CaAa)	231.50 - 106.50	-12.0000	-0.34	3	3	0.5000	0.6250		0.15

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
1" DC Power Cable	C	No	No	Ar (CaAa)	231.50 - 106.50	-12.0000	-0.34	3	3	0.5000	0.7740		0.76
7/16 coax	C	No	No	Ar (CaAa)	231.50 - 106.50	-12.0000	-0.34	3	3	0.4375	0.4375		0.11
**													
**													
HB158-21U6S24-xxM_TMO (1-5/8)	A	No	No	Ar (CaAa)	206.50 - 111.50	3.5000	-0.4	6	3	0.5000	1.9960		2.50
**													
1" Metal Conduit	A	No	No	Ar (CaAa)	231.50 - 111.50	0.0000	0.28	1	1	1.0000	1.0000		1.13
**													

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C_AA_A ft^2/ft	Weight plf
***								
**								

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	231.50-229.00	A	0.000	0.000	0.250	0.000	3
		B	0.000	0.000	1.344	0.000	11
		C	0.000	0.000	4.482	0.000	34
		D	0.000	0.000	0.000	0.000	0
T2	229.00-224.80	A	0.000	0.000	0.420	0.000	5
		B	0.000	0.000	2.257	0.000	18
		C	0.000	0.000	7.740	0.000	59
		D	0.000	0.000	0.000	0.000	0
T3	224.80-220.70	A	0.000	0.000	0.410	0.000	5
		B	0.000	0.000	2.921	0.000	19
		C	0.000	0.000	7.556	0.000	57
		D	0.000	0.000	0.000	0.000	0
T4	220.70-216.50	A	0.000	0.000	0.420	0.000	5
		B	0.000	0.000	3.333	0.000	20
		C	0.000	0.000	7.740	0.000	59
		D	0.000	0.000	0.000	0.000	0
T5	216.50-211.50	A	0.000	0.000	0.500	0.000	6
		B	0.000	0.000	4.468	0.000	33
		C	0.000	0.000	9.215	0.000	70
		D	0.000	0.000	0.000	0.000	0
T6	211.50-206.50	A	0.000	0.000	0.500	0.000	6
		B	0.000	0.000	6.468	0.000	66

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
		C	0.000	0.000	9.215	0.000	70
		D	0.000	0.000	0.000	0.000	0
T7	206.50-201.50	A	0.000	0.000	6.488	0.000	81
		B	0.000	0.000	6.468	0.000	66
		C	0.000	0.000	9.215	0.000	70
		D	0.000	0.000	2.500	0.000	42
T8	201.50-196.50	A	0.000	0.000	8.488	0.000	114
		B	0.000	0.000	6.468	0.000	66
		C	0.000	0.000	9.215	0.000	70
		D	0.000	0.000	2.500	0.000	42
T9	196.50-191.50	A	0.000	0.000	8.988	0.000	123
		B	0.000	0.000	6.468	0.000	66
		C	0.000	0.000	9.215	0.000	70
		D	0.000	0.000	2.500	0.000	42
T10	191.50-181.50	A	0.000	0.000	17.976	0.000	245
		B	0.000	0.000	12.935	0.000	133
		C	0.000	0.000	18.430	0.000	139
		D	0.000	0.000	5.000	0.000	84
T11	181.50-171.50	A	0.000	0.000	17.976	0.000	245
		B	0.000	0.000	12.935	0.000	133
		C	0.000	0.000	18.430	0.000	139
		D	0.000	0.000	5.000	0.000	84
T12	171.50-161.50	A	0.000	0.000	17.976	0.000	245
		B	0.000	0.000	12.935	0.000	133
		C	0.000	0.000	18.430	0.000	139
		D	0.000	0.000	5.000	0.000	84
T13	161.50-151.50	A	0.000	0.000	17.976	0.000	245
		B	0.000	0.000	12.935	0.000	133
		C	0.000	0.000	18.430	0.000	139
		D	0.000	0.000	5.000	0.000	84
T14	151.50-141.50	A	0.000	0.000	17.976	0.000	245
		B	0.000	0.000	12.935	0.000	133
		C	0.000	0.000	18.430	0.000	139
		D	0.000	0.000	5.000	0.000	84
T15	141.50-131.50	A	0.000	0.000	17.976	0.000	245
		B	0.000	0.000	12.935	0.000	133
		C	0.000	0.000	18.454	0.000	140
		D	0.000	0.000	5.000	0.000	84
T16	131.50-119.00	A	0.000	0.000	22.470	0.000	307
		B	0.000	0.000	16.169	0.000	166
		C	0.000	0.000	23.662	0.000	176
		D	0.000	0.000	6.250	0.000	105
T17	119.00-106.50	A	0.000	0.000	15.232	0.000	213
		B	0.000	0.000	12.264	0.000	118
		C	0.000	0.000	23.162	0.000	175
		D	0.000	0.000	5.500	0.000	92

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	231.50-229.00	A	1.032	0.000	0.000	0.766	0.000	9
		B		0.000	0.000	2.376	0.000	31
		C		0.000	0.000	11.098	0.000	112
		D		0.000	0.000	0.000	0.000	0
T2	229.00-224.80	A	1.031	0.000	0.000	1.286	0.000	15
		B		0.000	0.000	3.989	0.000	52

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
		C		0.000	0.000	19.709	0.000	197
		D		0.000	0.000	0.000	0.000	0
T3	224.80-220.70	A	1.029	0.000	0.000	1.254	0.000	15
		B		0.000	0.000	6.030	0.000	69
		C		0.000	0.000	19.225	0.000	192
		D		0.000	0.000	0.000	0.000	0
T4	220.70-216.50	A	1.027	0.000	0.000	1.283	0.000	15
		B		0.000	0.000	7.188	0.000	79
		C		0.000	0.000	19.679	0.000	196
		D		0.000	0.000	0.000	0.000	0
T5	216.50-211.50	A	1.025	0.000	0.000	1.525	0.000	18
		B		0.000	0.000	9.253	0.000	108
		C		0.000	0.000	23.407	0.000	233
		D		0.000	0.000	0.000	0.000	0
T6	211.50-206.50	A	1.022	0.000	0.000	1.522	0.000	18
		B		0.000	0.000	12.062	0.000	167
		C		0.000	0.000	23.384	0.000	233
		D		0.000	0.000	0.000	0.000	0
T7	206.50-201.50	A	1.020	0.000	0.000	8.484	0.000	165
		B		0.000	0.000	12.050	0.000	167
		C		0.000	0.000	23.361	0.000	232
		D		0.000	0.000	3.520	0.000	73
T8	201.50-196.50	A	1.017	0.000	0.000	11.291	0.000	223
		B		0.000	0.000	12.038	0.000	166
		C		0.000	0.000	23.337	0.000	232
		D		0.000	0.000	3.517	0.000	73
T9	196.50-191.50	A	1.015	0.000	0.000	11.985	0.000	237
		B		0.000	0.000	12.026	0.000	166
		C		0.000	0.000	23.312	0.000	231
		D		0.000	0.000	3.515	0.000	73
T10	191.50-181.50	A	1.011	0.000	0.000	23.940	0.000	474
		B		0.000	0.000	24.014	0.000	331
		C		0.000	0.000	46.549	0.000	461
		D		0.000	0.000	7.021	0.000	146
T11	181.50-171.50	A	1.005	0.000	0.000	23.898	0.000	473
		B		0.000	0.000	23.962	0.000	329
		C		0.000	0.000	46.445	0.000	459
		D		0.000	0.000	7.010	0.000	146
T12	171.50-161.50	A	0.999	0.000	0.000	23.854	0.000	472
		B		0.000	0.000	23.906	0.000	328
		C		0.000	0.000	46.334	0.000	457
		D		0.000	0.000	6.999	0.000	145
T13	161.50-151.50	A	0.993	0.000	0.000	23.808	0.000	470
		B		0.000	0.000	23.848	0.000	326
		C		0.000	0.000	46.218	0.000	455
		D		0.000	0.000	6.986	0.000	145
T14	151.50-141.50	A	0.987	0.000	0.000	23.759	0.000	469
		B		0.000	0.000	23.786	0.000	324
		C		0.000	0.000	46.095	0.000	453
		D		0.000	0.000	6.973	0.000	144
T15	141.50-131.50	A	0.980	0.000	0.000	23.707	0.000	467
		B		0.000	0.000	23.720	0.000	323
		C		0.000	0.000	46.106	0.000	451
		D		0.000	0.000	6.959	0.000	144
T16	131.50-119.00	A	0.971	0.000	0.000	29.555	0.000	582
		B		0.000	0.000	29.551	0.000	401
		C		0.000	0.000	60.799	0.000	572
		D		0.000	0.000	8.678	0.000	179
T17	119.00-106.50	A	0.961	0.000	0.000	20.099	0.000	397
		B		0.000	0.000	22.095	0.000	293
		C		0.000	0.000	57.920	0.000	553

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
		D		0.000	0.000	7.614	0.000	157

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	231.50-229.00	2.3845	-5.0046	4.1012	-7.7242
T2	229.00-224.80	3.1263	-6.2573	5.6165	-9.8230
T3	224.80-220.70	3.1250	-6.1271	5.2417	-9.1079
T4	220.70-216.50	3.6093	-6.9011	6.3924	-10.7221
T5	216.50-211.50	3.1812	-5.9331	5.1585	-8.6983
T6	211.50-206.50	4.5132	-7.2789	7.3618	-11.0523
T7	206.50-201.50	0.9625	-4.0323	3.6658	-8.0691
T8	201.50-196.50	-0.1656	-3.0470	2.2207	-6.8406
T9	196.50-191.50	-0.4162	-3.1631	2.1830	-7.2070
T10	191.50-181.50	-0.3039	-3.0660	2.3090	-7.2142
T11	181.50-171.50	-0.2110	-3.2690	2.6290	-7.6963
T12	171.50-161.50	-0.1245	-3.4622	2.9274	-8.1534
T13	161.50-151.50	-0.0436	-3.6464	3.2059	-8.5870
T14	151.50-141.50	0.0324	-3.8216	3.4655	-8.9975
T15	141.50-131.50	0.0949	-3.5990	3.3818	-8.6452
T16	131.50-119.00	0.2518	-4.6653	4.4098	-10.7371
T17	119.00-106.50	1.2436	-5.1625	5.3543	-10.7323

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	1	Climbing Ladder (Af)	229.00 - 231.50	0.6000	0.5237
T1	2	Safety Line 3/8	229.00 - 231.50	0.6000	0.5237
T1	11	LDF7-50A(1-5/8)	229.00 - 231.50	0.6000	0.5237
T1	14	3/4" DC	229.00 - 231.50	0.6000	0.5237
T1	15	5/8" dia. coax	229.00 - 231.50	0.6000	0.5237
T1	16	1" DC Power Cable	229.00 - 231.50	0.6000	0.5237
T1	17	7/16 coax	229.00 - 231.50	0.6000	0.5237
T1	27	1" Metal Conduit	229.00 - 231.50	0.6000	0.5237
T2	1	Climbing Ladder (Af)	224.80 - 229.00	0.6000	0.6000
T2	2	Safety Line 3/8	224.80 - 229.00	0.6000	0.6000
T2	11	LDF7-50A(1-5/8)	224.80 - 229.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T2	13	1/2" dia. coax	224.80 - 229.00	0.6000	0.6000
T2	14	3/4" DC	224.80 - 229.00	0.6000	0.6000
T2	15	5/8" dia. coax	224.80 - 229.00	0.6000	0.6000
T2	16	1" DC Power Cable	224.80 - 229.00	0.6000	0.6000
T2	17	7/16 coax	224.80 - 229.00	0.6000	0.6000
T2	27	1" Metal Conduit	224.80 - 229.00	0.6000	0.6000
T3	1	Climbing Ladder (Af)	220.70 - 224.80	0.6000	0.5379
T3	2	Safety Line 3/8	220.70 - 224.80	0.6000	0.5379
T3	10	EW90(ELLIPTICAL)	220.70 - 223.50	0.6000	0.5379
T3	11	LDF7-50A(1-5/8)	220.70 - 224.80	0.6000	0.5379
T3	13	1/2" dia. coax	220.70 - 224.80	0.6000	0.5379
T3	14	3/4" DC	220.70 - 224.80	0.6000	0.5379
T3	15	5/8" dia. coax	220.70 - 224.80	0.6000	0.5379
T3	16	1" DC Power Cable	220.70 - 224.80	0.6000	0.5379
T3	17	7/16 coax	220.70 - 224.80	0.6000	0.5379
T3	27	1" Metal Conduit	220.70 - 224.80	0.6000	0.5379
T4	1	Climbing Ladder (Af)	216.50 - 220.70	0.6000	0.6000
T4	2	Safety Line 3/8	216.50 - 220.70	0.6000	0.6000
T4	10	EW90(ELLIPTICAL)	216.50 - 220.70	0.6000	0.6000
T4	11	LDF7-50A(1-5/8)	216.50 - 220.70	0.6000	0.6000
T4	13	1/2" dia. coax	216.50 - 220.70	0.6000	0.6000
T4	14	3/4" DC	216.50 - 220.70	0.6000	0.6000
T4	15	5/8" dia. coax	216.50 - 220.70	0.6000	0.6000
T4	16	1" DC Power Cable	216.50 - 220.70	0.6000	0.6000
T4	17	7/16 coax	216.50 - 220.70	0.6000	0.6000
T4	27	1" Metal Conduit	216.50 - 220.70	0.6000	0.6000
T5	1	Climbing Ladder (Af)	211.50 - 216.50	0.6000	0.5001
T5	2	Safety Line 3/8	211.50 - 216.50	0.6000	0.5001
T5	5	Feedline Ladder (Af)	211.50 - 212.50	0.6000	0.5001
T5	10	EW90(ELLIPTICAL)	211.50 - 216.50	0.6000	0.5001
T5	11	LDF7-50A(1-5/8)	211.50 - 216.50	0.6000	0.5001

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T5	13	1/2" dia. coax	211.50 - 216.50	0.6000	0.5001
T5	14	3/4" DC	211.50 - 216.50	0.6000	0.5001
T5	15	5/8" dia. coax	211.50 - 216.50	0.6000	0.5001
T5	16	1" DC Power Cable	211.50 - 216.50	0.6000	0.5001
T5	17	7/16 coax	211.50 - 216.50	0.6000	0.5001
T5	27	1" Metal Conduit	211.50 - 216.50	0.6000	0.5001
T6	1	Climbing Ladder (Af)	206.50 - 211.50	0.6000	0.5781
T6	2	Safety Line 3/8	206.50 - 211.50	0.6000	0.5781
T6	5	Feedline Ladder (Af)	206.50 - 211.50	0.6000	0.5781
T6	10	EW90(ELLIPTICAL)	206.50 - 211.50	0.6000	0.5781
T6	11	LDF7-50A(1-5/8)	206.50 - 211.50	0.6000	0.5781
T6	13	1/2" dia. coax	206.50 - 211.50	0.6000	0.5781
T6	14	3/4" DC	206.50 - 211.50	0.6000	0.5781
T6	15	5/8" dia. coax	206.50 - 211.50	0.6000	0.5781
T6	16	1" DC Power Cable	206.50 - 211.50	0.6000	0.5781
T6	17	7/16 coax	206.50 - 211.50	0.6000	0.5781
T6	27	1" Metal Conduit	206.50 - 211.50	0.6000	0.5781
T7	1	Climbing Ladder (Af)	201.50 - 206.50	0.6000	0.6000
T7	2	Safety Line 3/8	201.50 - 206.50	0.6000	0.6000
T7	5	Feedline Ladder (Af)	201.50 - 206.50	0.6000	0.6000
T7	6	Feedline Ladder (Af)	201.50 - 206.50	0.6000	0.6000
T7	10	EW90(ELLIPTICAL)	201.50 - 206.50	0.6000	0.6000
T7	11	LDF7-50A(1-5/8)	201.50 - 206.50	0.6000	0.6000
T7	13	1/2" dia. coax	201.50 - 206.50	0.6000	0.6000
T7	14	3/4" DC	201.50 - 206.50	0.6000	0.6000
T7	15	5/8" dia. coax	201.50 - 206.50	0.6000	0.6000
T7	16	1" DC Power Cable	201.50 - 206.50	0.6000	0.6000
T7	17	7/16 coax	201.50 - 206.50	0.6000	0.6000
T7	23	HB158-21U6S24-xxM_TMO (1-5/8)	201.50 - 206.50	0.6000	0.6000
T7	27	1" Metal Conduit	201.50 - 206.50	0.6000	0.6000
T8	1	Climbing Ladder (Af)	196.50 - 201.50	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T8	2	Safety Line 3/8	196.50 - 201.50	0.6000	0.6000
T8	5	Feedline Ladder (Af)	196.50 - 201.50	0.6000	0.6000
T8	6	Feedline Ladder (Af)	196.50 - 201.50	0.6000	0.6000
T8	7	Feedline Ladder (Af)	196.50 - 200.50	0.6000	0.6000
T8	10	EW90(ELLIPTICAL)	196.50 - 201.50	0.6000	0.6000
T8	11	LDF7-50A(1-5/8)	196.50 - 201.50	0.6000	0.6000
T8	13	1/2" dia. coax	196.50 - 201.50	0.6000	0.6000
T8	14	3/4" DC	196.50 - 201.50	0.6000	0.6000
T8	15	5/8" dia. coax	196.50 - 201.50	0.6000	0.6000
T8	16	1" DC Power Cable	196.50 - 201.50	0.6000	0.6000
T8	17	7/16 coax	196.50 - 201.50	0.6000	0.6000
T8	23	HB158-21U6S24-xxM_TMO (1-5/8)	196.50 - 201.50	0.6000	0.6000
T8	27	1" Metal Conduit	196.50 - 201.50	0.6000	0.6000
T9	1	Climbing Ladder (Af)	191.50 - 196.50	0.6000	0.6000
T9	2	Safety Line 3/8	191.50 - 196.50	0.6000	0.6000
T9	5	Feedline Ladder (Af)	191.50 - 196.50	0.6000	0.6000
T9	6	Feedline Ladder (Af)	191.50 - 196.50	0.6000	0.6000
T9	7	Feedline Ladder (Af)	191.50 - 196.50	0.6000	0.6000
T9	10	EW90(ELLIPTICAL)	191.50 - 196.50	0.6000	0.6000
T9	11	LDF7-50A(1-5/8)	191.50 - 196.50	0.6000	0.6000
T9	13	1/2" dia. coax	191.50 - 196.50	0.6000	0.6000
T9	14	3/4" DC	191.50 - 196.50	0.6000	0.6000
T9	15	5/8" dia. coax	191.50 - 196.50	0.6000	0.6000
T9	16	1" DC Power Cable	191.50 - 196.50	0.6000	0.6000
T9	17	7/16 coax	191.50 - 196.50	0.6000	0.6000
T9	23	HB158-21U6S24-xxM_TMO (1-5/8)	191.50 - 196.50	0.6000	0.6000
T9	27	1" Metal Conduit	191.50 - 196.50	0.6000	0.6000
T10	1	Climbing Ladder (Af)	181.50 - 191.50	0.6000	0.6000
T10	2	Safety Line 3/8	181.50 - 191.50	0.6000	0.6000
T10	5	Feedline Ladder (Af)	181.50 - 191.50	0.6000	0.6000
T10	6	Feedline Ladder (Af)	181.50 - 191.50	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T10	7	Feedline Ladder (Af)	181.50 - 191.50	0.6000	0.6000
T10	10	EW90(ELLIPTICAL)	181.50 - 191.50	0.6000	0.6000
T10	11	LDF7-50A(1-5/8)	181.50 - 191.50	0.6000	0.6000
T10	13	1/2" dia. coax	181.50 - 191.50	0.6000	0.6000
T10	14	3/4" DC	181.50 - 191.50	0.6000	0.6000
T10	15	5/8" dia. coax	181.50 - 191.50	0.6000	0.6000
T10	16	1" DC Power Cable	181.50 - 191.50	0.6000	0.6000
T10	17	7/16 coax	181.50 - 191.50	0.6000	0.6000
T10	23	HB158-21U6S24-xxM_TMO (1-5/8)	181.50 - 191.50	0.6000	0.6000
T10	27	1" Metal Conduit	181.50 - 191.50	0.6000	0.6000
T11	1	Climbing Ladder (Af)	171.50 - 181.50	0.6000	0.6000
T11	2	Safety Line 3/8	171.50 - 181.50	0.6000	0.6000
T11	5	Feedline Ladder (Af)	171.50 - 181.50	0.6000	0.6000
T11	6	Feedline Ladder (Af)	171.50 - 181.50	0.6000	0.6000
T11	7	Feedline Ladder (Af)	171.50 - 181.50	0.6000	0.6000
T11	10	EW90(ELLIPTICAL)	171.50 - 181.50	0.6000	0.6000
T11	11	LDF7-50A(1-5/8)	171.50 - 181.50	0.6000	0.6000
T11	13	1/2" dia. coax	171.50 - 181.50	0.6000	0.6000
T11	14	3/4" DC	171.50 - 181.50	0.6000	0.6000
T11	15	5/8" dia. coax	171.50 - 181.50	0.6000	0.6000
T11	16	1" DC Power Cable	171.50 - 181.50	0.6000	0.6000
T11	17	7/16 coax	171.50 - 181.50	0.6000	0.6000
T11	23	HB158-21U6S24-xxM_TMO (1-5/8)	171.50 - 181.50	0.6000	0.6000
T11	27	1" Metal Conduit	171.50 - 181.50	0.6000	0.6000
T12	1	Climbing Ladder (Af)	161.50 - 171.50	0.6000	0.6000
T12	2	Safety Line 3/8	161.50 - 171.50	0.6000	0.6000
T12	5	Feedline Ladder (Af)	161.50 - 171.50	0.6000	0.6000
T12	6	Feedline Ladder (Af)	161.50 - 171.50	0.6000	0.6000
T12	7	Feedline Ladder (Af)	161.50 - 171.50	0.6000	0.6000
T12	10	EW90(ELLIPTICAL)	161.50 - 171.50	0.6000	0.6000
T12	11	LDF7-50A(1-5/8)	161.50 - 171.50	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T12	13	1/2" dia. coax	161.50 - 171.50	0.6000	0.6000
T12	14	3/4" DC	161.50 - 171.50	0.6000	0.6000
T12	15	5/8" dia. coax	161.50 - 171.50	0.6000	0.6000
T12	16	1" DC Power Cable	161.50 - 171.50	0.6000	0.6000
T12	17	7/16 coax	161.50 - 171.50	0.6000	0.6000
T12	23	HB158-21U6S24-xxM_TMO (1-5/8)	161.50 - 171.50	0.6000	0.6000
T12	27	1" Metal Conduit	161.50 - 171.50	0.6000	0.6000
T13	1	Climbing Ladder (Af)	151.50 - 161.50	0.6000	0.6000
T13	2	Safety Line 3/8	151.50 - 161.50	0.6000	0.6000
T13	5	Feedline Ladder (Af)	151.50 - 161.50	0.6000	0.6000
T13	6	Feedline Ladder (Af)	151.50 - 161.50	0.6000	0.6000
T13	7	Feedline Ladder (Af)	151.50 - 161.50	0.6000	0.6000
T13	10	EW90(ELLIPTICAL)	151.50 - 161.50	0.6000	0.6000
T13	11	LDF7-50A(1-5/8)	151.50 - 161.50	0.6000	0.6000
T13	13	1/2" dia. coax	151.50 - 161.50	0.6000	0.6000
T13	14	3/4" DC	151.50 - 161.50	0.6000	0.6000
T13	15	5/8" dia. coax	151.50 - 161.50	0.6000	0.6000
T13	16	1" DC Power Cable	151.50 - 161.50	0.6000	0.6000
T13	17	7/16 coax	151.50 - 161.50	0.6000	0.6000
T13	23	HB158-21U6S24-xxM_TMO (1-5/8)	151.50 - 161.50	0.6000	0.6000
T13	27	1" Metal Conduit	151.50 - 161.50	0.6000	0.6000
T14	1	Climbing Ladder (Af)	141.50 - 151.50	0.6000	0.6000
T14	2	Safety Line 3/8	141.50 - 151.50	0.6000	0.6000
T14	5	Feedline Ladder (Af)	141.50 - 151.50	0.6000	0.6000
T14	6	Feedline Ladder (Af)	141.50 - 151.50	0.6000	0.6000
T14	7	Feedline Ladder (Af)	141.50 - 151.50	0.6000	0.6000
T14	10	EW90(ELLIPTICAL)	141.50 - 151.50	0.6000	0.6000
T14	11	LDF7-50A(1-5/8)	141.50 - 151.50	0.6000	0.6000
T14	13	1/2" dia. coax	141.50 - 151.50	0.6000	0.6000
T14	14	3/4" DC	141.50 - 151.50	0.6000	0.6000
T14	15	5/8" dia. coax	141.50 - 151.50	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T14	16	1" DC Power Cable	141.50 - 151.50	0.6000	0.6000
T14	17	7/16 coax	141.50 - 151.50	0.6000	0.6000
T14	23	HB158-21U6S24-xxM_TMO (1-5/8)	141.50 - 151.50	0.6000	0.6000
T14	27	1" Metal Conduit	141.50 - 151.50	0.6000	0.6000
T15	1	Climbing Ladder (Af)	131.50 - 141.50	0.6000	0.6000
T15	2	Safety Line 3/8	131.50 - 141.50	0.6000	0.6000
T15	5	Feedline Ladder (Af)	131.50 - 141.50	0.6000	0.6000
T15	6	Feedline Ladder (Af)	131.50 - 141.50	0.6000	0.6000
T15	7	Feedline Ladder (Af)	131.50 - 141.50	0.6000	0.6000
T15	10	EW90(ELLIPTICAL)	131.50 - 141.50	0.6000	0.6000
T15	11	LDF7-50A(1-5/8)	131.50 - 141.50	0.6000	0.6000
T15	12	1/2" dia. coax	131.50 - 132.00	0.6000	0.6000
T15	13	1/2" dia. coax	132.00 - 141.50	0.6000	0.6000
T15	14	3/4" DC	131.50 - 141.50	0.6000	0.6000
T15	15	5/8" dia. coax	131.50 - 141.50	0.6000	0.6000
T15	16	1" DC Power Cable	131.50 - 141.50	0.6000	0.6000
T15	17	7/16 coax	131.50 - 141.50	0.6000	0.6000
T15	23	HB158-21U6S24-xxM_TMO (1-5/8)	131.50 - 141.50	0.6000	0.6000
T15	27	1" Metal Conduit	131.50 - 141.50	0.6000	0.6000
T16	1	Climbing Ladder (Af)	119.00 - 131.50	0.6000	0.6000
T16	2	Safety Line 3/8	119.00 - 131.50	0.6000	0.6000
T16	5	Feedline Ladder (Af)	119.00 - 131.50	0.6000	0.6000
T16	6	Feedline Ladder (Af)	119.00 - 131.50	0.6000	0.6000
T16	7	Feedline Ladder (Af)	119.00 - 131.50	0.6000	0.6000
T16	10	EW90(ELLIPTICAL)	119.00 - 131.50	0.6000	0.6000
T16	11	LDF7-50A(1-5/8)	119.00 - 131.50	0.6000	0.6000
T16	12	1/2" dia. coax	119.00 - 131.50	0.6000	0.6000
T16	14	3/4" DC	119.00 - 131.50	0.6000	0.6000
T16	15	5/8" dia. coax	119.00 - 131.50	0.6000	0.6000
T16	16	1" DC Power Cable	119.00 - 131.50	0.6000	0.6000
T16	17	7/16 coax	119.00 - 131.50	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T16	23	HB158-21U6S24-xxM_TMO (1-5/8)	119.00 - 131.50	0.6000	0.6000
T16	27	1" Metal Conduit	119.00 - 131.50	0.6000	0.6000
T17	1	Climbing Ladder (Af)	106.50 - 119.00	0.6000	0.6000
T17	2	Safety Line 3/8	106.50 - 119.00	0.6000	0.6000
T17	5	Feedline Ladder (Af)	111.75 - 119.00	0.6000	0.6000
T17	6	Feedline Ladder (Af)	108.00 - 119.00	0.6000	0.6000
T17	7	Feedline Ladder (Af)	108.00 - 119.00	0.6000	0.6000
T17	10	EW90(ELLIPTICAL)	111.50 - 119.00	0.6000	0.6000
T17	11	LDF7-50A(1-5/8)	106.50 - 119.00	0.6000	0.6000
T17	12	1/2" dia. coax	111.50 - 119.00	0.6000	0.6000
T17	14	3/4" DC	106.50 - 119.00	0.6000	0.6000
T17	15	5/8" dia. coax	106.50 - 119.00	0.6000	0.6000
T17	16	1" DC Power Cable	106.50 - 119.00	0.6000	0.6000
T17	17	7/16 coax	106.50 - 119.00	0.6000	0.6000
T17	23	HB158-21U6S24-xxM_TMO (1-5/8)	111.50 - 119.00	0.6000	0.6000
T17	27	1" Metal Conduit	111.50 - 119.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
**									
(2) 12" x 24" Beacon	B	From Face	0.00 0.00 14.00	0.0000	231.50	No Ice 1/2" Ice 1" Ice	1.00 1.58 1.77	1.00 1.58 1.77	30 50 72
5/8" x 4' Lightning Rod	B	From Face	0.00 0.00 13.00	0.0000	231.50	No Ice 1/2" Ice 1" Ice	0.25 0.66 0.97	0.25 0.66 0.97	4 7 12
13' T Beam Mount	B	From Face	0.00 0.00 6.50	0.0000	231.50	No Ice 1/2" Ice 1" Ice	10.50 14.00 17.50	10.50 14.00 17.50	100 150 200
**									
Top Platform Mount	C	None		0.0000	235.00	No Ice 1/2" Ice	72.25 90.00	72.25 90.00	5500 7500

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
						1" Ice	107.75	107.75	9500
2.4" Dia x 6-ft Pipe	B	From Face	4.00	0.0000	235.00	No Ice	1.43	1.43	22
			0.00			1/2" Ice	1.93	1.93	33
			0.00			1" Ice	2.30	2.30	48
2.4" Dia x 6-ft Pipe	D	From Face	4.00	0.0000	235.00	No Ice	1.43	1.43	22
			0.00			1/2" Ice	1.93	1.93	33
			0.00			1" Ice	2.30	2.30	48
Unused I-Beam Mount	A	From Face	4.00	0.0000	235.00	No Ice	2.50	2.50	100
			0.00			1/2" Ice	4.00	4.00	150
			0.00			1" Ice	5.50	5.50	200
TPA45R-KU6A w/ Mount Pipe	C	From Centroid-Face	4.00	0.0000	235.00	No Ice	11.25	8.41	83
			0.00			1/2" Ice	11.86	9.68	171
			0.00			1" Ice	12.45	10.74	266
QD4616-7 w/ Mount Pipe	D	From Centroid-Face	4.00	0.0000	235.00	No Ice	10.32	6.46	120
			0.00			1/2" Ice	11.12	7.62	204
			0.00			1" Ice	11.85	8.63	295
AIR 6449 B77D w/ Mount Pipe	A	From Centroid-Face	4.00	0.0000	235.00	No Ice	4.23	2.87	94
			0.00			1/2" Ice	4.55	3.30	133
			-7.20			1" Ice	4.88	3.74	177
AIR 6449 B77D w/ Mount Pipe	C	From Centroid-Face	4.00	0.0000	235.00	No Ice	4.23	2.87	94
			0.00			1/2" Ice	4.55	3.30	133
			1.80			1" Ice	4.88	3.74	177
AIR 6449 B77D w/ Mount Pipe	D	From Centroid-Face	4.00	0.0000	235.00	No Ice	4.23	2.87	94
			0.00			1/2" Ice	4.55	3.30	133
			0.70			1" Ice	4.88	3.74	177
AIR 6419 B77G w/ Mount Pipe	A	From Centroid-Face	4.00	0.0000	235.00	No Ice	3.87	2.32	78
			0.00			1/2" Ice	4.18	2.72	113
			-7.50			1" Ice	4.50	3.13	152
AIR 6419 B77G w/ Mount Pipe	C	From Centroid-Face	4.00	0.0000	235.00	No Ice	3.87	2.32	78
			0.00			1/2" Ice	4.18	2.72	113
			1.80			1" Ice	4.50	3.13	152
AIR 6419 B77G w/ Mount Pipe	D	From Centroid-Face	4.00	0.0000	235.00	No Ice	3.87	2.32	78
			0.00			1/2" Ice	4.18	2.72	113
			-2.80			1" Ice	4.50	3.13	152
(3) HPA-45R-BUU-H6 w/ Mount Pipe	B	From Centroid-Face	4.00	0.0000	235.00	No Ice	12.13	7.70	108
			0.00			1/2" Ice	12.72	8.89	198
			0.00			1" Ice	13.28	9.79	297
TPA45R-KU6A w/ Mount Pipe	B	From Centroid-Face	4.00	0.0000	235.00	No Ice	11.25	8.41	83
			0.00			1/2" Ice	11.86	9.68	171
			0.00			1" Ice	12.45	10.74	266
DMP65R-BU4DA w/ 2.9" x 8' MP	C	From Centroid-Face	4.00	0.0000	235.00	No Ice	9.43	5.81	114
			0.00			1/2" Ice	10.23	6.94	191
			0.00			1" Ice	10.87	7.74	276
(3) RRUS 32	B	From Centroid-Face	4.00	0.0000	235.00	No Ice	2.86	1.78	55
			0.00			1/2" Ice	3.08	1.97	77
			0.00			1" Ice	3.32	2.17	103
(3) RRUS 32	C	From Centroid-Face	4.00	0.0000	235.00	No Ice	2.86	1.78	55
			0.00			1/2" Ice	3.08	1.97	77
			0.00			1" Ice	3.32	2.17	103
(3) RRUS 32	D	From Centroid-Face	4.00	0.0000	235.00	No Ice	2.86	1.78	55
			0.00			1/2" Ice	3.08	1.97	77
			0.00			1" Ice	3.32	2.17	103
(2) RRUS 4478	B	From Centroid-Face	4.00	0.0000	235.00	No Ice	1.84	1.06	60
			0.00			1/2" Ice	2.01	1.20	76
			0.00			1" Ice	2.19	1.34	94
RRUS 4478	D	From Centroid-Face	4.00	0.0000	235.00	No Ice	1.84	1.06	60
			0.00			1/2" Ice	2.01	1.20	76

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
		ce	0.00			1" Ice	2.19	1.34	94
(2) RRUS 4449 B5/B12	B	From	4.00	0.0000	235.00	No Ice	1.97	1.41	71
		Centroid-Fa	0.00			1/2" Ice	2.14	1.56	90
		ce	0.00			1" Ice	2.33	1.73	111
RRUS 4449 B5/B12	D	From	4.00	0.0000	235.00	No Ice	1.97	1.41	71
		Centroid-Fa	0.00			1/2" Ice	2.14	1.56	90
		ce	0.00			1" Ice	2.33	1.73	111
(3) DC9-48-60-24-8C-EV	B	From	4.00	0.0000	235.00	No Ice	1.14	1.14	26
		Centroid-Fa	0.00			1/2" Ice	1.79	1.79	47
		ce	0.00			1" Ice	2.00	2.00	70
17" 3 element yagi	C	From	4.00	0.0000	229.00	No Ice	0.11	0.25	1
		Centroid-Fa	0.00			1/2" Ice	0.20	0.51	8
		ce	0.00			1" Ice	0.29	0.77	12
**									
Pipe Mount [PM 601-1]	A	From Face	1.50	0.0000	223.50	No Ice	1.32	1.32	65
			0.00			1/2" Ice	1.58	1.58	77
			0.00			1" Ice	1.84	1.84	93
**									
Pipe Mount [PM 601-1]	C	From Face	1.50	0.0000	221.00	No Ice	1.32	1.32	65
			0.00			1/2" Ice	1.58	1.58	77
			0.00			1" Ice	1.84	1.84	93
**									
4' L x 6' W Rest Platform	B	From Face	2.00	0.0000	216.50	No Ice	15.00	15.00	750
			0.00			1/2" Ice	22.50	22.50	1250
			0.00			1" Ice	30.00	30.00	1750
4' L x 6' W Rest Platform	D	From Face	2.00	0.0000	216.50	No Ice	15.00	15.00	750
			0.00			1/2" Ice	22.50	22.50	1250
			0.00			1" Ice	30.00	30.00	1750
**									
Site Pro 1 VFA12-HD	A	From Leg	2.00	0.0000	206.50	No Ice	13.20	9.20	658
			0.00			1/2" Ice	19.50	14.60	804
			0.00			1" Ice	25.80	19.50	1015
Site Pro 1 VFA12-HD	B	From Leg	2.00	0.0000	206.50	No Ice	13.20	9.20	658
			0.00			1/2" Ice	19.50	14.60	804
			0.00			1" Ice	25.80	19.50	1015
Site Pro 1 VFA12-HD	D	From Leg	2.00	0.0000	206.50	No Ice	13.20	9.20	658
			0.00			1/2" Ice	19.50	14.60	804
			0.00			1" Ice	25.80	19.50	1015
2.4" Dia x 8-ft Mount Pipe	A	From Leg	4.00	0.0000	206.50	No Ice	1.90	1.90	29
			0.00			1/2" Ice	2.73	2.73	44
			0.00			1" Ice	3.40	3.40	63
2.4" Dia x 8-ft Mount Pipe	B	From Leg	4.00	0.0000	206.50	No Ice	1.90	1.90	29
			0.00			1/2" Ice	2.73	2.73	44
			0.00			1" Ice	3.40	3.40	63
2.4" Dia x 8-ft Mount Pipe	D	From Leg	4.00	0.0000	206.50	No Ice	1.90	1.90	29
			0.00			1/2" Ice	2.73	2.73	44
			0.00			1" Ice	3.40	3.40	63
AIR 32 KRD901146-1 w/ Mount Pipe	A	From Leg	4.00	0.0000	206.50	No Ice	4.00	3.43	54
			0.00			1/2" Ice	4.47	4.26	90
			3.50			1" Ice	4.96	4.96	132
AIR 32 KRD901146-1 w/ Mount Pipe	B	From Leg	4.00	0.0000	206.50	No Ice	4.00	3.43	54
			0.00			1/2" Ice	4.47	4.26	90
			3.50			1" Ice	4.96	4.96	132
AIR 32 KRD901146-1 w/ Mount Pipe	D	From Leg	4.00	0.0000	206.50	No Ice	4.00	3.43	54
			0.00			1/2" Ice	4.47	4.26	90
			3.50			1" Ice	4.96	4.96	132
AIR 6419 B41_TMO w/	A	From Leg	4.00	0.0000	206.50	No Ice	7.50	4.78	126

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
Mount Pipe			0.00			1/2" Ice	8.34	5.85	190
			3.50			1" Ice	9.08	6.78	261
AIR 6419 B41_TMO w/ Mount Pipe	B	From Leg	4.00	0.0000	206.50	No Ice	7.50	4.78	126
			0.00			1/2" Ice	8.34	5.85	190
			3.50			1" Ice	9.08	6.78	261
AIR 6419 B41_TMO w/ Mount Pipe	D	From Leg	4.00	0.0000	206.50	No Ice	7.50	4.78	126
			0.00			1/2" Ice	8.34	5.85	190
			3.50			1" Ice	9.08	6.78	261
**									
Site Pro 1 VFA12-HD	A	From Leg	2.00	0.0000	203.00	No Ice	13.20	9.20	658
			0.00			1/2" Ice	19.50	14.60	804
			0.00			1" Ice	25.80	19.50	1015
Site Pro 1 VFA12-HD	B	From Leg	2.00	0.0000	203.00	No Ice	13.20	9.20	658
			0.00			1/2" Ice	19.50	14.60	804
			0.00			1" Ice	25.80	19.50	1015
Site Pro 1 VFA12-HD	D	From Leg	2.00	0.0000	203.00	No Ice	13.20	9.20	658
			0.00			1/2" Ice	19.50	14.60	804
			0.00			1" Ice	25.80	19.50	1015
2.4" Dia x 8-ft Mount Pipe	A	From Leg	4.00	0.0000	203.00	No Ice	1.90	1.90	29
			0.00			1/2" Ice	2.73	2.73	44
			0.00			1" Ice	3.40	3.40	63
2.4" Dia x 8-ft Mount Pipe	B	From Leg	4.00	0.0000	203.00	No Ice	1.90	1.90	29
			0.00			1/2" Ice	2.73	2.73	44
			0.00			1" Ice	3.40	3.40	63
2.4" Dia x 8-ft Mount Pipe	D	From Leg	4.00	0.0000	203.00	No Ice	1.90	1.90	29
			0.00			1/2" Ice	2.73	2.73	44
			0.00			1" Ice	3.40	3.40	63
APXVAALL24_43-U-NA20 w/ mount pipe	A	From Leg	4.00	0.0000	203.00	No Ice	20.24	11.03	169
			0.00			1/2" Ice	20.89	12.46	306
			0.00			1" Ice	21.55	13.56	454
APXVAALL24_43-U-NA20 w/ mount pipe	B	From Leg	4.00	0.0000	203.00	No Ice	20.24	11.03	169
			0.00			1/2" Ice	20.89	12.46	306
			0.00			1" Ice	21.55	13.56	454
APXVAALL24_43-U-NA20 w/ mount pipe	D	From Leg	4.00	0.0000	203.00	No Ice	20.24	11.03	169
			0.00			1/2" Ice	20.89	12.46	306
			0.00			1" Ice	21.55	13.56	454
RADIO 4480 B71_TMO	A	From Leg	4.00	0.0000	203.00	No Ice	2.85	1.38	93
			0.00			1/2" Ice	3.06	1.54	114
			0.00			1" Ice	3.28	1.71	139
RADIO 4480 B71_TMO	B	From Leg	4.00	0.0000	203.00	No Ice	2.85	1.38	93
			0.00			1/2" Ice	3.06	1.54	114
			0.00			1" Ice	3.28	1.71	139
RADIO 4480 B71_TMO	D	From Leg	4.00	0.0000	203.00	No Ice	2.85	1.38	93
			0.00			1/2" Ice	3.06	1.54	114
			0.00			1" Ice	3.28	1.71	139
RRUS 4460 B25/B66	A	From Leg	4.00	0.0000	203.00	No Ice	2.14	1.69	109
			0.00			1/2" Ice	2.32	1.85	131
			0.00			1" Ice	2.51	2.02	156
RRUS 4460 B25/B66	B	From Leg	4.00	0.0000	203.00	No Ice	2.14	1.69	109
			0.00			1/2" Ice	2.32	1.85	131
			0.00			1" Ice	2.51	2.02	156
RRUS 4460 B25/B66	D	From Leg	4.00	0.0000	203.00	No Ice	2.14	1.69	109
			0.00			1/2" Ice	2.32	1.85	131
			0.00			1" Ice	2.51	2.02	156
SDX1926Q-43	A	From Leg	4.00	0.0000	203.00	No Ice	0.24	0.10	6
			0.00			1/2" Ice	0.31	0.14	9
			0.00			1" Ice	0.38	0.19	12

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
SDX1926Q-43	B	From Leg	4.00	0.0000	203.00	No Ice	0.24	0.10	6
			0.00			1/2" Ice	0.31	0.14	9
			0.00			1" Ice	0.38	0.19	12
SDX1926Q-43	D	From Leg	4.00	0.0000	203.00	No Ice	0.24	0.10	6
			0.00			1/2" Ice	0.31	0.14	9
			0.00			1" Ice	0.38	0.19	12
**									
Side Arm Mount [SO 901-1]	B	From Leg	1.00	0.0000	132.00	No Ice	0.33	0.62	105
			0.00			1/2" Ice	0.46	0.78	113
			0.00			1" Ice	0.62	0.97	123
2.4" Dia x 6-ft Pipe	B	From Leg	2.00	0.0000	132.00	No Ice	1.43	1.43	22
			0.00			1/2" Ice	1.93	1.93	33
			0.00			1" Ice	2.30	2.30	48
2.4" Dia x 6-ft Pipe	B	From Leg	2.50	0.0000	132.00	No Ice	1.43	1.43	22
			0.00			1/2" Ice	1.93	1.93	33
			0.00			1" Ice	2.30	2.30	48
4-ft x 7 Element Yagi	B	From Leg	2.50	0.0000	132.00	No Ice	1.05	1.65	45
			0.00			1/2" Ice	2.05	2.96	61
			0.00			1" Ice	3.04	4.28	77

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight lb
Andrew HP10	A	Paraboloid w/Shroud (HP)	From Face	1.50	0.0000		223.50	10.00	No Ice	78.54	700
				0.00					1/2" Ice	79.85	1300
				0.00					1" Ice	81.17	1900
1-ft dish w/ shroud	C	Paraboloid w/Shroud (HP)	From Face	1.50	0.0000		221.00	1.00	No Ice	3.14	30
				0.00					1/2" Ice	3.41	48
				0.00					1" Ice	3.68	65

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 45 deg - No Ice
5	0.9 Dead+1.0 Wind 45 deg - No Ice
6	1.2 Dead+1.0 Wind 90 deg - No Ice
7	0.9 Dead+1.0 Wind 90 deg - No Ice
8	1.2 Dead+1.0 Wind 135 deg - No Ice
9	0.9 Dead+1.0 Wind 135 deg - No Ice
10	1.2 Dead+1.0 Wind 180 deg - No Ice

Comb. No.	Description
11	0.9 Dead+1.0 Wind 180 deg - No Ice
12	1.2 Dead+1.0 Wind 225 deg - No Ice
13	0.9 Dead+1.0 Wind 225 deg - No Ice
14	1.2 Dead+1.0 Wind 270 deg - No Ice
15	0.9 Dead+1.0 Wind 270 deg - No Ice
16	1.2 Dead+1.0 Wind 315 deg - No Ice
17	0.9 Dead+1.0 Wind 315 deg - No Ice
18	1.2 Dead+1.0 Ice+1.0 Temp
19	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
20	1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp
21	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
22	1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp
23	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
24	1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp
25	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
26	1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 45 deg - Service
29	Dead+Wind 90 deg - Service
30	Dead+Wind 135 deg - Service
31	Dead+Wind 180 deg - Service
32	Dead+Wind 225 deg - Service
33	Dead+Wind 270 deg - Service
34	Dead+Wind 315 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	231.5 - 229	Leg	Max Tension	5	3597	-2	-1
			Max. Compression	4	-8075	-1	-1
			Max. Mx	8	-2524	-4	4
			Max. My	16	-3003	4	-4
			Max. Vy	8	-2508	2	-2
			Max. Vx	16	-2423	-2	2
		Top Girt	Max Tension	2	1034	1	0
			Max. Compression	3	-1014	-1	0
			Max. Mx	8	700	4	0
			Max. My	3	-1014	-1	0
			Max. Vy	6	1307	-4	0
			Max. Vx	13	0	-3	0
T2	229 - 224.8	Leg	Max Tension	5	5156	1	0
			Max. Compression	4	-9747	0	0
			Max. Mx	8	-2460	2	-2
			Max. My	16	-3168	-2	2
			Max. Vy	17	-752	-2	2
			Max. Vx	16	701	-2	2
		Diagonal	Max Tension	17	4157	0	0
			Max. Compression	8	-4269	0	0
			Max. Mx	22	863	0	0
			Max. My	14	-3816	0	0
			Max. Vy	22	39	0	0
			Max. Vx	14	-6	0	0
T3	224.8 - 220.7	Leg	Max Tension	5	12854	0	0
			Max. Compression	16	-18334	0	0
			Max. Mx	4	-3917	-1	0
			Max. My	7	-12467	0	1
			Max. Vy	8	-679	0	0

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	4	-669	0	0
		Diagonal	Max Tension	6	3985	0	0
			Max. Compression	6	-3921	0	0
			Max. Mx	16	-1690	0	0
			Max. My	14	3771	0	0
			Max. Vy	19	34	0	0
			Max. Vx	14	-8	0	0
		Top Girt	Max Tension	2	1243	0	0
			Max. Compression	3	-1175	0	0
			Max. Mx	18	54	0	0
			Max. Vy	18	30	0	0
T4	220.7 - 216.5	Leg	Max Tension	5	17841	0	0
			Max. Compression	16	-23696	0	0
			Max. Mx	4	-3371	1	0
			Max. My	8	-2915	0	0
			Max. Vy	6	180	0	0
			Max. Vx	7	-171	0	0
		Diagonal	Max Tension	7	5015	0	0
			Max. Compression	6	-5151	0	0
			Max. Mx	16	2745	0	0
			Max. My	2	-3686	0	0
			Max. Vy	26	43	0	0
			Max. Vx	2	9	0	0
T5	216.5 - 211.5	Leg	Max Tension	5	25463	0	0
			Max. Compression	4	-31738	0	0
			Max. Mx	16	-31471	0	0
			Max. My	8	-31234	0	0
			Max. Vy	10	333	0	0
			Max. Vx	14	334	0	0
		Diagonal	Max Tension	7	4678	0	0
			Max. Compression	6	-5220	0	0
			Max. Mx	4	1254	0	0
			Max. My	25	-1712	0	0
			Max. Vy	26	-19	0	0
			Max. Vx	25	1	0	0
		Top Girt	Max Tension	6	1409	0	0
			Max. Compression	7	-1162	0	0
			Max. Mx	18	234	0	0
			Max. My	18	234	0	0
			Max. Vy	18	-64	0	0
			Max. Vx	18	2	0	0
T6	211.5 - 206.5	Leg	Max Tension	5	34196	0	0
			Max. Compression	4	-41898	0	0
			Max. Mx	4	-2884	1	-1
			Max. My	12	-6012	-1	1
			Max. Vy	8	-182	1	-1
			Max. Vx	16	-180	-1	1
		Diagonal	Max Tension	6	4872	0	0
			Max. Compression	6	-4856	0	0
			Max. Mx	4	3064	0	0
			Max. My	6	-4844	0	0
			Max. Vy	19	-20	0	0
			Max. Vx	6	-2	0	0
		Top Girt	Max Tension	6	1271	0	0
			Max. Compression	7	-923	0	0
			Max. Mx	18	339	0	0
			Max. My	18	339	0	0
			Max. Vy	18	-29	0	0
			Max. Vx	18	-1	0	0
T7	206.5 - 201.5	Leg	Max Tension	5	42416	0	0
			Max. Compression	16	-53473	0	0

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	4	-3740	1	-1
			Max. My	12	-8012	-1	1
			Max. Vy	6	-685	0	0
			Max. Vx	10	-679	0	0
		Diagonal	Max Tension	7	6029	0	0
			Max. Compression	6	-6262	0	0
			Max. Mx	4	2870	0	0
			Max. My	6	4836	0	0
			Max. Vy	26	-24	0	0
			Max. Vx	6	-2	0	0
T8	201.5 - 196.5	Leg	Max Tension	5	51425	0	0
			Max. Compression	16	-63256	0	0
			Max. Mx	12	-2365	1	-1
			Max. My	4	-7690	-1	1
			Max. Vy	12	-171	1	-1
			Max. Vx	4	-178	-1	1
		Diagonal	Max Tension	6	6775	0	0
			Max. Compression	6	-6909	0	0
			Max. Mx	16	4353	0	0
			Max. My	14	-6612	0	0
			Max. Vy	19	-22	0	0
			Max. Vx	14	2	0	0
		Top Girt	Max Tension	14	890	0	0
			Max. Compression	15	-731	0	0
			Max. Mx	18	109	0	0
			Max. My	18	109	0	0
			Max. Vy	18	36	0	0
			Max. Vx	18	-1	0	0
T9	196.5 - 191.5	Leg	Max Tension	5	61836	0	0
			Max. Compression	4	-73925	0	0
			Max. Mx	12	-2286	1	-1
			Max. My	4	-8593	-1	1
			Max. Vy	8	166	1	-1
			Max. Vx	16	172	-1	1
		Diagonal	Max Tension	6	6900	0	0
			Max. Compression	6	-6861	0	0
			Max. Mx	16	3997	0	0
			Max. My	14	5282	0	0
			Max. Vy	26	-26	0	0
			Max. Vx	25	2	0	0
T10	191.5 - 181.5	Leg	Max Tension	5	71383	0	0
			Max. Compression	4	-82686	0	0
			Max. Mx	6	-56854	-1	0
			Max. My	14	-57696	0	-1
			Max. Vy	16	-208	0	0
			Max. Vx	12	-209	0	-1
		Diagonal	Max Tension	13	10152	0	0
			Max. Compression	4	-11512	0	0
			Max. Mx	4	3255	0	0
			Max. My	12	-11293	0	0
			Max. Vy	26	33	0	0
			Max. Vx	12	-4	0	0
		Secondary Horizontal	Max Tension	14	405	0	0
			Max. Compression	14	-397	0	0
			Max. Mx	6	-393	0	0
			Max. My	14	-33	0	0
			Max. Vy	21	-25	0	0
			Max. Vx	6	-4	0	0
		Top Girt	Max Tension	14	3242	0	0
			Max. Compression	7	-2841	0	0

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	18	322	0	0
			Max. My	18	322	0	0
			Max. Vy	18	40	0	0
			Max. Vx	18	1	0	0
		Inner Bracing	Max Tension	25	321	0	0
			Max. Compression	1	0	0	0
			Max. Mx	18	321	0	0
			Max. Vy	18	50	0	0
T11	181.5 - 171.5	Leg	Max Tension	5	90128	0	0
			Max. Compression	4	-102837	0	0
			Max. Mx	6	-70735	-1	0
			Max. My	14	-71552	0	-1
			Max. Vy	4	-262	-1	-1
			Max. Vx	12	-260	-1	-1
		Diagonal	Max Tension	13	10188	0	0
			Max. Compression	4	-11437	0	0
			Max. Mx	4	3139	0	0
			Max. My	12	-11272	0	0
			Max. Vy	26	36	0	0
			Max. Vx	12	-4	0	0
		Secondary Horizontal	Max Tension	4	523	0	0
			Max. Compression	5	-492	0	0
			Max. Mx	6	-410	0	0
			Max. My	4	-474	0	0
			Max. Vy	21	-27	0	0
			Max. Vx	4	-4	0	0
		Top Girt	Max Tension	6	6328	0	0
			Max. Compression	7	-5143	0	0
			Max. Mx	18	1073	0	0
			Max. My	18	1073	0	0
			Max. Vy	18	43	0	0
			Max. Vx	18	-2	0	0
T12	171.5 - 161.5	Leg	Max Tension	5	108220	0	0
			Max. Compression	4	-122304	1	0
			Max. Mx	6	-84086	-1	0
			Max. My	14	-84877	0	-1
			Max. Vy	4	-294	-1	-1
			Max. Vx	12	291	-1	-1
		Diagonal	Max Tension	13	10392	0	0
			Max. Compression	4	-11609	0	0
			Max. Mx	4	2939	0	0
			Max. My	12	-11492	0	0
			Max. Vy	26	39	0	0
			Max. Vx	25	3	0	0
		Secondary Horizontal	Max Tension	4	590	0	0
			Max. Compression	5	-552	0	0
			Max. Mx	21	-54	0	0
			Max. My	4	-538	0	0
			Max. Vy	21	-25	0	0
			Max. Vx	4	-3	0	0
		Top Girt	Max Tension	6	6544	0	0
			Max. Compression	7	-5768	0	0
			Max. Mx	18	677	0	0
			Max. My	18	677	0	0
			Max. Vy	18	47	0	0
			Max. Vx	18	-2	0	0
		Inner Bracing	Max Tension	21	620	0	0
			Max. Compression	1	0	0	0
			Max. Mx	18	620	0	0

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	18	-59	0	0
T13	161.5 - 151.5	Leg	Max Tension	5	125948	0	0
			Max. Compression	4	-141394	1	1
			Max. Mx	6	-97118	-1	0
			Max. My	14	-97898	0	-1
			Max. Vy	4	327	-1	-1
			Max. Vx	12	324	-1	-1
		Diagonal	Max Tension	13	10693	0	0
			Max. Compression	4	-11896	0	0
			Max. Mx	4	2769	0	0
			Max. My	12	-11816	0	0
			Max. Vy	26	41	0	0
			Max. Vx	4	-4	0	0
		Secondary Horizontal	Max Tension	4	656	0	0
			Max. Compression	5	-613	0	0
			Max. Mx	21	-58	0	0
			Max. My	4	-601	0	0
			Max. Vy	21	-34	0	0
			Max. Vx	4	-5	0	0
		Top Girt	Max Tension	6	7418	0	0
			Max. Compression	7	-6190	0	0
			Max. Mx	18	1160	0	0
			Max. My	18	1160	0	0
			Max. Vy	18	51	0	0
			Max. Vx	18	2	0	0
T14	151.5 - 141.5	Leg	Max Tension	5	144733	-1	0
			Max. Compression	4	-161896	1	1
			Max. Mx	12	-159709	1	1
			Max. My	4	-161896	1	1
			Max. Vy	12	-502	-1	-1
			Max. Vx	4	-508	-1	-1
		Diagonal	Max Tension	13	10277	0	0
			Max. Compression	4	-11270	0	0
			Max. Mx	4	3725	0	0
			Max. My	12	-11151	0	0
			Max. Vy	26	44	0	0
			Max. Vx	25	4	0	0
		Secondary Horizontal	Max Tension	4	895	0	0
			Max. Compression	5	-835	0	0
			Max. Mx	21	-82	0	0
			Max. My	4	-826	0	0
			Max. Vy	21	-32	0	0
			Max. Vx	4	-3	0	0
		Top Girt	Max Tension	6	6723	0	0
			Max. Compression	7	-5960	0	0
			Max. Mx	18	702	0	0
			Max. My	18	702	0	0
			Max. Vy	18	54	0	0
			Max. Vx	18	2	0	0
		Inner Bracing	Max Tension	21	544	0	0
			Max. Compression	1	0	0	0
			Max. Mx	18	544	0	0
			Max. Vy	18	-62	0	0
T15	141.5 - 131.5	Leg	Max Tension	5	175317	-2	-2
			Max. Compression	4	-196120	2	2
			Max. Mx	6	-137884	3	0
			Max. My	14	-122950	0	3
			Max. Vy	12	8528	2	2
			Max. Vx	4	8543	2	2

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Diagonal	Max Tension	5	11891	0	0
			Max. Compression	12	-13074	0	0
			Max. Mx	4	3544	0	0
			Max. My	4	-2048	0	0
			Max. Vy	4	-43	0	0
			Max. Vx	4	8	0	0
		Horizontal	Max Tension	8	675	0	0
			Max. Compression	5	-624	0	0
			Max. Mx	25	190	0	0
			Max. My	6	575	0	0
			Max. Vy	25	-34	0	0
			Max. Vx	6	-3	0	0
		Top Girt	Max Tension	6	6926	0	0
			Max. Compression	7	-5885	0	0
			Max. Mx	18	998	0	0
			Max. My	18	998	0	0
			Max. Vy	18	58	0	0
			Max. Vx	18	2	0	0
		Redund Horz 1 Bracing	Max Tension	6	2536	0	0
			Max. Compression	7	-2214	0	0
			Max. Mx	18	304	0	0
			Max. My	18	186	0	0
			Max. Vy	18	12	0	0
			Max. Vx	18	0	0	0
		Redund Diag 1 Bracing	Max Tension	13	1499	0	0
			Max. Compression	4	-1713	0	0
			Max. Mx	18	-193	0	0
			Max. My	18	-184	0	0
			Max. Vy	18	12	0	0
			Max. Vx	18	-1	0	0
		Redund Hip 1 Bracing	Max Tension	5	17	0	0
			Max. Compression	4	-24	0	0
			Max. Mx	18	-8	0	0
			Max. Vy	18	17	0	0
T16	131.5 - 119	Leg	Max Tension	5	175315	-2	-1
			Max. Compression	4	-196123	1	1
			Max. Mx	6	-135438	5	0
			Max. My	14	-132161	0	5
			Max. Vy	12	8530	1	1
			Max. Vx	4	8545	1	1
		Diagonal	Max Tension	7	17382	0	0
			Max. Compression	6	-17895	0	0
			Max. Mx	4	13499	0	0
			Max. My	4	-15528	0	0
			Max. Vy	26	37	0	0
			Max. Vx	4	-38	0	0
		Top Girt	Max Tension	4	8884	0	0
			Max. Compression	13	-8240	0	0
			Max. Mx	6	3248	0	0
			Max. My	6	-2560	0	0
			Max. Vy	25	74	0	0
			Max. Vx	6	-6	0	0
		Redund Horz 1 Bracing	Max Tension	6	2190	0	0
			Max. Compression	7	-1955	0	0
			Max. Mx	18	187	0	0
			Max. My	18	187	0	0
			Max. Vy	18	-12	0	0

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	18	0	0	0
		Redund Diag 1 Bracing	Max Tension	7	2393	0	0
			Max. Compression	6	-2561	0	0
			Max. Mx	18	-73	0	0
			Max. My	18	-73	0	0
			Max. Vy	18	-11	0	0
			Max. Vx	18	1	0	0
		Redund Hip 1 Bracing	Max Tension	4	100	0	0
			Max. Compression	5	-96	0	0
			Max. Mx	18	2	0	0
			Max. Vy	18	18	0	0
		Inner Bracing	Max Tension	5	33	0	0
			Max. Compression	4	-47	0	0
			Max. Mx	18	-14	0	0
			Max. Vy	18	45	0	0
T17	119 - 106.5	Leg	Max Tension	5	190349	-1	-1
			Max. Compression	4	-213830	-3	-3
			Max. Mx	6	-147726	5	0
			Max. My	14	-144105	0	5
			Max. Vy	4	2302	-4	-4
			Max. Vx	16	2239	-4	-3
		Diagonal	Max Tension	7	17983	0	0
			Max. Compression	6	-18702	0	0
			Max. Mx	4	-11881	0	0
			Max. My	4	-13717	0	0
			Max. Vy	4	78	0	0
			Max. Vx	4	-48	0	0
		Top Girt	Max Tension	7	8257	0	0
			Max. Compression	6	-8330	0	0
			Max. Mx	6	-990	0	0
			Max. My	6	933	0	0
			Max. Vy	25	74	0	0
			Max. Vx	6	6	0	0
		Redund Horz 1 Bracing	Max Tension	12	712	0	0
			Max. Compression	5	-683	0	0
			Max. Mx	18	12	0	0
			Max. My	18	12	0	0
			Max. Vy	18	13	0	0
			Max. Vx	18	0	0	0
		Redund Diag 1 Bracing	Max Tension	13	4124	0	0
			Max. Compression	4	-4578	0	0
			Max. Mx	4	-4462	0	0
			Max. My	22	-108	0	0
			Max. Vy	4	30	0	0
			Max. Vx	21	-1	0	0
		Redund Hip 1 Bracing	Max Tension	4	126	0	0
			Max. Compression	13	-121	0	0
			Max. Mx	18	2	0	0
			Max. Vy	18	19	0	0
		Redund Hip Diagonal 1 Bracing	Max Tension	14	107	0	0
			Max. Compression	6	-111	0	0
			Max. Mx	18	23	0	0
			Max. Vy	18	30	0	0
		Redund Sub Horz Bracing	Max Tension	4	3859	0	0

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	5	-3388	0	0
			Max. Mx	18	396	0	0
			Max. My	18	396	0	0
			Max. Vy	18	7	0	0
			Max. Vx	18	0	0	0
		Redund Sub Diagonal Bracing	Max Tension	5	3858	0	0
			Max. Compression	4	-4417	0	0
			Max. Mx	18	-442	0	0
			Max. My	18	-470	0	0
			Max. Vy	18	7	0	0
			Max. Vx	18	-1	0	0
		Inner Bracing	Max Tension	7	29	0	0
			Max. Compression	14	-45	0	0
			Max. Mx	18	-15	0	0
			Max. Vy	18	-48	0	0

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Leg D	Max. Vert	12	238388	14663	-15353
	Max. H_x	12	238388	14663	-15353
	Max. H_z	5	-215897	-13867	14300
	Min. Vert	5	-215897	-13867	14300
	Min. H_x	5	-215897	-13867	14300
	Min. H_z	12	238388	14663	-15353
Leg C	Max. Vert	8	236824	-14683	-15228
	Max. H_x	17	-210527	13546	14017
	Max. H_z	17	-210527	13546	14017
	Min. Vert	17	-210527	13546	14017
	Min. H_x	8	236824	-14683	-15228
	Min. H_z	8	236824	-14683	-15228
Leg B	Max. Vert	4	241229	-15588	14714
	Max. H_x	13	-213010	14376	-13503
	Max. H_z	4	241229	-15588	14714
	Min. Vert	13	-213010	14376	-13503
	Min. H_x	4	241229	-15588	14714
	Min. H_z	13	-213010	14376	-13503
Leg A	Max. Vert	16	236180	15220	14490
	Max. H_x	16	236180	15220	14490
	Max. H_z	16	236180	15220	14490
	Min. Vert	9	-211766	-14349	-13438
	Min. H_x	9	-211766	-14349	-13438
	Min. H_z	9	-211766	-14349	-13438

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	48296	0	0	-12	15	0

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 0 deg - No Ice	57955	1	-49412	-3820	22	-12
0.9 Dead+1.0 Wind 0 deg - No Ice	43467	1	-49412	-3816	18	-12
1.2 Dead+1.0 Wind 45 deg - No Ice	57955	41706	-39660	-2979	-3180	-18
0.9 Dead+1.0 Wind 45 deg - No Ice	43467	41706	-39660	-2976	-3185	-18
1.2 Dead+1.0 Wind 90 deg - No Ice	57955	54251	-312	-47	-4143	-27
0.9 Dead+1.0 Wind 90 deg - No Ice	43467	54251	-312	-43	-4147	-27
1.2 Dead+1.0 Wind 135 deg - No Ice	57955	41264	39218	2905	-3135	-20
0.9 Dead+1.0 Wind 135 deg - No Ice	43467	41264	39218	2908	-3140	-20
1.2 Dead+1.0 Wind 180 deg - No Ice	57955	-624	49412	3790	86	12
0.9 Dead+1.0 Wind 180 deg - No Ice	43467	-624	49412	3793	81	12
1.2 Dead+1.0 Wind 225 deg - No Ice	57955	-41066	39599	2942	3140	21
0.9 Dead+1.0 Wind 225 deg - No Ice	43467	-41066	39599	2946	3136	21
1.2 Dead+1.0 Wind 270 deg - No Ice	57955	-53549	312	17	4096	27
0.9 Dead+1.0 Wind 270 deg - No Ice	43467	-53549	312	21	4091	27
1.2 Dead+1.0 Wind 315 deg - No Ice	57955	-40624	-39157	-2927	3095	16
0.9 Dead+1.0 Wind 315 deg - No Ice	43467	-40624	-39157	-2924	3091	16
1.2 Dead+1.0 Ice+1.0 Temp	103228	0	0	-39	20	0
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	103228	3	-11834	-955	20	-1
1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp	103228	9797	-9417	-745	-730	-5
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	103228	13151	-58	-45	-988	-10
1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp	103228	9715	9335	659	-721	-8
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	103228	-114	11834	878	32	1
1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp	103228	-9683	9406	666	756	6
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	103228	-13025	58	-32	1013	10
1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp	103228	-9601	-9324	-735	748	7
Dead+Wind 0 deg - Service	48296	0	-13009	-1014	16	-3
Dead+Wind 45 deg - Service	48296	10980	-10441	-793	-828	-5
Dead+Wind 90 deg - Service	48296	14283	-82	-21	-1081	-7
Dead+Wind 135 deg - Service	48296	10863	10325	756	-816	-5
Dead+Wind 180 deg - Service	48296	-164	13009	990	32	3
Dead+Wind 225 deg - Service	48296	-10811	10425	766	837	6
Dead+Wind 270 deg - Service	48296	-14098	82	-4	1089	7
Dead+Wind 315 deg - Service	48296	-10695	-10309	-779	825	4

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	% Error
1	0	-48296	0	0	48296	0	0.000%
2	1	-57955	-49412	-1	57955	49412	0.000%
3	1	-43467	-49412	-1	43467	49412	0.000%
4	41706	-57955	-39660	-41706	57955	39660	0.000%
5	41706	-43467	-39660	-41706	43467	39660	0.000%
6	54251	-57955	-312	-54251	57955	312	0.000%
7	54251	-43467	-312	-54251	43467	312	0.000%
8	41264	-57955	39218	-41264	57955	-39218	0.000%
9	41264	-43467	39218	-41264	43467	-39218	0.000%
10	-624	-57955	49412	624	57955	-49412	0.000%
11	-624	-43467	49412	624	43467	-49412	0.000%
12	-41066	-57955	39599	41066	57955	-39599	0.000%
13	-41066	-43467	39599	41066	43467	-39599	0.000%
14	-53549	-57955	312	53549	57955	-312	0.000%
15	-53549	-43467	312	53549	43467	-312	0.000%
16	-40624	-57955	-39157	40624	57955	39157	0.000%
17	-40624	-43467	-39157	40624	43467	39157	0.000%
18	0	-103228	0	0	103228	0	0.000%
19	3	-103228	-11834	-3	103228	11834	0.000%
20	9797	-103228	-9417	-9797	103228	9417	0.000%
21	13151	-103228	-58	-13151	103228	58	0.000%
22	9715	-103228	9335	-9715	103228	-9335	0.000%
23	-114	-103228	11834	114	103228	-11834	0.000%
24	-9683	-103228	9406	9683	103228	-9406	0.000%
25	-13025	-103228	58	13025	103228	-58	0.000%
26	-9601	-103228	-9324	9601	103228	9324	0.000%
27	0	-48296	-13009	0	48296	13009	0.000%
28	10980	-48296	-10441	-10980	48296	10441	0.000%
29	14283	-48296	-82	-14283	48296	82	0.000%
30	10863	-48296	10325	-10863	48296	-10325	0.000%
31	-164	-48296	13009	164	48296	-13009	0.000%
32	-10811	-48296	10425	10811	48296	-10425	0.000%
33	-14098	-48296	82	14098	48296	-82	0.000%
34	-10695	-48296	-10309	10695	48296	10309	0.000%

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	231.5 - 229	2.055	34	0.1361	0.0177
T2	229 - 224.8	1.959	34	0.1355	0.0151
T3	224.8 - 220.7	1.839	34	0.1341	0.0150
T4	220.7 - 216.5	1.724	34	0.1311	0.0148
T5	216.5 - 211.5	1.609	34	0.1270	0.0144
T6	211.5 - 206.5	1.474	28	0.1234	0.0136
T7	206.5 - 201.5	1.344	28	0.1188	0.0129
T8	201.5 - 196.5	1.219	28	0.1133	0.0119
T9	196.5 - 191.5	1.099	28	0.1065	0.0106
T10	191.5 - 181.5	0.985	28	0.0993	0.0095
T11	181.5 - 171.5	0.775	28	0.0893	0.0078
T12	171.5 - 161.5	0.587	28	0.0779	0.0064
T13	161.5 - 151.5	0.424	28	0.0655	0.0053

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T14	151.5 - 141.5	0.287	28	0.0521	0.0042
T15	141.5 - 131.5	0.176	28	0.0402	0.0033
T16	131.5 - 119	0.091	28	0.0278	0.0026
T17	119 - 106.5	0.026	30	0.0142	0.0012

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
235.00	Top Platform Mount	34	2.055	0.1361	0.0177	8838
231.50	(2) 12" x 24" Beacon	34	2.055	0.1361	0.0177	8838
229.00	17" 3 element yagi	34	1.959	0.1355	0.0151	8838
223.50	Andrew HP10	34	1.804	0.1334	0.0150	174639
221.00	1-ft dish w/ shroud	34	1.733	0.1314	0.0148	244596
216.50	4' L x 6' W Rest Platform	34	1.609	0.1270	0.0144	115743
206.50	Site Pro 1 VFA12-HD	28	1.344	0.1188	0.0129	70259
203.00	Site Pro 1 VFA12-HD	28	1.256	0.1151	0.0122	57560
132.00	Side Arm Mount [SO 901-1]	28	0.094	0.0284	0.0026	37982

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	231.5 - 229	7.774	5	0.5068	0.0668
T2	229 - 224.8	7.415	5	0.5044	0.0571
T3	224.8 - 220.7	6.968	5	0.4992	0.0568
T4	220.7 - 216.5	6.539	5	0.4886	0.0559
T5	216.5 - 211.5	6.109	5	0.4737	0.0547
T6	211.5 - 206.5	5.602	5	0.4605	0.0516
T7	206.5 - 201.5	5.111	5	0.4431	0.0490
T8	201.5 - 196.5	4.634	5	0.4237	0.0450
T9	196.5 - 191.5	4.177	5	0.4004	0.0401
T10	191.5 - 181.5	3.745	5	0.3747	0.0360
T11	181.5 - 171.5	2.947	5	0.3382	0.0296
T12	171.5 - 161.5	2.233	5	0.2959	0.0243
T13	161.5 - 151.5	1.611	5	0.2490	0.0199
T14	151.5 - 141.5	1.091	5	0.1984	0.0160
T15	141.5 - 131.5	0.670	5	0.1528	0.0126
T16	131.5 - 119	0.344	5	0.1058	0.0097
T17	119 - 106.5	0.100	4	0.0538	0.0046

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
235.00	Top Platform Mount	5	7.774	0.5068	0.0668	2339

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
231.50	(2) 12" x 24" Beacon	5	7.774	0.5068	0.0668	2339
229.00	17" 3 element yagi	5	7.415	0.5044	0.0571	2339
223.50	Andrew HP10	5	6.835	0.4965	0.0568	50240
221.00	1-ft dish w/ shroud	5	6.571	0.4896	0.0560	75424
216.50	4' L x 6' W Rest Platform	5	6.109	0.4737	0.0547	32777
206.50	Site Pro 1 VFA12-HD	5	5.111	0.4431	0.0490	20093
203.00	Site Pro 1 VFA12-HD	5	4.776	0.4298	0.0464	16776
132.00	Side Arm Mount [SO 901-1]	5	0.357	0.1080	0.0099	10003

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load per Bolt lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	231.5	Top Girt	A325N	0.7500	2	517	14738	0.035	1.05	Member Bearing
T2	229	Diagonal	A325N	0.7500	2	2079	20934	0.099	1.05	Member Block Shear
T3	224.8	Leg	A325N	0.7500	8	4584	28221	0.162	1.05	Bearing
		Diagonal	A325N	0.7500	2	1993	20934	0.095	1.05	Member Block Shear
		Top Girt	A325N	0.7500	2	622	10467	0.059	1.05	Member Block Shear
T4	220.7	Diagonal	A325N	0.7500	2	2508	20934	0.120	1.05	Member Block Shear
T5	216.5	Diagonal	A325N	0.7500	2	2339	10467	0.223	1.05	Member Block Shear
		Top Girt	A325N	0.7500	3	470	15225	0.031	1.05	Member Bearing
T6	211.5	Diagonal	A325N	0.7500	2	2436	10467	0.233	1.05	Member Block Shear
		Top Girt	A325N	0.7500	2	636	10467	0.061	1.05	Member Block Shear
T7	206.5	Diagonal	A325N	0.7500	2	3015	10467	0.288	1.05	Member Block Shear
T8	201.5	Leg	A325N	0.7500	12	10543	39005	0.270	1.05	Bearing
		Diagonal	A325N	0.7500	2	3387	10467	0.324	1.05	Member Block Shear
		Top Girt	A325N	0.7500	2	475	10467	0.045	1.05	Member Block Shear
T9	196.5	Diagonal	A325N	0.7500	2	3450	10467	0.330	1.05	Member Block Shear
T10	191.5	Diagonal	A325N	0.7500	2	5076	11147	0.455	1.05	Member Block Shear
		Secondary Horizontal	A325N	0.7500	2	621	10467	0.059	1.05	Member Block Shear
		Top Girt	A325N	0.7500	2	1621	10467	0.155	1.05	Member Block Shear
T11	181.5	Leg	A325N	0.7500	16	12855	39761	0.323	1.05	Bolt DS
		Diagonal	A325N	0.7500	2	5094	11147	0.457	1.05	Member Block Shear
		Secondary Horizontal	A325N	0.7500	2	772	10467	0.074	1.05	Member Block Shear
		Top Girt	A325N	0.7500	2	3164	10467	0.302	1.05	Member Block Shear
T12	171.5	Diagonal	A325N	0.7500	2	5196	11147	0.466	1.05	Member Block Shear

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load per Bolt lb	Ratio Load / Allowable	Allowable Ratio	Criteria
		Secondary Horizontal	A325N	0.7500	2	918	7850	0.117	1.05	Member Block Shear
		Top Girt	A325N	0.7500	2	3272	10467	0.313	1.05	Member Block Shear
T13	161.5	Leg	A325N	0.7500	20	14139	39761	0.356	1.05	Bolt DS
		Diagonal	A325N	0.7500	2	5347	11147	0.480	1.05	Member Block Shear
		Secondary Horizontal	A325N	0.7500	2	1061	10467	0.101	1.05	Member Block Shear
		Top Girt	A325N	0.7500	2	3709	10467	0.354	1.05	Member Block Shear
T14	151.5	Diagonal	A325N	0.7500	2	5139	11147	0.461	1.05	Member Block Shear
		Secondary Horizontal	A325N	0.7500	2	1215	10467	0.116	1.05	Member Block Shear
		Top Girt	A325N	0.7500	2	3361	10467	0.321	1.05	Member Block Shear
T15	141.5	Leg	A325N	0.7500	20	19612	39761	0.493	1.05	Bolt DS
		Diagonal	A325N	0.7500	2	5945	11147	0.533	1.05	Member Block Shear
		Horizontal	A325N	0.7500	2	1472	10467	0.141	1.05	Member Block Shear
		Top Girt	A325N	0.7500	2	3463	10467	0.331	1.05	Member Block Shear
		Redund Horz 1 Bracing	A325N	0.6250	1	2944	7830	0.376	1.05	Member Bearing
		Redund Diag 1 Bracing	A325N	0.6250	1	1986	7830	0.254	1.05	Member Bearing
		Redund Hip 1 Bracing	A325N	0.6250	2	9	8224	0.001	1.05	Member Block Shear
T16	131.5	Diagonal	A325N	0.7500	2	8691	20934	0.415	1.05	Member Block Shear
		Top Girt	A325N	0.7500	2	4442	20934	0.212	1.05	Member Block Shear
		Redund Horz 1 Bracing	A325N	0.6250	1	2944	7830	0.376	1.05	Member Bearing
		Redund Diag 1 Bracing	A325N	0.6250	1	3390	7830	0.433	1.05	Member Bearing
		Redund Hip 1 Bracing	A325N	0.6250	2	50	8224	0.006	1.05	Member Block Shear
T17	119	Leg	A325N	0.7500	28	15271	39761	0.384	1.05	Bolt DS
		Diagonal	A325N	0.7500	2	8991	20934	0.430	1.05	Member Block Shear
		Top Girt	A325N	0.7500	2	4129	20934	0.197	1.05	Member Block Shear
		Redund Horz 1 Bracing	A325N	0.6250	1	3210	7830	0.410	1.05	Member Bearing
		Redund Diag 1 Bracing	A325N	0.6250	1	4124	7830	0.527	1.05	Member Bearing
		Redund Hip 1 Bracing	A325N	0.6250	2	63	8224	0.008	1.05	Member Block Shear
		Redund Hip Diagonal 1 Bracing	A325N	0.6250	2	53	8224	0.006	1.05	Member Block Shear
		Redund Sub Horz Bracing	A325N	0.6250	2	1929	7188	0.268	1.05	Member Block Shear
		Redund Sub Diagonal Bracing	A325N	0.6250	2	1929	7188	0.268	1.05	Member Block Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T1	231.5 - 229	L4x4x3/8	2.50	2.50	38.1 K=1.00	2.8600	-6669	98268	0.068
T2	229 - 224.8	L4x4x3/8	4.20	4.20	64.0 K=1.00	2.8600	-9747	89716	0.109 [1]
T3	224.8 - 220.7	L4x4x3/8	4.10	4.10	62.4 K=1.00	2.8600	-18334	90339	0.203 [1]
T4	220.7 - 216.5	L4x4x3/8	4.20	4.20	64.0 K=1.00	2.8600	-23697	89716	0.264 [1]
T5	216.5 - 211.5	L5x5x1/2	5.01	5.01	61.1 K=1.00	4.7500	-31738	150915	0.210 [1]
T6	211.5 - 206.5	L5x5x1/2	5.01	5.01	61.1 K=1.00	4.7500	-41898	150915	0.278 [1]
T7	206.5 - 201.5	L5x5x1/2	5.01	5.01	61.1 K=1.00	4.7500	-53473	150915	0.354 [1]
T8	201.5 - 196.5	L5x5x1/2	5.01	5.01	61.1 K=1.00	4.7500	-63256	150915	0.419 [1]
T9	196.5 - 191.5	L5x5x1/2	5.01	5.01	61.1 K=1.00	4.7500	-73925	150915	0.490 [1]
T10	191.5 - 181.5	L6x6x5/8	10.01	5.24	53.3 K=1.00	7.1100	-82686	233106	0.355 [1]
T11	181.5 - 171.5	L6x6x5/8	10.01	5.22	53.1 K=1.00	7.1100	-102837	233279	0.441 [1]
T12	171.5 - 161.5	L6x6x5/8	10.01	5.20	52.9 K=1.00	7.1100	-122304	233424	0.524 [1]
T13	161.5 - 151.5	L6x6x5/8	10.01	5.19	52.8 K=1.00	7.1100	-141394	233548	0.605 [1]
T14	151.5 - 141.5	L6x6x3/4	10.01	5.18	53.1 K=1.00	8.4400	-161896	276908	0.585 [1]
T15	141.5 - 131.5	L6x6x3/4	10.01	0.08	0.9 K=1.00	8.4400	-196120	303833	0.645 [1]
T16	131.5 - 119	L6x6x7/8	12.52	6.22	63.8 K=1.00	9.7300	-192365	305504	0.630 [1]
T17	119 - 106.5	L6x6x7/8	12.52	3.13	32.1 K=1.00	9.7300	-213830	338935	0.631 [1]

[1] P_u / ϕP_n controls

Leg Bending Design Data (Compression)

Section No.	Elevation	Size	M_{ux}	ϕM_{nx}	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy}	ϕM_{ny}	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	ft		kip-ft	kip-ft		kip-ft	kip-ft	
T1	231.5 - 229	L4x4x3/8	4	10	0.351	1	5	0.251
T2	229 - 224.8	L4x4x3/8	0	10	0.000	0	5	0.000
T3	224.8 - 220.7	L4x4x3/8	0	10	0.000	0	5	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T4	220.7 - 216.5	L4x4x3/8	0	10	0.000	0	5	0.000
T5	216.5 - 211.5	L5x5x1/2	0	22	0.000	0	11	0.000
T6	211.5 - 206.5	L5x5x1/2	0	22	0.000	0	11	0.000
T7	206.5 - 201.5	L5x5x1/2	0	22	0.000	0	11	0.000
T8	201.5 - 196.5	L5x5x1/2	0	22	0.000	0	11	0.000
T9	196.5 - 191.5	L5x5x1/2	0	22	0.000	0	11	0.000
T10	191.5 - 181.5	L6x6x5/8	0	39	0.000	0	20	0.000
T11	181.5 - 171.5	L6x6x5/8	0	39	0.000	0	20	0.000
T12	171.5 - 161.5	L6x6x5/8	0	39	0.000	0	20	0.000
T13	161.5 - 151.5	L6x6x5/8	0	39	0.000	0	20	0.000
T14	151.5 - 141.5	L6x6x3/4	0	46	0.000	0	23	0.000
T15	141.5 - 131.5	L6x6x3/4	0	46	0.000	0	23	0.000
T16	131.5 - 119	L6x6x7/8	0	52	0.000	0	27	0.000
T17	119 - 106.5	L6x6x7/8	0	52	0.000	0	27	0.000

Leg Interaction Design Data (Compression)

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	231.5 - 229	L4x4x3/8	0.068	0.351	0.251	0.637	1.050	4.8.1
T2	229 - 224.8	L4x4x3/8	0.109	0.000	0.000	0.109 [1]	1.050	4.8.1
T3	224.8 - 220.7	L4x4x3/8	0.203	0.000	0.000	0.203 [1]	1.050	4.8.1
T4	220.7 - 216.5	L4x4x3/8	0.264	0.000	0.000	0.264 [1]	1.050	4.8.1
T5	216.5 - 211.5	L5x5x1/2	0.210	0.000	0.000	0.210 [1]	1.050	4.8.1
T6	211.5 - 206.5	L5x5x1/2	0.278	0.000	0.000	0.278 [1]	1.050	4.8.1
T7	206.5 - 201.5	L5x5x1/2	0.354	0.000	0.000	0.354 [1]	1.050	4.8.1
T8	201.5 - 196.5	L5x5x1/2	0.419	0.000	0.000	0.419 [1]	1.050	4.8.1
T9	196.5 - 191.5	L5x5x1/2	0.490	0.000	0.000	0.490 [1]	1.050	4.8.1
T10	191.5 - 181.5	L6x6x5/8	0.355	0.000	0.000	0.355 [1]	1.050	4.8.1
T11	181.5 - 171.5	L6x6x5/8	0.441	0.000	0.000	0.441 [1]	1.050	4.8.1
T12	171.5 - 161.5	L6x6x5/8	0.524	0.000	0.000	0.524 [1]	1.050	4.8.1
T13	161.5 - 151.5	L6x6x5/8	0.605	0.000	0.000	0.605 [1]	1.050	4.8.1
T14	151.5 - 141.5	L6x6x3/4	0.585	0.000	0.000	0.585 [1]	1.050	4.8.1
T15	141.5 - 131.5	L6x6x3/4	0.645	0.000	0.000	0.645 [1]	1.050	4.8.1
T16	131.5 - 119	L6x6x7/8	0.630	0.000	0.000	0.630 [1]	1.050	4.8.1
T17	119 - 106.5	L6x6x7/8	0.631	0.000	0.000	0.631 [1]	1.050	4.8.1

[1] P_u / ϕP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T2	229 - 224.8	2L2 1/2x2 1/2x1/4x3/8	7.00	3.27	51.1 K=1.00	2.3800	-4269	76836	0.056 [1]
T3	224.8 - 220.7	2L2 1/2x2 1/2x1/4x3/8	6.94	3.24	50.6 K=1.00	2.3800	-3921	76857	0.051 [1]
T4	220.7 - 216.5	2L2 1/2x2 1/2x1/4x3/8	7.00	3.27	51.1 K=1.00	2.3800	-5151	76836	0.067 [1]
T5	216.5 - 211.5	L2 1/2x2x1/4	7.65	3.72	108.9	1.0600	-5220	23941	0.218 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T6	211.5 - 206.5	L2 1/2x2x1/4	7.93	3.85	K=1.04 111.7	1.0600	-4856	23177	0.210 [1]
T7	206.5 - 201.5	L2 1/2x2x1/4	8.21	3.99	K=1.03 114.7	1.0600	-6262	22371	0.280 [1]
T8	201.5 - 196.5	L2 1/2x2x1/4	8.50	4.13	K=1.02 117.7	1.0600	-6909	21524	0.321 [1]
T9	196.5 - 191.5	L2 1/2x2x1/4	8.80	4.28	K=1.01 120.9	1.0600	-6861	20621	0.333 [1]
T10	191.5 - 181.5	L3x3x1/4	12.68	6.40	K=1.00 128.7	1.4400	-11512	24884	0.463 [1]
T11	181.5 - 171.5	L3x3x1/4	13.13	6.62	K=0.98 132.0	1.4400	-11437	23642	0.484 [1]
T12	171.5 - 161.5	L3x3x1/4	13.61	6.85	K=0.97 135.6	1.4400	-11609	22416	0.518 [1]
T13	161.5 - 151.5	L3x3x1/4	14.12	7.09	K=0.97 139.4	1.4400	-11896	21222	0.561 [1]
T14	151.5 - 141.5	L3x3x1/4	14.64	7.34	K=0.96 143.3	1.4400	-11270	20073	0.561 [1]
T15	141.5 - 131.5	L3x3x1/4	7.70	7.24	K=0.95 106.9	1.4400	-13074	33215	0.394 [1]
T16	131.5 - 119	2L2 1/2x2 1/2x1/4x3/8	13.95	13.49	K=1.14 143.4	2.3800	-17895	32371	0.553 [1]
T17	119 - 106.5	2L2 1/2x2 1/2x1/4x3/8	14.23	6.89	K=1.00 107.5	2.3800	-18702	54560	0.343 [1]
					K=1.00				

[1] P_u / ϕP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T15	141.5 - 131.5	L2 1/2x2x1/4	11.40	8.32	168.6 K=1.00	1.0600	-2944	10671	0.276 [1]

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T10	191.5 - 181.5	L2 1/2x2x1/4	7.76	7.31	148.0 K=1.00	1.0600	-1241	13856	0.090 [1]
T11	181.5 - 171.5	L2 1/2x2x1/4	8.49	8.03	162.7 K=1.00	1.0600	-1544	11462	0.135 [1]
T12	171.5 - 161.5	L2 1/2x2x3/16	9.22	8.76	175.2 K=1.00	0.8090	-1836	7540	0.243 [1]
T13	161.5 - 151.5	L2 1/2x2 1/2x1/4	9.94	9.48	148.0 K=1.00	1.1900	-2122	15548	0.137 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T14	151.5 - 141.5	L2 1/2x2x1/4	10.67	10.21	206.8 K=1.00	1.0600	-2430	7091	0.343 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	231.5 - 229	C8x11.5	5.60	5.60	107.6 K=1.00	3.3800	-674	59533	0.011
T3	224.8 - 220.7	L2 1/2x2 1/2x1/4	5.60	5.15	123.5 K=0.98	1.1900	-1175	22279	0.053 [1]
T5	216.5 - 211.5	C7x9.8	5.60	5.60	115.7 K=1.00	2.8700	-1162	45932	0.025 [1]
T6	211.5 - 206.5	L2 1/2x2x1/4	5.97	5.51	142.1 K=0.91	1.0600	-923	15029	0.061 [1]
T8	201.5 - 196.5	L2 1/2x2 1/2x1/4	6.69	6.23	139.9 K=0.92	1.1900	-949	17403	0.055 [1]
T10	191.5 - 181.5	L2 1/2x2 1/2x1/4	7.42	6.96	150.8 K=0.89	1.1900	-2841	14977	0.190 [1]
T11	181.5 - 171.5	L2 1/2x2 1/2x1/4	8.14	7.68	161.7 K=0.86	1.1900	-5143	13026	0.395 [1]
T12	171.5 - 161.5	L2 1/2x2 1/2x1/4	8.87	8.41	172.6 K=0.84	1.1900	-5768	11432	0.505 [1]
T13	161.5 - 151.5	L2 1/2x2 1/2x1/4	9.59	9.14	183.5 K=0.82	1.1900	-6190	10114	0.612 [1]
T14	151.5 - 141.5	L2 1/2x2 1/2x1/4	10.32	9.86	194.4 K=0.81	1.1900	-5960	9011	0.661 [1]
T15	141.5 - 131.5	L2 1/2x2 1/2x1/4	11.04	7.83	163.8 K=0.86	1.1900	-5885	12692	0.464 [1]
T16	131.5 - 119	2L2 1/2x2 1/2x1/4x3/8	11.78	8.60	98.8 K=1.00	2.3800	-8240	57848	0.142 [1]
T17	119 - 106.5	2L2 1/2x2 1/2x1/4x3/8	12.68	9.28	104.9 K=1.00	2.3800	-8330	54587	0.153 [1]

[1] P_u / ϕP_n controls

Top Girt Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T1	231.5 - 229	C8x11.5	-4	22	0.173	0	3	0.000
T3	224.8 - 220.7	L2 1/2x2 1/2x1/4	0	3	0.000	0	1	0.000
T5	216.5 - 211.5	C7x9.8	0	16	0.000	0	3	0.000
T6	211.5 - 206.5	L2 1/2x2x1/4	0	2	0.000	0	1	0.000
T8	201.5 - 196.5	L2 1/2x2 1/2x1/4	0	3	0.000	0	1	0.000
T10	191.5 - 181.5	L2 1/2x2 1/2x1/4	0	3	0.000	0	1	0.000
T11	181.5 - 171.5	L2 1/2x2 1/2x1/4	0	3	0.000	0	1	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T12	171.5 - 161.5	L2 1/2x2 1/2x1/4	0	3	0.000	0	1	0.000
T13	161.5 - 151.5	L2 1/2x2 1/2x1/4	0	3	0.000	0	1	0.000
T14	151.5 - 141.5	L2 1/2x2 1/2x1/4	0	3	0.000	0	1	0.000
T15	141.5 - 131.5	L2 1/2x2 1/2x1/4	0	3	0.000	0	1	0.000
T16	131.5 - 119	2L2 1/2x2 1/2x1/4x3/8	0	3	0.000	0	5	0.000
T17	119 - 106.5	2L2 1/2x2 1/2x1/4x3/8	0	3	0.000	0	5	0.000

Top Girt Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	231.5 - 229	C8x11.5	0.011	0.173	0.000	0.179	1.050	4.8.1
T3	224.8 - 220.7	L2 1/2x2 1/2x1/4	0.053	0.000	0.000	0.053 [1]	1.050	4.8.1
T5	216.5 - 211.5	C7x9.8	0.025	0.000	0.000	0.025 [1]	1.050	4.8.1
T6	211.5 - 206.5	L2 1/2x2x1/4	0.061	0.000	0.000	0.061 [1]	1.050	4.8.1
T8	201.5 - 196.5	L2 1/2x2 1/2x1/4	0.055	0.000	0.000	0.055 [1]	1.050	4.8.1
T10	191.5 - 181.5	L2 1/2x2 1/2x1/4	0.190	0.000	0.000	0.190 [1]	1.050	4.8.1
T11	181.5 - 171.5	L2 1/2x2 1/2x1/4	0.395	0.000	0.000	0.395 [1]	1.050	4.8.1
T12	171.5 - 161.5	L2 1/2x2 1/2x1/4	0.505	0.000	0.000	0.505 [1]	1.050	4.8.1
T13	161.5 - 151.5	L2 1/2x2 1/2x1/4	0.612	0.000	0.000	0.612 [1]	1.050	4.8.1
T14	151.5 - 141.5	L2 1/2x2 1/2x1/4	0.661	0.000	0.000	0.661 [1]	1.050	4.8.1
T15	141.5 - 131.5	L2 1/2x2 1/2x1/4	0.464	0.000	0.000	0.464 [1]	1.050	4.8.1
T16	131.5 - 119	2L2 1/2x2 1/2x1/4x3/8	0.142	0.000	0.000	0.142 [1]	1.050	4.8.1
T17	119 - 106.5	2L2 1/2x2 1/2x1/4x3/8	0.153	0.000	0.000	0.153 [1]	1.050	4.8.1

[1] P_u / ϕP_n controls

Redundant Horizontal (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T15	141.5 - 131.5	L2 1/2x2x3/16	2.85	2.61	96.7 K=1.32	0.8090	-2944	20561	0.143 [1]
T16	131.5 - 119	L2 1/2x2x3/16	2.94	2.70	98.0 K=1.29	0.8090	-2944	20329	0.145 [1]
T17	119 - 106.5	L2 1/2x2x3/16	3.17	2.93	101.2 K=1.23	0.8090	-3210	19752	0.162 [1]

[1] P_u / ϕP_n controls

Redundant Diagonal (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T15	141.5 - 131.5	L2 1/2x2x3/16	3.85	3.61	110.7 K=1.09	0.8090	-1986	17902	0.111 [1]
T16	131.5 - 119	L2 1/2x2x3/16	6.78	6.54	183.8 K=1.00	0.8090	-3390	6851	0.495 [1]
T17	119 - 106.5	L2 1/2x2x3/16	6.91	6.67	133.5 K=1.00	0.8090	-4578	12993	0.352 [1]

[1] P_u / ϕP_n controls

Redundant Hip (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T15	141.5 - 131.5	L2x2x1/4	4.03	3.64	115.8 K=1.04	0.9380	-24	19530	0.001 [1]
T16	131.5 - 119	L2x2x1/4	4.16	3.77	117.8 K=1.02	0.9380	-96	19030	0.005 [1]
T17	119 - 106.5	L2x2x1/4	4.48	4.09	125.4 K=1.00	0.9380	-121	17070	0.007 [1]

[1] P_u / ϕP_n controls

Redundant Hip Diagonal (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T17	119 - 106.5	L2x2x1/4	9.53	9.13	280.3 K=1.00	0.9380	-111	3416	0.033 [1]
		KL/R > 250 (C) - 392							

[1] P_u / ϕP_n controls

Redundant Sub-Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T17	119 - 106.5	L2 1/2x2x3/16	1.58	1.19	76.7 K=2.30	0.8090	-3388	23736	0.143 [1]

[1] P_u / ϕP_n controls

Redundant Sub Diagonal Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T17	119 - 106.5	L2 1/2x2x3/16	3.56	3.16	104.4 K=1.18	0.8090	-4417	19135	0.231 [1]

[1] P_u / ϕP_n controls

Inner Bracing Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T16	131.5 - 119	L3x3x3/16	8.33	8.33	167.7 K=1.00	1.0900	-47	11099	0.004 [1]
T17	119 - 106.5	L3x3x3/16	8.96	8.96	180.5 K=1.00	1.0900	-45	9578	0.005 [1]

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T1	231.5 - 229	L4x4x3/8	2.50	2.50	24.4	2.8600	2095	92664	0.023
T2	229 - 224.8	L4x4x3/8	4.20	4.20	41.0	2.8600	5156	92664	0.056 [1]
T3	224.8 - 220.7	L4x4x3/8	4.10	4.10	40.0	1.6528	12854	71897	0.179 [1]
T4	220.7 - 216.5	L4x4x3/8	4.20	4.20	41.0	2.8600	17841	92664	0.193 [1]
T5	216.5 - 211.5	L5x5x1/2	5.01	5.01	39.0	4.7500	25463	153900	0.165 [1]
T6	211.5 - 206.5	L5x5x1/2	5.01	5.01	39.0	4.7500	34196	153900	0.222 [1]
T7	206.5 - 201.5	L5x5x1/2	5.01	5.01	39.0	4.7500	42416	153900	0.276 [1]
T8	201.5 - 196.5	L5x5x1/2	5.01	5.01	39.0	2.9063	51426	126422	0.407 [1]
T9	196.5 - 191.5	L5x5x1/2	5.01	5.01	39.0	4.7500	61836	153900	0.402 [1]
T10	191.5 - 181.5	L6x6x5/8	10.01	4.77	31.1	7.1100	71383	230364	0.310 [1]
T11	181.5 - 171.5	L6x6x5/8	10.01	4.79	31.3	4.5122	90128	196280	0.459 [1]
T12	171.5 - 161.5	L6x6x5/8	10.01	4.81	31.4	7.1100	108220	230364	0.470 [1]
T13	161.5 - 151.5	L6x6x5/8	10.01	4.82	31.5	4.5122	125948	196280	0.642 [1]
T14	151.5 - 141.5	L6x6x3/4	10.01	4.84	31.7	8.4400	144733	273456	0.529 [1]
T15	141.5 - 131.5	L6x6x3/4	10.01	0.08	0.5	5.3456	175317	232535	0.754 [1]
T16	131.5 - 119	L6x6x7/8	12.52	0.08	0.6	9.7300	175315	315252	0.556 [1]
T17	119 - 106.5	L6x6x7/8	12.52	3.13	20.7	6.1491	190349	267484	0.712 [1]

[1] P_u / ϕP_n controls

Leg Bending Design Data (Tension)

Section No.	Elevation	Size	M_{ux}	ϕM_{nx}	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy}	ϕM_{ny}	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	ft		kip-ft	kip-ft		kip-ft	kip-ft	
T1	231.5 - 229	L4x4x3/8	4	10	0.350	-1	5	0.258
T2	229 - 224.8	L4x4x3/8	0	10	0.000	0	5	0.000
T3	224.8 - 220.7	L4x4x3/8	0	10	0.000	0	5	0.000
T4	220.7 - 216.5	L4x4x3/8	0	10	0.000	0	5	0.000
T5	216.5 - 211.5	L5x5x1/2	0	22	0.000	0	11	0.000
T6	211.5 - 206.5	L5x5x1/2	0	22	0.000	0	11	0.000
T7	206.5 - 201.5	L5x5x1/2	0	22	0.000	0	11	0.000
T8	201.5 - 196.5	L5x5x1/2	0	22	0.000	0	11	0.000
T9	196.5 - 191.5	L5x5x1/2	0	22	0.000	0	11	0.000
T10	191.5 - 181.5	L6x6x5/8	0	39	0.000	0	20	0.000
T11	181.5 - 171.5	L6x6x5/8	0	39	0.000	0	20	0.000
T12	171.5 - 161.5	L6x6x5/8	0	39	0.000	0	20	0.000
T13	161.5 - 151.5	L6x6x5/8	0	39	0.000	0	20	0.000
T14	151.5 - 141.5	L6x6x3/4	0	46	0.000	0	23	0.000
T15	141.5 - 131.5	L6x6x3/4	0	46	0.000	0	23	0.000
T16	131.5 - 119	L6x6x7/8	0	52	0.000	0	27	0.000
T17	119 - 106.5	L6x6x7/8	0	52	0.000	0	27	0.000

Leg Interaction Design Data (Tension)

Section No.	Elevation	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	ft							
T1	231.5 - 229	L4x4x3/8	0.023	0.350	0.258	0.620	1.050	4.8.1
T2	229 - 224.8	L4x4x3/8	0.056	0.000	0.000	0.056 [1]	1.050	4.8.1
T3	224.8 - 220.7	L4x4x3/8	0.179	0.000	0.000	0.179 [1]	1.050	4.8.1
T4	220.7 - 216.5	L4x4x3/8	0.193	0.000	0.000	0.193 [1]	1.050	4.8.1
T5	216.5 - 211.5	L5x5x1/2	0.165	0.000	0.000	0.165 [1]	1.050	4.8.1
T6	211.5 - 206.5	L5x5x1/2	0.222	0.000	0.000	0.222 [1]	1.050	4.8.1
T7	206.5 - 201.5	L5x5x1/2	0.276	0.000	0.000	0.276 [1]	1.050	4.8.1
T8	201.5 - 196.5	L5x5x1/2	0.407	0.000	0.000	0.407 [1]	1.050	4.8.1
T9	196.5 - 191.5	L5x5x1/2	0.402	0.000	0.000	0.402 [1]	1.050	4.8.1
T10	191.5 - 181.5	L6x6x5/8	0.310	0.000	0.000	0.310 [1]	1.050	4.8.1
T11	181.5 - 171.5	L6x6x5/8	0.459	0.000	0.000	0.459 [1]	1.050	4.8.1
T12	171.5 - 161.5	L6x6x5/8	0.470	0.000	0.000	0.470 [1]	1.050	4.8.1
T13	161.5 - 151.5	L6x6x5/8	0.642	0.000	0.000	0.642 [1]	1.050	4.8.1
T14	151.5 - 141.5	L6x6x3/4	0.529	0.000	0.000	0.529 [1]	1.050	4.8.1
T15	141.5 - 131.5	L6x6x3/4	0.754	0.000	0.000	0.754 [1]	1.050	4.8.1
T16	131.5 - 119	L6x6x7/8	0.556	0.000	0.000	0.556 [1]	1.050	4.8.1
T17	119 - 106.5	L6x6x7/8	0.712	0.000	0.000	0.712 [1]	1.050	4.8.1

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T2	229 - 224.8	2L2 1/2x2 1/2x1/4x3/8	7.00	3.27	54.6	1.4569	4157	63374	0.066 [1]
T3	224.8 - 220.7	2L2 1/2x2 1/2x1/4x3/8	6.94	3.24	54.2	1.4569	3985	63374	0.063 [1]
T4	220.7 - 216.5	2L2 1/2x2 1/2x1/4x3/8	7.00	3.27	54.6	1.4569	5015	63374	0.079 [1]
T5	216.5 - 211.5	L2 1/2x2x1/4	7.65	3.72	79.9	0.6309	4678	27446	0.170 [1]
T6	211.5 - 206.5	L2 1/2x2x1/4	7.93	3.85	82.7	0.6309	4872	27446	0.177 [1]
T7	206.5 - 201.5	L2 1/2x2x1/4	8.21	3.99	85.5	0.6309	6029	27446	0.220 [1]
T8	201.5 - 196.5	L2 1/2x2x1/4	8.50	4.13	88.4	0.6309	6775	27446	0.247 [1]
T9	196.5 - 191.5	L2 1/2x2x1/4	8.80	4.28	91.3	0.6309	6900	27446	0.251 [1]
T10	191.5 - 181.5	L3x3x1/4	12.68	6.40	86.0	0.9159	10152	39843	0.255 [1]
T11	181.5 - 171.5	L3x3x1/4	13.13	6.62	88.7	0.9159	10188	39843	0.256 [1]
T12	171.5 - 161.5	L3x3x1/4	13.61	6.85	91.7	0.9159	10392	39843	0.261 [1]
T13	161.5 - 151.5	L3x3x1/4	14.12	7.09	94.8	0.9159	10694	39843	0.268 [1]
T14	151.5 - 141.5	L3x3x1/4	14.64	7.34	98.1	0.9159	10277	39843	0.258 [1]
T15	141.5 - 131.5	L3x3x1/4	7.70	7.24	99.7	0.9159	11891	39843	0.298 [1]
T16	131.5 - 119	2L2 1/2x2 1/2x1/4x3/8	13.95	13.49	140.7	1.4569	17382	63374	0.274 [1]
T17	119 - 106.5	2L2 1/2x2 1/2x1/4x3/8	14.23	6.89	111.1	1.4569	17983	63374	0.284 [1]

[1] P_u / ϕP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T15	141.5 - 131.5	L2 1/2x2x1/4	11.40	8.32	173.3	0.6309	2944	27446	0.107 [1]

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T10	191.5 - 181.5	L2 1/2x2x1/4	7.76	7.31	157.3	0.6309	1241	27446	0.045 [1]
T11	181.5 - 171.5	L2 1/2x2x1/4	8.49	8.03	172.0	0.6309	1544	27446	0.056 [1]
T12	171.5 - 161.5	L2 1/2x2x3/16	9.22	8.76	184.4	0.4837	1836	21041	0.087 [1]
T13	161.5 - 151.5	L2 1/2x2 1/2x1/4	9.94	9.48	155.2	0.7284	2122	31687	0.067 [1]
T14	151.5 - 141.5	L2 1/2x2x1/4	10.67	10.21	216.1	0.6309	2430	27446	0.089 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	231.5 - 229	C8x11.5	5.60	5.60	107.6	2.3906	700	103992	0.007

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T3	224.8 - 220.7	L2 1/2x2 1/2x1/4	5.60	5.15	87.5	0.7284	1243	31687	0.039 [1]
T5	216.5 - 211.5	C7x9.8	5.60	5.60	115.7	2.0147	1409	87639	0.016 [1]
T6	211.5 - 206.5	L2 1/2x2x1/4	5.97	5.51	120.9	0.6309	1271	27446	0.046 [1]
T8	201.5 - 196.5	L2 1/2x2 1/2x1/4	6.69	6.23	104.4	0.7284	949	31687	0.030 [1]
T10	191.5 - 181.5	L2 1/2x2 1/2x1/4	7.42	6.96	115.7	0.7284	3242	31687	0.102 [1]
T11	181.5 - 171.5	L2 1/2x2 1/2x1/4	8.14	7.68	127.1	0.7284	6328	31687	0.200 [1]
T12	171.5 - 161.5	L2 1/2x2 1/2x1/4	8.87	8.41	138.4	0.7284	6544	31687	0.207 [1]
T13	161.5 - 151.5	L2 1/2x2 1/2x1/4	9.59	9.14	149.7	0.7284	7418	31687	0.234 [1]
T14	151.5 - 141.5	L2 1/2x2 1/2x1/4	10.32	9.86	161.0	0.7284	6723	31687	0.212 [1]
T15	141.5 - 131.5	L2 1/2x2 1/2x1/4	11.04	7.83	172.3	0.7284	6926	31687	0.219 [1]
T16	131.5 - 119	2L2 1/2x2 1/2x1/4x3/8	11.78	8.60	91.9	1.4569	8884	63374	0.140 [1]
T17	119 - 106.5	2L2 1/2x2 1/2x1/4x3/8	12.68	9.28	98.9	1.4569	8257	63374	0.130 [1]

[1] P_u / ϕP_n controls

Top Girt Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T1	231.5 - 229	C8x11.5	4	22	0.175	0	3	0.000
T3	224.8 - 220.7	L2 1/2x2 1/2x1/4	0	3	0.000	0	1	0.000
T5	216.5 - 211.5	C7x9.8	0	16	0.000	0	3	0.000
T6	211.5 - 206.5	L2 1/2x2x1/4	0	2	0.000	0	1	0.000
T8	201.5 - 196.5	L2 1/2x2 1/2x1/4	0	3	0.000	0	1	0.000
T10	191.5 - 181.5	L2 1/2x2 1/2x1/4	0	3	0.000	0	1	0.000
T11	181.5 - 171.5	L2 1/2x2 1/2x1/4	0	3	0.000	0	1	0.000
T12	171.5 - 161.5	L2 1/2x2 1/2x1/4	0	3	0.000	0	1	0.000
T13	161.5 - 151.5	L2 1/2x2 1/2x1/4	0	3	0.000	0	1	0.000
T14	151.5 - 141.5	L2 1/2x2 1/2x1/4	0	3	0.000	0	1	0.000
T15	141.5 - 131.5	L2 1/2x2 1/2x1/4	0	3	0.000	0	1	0.000
T16	131.5 - 119	2L2 1/2x2 1/2x1/4x3/8	0	3	0.000	0	5	0.000
T17	119 - 106.5	2L2 1/2x2 1/2x1/4x3/8	0	3	0.000	0	5	0.000

Top Girt Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	231.5 - 229	C8x11.5	0.007	0.175	0.000	0.178	1.050	4.8.1
T3	224.8 - 220.7	L2 1/2x2 1/2x1/4	0.039	0.000	0.000	0.039 [1]	1.050	4.8.1
T5	216.5 - 211.5	C7x9.8	0.016	0.000	0.000	0.016 [1]	1.050	4.8.1
T6	211.5 - 206.5	L2 1/2x2x1/4	0.046	0.000	0.000	0.046 [1]	1.050	4.8.1
T8	201.5 - 196.5	L2 1/2x2 1/2x1/4	0.030	0.000	0.000	0.030 [1]	1.050	4.8.1
T10	191.5 - 181.5	L2 1/2x2 1/2x1/4	0.102	0.000	0.000	0.102 [1]	1.050	4.8.1
T11	181.5 - 171.5	L2 1/2x2 1/2x1/4	0.200	0.000	0.000	0.200 [1]	1.050	4.8.1
T12	171.5 - 161.5	L2 1/2x2 1/2x1/4	0.207	0.000	0.000	0.207 [1]	1.050	4.8.1
T13	161.5 - 151.5	L2 1/2x2 1/2x1/4	0.234	0.000	0.000	0.234 [1]	1.050	4.8.1
T14	151.5 - 141.5	L2 1/2x2 1/2x1/4	0.212	0.000	0.000	0.212 [1]	1.050	4.8.1
T15	141.5 - 131.5	L2 1/2x2 1/2x1/4	0.219	0.000	0.000	0.219 [1]	1.050	4.8.1
T16	131.5 - 119	2L2 1/2x2 1/2x1/4x3/8	0.140	0.000	0.000	0.140 [1]	1.050	4.8.1
T17	119 - 106.5	2L2 1/2x2 1/2x1/4x3/8	0.130	0.000	0.000	0.130 [1]	1.050	4.8.1

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria

[1] P_u / ϕP_n controls

Redundant Horizontal (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T15	141.5 - 131.5	L2 1/2x2x3/16	2.85	2.61	57.0	0.5013	2944	21806	0.135 [1]
T16	131.5 - 119	L2 1/2x2x3/16	2.94	2.70	58.9	0.5013	2944	21806	0.135 [1]
T17	119 - 106.5	L2 1/2x2x3/16	3.17	2.93	63.4	0.5013	3210	21806	0.147 [1]

[1] P_u / ϕP_n controls

Redundant Diagonal (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T15	141.5 - 131.5	L2 1/2x2x3/16	3.85	3.61	77.0	0.5013	1986	21806	0.091 [1]
T16	131.5 - 119	L2 1/2x2x3/16	6.78	6.54	135.7	0.5013	3390	21806	0.155 [1]
T17	119 - 106.5	L2 1/2x2x3/16	6.91	6.67	138.3	0.5013	4124	21806	0.189 [1]

[1] P_u / ϕP_n controls

Redundant Hip (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T15	141.5 - 131.5	L2x2x1/4	4.03	3.64	79.4	0.5629	17	24485	0.001 [1]
T16	131.5 - 119	L2x2x1/4	4.16	3.77	82.0	0.5629	100	24485	0.004 [1]
T17	119 - 106.5	L2x2x1/4	4.48	4.09	88.3	0.5629	126	24485	0.005 [1]

[1] P_u / ϕP_n controls

Redundant Hip Diagonal (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T17	119 - 106.5	L2x2x1/4	9.53	9.13	187.8	0.5629	107	24485	0.004 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$

[1] P_u / ϕP_n controls

Redundant Sub-Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T17	119 - 106.5	L2 1/2x2x3/16	1.58	1.19	31.7	0.5013	3859	21806	0.177 [1]

[1] P_u / ϕP_n controls

Redundant Sub Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T17	119 - 106.5	L2 1/2x2x3/16	3.56	3.16	71.2	0.5013	3858	21806	0.177 [1]

[1] P_u / ϕP_n controls

Inner Bracing Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T10	191.5 - 181.5	L2 1/2x2 1/2x3/16	10.49	10.49	161.8	0.9020	321	29225	0.011 [1]
T12	171.5 - 161.5	L2 1/2x2 1/2x3/16	12.54	12.54	193.4	0.9020	620	29225	0.021 [*1]
T14	151.5 - 141.5	L2x2 1/2x3/16	14.59	14.59	292.0	0.8090	544	26212	0.021 [*1]
T16	131.5 - 119	L3x3x3/16	8.33	8.33	106.4	1.0900	33	35316	0.001 [1]
T17	119 - 106.5	L3x3x3/16	8.96	8.96	114.6	1.0900	29	35316	0.001 [1]

[*] DL controls
[1] P_u / ϕP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	231.5 - 229	Leg	L4x4x3/8	3	-6669	103181	60.7	Pass
T2	229 - 224.8	Leg	L4x4x3/8	11	-9747	94202	10.3	Pass
T3	224.8 - 220.7	Leg	L4x4x3/8	24	-18334	94856	19.3	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T4	220.7 - 216.5	Leg	L4x4x3/8	40	-23697	94202	25.2	Pass
T5	216.5 - 211.5	Leg	L5x5x1/2	51	-31738	158461	20.0	Pass
T6	211.5 - 206.5	Leg	L5x5x1/2	67	-41898	158461	26.4	Pass
T7	206.5 - 201.5	Leg	L5x5x1/2	84	-53473	158461	33.7	Pass
T8	201.5 - 196.5	Leg	L5x5x1/2	96	-63256	158461	39.9	Pass
T9	196.5 - 191.5	Leg	L5x5x1/2	111	-73925	158461	46.7	Pass
T10	191.5 - 181.5	Leg	L6x6x5/8	123	-82686	244761	33.8	Pass
T11	181.5 - 171.5	Leg	L6x6x5/8	143	90128	206094	43.7	Pass
T12	171.5 - 161.5	Leg	L6x6x5/8	165	-122304	245095	49.9	Pass
T13	161.5 - 151.5	Leg	L6x6x5/8	185	125948	206094	61.1	Pass
T14	151.5 - 141.5	Leg	L6x6x3/4	207	-161896	290753	55.7	Pass
T15	141.5 - 131.5	Leg	L6x6x3/4	227	175317	244162	71.8	Pass
T16	131.5 - 119	Leg	L6x6x7/8	297	-192365	320779	60.0	Pass
T17	119 - 106.5	Leg	L6x6x7/8	335	190349	280858	67.8	Pass
T2	229 - 224.8	Diagonal	2L2 1/2x2 1/2x1/4x3/8	15	4157	66543	6.2	Pass
T3	224.8 - 220.7	Diagonal	2L2 1/2x2 1/2x1/4x3/8	34	3985	66543	6.0	Pass
T4	220.7 - 216.5	Diagonal	2L2 1/2x2 1/2x1/4x3/8	46	5015	66543	7.5	Pass
T5	216.5 - 211.5	Diagonal	L2 1/2x2x1/4	61	-5220	25138	20.8	Pass
T6	211.5 - 206.5	Diagonal	L2 1/2x2x1/4	77	-4856	24335	20.0	Pass
T7	206.5 - 201.5	Diagonal	L2 1/2x2x1/4	89	-6262	23489	26.7	Pass
T8	201.5 - 196.5	Diagonal	L2 1/2x2x1/4	105	-6909	22600	30.6	Pass
T9	196.5 - 191.5	Diagonal	L2 1/2x2x1/4	117	-6861	21652	31.7	Pass
T10	191.5 - 181.5	Diagonal	L3x3x1/4	135	-11512	26128	44.1	Pass
T11	181.5 - 171.5	Diagonal	L3x3x1/4	155	-11437	24824	46.1	Pass
T12	171.5 - 161.5	Diagonal	L3x3x1/4	177	-11609	23537	49.3	Pass
T13	161.5 - 151.5	Diagonal	L3x3x1/4	197	-11896	22283	53.4	Pass
T14	151.5 - 141.5	Diagonal	L3x3x1/4	219	-11270	21076	53.5	Pass
T15	141.5 - 131.5	Diagonal	L3x3x1/4	262	-13074	34876	37.5	Pass
T16	131.5 - 119	Diagonal	2L2 1/2x2 1/2x1/4x3/8	320	-17895	33989	52.6	Pass
T17	119 - 106.5	Diagonal	2L2 1/2x2 1/2x1/4x3/8	377	-18702	57288	32.6	Pass
T15	141.5 - 131.5	Horizontal	L2 1/2x2x1/4	242	-2944	11205	26.3	Pass
T10	191.5 - 181.5	Secondary Horizontal	L2 1/2x2x1/4	140	-1241	14549	8.5	Pass
T11	181.5 - 171.5	Secondary Horizontal	L2 1/2x2x1/4	160	-1544	12035	12.8	Pass
T12	171.5 - 161.5	Secondary Horizontal	L2 1/2x2x3/16	182	-1836	7917	23.2	Pass
T13	161.5 - 151.5	Secondary Horizontal	L2 1/2x2 1/2x1/4	202	-2122	16325	13.0	Pass
T14	151.5 - 141.5	Secondary Horizontal	L2 1/2x2x1/4	224	-2430	7446	32.6	Pass
T1	231.5 - 229	Top Girt	C8x11.5	6	-674	62510	17.0	Pass
T3	224.8 - 220.7	Top Girt	L2 1/2x2 1/2x1/4	25	-1175	23393	5.0	Pass
T5	216.5 - 211.5	Top Girt	C7x9.8	56	-1162	48228	2.4	Pass
T6	211.5 - 206.5	Top Girt	L2 1/2x2x1/4	72	-923	15781	5.8	Pass
T8	201.5 - 196.5	Top Girt	L2 1/2x2 1/2x1/4	99	-949	18273	5.2	Pass
T10	191.5 - 181.5	Top Girt	L2 1/2x2 1/2x1/4	130	-2841	15726	18.1	Pass
T11	181.5 - 171.5	Top Girt	L2 1/2x2 1/2x1/4	150	-5143	13677	37.6	Pass
T12	171.5 - 161.5	Top Girt	L2 1/2x2 1/2x1/4	172	-5768	12004	48.1	Pass
T13	161.5 - 151.5	Top Girt	L2 1/2x2 1/2x1/4	192	-6190	10620	58.3	Pass
T14	151.5 - 141.5	Top Girt	L2 1/2x2 1/2x1/4	214	-5960	9462	63.0	Pass
T15	141.5 - 131.5	Top Girt	L2 1/2x2 1/2x1/4	234	-5885	13327	44.2	Pass
T16	131.5 - 119	Top Girt	2L2 1/2x2 1/2x1/4x3/8	301	-8240	60741	13.6	Pass
T17	119 - 106.5	Top Girt	2L2 1/2x2 1/2x1/4x3/8	341	-8330	57317	14.5	Pass
T15	141.5 - 131.5	Redund Horz 1 Bracing	L2 1/2x2x3/16	247	-2944	21589	13.6	Pass
T16	131.5 - 119	Redund Horz 1 Bracing	L2 1/2x2x3/16	317	-2944	21345	13.8	Pass
T17	119 - 106.5	Redund Horz 1 Bracing	L2 1/2x2x3/16	365	-3210	20739	15.5	Pass
T15	141.5 - 131.5	Redund Diag 1 Bracing	L2 1/2x2x3/16	278	-1986	18797	10.6	Pass
T16	131.5 - 119	Redund Diag 1 Bracing	L2 1/2x2x3/16	318	-3390	7194	47.1	Pass
T17	119 - 106.5	Redund Diag 1 Bracing	L2 1/2x2x3/16	366	-4578	13642	33.6	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T15	141.5 - 131.5	Redund Hip 1 Bracing	L2x2x1/4	249	-13	20506	0.2	Pass
T16	131.5 - 119	Redund Hip 1 Bracing	L2x2x1/4	334	-96	19981	0.5	Pass
T17	119 - 106.5	Redund Hip 1 Bracing	L2x2x1/4	391	-121	17924	0.7	Pass
T17	119 - 106.5	Redund Hip Diagonal 1 Bracing	L2x2x1/4	392	-111	3587	3.1	Pass
T17	119 - 106.5	Redund Sub Horz Bracing	L2 1/2x2x3/16	370	3859	22896	16.9	Pass
T17	119 - 106.5	Redund Sub Diagonal Bracing	L2 1/2x2x3/16	369	-4417	20092	22.0	Pass
T10	191.5 - 181.5	Inner Bracing	L2 1/2x2 1/2x3/16	126	321	30686	1.0	Pass
T12	171.5 - 161.5	Inner Bracing	L2 1/2x2 1/2x3/16	168	620	30686	2.0	Pass
T14	151.5 - 141.5	Inner Bracing	L2x2 1/2x3/16	210	544	27522	2.0	Pass
T16	131.5 - 119	Inner Bracing	L3x3x3/16	304	-47	11654	0.4	Pass
T17	119 - 106.5	Inner Bracing	L3x3x3/16	345	-45	10057	0.4	Pass
							Summary	
						Leg (T15)	71.8	Pass
						Diagonal (T14)	53.5	Pass
						Horizontal (T15)	26.3	Pass
						Secondary Horizontal (T14)	32.6	Pass
						Top Girt (T14)	63.0	Pass
						Redund Horz 1 Bracing (T17)	15.5	Pass
						Redund Diag 1 Bracing (T16)	47.1	Pass
						Redund Hip 1 Bracing (T17)	0.7	Pass
						Redund Hip Diagonal 1 Bracing (T17)	3.1	Pass
						Redund Sub Horz Bracing (T17)	16.9	Pass
						Redund Sub Diagonal Bracing (T17)	22.0	Pass
						Inner Bracing (T12)	2.0	Pass
						Bolt Checks	50.8	Pass
						RATING =	**71.8**	**Pass**

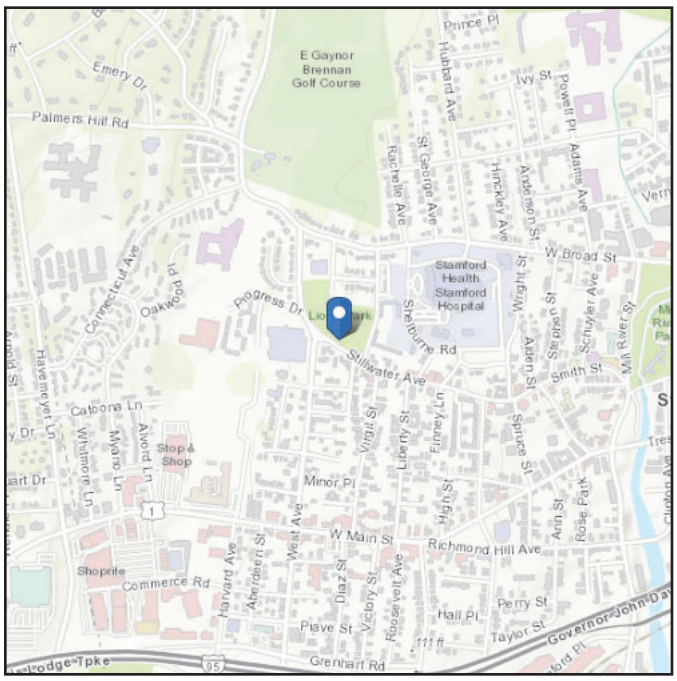
APPENDIX B

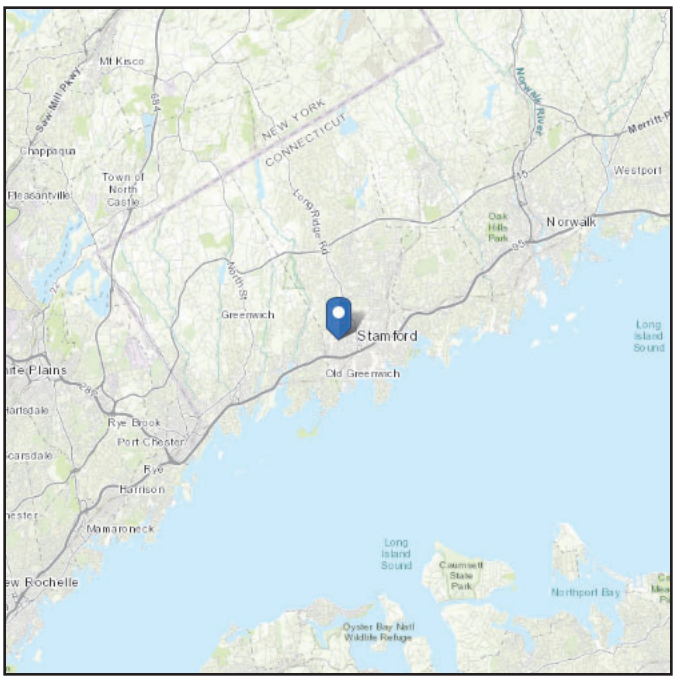
ADDITIONAL CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-16	**Latitude:**	41.053444
Risk Category:	II	**Longitude:**	-73.556414
Soil Class:	D - Default (see Section 11.4.3)	**Elevation:**	83.16208637509745 ft (NAVD 88)





Wind

Results:

Wind Speed	117 Vmph	120 mph, per 2022 Connecticut State Building Code
10-year MRI	75 Vmph	
25-year MRI	85 Vmph	
50-year MRI	90 Vmph	
100-year MRI	97 Vmph	

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2

Date Accessed: Mon May 15 2023

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Seismic

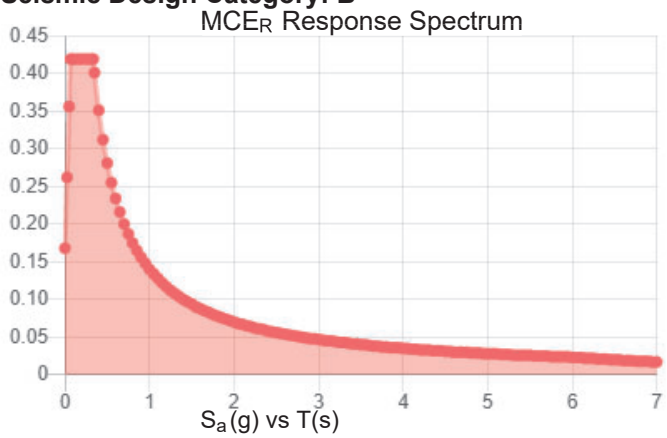
D - Default (see Section 11.4.3)

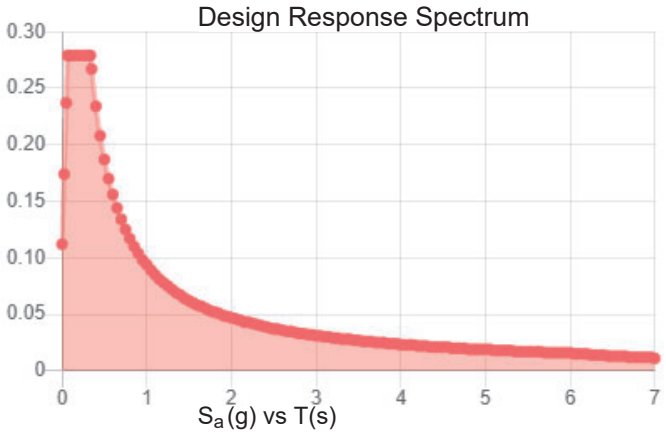
Site Soil Class:

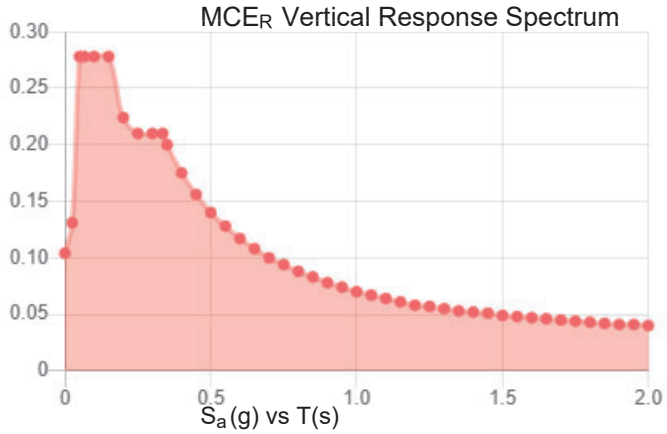
Results:

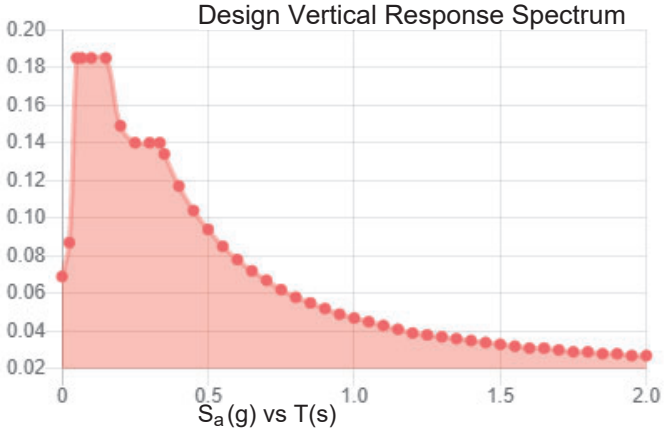
S_S :	0.264	S_{D1} :	0.094
S_1 :	0.058	T_L :	6
F_a :	1.589	PGA :	0.159
F_v :	2.4	PGA_M :	0.236
S_{MS} :	0.419	F_{PGA} :	1.482
S_{M1} :	0.14	I_e :	1
S_{DS} :	0.279	C_v :	0.828

Seismic Design Category: B









Data Accessed: **Mon May 15 2023**

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Mon May 15 2023

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Exhibit E

Mount Analysis

March 9, 2022
September 22, 2022 (Rev.1)
February 3, 2023 (Rev.2)
February 28, 2023 (Rev.3)

SAI Communications
12 Industrial Way
Salem NH, 03079

RE:	AT&T Site Number:	CT2118
	FA Number:	10034983
	PACE Number:	MRCTB050840
	PT Number:	2051A0Z6YH
	TEP Site Number:	352000
	AT&T Site Name:	STAMFORD CENTRAL SBC CO
	Site Address:	555 Main Street Stamford, CT 06901

To Whom It May Concern:

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

- (3) HPA-45R-BUU-H6 Antennas (72.0"x18.9"x8.3" – Wt. = 50 lbs. /each)
- (1) TPA45R-KU6A Antenna (78.3"x15.4"x8.2" – Wt. = 56 lbs. /each)
- (3) RRUS-32 B30 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (3) 4478 B14 RRH's (18.1"x13.4"x8.3" – Wt. = 60 lbs. /each)
- (3) RRUS-32 B66A RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (3) RRUS-32 B2 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- **(1) QD4616-7 Antenna (51.5"x22.0"x9.6" – Wt. = 109 lbs. /each)**
- **(3) AIR6419 Antennas (31.0"x16.1"x7.3" – Wt. = 66 lbs. /each)**
- **(3) AIR6449 Antennas (30.6"x15.9"x10.6" – Wt. = 82 lbs. /each)**
- **(1) DMP65R-BU4DA Antenna (48.0"x20.7"x7.7" – Wt. = 68 lbs. /each)**
- **(1) TPA-45R-KU6AA-K Antenna (78.3"x15.4"x8.2" – Wt. = 56 lbs. /each)**
- **(3) 4449 B5/B12 RRH's (17.9"x13.2"x9.4" – Wt. = 73 lbs. /each)**
- **(3) DC9-48-60-24-8C-EV Surge Arrestors (31.4"x10.2" Ø – Wt. = 29 lbs.)**

*Proposed equipment shown in bold.

No original structural design documents or fabrication drawings were available for the existing mount. Com Ex Consultants conducted a survey climb and mapping of the existing AT&T antenna mount on October 4, 2016. TEP NE conducted a ground audit of the existing AT&T antenna mount on March 17, 2021.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-H, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2021 with 2022 Connecticut State Building Code, and AT&T Mount Technical Directive – R22.
- TEP NE considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-H and Appendix P of the Connecticut State Building Code, the max basic wind speed for this site is equal to 120 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 1.22 in was used for this analysis.
- TEP NE considers this site to be exposure category B; tower is located in an urban/suburban or wooded area with numerous closely spaced obstructions.
- TEP NE considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- TEP NE considers this site to have a spectral response acceleration parameter at short periods, S_S, of 0.261 and a spectral response acceleration parameter at a period of 1 second, S_1, of 0.058.
- The mount has been analyzed with load combinations consisting of 500 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 1.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.
- The existing mount is secured to the existing self supporting tower with steel plates and threaded rods. TEP NE considers the threaded rods to be the governing connection member.

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

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing Mount Rating	241	LC3	83%	**PASS**

Reference Documents:

- Mount mapping report prepared by Com Ex Consultants.

This determination was based on the following limitations and assumptions:

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

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

Respectfully Submitted,
TEP Northeast

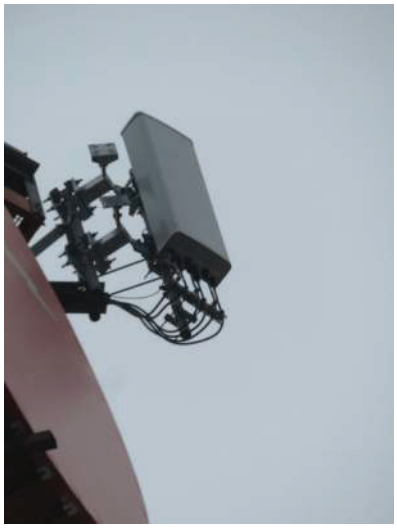
Michael Cabral
Director

Daniel P. Hamm, PE
Vice President

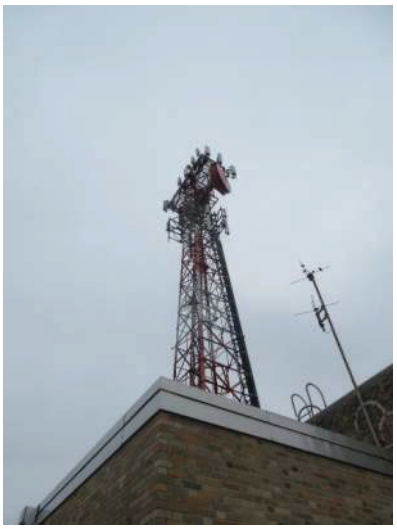
FIELD PHOTOS:





FIELD PHOTOS (CONT.):






Wind & Ice
Calculations

Date: 2/28/2023
Project Name: STAMFORD CENTRAL SBC CO
Project No.: CT2118
Designed By: KM **Checked By:** MSC

2.6.5.2 Velocity Pressure Coeff:

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

z=	235 (ft)
z_g=	1200 (ft)
α=	7

K_z= 1.261

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

Table 2-4

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

2.6.6.2 Topographic Factor:

Table 2-5

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

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

K_{zt}= 1

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

Category= **1**

K_h=	1	
K_c=	0.9	(from Table 2-4)
K_t=	0	(from Table 2-5)
f=	0	(from Table 2-5)
z=	235	
z_s=	10	(Mean elevation of base of structure above sea level)
H=	0	(Ht. of the crest above surrounding terrain)
K_{zt}=	1.00	(from 2.6.6.2.1)
K_e=	1.00	(from 2.6.8)

2.6.10 Design Ice Thickness

Max Ice Thickness = t_i = 1.00 in
Importance Factor = I= 1.00 (from Table 2-3)
K_{iz} = 1.22 (from Sec. 2.6.10)

$t_{iz} = t_i * I * K_{iz} * (K_{zt})^{0.35}$ $\quad t_{iz}$ = 1.22 in

Date: 2/28/2023
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Project No.: CT2118
Designed By: KM Checked By: MSC

2.6.9 Gust Effect Factor

2.6.9.1 Self Supporting Lattice Structures

G_h = 1.0 Latticed Structures > 600 ft

G_h = 0.85 Latticed Structures 450 ft or less

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

h=	231	G_h=	0.85
2.6.9.2 Guyed Masts		G_h=	0.85
2.6.9.3 Pole Structures		G_h=	1.1
2.6.9 Appurtenances		G_h=	1.0

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

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

2.6.11.2 Design Wind Force on Appurtenances

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

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

		K_z=	1.261	(from 2.6.5.2)
		K_{zt}=	1.0	(from 2.6.6.2.1)
		K_s=	1.0	(from 2.6.7)
q_z=	**39.51**	K_e=	1.00	(from 2.6.8)
$q_{z\ (ice)}$=	**6.86**	K_d=	0.85	(from Table 2-2)
$q_{z\ (30)}$=	**2.47**	V_{max}=	120	mph (Ultimate Wind Speed)
		$V_{max\ (ice)}$=	50	mph
		V_{30}=	30	mph

Table 2-2

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

Date: 2/28/2023
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Determine Ca:

Table 2-9

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

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

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

Ice Thickness = 1.22 in | **Angle =** 0 (deg) | **Equivalent Angle =** 180 (deg)

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
HPA-45R-BUU-H6 Antenna	72.0	18.9	8.3	9.45	3.81	1.26	470	95	29
TPA45R-KU6A Antenna	78.3	15.4	8.2	8.37	5.08	1.31	435	90	27
TPA-45R-KU6AA-K Antenna	78.3	15.4	8.2	8.37	5.08	1.31	435	90	27
QD4616-7 Antenna	51.5	22.0	9.6	7.87	2.34	1.20	373	75	23
AIR6419 Antenna	31.1	16.1	7.3	3.48	1.93	1.20	165	36	10
AIR6449 Antenna	30.6	15.9	10.6	3.38	1.92	1.20	160	35	10
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.32	1.20	327	67	20
RRUS-32 B30 RRH (Side)	27.2	7.0	12.1	1.32	3.89	1.26	66	17	4
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	7.77	1.43	37	12	2
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	2.18	1.20	49	13	3
4478 B14 RRH (Shielded)	18.1	4.2	13.4	0.52	4.36	1.28	26	8	2
RRUS-32 B66 RRH (Side)	27.2	7.0	12.1	1.32	3.89	1.26	66	17	4
RRUS-32 B66A RRH (Shielded)	27.2	3.5	12.1	0.66	7.77	1.43	37	12	2
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.90	1.20	55	14	3
4449 B5/B12 RRH (Shielded)	17.9	4.7	13.2	0.58	3.81	1.26	29	9	2
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	3.89	1.26	66	17	4
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	7.77	1.43	37	12	2
DC9-48-60-24-8C-EV Surge Arrestor	31.4	10.2	10.2	2.22	3.08	0.70	62	14	4
PL 6x3/8	0.4	12.0		0.03	0.03	2.00	2		
PL 6x1/2	6.0	12.0		0.50	0.50	2.00	40		
2" Pipe	2.4	12.0		0.20	0.20	1.20	9		
2-1/2" Pipe	2.9	12.0		0.24	0.24	1.20	11		
2x2 Angle	2.0	12.0		0.17	0.17	2.00	13		
3x3 Angle	3.0	12.0		0.25	0.25	2.00	20		
3-1/2x3-1/2 Angle	3.5	12.0		0.29	0.29	2.00	23		
4x4 Angle	4.0	12.0		0.33	0.33	2.00	26		
5x5 Angle	5.0	12.0		0.42	0.42	2.00	33		
HSS 4x4	4.0	12.0		0.33	0.33	1.25	16		
C 8x11.5	8.0	12.0		0.67	0.67	2.00	53		
W 5x16	5.0	12.0		0.42	0.42	2.00	33		
C 6x4	6.0	12.0		0.50	0.50	2.00	40		
4x4 Angle	4.0	12.0		0.33	0.33	2.00	26		
1-1/4" Pipe	1.7	12.0		0.14	0.14	1.20	7		
1-1/2" Pipe	1.9	12.0		0.16	0.16	1.20	7		

Date: 2/28/2023
Project Name: STAMFORD CENTRAL SBC CO
Project No.: CT2118
Designed By: KM Checked By: MSC

WIND LOADS

Angle = 30 (deg) | Ice Thickness = 1.22 in. | Equivalent Angle = 210 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
HPA-45R-BUU-H6 Antenna	72.0	18.9	8.3	9.45	4.15	3.81	8.67	1.26	1.46	470	239	412
TPA45R-KU6A Antenna	78.3	15.4	8.2	8.37	4.46	5.08	9.55	1.31	1.48	435	262	392
QD4616-7 Antenna	51.5	22.0	9.6	7.87	3.43	2.34	5.36	1.20	1.33	373	180	325
AIR6419 Antenna	31.1	16.1	7.3	3.48	1.58	1.93	4.26	1.20	1.28	165	80	144
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	160	108	147
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	327	139	280
RRUS-32 B30 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	66	108	77
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	37	108	55
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	49	80	57
4478 B14 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	26	80	40
RRUS-32 B66 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	66	108	77
RRUS-32 B66A RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	37	108	55
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	55	78	61
4449 B5/B12 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	29	78	41
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	66	108	77
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	37	108	55

WIND LOADS WITH ICE:

HPA-45R-BUU-H6 Antenna	74.4	21.3	10.7	11.03	5.55	3.49	6.93	1.24	1.40	94	53	84
TPA45R-KU6A Antenna	80.7	17.8	10.6	10.00	5.96	4.53	7.59	1.29	1.42	88	58	81
TPA-45R-KU6AA-K Antenna	80.7	17.8	10.6	10.00	5.96	4.53	7.59	1.29	1.42	88	58	81
QD4616-7 Antenna	53.9	24.4	12.0	9.15	4.51	2.21	4.48	1.20	1.29	75	40	66
AIR6419 Antenna	33.5	18.5	9.7	4.32	2.27	1.81	3.45	1.20	1.24	36	19	31
AIR6449 Antenna	33.0	18.3	13.0	4.21	2.99	1.80	2.53	1.20	1.20	35	25	32
DMP65R-BU4DA Antenna	50.4	23.1	10.1	8.10	3.55	2.18	4.98	1.20	1.31	67	32	58
RRUS-32 B30 RRH (Side)	29.6	9.4	14.5	1.94	2.99	3.14	2.04	1.23	1.20	16	25	18
RRUS-32 B30 RRH (Shielded)	29.6	5.9	14.5	1.22	2.99	4.99	2.04	1.31	1.20	11	25	14
4478 B14 RRH (Side)	20.5	10.7	15.8	1.53	2.26	1.91	1.30	1.20	1.20	13	19	14
4478 B14 RRH (Shielded)	20.5	6.6	15.8	0.94	2.26	3.12	1.30	1.23	1.20	8	19	11
RRUS-32 B66 RRH (Side)	29.6	9.4	14.5	1.94	2.99	3.14	2.04	1.23	1.20	16	25	18
RRUS-32 B66A RRH (Shielded)	29.6	5.9	14.5	1.22	2.99	4.99	2.04	1.31	1.20	11	25	14
4449 B5/B12 RRH (Side)	20.3	11.8	15.6	1.67	2.21	1.72	1.30	1.20	1.20	14	18	15
4449 B5/B12 RRH (Shielded)	20.3	7.1	15.6	1.01	2.21	2.85	1.30	1.22	1.20	8	18	11
RRUS-32 B2 RRH (Side)	29.6	9.4	14.5	1.94	2.99	3.14	2.04	1.23	1.20	16	25	18
RRUS-32 B2 RRH (Shielded)	29.6	5.9	14.5	1.22	2.99	4.99	2.04	1.31	1.20	11	25	14

WIND LOADS AT 30 MPH:

HPA-45R-BUU-H6 Antenna	72.0	18.9	8.3	9.45	4.15	3.81	8.67	1.26	1.46	29	15	26
TPA45R-KU6A Antenna	78.3	15.4	8.2	8.37	4.46	5.08	9.55	1.31	1.48	27	16	24
TPA-45R-KU6AA-K Antenna	78.3	15.4	8.2	8.37	4.46	5.08	9.55	1.31	1.48	27	16	24
QD4616-7 Antenna	51.5	22.0	9.6	7.87	3.43	2.34	5.36	1.20	1.33	23	11	20
AIR6419 Antenna	31.1	16.1	7.3	3.48	1.58	1.93	4.26	1.20	1.28	10	5	9
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	10	7	9
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	20	9	18
RRUS-32 B30 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	7	5
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	7	3
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	5	4
4478 B14 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	2	5	2
RRUS-32 B66 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	7	5
RRUS-32 B66A RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	7	3
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	3	5	4
4449 B5/B12 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	2	5	3
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	7	5
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	7	3

Date: 2/28/2023
Project Name: STAMFORD CENTRAL SBC CO
Project No.: CT2118
Designed By: KM Checked By: MSC

TEP NORTHEAST

WIND LOADS

Angle = 60 (deg) | Ice Thickness = 1.22 in. | Equivalent Angle = 240 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
HPA-45R-BUU-H6 Antenna	72.0	18.9	8.3	9.45	4.15	3.81	8.67	1.26	1.46	470	239	296
TPA45R-KU6A Antenna	78.3	15.4	8.2	8.37	4.46	5.08	9.55	1.31	1.48	435	262	305
TPA-45R-KU6AA-K Antenna	78.3	15.4	8.2	8.37	4.46	5.08	9.55	1.31	1.48	435	262	305
QD4616-7 Antenna	51.5	22.0	9.6	7.87	3.43	2.34	5.36	1.20	1.33	373	180	228
AIR6419 Antenna	31.1	16.1	7.3	3.48	1.58	1.93	4.26	1.20	1.28	165	80	101
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	160	108	121
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	327	139	186
RRUS-32 B30 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	66	108	98
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	37	108	91
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	49	80	72
4478 B14 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	26	80	67
RRUS-32 B66 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	66	108	98
RRUS-32 B66A RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	37	108	91
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	55	78	72
4449 B5/B12 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	29	78	66
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	66	108	98
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	37	108	91

WIND LOADS WITH ICE:

HPA-45R-BUU-H6 Antenna	74.4	21.3	10.7	11.03	5.55	3.49	6.93	1.24	1.40	94	53	63
TPA45R-KU6A Antenna	80.7	17.8	10.6	10.00	5.96	4.53	7.59	1.29	1.42	88	58	66
TPA-45R-KU6AA-K Antenna	80.7	17.8	10.6	10.00	5.96	4.53	7.59	1.29	1.42	88	58	66
QD4616-7 Antenna	53.9	24.4	12.0	9.15	4.51	2.21	4.48	1.20	1.29	75	40	49
AIR6419 Antenna	33.5	18.5	9.7	4.32	2.27	1.81	3.45	1.20	1.24	36	19	23
AIR6449 Antenna	33.0	18.3	13.0	4.21	2.99	1.80	2.53	1.20	1.20	35	25	27
DMP65R-BU4DA Antenna	50.4	23.1	10.1	8.10	3.55	2.18	4.98	1.20	1.31	67	32	41
RRUS-32 B30 RRH (Side)	29.6	9.4	14.5	1.94	2.99	3.14	2.04	1.23	1.20	16	25	23
RRUS-32 B30 RRH (Shielded)	29.6	5.9	14.5	1.22	2.99	4.99	2.04	1.31	1.20	11	25	21
4478 B14 RRH (Side)	20.5	10.7	15.8	1.53	2.26	1.91	1.30	1.20	1.20	13	19	17
4478 B14 RRH (Shielded)	20.5	6.6	15.8	0.94	2.26	3.12	1.30	1.23	1.20	8	19	16
RRUS-32 B66 RRH (Side)	29.6	9.4	14.5	1.94	2.99	3.14	2.04	1.23	1.20	16	25	23
RRUS-32 B66A RRH (Shielded)	29.6	5.9	14.5	1.22	2.99	4.99	2.04	1.31	1.20	11	25	21
4449 B5/B12 RRH (Side)	20.3	11.8	15.6	1.67	2.21	1.72	1.30	1.20	1.20	14	18	17
4449 B5/B12 RRH (Shielded)	20.3	7.1	15.6	1.01	2.21	2.85	1.30	1.22	1.20	8	18	16
RRUS-32 B2 RRH (Side)	29.6	9.4	14.5	1.94	2.99	3.14	2.04	1.23	1.20	16	25	23
RRUS-32 B2 RRH (Shielded)	29.6	5.9	14.5	1.22	2.99	4.99	2.04	1.31	1.20	11	25	21

WIND LOADS AT 30 MPH:

HPA-45R-BUU-H6 Antenna	72.0	18.9	8.3	9.45	4.15	3.81	8.67	1.26	1.46	29	15	19
TPA45R-KU6A Antenna	78.3	15.4	8.2	8.37	4.46	5.08	9.55	1.31	1.48	27	16	19
TPA-45R-KU6AA-K Antenna	78.3	15.4	8.2	8.37	4.46	5.08	9.55	1.31	1.48	27	16	19
QD4616-7 Antenna	51.5	22.0	9.6	7.87	3.43	2.34	5.36	1.20	1.33	23	11	14
AIR6419 Antenna	31.1	16.1	7.3	3.48	1.58	1.93	4.26	1.20	1.28	10	5	6
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	10	7	8
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	20	9	12
RRUS-32 B30 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	7	6
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	7	6
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	5	5
4478 B14 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	2	5	4
RRUS-32 B66 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	7	6
RRUS-32 B66A RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	7	6
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	3	5	5
4449 B5/B12 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	2	5	4
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	7	6
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	7	6

Date: 2/28/2023
Project Name: STAMFORD CENTRAL SBC CO
Project No.: CT2118
Designed By: KM Checked By: MSC

TEP NORTHEAST

WIND LOADS

Angle = 90 (deg)

Ice Thickness = 1.22 in.

Equivalent Angle = 270 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
HPA-45R-BUU-H6 Antenna	72.0	18.9	8.3	9.45	4.15	3.81	8.67	1.26	1.46	470	239	239
TPA45R-KU6A Antenna	78.3	15.4	8.2	8.37	4.46	5.08	9.55	1.31	1.48	435	262	262
TPA-45R-KU6AA-K Antenna	78.3	15.4	8.2	8.37	4.46	5.08	9.55	1.31	1.48	435	262	262
QD4616-7 Antenna	51.5	22.0	9.6	7.87	3.43	2.34	5.36	1.20	1.33	373	180	180
AIR6419 Antenna	31.1	16.1	7.3	3.48	1.58	1.93	4.26	1.20	1.28	165	80	80
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	160	108	108
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	327	139	139
RRUS-32 B30 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	66	108	108
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	37	108	108
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	49	80	80
4478 B14 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	26	80	80
RRUS-32 B66 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	66	108	108
RRUS-32 B66A RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	37	108	108
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	55	78	78
4449 B5/B12 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	29	78	78
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	66	108	108
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	37	108	108

WIND LOADS WITH ICE:

HPA-45R-BUU-H6 Antenna	74.4	21.3	10.7	11.03	5.55	3.49	6.93	1.24	1.40	94	53	53
TPA45R-KU6A Antenna	80.7	17.8	10.6	10.00	5.96	4.53	7.59	1.29	1.42	88	58	58
TPA-45R-KU6AA-K Antenna	80.7	17.8	10.6	10.00	5.96	4.53	7.59	1.29	1.42	88	58	58
QD4616-7 Antenna	53.9	24.4	12.0	9.15	4.51	2.21	4.48	1.20	1.29	75	40	40
AIR6419 Antenna	33.5	18.5	9.7	4.32	2.27	1.81	3.45	1.20	1.24	36	19	19
AIR6449 Antenna	33.0	18.3	13.0	4.21	2.99	1.80	2.53	1.20	1.20	35	25	25
DMP65R-BU4DA Antenna	50.4	23.1	10.1	8.10	3.55	2.18	4.98	1.20	1.31	67	32	32
RRUS-32 B30 RRH (Side)	29.6	9.4	14.5	1.94	2.99	3.14	2.04	1.23	1.20	16	25	25
RRUS-32 B30 RRH (Shielded)	29.6	5.9	14.5	1.22	2.99	4.99	2.04	1.31	1.20	11	25	25
4478 B14 RRH (Side)	20.5	10.7	15.8	1.53	2.26	1.91	1.30	1.20	1.20	13	19	19
4478 B14 RRH (Shielded)	20.5	6.6	15.8	0.94	2.26	3.12	1.30	1.23	1.20	8	19	19
RRUS-32 B66 RRH (Side)	29.6	9.4	14.5	1.94	2.99	3.14	2.04	1.23	1.20	16	25	25
RRUS-32 B66A RRH (Shielded)	29.6	5.9	14.5	1.22	2.99	4.99	2.04	1.31	1.20	11	25	25
4449 B5/B12 RRH (Side)	20.3	11.8	15.6	1.67	2.21	1.72	1.30	1.20	1.20	14	18	18
4449 B5/B12 RRH (Shielded)	20.3	7.1	15.6	1.01	2.21	2.85	1.30	1.22	1.20	8	18	18
RRUS-32 B2 RRH (Side)	29.6	9.4	14.5	1.94	2.99	3.14	2.04	1.23	1.20	16	25	25
RRUS-32 B2 RRH (Shielded)	29.6	5.9	14.5	1.22	2.99	4.99	2.04	1.31	1.20	11	25	25

WIND LOADS AT 30 MPH:

HPA-45R-BUU-H6 Antenna	72.0	18.9	8.3	9.45	4.15	3.81	8.67	1.26	1.46	29	15	15
TPA45R-KU6A Antenna	78.3	15.4	8.2	8.37	4.46	5.08	9.55	1.31	1.48	27	16	16
TPA-45R-KU6AA-K Antenna	78.3	15.4	8.2	8.37	4.46	5.08	9.55	1.31	1.48	27	16	16
QD4616-7 Antenna	51.5	22.0	9.6	7.87	3.43	2.34	5.36	1.20	1.33	23	11	11
AIR6419 Antenna	31.1	16.1	7.3	3.48	1.58	1.93	4.26	1.20	1.28	10	5	5
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	10	7	7
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	20	9	9
RRUS-32 B30 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	7	7
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	7	7
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	5	5
4478 B14 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	2	5	5
RRUS-32 B66 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	7	7
RRUS-32 B66A RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	7	7
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	3	5	5
4449 B5/B12 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	2	5	5
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	7	7
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	7	7

Date: 2/28/2023
Project Name: STAMFORD CENTRAL SBC CO
Project No.: CT2118
Designed By: KM Checked By: MSC

WIND LOADS

Angle = 120 (deg) | Ice Thickness = 1.22 in. | Equivalent Angle = 300 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
HPA-45R-BUU-H6 Antenna	72.0	18.9	8.3	9.45	4.15	3.81	8.67	1.26	1.46	470	239	296
TPA45R-KU6A Antenna	78.3	15.4	8.2	8.37	4.46	5.08	9.55	1.31	1.48	435	262	305
TPA-45R-KU6AA-K Antenna	78.3	15.4	8.2	8.37	4.46	5.08	9.55	1.31	1.48	435	262	305
QD4616-7 Antenna	51.5	22.0	9.6	7.87	3.43	2.34	5.36	1.20	1.33	373	180	228
AIR6419 Antenna	31.1	16.1	7.3	3.48	1.58	1.93	4.26	1.20	1.28	165	80	101
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	160	108	121
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	327	139	186
RRUS-32 B30 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	66	108	98
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	37	108	91
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	49	80	72
4478 B14 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	26	80	67
RRUS-32 B66 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	66	108	98
RRUS-32 B66A RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	37	108	91
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	55	78	72
4449 B5/B12 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	29	78	66
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	66	108	98
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	37	108	91

WIND LOADS WITH ICE:

HPA-45R-BUU-H6 Antenna	74.4	21.3	10.7	11.03	5.55	3.49	6.93	1.24	1.40	94	53	63
TPA45R-KU6A Antenna	80.7	17.8	10.6	10.00	5.96	4.53	7.59	1.29	1.42	88	58	66
TPA-45R-KU6AA-K Antenna	80.7	17.8	10.6	10.00	5.96	4.53	7.59	1.29	1.42	88	58	66
QD4616-7 Antenna	53.9	24.4	12.0	9.15	4.51	2.21	4.48	1.20	1.29	75	40	49
AIR6419 Antenna	33.5	18.5	9.7	4.32	2.27	1.81	3.45	1.20	1.24	36	19	23
AIR6449 Antenna	33.0	18.3	13.0	4.21	2.99	1.80	2.53	1.20	1.20	35	25	27
DMP65R-BU4DA Antenna	50.4	23.1	10.1	8.10	3.55	2.18	4.98	1.20	1.31	67	32	41
RRUS-32 B30 RRH (Side)	29.6	9.4	14.5	1.94	2.99	3.14	2.04	1.23	1.20	16	25	23
RRUS-32 B30 RRH (Shielded)	29.6	5.9	14.5	1.22	2.99	4.99	2.04	1.31	1.20	11	25	21
4478 B14 RRH (Side)	20.5	10.7	15.8	1.53	2.26	1.91	1.30	1.20	1.20	13	19	17
4478 B14 RRH (Shielded)	20.5	6.6	15.8	0.94	2.26	3.12	1.30	1.23	1.20	8	19	16
RRUS-32 B66 RRH (Side)	29.6	9.4	14.5	1.94	2.99	3.14	2.04	1.23	1.20	16	25	23
RRUS-32 B66A RRH (Shielded)	29.6	5.9	14.5	1.22	2.99	4.99	2.04	1.31	1.20	11	25	21
4449 B5/B12 RRH (Side)	20.3	11.8	15.6	1.67	2.21	1.72	1.30	1.20	1.20	14	18	17
4449 B5/B12 RRH (Shielded)	20.3	7.1	15.6	1.01	2.21	2.85	1.30	1.22	1.20	8	18	16
RRUS-32 B2 RRH (Side)	29.6	9.4	14.5	1.94	2.99	3.14	2.04	1.23	1.20	16	25	23
RRUS-32 B2 RRH (Shielded)	29.6	5.9	14.5	1.22	2.99	4.99	2.04	1.31	1.20	11	25	21

WIND LOADS AT 30 MPH:

HPA-45R-BUU-H6 Antenna	72.0	18.9	8.3	9.45	4.15	3.81	8.67	1.26	1.46	29	15	19
TPA45R-KU6A Antenna	78.3	15.4	8.2	8.37	4.46	5.08	9.55	1.31	1.48	27	16	19
TPA-45R-KU6AA-K Antenna	78.3	15.4	8.2	8.37	4.46	5.08	9.55	1.31	1.48	27	16	19
QD4616-7 Antenna	51.5	22.0	9.6	7.87	3.43	2.34	5.36	1.20	1.33	23	11	14
AIR6419 Antenna	31.1	16.1	7.3	3.48	1.58	1.93	4.26	1.20	1.28	10	5	6
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	10	7	8
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	20	9	12
RRUS-32 B30 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	7	6
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	7	6
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	5	5
4478 B14 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	2	5	4
RRUS-32 B66 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	7	6
RRUS-32 B66A RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	7	6
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	3	5	5
4449 B5/B12 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	2	5	4
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	7	6
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	7	6

Date: 2/28/2023
Project Name: STAMFORD CENTRAL SBC CO
Project No.: CT2118
Designed By: KM Checked By: MSC

TEP NORTHEAST

WIND LOADS

Angle = 150 (deg)

Ice Thickness = 1.22 in.

Equivalent Angle = 330 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
HPA-45R-BUU-H6 Antenna	72.0	18.9	8.3	9.45	4.15	3.81	8.67	1.26	1.46	470	239	412
TPA45R-KU6A Antenna	78.3	15.4	8.2	8.37	4.46	5.08	9.55	1.31	1.48	435	262	392
TPA-45R-KU6AA-K Antenna	78.3	15.4	8.2	8.37	4.46	5.08	9.55	1.31	1.48	435	262	392
QD4616-7 Antenna	51.5	22.0	9.6	7.87	3.43	2.34	5.36	1.20	1.33	373	180	325
AIR6419 Antenna	31.1	16.1	7.3	3.48	1.58	1.93	4.26	1.20	1.28	165	80	144
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	160	108	147
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	327	139	280
RRUS-32 B30 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	66	108	77
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	37	108	55
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	49	80	57
4478 B14 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	26	80	40
RRUS-32 B66 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	66	108	77
RRUS-32 B66A RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	37	108	55
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	55	78	61
4449 B5/B12 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	29	78	41
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	66	108	77
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	37	108	55

WIND LOADS WITH ICE:

HPA-45R-BUU-H6 Antenna	74.4	21.3	10.7	11.03	5.55	3.49	6.93	1.24	1.40	94	53	84
TPA45R-KU6A Antenna	80.7	17.8	10.6	10.00	5.96	4.53	7.59	1.29	1.42	88	58	81
TPA-45R-KU6AA-K Antenna	80.7	17.8	10.6	10.00	5.96	4.53	7.59	1.29	1.42	88	58	81
QD4616-7 Antenna	53.9	24.4	12.0	9.15	4.51	2.21	4.48	1.20	1.29	75	40	66
AIR6419 Antenna	33.5	18.5	9.7	4.32	2.27	1.81	3.45	1.20	1.24	36	19	31
AIR6449 Antenna	33.0	18.3	13.0	4.21	2.99	1.80	2.53	1.20	1.20	35	25	32
DMP65R-BU4DA Antenna	50.4	23.1	10.1	8.10	3.55	2.18	4.98	1.20	1.31	67	32	58
RRUS-32 B30 RRH (Side)	29.6	9.4	14.5	1.94	2.99	3.14	2.04	1.23	1.20	16	25	18
RRUS-32 B30 RRH (Shielded)	29.6	5.9	14.5	1.22	2.99	4.99	2.04	1.31	1.20	11	25	14
4478 B14 RRH (Side)	20.5	10.7	15.8	1.53	2.26	1.91	1.30	1.20	1.20	13	19	14
4478 B14 RRH (Shielded)	20.5	6.6	15.8	0.94	2.26	3.12	1.30	1.23	1.20	8	19	11
RRUS-32 B66 RRH (Side)	29.6	9.4	14.5	1.94	2.99	3.14	2.04	1.23	1.20	16	25	18
RRUS-32 B66A RRH (Shielded)	29.6	5.9	14.5	1.22	2.99	4.99	2.04	1.31	1.20	11	25	14
4449 B5/B12 RRH (Side)	20.3	11.8	15.6	1.67	2.21	1.72	1.30	1.20	1.20	14	18	15
4449 B5/B12 RRH (Shielded)	20.3	7.1	15.6	1.01	2.21	2.85	1.30	1.22	1.20	8	18	11
RRUS-32 B2 RRH (Side)	29.6	9.4	14.5	1.94	2.99	3.14	2.04	1.23	1.20	16	25	18
RRUS-32 B2 RRH (Shielded)	29.6	5.9	14.5	1.22	2.99	4.99	2.04	1.31	1.20	11	25	14

WIND LOADS AT 30 MPH:

HPA-45R-BUU-H6 Antenna	72.0	18.9	8.3	9.45	4.15	3.81	8.67	1.26	1.46	29	15	26
TPA45R-KU6A Antenna	78.3	15.4	8.2	8.37	4.46	5.08	9.55	1.31	1.48	27	16	24
TPA-45R-KU6AA-K Antenna	78.3	15.4	8.2	8.37	4.46	5.08	9.55	1.31	1.48	27	16	24
QD4616-7 Antenna	51.5	22.0	9.6	7.87	3.43	2.34	5.36	1.20	1.33	23	11	20
AIR6419 Antenna	31.1	16.1	7.3	3.48	1.58	1.93	4.26	1.20	1.28	10	5	9
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	10	7	9
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	20	9	18
RRUS-32 B30 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	7	5
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	7	3
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	5	4
4478 B14 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	2	5	2
RRUS-32 B66 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	7	5
RRUS-32 B66A RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	7	3
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	3	5	4
4449 B5/B12 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	2	5	3
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	7	5
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	7	3

Date: 2/28/2023
Project Name: STAMFORD CENTRAL SBC CO
Project No.: CT2118
Designed By: KM **Checked By:** MSC

ICE WEIGHT CALCULATIONS

Thickness of ice: 1.22 in.
Density of ice: 56 pcf

HPA-45R-BUU-H6 Antenna

Weight of ice based on total radial SF area:

Height (in):	72.0	
Width (in):	18.9	
Depth (in):	8.3	
Total weight of ice on object:		196 lbs
Weight of object:	50.0	lbs
Combined weight of ice and object:		246 lbs

TPA45R-KU6A Antenna

Weight of ice based on total radial SF area:

Height (in):	78.3	
Width (in):	15.4	
Depth (in):	8.2	
Total weight of ice on object:		182 lbs
Weight of object:	56.0	lbs
Combined weight of ice and object:		238 lbs

TPA-45R-KU6AA-K Antenna

Weight of ice based on total radial SF area:

Height (in):	78.3	
Width (in):	15.4	
Depth (in):	8.2	
Total weight of ice on object:		182 lbs
Weight of object:	56.0	lbs
Combined weight of ice and object:		238 lbs

QD4616-7 Antenna

Weight of ice based on total radial SF area:

Height (in):	51.5	
Width (in):	22.0	
Depth (in):	9.6	
Total weight of ice on object:		161 lbs
Weight of object:	109.0	lbs
Combined weight of ice and object:		270 lbs

AIR6419 Antenna

Weight of ice based on total radial SF area:

Height (in):	31.0	
Width (in):	16.1	
Depth (in):	7.3	
Total weight of ice on object:		73 lbs
Weight of object:	66.0	lbs
Combined weight of ice and object:		139 lbs

AIR6449 Antenna

Weight of ice based on total radial SF area:

Height (in):	30.6	
Width (in):	15.9	
Depth (in):	10.6	
Total weight of ice on object:		77 lbs
Weight of object:	82.0	lbs
Combined weight of ice and object:		159 lbs

DMP65R-BU4DA Antenna

Weight of ice based on total radial SF area:

Height (in):	48.0	
Width (in):	20.7	
Depth (in):	7.7	
Total weight of ice on object:		139 lbs
Weight of object:	68.0	lbs
Combined weight of ice and object:		207 lbs

RRUS-32 B30 RRH

Weight of ice based on total radial SF area:

Height (in):	27.2	
Width (in):	12.1	
Depth (in):	7.0	
Total weight of ice on object:		51 lbs
Weight of object:	60.0	lbs
Combined weight of ice and object:		111 lbs

4478 B14 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:		38 lbs
Weight of object:	60.0	lbs
Combined weight of ice and object:		98 lbs

RRUS-32 B66A 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:		51 lbs
Weight of object:	60.0	lbs
Combined weight of ice and object:		111 lbs

4449 B5/B12 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:		39 lbs
Weight of object:	73.0	lbs
Combined weight of ice and object:		112 lbs

RRUS-32 B2 RRH

Weight of ice based on total radial SF area:

Height (in):	27.2	
Width (in):	12.1	
Depth (in):	7.0	
Total weight of ice on object:		51 lbs
Weight of object:	60.0	lbs
Combined weight of ice and object:		111 lbs

Date: 2/28/2023
Project Name: STAMFORD CENTRAL SBC CO
Project No.: CT2118
Designed By: KM **Checked By:** MSC

ICE WEIGHT CALCULATIONS (CONT.)

Thickness of ice: 1.22 in.
Density of ice: 56 pcf

DC9-48-60-24-8C-EV Surge Arrestor

Weight of ice based on total radial SF area:

Depth (in):	31.4	
Diameter(in):	10.2	
Total weight of ice on object:		45 lbs
Weight of object:	29	lbs
Combined weight of ice and object:		74 lbs

PL 6x3/8

Weight of ice based on total radial SF area:

Height (in):	6	
Width (in):	0.38	
Per foot weight of ice on object:		11 plf

PL 6x1/2

Weight of ice based on total radial SF area:

Height (in):	6	
Width (in):	0.50	
Per foot weight of ice on object:		11 plf

L 2x2 Angles

Weight of ice based on total radial SF area:

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

L 3x3 Angles

Weight of ice based on total radial SF area:

Height (in):	3	
Width (in):	3	
Per foot weight of ice on object:		8 plf

L 3-1/2x3-1/2 Angles

Weight of ice based on total radial SF area:

Height (in):	3.5	
Width (in):	3.5	
Per foot weight of ice on object:		9 plf

L 4x4 Angles

Weight of ice based on total radial SF area:

Height (in):	4	
Width (in):	4	
Per foot weight of ice on object:		10 plf

L 5x5 Angles

Weight of ice based on total radial SF area:

Height (in):	5	
Width (in):	5	
Per foot weight of ice on object:		12 plf

HSS 4x4

Weight of ice based on total radial SF area:

Height (in):	4	
Width (in):	4	
Per foot weight of ice on object:		10 plf

C 8x11.5

Weight of ice based on total radial SF area:

Height (in):	8	
Width (in):	2.26	
Per foot weight of ice on object:		14 plf

W 5x16

Weight of ice based on total radial SF area:

Height (in):	5	
Width (in):	5	
Per foot weight of ice on object:		12 plf

2" Pipe

Per foot weight of ice:

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

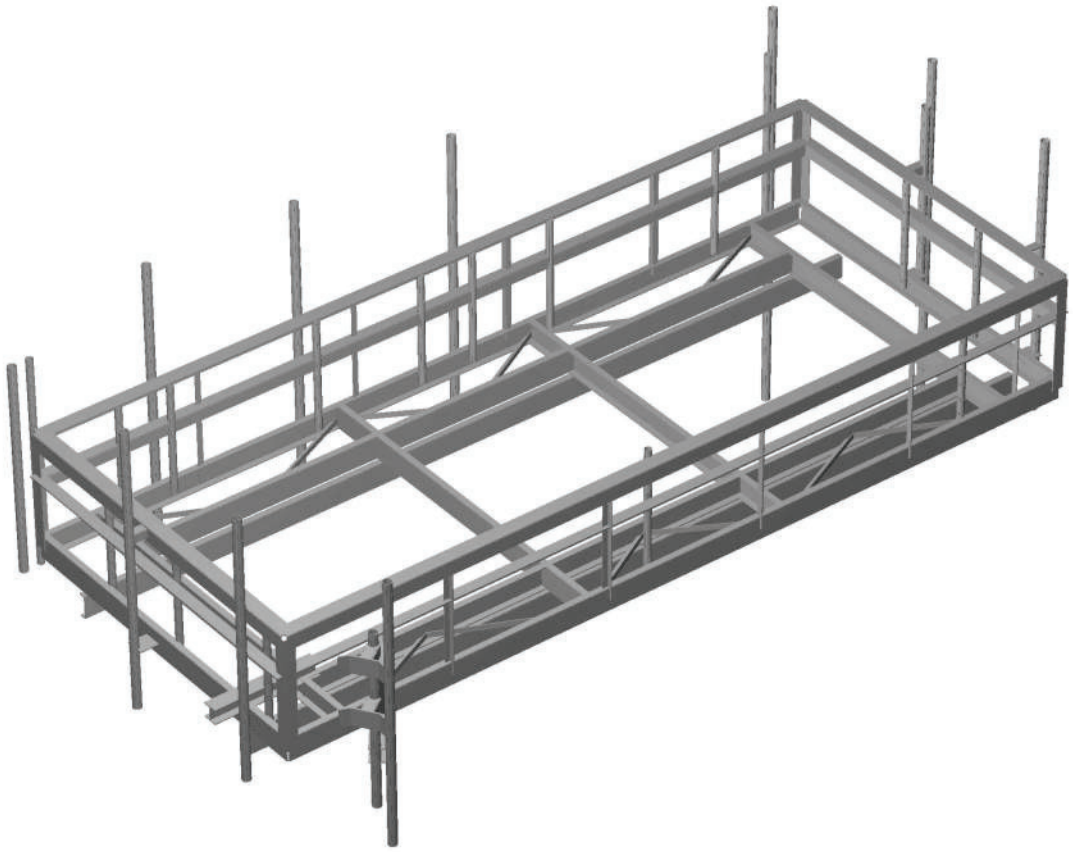
2-1/2" Pipe

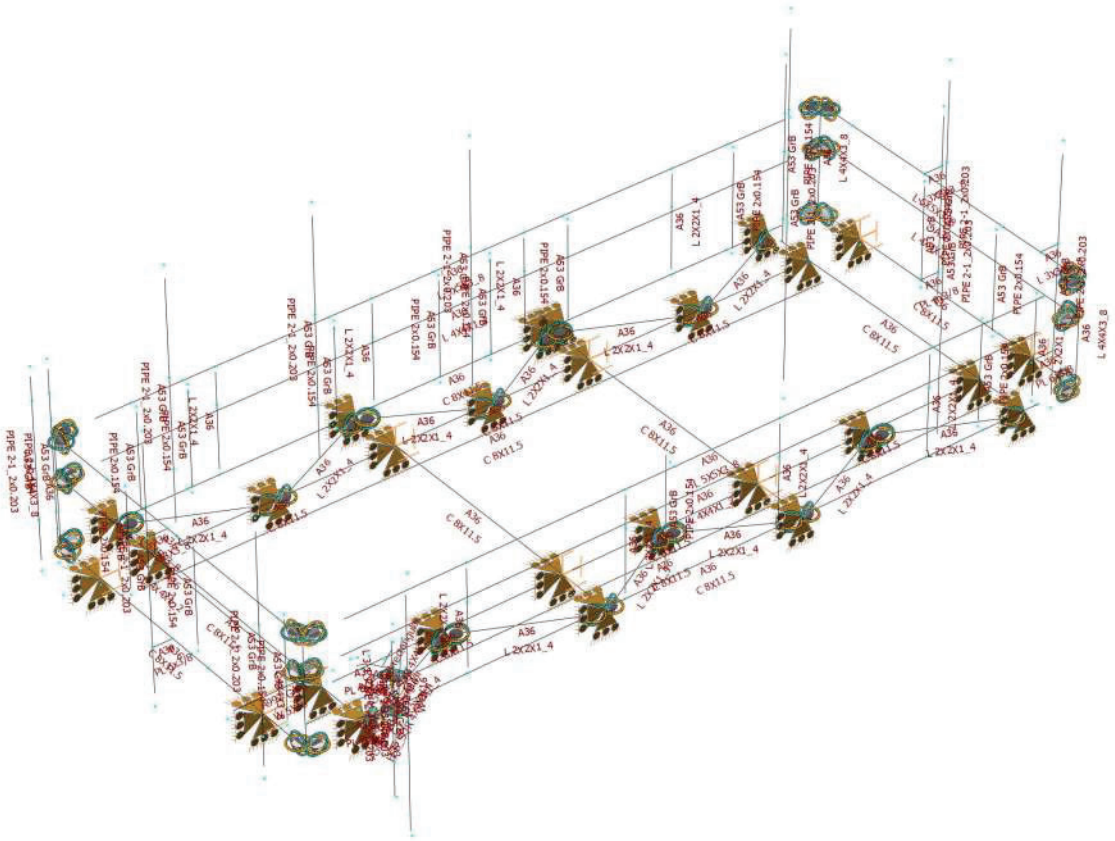
Per foot weight of ice:

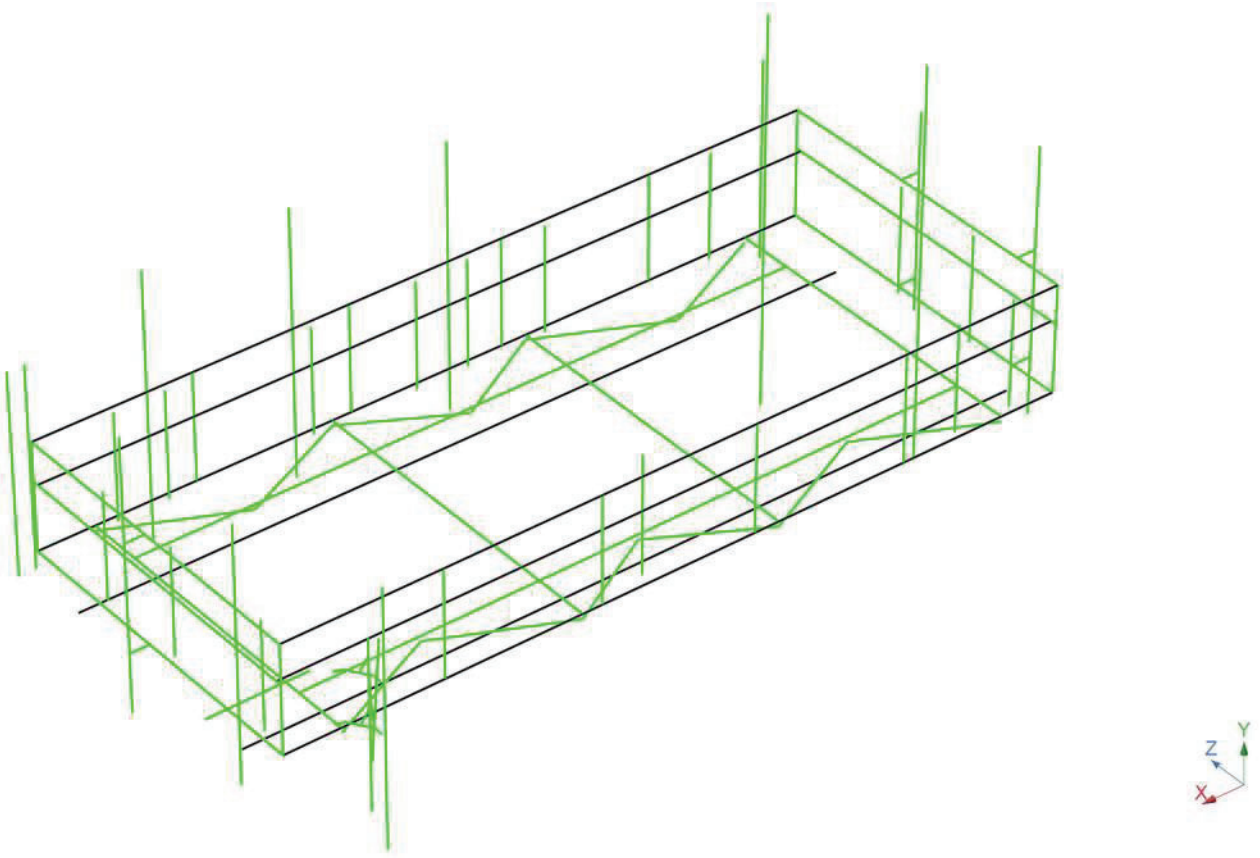
diameter (in):	2.88	
Per foot weight of ice on object:		6 plf

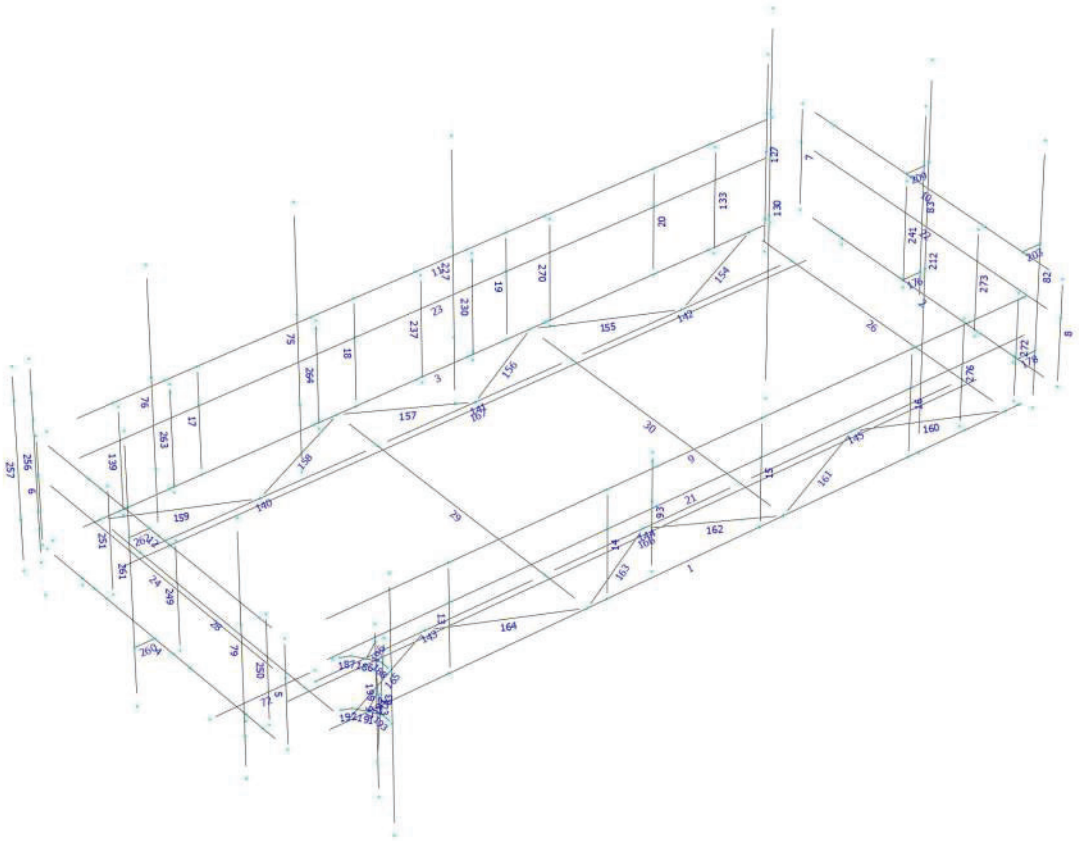
Mount Calculations
(Existing Conditions)

Current Date: 2/28/2023 2:43 PM
Units system: English




Y
Z
X


Design status
Not designed
Error on design
Design O.K.
With warnings
Y
Z
X


Y
Z
X

RAM® Elements
CONNECT Edition

Current Date: 2/28/2023 2:45 PM
Units system: English

Load data

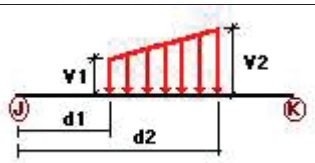
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

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

Distributed force on members



Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
DL	1	y	-0.01	0.00	0.00	No	0.00	No
	2	y	-0.01	0.00	0.00	No	0.00	No
	3	y	-0.01	0.00	0.00	No	0.00	No
	4	y	-0.01	0.00	0.00	No	0.00	No
	26	y	-0.01	0.00	0.00	No	0.00	No
	28	y	-0.01	0.00	0.00	No	0.00	No
	29	y	-0.01	0.00	0.00	No	0.00	No
	30	y	-0.01	0.00	0.00	No	0.00	No
	140	y	-0.01	0.00	0.00	No	0.00	No
	141	y	-0.01	0.00	0.00	No	0.00	No
	142	y	-0.01	0.00	0.00	No	0.00	No
	143	y	-0.01	0.00	0.00	No	0.00	No
	144	y	-0.01	0.00	0.00	No	0.00	No
	145	y	-0.01	0.00	0.00	No	0.00	No
W0	1	z	-0.053	0.00	0.00	No	0.00	No
	2	z	-0.053	0.00	0.00	No	0.00	No

3	z	-0.053	0.00	0.00	No	0.00	No
4	z	-0.053	0.00	0.00	No	0.00	No
5	z	-0.026	0.00	0.00	No	0.00	No
6	z	-0.026	0.00	0.00	No	0.00	No
7	z	-0.026	0.00	0.00	No	0.00	No
8	z	-0.026	0.00	0.00	No	0.00	No
9	z	-0.033	0.00	0.00	No	0.00	No
10	z	-0.033	0.00	0.00	No	0.00	No
11	z	-0.033	0.00	0.00	No	0.00	No
12	z	-0.033	0.00	0.00	No	0.00	No
13	z	-0.013	0.00	0.00	No	0.00	No
14	z	-0.013	0.00	0.00	No	0.00	No
15	z	-0.013	0.00	0.00	No	0.00	No
16	z	-0.013	0.00	0.00	No	0.00	No
17	z	-0.013	0.00	0.00	No	0.00	No
18	z	-0.013	0.00	0.00	No	0.00	No
19	z	-0.013	0.00	0.00	No	0.00	No
20	z	-0.013	0.00	0.00	No	0.00	No
21	z	-0.026	0.00	0.00	No	0.00	No
22	z	-0.026	0.00	0.00	No	0.00	No
23	z	-0.026	0.00	0.00	No	0.00	No
24	z	-0.026	0.00	0.00	No	0.00	No
26	z	-0.053	0.00	0.00	No	0.00	No
28	z	-0.053	0.00	0.00	No	0.00	No
29	z	-0.053	0.00	0.00	No	0.00	No
30	z	-0.053	0.00	0.00	No	0.00	No
63	z	-0.033	0.00	0.00	No	0.00	No
72	z	-0.033	0.00	0.00	No	0.00	No
79	z	-0.011	0.00	0.00	No	0.00	No
82	z	-0.011	0.00	0.00	No	0.00	No
83	z	-0.011	0.00	0.00	No	0.00	No
93	z	-0.009	0.00	0.00	No	0.00	No
97	z	-0.011	0.00	0.00	No	0.00	No
123	z	-0.011	0.00	0.00	No	0.00	No
127	z	-0.009	0.00	0.00	No	0.00	No
130	z	-0.011	0.00	0.00	No	0.00	No
133	z	-0.009	0.00	0.00	No	0.00	No
139	z	-0.009	0.00	0.00	No	0.00	No
140	z	-0.053	0.00	0.00	No	0.00	No
141	z	-0.053	0.00	0.00	No	0.00	No
142	z	-0.053	0.00	0.00	No	0.00	No
143	z	-0.053	0.00	0.00	No	0.00	No
144	z	-0.053	0.00	0.00	No	0.00	No
145	z	-0.053	0.00	0.00	No	0.00	No
154	z	-0.013	0.00	0.00	No	0.00	No
155	z	-0.013	0.00	0.00	No	0.00	No
156	z	-0.013	0.00	0.00	No	0.00	No
157	z	-0.013	0.00	0.00	No	0.00	No
158	z	-0.013	0.00	0.00	No	0.00	No
159	z	-0.013	0.00	0.00	No	0.00	No
160	z	-0.013	0.00	0.00	No	0.00	No
161	z	-0.013	0.00	0.00	No	0.00	No
162	z	-0.013	0.00	0.00	No	0.00	No
163	z	-0.013	0.00	0.00	No	0.00	No
164	z	-0.013	0.00	0.00	No	0.00	No
165	z	-0.013	0.00	0.00	No	0.00	No
166	z	-0.053	0.00	0.00	No	0.00	No
167	z	-0.053	0.00	0.00	No	0.00	No
176	z	-0.002	0.00	0.00	No	0.00	No
178	z	-0.002	0.00	0.00	No	0.00	No

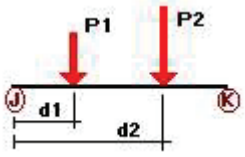
	186	z	-0.04	0.00	0.00	No	0.00	No
	187	z	-0.04	0.00	0.00	No	0.00	No
	188	z	-0.04	0.00	0.00	No	0.00	No
	191	z	-0.04	0.00	0.00	No	0.00	No
	192	z	-0.04	0.00	0.00	No	0.00	No
	193	z	-0.04	0.00	0.00	No	0.00	No
	196	z	-0.016	0.00	0.00	No	0.00	No
	197	z	-0.016	0.00	0.00	No	0.00	No
	199	z	-0.023	0.00	0.00	No	0.00	No
	203	z	-0.02	0.00	0.00	No	0.00	No
	209	z	-0.02	0.00	0.00	No	0.00	No
	212	z	-0.011	0.00	0.00	No	0.00	No
	237	z	-0.009	0.00	0.00	No	0.00	No
	241	z	-0.009	0.00	0.00	No	0.00	No
	249	z	-0.009	0.00	0.00	No	0.00	No
	250	z	-0.009	0.00	0.00	No	0.00	No
	251	z	-0.009	0.00	0.00	No	0.00	No
	256	z	-0.009	0.00	0.00	No	0.00	No
	257	z	-0.011	0.00	0.00	No	0.00	No
	260	z	-0.002	0.00	0.00	No	0.00	No
	261	z	-0.011	0.00	0.00	No	0.00	No
	262	z	-0.02	0.00	0.00	No	0.00	No
	270	z	-0.009	0.00	0.00	No	0.00	No
	272	z	-0.013	0.00	0.00	No	0.00	No
	273	z	-0.009	0.00	0.00	No	0.00	No
	276	z	-0.009	0.00	0.00	No	0.00	No
W30	1	x	-0.053	0.00	0.00	No	0.00	No
	2	x	-0.053	0.00	0.00	No	0.00	No
	3	x	-0.053	0.00	0.00	No	0.00	No
	4	x	-0.053	0.00	0.00	No	0.00	No
	5	x	-0.026	0.00	0.00	No	0.00	No
	6	x	-0.026	0.00	0.00	No	0.00	No
	7	x	-0.026	0.00	0.00	No	0.00	No
	8	x	-0.026	0.00	0.00	No	0.00	No
	9	x	-0.033	0.00	0.00	No	0.00	No
	10	x	-0.033	0.00	0.00	No	0.00	No
	11	x	-0.033	0.00	0.00	No	0.00	No
	12	x	-0.033	0.00	0.00	No	0.00	No
	13	x	-0.013	0.00	0.00	No	0.00	No
	14	x	-0.013	0.00	0.00	No	0.00	No
	15	x	-0.013	0.00	0.00	No	0.00	No
	16	x	-0.013	0.00	0.00	No	0.00	No
	17	x	-0.013	0.00	0.00	No	0.00	No
	18	x	-0.013	0.00	0.00	No	0.00	No
	19	x	-0.013	0.00	0.00	No	0.00	No
	20	x	-0.013	0.00	0.00	No	0.00	No
	21	x	-0.026	0.00	0.00	No	0.00	No
	22	x	-0.026	0.00	0.00	No	0.00	No
	23	x	-0.026	0.00	0.00	No	0.00	No
	24	x	-0.026	0.00	0.00	No	0.00	No
	26	x	-0.053	0.00	0.00	No	0.00	No
	28	x	-0.053	0.00	0.00	No	0.00	No
	29	x	-0.053	0.00	0.00	No	0.00	No
	30	x	-0.053	0.00	0.00	No	0.00	No
	63	x	-0.033	0.00	0.00	No	0.00	No
	72	x	-0.033	0.00	0.00	No	0.00	No
	75	x	-0.011	0.00	0.00	No	0.00	No
	76	x	-0.011	0.00	0.00	No	0.00	No
	79	x	-0.011	0.00	0.00	No	0.00	No
	82	x	-0.011	0.00	0.00	No	0.00	No

	83	x	-0.011	0.00	0.00	No	0.00	No
	93	x	-0.009	0.00	0.00	No	0.00	No
	97	x	-0.011	0.00	0.00	No	0.00	No
	123	x	-0.011	0.00	0.00	No	0.00	No
	127	x	-0.009	0.00	0.00	No	0.00	No
	130	x	-0.011	0.00	0.00	No	0.00	No
	133	x	-0.009	0.00	0.00	No	0.00	No
	139	x	-0.009	0.00	0.00	No	0.00	No
	140	x	-0.053	0.00	0.00	No	0.00	No
	141	x	-0.053	0.00	0.00	No	0.00	No
	142	x	-0.053	0.00	0.00	No	0.00	No
	143	x	-0.053	0.00	0.00	No	0.00	No
	144	x	-0.053	0.00	0.00	No	0.00	No
	145	x	-0.053	0.00	0.00	No	0.00	No
	154	x	-0.013	0.00	0.00	No	0.00	No
	155	x	-0.013	0.00	0.00	No	0.00	No
	156	x	-0.013	0.00	0.00	No	0.00	No
	157	x	-0.013	0.00	0.00	No	0.00	No
	158	x	-0.013	0.00	0.00	No	0.00	No
	159	x	-0.013	0.00	0.00	No	0.00	No
	160	x	-0.013	0.00	0.00	No	0.00	No
	161	x	-0.013	0.00	0.00	No	0.00	No
	162	x	-0.013	0.00	0.00	No	0.00	No
	163	x	-0.013	0.00	0.00	No	0.00	No
	164	x	-0.013	0.00	0.00	No	0.00	No
	165	x	-0.013	0.00	0.00	No	0.00	No
	166	x	-0.053	0.00	0.00	No	0.00	No
	167	x	-0.053	0.00	0.00	No	0.00	No
	176	x	-0.002	0.00	0.00	No	0.00	No
	178	x	-0.002	0.00	0.00	No	0.00	No
	186	x	-0.04	0.00	0.00	No	0.00	No
	187	x	-0.04	0.00	0.00	No	0.00	No
	188	x	-0.04	0.00	0.00	No	0.00	No
	191	x	-0.04	0.00	0.00	No	0.00	No
	192	x	-0.04	0.00	0.00	No	0.00	No
	193	x	-0.04	0.00	0.00	No	0.00	No
	196	x	-0.016	0.00	0.00	No	0.00	No
	197	x	-0.016	0.00	0.00	No	0.00	No
	199	x	-0.023	0.00	0.00	No	0.00	No
	203	x	-0.02	0.00	0.00	No	0.00	No
	209	x	-0.02	0.00	0.00	No	0.00	No
	212	x	-0.011	0.00	0.00	No	0.00	No
	227	x	-0.011	0.00	0.00	No	0.00	No
	230	x	-0.009	0.00	0.00	No	0.00	No
	237	x	-0.009	0.00	0.00	No	0.00	No
	241	x	-0.009	0.00	0.00	No	0.00	No
	249	x	-0.009	0.00	0.00	No	0.00	No
	250	x	-0.009	0.00	0.00	No	0.00	No
	251	x	-0.009	0.00	0.00	No	0.00	No
	260	x	-0.002	0.00	0.00	No	0.00	No
	262	x	-0.02	0.00	0.00	No	0.00	No
	263	x	-0.009	0.00	0.00	No	0.00	No
	264	x	-0.009	0.00	0.00	No	0.00	No
	270	x	-0.009	0.00	0.00	No	0.00	No
	272	x	-0.013	0.00	0.00	No	0.00	No
	273	x	-0.009	0.00	0.00	No	0.00	No
	276	x	-0.009	0.00	0.00	No	0.00	No
Di	1	y	-0.014	0.00	0.00	No	0.00	No
	2	y	-0.014	0.00	0.00	No	0.00	No
	3	y	-0.014	0.00	0.00	No	0.00	No

4	y	-0.014	0.00	0.00	No	0.00	No
5	y	-0.01	0.00	0.00	No	0.00	No
6	y	-0.01	0.00	0.00	No	0.00	No
7	y	-0.01	0.00	0.00	No	0.00	No
8	y	-0.01	0.00	0.00	No	0.00	No
9	y	-0.012	0.00	0.00	No	0.00	No
10	y	-0.012	0.00	0.00	No	0.00	No
11	y	-0.012	0.00	0.00	No	0.00	No
12	y	-0.012	0.00	0.00	No	0.00	No
13	y	-0.006	0.00	0.00	No	0.00	No
14	y	-0.006	0.00	0.00	No	0.00	No
15	y	-0.006	0.00	0.00	No	0.00	No
16	y	-0.006	0.00	0.00	No	0.00	No
17	y	-0.006	0.00	0.00	No	0.00	No
18	y	-0.006	0.00	0.00	No	0.00	No
19	y	-0.006	0.00	0.00	No	0.00	No
20	y	-0.006	0.00	0.00	No	0.00	No
21	y	-0.01	0.00	0.00	No	0.00	No
22	y	-0.01	0.00	0.00	No	0.00	No
23	y	-0.01	0.00	0.00	No	0.00	No
24	y	-0.01	0.00	0.00	No	0.00	No
26	y	-0.014	0.00	0.00	No	0.00	No
28	y	-0.014	0.00	0.00	No	0.00	No
29	y	-0.014	0.00	0.00	No	0.00	No
30	y	-0.014	0.00	0.00	No	0.00	No
63	y	-0.012	0.00	0.00	No	0.00	No
72	y	-0.012	0.00	0.00	No	0.00	No
75	y	-0.006	0.00	0.00	No	0.00	No
76	y	-0.006	0.00	0.00	No	0.00	No
79	y	-0.006	0.00	0.00	No	0.00	No
82	y	-0.006	0.00	0.00	No	0.00	No
83	y	-0.006	0.00	0.00	No	0.00	No
93	y	-0.005	0.00	0.00	No	0.00	No
97	y	-0.006	0.00	0.00	No	0.00	No
123	y	-0.006	0.00	0.00	No	0.00	No
127	y	-0.005	0.00	0.00	No	0.00	No
130	y	-0.006	0.00	0.00	No	0.00	No
133	y	-0.005	0.00	0.00	No	0.00	No
139	y	-0.005	0.00	0.00	No	0.00	No
140	y	-0.014	0.00	0.00	No	0.00	No
141	y	-0.014	0.00	0.00	No	0.00	No
142	y	-0.014	0.00	0.00	No	0.00	No
143	y	-0.014	0.00	0.00	No	0.00	No
144	y	-0.014	0.00	0.00	No	0.00	No
145	y	-0.014	0.00	0.00	No	0.00	No
154	y	-0.006	0.00	0.00	No	0.00	No
155	y	-0.006	0.00	0.00	No	0.00	No
156	y	-0.006	0.00	0.00	No	0.00	No
157	y	-0.006	0.00	0.00	No	0.00	No
158	y	-0.006	0.00	0.00	No	0.00	No
159	y	-0.006	0.00	0.00	No	0.00	No
160	y	-0.006	0.00	0.00	No	0.00	No
161	y	-0.006	0.00	0.00	No	0.00	No
162	y	-0.006	0.00	0.00	No	0.00	No
163	y	-0.006	0.00	0.00	No	0.00	No
164	y	-0.006	0.00	0.00	No	0.00	No
165	y	-0.006	0.00	0.00	No	0.00	No
166	y	-0.014	0.00	0.00	No	0.00	No
167	y	-0.014	0.00	0.00	No	0.00	No
176	y	-0.011	0.00	0.00	No	0.00	No

178	y	-0.011	0.00	0.00	No	0.00	No
186	y	-0.011	0.00	0.00	No	0.00	No
187	y	-0.011	0.00	0.00	No	0.00	No
188	y	-0.011	0.00	0.00	No	0.00	No
191	y	-0.011	0.00	0.00	No	0.00	No
192	y	-0.011	0.00	0.00	No	0.00	No
193	y	-0.011	0.00	0.00	No	0.00	No
196	y	-0.01	0.00	0.00	No	0.00	No
197	y	-0.01	0.00	0.00	No	0.00	No
199	y	-0.009	0.00	0.00	No	0.00	No
203	y	-0.008	0.00	0.00	No	0.00	No
209	y	-0.008	0.00	0.00	No	0.00	No
212	y	-0.006	0.00	0.00	No	0.00	No
227	y	-0.006	0.00	0.00	No	0.00	No
230	y	-0.005	0.00	0.00	No	0.00	No
237	y	-0.005	0.00	0.00	No	0.00	No
241	y	-0.005	0.00	0.00	No	0.00	No
249	y	-0.005	0.00	0.00	No	0.00	No
250	y	-0.005	0.00	0.00	No	0.00	No
251	y	-0.005	0.00	0.00	No	0.00	No
256	y	-0.005	0.00	0.00	No	0.00	No
257	y	-0.006	0.00	0.00	No	0.00	No
260	y	-0.011	0.00	0.00	No	0.00	No
261	y	-0.006	0.00	0.00	No	0.00	No
262	y	-0.008	0.00	0.00	No	0.00	No
263	y	-0.005	0.00	0.00	No	0.00	No
264	y	-0.005	0.00	0.00	No	0.00	No
270	y	-0.005	0.00	0.00	No	0.00	No
272	y	-0.006	0.00	0.00	No	0.00	No
273	y	-0.005	0.00	0.00	No	0.00	No
276	y	-0.005	0.00	0.00	No	0.00	No

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	75	y	-0.033	1.25	No
		y	-0.033	3.00	No
		y	-0.041	5.00	No
		y	-0.041	6.75	No
	76	y	-0.055	1.63	No
		y	-0.055	4.88	No
	79	y	-0.033	1.50	No
		y	-0.033	3.50	No
	82	y	-0.025	0.50	No
		y	-0.025	6.00	No
	123	y	-0.025	1.50	No
		y	-0.025	6.50	No
	130	y	-0.025	0.50	No
		y	-0.025	5.50	No

		y	-0.041	9.50	No
		y	-0.041	11.25	No
	133	y	-0.073	0.50	No
		y	-0.06	0.50	No
	212	y	-0.028	0.50	No
		y	-0.028	6.00	No
		y	-0.033	10.00	No
		y	-0.033	11.75	No
	227	y	-0.034	1.75	No
		y	-0.034	4.75	No
	230	y	-0.073	0.50	No
		y	-0.06	0.50	No
	237	y	-0.029	0.50	No
	241	y	-0.06	0.50	No
		y	-0.06	0.50	No
	249	y	-0.06	0.50	No
		y	-0.06	0.50	No
	250	y	-0.073	0.50	No
		y	-0.06	0.50	No
	251	y	-0.06	0.50	No
	257	y	-0.028	0.50	No
		y	-0.028	5.50	No
	261	y	-0.041	1.50	No
		y	-0.041	3.50	No
	263	y	-0.06	0.50	No
		y	-0.06	0.50	No
	264	y	-0.06	0.50	No
		y	-0.029	0.50	No
	270	y	-0.029	0.50	No
	276	y	-0.06	0.50	No
W0	75	z	-0.083	1.25	No
		z	-0.083	3.00	No
		z	-0.081	5.00	No
		z	-0.081	6.75	No
	76	z	-0.187	1.63	No
		z	-0.187	4.88	No
	79	z	-0.04	1.50	No
		z	-0.04	3.50	No
	82	z	-0.12	0.50	No
		z	-0.12	5.50	No
	123	z	-0.12	1.50	No
		z	-0.12	6.50	No
	130	z	-0.12	0.50	No
		z	-0.12	5.50	No
		z	-0.055	9.50	No
		z	-0.055	11.25	No
	133	z	-0.037	0.50	No
		z	-0.029	0.50	No
	212	z	-0.131	0.50	No
		z	-0.131	6.00	No
		z	-0.04	10.00	No
		z	-0.04	11.75	No
	227	z	-0.164	1.75	No
		z	-0.164	4.75	No
	230	z	-0.037	0.50	No
		z	-0.029	0.50	No
	237	z	-0.062	0.50	No
	241	z	-0.108	0.50	No
	249	z	-0.108	0.50	No
	250	z	-0.108	0.50	No

	251	z	-0.108	0.50	No
	257	z	-0.131	0.50	No
		z	-0.131	5.50	No
	261	z	-0.054	1.50	No
		z	-0.054	3.50	No
	263	z	-0.037	0.50	No
		z	-0.026	0.50	No
	264	z	-0.037	0.50	No
		z	-0.062	0.50	No
	270	z	-0.062	0.50	No
	276	z	-0.066	0.50	No
W30	75	x	-0.04	1.25	No
		x	-0.04	3.00	No
		x	-0.055	5.00	No
		x	-0.055	6.75	No
	76	x	-0.091	1.63	No
		x	-0.091	4.88	No
	79	x	-0.083	1.50	No
		x	-0.083	3.50	No
	82	x	-0.235	0.50	No
		x	-0.235	5.50	No
	123	x	-0.235	1.50	No
		x	-0.235	6.50	No
	130	x	-0.235	0.50	No
		x	-0.235	5.50	No
		x	-0.081	9.50	No
		x	-0.081	11.25	No
	133	x	-0.108	0.50	No
	212	x	-0.218	0.50	No
		x	-0.218	6.00	No
		x	-0.083	10.00	No
		x	-0.083	11.75	No
	227	x	-0.07	1.75	No
		x	-0.07	4.75	No
	230	x	-0.108	0.50	No
	237	x	-0.062	0.50	No
	241	x	-0.066	0.50	No
		x	-0.049	0.50	No
	249	x	-0.066	0.50	No
		x	-0.049	0.50	No
	250	x	-0.066	0.50	No
		x	-0.055	0.50	No
	251	x	-0.066	0.50	No
	257	x	-0.218	0.50	No
		x	-0.218	5.50	No
	261	x	-0.08	1.50	No
		x	-0.08	3.50	No
	263	x	-0.108	0.50	No
	264	x	-0.108	0.50	No
	270	x	-0.062	0.50	No
	276	x	-0.108	0.50	No
Di	75	y	-0.037	1.25	No
		y	-0.037	3.00	No
		y	-0.039	5.00	No
		y	-0.039	6.75	No
	76	y	-0.081	1.63	No
		y	-0.081	4.88	No
	79	y	-0.037	1.50	No
		y	-0.037	3.50	No
	82	y	-0.098	0.50	No

		y	-0.098	6.00	No
	123	y	-0.098	1.50	No
		y	-0.098	6.50	No
	130	y	-0.098	0.50	No
		y	-0.098	5.50	No
		y	-0.039	9.50	No
		y	-0.039	11.25	No
	133	y	-0.039	0.50	No
		y	-0.051	0.50	No
	212	y	-0.091	0.50	No
		y	-0.091	6.00	No
		y	-0.037	10.00	No
		y	-0.037	11.75	No
	227	y	-0.07	1.75	No
		y	-0.07	4.75	No
	230	y	-0.039	0.50	No
		y	-0.051	0.50	No
	237	y	-0.045	0.50	No
	241	y	-0.051	0.50	No
		y	-0.038	0.50	No
	249	y	-0.051	0.50	No
		y	-0.038	0.50	No
	250	y	-0.039	0.50	No
		y	-0.051	0.50	No
	251	y	-0.051	0.50	No
	257	y	-0.091	0.50	No
		y	-0.091	5.50	No
	261	y	-0.039	1.50	No
		y	-0.039	3.50	No
	263	y	-0.051	0.50	No
		y	-0.038	0.50	No
	264	y	-0.051	0.50	No
		y	-0.045	0.50	No
	270	y	-0.045	0.50	No
	276	y	-0.051	0.50	No
Wi0	75	z	-0.018	1.25	No
		z	-0.018	3.00	No
		z	-0.018	5.00	No
		z	-0.018	6.75	No
	76	z	-0.038	1.63	No
		z	-0.038	4.88	No
	79	z	-0.01	1.50	No
		z	-0.01	3.50	No
	82	z	-0.028	0.50	No
		z	-0.028	5.50	No
	123	z	-0.028	1.50	No
		z	-0.028	6.50	No
	130	z	-0.028	0.50	No
		z	-0.028	5.50	No
		z	-0.013	9.50	No
		z	-0.013	11.25	No
	133	z	-0.012	0.50	No
		z	-0.009	0.50	No
	212	z	-0.031	0.50	No
		z	-0.031	6.00	No
		z	-0.01	10.00	No
		z	-0.01	11.75	No
	227	z	-0.034	1.75	No
		z	-0.034	4.75	No
	230	z	-0.012	0.50	No

		z	-0.009	0.50	No
	237	z	-0.014	0.50	No
	241	z	-0.025	0.50	No
	249	z	-0.025	0.50	No
	250	z	-0.025	0.50	No
	251	z	-0.025	0.50	No
	257	z	-0.031	0.50	No
		z	-0.031	5.50	No
	261	z	-0.013	1.50	No
		z	-0.013	3.50	No
	263	z	-0.012	0.50	No
		z	-0.008	0.50	No
	264	z	-0.012	0.50	No
		z	-0.014	0.50	No
	270	z	-0.014	0.50	No
	276	z	-0.016	0.50	No
Wi30	75	x	-0.01	1.25	No
		x	-0.01	3.00	No
		x	-0.013	5.00	No
		x	-0.013	6.75	No
	76	x	-0.02	1.63	No
		x	-0.02	4.88	No
	79	x	-0.018	1.50	No
		x	-0.018	3.50	No
	82	x	-0.048	0.50	No
		x	-0.048	5.50	No
	123	x	-0.048	1.50	No
		x	-0.048	6.50	No
	130	x	-0.048	0.50	No
		x	-0.048	5.50	No
		x	-0.018	9.50	No
		x	-0.018	11.25	No
	133	x	-0.025	0.50	No
	212	x	-0.045	0.50	No
		x	-0.045	6.00	No
		x	-0.018	10.00	No
		x	-0.018	11.75	No
	227	x	-0.016	1.75	No
		x	-0.016	4.75	No
	230	x	-0.025	0.50	No
	237	x	-0.014	0.50	No
	241	x	-0.016	0.50	No
		x	-0.013	0.50	No
	249	x	-0.016	0.50	No
		x	-0.013	0.50	No
	250	x	-0.016	0.50	No
		x	-0.014	0.50	No
	251	x	-0.016	0.50	No
	257	x	-0.045	0.50	No
		x	-0.045	5.50	No
	261	x	-0.018	1.50	No
		x	-0.018	3.50	No
	263	x	-0.025	0.50	No
	264	x	-0.025	0.50	No
	270	x	-0.014	0.50	No
	276	x	-0.025	0.50	No
WL0	75	z	-0.006	1.25	No
		z	-0.006	3.00	No
		z	-0.006	5.00	No
		z	-0.006	6.75	No

	76	z	-0.012	1.63	No
		z	-0.012	4.88	No
	79	z	-0.003	1.50	No
		z	-0.003	3.50	No
	82	z	-0.008	0.50	No
		z	-0.008	5.50	No
	123	z	-0.008	1.50	No
		z	-0.008	6.50	No
	130	z	-0.008	0.50	No
		z	-0.008	5.50	No
		z	-0.004	9.50	No
		z	-0.004	11.25	No
	133	z	-0.002	0.50	No
		z	-0.002	0.50	No
	212	z	-0.009	0.50	No
		z	-0.009	6.00	No
		z	-0.003	10.00	No
		z	-0.003	11.75	No
	227	z	-0.011	1.75	No
		z	-0.011	4.75	No
	230	z	-0.002	0.50	No
		z	-0.002	0.50	No
	237	z	-0.004	0.50	No
	241	z	-0.007	0.50	No
	249	z	-0.007	0.50	No
	250	z	-0.007	0.50	No
	251	z	-0.007	0.50	No
	257	z	-0.009	0.50	No
		z	-0.009	5.50	No
	261	z	-0.004	1.50	No
		z	-0.004	3.50	No
	263	z	-0.002	0.50	No
		z	-0.002	0.50	No
	264	z	-0.002	0.50	No
		z	-0.004	0.50	No
	270	z	-0.004	0.50	No
	276	z	-0.004	0.50	No
WL30	75	x	-0.003	1.25	No
		x	-0.003	3.00	No
		x	-0.004	5.00	No
		x	-0.004	6.75	No
	76	x	-0.006	1.63	No
		x	-0.006	4.88	No
	79	x	-0.005	1.50	No
		x	-0.005	3.50	No
	82	x	-0.015	0.50	No
		x	-0.015	5.50	No
	123	x	-0.015	1.50	No
		x	-0.015	6.50	No
	130	x	-0.015	0.50	No
		x	-0.015	5.50	No
		x	-0.006	9.50	No
		x	-0.006	11.25	No
	133	x	-0.007	0.50	No
	212	x	-0.014	0.50	No
		x	-0.014	6.00	No
		x	-0.006	10.00	No
		x	-0.006	11.75	No
	227	x	-0.005	1.75	No
		x	-0.005	4.75	No

	230	x	-0.007	0.50	No
	237	x	-0.004	0.50	No
	241	x	-0.004	0.50	No
		x	-0.003	0.50	No
	249	x	-0.004	0.50	No
		x	-0.003	0.50	No
	250	x	-0.004	0.50	No
		x	-0.003	0.50	No
	251	x	-0.004	0.50	No
	257	x	-0.014	0.50	No
		x	-0.014	5.50	No
	261	x	-0.005	1.50	No
		x	-0.005	3.50	No
	263	x	-0.007	0.50	No
	264	x	-0.007	0.50	No
	270	x	-0.004	0.50	No
	276	x	-0.007	0.50	No
LL1	11	y	-0.25	50.00	Yes
LL2	11	y	-0.25	100.00	Yes
LLa1	130	y	-0.50	50.00	Yes
LLa3	212	y	-0.50	50.00	Yes
LLa4	82	y	-0.50	50.00	Yes

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	-1.00	0.00
W0	Wind Load 0/60/120 deg	No	0.00	0.00	0.00
W30	Wind Load 30/90/150 deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
Wi0	Ice Wind Load 0/60/120 deg	No	0.00	0.00	0.00
Wi30	Ice Wind Load 30/90/150 deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0/60/120 deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30/90/150 deg	No	0.00	0.00	0.00
LL1	250 lb Live Load Center of Mount	No	0.00	0.00	0.00
LL2	250 lb Live Load End of Mount	No	0.00	0.00	0.00
LLa1	500 lb Live Load Antenna 1	No	0.00	0.00	0.00
LLa2	500 lb Live Load Antenna 2	No	0.00	0.00	0.00
LLa3	500 lb Live Load Antenna 3	No	0.00	0.00	0.00
LLa4	500 lb Live Load Antenna 4	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
W0	0.00	0.00	0.00
W30	0.00	0.00	0.00
Di	0.00	0.00	0.00
Wi0	0.00	0.00	0.00

Wi30	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LLa1	0.00	0.00	0.00
LLa2	0.00	0.00	0.00
LLa3	0.00	0.00	0.00
LLa4	0.00	0.00	0.00

RAM® Elements
CONNECT Edition

Current Date: 2/28/2023 2:46 PM
Units system: English

Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2DL+W0
LC2=1.2DL+W30
LC3=1.2DL-W0
LC4=1.2DL-W30
LC5=0.9DL+W0
LC6=0.9DL+W30
LC7=0.9DL-W0
LC8=0.9DL-W30
LC9=1.2DL+Di+Wi0
LC10=1.2DL+Di+Wi30
LC11=1.2DL+Di-Wi0
LC12=1.2DL+Di-Wi30
LC13=1.4DL
LC14=1.2DL+1.6LL1
LC15=1.2DL+1.6LL2
LC16=1.2DL+WL0+1.6LLa1
LC17=1.2DL+WL30+1.6LLa1
LC18=1.2DL-WL0+1.6LLa1
LC19=1.2DL-WL30+1.6LLa1
LC20=1.2DL+WL0+1.6LLa2
LC21=1.2DL+WL30+1.6LLa2
LC22=1.2DL-WL0+1.6LLa2
LC23=1.2DL-WL30+1.6LLa2
LC24=1.2DL+WL0+1.6LLa3
LC25=1.2DL+WL30+1.6LLa3
LC26=1.2DL-WL0+1.6LLa3
LC27=1.2DL-WL30+1.6LLa3
LC28=1.2DL+WL0+1.6LLa4
LC29=1.2DL+WL30+1.6LLa4
LC30=1.2DL-WL0+1.6LLa4
LC31=1.2DL-WL30+1.6LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	C 8X11.5	**1**	LC8 at 10.94%	0.58	With warnings	
		2	LC4 at 82.81%	0.28	OK	
		3	LC8 at 4.38%	0.31	With warnings	
		4	LC3 at 89.38%	0.11	OK	
		26	LC7 at 100.00%	0.07	OK	
		28	LC1 at 0.00%	0.07	OK	
		29	LC2 at 18.75%	0.05	OK	
		30	LC5 at 0.00%	0.08	OK	
		140	LC1 at 0.00%	0.02	OK	
		141	LC1 at 50.00%	0.01	OK	
		142	LC1 at 50.00%	0.02	OK	
		143	LC1 at 32.81%	0.14	OK	
		144	LC1 at 50.00%	0.01	OK	
		145	LC1 at 100.00%	0.02	OK	
		166	LC1 at 100.00%	0.70	With warnings	
		167	LC3 at 0.00%	**0.70**	**With warnings**	
	HSS_SQR 4X4X1_4	**196**	LC2 at 0.00%	0.01	OK	
		197	LC4 at 0.00%	**0.04**	**OK**	

L 2X2X1_4	**13**	LC2 at 0.00%	0.59	OK
	14	LC2 at 0.00%	0.63	OK
	15	LC2 at 0.00%	0.62	OK
	16	LC2 at 0.00%	0.61	OK
	17	LC4 at 0.00%	0.50	OK
	18	LC3 at 0.00%	**0.69**	**OK**
	19	LC3 at 0.00%	0.55	OK
	20	LC4 at 0.00%	0.50	OK
	154	LC1 at 50.00%	0.03	OK
	155	LC1 at 50.00%	0.03	OK
	156	LC9 at 50.00%	0.02	OK
	157	LC1 at 50.00%	0.02	OK
	158	LC1 at 50.00%	0.03	OK
	159	LC1 at 50.00%	0.03	OK
	160	LC1 at 50.00%	0.04	OK
	161	LC1 at 50.00%	0.04	OK
	162	LC1 at 50.00%	0.02	OK
	163	LC1 at 50.00%	0.03	OK
	164	LC1 at 50.00%	0.03	OK
	165	LC1 at 50.00%	0.03	OK
	272	LC1 at 100.00%	0.27	OK
L 3-1_2X3-1_2X1_2	**199**	LC1 at 100.00%	**0.01**	**OK**
L 3X3X3_8	**203**	LC31 at 100.00%	0.14	OK
	209	LC27 at 0.00%	**0.18**	**OK**
	262	LC10 at 100.00%	0.04	OK
L 4X4X1_2	**21**	LC3 at 53.13%	0.13	With warnings
	22	LC2 at 50.00%	0.07	OK
	23	LC3 at 19.79%	**0.21**	**With warnings**
	24	LC4 at 50.00%	0.07	OK
L 4X4X3_8	**5**	LC1 at 65.63%	**0.05**	**OK**
	6	LC1 at 65.63%	0.04	OK
	7	LC3 at 65.63%	0.03	OK
	8	LC3 at 65.63%	0.03	OK
L 5X5X3_8	**9**	LC3 at 48.44%	0.32	With warnings
	10	LC2 at 42.71%	0.22	OK
	11	LC5 at 54.91%	**0.54**	**With warnings**
	12	LC4 at 53.13%	0.18	OK
PIPE 2-1_2x0.203	**75**	LC3 at 39.58%	0.05	OK
	76	LC3 at 41.67%	0.09	OK
	79	LC3 at 81.25%	0.19	OK
	82	LC2 at 37.50%	0.25	OK
	83	LC3 at 81.25%	0.11	OK
	97	LC2 at 72.50%	**0.37**	**OK**
	123	LC2 at 56.25%	0.23	OK
	130	LC2 at 52.08%	0.33	OK
	212	LC2 at 52.08%	0.26	OK
	227	LC3 at 39.58%	0.07	OK
	257	LC4 at 75.00%	0.09	OK
	261	LC3 at 77.08%	0.06	OK
PIPE 2x0.154	**93**	LC4 at 8.33%	0.10	OK
	127	LC2 at 82.81%	0.26	OK
	133	LC2 at 100.00%	0.16	OK
	139	LC4 at 100.00%	0.19	OK
	230	LC2 at 100.00%	0.21	OK
	237	LC4 at 100.00%	0.19	OK
	241	LC3 at 100.00%	**0.83**	**OK**

	249	LC3 at 100.00%	0.61	OK
	250	LC3 at 100.00%	0.60	OK
	251	LC3 at 100.00%	0.63	OK
	256	LC4 at 28.75%	0.10	OK
	263	LC4 at 100.00%	0.21	OK
	264	LC3 at 100.00%	0.27	OK
	270	LC3 at 100.00%	0.41	OK
	273	LC1 at 100.00%	0.80	OK
	276	LC2 at 100.00%	0.17	OK
PL 6x1/2	**186**	LC4 at 50.00%	0.15	OK
	187	LC1 at 0.00%	0.00	OK
	188	LC2 at 0.00%	0.10	OK
	191	LC2 at 50.00%	**0.28**	**OK**
	192	LC1 at 0.00%	0.00	OK
	193	LC2 at 0.00%	0.14	OK
PL 6x3/8	**176**	LC25 at 0.00%	0.18	OK
	178	LC2 at 0.00%	**0.22**	**OK**
	260	LC11 at 100.00%	0.06	OK
W 5X16	**63**	LC4 at 46.88%	**0.16**	**OK**
	72	LC3 at 100.00%	0.01	OK

RAM® Elements
CONNECT Edition

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Geometry data

GLOSSARY

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

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
1	23.50	0.00	10.00	0
2	0.00	0.00	10.00	0
3	0.00	0.00	0.00	0
4	23.50	0.00	0.00	0
5	23.50	3.21	10.00	0
6	0.00	3.21	10.00	0
7	0.00	3.21	0.00	0
8	23.50	3.21	0.00	0
9	18.83	0.00	0.00	0
10	18.83	3.21	0.00	0
11	14.16	0.00	0.00	0
12	14.16	3.21	0.00	0
13	9.49	0.00	0.00	0
14	9.49	3.21	0.00	0
15	4.82	0.00	0.00	0
16	4.82	3.21	0.00	0
17	18.83	0.00	10.00	0
18	14.16	0.00	10.00	0
19	9.49	0.00	10.00	0
20	4.82	0.00	10.00	0
21	18.83	3.21	10.00	0
22	14.16	3.21	10.00	0
23	9.49	3.21	10.00	0

24	4.82	3.21	10.00	0
25	23.50	2.05	10.00	0
26	0.00	2.05	10.00	0
27	0.00	2.05	0.00	0
28	23.50	2.05	0.00	0
29	18.83	2.05	0.00	0
30	14.16	2.05	0.00	0
31	9.49	2.05	0.00	0
32	4.82	2.05	0.00	0
33	18.83	2.05	10.00	0
34	14.16	2.05	10.00	0
35	9.49	2.05	10.00	0
36	4.82	2.05	10.00	0
46	21.83	0.00	1.67	0
47	21.83	0.00	8.34	0
48	1.67	0.00	1.67	0
49	1.67	0.00	8.33	0
50	21.83	0.00	0.00	0
51	21.83	0.00	10.00	0
52	1.67	0.00	10.00	0
53	1.67	0.00	0.00	0
55	8.75	0.00	0.00	0
56	14.75	0.00	0.00	0
57	14.75	0.00	10.00	0
58	8.75	0.00	10.00	0
63	23.50	0.00	3.90	0
69	24.00	0.00	1.00	0
81	0.00	0.00	8.75	0
124	19.50	0.00	1.67	0
127	22.40	0.333	-1.9743	0
130	21.00	0.00	10.00	0
143	21.50	0.00	1.67	0
144	24.50	0.33	1.67	0
155	24.00	-1.25	1.00	0
165	24.00	6.25	1.00	0
184	12.66	3.21	0.00	0
185	12.66	2.05	0.00	0
186	12.66	3.21	0.20	0
187	12.66	2.05	0.20	0
188	12.66	0.00	0.20	0
189	12.66	3.50	0.20	0
192	14.75	0.00	1.67	0
193	14.75	0.00	8.33	0
194	8.75	0.00	8.33	0
195	8.75	0.00	1.67	0
200	22.1725	-1.00	-1.6857	0
201	22.1725	4.00	-1.6857	0
234	22.5425	-1.25	-2.7857	0
236	22.5425	6.25	-2.7857	0
237	1.00	0.00	10.00	0
238	1.00	2.05	10.00	0
239	1.00	3.21	10.00	0
240	1.00	0.00	10.20	0
241	1.00	2.05	10.20	0
242	1.00	3.21	10.20	0
243	1.00	-1.00	10.20	0
244	1.00	5.00	10.20	0
245	0.8121	3.21	10.2684	0
246	0.8121	0.00	10.2684	0
247	0.8121	6.25	10.2684	0

248	0.8121	-5.75	10.2684	0
260	3.00	3.21	10.00	0
261	3.00	0.00	10.00	0
262	3.00	3.21	9.80	0
263	3.00	0.00	9.80	0
264	15.45	3.21	10.00	0
265	15.45	0.00	10.00	0
268	21.28	3.21	10.00	0
269	21.28	0.00	10.00	0
270	21.28	3.21	9.80	0
271	21.28	0.00	9.80	0
272	19.50	0.33	1.67	0
273	21.50	0.33	1.67	0
277	18.29	0.00	8.335	0
278	11.75	0.00	8.33	0
279	5.21	0.00	8.33	0
280	5.21	0.00	1.67	0
281	11.75	0.00	1.67	0
282	18.29	0.00	1.67	0
283	0.00	0.00	1.67	0
284	0.00	0.00	8.33	0
285	23.50	0.00	1.67	0
286	23.50	0.00	8.34	0
287	23.50	-0.20	1.67	0
288	0.00	-0.20	1.67	0
289	0.00	-0.20	8.33	0
290	23.50	-0.20	8.34	0
292	23.50	0.00	7.83	0
296	23.50	0.00	1.00	0
297	23.20	0.00	10.00	0
298	23.20	0.00	10.58	0
299	19.78	6.25	10.58	0
300	19.78	-1.75	10.58	0
301	19.78	0.00	10.00	0
302	19.78	0.25	10.58	0
303	15.45	6.25	10.58	0
305	15.45	0.25	9.80	0
307	15.45	0.25	10.58	0
309	15.45	-1.75	10.58	0
319	0.00	0.00	5.92	0
321	-0.58	-1.00	5.92	0
322	-0.58	5.00	5.92	0
323	0.00	0.00	1.50	0
324	-0.58	0.00	1.50	0
325	-0.58	-1.75	1.50	0
326	-0.58	6.25	1.50	0
343	23.50	0.00	9.80	0
344	22.5125	3.50	-2.3657	0
345	22.9125	3.50	-1.7657	0
346	23.1625	3.50	-1.6657	0
347	22.5325	3.50	-2.6357	0
348	23.3125	3.50	-1.6157	0
349	22.5425	3.50	-2.7857	0
351	22.5125	2.00	-2.3657	0
352	22.9125	2.00	-1.7657	0
353	23.1625	2.00	-1.6657	0
354	22.5325	2.00	-2.6357	0
356	22.5425	2.00	-2.7857	0
357	22.1725	3.50	-1.6857	0
358	22.7125	3.50	-2.0657	0

359	22.1725	2.00	-1.6857	0
360	22.7125	2.00	-2.0657	0
361	20.829	0.00	0.00	0
362	20.829	0.33	0.00	0
363	22.1725	2.75	-1.6857	0
368	21.2779	0.3309	-0.5641	0
369	24.00	3.21	1.00	0
370	23.50	3.21	1.00	0
372	23.50	3.21	7.83	0
373	0.00	3.21	8.75	0
375	0.00	3.21	1.50	0
376	-0.58	3.21	1.50	0
377	19.78	3.21	10.00	0
378	19.78	2.96	10.58	0
379	15.45	2.96	9.80	0
380	15.45	2.96	10.58	0
383	23.20	3.21	10.00	0
384	23.20	3.21	10.58	0
387	0.00	3.21	5.92	0
388	-0.58	3.21	5.92	0
390	-0.7749	3.21	5.965	0
391	-0.58	0.00	5.92	0
392	-0.7749	0.00	5.965	0
393	-0.7749	6.25	5.965	0
394	-0.7749	-5.75	5.965	0
395	23.50	-1.50	10.00	0
396	23.50	3.21	4.58	0
397	23.50	0.00	4.58	0
398	23.30	3.21	4.58	0
399	23.30	0.00	4.58	0
409	23.50	3.21	7.33	0
410	23.50	0.00	7.33	0
417	19.78	2.96	9.80	0
418	19.78	0.25	9.80	0
419	10.70	3.21	10.00	0
420	10.70	0.00	10.00	0
421	10.70	3.21	9.80	0
422	10.70	0.00	9.80	0
423	10.70	6.25	10.58	0
424	10.70	0.25	9.80	0
425	10.70	0.25	10.58	0
426	10.70	-1.75	10.58	0
427	10.70	2.96	9.80	0
428	10.70	2.96	10.58	0
434	12.28	3.21	10.00	0
435	12.28	3.21	9.80	0
436	12.28	0.00	9.80	0
437	12.28	0.00	10.00	0
438	0.00	3.21	5.67	0
439	0.00	0.00	5.67	0
440	0.20	3.21	5.67	0
441	0.20	0.00	5.67	0
442	0.00	3.21	2.92	0
443	0.20	3.21	2.92	0
444	0.20	0.00	2.92	0
445	0.00	0.00	2.92	0
446	1.25	3.21	0.00	0
447	1.25	0.00	0.00	0
448	1.25	3.21	0.20	0
449	1.25	0.00	0.20	0

450	23.30	3.21	1.00	0
451	23.30	0.00	1.00	0
452	23.30	3.21	7.33	0
453	23.30	0.00	7.33	0
454	23.20	5.00	10.58	0
455	23.20	-1.00	10.58	0
456	23.70	5.00	10.58	0
457	23.70	-1.00	10.58	0
458	23.20	4.00	10.58	0
459	23.70	4.00	10.58	0
460	23.20	0.50	10.58	0
461	23.70	0.50	10.58	0
462	24.08	0.00	5.33	0
463	24.08	-1.75	5.33	0
464	24.08	6.25	5.33	0
465	23.50	0.00	5.33	0
466	24.08	3.21	5.33	0
467	23.50	3.21	5.33	0
468	19.78	3.21	9.80	0
469	19.78	0.00	9.80	0
470	15.45	3.21	9.80	0
471	15.45	0.00	9.80	0
472	8.25	0.00	10.00	0
473	8.28	3.21	10.00	0
474	8.28	3.21	9.80	0
475	8.28	0.00	9.80	0
476	8.28	0.00	10.00	0
477	3.00	3.21	0.00	0
478	3.00	0.00	0.00	0
479	3.00	3.21	0.20	0
480	3.00	0.00	0.20	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
46	1	1	1	0	0	0
47	1	1	1	0	0	0
48	1	1	1	0	0	0
49	1	1	1	0	0	0
50	1	1	1	0	0	0
51	1	1	1	0	0	0
52	1	1	1	0	0	0
53	1	1	1	0	0	0
55	1	1	1	0	0	0
56	1	1	1	0	0	0
57	1	1	1	0	0	0
58	1	1	1	0	0	0
192	1	1	1	1	1	1
193	1	1	1	1	1	1
194	1	1	1	1	1	1
195	1	1	1	1	1	1
277	1	1	1	0	0	0
278	1	1	1	0	0	0
279	1	1	1	0	0	0
280	1	1	1	0	0	0

281	1	1	1	0	0	0
282	1	1	1	0	0	0
283	1	1	1	1	1	1
284	1	1	1	1	1	1
285	1	1	1	1	1	1
286	1	1	1	1	1	1
472	1	1	1	0	0	0

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
1	4	3		C 8X11.5	A36	0.00	0.00	0.00
2	3	2		C 8X11.5	A36	0.00	0.00	0.00
3	2	1		C 8X11.5	A36	0.00	0.00	0.00
4	1	4		C 8X11.5	A36	0.00	0.00	0.00
5	4	8		L 4X4X3_8	A36	0.00	0.00	0.00
6	1	5		L 4X4X3_8	A36	0.00	0.00	0.00
7	2	6		L 4X4X3_8	A36	0.00	0.00	0.00
8	3	7		L 4X4X3_8	A36	0.00	0.00	0.00
9	7	8		L 5X5X3_8	A36	0.00	0.00	0.00
10	6	7		L 5X5X3_8	A36	0.00	0.00	0.00
11	5	6		L 5X5X3_8	A36	0.00	0.00	0.00
12	8	5		L 5X5X3_8	A36	0.00	0.00	0.00
13	9	10		L 2X2X1_4	A36	0.00	0.00	0.00
14	11	12		L 2X2X1_4	A36	0.00	0.00	0.00
15	13	14		L 2X2X1_4	A36	0.00	0.00	0.00
16	15	16		L 2X2X1_4	A36	0.00	0.00	0.00
17	17	21		L 2X2X1_4	A36	0.00	0.00	0.00
18	18	22		L 2X2X1_4	A36	0.00	0.00	0.00
19	19	23		L 2X2X1_4	A36	0.00	0.00	0.00
20	20	24		L 2X2X1_4	A36	0.00	0.00	0.00
21	27	28		L 4X4X1_2	A36	0.00	0.00	0.00
22	26	27		L 4X4X1_2	A36	0.00	0.00	0.00
23	25	26		L 4X4X1_2	A36	0.00	0.00	0.00
24	28	25		L 4X4X1_2	A36	0.00	0.00	0.00
26	52	53		C 8X11.5	A36	0.00	0.00	0.00
28	51	50		C 8X11.5	A36	0.00	0.00	0.00
29	56	57		C 8X11.5	A36	0.00	0.00	0.00
30	58	55		C 8X11.5	A36	0.00	0.00	0.00
63	272	127		W 5X16	A992 Gr50	0.00	0.00	0.00
72	144	273		W 5X16	A992 Gr50	0.00	0.00	0.00
75	303	309		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
76	299	300		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
79	165	155		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
82	326	325		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
83	322	321		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
93	189	188		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
97	201	200		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
123	236	234		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
127	244	243		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
130	247	248		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
133	262	263		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
139	270	271		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
140	47	193		C 8X11.5	A36	0.00	0.00	0.00
141	193	194		C 8X11.5	A36	0.00	0.00	0.00

142	194	49	C 8X11.5	A36	0.00	0.00	0.00
143	46	192	C 8X11.5	A36	0.00	0.00	0.00
144	192	195	C 8X11.5	A36	0.00	0.00	0.00
145	195	48	C 8X11.5	A36	0.00	0.00	0.00
154	52	279	L 2X2X1_4	A36	0.00	0.00	0.00
155	279	58	L 2X2X1_4	A36	0.00	0.00	0.00
156	58	278	L 2X2X1_4	A36	0.00	0.00	0.00
157	278	57	L 2X2X1_4	A36	0.00	0.00	0.00
158	57	277	L 2X2X1_4	A36	0.00	0.00	0.00
159	277	51	L 2X2X1_4	A36	0.00	0.00	0.00
160	53	280	L 2X2X1_4	A36	0.00	0.00	0.00
161	280	55	L 2X2X1_4	A36	0.00	0.00	0.00
162	55	281	L 2X2X1_4	A36	0.00	0.00	0.00
163	281	56	L 2X2X1_4	A36	0.00	0.00	0.00
164	56	282	L 2X2X1_4	A36	0.00	0.00	0.00
165	282	50	L 2X2X1_4	A36	0.00	0.00	0.00
166	288	287	C 8X11.5	A36	0.00	0.00	0.00
167	289	290	C 8X11.5	A36	0.00	0.00	0.00
176	391	319	PL 6x3/8	A36	0.00	0.00	0.00
178	323	324	PL 6x3/8	A36	0.00	0.00	0.00
186	345	344	PL 6x1/2	A36	0.00	0.00	0.00
187	345	346	PL 6x1/2	A36	0.00	0.00	0.00
188	344	347	PL 6x1/2	A36	0.00	0.00	0.00
191	352	351	PL 6x1/2	A36	0.00	0.00	0.00
192	352	353	PL 6x1/2	A36	0.00	0.00	0.00
193	351	354	PL 6x1/2	A36	0.00	0.00	0.00
196	357	358	HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
197	359	360	HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
199	368	363	L 3-1_2X3-1_2X1_2	A36	0.00	0.00	0.00
203	375	376	L 3X3X3_8	A36	0.00	0.00	0.00
209	388	387	L 3X3X3_8	A36	0.00	0.00	0.00
212	393	394	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
227	423	426	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
230	421	422	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
237	435	436	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
241	440	441	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
249	398	399	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
250	450	451	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
251	452	453	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
256	454	455	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
257	456	457	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
260	465	462	PL 6x3/8	A36	0.00	0.00	0.00
261	464	463	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
262	467	466	L 3X3X3_8	A36	0.00	0.00	0.00
263	468	469	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
264	470	471	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
270	474	475	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
272	448	449	L 2X2X1_4	A36	0.00	0.00	0.00
273	443	444	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
276	479	480	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
1	180.00	0	0.00	0.00	0.00
2	180.00	0	0.00	0.00	0.00
3	180.00	0	0.00	0.00	0.00
4	180.00	0	0.00	0.00	0.00
5	0.00	2	-1.00	0.00	0.00
6	0.00	2	0.00	0.00	-1.00
7	0.00	2	1.00	0.00	0.00
8	0.00	2	0.00	0.00	1.00
9	90.00	0	0.00	0.00	0.00
10	90.00	0	0.00	0.00	0.00
11	90.00	0	0.00	0.00	0.00
12	90.00	0	0.00	0.00	0.00
13	0.00	2	1.00	0.00	0.00
14	0.00	2	1.00	0.00	0.00
15	0.00	2	0.00	0.00	-1.00
16	0.00	2	0.00	0.00	-1.00
17	0.00	2	0.00	0.00	1.00
18	0.00	2	0.00	0.00	1.00
19	0.00	2	-1.00	0.00	0.00
20	0.00	2	-1.00	0.00	0.00
21	180.00	0	0.00	0.00	0.00
22	180.00	0	0.00	0.00	0.00
23	180.00	0	0.00	0.00	0.00
24	180.00	0	0.00	0.00	0.00
79	0.00	2	-1.00	0.00	0.00
82	0.00	2	-0.7071	0.00	0.7071
83	0.00	2	-1.00	0.00	0.00
93	0.00	2	-0.7071	0.00	0.7071
97	0.00	2	-1.00	0.00	0.00
123	0.00	2	-0.7071	0.00	0.7071
127	0.00	2	-1.00	0.00	0.00
130	0.00	2	-0.7071	0.00	0.7071
139	0.00	2	-0.7071	0.00	0.7071
140	180.00	0	0.00	0.00	0.00
141	180.00	0	0.00	0.00	0.00
142	180.00	0	0.00	0.00	0.00
176	90.00	0	0.00	0.00	0.00
178	90.00	0	0.00	0.00	0.00
199	270.00	0	0.00	0.00	0.00
203	90.00	0	0.00	0.00	0.00
209	90.00	0	0.00	0.00	0.00
212	0.00	2	-1.00	0.00	0.00
230	0.00	2	-0.7071	0.00	0.7071
237	0.00	2	-0.7071	0.00	0.7071
256	0.00	2	-0.7071	0.00	0.7071
257	0.00	2	-0.7071	0.00	0.7071
260	90.00	0	0.00	0.00	0.00
261	0.00	2	-0.7071	0.00	0.7071
262	90.00	0	0.00	0.00	0.00
263	0.00	2	-0.7071	0.00	0.7071
264	0.00	2	-1.00	0.00	0.00
270	0.00	2	-0.7071	0.00	0.7071
272	180.00	0	0.00	0.00	0.00

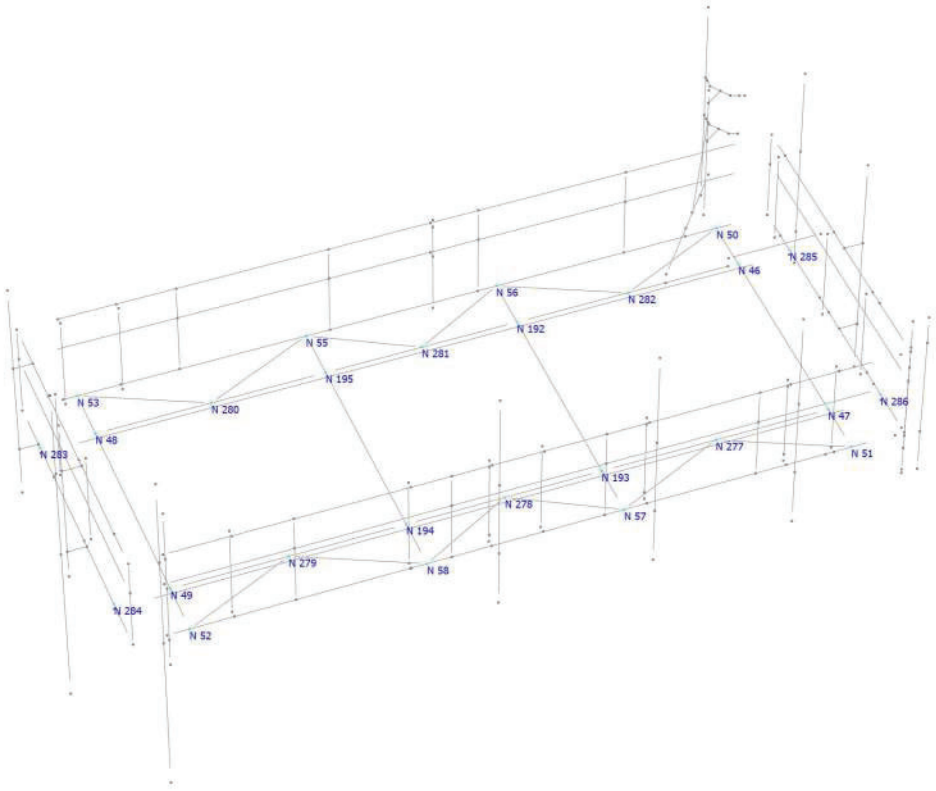
Rigid end offsets

Member	DJX [in]	DJY [in]	DJZ [in]	DKX [in]	DKY [in]	DKZ [in]
21	0.00	0.00	2.00	0.00	0.00	2.00
23	0.00	0.00	-2.00	0.00	0.00	-2.00
63	0.00	2.00	0.00	0.00	2.00	0.00
72	0.00	2.00	0.00	0.00	2.00	0.00
93	0.00	0.00	2.00	0.00	0.00	2.00
97	2.50	0.00	-2.50	2.50	0.00	-2.50
123	2.50	0.00	-2.50	2.50	0.00	-2.50
154	0.00	-1.85	0.00	0.00	-1.85	0.00
155	0.00	-1.85	0.00	0.00	-1.85	0.00
156	0.00	-1.85	0.00	0.00	-1.85	0.00
157	0.00	-1.85	0.00	0.00	-1.85	0.00
158	0.00	-1.85	0.00	0.00	-1.85	0.00
159	0.00	-1.85	0.00	0.00	-1.85	0.00
160	0.00	-1.85	0.00	0.00	-1.85	0.00
161	0.00	-1.85	0.00	0.00	-1.85	0.00
162	0.00	-1.85	0.00	0.00	-1.85	0.00
163	0.00	-1.85	0.00	0.00	-1.85	0.00
164	0.00	-1.85	0.00	0.00	-1.85	0.00
165	0.00	-1.85	0.00	0.00	-1.85	0.00
166	0.00	-8.00	0.00	0.00	-8.00	0.00
167	0.00	-8.00	0.00	0.00	-8.00	0.00
186	2.50	0.00	-2.50	2.50	0.00	-2.50
187	2.50	0.00	-2.50	2.50	0.00	-2.50
188	2.50	0.00	-2.50	2.50	0.00	-2.50
191	2.50	0.00	-2.50	2.50	0.00	-2.50
192	2.50	0.00	-2.50	2.50	0.00	-2.50
193	2.50	0.00	-2.50	2.50	0.00	-2.50
196	2.50	0.00	-2.50	2.50	0.00	-2.50
197	2.50	0.00	-2.50	2.50	0.00	-2.50
199	2.50	2.00	-2.50	2.50	2.00	-2.50

Hinges

Member	Node-J				Node-K				TOR	AXL	Axial rigidity
	M33	M22	V3	V2	M33	M22	V3	V2			
1	1	1	0	0	1	1	0	0	0	0	Full
2	1	1	0	0	1	1	0	0	0	0	Full
3	1	1	0	0	1	1	0	0	0	0	Full
4	1	1	0	0	1	1	0	0	0	0	Full
9	1	1	0	0	1	1	0	0	0	0	Full
10	1	1	0	0	1	1	0	0	0	0	Full
11	1	1	0	0	1	1	0	0	0	0	Full
12	1	1	0	0	1	1	0	0	0	0	Full
21	1	1	0	0	1	1	0	0	0	0	Full
22	1	1	0	0	1	1	0	0	0	0	Full
23	1	1	0	0	1	1	0	0	0	0	Full
24	1	1	0	0	1	1	0	0	0	0	Full
154	1	1	0	0	1	1	0	0	0	0	Full
155	1	1	0	0	1	1	0	0	0	0	Full
156	1	1	0	0	1	1	0	0	0	0	Full
157	1	1	0	0	1	1	0	0	0	0	Full
158	1	1	0	0	1	1	0	0	0	0	Full
159	1	1	0	0	1	1	0	0	0	0	Full
160	1	1	0	0	1	1	0	0	0	0	Full
161	1	1	0	0	1	1	0	0	0	0	Full

162	1	1	0	0	1	1	0	0	0	0	Full
163	1	1	0	0	1	1	0	0	0	0	Full
164	1	1	0	0	1	1	0	0	0	0	Full
165	1	1	0	0	1	1	0	0	0	0	Full
199	1	1	0	0	1	1	0	0	0	0	Full

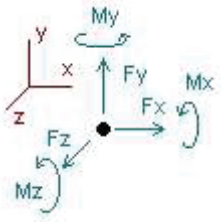

N 50
N 285
N 46
N 56
N 282
N 192
N 55
N 281
N 195
N 53
N 280
N 286
N 47
N 48
N 283
N 277
N 51
N 193
N 278
N 57
N 194
N 279
N 58
N 49
N 284
N 52
Y
X
Z

RAM® Elements
CONNECT Edition

Current Date: 2/28/2023 2:47 PM
Units system: English

Analysis result

Reactions



Direction of positive forces and moments

	Forces [Kip]			Moments [Kip*ft]		
Node	**FX**	**FY**	**FZ**	**MX**	**MY**	**MZ**
Condition **LC1=1.2DL+W0**						
46	-0.12911	-0.06008	0.46492	0.00000	0.00000	0.00000
47	-0.12937	0.43995	0.09881	0.00000	0.00000	0.00000
48	-0.13478	-0.10241	0.09643	0.00000	0.00000	0.00000
49	0.07012	0.46014	0.09134	0.00000	0.00000	0.00000
50	0.56737	2.41812	0.31117	0.00000	0.00000	0.00000
51	0.22557	0.67223	0.70847	0.00000	0.00000	0.00000
52	-0.22790	0.22221	1.05410	0.00000	0.00000	0.00000
53	0.10519	0.73929	0.54622	0.00000	0.00000	0.00000
55	-0.10806	0.72820	0.67999	0.00000	0.00000	0.00000
56	0.09238	0.97483	0.61364	0.00000	0.00000	0.00000
57	-0.14744	0.32094	1.12740	0.00000	0.00000	0.00000
58	0.02843	-1.60816	0.78797	0.00000	0.00000	0.00000
192	0.03363	0.00439	0.09802	-0.19333	0.05450	0.15998
193	0.02807	0.96606	0.17496	-0.15429	-0.00219	0.00199
194	0.09966	1.03267	0.17249	-0.17694	0.06914	-0.00583
195	0.02150	-0.09831	0.17418	-0.17944	0.00486	-0.00514
277	0.03586	0.11893	0.17659	0.00000	0.00000	0.00000
278	0.06510	0.09052	0.16206	0.00000	0.00000	0.00000
279	-0.03172	0.11877	0.19143	0.00000	0.00000	0.00000
280	-0.01130	0.11845	0.18796	0.00000	0.00000	0.00000
281	0.01965	0.09052	0.15815	0.00000	0.00000	0.00000
282	-0.45407	-0.86550	0.70299	0.00000	0.00000	0.00000
283	-0.71424	1.58369	2.01544	-0.06405	-2.23256	-0.06340
284	-0.70879	-0.06701	1.50304	-1.13474	-2.08826	-0.04038
285	0.64761	0.83798	2.35821	0.49201	2.14876	0.03498
286	0.72296	-0.24485	1.43375	0.33427	2.18822	0.03570
472	0.03366	1.53850	0.18737	0.00000	0.00000	0.00000
SUM	0.00000	10.43007	16.27711	-1.07652	0.14248	0.11790
Condition **LC2=1.2DL+W30**						
46	-0.09689	0.22490	0.11447	0.00000	0.00000	0.00000
47	0.35342	0.18798	0.01935	0.00000	0.00000	0.00000
48	0.31416	0.21310	0.01913	0.00000	0.00000	0.00000
49	0.30532	0.18739	-0.01967	0.00000	0.00000	0.00000
50	2.01425	0.81248	-0.24869	0.00000	0.00000	0.00000
51	0.85532	0.51275	0.15261	0.00000	0.00000	0.00000
52	1.40063	0.86045	-0.11346	0.00000	0.00000	0.00000
53	0.58639	0.67083	0.00997	0.00000	0.00000	0.00000

55	0.70882	0.32310	-0.04046	0.00000	0.00000	0.00000
56	0.89398	0.78371	0.00166	0.00000	0.00000	0.00000
57	1.08779	0.98540	0.00123	0.00000	0.00000	0.00000
58	0.64643	0.71216	0.11031	0.00000	0.00000	0.00000
192	0.30195	0.21370	-0.03364	-0.09334	0.17872	0.03846
193	0.23624	0.17548	0.00640	0.09473	-0.18270	0.00449
194	0.22410	0.20119	-0.00651	0.08440	-0.18940	-0.00547
195	0.22465	0.20883	0.00633	-0.08186	0.18889	-0.00672
277	-0.03236	0.11799	-0.02989	0.00000	0.00000	0.00000
278	0.05204	0.09052	0.00049	0.00000	0.00000	0.00000
279	-0.02651	0.11847	0.02946	0.00000	0.00000	0.00000
280	-0.01484	0.11842	-0.02565	0.00000	0.00000	0.00000
281	0.07321	0.09052	-0.00396	0.00000	0.00000	0.00000
282	-0.74440	-0.22174	0.11009	0.00000	0.00000	0.00000
283	-0.19719	0.76446	-0.04022	0.60344	0.60727	-0.19551
284	-0.05100	1.01688	0.14316	-0.81005	-0.73767	-0.07035
285	1.05509	0.46518	0.08660	-1.28378	0.21052	-0.03236
286	0.95681	0.54305	-0.18049	1.08506	-0.23238	-0.02402
472	0.36805	0.05287	-0.06863	0.00000	0.00000	0.00000
SUM	11.49544	10.43007	0.00000	-0.40138	-0.15676	-0.29148

Condition **LC3=1.2DL-W0**

46	0.14117	0.43791	-0.44284	0.00000	0.00000	0.00000
47	0.11938	-0.06506	-0.09767	0.00000	0.00000	0.00000
48	0.13493	0.50306	-0.09630	0.00000	0.00000	0.00000
49	-0.08581	-0.08814	-0.09243	0.00000	0.00000	0.00000
50	-0.56110	-0.27982	-0.39120	0.00000	0.00000	0.00000
51	-0.16043	0.93615	-0.65324	0.00000	0.00000	0.00000
52	0.22092	1.21027	-1.04017	0.00000	0.00000	0.00000
53	-0.10101	0.19508	-0.52649	0.00000	0.00000	0.00000
55	0.10765	0.08532	-0.67907	0.00000	0.00000	0.00000
56	-0.13294	0.06100	-0.61676	0.00000	0.00000	0.00000
57	0.12967	1.74961	-1.10887	0.00000	0.00000	0.00000
58	-0.08638	2.92940	-0.68185	0.00000	0.00000	0.00000
192	-0.03281	0.49818	-0.10694	0.02073	-0.04447	-0.03984
193	-0.00889	-0.59599	-0.17459	0.33682	0.01224	0.00695
194	-0.09110	-0.66948	-0.17285	0.35968	-0.06488	-0.00691
195	-0.02255	0.49419	-0.17413	0.00677	-0.00423	-0.00539
277	-0.06855	0.11727	-0.18288	0.00000	0.00000	0.00000
278	0.00405	0.09052	-0.16152	0.00000	0.00000	0.00000
279	0.06169	0.11731	-0.18826	0.00000	0.00000	0.00000
280	0.00892	0.11819	-0.18588	0.00000	0.00000	0.00000
281	0.00470	0.09052	-0.16191	0.00000	0.00000	0.00000
282	0.49064	0.47180	-0.61725	0.00000	0.00000	0.00000
283	-0.72367	-0.26714	-2.06076	-0.55734	2.19587	-0.03337
284	-0.74152	1.55787	-1.49303	1.62871	2.18529	-0.03617
285	0.75993	0.59821	-2.41921	-1.17170	-2.13026	0.03455
286	0.66846	1.54241	-1.44181	0.33289	-2.21588	0.02950
472	-0.03537	-1.40855	-0.30920	0.00000	0.00000	0.00000
SUM	0.00000	10.43007	-16.27711	0.95656	-0.06632	-0.05068

Condition **LC4=1.2DL-W30**

46	0.06666	0.16881	-0.09062	0.00000	0.00000	0.00000
47	-0.36223	0.18491	-0.01824	0.00000	0.00000	0.00000
48	-0.31850	0.18748	-0.01870	0.00000	0.00000	0.00000
49	-0.32016	0.18315	0.01860	0.00000	0.00000	0.00000
50	-1.90987	1.31060	0.17015	0.00000	0.00000	0.00000
51	-0.79150	1.09768	-0.09342	0.00000	0.00000	0.00000
52	-1.40601	0.57764	0.11032	0.00000	0.00000	0.00000
53	-0.57916	0.26359	0.00399	0.00000	0.00000	0.00000
55	-0.71386	0.48965	0.04164	0.00000	0.00000	0.00000
56	-0.91327	0.25990	-0.00452	0.00000	0.00000	0.00000
57	-1.11712	1.09107	0.02729	0.00000	0.00000	0.00000
58	-0.69874	0.65048	-0.06582	0.00000	0.00000	0.00000
192	-0.29817	0.28450	0.02470	-0.07943	-0.17028	0.07736
193	-0.20724	0.18637	-0.00603	0.09039	0.19813	0.00451
194	-0.22239	0.15328	0.00615	0.10110	0.18992	-0.00732
195	-0.22163	0.18626	-0.00618	-0.09105	-0.19037	-0.00383
277	-0.00187	0.11819	0.02369	0.00000	0.00000	0.00000
278	0.01677	0.09052	0.00002	0.00000	0.00000	0.00000
279	0.05858	0.11758	-0.02631	0.00000	0.00000	0.00000
280	0.01217	0.11822	0.02738	0.00000	0.00000	0.00000
281	-0.04808	0.09052	0.00007	0.00000	0.00000	0.00000
282	0.70141	-0.16970	-0.03401	0.00000	0.00000	0.00000
283	-1.23861	0.55093	0.00722	-1.22871	-0.64025	0.09929
284	-1.39697	0.47294	-0.13397	1.31298	0.83188	-0.00611
285	0.35097	0.96313	-0.14345	0.58614	-0.19304	0.10183
286	0.43263	0.75844	0.16328	-0.41811	0.20636	0.08915
472	-0.36924	0.04391	0.01677	0.00000	0.00000	0.00000
SUM	-11.49544	10.43007	0.00000	0.27331	0.23235	0.35487

Condition **LC5=0.9DL+W0**

46	-0.12742	-0.10591	0.46080	0.00000	0.00000	0.00000
47	-0.12912	0.39222	0.09871	0.00000	0.00000	0.00000
48	-0.13443	-0.15145	0.09638	0.00000	0.00000	0.00000
49	0.07231	0.41267	0.09150	0.00000	0.00000	0.00000
50	0.55936	2.14321	0.32433	0.00000	0.00000	0.00000
51	0.21854	0.47150	0.70202	0.00000	0.00000	0.00000
52	-0.22713	0.04450	1.05414	0.00000	0.00000	0.00000
53	0.10444	0.62150	0.54502	0.00000	0.00000	0.00000
55	-0.10727	0.62588	0.68064	0.00000	0.00000	0.00000
56	0.09701	0.84132	0.61564	0.00000	0.00000	0.00000
57	-0.14328	0.06489	1.12690	0.00000	0.00000	0.00000
58	0.03362	-1.76724	0.78459	0.00000	0.00000	0.00000
192	0.03296	-0.05779	0.09945	-0.17137	0.05319	0.14437
193	0.02445	0.91697	0.17493	-0.17622	-0.00413	0.00088
194	0.10007	0.98415	0.17255	-0.19880	0.06943	-0.00423
195	0.02113	-0.14669	0.17416	-0.15752	0.00504	-0.00382
277	0.03985	0.08940	0.17735	0.00000	0.00000	0.00000
278	0.05637	0.06789	0.16200	0.00000	0.00000	0.00000
279	-0.03543	0.08926	0.19103	0.00000	0.00000	0.00000
280	-0.01086	0.08886	0.18773	0.00000	0.00000	0.00000
281	0.01628	0.06789	0.15865	0.00000	0.00000	0.00000
282	-0.45377	-0.81186	0.69107	0.00000	0.00000	0.00000
283	-0.53464	1.41605	2.01628	0.01094	-2.23429	-0.05125
284	-0.52750	-0.25044	1.50172	-1.19432	-2.10695	-0.03081
285	0.47188	0.66100	2.36060	0.57737	2.15290	0.02630
286	0.54905	-0.40434	1.43534	0.24886	2.19802	0.02754
472	0.03354	1.51911	0.19362	0.00000	0.00000	0.00000

SUM	-0.00003	7.82255	16.27715	-1.06108	0.13321	0.10897
Condition	**LC6=0.9DL+W30**					
46	-0.09558	0.18031	0.10946	0.00000	0.00000	0.00000
47	0.35430	0.14136	0.01919	0.00000	0.00000	0.00000
48	0.31470	0.16301	0.01908	0.00000	0.00000	0.00000
49	0.30717	0.14108	-0.01954	0.00000	0.00000	0.00000
50	2.00663	0.53564	-0.23351	0.00000	0.00000	0.00000
51	0.84760	0.31165	0.14518	0.00000	0.00000	0.00000
52	1.40105	0.68063	-0.11300	0.00000	0.00000	0.00000
53	0.58508	0.55363	0.00819	0.00000	0.00000	0.00000
55	0.70921	0.22254	-0.04044	0.00000	0.00000	0.00000
56	0.90001	0.64897	0.00315	0.00000	0.00000	0.00000
57	1.09128	0.72587	-0.00230	0.00000	0.00000	0.00000
58	0.65279	0.54171	0.10470	0.00000	0.00000	0.00000
192	0.30091	0.15002	-0.03199	-0.07171	0.17735	0.02238
193	0.23261	0.13029	0.00635	0.07158	-0.18463	0.00337
194	0.22388	0.15689	-0.00646	0.06121	-0.18946	-0.00388
195	0.22431	0.15948	0.00631	-0.06024	0.18905	-0.00539
277	-0.02806	0.08847	-0.02908	0.00000	0.00000	0.00000
278	0.04344	0.06789	0.00042	0.00000	0.00000	0.00000
279	-0.03046	0.08897	0.02907	0.00000	0.00000	0.00000
280	-0.01432	0.08883	-0.02587	0.00000	0.00000	0.00000
281	0.06949	0.06789	-0.00343	0.00000	0.00000	0.00000
282	-0.74457	-0.16615	0.09659	0.00000	0.00000	0.00000
283	-0.01730	0.60007	-0.03610	0.68093	0.61201	-0.18333
284	0.13049	0.83041	0.14201	-0.87166	-0.75022	-0.06076
285	0.87953	0.29189	0.09255	-1.18826	0.20833	-0.04099
286	0.78326	0.38039	-0.17834	1.00133	-0.22919	-0.03212
472	0.36798	0.04082	-0.06215	0.00000	0.00000	0.00000
SUM	11.49541	7.82255	0.00003	-0.37683	-0.16676	-0.30073
Condition	**LC7=0.9DL-W0**					
46	0.14409	0.38823	-0.44519	0.00000	0.00000	0.00000
47	0.12133	-0.11054	-0.09785	0.00000	0.00000	0.00000
48	0.13565	0.45191	-0.09636	0.00000	0.00000	0.00000
49	-0.08430	-0.13328	-0.09232	0.00000	0.00000	0.00000
50	-0.57198	-0.54324	-0.38302	0.00000	0.00000	0.00000
51	-0.16905	0.73432	-0.66161	0.00000	0.00000	0.00000
52	0.22124	1.02839	-1.03950	0.00000	0.00000	0.00000
53	-0.10250	0.07915	-0.52886	0.00000	0.00000	0.00000
55	0.10793	-0.01520	-0.67999	0.00000	0.00000	0.00000
56	-0.13030	-0.06753	-0.61752	0.00000	0.00000	0.00000
57	0.13268	1.48652	-1.11547	0.00000	0.00000	0.00000
58	-0.07847	2.74791	-0.69029	0.00000	0.00000	0.00000
192	-0.03310	0.43473	-0.10597	0.04197	-0.04545	-0.05433
193	-0.01244	-0.63733	-0.17465	0.31246	0.01036	0.00581
194	-0.09201	-0.70955	-0.17282	0.33516	-0.06534	-0.00531
195	-0.02290	0.44377	-0.17415	0.02806	-0.00406	-0.00407
277	-0.06399	0.08775	-0.18208	0.00000	0.00000	0.00000
278	-0.00441	0.06789	-0.16159	0.00000	0.00000	0.00000
279	0.05742	0.08781	-0.18865	0.00000	0.00000	0.00000
280	0.00920	0.08861	-0.18609	0.00000	0.00000	0.00000
281	0.00164	0.06789	-0.16143	0.00000	0.00000	0.00000
282	0.49495	0.52085	-0.62599	0.00000	0.00000	0.00000
283	-0.54391	-0.42823	-2.05321	-0.47666	2.20672	-0.02134
284	-0.56033	1.36879	-1.49398	1.56354	2.17957	-0.02661
285	0.58387	0.41996	-2.40758	-1.08012	-2.13910	0.02585
286	0.49471	1.37646	-1.43917	0.25206	-2.21868	0.02137

472	-0.03504	-1.41348	-0.30175	0.00000	0.00000	0.00000
SUM	-0.00003	7.82255	-16.27708	0.97647	-0.07597	-0.05862

Condition **LC8=0.9DL-W30**

46	0.07014	0.11781	-0.09210	0.00000	0.00000	0.00000
47	-0.36094	0.13835	-0.01836	0.00000	0.00000	0.00000
48	-0.31795	0.13739	-0.01875	0.00000	0.00000	0.00000
49	-0.31830	0.13687	0.01873	0.00000	0.00000	0.00000
50	-1.92158	1.04932	0.17633	0.00000	0.00000	0.00000
51	-0.79940	0.89616	-0.10083	0.00000	0.00000	0.00000
52	-1.40539	0.39779	0.11075	0.00000	0.00000	0.00000
53	-0.58012	0.14707	0.00225	0.00000	0.00000	0.00000
55	-0.71315	0.38737	0.04136	0.00000	0.00000	0.00000
56	-0.91210	0.13255	-0.00476	0.00000	0.00000	0.00000
57	-1.11335	0.83137	0.02360	0.00000	0.00000	0.00000
58	-0.69207	0.47986	-0.07145	0.00000	0.00000	0.00000
192	-0.29810	0.22259	0.02545	-0.05786	-0.17119	0.06337
193	-0.21087	0.14125	-0.00607	0.06721	0.19619	0.00339
194	-0.22262	0.10911	0.00620	0.07787	0.18984	-0.00572
195	-0.22206	0.13681	-0.00620	-0.06945	-0.19016	-0.00252
277	0.00239	0.08867	0.02444	0.00000	0.00000	0.00000
278	0.00818	0.06789	-0.00004	0.00000	0.00000	0.00000
279	0.05453	0.08808	-0.02670	0.00000	0.00000	0.00000
280	0.01238	0.08865	0.02717	0.00000	0.00000	0.00000
281	-0.05080	0.06789	0.00053	0.00000	0.00000	0.00000
282	0.70654	-0.12272	-0.04114	0.00000	0.00000	0.00000
283	-1.05913	0.38662	0.01140	-1.15050	-0.63588	0.11128
284	-1.21598	0.28691	-0.13510	1.24976	0.82002	0.00344
285	0.17475	0.78124	-0.13536	0.66769	-0.19554	0.09309
286	0.25852	0.59563	0.16541	-0.50061	0.21017	0.08096
472	-0.36898	0.03203	0.02331	0.00000	0.00000	0.00000
SUM	-11.49547	7.82255	0.00003	0.28410	0.22345	0.34728

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

46	-0.04170	0.21315	0.05167	0.00000	0.00000	0.00000
47	-0.01136	0.31518	0.00175	0.00000	0.00000	0.00000
48	-0.00400	0.28912	0.00042	0.00000	0.00000	0.00000
49	-0.01608	0.31116	-0.00115	0.00000	0.00000	0.00000
50	0.14689	2.25281	-0.09209	0.00000	0.00000	0.00000
51	0.07619	1.35621	0.09969	0.00000	0.00000	0.00000
52	-0.01188	1.17106	0.08875	0.00000	0.00000	0.00000
53	0.01134	0.79342	0.02317	0.00000	0.00000	0.00000
55	0.00182	0.65495	0.00072	0.00000	0.00000	0.00000
56	-0.02822	0.93754	-0.00888	0.00000	0.00000	0.00000
57	-0.03347	1.66060	0.10649	0.00000	0.00000	0.00000
58	-0.03299	0.95488	0.13130	0.00000	0.00000	0.00000
192	0.00930	0.41981	-0.01724	-0.13712	0.01518	0.13939
193	0.02661	0.36495	0.00058	0.11596	0.01387	0.00658
194	0.00689	0.36310	-0.00038	0.11483	0.00332	-0.00979
195	0.00101	0.29352	0.00014	-0.13666	-0.00039	-0.00830
277	-0.02062	0.19762	-0.00671	0.00000	0.00000	0.00000
278	0.05966	0.15312	0.00023	0.00000	0.00000	0.00000
279	0.01671	0.19755	0.00278	0.00000	0.00000	0.00000
280	-0.00942	0.19800	0.00124	0.00000	0.00000	0.00000
281	0.03183	0.15312	-0.00407	0.00000	0.00000	0.00000
282	-0.06520	-0.58723	0.12971	0.00000	0.00000	0.00000
283	-1.46497	1.33302	0.10273	-0.46367	-0.04480	-0.10552

284	-1.45935	1.29370	0.09691	0.32157	0.10444	-0.07774
285	1.40635	1.08283	0.13173	-0.60622	0.01026	0.07018
286	1.40121	1.05494	0.07275	0.52251	-0.01862	0.06727
472	0.00343	0.18687	-0.08024	0.00000	0.00000	0.00000
SUM	-0.00002	17.61500	0.83203	-0.26880	0.08326	0.08206

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

46	-0.07872	0.24108	0.05003	0.00000	0.00000	0.00000
47	0.00067	0.28429	0.00102	0.00000	0.00000	0.00000
48	-0.00291	0.31307	0.00032	0.00000	0.00000	0.00000
49	-0.01299	0.28295	-0.00093	0.00000	0.00000	0.00000
50	0.31954	2.07763	-0.13595	0.00000	0.00000	0.00000
51	0.17528	1.32816	0.08539	0.00000	0.00000	0.00000
52	0.18927	1.25221	-0.01429	0.00000	0.00000	0.00000
53	0.06729	0.79391	0.01068	0.00000	0.00000	0.00000
55	0.07594	0.63497	-0.00801	0.00000	0.00000	0.00000
56	0.06720	0.94401	-0.00930	0.00000	0.00000	0.00000
57	0.11970	1.73787	0.02224	0.00000	0.00000	0.00000
58	0.03615	1.22305	0.06259	0.00000	0.00000	0.00000
192	0.01584	0.41889	-0.01508	-0.13397	0.00906	0.12718
193	0.02164	0.27033	0.00034	0.14570	0.01144	0.00705
194	0.00357	0.26786	-0.00031	0.14469	0.00159	-0.00954
195	0.00167	0.30632	0.00011	-0.13257	-0.00079	-0.00834
277	-0.03154	0.19747	-0.00518	0.00000	0.00000	0.00000
278	0.05561	0.15312	0.00030	0.00000	0.00000	0.00000
279	0.01386	0.19757	0.00336	0.00000	0.00000	0.00000
280	-0.01115	0.19802	0.00135	0.00000	0.00000	0.00000
281	0.03516	0.15312	-0.00415	0.00000	0.00000	0.00000
282	-0.12869	-0.52398	0.10507	0.00000	0.00000	0.00000
283	-1.42449	1.25931	-0.03194	-0.42201	0.03053	-0.12469
284	-1.39364	1.40200	0.02304	0.28237	0.00511	-0.08169
285	1.42495	1.04138	-0.04413	-0.88285	0.01821	0.06134
286	1.39945	1.14474	-0.03921	0.55999	-0.02536	0.05900
472	0.04829	0.01565	-0.05736	0.00000	0.00000	0.00000
SUM	0.98698	17.61500	0.00003	-0.43865	0.04980	0.03032

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

46	-0.00527	0.26270	0.01225	0.00000	0.00000	0.00000
47	-0.00285	0.25282	0.00058	0.00000	0.00000	0.00000
48	-0.00298	0.33404	0.00030	0.00000	0.00000	0.00000
49	-0.00982	0.25420	-0.00071	0.00000	0.00000	0.00000
50	0.03072	1.95362	-0.11517	0.00000	0.00000	0.00000
51	0.05992	1.37831	0.02675	0.00000	0.00000	0.00000
52	0.00439	1.29351	-0.08697	0.00000	0.00000	0.00000
53	0.01765	0.74656	-0.00060	0.00000	0.00000	0.00000
55	0.00490	0.63548	-0.00660	0.00000	0.00000	0.00000
56	-0.02938	0.87843	-0.00893	0.00000	0.00000	0.00000
57	-0.00994	1.83020	-0.05892	0.00000	0.00000	0.00000
58	-0.05259	1.48534	-0.02517	0.00000	0.00000	0.00000
192	0.00275	0.42563	-0.00556	-0.12923	0.00503	0.11878
193	0.02023	0.17641	0.00019	0.17509	0.01084	0.00710
194	0.00024	0.16535	-0.00023	0.17706	-0.00014	-0.00995
195	0.00393	0.31662	0.00010	-0.12955	-0.00204	-0.00834
277	-0.03165	0.19744	-0.00351	0.00000	0.00000	0.00000
278	0.05278	0.15312	0.00030	0.00000	0.00000	0.00000
279	0.02830	0.19737	0.00329	0.00000	0.00000	0.00000
280	-0.00448	0.19794	0.00161	0.00000	0.00000	0.00000

281	0.02779	0.15312	-0.00361	0.00000	0.00000	0.00000
282	0.01527	-0.44621	0.05986	0.00000	0.00000	0.00000
283	-1.46027	1.16265	-0.17115	-0.61315	-0.02950	-0.10279
284	-1.46833	1.43280	-0.07920	0.51423	0.09941	-0.07708
285	1.41862	1.06739	-0.23969	-0.89644	0.01923	0.06995
286	1.39398	1.26816	-0.10252	0.38132	-0.02434	0.06635
472	-0.00394	-0.15799	-0.02866	0.00000	0.00000	0.00000
SUM	-0.00002	17.61500	-0.83197	-0.52066	0.07849	0.06403

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

46	0.03124	0.23502	0.01390	0.00000	0.00000	0.00000
47	-0.01489	0.28367	0.00132	0.00000	0.00000	0.00000
48	-0.00409	0.31010	0.00040	0.00000	0.00000	0.00000
49	-0.01290	0.28238	-0.00093	0.00000	0.00000	0.00000
50	-0.14073	2.12841	-0.07125	0.00000	0.00000	0.00000
51	-0.03917	1.40640	0.04115	0.00000	0.00000	0.00000
52	-0.19672	1.21246	0.01578	0.00000	0.00000	0.00000
53	-0.03829	0.74605	0.01185	0.00000	0.00000	0.00000
55	-0.06924	0.65544	0.00213	0.00000	0.00000	0.00000
56	-0.12452	0.87202	-0.00848	0.00000	0.00000	0.00000
57	-0.16328	1.75303	0.02553	0.00000	0.00000	0.00000
58	-0.12167	1.21783	0.04278	0.00000	0.00000	0.00000
192	-0.00376	0.42649	-0.00772	-0.13238	0.01113	0.13091
193	0.02534	0.27087	0.00044	0.14540	0.01335	0.00663
194	0.00348	0.26042	-0.00031	0.14725	0.00154	-0.01019
195	0.00328	0.30382	0.00013	-0.13363	-0.00164	-0.00830
277	-0.02076	0.19759	-0.00505	0.00000	0.00000	0.00000
278	0.05682	0.15312	0.00024	0.00000	0.00000	0.00000
279	0.03119	0.19736	0.00272	0.00000	0.00000	0.00000
280	-0.00276	0.19792	0.00150	0.00000	0.00000	0.00000
281	0.02447	0.15312	-0.00353	0.00000	0.00000	0.00000
282	0.07776	-0.50931	0.08437	0.00000	0.00000	0.00000
283	-1.50072	1.23633	-0.03641	-0.65489	-0.10476	-0.08361
284	-1.53400	1.32449	-0.00527	0.55360	0.19869	-0.07313
285	1.39999	1.10876	-0.06389	-0.62007	0.01125	0.07878
286	1.39571	1.17845	0.00929	0.34384	-0.01756	0.07461
472	-0.04880	0.01275	-0.05066	0.00000	0.00000	0.00000
SUM	-0.98702	17.61500	0.00003	-0.35087	0.11199	0.11570

Condition **LC13=1.4DL**

46	-0.01216	0.22310	0.01524	0.00000	0.00000	0.00000
47	-0.00502	0.21750	0.00067	0.00000	0.00000	0.00000
48	-0.00254	0.23373	0.00026	0.00000	0.00000	0.00000
49	-0.00866	0.21611	-0.00063	0.00000	0.00000	0.00000
50	0.04724	1.25664	-0.04982	0.00000	0.00000	0.00000
51	0.03639	0.93941	0.03451	0.00000	0.00000	0.00000
52	-0.00247	0.83914	-0.00200	0.00000	0.00000	0.00000
53	0.00528	0.54539	0.00818	0.00000	0.00000	0.00000
55	-0.00258	0.47328	0.00059	0.00000	0.00000	0.00000
56	-0.01636	0.61191	-0.00293	0.00000	0.00000	0.00000
57	-0.01693	1.21131	0.01665	0.00000	0.00000	0.00000
58	-0.03035	0.79517	0.02608	0.00000	0.00000	0.00000
192	0.00235	0.29304	-0.00560	-0.10081	0.00530	0.07024
193	0.01692	0.21098	0.00022	0.10802	0.00899	0.00525
194	0.00100	0.20668	-0.00021	0.10824	0.00030	-0.00746
195	0.00176	0.23046	0.00008	-0.10086	-0.00086	-0.00617
277	-0.01994	0.13777	-0.00363	0.00000	0.00000	0.00000

278	0.04012	0.10560	0.00030	0.00000	0.00000	0.00000
279	0.01864	0.13770	0.00184	0.00000	0.00000	0.00000
280	-0.00171	0.13804	0.00102	0.00000	0.00000	0.00000
281	0.01508	0.10560	-0.00230	0.00000	0.00000	0.00000
282	-0.01339	-0.24022	0.04809	0.00000	0.00000	0.00000
283	-0.83876	0.76712	-0.01923	-0.36320	-0.02126	-0.05643
284	-0.84603	0.86905	0.00533	0.29118	0.05696	-0.04466
285	0.82109	0.82841	-0.03240	-0.41340	0.01096	0.04056
286	0.81146	0.75923	-0.00996	0.38807	-0.01634	0.03803
472	-0.00045	0.05625	-0.03032	0.00000	0.00000	0.00000
SUM	0.00000	12.16841	0.00000	-0.08276	0.04406	0.03936

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

46	-0.01044	0.19130	0.01303	0.00000	0.00000	0.00000
47	-0.00445	0.18540	0.00058	0.00000	0.00000	0.00000
48	-0.00218	0.20034	0.00022	0.00000	0.00000	0.00000
49	-0.00729	0.18470	-0.00053	0.00000	0.00000	0.00000
50	0.04054	1.07696	-0.04263	0.00000	0.00000	0.00000
51	0.04133	0.76320	0.03461	0.00000	0.00000	0.00000
52	-0.00898	0.70423	0.00147	0.00000	0.00000	0.00000
53	0.00453	0.46747	0.00700	0.00000	0.00000	0.00000
55	-0.00221	0.40570	0.00050	0.00000	0.00000	0.00000
56	-0.01398	0.52443	-0.00251	0.00000	0.00000	0.00000
57	0.00363	1.24212	0.01316	0.00000	0.00000	0.00000
58	-0.02549	1.31546	0.01606	0.00000	0.00000	0.00000
192	0.00201	0.25115	-0.00480	-0.08641	0.00454	0.06018
193	0.01420	0.18142	0.00019	0.09253	0.00754	0.00556
194	0.00093	0.17852	-0.00017	0.09274	0.00030	-0.00636
195	0.00151	0.19753	0.00007	-0.08645	-0.00074	-0.00528
277	-0.03975	0.11774	-0.00149	0.00000	0.00000	0.00000
278	0.02068	0.09052	-0.00193	0.00000	0.00000	0.00000
279	0.02974	0.11782	0.00242	0.00000	0.00000	0.00000
280	-0.00146	0.11832	0.00087	0.00000	0.00000	0.00000
281	0.01291	0.09052	-0.00197	0.00000	0.00000	0.00000
282	-0.01152	-0.20581	0.04115	0.00000	0.00000	0.00000
283	-0.71899	0.65754	-0.01650	-0.31132	-0.01822	-0.04837
284	-0.72524	0.75098	0.00441	0.23955	0.04883	-0.03827
285	0.70384	0.71000	-0.02800	-0.35412	0.00941	0.03478
286	0.69559	0.66975	-0.00877	0.30218	-0.01399	0.03261
472	0.00055	-0.35726	-0.02644	0.00000	0.00000	0.00000
SUM	0.00000	10.83007	0.00000	-0.11130	0.03767	0.03484

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

46	-0.01045	0.19129	0.01303	0.00000	0.00000	0.00000
47	-0.00429	0.18643	0.00057	0.00000	0.00000	0.00000
48	-0.00215	0.20032	0.00022	0.00000	0.00000	0.00000
49	-0.00778	0.18625	-0.00056	0.00000	0.00000	0.00000
50	0.04049	1.07699	-0.04262	0.00000	0.00000	0.00000
51	0.03232	0.80400	0.02972	0.00000	0.00000	0.00000
52	0.00993	0.86590	-0.00713	0.00000	0.00000	0.00000
53	0.00445	0.46746	0.00696	0.00000	0.00000	0.00000
55	-0.00217	0.40572	0.00049	0.00000	0.00000	0.00000
56	-0.01396	0.52440	-0.00251	0.00000	0.00000	0.00000
57	-0.01336	1.04096	0.01385	0.00000	0.00000	0.00000
58	-0.01256	0.75632	0.02861	0.00000	0.00000	0.00000
192	0.00201	0.25115	-0.00480	-0.08641	0.00454	0.06018
193	0.01454	0.18098	0.00019	0.09256	0.00773	0.00448

194	0.00076	0.17529	-0.00019	0.09295	0.00020	-0.00538
195	0.00149	0.19754	0.00007	-0.08645	-0.00073	-0.00528
277	-0.01746	0.11809	-0.00309	0.00000	0.00000	0.00000
278	0.03542	0.09052	0.00016	0.00000	0.00000	0.00000
279	-0.01304	0.11836	0.00317	0.00000	0.00000	0.00000
280	-0.00145	0.11832	0.00087	0.00000	0.00000	0.00000
281	0.01290	0.09052	-0.00197	0.00000	0.00000	0.00000
282	-0.01151	-0.20581	0.04116	0.00000	0.00000	0.00000
283	-0.71894	0.65661	-0.01797	-0.31254	-0.01787	-0.04848
284	-0.72516	1.03271	0.00440	-0.22125	0.04872	-0.03838
285	0.70387	0.71017	-0.02771	-0.35409	0.00936	0.03476
286	0.69564	0.65073	-0.00856	0.33264	-0.01402	0.03254
472	0.00045	-0.06115	-0.02637	0.00000	0.00000	0.00000
SUM	0.00000	10.83007	0.00000	-0.54260	0.03793	0.03444

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

46	-0.01582	0.18456	0.01850	0.00000	0.00000	0.00000
47	-0.00545	0.19481	0.00073	0.00000	0.00000	0.00000
48	-0.00203	0.20002	0.00028	0.00000	0.00000	0.00000
49	-0.01567	0.18470	-0.00111	0.00000	0.00000	0.00000
50	0.05705	1.11901	-0.03882	0.00000	0.00000	0.00000
51	0.04088	0.79833	0.03948	0.00000	0.00000	0.00000
52	-0.00984	1.26155	0.06317	0.00000	0.00000	0.00000
53	0.00391	0.46761	0.00768	0.00000	0.00000	0.00000
55	-0.00291	0.40586	0.00091	0.00000	0.00000	0.00000
56	-0.01375	0.53145	-0.00278	0.00000	0.00000	0.00000
57	-0.00550	1.01892	0.03707	0.00000	0.00000	0.00000
58	-0.00119	0.64302	0.05388	0.00000	0.00000	0.00000
192	0.00273	0.25143	-0.00642	-0.08716	0.00605	0.06301
193	0.01571	0.20372	0.00024	0.08542	0.00831	0.00446
194	0.00120	0.19605	-0.00037	0.08637	0.00022	-0.00520
195	0.00148	0.19634	0.00009	-0.08681	-0.00070	-0.00531
277	-0.01644	0.11810	-0.00354	0.00000	0.00000	0.00000
278	0.03519	0.09052	0.00023	0.00000	0.00000	0.00000
279	-0.01823	0.11843	0.00386	0.00000	0.00000	0.00000
280	-0.00151	0.11832	0.00079	0.00000	0.00000	0.00000
281	0.01363	0.09052	-0.00202	0.00000	0.00000	0.00000
282	-0.02327	-0.22554	0.05078	0.00000	0.00000	0.00000
283	-0.72109	0.65589	-0.01396	-0.31064	-0.02029	-0.04869
284	-0.72267	1.02467	0.02715	-0.20799	0.04781	-0.03873
285	0.70219	0.71296	0.02575	-0.31148	0.00790	0.03470
286	0.69689	0.61797	0.01874	0.35618	-0.01328	0.03235
472	0.00450	0.05084	-0.04032	0.00000	0.00000	0.00000
SUM	0.00000	11.23007	0.24000	-0.47611	0.03602	0.03660

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

46	-0.02797	0.19301	0.01830	0.00000	0.00000	0.00000
47	-0.00179	0.18590	0.00051	0.00000	0.00000	0.00000
48	-0.00174	0.20654	0.00025	0.00000	0.00000	0.00000
49	-0.01461	0.17688	-0.00103	0.00000	0.00000	0.00000
50	0.11226	1.06866	-0.05167	0.00000	0.00000	0.00000
51	0.07016	0.79054	0.03560	0.00000	0.00000	0.00000
52	0.05181	1.28512	0.03258	0.00000	0.00000	0.00000
53	0.01959	0.46792	0.00430	0.00000	0.00000	0.00000
55	0.01792	0.40016	-0.00154	0.00000	0.00000	0.00000
56	0.01417	0.53413	-0.00292	0.00000	0.00000	0.00000
57	0.03927	1.04088	0.01159	0.00000	0.00000	0.00000

58	0.01882	0.71896	0.03386	0.00000	0.00000	0.00000
192	0.00479	0.25094	-0.00584	-0.08628	0.00425	0.05935
193	0.01401	0.17655	0.00017	0.09396	0.00746	0.00460
194	0.00025	0.16899	-0.00034	0.09486	-0.00026	-0.00513
195	0.00163	0.19983	0.00008	-0.08570	-0.00079	-0.00532
277	-0.01952	0.11806	-0.00309	0.00000	0.00000	0.00000
278	0.03403	0.09052	0.00024	0.00000	0.00000	0.00000
279	-0.01901	0.11843	0.00401	0.00000	0.00000	0.00000
280	-0.00204	0.11833	0.00082	0.00000	0.00000	0.00000
281	0.01469	0.09052	-0.00205	0.00000	0.00000	0.00000
282	-0.04433	-0.20717	0.04364	0.00000	0.00000	0.00000
283	-0.70814	0.63588	-0.05120	-0.29742	0.00346	-0.05432
284	-0.70101	1.05412	0.00661	-0.21866	0.01546	-0.03984
285	0.70704	0.69998	-0.02514	-0.39099	0.01003	0.03227
286	0.69628	0.64381	-0.01424	0.36532	-0.01501	0.03004
472	0.01742	0.00257	-0.03349	0.00000	0.00000	0.00000
SUM	0.29400	11.23007	0.00000	-0.52491	0.02460	0.02165

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

46	-0.00500	0.19818	0.00750	0.00000	0.00000	0.00000
47	-0.00283	0.17679	0.00039	0.00000	0.00000	0.00000
48	-0.00179	0.21222	0.00025	0.00000	0.00000	0.00000
49	-0.01344	0.16895	-0.00095	0.00000	0.00000	0.00000
50	0.02299	1.03430	-0.04619	0.00000	0.00000	0.00000
51	0.03604	0.80466	0.01811	0.00000	0.00000	0.00000
52	-0.00561	1.29668	0.01141	0.00000	0.00000	0.00000
53	0.00566	0.45472	0.00124	0.00000	0.00000	0.00000
55	-0.00206	0.40052	-0.00113	0.00000	0.00000	0.00000
56	-0.01458	0.51541	-0.00292	0.00000	0.00000	0.00000
57	0.00170	1.06739	-0.01301	0.00000	0.00000	0.00000
58	-0.00671	0.79325	0.00796	0.00000	0.00000	0.00000
192	0.00095	0.25306	-0.00315	-0.08496	0.00318	0.05731
193	0.01342	0.14951	0.00013	0.10242	0.00719	0.00461
194	-0.00071	0.13975	-0.00031	0.10409	-0.00076	-0.00524
195	0.00227	0.20263	0.00008	-0.08488	-0.00114	-0.00532
277	-0.01955	0.11805	-0.00261	0.00000	0.00000	0.00000
278	0.03323	0.09052	0.00025	0.00000	0.00000	0.00000
279	-0.01485	0.11838	0.00396	0.00000	0.00000	0.00000
280	-0.00017	0.11831	0.00089	0.00000	0.00000	0.00000
281	0.01256	0.09052	-0.00190	0.00000	0.00000	0.00000
282	0.00049	-0.18587	0.03138	0.00000	0.00000	0.00000
283	-0.71946	0.60970	-0.08965	-0.35124	-0.01565	-0.04793
284	-0.72550	1.06138	-0.02303	-0.15360	0.04655	-0.03854
285	0.70577	0.70751	-0.08178	-0.39707	0.01050	0.03463
286	0.69480	0.67990	-0.03229	0.31525	-0.01494	0.03207
472	0.00236	-0.04636	-0.02463	0.00000	0.00000	0.00000
SUM	0.00000	11.23007	-0.24000	-0.54999	0.03493	0.03158

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

46	0.00711	0.18975	0.00770	0.00000	0.00000	0.00000
47	-0.00649	0.18569	0.00061	0.00000	0.00000	0.00000
48	-0.00208	0.20570	0.00028	0.00000	0.00000	0.00000
49	-0.01450	0.17676	-0.00103	0.00000	0.00000	0.00000
50	-0.03213	1.08462	-0.03334	0.00000	0.00000	0.00000
51	0.00676	0.81246	0.02200	0.00000	0.00000	0.00000
52	-0.06726	1.27312	0.04198	0.00000	0.00000	0.00000
53	-0.01002	0.45441	0.00462	0.00000	0.00000	0.00000

55	-0.02289	0.40622	0.00132	0.00000	0.00000	0.00000
56	-0.04248	0.51274	-0.00277	0.00000	0.00000	0.00000
57	-0.04309	1.04544	0.01248	0.00000	0.00000	0.00000
58	-0.02672	0.71736	0.02793	0.00000	0.00000	0.00000
192	-0.00110	0.25355	-0.00372	-0.08584	0.00498	0.06096
193	0.01514	0.17666	0.00020	0.09389	0.00804	0.00448
194	0.00023	0.16680	-0.00034	0.09561	-0.00027	-0.00531
195	0.00212	0.19915	0.00009	-0.08599	-0.00105	-0.00530
277	-0.01648	0.11810	-0.00307	0.00000	0.00000	0.00000
278	0.03440	0.09052	0.00023	0.00000	0.00000	0.00000
279	-0.01407	0.11837	0.00382	0.00000	0.00000	0.00000
280	0.00036	0.11830	0.00086	0.00000	0.00000	0.00000
281	0.01151	0.09052	-0.00186	0.00000	0.00000	0.00000
282	0.02147	-0.20421	0.03851	0.00000	0.00000	0.00000
283	-0.73242	0.62971	-0.05240	-0.36447	-0.03939	-0.04230
284	-0.74715	1.03193	-0.00249	-0.14291	0.07889	-0.03742
285	0.70092	0.72049	-0.03088	-0.31757	0.00837	0.03706
286	0.69541	0.65407	0.00068	0.30611	-0.01320	0.03437
472	-0.01055	0.00187	-0.03140	0.00000	0.00000	0.00000
SUM	-0.29400	11.23007	0.00000	-0.50120	0.04636	0.04653

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

46	-0.01584	0.18448	0.01853	0.00000	0.00000	0.00000
47	-0.00560	0.19546	0.00074	0.00000	0.00000	0.00000
48	-0.00230	0.19423	0.00024	0.00000	0.00000	0.00000
49	-0.00851	0.19312	-0.00061	0.00000	0.00000	0.00000
50	0.05752	1.11933	-0.03894	0.00000	0.00000	0.00000
51	0.03360	0.80203	0.04023	0.00000	0.00000	0.00000
52	-0.00426	0.70166	0.02421	0.00000	0.00000	0.00000
53	0.00364	0.47392	0.01023	0.00000	0.00000	0.00000
55	-0.00263	0.40837	0.00152	0.00000	0.00000	0.00000
56	-0.01356	0.53244	-0.00244	0.00000	0.00000	0.00000
57	-0.01811	1.01397	0.03925	0.00000	0.00000	0.00000
58	-0.02324	0.60627	0.04523	0.00000	0.00000	0.00000
192	0.00290	0.25033	-0.00643	-0.08751	0.00597	0.06304
193	0.01563	0.20801	0.00025	0.08406	0.00826	0.00443
194	0.00181	0.20537	-0.00020	0.08390	0.00075	-0.00637
195	0.00111	0.19439	0.00008	-0.08742	-0.00051	-0.00528
277	-0.01553	0.11812	-0.00358	0.00000	0.00000	0.00000
278	0.03537	0.09052	0.00024	0.00000	0.00000	0.00000
279	0.01428	0.11805	0.00153	0.00000	0.00000	0.00000
280	-0.00213	0.11833	0.00082	0.00000	0.00000	0.00000
281	0.01344	0.09052	-0.00203	0.00000	0.00000	0.00000
282	-0.02337	-0.22564	0.05086	0.00000	0.00000	0.00000
283	-0.71981	0.68066	0.02137	-0.29100	-0.02054	-0.04875
284	-0.72381	0.72653	0.02966	0.22236	0.04945	-0.03838
285	0.70206	0.71291	0.02605	-0.31130	0.00810	0.03480
286	0.69665	0.61974	0.01699	0.35314	-0.01318	0.03274
472	0.00069	0.09693	-0.03378	0.00000	0.00000	0.00000
SUM	0.00000	10.43007	0.24000	-0.03376	0.03830	0.03622

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

46	-0.02799	0.19293	0.01833	0.00000	0.00000	0.00000
47	-0.00194	0.18655	0.00052	0.00000	0.00000	0.00000
48	-0.00201	0.20075	0.00021	0.00000	0.00000	0.00000
49	-0.00747	0.18532	-0.00054	0.00000	0.00000	0.00000
50	0.11274	1.06898	-0.05179	0.00000	0.00000	0.00000
51	0.06288	0.79424	0.03635	0.00000	0.00000	0.00000
52	0.05742	0.72523	-0.00639	0.00000	0.00000	0.00000
53	0.01932	0.47424	0.00684	0.00000	0.00000	0.00000
55	0.01819	0.40267	-0.00094	0.00000	0.00000	0.00000
56	0.01436	0.53512	-0.00258	0.00000	0.00000	0.00000
57	0.02666	1.03594	0.01377	0.00000	0.00000	0.00000
58	-0.00322	0.68221	0.02529	0.00000	0.00000	0.00000
192	0.00495	0.24984	-0.00586	-0.08663	0.00418	0.05938
193	0.01393	0.18084	0.00017	0.09260	0.00741	0.00456
194	0.00086	0.17831	-0.00018	0.09238	0.00026	-0.00630
195	0.00126	0.19787	0.00007	-0.08630	-0.00061	-0.00529
277	-0.01861	0.11807	-0.00312	0.00000	0.00000	0.00000
278	0.03421	0.09052	0.00026	0.00000	0.00000	0.00000
279	0.01351	0.11806	0.00167	0.00000	0.00000	0.00000
280	-0.00266	0.11834	0.00085	0.00000	0.00000	0.00000
281	0.01450	0.09052	-0.00206	0.00000	0.00000	0.00000
282	-0.04443	-0.20727	0.04371	0.00000	0.00000	0.00000
283	-0.70686	0.66066	-0.01584	-0.27776	0.00321	-0.05439
284	-0.70215	0.75596	0.00911	0.21168	0.01711	-0.03950
285	0.70691	0.69993	-0.02485	-0.39081	0.01022	0.03237
286	0.69604	0.64558	-0.01599	0.36228	-0.01491	0.03044
472	0.01361	0.04867	-0.02702	0.00000	0.00000	0.00000
SUM	0.29400	10.43007	0.00000	-0.08255	0.02687	0.02127

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

46	-0.00502	0.19810	0.00753	0.00000	0.00000	0.00000
47	-0.00297	0.17744	0.00040	0.00000	0.00000	0.00000
48	-0.00205	0.20643	0.00020	0.00000	0.00000	0.00000
49	-0.00634	0.17739	-0.00046	0.00000	0.00000	0.00000
50	0.02346	1.03462	-0.04631	0.00000	0.00000	0.00000
51	0.02876	0.80836	0.01887	0.00000	0.00000	0.00000
52	0.00002	0.73680	-0.02758	0.00000	0.00000	0.00000
53	0.00540	0.46103	0.00378	0.00000	0.00000	0.00000
55	-0.00179	0.40304	-0.00053	0.00000	0.00000	0.00000
56	-0.01439	0.51640	-0.00258	0.00000	0.00000	0.00000
57	-0.01092	1.06244	-0.01083	0.00000	0.00000	0.00000
58	-0.02875	0.75649	-0.00053	0.00000	0.00000	0.00000
192	0.00112	0.25196	-0.00316	-0.08531	0.00311	0.05733
193	0.01335	0.15380	0.00013	0.10107	0.00715	0.00458
194	-0.00011	0.14907	-0.00015	0.10161	-0.00024	-0.00642
195	0.00190	0.20067	0.00007	-0.08548	-0.00096	-0.00529
277	-0.01865	0.11806	-0.00265	0.00000	0.00000	0.00000
278	0.03342	0.09052	0.00026	0.00000	0.00000	0.00000
279	0.01766	0.11800	0.00163	0.00000	0.00000	0.00000
280	-0.00079	0.11831	0.00092	0.00000	0.00000	0.00000
281	0.01238	0.09052	-0.00191	0.00000	0.00000	0.00000
282	0.00039	-0.18596	0.03145	0.00000	0.00000	0.00000
283	-0.71818	0.63449	-0.05426	-0.33158	-0.01590	-0.04800
284	-0.72664	0.76320	-0.02054	0.27675	0.04819	-0.03819
285	0.70564	0.70746	-0.08149	-0.39689	0.01069	0.03474
286	0.69456	0.68167	-0.03404	0.31221	-0.01483	0.03246
472	-0.00145	-0.00026	-0.01824	0.00000	0.00000	0.00000

SUM	0.00000	10.43007	-0.24000	-0.10762	0.03721	0.03121

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

46	0.00709	0.18967	0.00773	0.00000	0.00000	0.00000
47	-0.00664	0.18635	0.00062	0.00000	0.00000	0.00000
48	-0.00234	0.19991	0.00023	0.00000	0.00000	0.00000
49	-0.00737	0.18520	-0.00053	0.00000	0.00000	0.00000
50	-0.03166	1.08493	-0.03345	0.00000	0.00000	0.00000
51	-0.00052	0.81616	0.02276	0.00000	0.00000	0.00000
52	-0.06166	0.71323	0.00300	0.00000	0.00000	0.00000
53	-0.01029	0.46072	0.00716	0.00000	0.00000	0.00000
55	-0.02261	0.40874	0.00193	0.00000	0.00000	0.00000
56	-0.04229	0.51373	-0.00243	0.00000	0.00000	0.00000
57	-0.05570	1.04049	0.01466	0.00000	0.00000	0.00000
58	-0.04876	0.68061	0.01936	0.00000	0.00000	0.00000
192	-0.00094	0.25245	-0.00373	-0.08619	0.00490	0.06098
193	0.01506	0.18095	0.00020	0.09253	0.00800	0.00444
194	0.00083	0.17612	-0.00018	0.09313	0.00025	-0.00649
195	0.00175	0.19719	0.00008	-0.08660	-0.00087	-0.00528
277	-0.01557	0.11811	-0.00310	0.00000	0.00000	0.00000
278	0.03458	0.09052	0.00025	0.00000	0.00000	0.00000
279	0.01844	0.11800	0.00148	0.00000	0.00000	0.00000
280	-0.00026	0.11831	0.00089	0.00000	0.00000	0.00000
281	0.01132	0.09052	-0.00188	0.00000	0.00000	0.00000
282	0.02137	-0.20431	0.03859	0.00000	0.00000	0.00000
283	-0.73113	0.65448	-0.01704	-0.34483	-0.03964	-0.04237
284	-0.74830	0.73377	0.00002	0.28745	0.08053	-0.03707
285	0.70079	0.72043	-0.03059	-0.31739	0.00856	0.03717
286	0.69516	0.65584	-0.00107	0.30307	-0.01310	0.03476
472	-0.01437	0.04797	-0.02493	0.00000	0.00000	0.00000
SUM	-0.29400	10.43007	0.00000	-0.05883	0.04863	0.04615

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

46	-0.01589	0.18444	0.01857	0.00000	0.00000	0.00000
47	-0.00526	0.19531	0.00072	0.00000	0.00000	0.00000
48	-0.00216	0.19647	0.00023	0.00000	0.00000	0.00000
49	-0.00833	0.19212	-0.00060	0.00000	0.00000	0.00000
50	0.06735	1.10881	-0.03903	0.00000	0.00000	0.00000
51	0.05293	0.79259	0.04109	0.00000	0.00000	0.00000
52	0.02415	0.74333	0.02121	0.00000	0.00000	0.00000
53	0.01763	0.48113	0.00920	0.00000	0.00000	0.00000
55	0.02301	0.40711	-0.00006	0.00000	0.00000	0.00000
56	0.01101	0.52875	-0.00132	0.00000	0.00000	0.00000
57	0.01423	1.01234	0.03831	0.00000	0.00000	0.00000
58	0.00064	0.62918	0.04834	0.00000	0.00000	0.00000
192	0.00311	0.24975	-0.00645	-0.08769	0.00588	0.06307
193	0.01564	0.20700	0.00024	0.08439	0.00827	0.00446
194	0.00174	0.20441	-0.00020	0.08407	0.00072	-0.00603
195	0.00127	0.19558	0.00007	-0.08703	-0.00060	-0.00523
277	-0.01649	0.11810	-0.00357	0.00000	0.00000	0.00000
278	0.03534	0.09052	0.00023	0.00000	0.00000	0.00000
279	0.00481	0.11816	0.00199	0.00000	0.00000	0.00000
280	-0.00317	0.11834	0.00072	0.00000	0.00000	0.00000
281	0.01320	0.09052	-0.00194	0.00000	0.00000	0.00000
282	-0.02377	-0.22578	0.05081	0.00000	0.00000	0.00000
283	-0.76875	0.96744	0.02124	-0.68983	-0.09672	-0.06009
284	-0.85501	1.22741	0.03215	0.67486	0.22953	-0.04594
285	0.70234	0.71422	0.02594	-0.30859	0.00821	0.03298
286	0.69679	0.61436	0.01686	0.36201	-0.01335	0.03139

472	0.01365	0.06845	-0.03475	0.00000	0.00000	0.00000
SUM	0.00000	11.23007	0.24000	0.03218	0.14194	0.01461

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

46	-0.02805	0.19289	0.01837	0.00000	0.00000	0.00000
47	-0.00159	0.18640	0.00050	0.00000	0.00000	0.00000
48	-0.00187	0.20299	0.00020	0.00000	0.00000	0.00000
49	-0.00730	0.18431	-0.00052	0.00000	0.00000	0.00000
50	0.12257	1.05846	-0.05188	0.00000	0.00000	0.00000
51	0.08222	0.78479	0.03721	0.00000	0.00000	0.00000
52	0.08582	0.76690	-0.00937	0.00000	0.00000	0.00000
53	0.03330	0.48143	0.00582	0.00000	0.00000	0.00000
55	0.04382	0.40141	-0.00251	0.00000	0.00000	0.00000
56	0.03893	0.53143	-0.00146	0.00000	0.00000	0.00000
57	0.05900	1.03429	0.01284	0.00000	0.00000	0.00000
58	0.02065	0.70509	0.02840	0.00000	0.00000	0.00000
192	0.00516	0.24927	-0.00587	-0.08682	0.00408	0.05941
193	0.01393	0.17984	0.00017	0.09293	0.00743	0.00460
194	0.00079	0.17736	-0.00017	0.09255	0.00023	-0.00596
195	0.00142	0.19907	0.00007	-0.08592	-0.00070	-0.00524
277	-0.01957	0.11806	-0.00311	0.00000	0.00000	0.00000
278	0.03418	0.09052	0.00024	0.00000	0.00000	0.00000
279	0.00404	0.11817	0.00214	0.00000	0.00000	0.00000
280	-0.00370	0.11835	0.00075	0.00000	0.00000	0.00000
281	0.01426	0.09052	-0.00198	0.00000	0.00000	0.00000
282	-0.04483	-0.20742	0.04367	0.00000	0.00000	0.00000
283	-0.75578	0.94743	-0.01598	-0.67664	-0.07292	-0.06572
284	-0.83334	1.25686	0.01158	0.66423	0.19716	-0.04706
285	0.70718	0.70124	-0.02496	-0.38810	0.01034	0.03055
286	0.69618	0.64020	-0.01612	0.37115	-0.01508	0.02909
472	0.02658	0.02021	-0.02800	0.00000	0.00000	0.00000
SUM	0.29400	11.23007	0.00000	-0.01662	0.13054	-0.00034

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

46	-0.00508	0.19805	0.00758	0.00000	0.00000	0.00000
47	-0.00263	0.17730	0.00038	0.00000	0.00000	0.00000
48	-0.00192	0.20867	0.00019	0.00000	0.00000	0.00000
49	-0.00617	0.17639	-0.00045	0.00000	0.00000	0.00000
50	0.03329	1.02411	-0.04640	0.00000	0.00000	0.00000
51	0.04810	0.79891	0.01973	0.00000	0.00000	0.00000
52	0.02844	0.77848	-0.03055	0.00000	0.00000	0.00000
53	0.01938	0.46823	0.00276	0.00000	0.00000	0.00000
55	0.02384	0.40177	-0.00210	0.00000	0.00000	0.00000
56	0.01017	0.51270	-0.00146	0.00000	0.00000	0.00000
57	0.02143	1.06078	-0.01176	0.00000	0.00000	0.00000
58	-0.00486	0.77934	0.00259	0.00000	0.00000	0.00000
192	0.00133	0.25139	-0.00318	-0.08550	0.00301	0.05737
193	0.01335	0.15281	0.00012	0.10139	0.00716	0.00461
194	-0.00018	0.14814	-0.00015	0.10178	-0.00027	-0.00608
195	0.00206	0.20187	0.00006	-0.08510	-0.00105	-0.00524
277	-0.01960	0.11805	-0.00264	0.00000	0.00000	0.00000
278	0.03338	0.09052	0.00025	0.00000	0.00000	0.00000
279	0.00819	0.11811	0.00209	0.00000	0.00000	0.00000
280	-0.00182	0.11832	0.00082	0.00000	0.00000	0.00000
281	0.01214	0.09052	-0.00182	0.00000	0.00000	0.00000
282	-0.00001	-0.18611	0.03141	0.00000	0.00000	0.00000
283	-0.76709	0.92125	-0.05441	-0.73047	-0.09202	-0.05934

284	-0.85789	1.26411	-0.01809	0.72926	0.22831	-0.04575
285	0.70591	0.70877	-0.08158	-0.39417	0.01081	0.03292
286	0.69470	0.67628	-0.03418	0.32108	-0.01501	0.03111
472	0.01153	-0.02870	-0.01923	0.00000	0.00000	0.00000
SUM	0.00000	11.23007	-0.24000	-0.04174	0.14094	0.00960

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

46	0.00704	0.18962	0.00778	0.00000	0.00000	0.00000
47	-0.00630	0.18620	0.00059	0.00000	0.00000	0.00000
48	-0.00221	0.20215	0.00022	0.00000	0.00000	0.00000
49	-0.00720	0.18419	-0.00052	0.00000	0.00000	0.00000
50	-0.02182	1.07442	-0.03354	0.00000	0.00000	0.00000
51	0.01882	0.80671	0.02361	0.00000	0.00000	0.00000
52	-0.03323	0.75491	0.00002	0.00000	0.00000	0.00000
53	0.00370	0.46792	0.00614	0.00000	0.00000	0.00000
55	0.00302	0.40747	0.00035	0.00000	0.00000	0.00000
56	-0.01772	0.51003	-0.00132	0.00000	0.00000	0.00000
57	-0.02335	1.03884	0.01373	0.00000	0.00000	0.00000
58	-0.02487	0.70349	0.02247	0.00000	0.00000	0.00000
192	-0.00073	0.25187	-0.00375	-0.08638	0.00481	0.06102
193	0.01507	0.17996	0.00020	0.09286	0.00801	0.00448
194	0.00077	0.17517	-0.00017	0.09330	0.00022	-0.00615
195	0.00190	0.19838	0.00007	-0.08621	-0.00096	-0.00523
277	-0.01653	0.11810	-0.00309	0.00000	0.00000	0.00000
278	0.03454	0.09052	0.00023	0.00000	0.00000	0.00000
279	0.00897	0.11811	0.00195	0.00000	0.00000	0.00000
280	-0.00129	0.11832	0.00079	0.00000	0.00000	0.00000
281	0.01108	0.09052	-0.00179	0.00000	0.00000	0.00000
282	0.02097	-0.20446	0.03854	0.00000	0.00000	0.00000
283	-0.78006	0.94126	-0.01718	-0.74366	-0.11581	-0.05371
284	-0.87955	1.23466	0.00249	0.73990	0.26067	-0.04463
285	0.70107	0.72174	-0.03069	-0.31468	0.00868	0.03535
286	0.69531	0.65045	-0.00121	0.31194	-0.01327	0.03342
472	-0.00140	0.01951	-0.02591	0.00000	0.00000	0.00000
SUM	-0.29400	11.23007	0.00000	0.00706	0.15234	0.02454

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

46	-0.01591	0.18436	0.01859	0.00000	0.00000	0.00000
47	-0.00553	0.19547	0.00074	0.00000	0.00000	0.00000
48	-0.00192	0.19552	0.00021	0.00000	0.00000	0.00000
49	-0.00849	0.19356	-0.00061	0.00000	0.00000	0.00000
50	0.07245	1.10348	-0.03928	0.00000	0.00000	0.00000
51	0.03695	0.80023	0.04043	0.00000	0.00000	0.00000
52	0.00058	0.70197	0.02378	0.00000	0.00000	0.00000
53	0.03136	0.57094	0.01451	0.00000	0.00000	0.00000
55	0.03863	0.38542	-0.00478	0.00000	0.00000	0.00000
56	0.01918	0.53354	0.00033	0.00000	0.00000	0.00000
57	-0.01229	1.01335	0.03913	0.00000	0.00000	0.00000
58	-0.01942	0.60581	0.04556	0.00000	0.00000	0.00000
192	0.00332	0.24926	-0.00646	-0.08791	0.00577	0.06302
193	0.01564	0.20807	0.00024	0.08405	0.00827	0.00443
194	0.00184	0.20586	-0.00020	0.08374	0.00077	-0.00635
195	0.00085	0.19381	0.00007	-0.08730	-0.00039	-0.00465
277	-0.01567	0.11812	-0.00358	0.00000	0.00000	0.00000
278	0.03534	0.09052	0.00024	0.00000	0.00000	0.00000
279	0.01378	0.11806	0.00154	0.00000	0.00000	0.00000
280	-0.02119	0.11854	-0.00056	0.00000	0.00000	0.00000

281	0.01618	0.09052	-0.00166	0.00000	0.00000	0.00000
282	-0.02487	-0.22591	0.05071	0.00000	0.00000	0.00000
283	-0.83659	1.38420	0.02290	-0.08426	-0.00504	-0.11023
284	-0.72529	0.76389	0.02937	0.27893	0.04955	-0.03941
285	0.70206	0.71527	0.02579	-0.30690	0.00895	0.03261
286	0.69600	0.61889	0.01662	0.35494	-0.01310	0.03217
472	0.00302	0.09733	-0.03365	0.00000	0.00000	0.00000
SUM	0.00000	11.23007	0.24000	0.23528	0.05479	-0.02840

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

46	-0.02807	0.19281	0.01839	0.00000	0.00000	0.00000
47	-0.00186	0.18656	0.00052	0.00000	0.00000	0.00000
48	-0.00163	0.20205	0.00018	0.00000	0.00000	0.00000
49	-0.00746	0.18574	-0.00053	0.00000	0.00000	0.00000
50	0.12767	1.05312	-0.05213	0.00000	0.00000	0.00000
51	0.06623	0.79243	0.03655	0.00000	0.00000	0.00000
52	0.06226	0.72557	-0.00682	0.00000	0.00000	0.00000
53	0.04703	0.57124	0.01112	0.00000	0.00000	0.00000
55	0.05946	0.37971	-0.00724	0.00000	0.00000	0.00000
56	0.04711	0.53622	0.00019	0.00000	0.00000	0.00000
57	0.03248	1.03531	0.01366	0.00000	0.00000	0.00000
58	0.00059	0.68177	0.02562	0.00000	0.00000	0.00000
192	0.00537	0.24878	-0.00588	-0.08703	0.00398	0.05937
193	0.01394	0.18090	0.00017	0.09259	0.00742	0.00457
194	0.00089	0.17879	-0.00018	0.09223	0.00028	-0.00628
195	0.00101	0.19731	0.00006	-0.08618	-0.00048	-0.00466
277	-0.01875	0.11807	-0.00312	0.00000	0.00000	0.00000
278	0.03418	0.09052	0.00026	0.00000	0.00000	0.00000
279	0.01301	0.11806	0.00168	0.00000	0.00000	0.00000
280	-0.02172	0.11854	-0.00053	0.00000	0.00000	0.00000
281	0.01723	0.09052	-0.00169	0.00000	0.00000	0.00000
282	-0.04593	-0.20754	0.04356	0.00000	0.00000	0.00000
283	-0.82366	1.36412	-0.01425	-0.07107	0.01869	-0.11586
284	-0.70363	0.79340	0.00876	0.26831	0.01721	-0.04053
285	0.70690	0.70229	-0.02511	-0.38641	0.01107	0.03018
286	0.69540	0.64473	-0.01635	0.36408	-0.01483	0.02986
472	0.01594	0.04904	-0.02690	0.00000	0.00000	0.00000
SUM	0.29400	11.23007	0.00000	0.18650	0.04334	-0.04336

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

46	-0.00510	0.19798	0.00760	0.00000	0.00000	0.00000
47	-0.00290	0.17745	0.00039	0.00000	0.00000	0.00000
48	-0.00167	0.20775	0.00017	0.00000	0.00000	0.00000
49	-0.00632	0.17780	-0.00046	0.00000	0.00000	0.00000
50	0.03839	1.01877	-0.04665	0.00000	0.00000	0.00000
51	0.03211	0.80656	0.01906	0.00000	0.00000	0.00000
52	0.00485	0.73716	-0.02800	0.00000	0.00000	0.00000
53	0.03312	0.55801	0.00806	0.00000	0.00000	0.00000
55	0.03946	0.38007	-0.00683	0.00000	0.00000	0.00000
56	0.01834	0.51750	0.00019	0.00000	0.00000	0.00000
57	-0.00510	1.06182	-0.01095	0.00000	0.00000	0.00000
58	-0.02493	0.75608	-0.00020	0.00000	0.00000	0.00000
192	0.00154	0.25091	-0.00319	-0.08572	0.00291	0.05732
193	0.01336	0.15385	0.00013	0.10105	0.00715	0.00458
194	-0.00008	0.14954	-0.00015	0.10146	-0.00022	-0.00640
195	0.00165	0.20011	0.00006	-0.08536	-0.00084	-0.00466
277	-0.01879	0.11806	-0.00265	0.00000	0.00000	0.00000

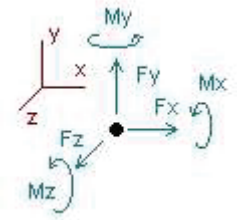
278	0.03339	0.09052	0.00027	0.00000	0.00000	0.00000
279	0.01716	0.11801	0.00164	0.00000	0.00000	0.00000
280	-0.01985	0.11852	-0.00045	0.00000	0.00000	0.00000
281	0.01511	0.09052	-0.00154	0.00000	0.00000	0.00000
282	-0.00110	-0.18623	0.03130	0.00000	0.00000	0.00000
283	-0.83496	1.33787	-0.05260	-0.12498	-0.00039	-0.10947
284	-0.72812	0.80071	-0.02095	0.33346	0.04829	-0.03922
285	0.70563	0.70982	-0.08174	-0.39249	0.01154	0.03255
286	0.69391	0.68081	-0.03440	0.31400	-0.01475	0.03189
472	0.00089	0.00010	-0.01812	0.00000	0.00000	0.00000
SUM	0.00000	11.23007	-0.24000	0.16144	0.05369	-0.03342

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

46	0.00701	0.18955	0.00780	0.00000	0.00000	0.00000
47	-0.00657	0.18636	0.00061	0.00000	0.00000	0.00000
48	-0.00196	0.20122	0.00020	0.00000	0.00000	0.00000
49	-0.00736	0.18562	-0.00053	0.00000	0.00000	0.00000
50	-0.01674	1.06909	-0.03379	0.00000	0.00000	0.00000
51	0.00283	0.81436	0.02295	0.00000	0.00000	0.00000
52	-0.05682	0.71357	0.00257	0.00000	0.00000	0.00000
53	0.01745	0.55771	0.01144	0.00000	0.00000	0.00000
55	0.01863	0.38578	-0.00437	0.00000	0.00000	0.00000
56	-0.00957	0.51482	0.00034	0.00000	0.00000	0.00000
57	-0.04988	1.03986	0.01454	0.00000	0.00000	0.00000
58	-0.04494	0.68017	0.01969	0.00000	0.00000	0.00000
192	-0.00051	0.25139	-0.00376	-0.08659	0.00470	0.06097
193	0.01507	0.18101	0.00020	0.09252	0.00800	0.00445
194	0.00087	0.17660	-0.00018	0.09298	0.00027	-0.00647
195	0.00150	0.19662	0.00007	-0.08647	-0.00074	-0.00465
277	-0.01571	0.11811	-0.00311	0.00000	0.00000	0.00000
278	0.03455	0.09052	0.00025	0.00000	0.00000	0.00000
279	0.01794	0.11800	0.00150	0.00000	0.00000	0.00000
280	-0.01932	0.11851	-0.00049	0.00000	0.00000	0.00000
281	0.01405	0.09052	-0.00151	0.00000	0.00000	0.00000
282	0.01988	-0.20458	0.03844	0.00000	0.00000	0.00000
283	-0.84789	1.35794	-0.01545	-0.13817	-0.02412	-0.10384
284	-0.74977	0.77121	-0.00034	0.34410	0.08063	-0.03810
285	0.70079	0.72279	-0.03085	-0.31300	0.00942	0.03498
286	0.69452	0.65498	-0.00143	0.30486	-0.01302	0.03419
472	-0.01204	0.04835	-0.02481	0.00000	0.00000	0.00000
SUM	-0.29400	11.23007	0.00000	0.21022	0.06513	-0.01847

Envelope for nodal reactions

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



Direction of positive forces and moments

Envelope of nodal reactions for :

LC1=1.2DL+W0
LC2=1.2DL+W30
LC3=1.2DL-W0
LC4=1.2DL-W30
LC5=0.9DL+W0
LC6=0.9DL+W30
LC7=0.9DL-W0
LC8=0.9DL-W30
LC9=1.2DL+Di+Wi0
LC10=1.2DL+Di+Wi30
LC11=1.2DL+Di-Wi0
LC12=1.2DL+Di-Wi30
LC13=1.4DL
LC14=1.2DL+1.6LL1
LC15=1.2DL+1.6LL2
LC16=1.2DL+WL0+1.6LLa1
LC17=1.2DL+WL30+1.6LLa1
LC18=1.2DL-WL0+1.6LLa1
LC19=1.2DL-WL30+1.6LLa1
LC20=1.2DL+WL0+1.6LLa2
LC21=1.2DL+WL30+1.6LLa2
LC22=1.2DL-WL0+1.6LLa2
LC23=1.2DL-WL30+1.6LLa2
LC24=1.2DL+WL0+1.6LLa3
LC25=1.2DL+WL30+1.6LLa3
LC26=1.2DL-WL0+1.6LLa3
LC27=1.2DL-WL30+1.6LLa3
LC28=1.2DL+WL0+1.6LLa4
LC29=1.2DL+WL30+1.6LLa4
LC30=1.2DL-WL0+1.6LLa4
LC31=1.2DL-WL30+1.6LLa4

		Forces						Moments					
Node		**Fx** [Kip]	**Ic**	**Fy** [Kip]	**Ic**	**Fz** [Kip]	**Ic**	**Mx** [Kip*ft]	**Ic**	**My** [Kip*ft]	**Ic**	**Mz** [Kip*ft]	**Ic**
46	Max	0.144	LC7	0.438	LC3	0.465	LC1	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.129	LC1	-0.106	LC5	-0.445	LC7	0.00000	LC1	0.00000	LC1	0.00000	LC1
47	Max	0.354	LC6	0.440	LC1	0.099	LC1	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.362	LC4	-0.111	LC7	-0.098	LC7	0.00000	LC1	0.00000	LC1	0.00000	LC1
48	Max	0.315	LC6	0.503	LC3	0.096	LC1	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.319	LC4	-0.151	LC5	-0.096	LC7	0.00000	LC1	0.00000	LC1	0.00000	LC1
49	Max	0.307	LC6	0.460	LC1	0.091	LC5	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.320	LC4	-0.133	LC7	-0.092	LC3	0.00000	LC1	0.00000	LC1	0.00000	LC1
50	Max	2.014	LC2	2.418	LC1	0.324	LC5	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-1.922	LC8	-0.543	LC7	-0.391	LC3	0.00000	LC1	0.00000	LC1	0.00000	LC1

51	Max	0.855	LC2	1.406	LC12	0.708	LC1	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.799	LC8	0.312	LC6	-0.662	LC7	0.00000	LC1	0.00000	LC1	0.00000	LC1
52	Max	1.401	LC6	1.297	LC18	1.054	LC5	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-1.406	LC4	0.045	LC5	-1.040	LC3	0.00000	LC1	0.00000	LC1	0.00000	LC1
53	Max	0.586	LC2	0.794	LC10	0.546	LC1	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.580	LC8	0.079	LC7	-0.529	LC7	0.00000	LC1	0.00000	LC1	0.00000	LC1
55	Max	0.709	LC6	0.728	LC1	0.681	LC5	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.714	LC4	-0.015	LC7	-0.680	LC7	0.00000	LC1	0.00000	LC1	0.00000	LC1
56	Max	0.900	LC6	0.975	LC1	0.616	LC5	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.913	LC4	-0.068	LC7	-0.618	LC7	0.00000	LC1	0.00000	LC1	0.00000	LC1
57	Max	1.091	LC6	1.830	LC11	1.127	LC1	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-1.117	LC4	0.065	LC5	-1.115	LC7	0.00000	LC1	0.00000	LC1	0.00000	LC1
58	Max	0.653	LC6	2.929	LC3	0.788	LC1	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.699	LC4	-1.767	LC5	-0.690	LC7	0.00000	LC1	0.00000	LC1	0.00000	LC1
192	Max	0.302	LC2	0.498	LC3	0.099	LC5	0.04197	LC7	0.17872	LC2	0.15998	LC1
	Min	-0.298	LC4	-0.058	LC5	-0.107	LC3	-0.19333	LC1	-0.17119	LC8	-0.05433	LC7
193	Max	0.236	LC2	0.966	LC1	0.175	LC1	0.33682	LC3	0.19813	LC4	0.00710	LC11
	Min	-0.211	LC8	-0.637	LC7	-0.175	LC7	-0.17622	LC5	-0.18463	LC6	0.00088	LC5
194	Max	0.224	LC2	1.033	LC1	0.173	LC5	0.35968	LC3	0.18992	LC4	-0.00388	LC6
	Min	-0.223	LC8	-0.710	LC7	-0.173	LC3	-0.19880	LC5	-0.18946	LC6	-0.01019	LC12
195	Max	0.225	LC2	0.494	LC3	0.174	LC1	0.02806	LC7	0.18905	LC6	-0.00252	LC8
	Min	-0.222	LC8	-0.147	LC5	-0.174	LC7	-0.17944	LC1	-0.19037	LC4	-0.00834	LC10
277	Max	0.040	LC5	0.198	LC9	0.177	LC5	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.069	LC3	0.088	LC7	-0.183	LC3	0.00000	LC1	0.00000	LC1	0.00000	LC1
278	Max	0.065	LC1	0.153	LC9	0.162	LC1	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.004	LC7	0.068	LC7	-0.162	LC7	0.00000	LC1	0.00000	LC1	0.00000	LC1
279	Max	0.062	LC3	0.198	LC10	0.191	LC1	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.035	LC5	0.088	LC7	-0.189	LC7	0.00000	LC1	0.00000	LC1	0.00000	LC1
280	Max	0.012	LC8	0.198	LC10	0.188	LC1	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.022	LC29	0.089	LC7	-0.186	LC7	0.00000	LC1	0.00000	LC1	0.00000	LC1
281	Max	0.073	LC2	0.153	LC12	0.159	LC5	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.051	LC8	0.068	LC5	-0.162	LC3	0.00000	LC1	0.00000	LC1	0.00000	LC1
282	Max	0.707	LC8	0.521	LC7	0.703	LC1	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.745	LC6	-0.866	LC1	-0.626	LC7	0.00000	LC1	0.00000	LC1	0.00000	LC1
283	Max	-0.017	LC6	1.584	LC1	2.016	LC5	0.68093	LC6	2.20672	LC7	0.11128	LC8
	Min	-1.501	LC12	-0.428	LC7	-2.061	LC3	-1.22871	LC4	-2.23429	LC5	-0.19551	LC2
284	Max	0.130	LC6	1.558	LC3	1.503	LC1	1.62871	LC3	2.18529	LC3	0.00344	LC8
	Min	-1.534	LC12	-0.250	LC5	-1.494	LC7	-1.19432	LC5	-2.10695	LC5	-0.08169	LC10
285	Max	1.425	LC10	1.109	LC12	2.361	LC5	0.66769	LC8	2.15290	LC5	0.10183	LC4
	Min	0.175	LC8	0.292	LC6	-2.419	LC3	-1.28378	LC2	-2.13910	LC7	-0.04099	LC6
286	Max	1.401	LC9	1.542	LC3	1.435	LC5	1.08506	LC2	2.19802	LC5	0.08915	LC4

	Min	0.259	LC8	-0.404	LC5	-1.442	LC3	-0.50061	LC8	-2.21868	LC7	-0.03212	LC6
472	Max	0.368	LC2	1.539	LC1	0.194	LC5	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.369	LC4	-1.413	LC7	-0.309	LC3	0.00000	LC1	0.00000	LC1	0.00000	LC1

Date: 2/28/2023
Project Name: STAMFORD CENTRAL SBC CO
Project No.: CT2118
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 =** 1584 lbs. (See Bentley Output)

SHEAR FORCES

Reactions in X direction: 1501 lbs. (See Bentley Output)
Reactions in Z direction: 2061 lbs. (See Bentley Output)

Resultant: 2550 lbs.

No. of Supports = 1
No. of Bolts / Support = 2

Tension Design Load /Bolts =

f_t= 792.00 lbs. < 6673 lbs. **Therefore, OK !**

Shear Design Load / Bolts=

f_v= 1274.83 lbs. < 4004 lbs. **Therefore, OK !**

CHECK COMBINED TENSION AND SHEAR

f_t / F_T	+	f_v / F_V	≤	1.0			
0.119	+	0.318	=	0.437	<	1.0	**Therefore, OK !**

Exhibit F

Power Density/RF Emissions Report

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

Calculated Radio Frequency Emissions Report

CT2118

555 Main Street, Stamford, CT

November 10, 2023

Table of Contents

List of Figures

List of Tables

1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed modification of AT&T antenna arrays to be mounted at 235' and 227.9' AGL on a self-support tower on a rooftop located at 555 Main Street in Stamford, CT. The coordinates of the tower are 41° 3' 12.47" N, 73° 32' 8.40" W.

AT&T is proposing the following:

1) Install thirteen (13) multi-band antennas (five (5) on alpha sector, four (4) on beta and gamma sector) to support its commercial LTE network and the FirstNet National Public Safety Broadband Network ("NPSBN").

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

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

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

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

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

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

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

[1] As referenced to AT&T's Radio Frequency Design Sheet, dated 04/26/2021

[2] As referenced to T-Mobile's Connecticut Siting Council Notice of Exempt Modification, 555 Main Street, Stamford, Connecticut, dated September 7, 2022

3. RF Exposure Prediction Methods

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

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

Where:

EIRP = Effective Isotropic Radiated Power

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

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Off Beam Loss is determined by the selected antenna patterns

GRF = Ground Reflection Factor of 1.6

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

4. Antenna Inventory

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

Operator	Sector / Call Sign	TX Freq (MHz)	Power at Antenna (Watts)	Ant Gain (dBi)	Power EIRP (Watts)	Antenna Model	Beam Width	Mech. Tilt	Length (ft)	Antenna Centerline Height (ft)
AT&T	Alpha / 76°	700	160	15.3	5422	HPA-45R-BUU-H6	51	0	6.0	235
		2300	100	18.3	10817		41			
		700	160	15.3	5422	HPA-45R-BUU-H6	51	0	6.0	235
		850	160	15.5	5677		44			
		1900	160	18.0	10095		49			
		700	160	13.9	3928	TPA45R-KU6A	51	0	6.5	235
		2100	240	17.5	13496		41			
		3500	54	25.65	19833	AIR 6419	11	0	2.53	227.9
		3700	87	25.65	31954	AIR 6449	11	0	2.53	227.9
	Beta / 266°	700	160	15.3	5422	HPA-45R-BUU-H6	51	0	6.0	235
		850	160	15.5	5677		44			
		2300	160	18.3	10817		41			
		700	160	13.9	3928	TPA45R-KU6A	51	0	6.5	235
		1900	160	17.3	8593		41			
		2100	240	17.5	13496		41			
		3500	54	25.65	19833	AIR 6419	11	0	2.53	227.9
		3700	87	25.65	31954	AIR 6449	11	0	2.53	227.9
	Gamma / 351°	700	160	12.7	2979	DMP65R-BU4D	75	0	4	235
		850	160	13.0	3192		67			
		2300	100	17.2	5248		57			
		700	160	12.7	2979	QD4616-7	-	0	4.29	235
		700	160	14.0	4019		-			
		1900	160	16.0	6370		-			
		2100	240	17	12028		-			
		3500	54	25.65	19833	AIR 6419	11	0	2.53	235
		3700	87	25.65	31954	AIR 6449	11	0	2.53	235

Table 1: Proposed Antenna Inventory[3][4][5]

[3] AT&T's Radio Frequency Design Sheet, dated 04/26/2021

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

[5] In cases where specific antenna pattern is not available from the manufacturer, similar antenna pattern with similar specifications are used

5. Calculation Results

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

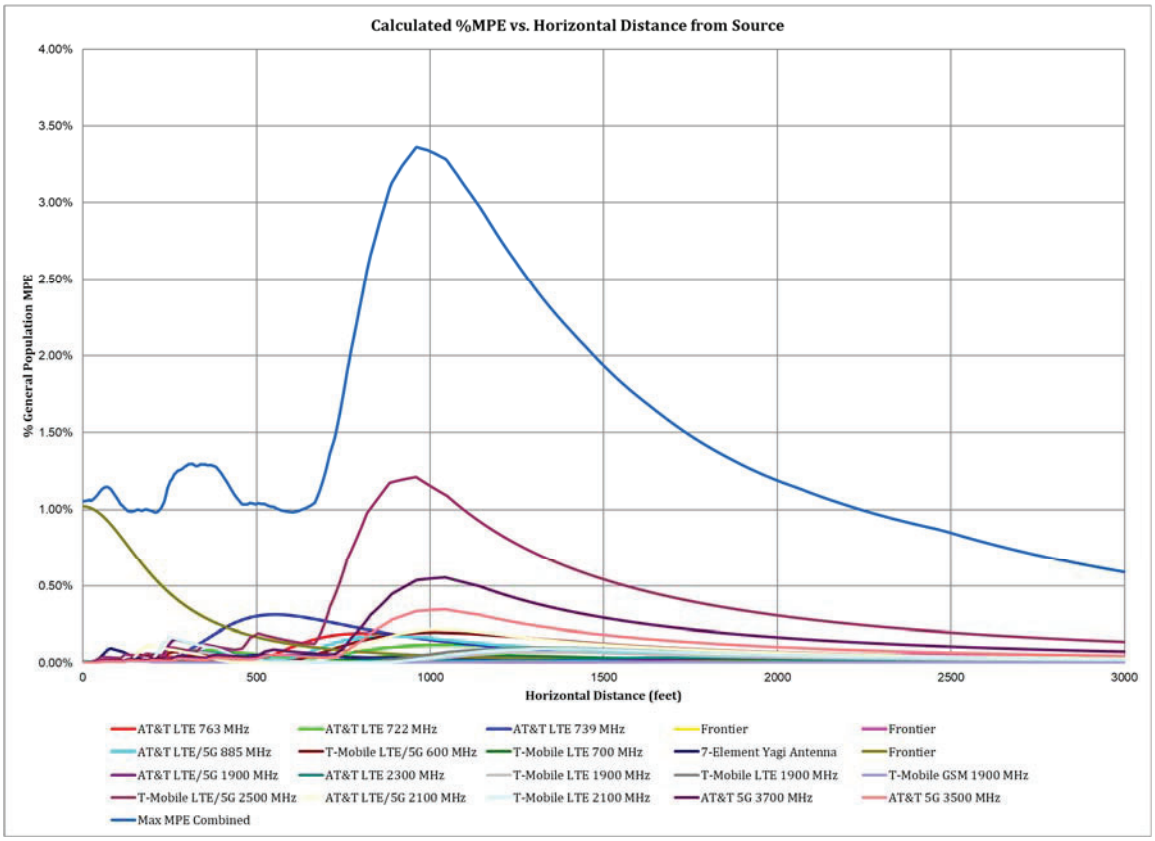


Figure 1: Graph of General Population % MPE vs. Distance

The highest percent of MPE (3.36% of the General Population limit) is calculated to occur at a horizontal distance of 961 feet from antennas. Please note that the percent of MPE calculations close to the site take into account off beam loss, which is determined from the vertical pattern of the antennas used. Therefore, RF power density levels may increase as the distance from the site increases. At distances of approximately 1500 feet and beyond, one would now be in the main beam of the antenna pattern and off beam loss is no longer considered. Beyond this point, RF levels become calculated solely on distance from the site and the percent of MPE decreases significantly as distance from the site increases.

Table 2 below lists percent of MPE values as well as the associated parameters that were included in the calculations. The highest percent of MPE value was calculated to occur at a horizontal distance of 961 feet from the site (reference Figure 1).

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

Carrier	Number of Transmitters	Power out of Base Station Per Transmitter (Watts)	Antenna Height (Feet)	Distance to the Base of Antennas (Feet)	Power Density (mW/cm^2)	Limit (mW/cm^2)	% MPE
7-Element Yagi Antenna	1	100.0	132.0	961	0.000087	0.300	0.03%
AT&T 5G 3500 MHz	1	54.2	227.9	961	0.003364	1.000	0.34%
AT&T 5G 3700 MHz	1	86.8	227.9	961	0.005382	1.000	0.54%
AT&T LTE 2300 MHz	1	100.0	235.0	961	0.000237	1.000	0.02%
AT&T LTE 722 MHz	1	160.0	235.0	961	0.000546	0.481	0.11%
AT&T LTE 739 MHz	1	160.0	235.0	961	0.000804	0.493	0.16%
AT&T LTE 763 MHz	1	160.0	235.0	961	0.000858	0.509	0.17%
AT&T LTE/5G 1900 MHz	1	160.0	235.0	961	0.000148	1.000	0.01%
AT&T LTE/5G 2100 MHz	1	240.0	235.0	961	0.002072	1.000	0.21%
AT&T LTE/5G 885 MHz	1	160.0	235.0	961	0.000992	0.590	0.17%
Frontier	1	1.0	223.5	961	0.000003	1.000	0.00%
Frontier	1	1.0	221.0	961	0.000003	1.000	0.00%
Frontier	1	100.0	229.0	961	0.000157	0.300	0.05%
T-Mobile GSM 1900 MHz	1	15.0	210.0	961	0.000043	1.000	0.00%
T-Mobile LTE 1900 MHz	1	120.0	203.0	961	0.000158	1.000	0.02%
T-Mobile LTE 1900 MHz	1	160.0	210.0	961	0.000462	1.000	0.05%
T-Mobile LTE 2100 MHz	1	160.0	210.0	961	0.000261	1.000	0.03%
T-Mobile LTE 700 MHz	1	40.0	203.0	961	0.000233	0.467	0.05%
T-Mobile LTE/5G 2500 MHz	1	160.0	210.0	961	0.012105	1.000	1.21%
T-Mobile LTE/5G 600 MHz	1	160.0	203.0	961	0.000777	0.400	0.19%
						Total	**3.36%**

Table 2: Maximum Percent of General Population Exposure Values

6. Conclusion

The above analysis verifies that RF exposure levels from the site with AT&T's proposed antenna configuration will be well below the maximum permissible levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Using the conservative calculation methods and parameters detailed above, the maximum cumulative percent of MPE in consideration of all transmitters is calculated to be **3.36% of the FCC limit (General Population/Uncontrolled)**. This maximum cumulative percent of MPE value is calculated to occur 961 feet away from the site.

7. Statement of Certification

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

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

November 10, 2023
Date

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

November 10, 2023
Date

Attachment A: References

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

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

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

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

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

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

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

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

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

Table 3: FCC Limits for Maximum Permissible Exposure

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

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

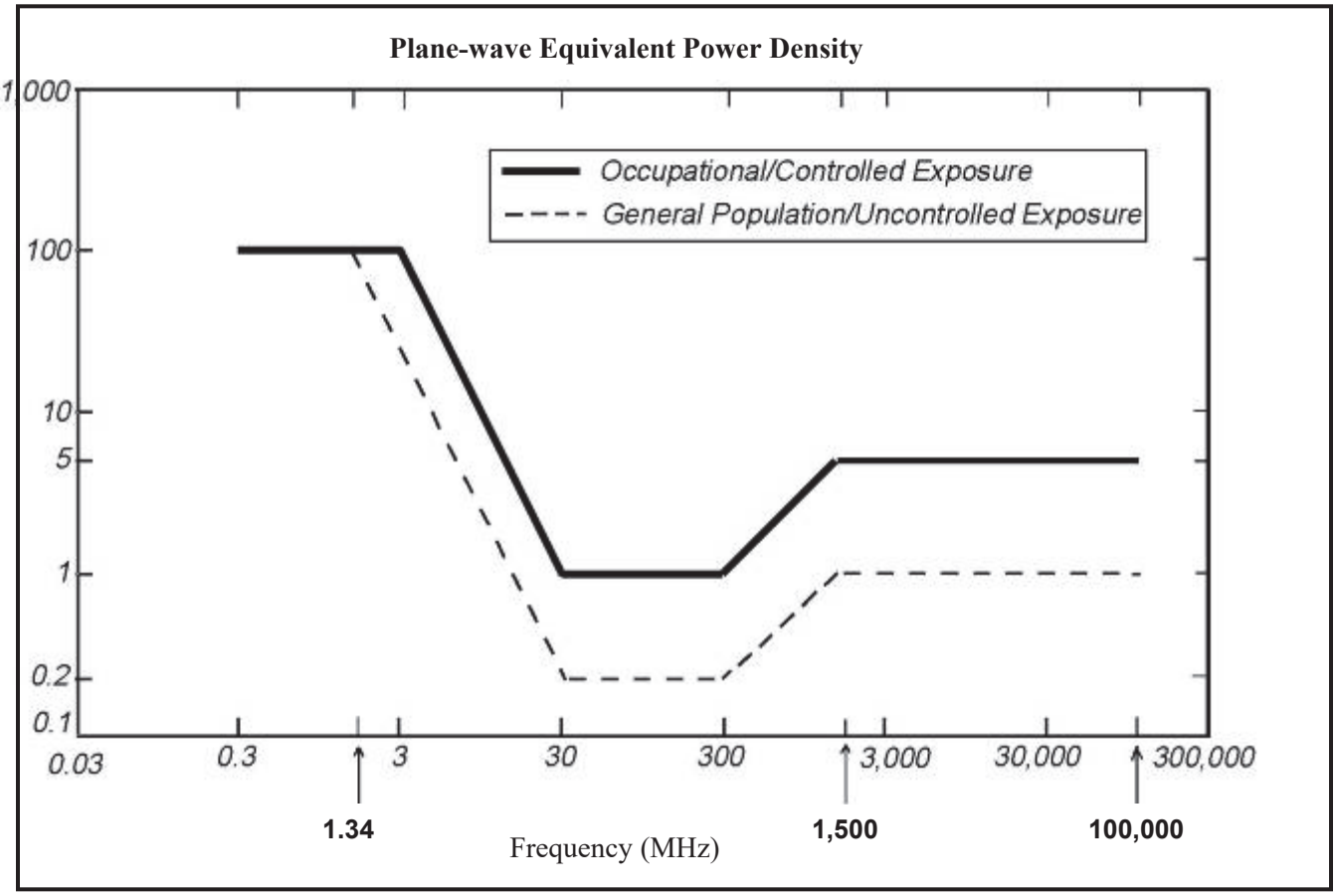
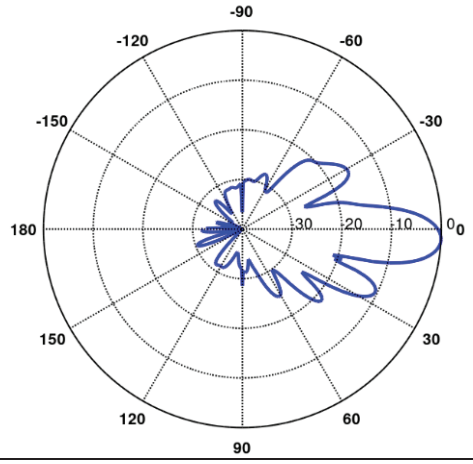
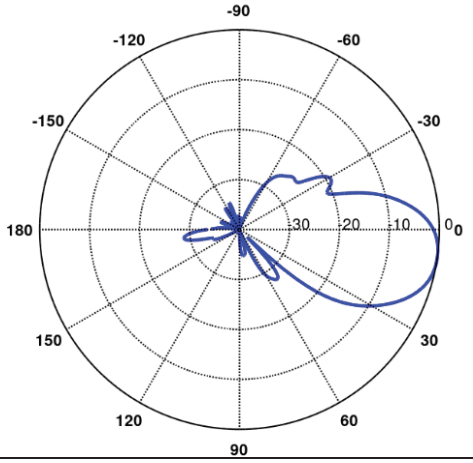
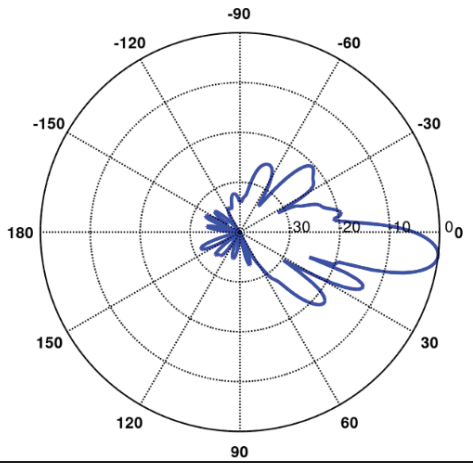


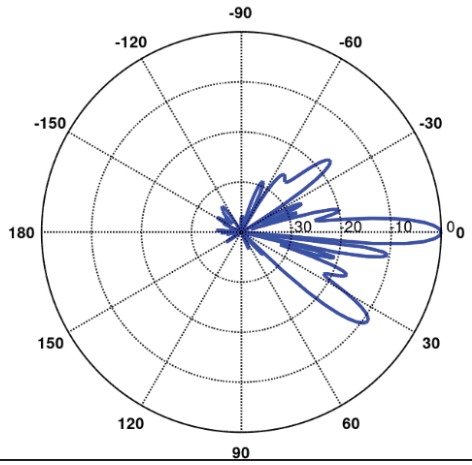
Figure 2: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

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

700 MHz Manufacturer: CCI Model #: HPA-45R-BUU-H6 Frequency Band: 698-806 MHz Gain: 15.3 dBi Vertical Beamwidth: 13.2° Horizontal Beamwidth: 51° Polarization: Dual Linear 45° Dimensions (L x W x D): 72.1” x 18.6” x 8.2”	
700 MHz Manufacturer: CCI Model #: TPA45R-KU6A Frequency Band: 698-806 MHz Gain: 13.9 dBi Vertical Beamwidth: 25.5° Horizontal Beamwidth: 51° Polarization: Dual Linear 45° Dimensions (L x W x D): 78.3” x 15.4” x 8.2”	
850 MHz Manufacturer: CCI Model #: HPA-45R-BUU-H6 Frequency Band: 824-894 MHz Gain: 15.5 dBi Vertical Beamwidth: 11.1° Horizontal Beamwidth: 44° Polarization: Dual Linear 45° Dimensions (L x W x D): 72.1” x 18.6” x 8.2”	

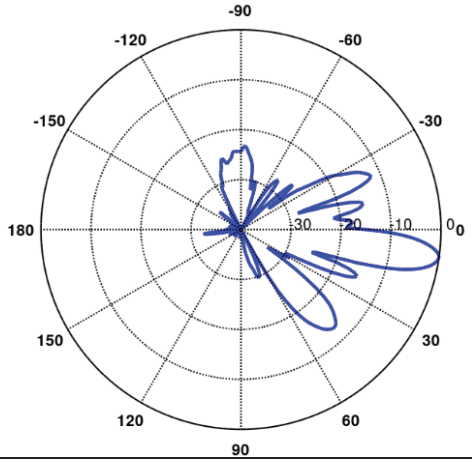
1900 MHz

Manufacturer:	CCI
Model #:	HPA-45R-BUU-H6
Frequency Band:	1850-1990 MHz
Gain:	18.0 dBi
Vertical Beamwidth:	5.7°
Horizontal Beamwidth:	49°
Polarization:	Dual Linear 45°
Dimensions (L x W x D):	72.1” x 18.6” x 8.2”



2100 MHz

Manufacturer:	CCI
Model #:	TPA45R-KU6A
Frequency Band:	1920-2180 MHz
Gain:	17.5 dBi
Vertical Beamwidth:	8.5°
Horizontal Beamwidth:	41°
Polarization:	Dual Linear 45°
Dimensions (L x W x D):	78.3” x 15.4” x 8.2”



2300 MHz

Manufacturer:	CCI
Model #:	HPA-45R-BUU-H6
Frequency Band:	2300-2400 MHz
Gain:	18.3 dBi
Vertical Beamwidth:	4.5°
Horizontal Beamwidth:	41°
Polarization:	Dual Linear 45°
Dimensions (L x W x D):	72.1” x 18.6” x 8.2”

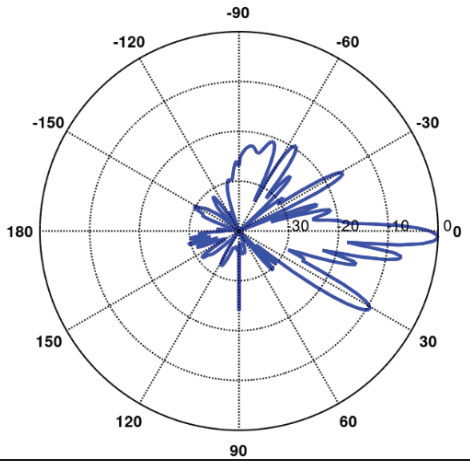
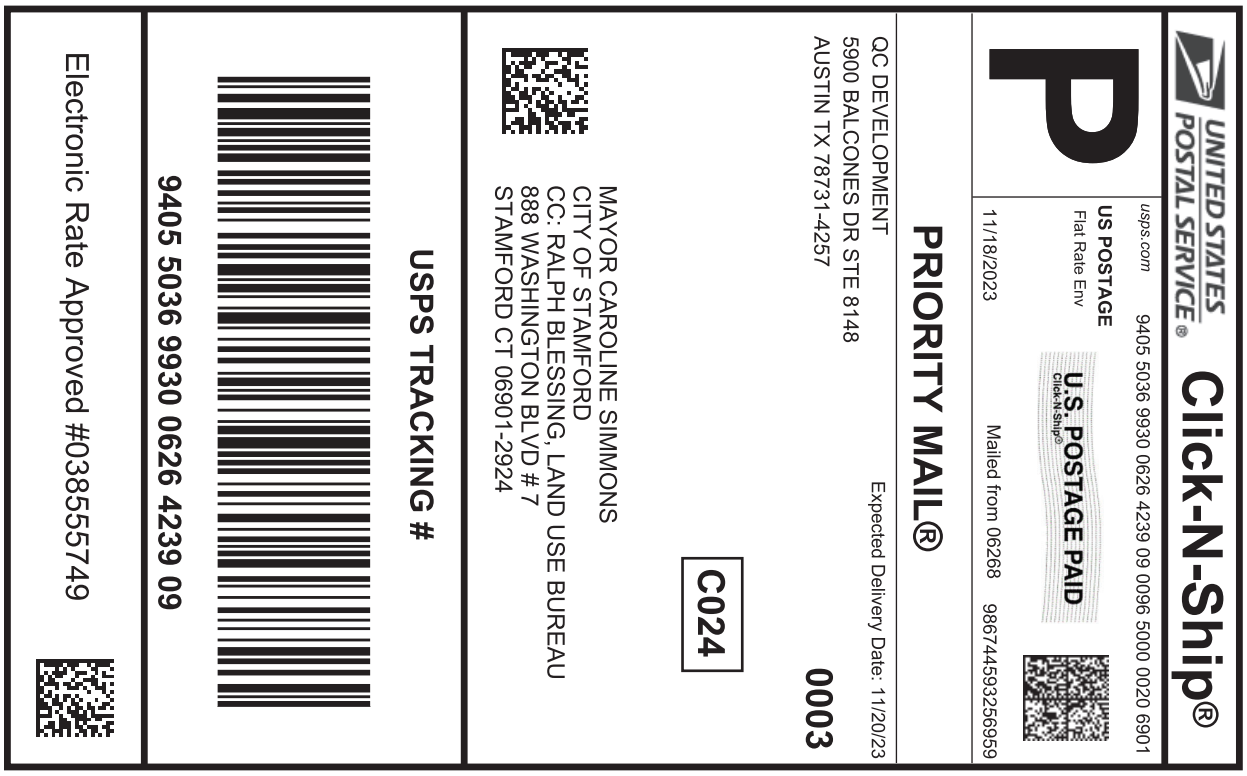


Exhibit G

Recipient Mailings



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Expected Delivery Date:	11/20/2023

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AUSTIN TX 78731-4257

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CITY OF STAMFORD
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STAMFORD CT 06901-2924

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Your item arrived at our USPS facility in STAMFORD CT DISTRIBUTION CENTER on November 19, 2023 at 7:02 am. The item is currently in transit to the destination.

Get More Out of USPS Tracking:

USPS Tracking Plus®

Delivered

Out for Delivery

Preparing for Delivery

Moving Through Network

Arrived at USPS Regional Facility

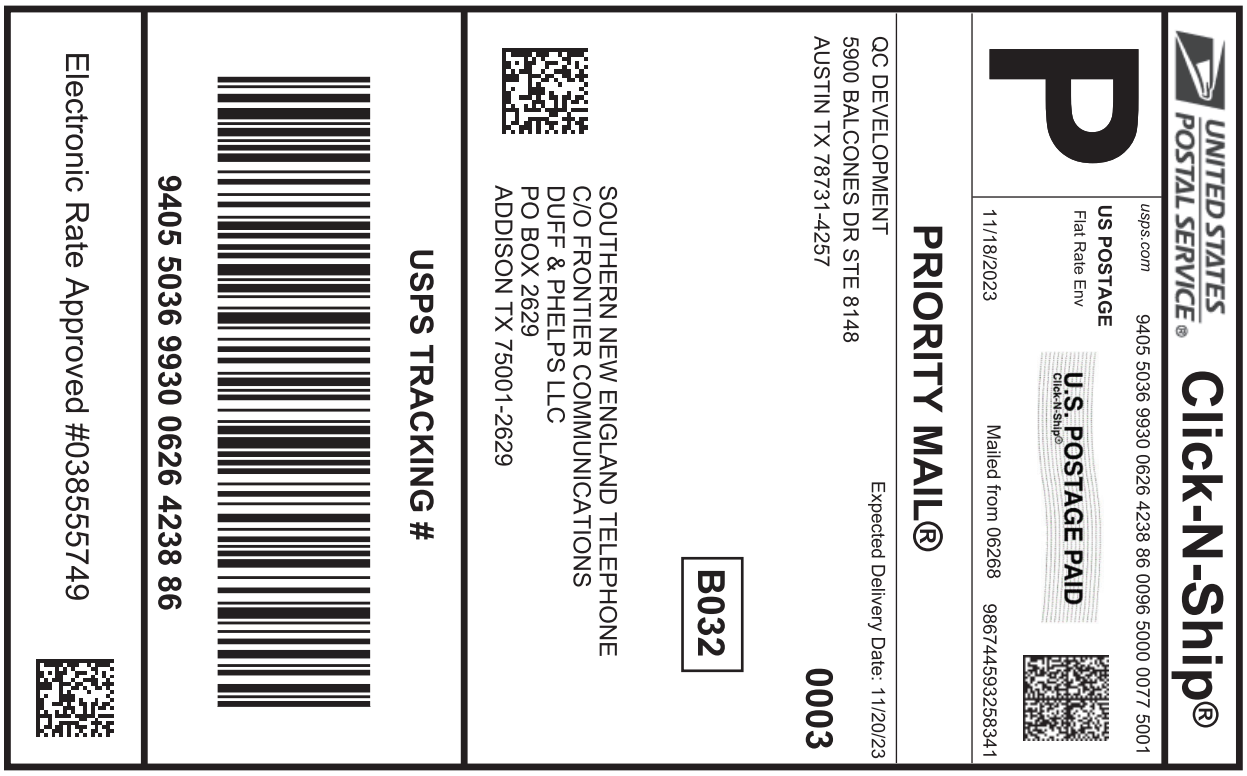
STAMFORD CT DISTRIBUTION CENTER
November 19, 2023, 7:02 am

Departed USPS Regional Facility

SPRINGFIELD MA NETWORK DISTRIBUTION CENTER
November 19, 2023, 4:28 am

See All Tracking History

Feedback



Cut on dotted line.

Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
2. **Place your label so it does not wrap around the edge of the package.**
3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0626 4238 86

Trans. #:	596920614
Print Date:	11/16/2023
Ship Date:	11/18/2023
Expected Delivery Date:	11/20/2023

Priority Mail® Postage:	**$9.65**
Total:	**$9.65**

From: QC DEVELOPMENT
5900 BALCONES DR STE 8148
AUSTIN TX 78731-4257

To: SOUTHERN NEW ENGLAND TELEPHONE
C/O FRONTIER COMMUNICATIONS
DUFF & PHELPS LLC
PO BOX 2629
ADDISON TX 75001-2629

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com

USPS Tracking®

FAQs >

Remove ×

Tracking Number:

9405503699300626423886

Copy Add to Informed Delivery (https://informeddelivery.usps.com/)

Expected Delivery by

MONDAY

20 November 2023 ⓘ

by **9:00pm** ⓘ

Your item arrived at our SPRINGFIELD MA NETWORK DISTRIBUTION CENTER origin facility on November 19, 2023 at 1:16 am. The item is currently in transit to the destination.

Get More Out of USPS Tracking:

USPS Tracking Plus®

In Transit from Origin Processing

Arrived at USPS Regional Origin Facility

SPRINGFIELD MA NETWORK DISTRIBUTION CENTER
November 19, 2023, 1:16 am

Departed Post Office

STORRS MANSFIELD, CT 06268
November 18, 2023, 5:00 pm

See All Tracking History

What Do USPS Tracking Statuses Mean? (https://faq.usps.com/s/article/Where-is-my-package)

Text & Email Updates

Feedback