QC Development
PO Box 916
Storrs, CT 06268
860-670-9068
Mark.Roberts@QCDevelopment.net

February 15, 2019

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) – CT2049
689 Old Colchester Road, Montville, CT 06353
N 41.45307500
W 72.15402222

Dear Ms. Bachman:

AT&T currently maintains twelve (12) antennas at the 240-foot level of the existing 370-foot Guyed Lattice tower at 689 Old Colchester Road, Montville, CT. The tower and property are owned by Atlantic Broadband (CT) LLC. AT&T now intends to remove three (3) Powerwave antennas and add (2) Kathrein 800-10965 and (4) Kathrein 800-10966 antennas. AT&T will also swap (3) Ericsson RRUS-11 for (3) Ericsson 4449-B5/B12s, swap (3) Ericsson RRUS-32 for (3) Ericsson 8843-B25/B66 and add (3) Ericsson 4478-B14 Remote Radio Units (RRU). The Antennas and RRUs will be installed at the 240-foot level of the tower.

This facility was approved by the Siting Council on July 6, 1989. This approval included no condition(s) that could feasibly be violated by this modification, including total facility height or mounting restrictions. This modification therefore complies with the aforementioned approval.

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 Ronald K. McDaniel, Mayor of the Town of Montville, and the Montville Planning Department 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
QC Development
Consultant for AT&T

Attachments

Cc: Mayor Ronald K. McDaniel - Elected Official
Marcia A. Vlaun – Town Planner
Atlantic Broadband – Property and Tower Owner

Power Density

Existing Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%MPE
Other Carriers*							0.47%
AT&T GSM	2	414	240	0.0054	850	0.5667	0.10%
AT&T UMTS	2	414	240	0.0054	850	0.5667	0.10%
AT&T UMTS	2	656	240	0.0086	1900	1.0000	0.09%
AT&T LTE	2	940	240	0.0123	700	0.4667	0.26%
AT&T LTE	2	1791	240	0.0235	1900	1.0000	0.24%
Site Total							1.25%

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

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

Proposed Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%MPE
Other Carriers*							0.47%
AT&T UMTS	1	268	240	0.0015	850	0.5667	0.03%
AT&T LTE	2	1476	240	0.0388	700	0.4667	0.83%
AT&T LTE	1	1000	240	0.0066	850	0.5667	0.12%
AT&T 5G	1	1000	240	0.0066	850	0.5667	0.12%
AT&T LTE	2	3664	240	0.0504	1900	1.0000	0.50%
AT&T LTE	2	3837	240	0.0481	2100	1.0000	0.48%
Site Total							2.55%

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

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

PROJECT INFORMATION

SCOPE OF WORK:	ITEMS TO BE MOUNTED ON THE EXISTING TOWER: • NEW AT&T LTE ANTENNAS (800–10965) @ POS. 2 & 3 (TOTAL OF 2 FOR ALPHA SECTOR). • NEW AT&T LTE ANTENNAS (800–10966) @ POS. 2 & 3 (TYP. OF 2 PER BETA & GAMMA SECTORS, TOTAL OF 4) • NEW AT&T RRUS 4478 B14 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T RRUS 4449 B5/B12 (700/850) (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T RRUS 8843 B2/B66A (AWS/PCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW SURGE ARRESTOR (DC6–48–60–18–8C) (1 DC ONLY, & 1 DC/FIBER, TOTAL OF 2) WITH (4) DC POWER CABLES, & (1) FIBER (TO FOLLOW EXISTING ROUTE). • ADD (3) 3/8" HOMERUN RET CABLES. • PROPOSED MOUNT MODS (SEE S–1 SHEET). ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION: • LOW BAND COMBINERS (DBCT108F1V92–1) (TOTAL OF 3). • SWAP BB FOR RBS 6630. • ADD 5G RBS 6630. • ADD XMU. • BASEBAND CONFIGURATION AS PER PD / SECTION–7. • INSTALL (1) RM–DC12
SITE ADDRESS:	695 OLD COLCHESTER ROAD MONTVILLE, CT 06353
LATITUDE:	41.453048 N, 41° 27' 10.97" N
LONGITUDE:	72.154081 W, 72° 09' 14.69" W
TYPE OF SITE:	GUYED TOWER / INDOOR EQUIPMENT
STRUCTURE HEIGHT:	370'±
RAD CENTER:	240'±
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

at&t

SITE NUMBER: CT2049

SITE NAME: MONTVILLE-OLD COLCHESTER RD

FA CODE: 10035001

PACE ID: MRCTB035261, MRCTB035131, MRCTB035140, MRCTB035294, MRCTB035301

PROJECT: LTE 3C/4C/5C/4TX4RX 2019 UPGRADE

DRAWING INDEX

VICINITY MAP

DIRECTIONS TO SITE:

TAKE I–395N TO EXIT 79 TURN RIGHT ONTO RT 163 APPROX 1.1 MILES JUST PASSED PAPERBOARD FACTORY TURN LEFT ON BRIDGE ST TURN RIGHT AT END MAPLE AVE TAKE 1ST LEFT ONTO SHARP HILL ROAD TO END TURN RIGHT ON OLD COLECHESTER ROAD ACCESS ROAD APPROX 3 MILES ON RIGHT. FOLLOW ACCESS ROAD AROUND SITE COMPOUND TO FAR RIGHT HAND CORNER NEAR THE REAR OF COMPOUND.

GENERAL NOTES

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

72 HOURS

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

UNDERGROUND SERVICE ALERT

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

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT2049
SITE NAME: MONTVILLE-OLD COLCHESTER RD

695 OLD COLCHESTER ROAD
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NEW LONDON COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	02/11/19	ISSUED FOR CONSTRUCTION	AM	AT	DJC
A	01/03/18	ISSUED FOR REVIEW	ET	AT	DJC

SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: ET

STATE OF CONNECTICUT · REGISTERED · ERASER · No. 28055 · LICENSED PROFESSIONAL ENGINEER

AT&T

TITLE SHEET
(LTE 3C/4C/5C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT2049	T–1	1

GROUNDING NOTES

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

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

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) 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 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 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

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

GENERAL NOTES

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

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

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

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

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

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

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

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

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

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

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

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

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

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

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

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

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

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

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

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

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

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

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

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

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

    TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G, 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		

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

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT2049
SITE NAME: MONTVILLE-OLD COLCHESTER RD

695 OLD COLCHESTER ROAD
MONTVILLE, CT 06353
NEW LONDON COUNTY

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

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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: ET

STATE OF CONNECTICUT
DEREK J. CREASER
NO. 28356
LICENSED PROFESSIONAL ENGINEER

AT&T

GENERAL NOTES
(LTE 3C/4C/5C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT2049	GN-1	1

NOTE:

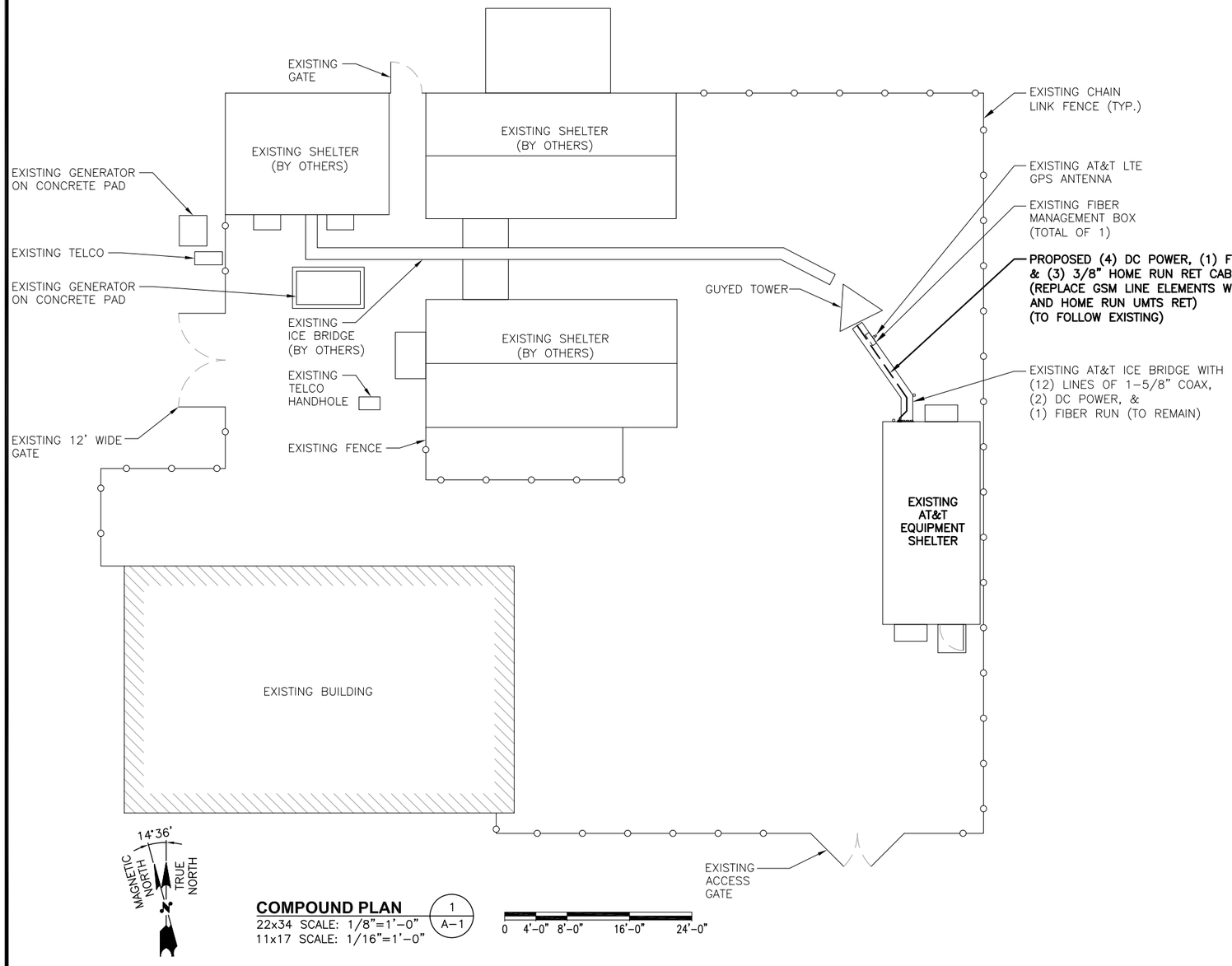
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: DECEMBER 18, 2018

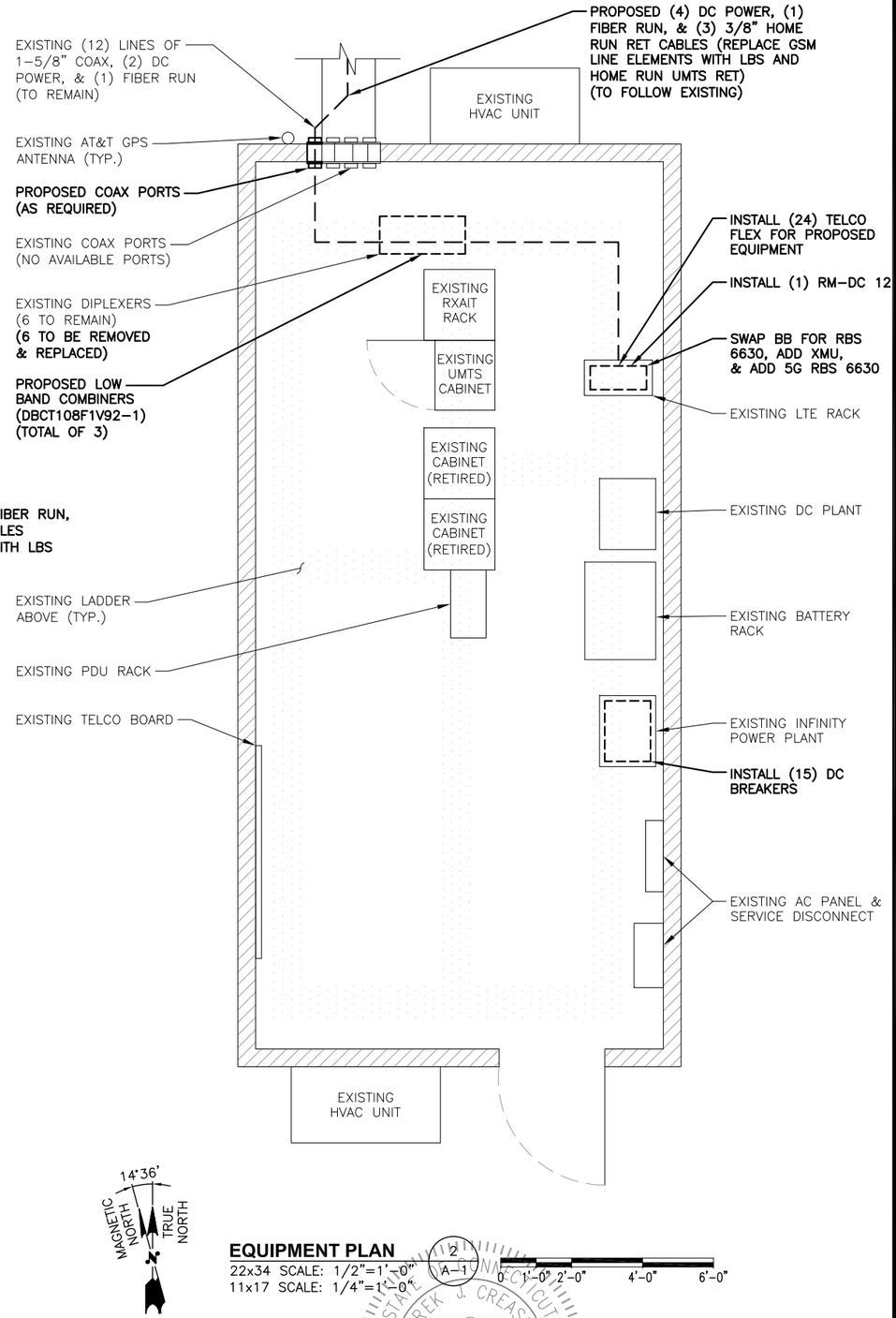
NOTE:

REFER TO STRUCTURAL ANALYSIS BY: CENTEK ENGINEERING, DATED: FEBRUARY 7, 2019 FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.



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

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



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

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

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
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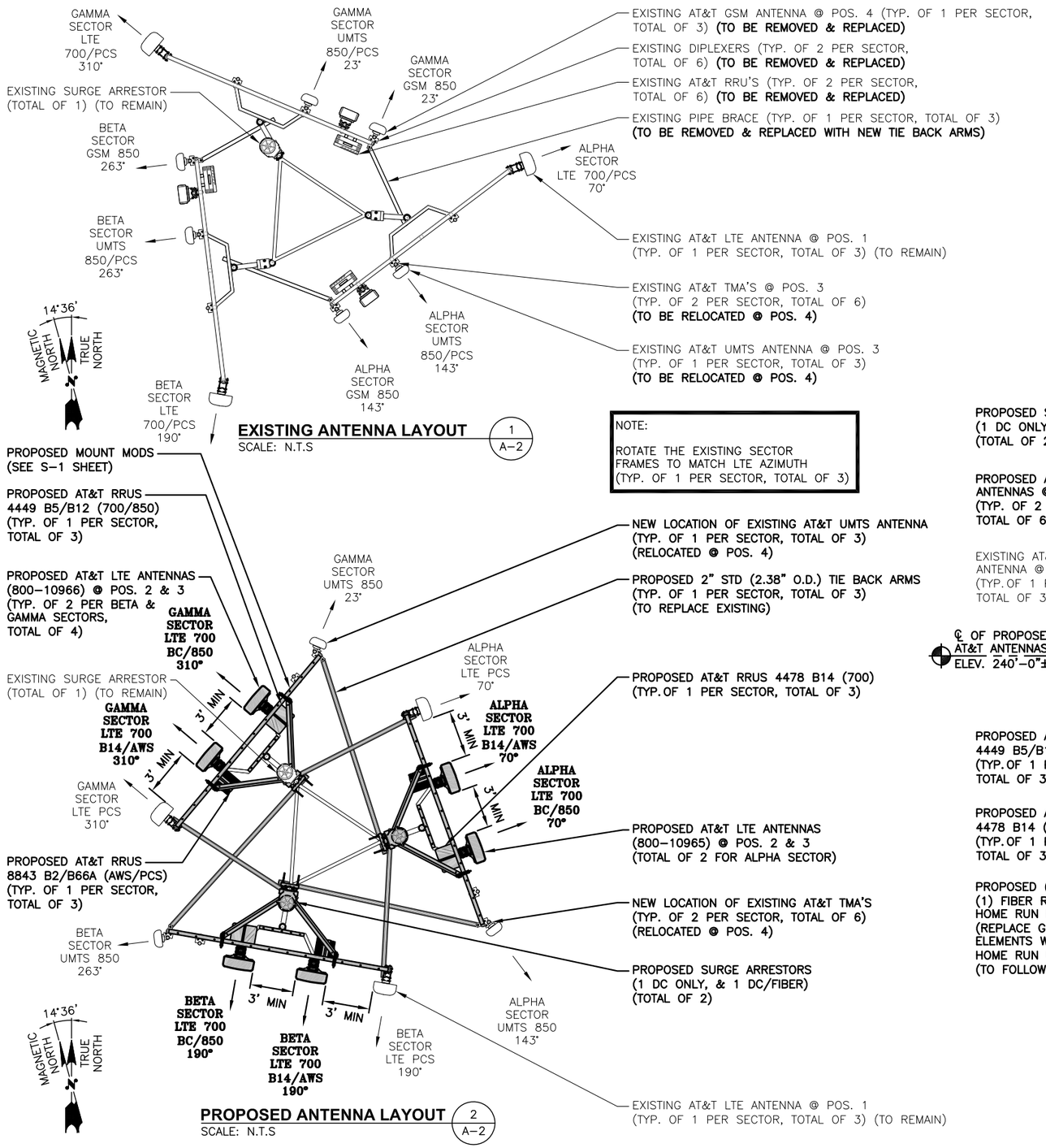
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: ET

STATE OF CONNECTICUT · DEREK J. CREASER · No. 29554 · LICENSED PROFESSIONAL ENGINEER

AT&T

COMPOUND & EQUIPMENT PLANS
(LTE 3C/4C/5C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT2049	A-1	1



EXISTING ANTENNA LAYOUT

SCALE: N.T.S

1 / A–2

NOTE:

ROTATE THE EXISTING SECTOR FRAMES TO MATCH LTE AZIMUTH (TYP. OF 1 PER SECTOR, TOTAL OF 3)

PROPOSED ANTENNA LAYOUT

SCALE: N.T.S

2 / A–2

NOTE:

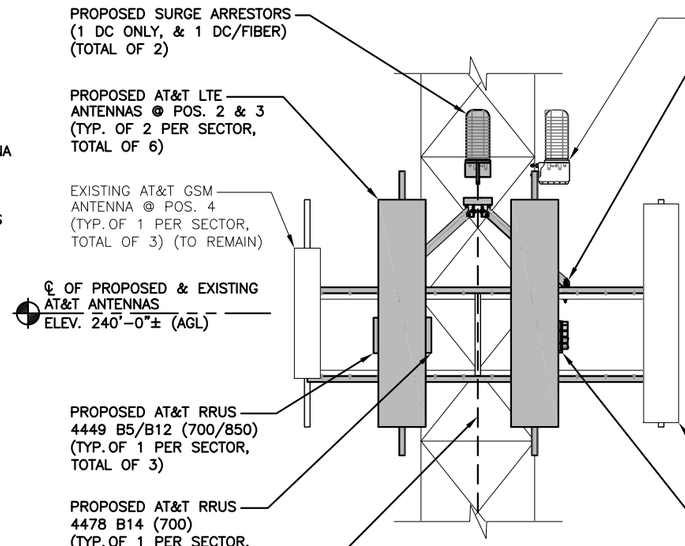
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: DECEMBER 18, 2018

NOTE:

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

NOTE:

REFER TO STRUCTURAL ANALYSIS BY: CENTEK ENGINEERING, DATED: FEBRUARY 7, 2019 FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.



ENLARGED ELEVATION

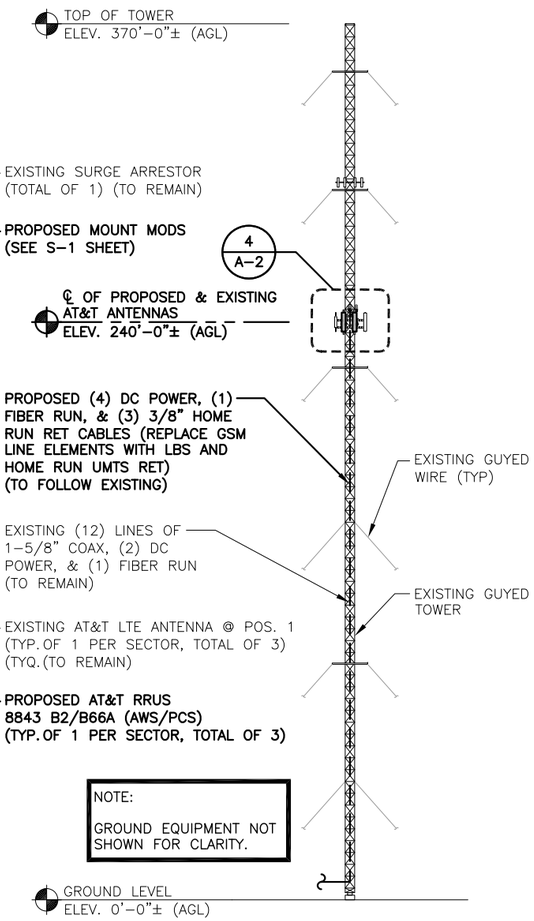
22x34 SCALE: 3/8"=1'–0"
11x17 SCALE: 3/16"=1'–0"

0 1'–4" 2'–8" 5'–4" 8'–0"

4 / A–2

NOTE:

RELOCATE THE EXISTING STANDOFF ARMS SO THAT THEY ARE PERPENDICULAR.



ELEVATION

22x34 SCALE: 1/32"=1'–0"
11x17 SCALE: 1/64"=1'–0"

0 16'–0" 32'–0" 64'–0" 96'–0"

3 / A–2

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500 ENTERPRISE DRIVE, SUITE 3A
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NO.	DATE	REVISIONS	BY	CHK	APP'D
1	02/11/19	ISSUED FOR CONSTRUCTION	AM	AT	DJC
A	01/03/18	ISSUED FOR REVIEW	ET	AT	DJC

SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: ET

STATE OF CONNECTICUT · DEREK J. CREASEY · No. 24057 · LICENSED PROFESSIONAL ENGINEER

AT&T

ANTENNA LAYOUTS & ELEVATION (LTE 3C/4C/5C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT2049	A–2	1

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:
HUDSON DESIGN GROUP, LLC.
DATED: DECEMBER 18, 2018

NOTE:

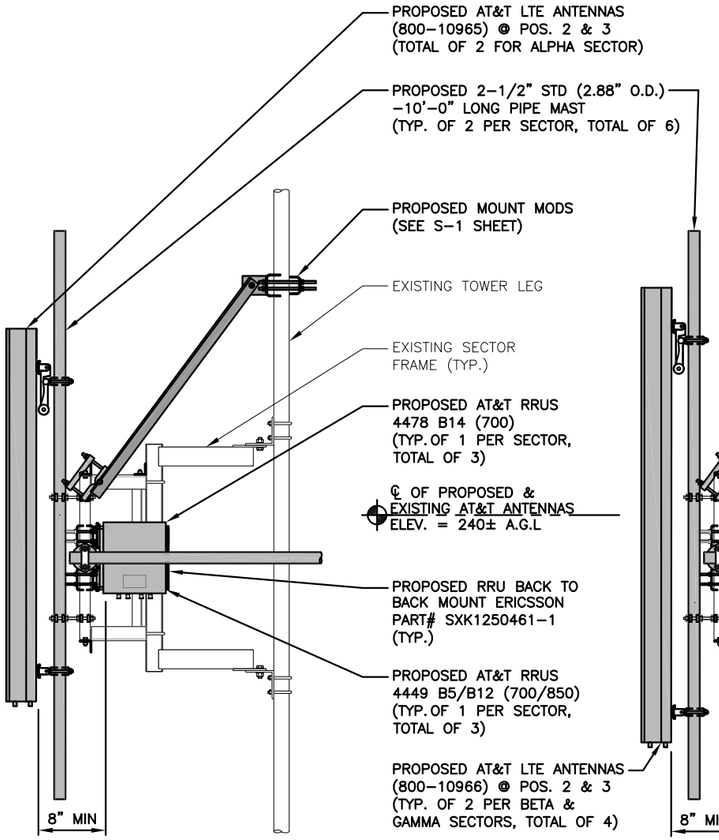
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

REFER TO STRUCTURAL ANALYSIS BY: CENTEK ENGINEERING,
DATED: FEBRUARY 7, 2019
FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

ANTENNA SCHEDULE

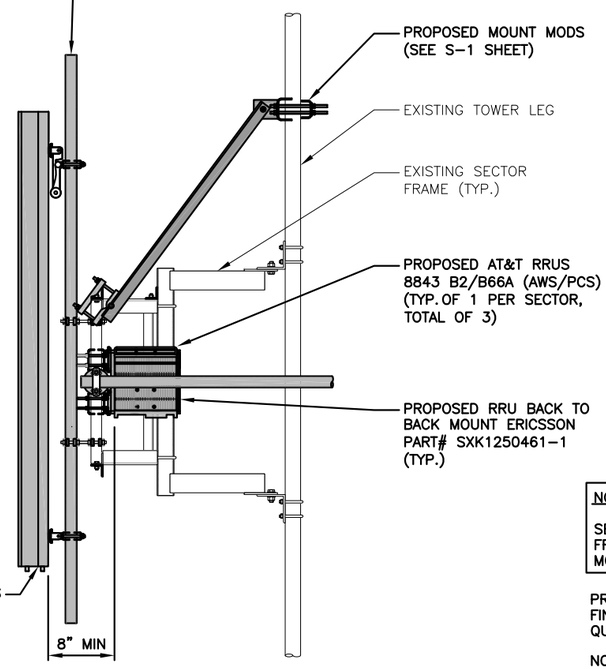
SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	EXISTING	LTE PCS	HPA-65R-BUU-H6	72X14.8X9	±240'	70°	–	(P)(1) 8843 B2/B66A (AWS/PCS)	14.9X13.2X10.9	(2) 1-5/8 COAX (LENGTH 290'±)	(E) (1) RAYCAP DC6-48-60-18-8C
A2	PROPOSED	LTE 700 B14/AWS	800-10965	78.7X20X6.9	±240'	70°	–	(P)(1) 4478 B14 (700)	18.1X13.4X8.3	–	
A3	PROPOSED	LTE 700 BC/850	800-10965	78.7X20X6.9	±240'	70°	–	(P)(1) 4449 B5/B12 (700BC/850)	17.9X13.2X9.4	–	
A4	EXISTING	UMTS 850	7770	55X11X5	±240'	143°	(E)(2) POWERWAVE LGP21401			(2) 1-5/8 COAX (LENGTH 290'±)	
B1	EXISTING	LTE PCS	HPA-65R-BUU-H8	92.4X14.8X7.4	±240'	190°	–	(P)(1) 8843 B2/B66A (AWS/PCS)	14.9X13.2X10.9	(2) 1-5/8 COAX (LENGTH 290'±)	(P)(1) RAYCAP DC6-48-60-18-8C
B2	PROPOSED	LTE 700 B14/AWS	800-10966	96X20X6.9	±240'	190°	–	(P)(1) 4478 B14 (700)	18.1X13.4X8.3	–	
B3	PROPOSED	LTE 700 BC/850	800-10966	96X20X6.9	±240'	190°	–	(P)(1) 4449 B5/B12 (700BC/850)	17.9X13.2X9.4	–	
B4	EXISTING	UMTS 850	7770	55X11X5	±240'	263°	(E)(2) POWERWAVE LGP21401			(2) 1-5/8 COAX (LENGTH 290'±)	
C1	EXISTING	LTE PCS	HPA-65R-BUU-H8	92.4X14.8X7.4	±240'	310°	–	(P)(1) 8843 B2/B66A (AWS/PCS)	14.9X13.2X10.9	(2) 1-5/8 COAX (LENGTH 290'±)	(P)(1) RAYCAP DC6-48-60-18-8C
C2	PROPOSED	LTE 700 B14/AWS	800-10966	96X20X6.9	±240'	310°	–	(P)(1) 4478 B14 (700)	18.1X13.4X8.3	–	
C3	PROPOSED	LTE 700 BC/850	800-10966	96X20X6.9	±240'	310°	–	(P)(1) 4449 B5/B12 (700BC/850)	17.9X13.2X9.4	–	
C4	EXISTING	UMTS 850	7770	55X11X5	±240'	23°	(E)(2) POWERWAVE LGP21401			(2) 1-5/8 COAX (LENGTH 290'±)	



PROPOSED LTE ANTENNA & RRH MOUNTING DETAIL (ALPHA SECTOR) 2 / A-3

22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"

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



PROPOSED LTE ANTENNA & RRH MOUNTING DETAIL (BETA & GAMMA SECTORS) 3 / A-3

22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"

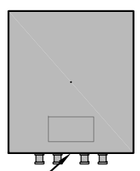
0 8" 1'-4" 2'-8" 4'-0"

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

RRU CHART				
QUANTITY	MODEL	L	W	D
3(P)	4478 B14	18.1"	13.4"	8.3"
3(P)	4449	17.9"	13.2"	9.4"
3(P)	8843	14.9"	13.2"	10.9"
NOTE: MOUNT PER MANUFACTURER'S SPECIFICATIONS				

NOTE:

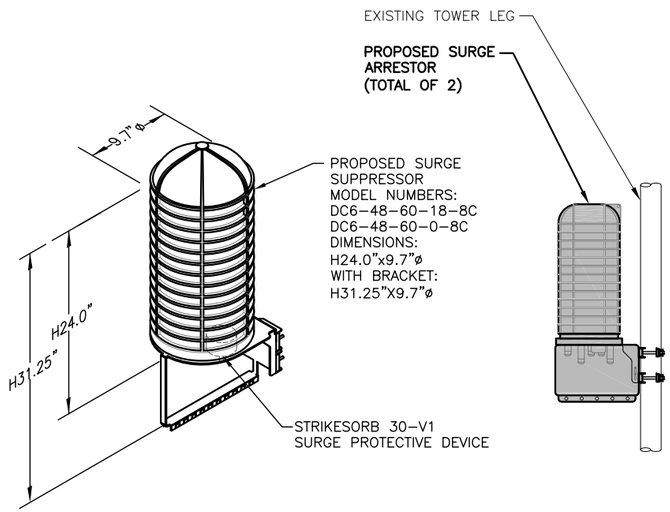
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER



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

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

PROPOSED RRUS DETAIL 4 / A-3
SCALE: N.T.S



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL 5 / A-3
SCALE: N.T.S

PROPOSED SURGE ARRESTOR MOUNTING DETAIL 6 / A-3
SCALE: N.T.S

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SITE NUMBER: CT2049
SITE NAME: MONTVILLE-OLD COLCHESTER RD

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STATE OF CONNECTICUT · DEREK J. CREASER · No. 25... · LICENSED PROFESSIONAL ENGINEER

AT&T

DETAILS
(LTE 3C/4C/5C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT2049	A-3	1

STRUCTURAL NOTES:

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

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

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

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

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

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

SPECIAL INSPECTION CHECKLIST	
BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
N/A	ENGINEER OF RECORD APPROVED SHOP DRAWINGS [1]
N/A	MATERIAL SPECIFICATIONS REPORT [2]
N/A	FABRICATOR NDE INSPECTION
N/A	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:	

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.

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.

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12 INDUSTRIAL WAY
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SITE NUMBER: CT2049
SITE NAME: MONTVILLE-OLD COLCHESTER RD

695 OLD COLCHESTER ROAD
MONTVILLE, CT 06353
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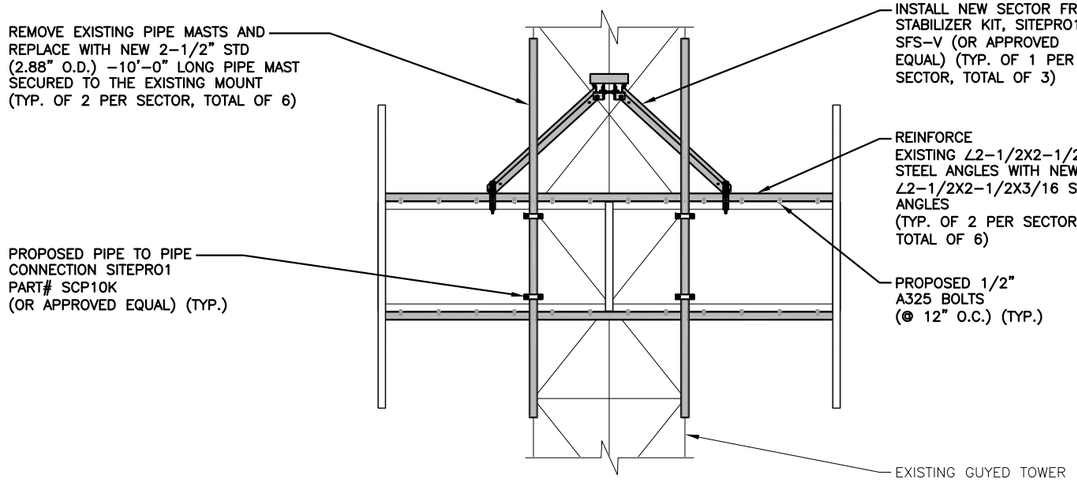
STATE OF CONNECTICUT · DEREK J. CREASER · No. 25858 · LICENSED PROFESSIONAL ENGINEER

AT&T

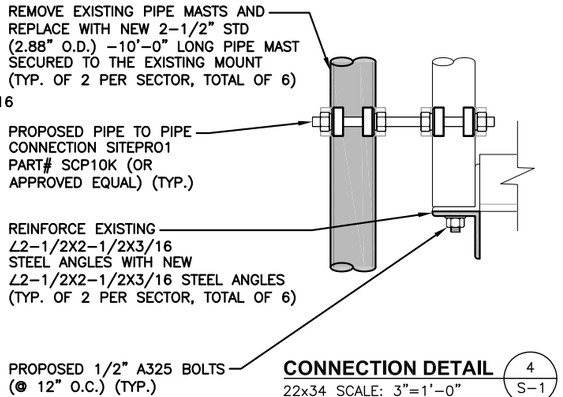
STRUCTURAL NOTES
(LTE 3C/4C/5C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT2049	SN-1	1



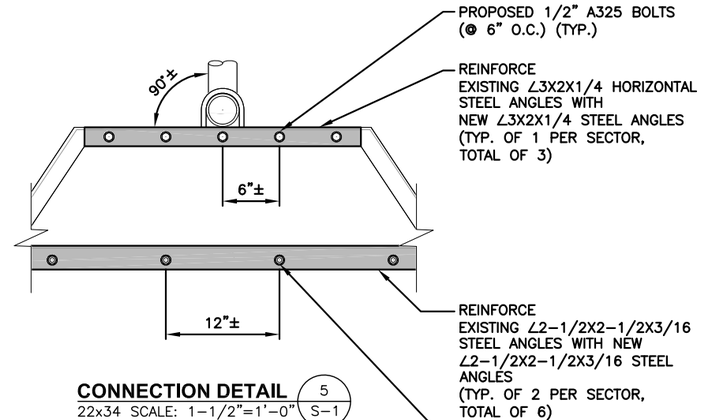
MOUNT MODIFICATIONS FACE ELEVATION (1 / S-1)
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"

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



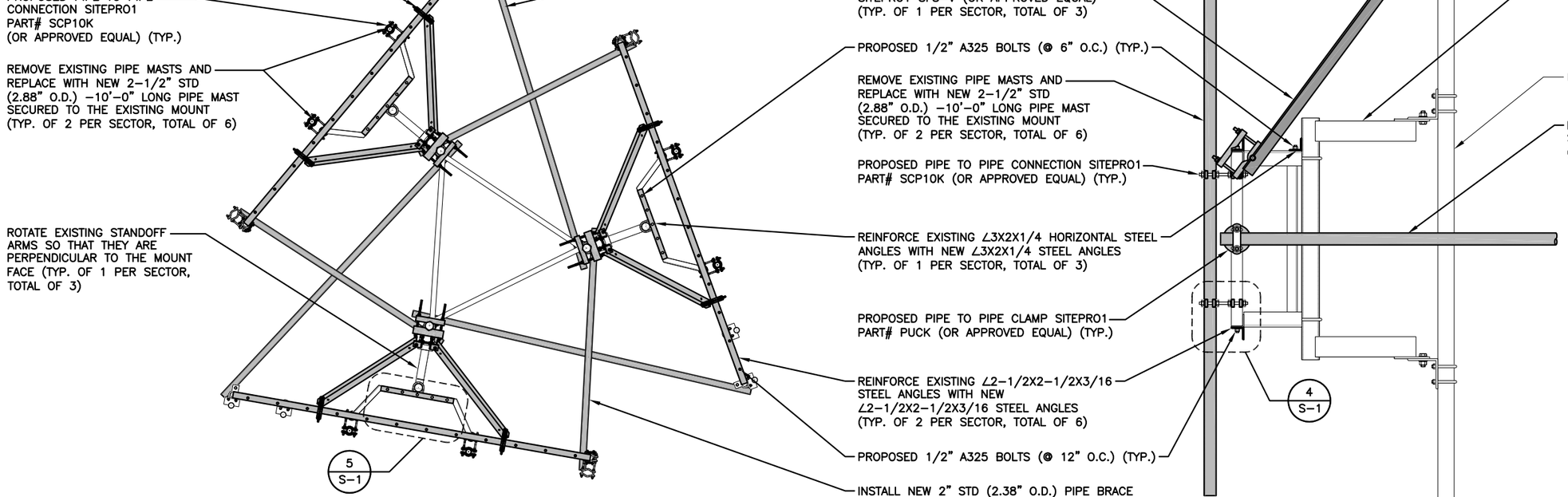
CONNECTION DETAIL (4 / S-1)
22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"

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



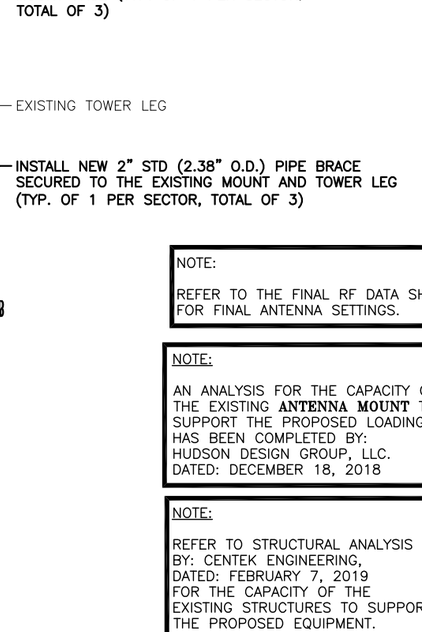
CONNECTION DETAIL (5 / S-1)
22x34 SCALE: 1-1/2"=1'-0"
11x17 SCALE: 3/4"=1'-0"

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



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

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



MOUNT MODIFICATIONS ELEVATION (3 / S-1)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

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

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

NOTE:
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HUDSON DESIGN GROUP, LLC.
DATED: DECEMBER 18, 2018

NOTE:
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FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

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STATE OF CONNECTICUT — ERIK J. LEASER — No. 28351 — LICENSED PROFESSIONAL ENGINEER

AT&T

MOUNT MODIFICATIONS DESIGN
(LTE 3C/4C/5C/4TX4RX)

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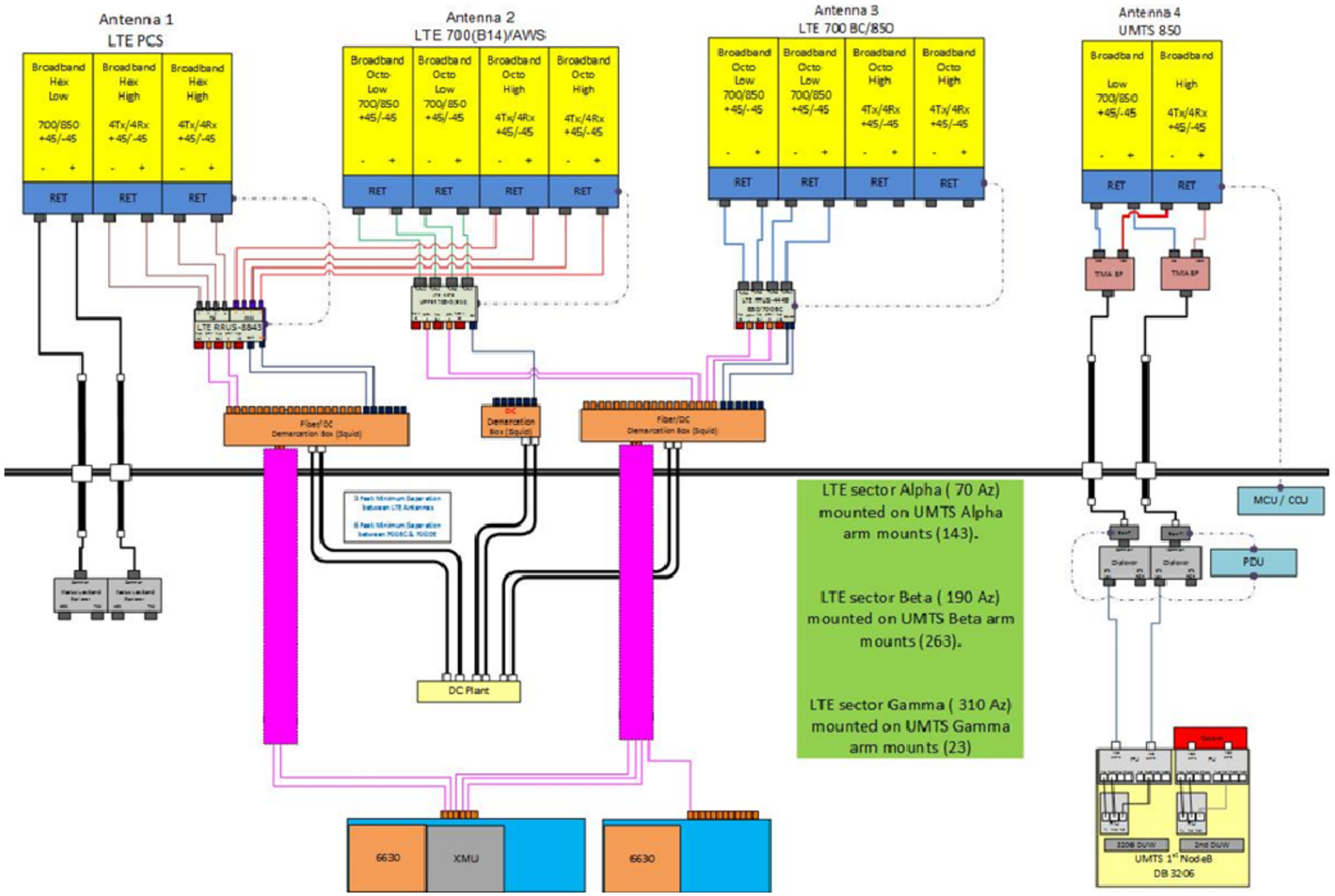

RF PLUMBING DIAGRAM (1 / RF–1)
SCALE: N.T.S

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

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

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MONTVILLE, CT 06353
NEW LONDON COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	02/11/19	ISSUED FOR CONSTRUCTION	AM	AT	DJC
A	01/03/18	ISSUED FOR REVIEW	ET	AT	DJC

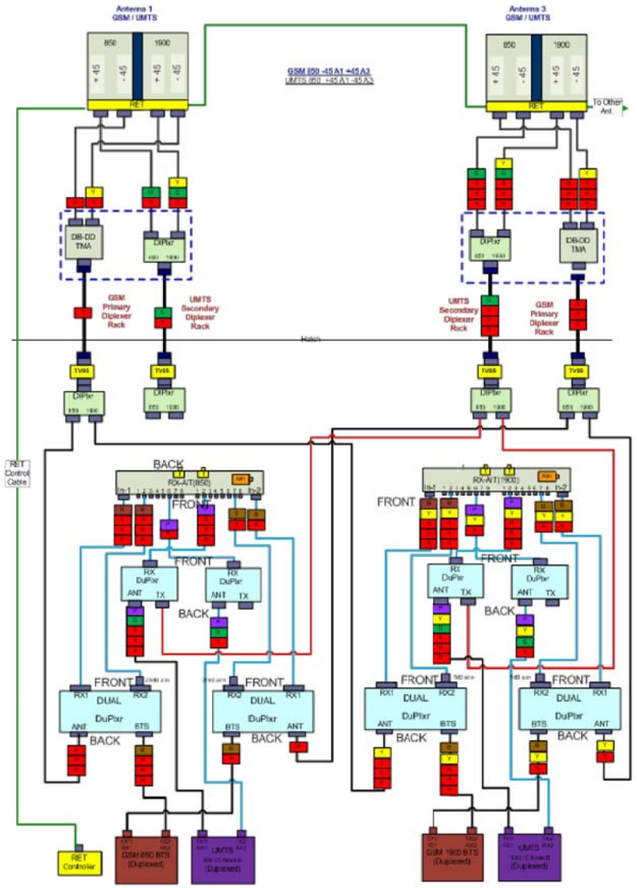
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: ET

STATE OF CONNECTICUT · DEREK J. CREASER · No. 28351 · LICENSED PROFESSIONAL ENGINEER

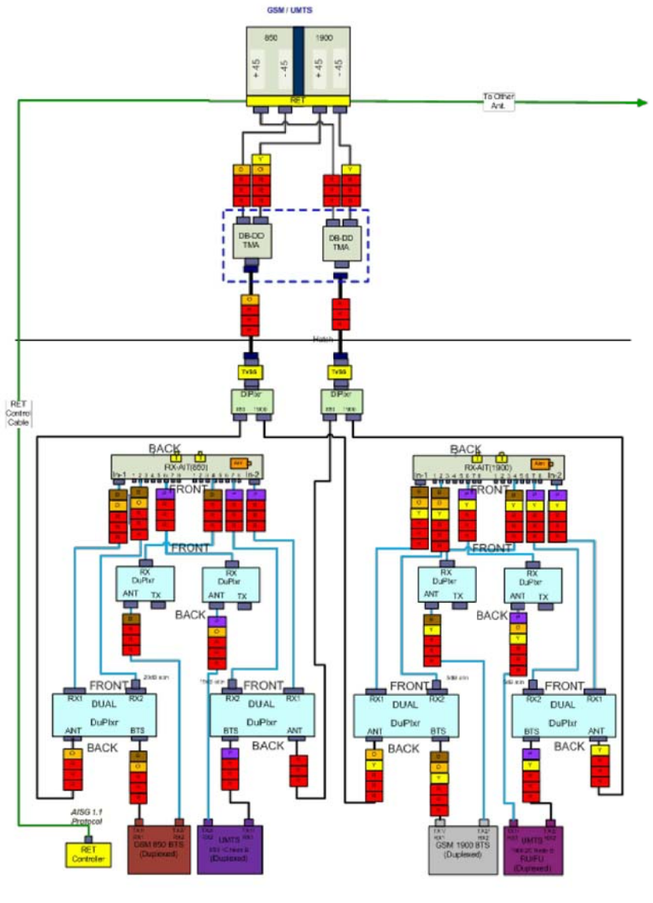
AT&T

RF PLUMBING DIAGRAM
(LTE 3C/4C/5C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT2049	RF–1	1



TMA PLUMBING DIAGRAM EXISTING (1 / RF–2)
SCALE: N.T.S



TMA PLUMBING DIAGRAM PROPOSED (2 / RF–2)
SCALE: N.T.S

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

NOTE:

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

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

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT2049
SITE NAME: MONTVILLE-OLD COLCHESTER RD

695 OLD COLCHESTER ROAD
MONTVILLE, CT 06353
NEW LONDON COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	02/11/19	ISSUED FOR CONSTRUCTION	AM	AT	DJC
A	01/03/18	ISSUED FOR REVIEW	ET	AT	DJC

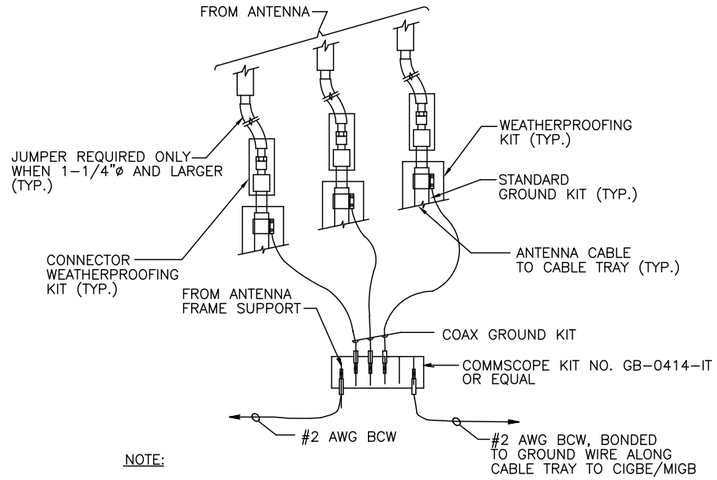
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: ET

STATE OF CONNECTICUT · DEREK J. CREASER · No. 24054 · LICENSED PROFESSIONAL ENGINEER

AT&T

TMA PLUMBING DIAGRAM
(LTE 3C/4C/5C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT2049	RF–2	1



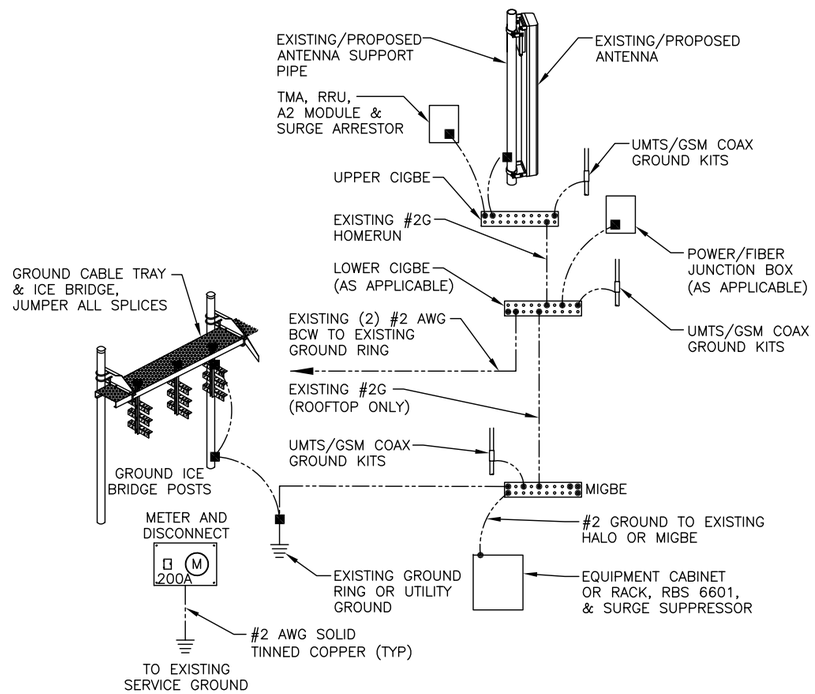
NOTE:

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

GROUND WIRE TO GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

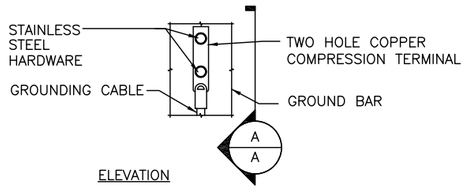
1 / G-1



GROUNDING RISER DIAGRAM

SCALE: N.T.S

2 / G-1



NOTE:

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

TYPICAL GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

3 / G-1

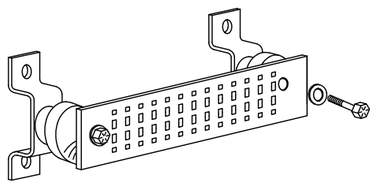
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" – SURGE PRODUCERS

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

SECTION "A" – SURGE ABSORBERS

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



GROUND BAR - DETAIL

SCALE: N.T.S

4 / G-1

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

12 INDUSTRIAL WAY
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500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

SITE NUMBER: CT2049
SITE NAME: MONTVILLE-OLD COLCHESTER RD

695 OLD COLCHESTER ROAD
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NEW LONDON COUNTY

NO.	DATE	REVISIONS	BY	CHK	APP'D
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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: ET

STATE OF CONNECTICUT · DEREK J. CREASER · No. 25358 · LICENSED PROFESSIONAL ENGINEER

AT&T

GROUNDING DETAILS
(LTE 3C/4C/5C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT2049	G-1	1

CENTEK engineering

Centered on Solutions℠

Structural Analysis Report

370-ft Existing Guyed Lattice Tower

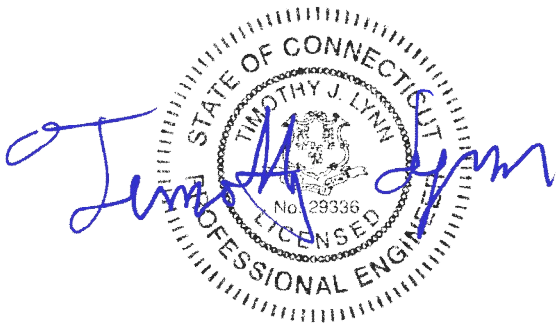
Proposed AT&T Mobility
Antenna Upgrade

AT&T Site Ref: CT2049

689 Old Colchester Road
Montville, CT

Centek Project No. 19002.00

Date: February 7, 2019



Prepared for:

AT&T Mobility
500 Enterprise Drive, Suite 3A
Rocky Hill, CT 06067

Table of Contents

Introduction

The purpose of this report is to summarize the results of the non-linear, P-Δ structural analysis of the antenna upgrade proposed by AT&T on the existing guyed lattice tower located in Montville, Connecticut.

The host tower is a 370-ft, three face, guyed steel lattice tower originally designed and manufactured by PiROD. The original design documents were unavailable for use in this report. The tower geometry, structure member sizes, reinforcement information and foundation information were obtained from a previous structural analysis prepared by Centek. Job No. 15001.08 dated June 3, 2015.

Antenna and appurtenance inventory were taken from the aforementioned structural report and a AT&T RF data sheet.

The tower consists of fifteen (15) vertical sections constructed of solid round pipe legs conforming to ASTM A36. Diagonal and horizontal lateral support bracing consists of a combination of steel angle and solid round pipe construction conforming to ASTM A36. The vertical tower sections are connected by bolted flange plates with the diagonal and horizontal bracing to pipe legs consisting of bolted connections. The width of the tower face is 5-ft at throughout its length.

AT&T proposes the removal of three (3) panel antennas and the installation of three (3) panel antennas and three (3) remote radio heads mounted on three (3) existing T-Frames. Refer to the Antenna and Appurtenance Summary below for a detailed description of the proposed antenna and appurtenance configuration.

Antenna and Appurtenance Summary

The existing tower supports several communication antennas. The existing and proposed loads considered in the analysis consist of the following:

- WGBH (Existing):
  Antenna: One (1) Search Antenna leg mounted with an elevation of ±370-ft above grade level.
  Coax Cable: One (1) 7/8" coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (Existing):
  Antenna: One (1) 8-ft microwave dish pipe mounted with an elevation of ±355-ft above the tower base.
  Coax Cable: One (1) 7/8" coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (Existing):
  Antenna: One (1) 20' by 3" ∅ Omni-directional (whip) antenna pipe mounted with an elevation of ±350-ft above the tower base.
  Coax Cable: Two (2) 7/8" coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.

- UNKNOWN (Existing):
  Antenna: One (1) 10' by 3" ∅ Omni-directional (whip) antenna mounted on a 3-ft side arm with an elevation of ±325-ft above the tower base.
  Coax Cable: One (1) 1-5/8" coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- VERIZON (Existing to Remain):
  Antennas: Three (3) Andrew LNX-6514DS panel antennas, three (3) Antel QUAD656C0000 panel antennas, six (6) Andrew HBXX-6517DS panel antennas, three (3) Alcatel-Lucent RRH4x45-AWS Remote Radio Heads, three (3) Alcatel-Lucent RRH4x30-B13 Remote Radio Heads, two (2) RFS DB-T1-6Z-8AB-0Z main distribution boxes and six (6) RFS FD9R6004/2C-3L diplexers mounted on three (3) boom gates with a RAD center elevation of ±305-ft above the existing tower base.
  Coax Cables: Twelve (12) 1-5/8" ∅ coax cables and two (2) 1-5/8" ∅ Hybriflex fiber lines running on the face of the existing tower as specified in Section 3 of this report.
- Secret Service (Existing):
  Antenna: One (1) 20' by 3" ∅ Omni-directional (whip) antenna pipe mounted with an elevation of ±250-ft above the tower base.
  Coax Cable: None
- UNKNOWN (Existing):
  Antenna: One (1) 4' yagi antenna leg mounted with an elevation of ±200-ft above the tower base.
  Coax Cable: One (1) 7/8" coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (Existing):
  Antenna: Four (4) 5' yagi antennas mounted on two (2) pipe mounts with an elevation of ±180-ft above the tower base.
  Coax Cable: One (1) 7/8" coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (Existing):
  Antenna: One (1) 5' yagi antenna leg mounted with an elevation of ±148-ft above the tower base.
  Coax Cable: One (1) 1/2" coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (Existing):
  Antenna: One (1) 8' yagi antenna leg mounted with an elevation of ±140-ft above the tower base.
  Coax Cable: One (1) 7/8" coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (Existing):
  Antenna: One (1) 4' yagi antenna leg mounted with an elevation of ±125-ft above the tower base.
  Coax Cable: One (1) 1/2" coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.

- UNKNOWN (Existing):
  Antenna: Four (4) antennas leg mounted with an elevation of ±88-ft above the tower base.
  Coax Cable: One (1) 7/8" coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (Existing):
  Antenna: One (1) 6' yagi antenna leg mounted with an elevation of ±62-ft above the tower base.
  Coax Cable: One (1) 7/8" coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (Existing):
  Antenna: One (1) 5' yagi antenna leg mounted with an elevation of ±40-ft above the tower base.
  Coax Cable: One (1) 7/8" coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- AT&T (Existing to Remain):
  Antennas: One (1) CCI HPA-65R-BUU-H6 panel antenna, two (2) CCI HPA-65R-BUU-H8 panel antennas, three (3) Powerwave 7770 panel antennas, six (6) Powerwave LGP-21401 TMAs and one (1) DC6-48-60-18-8F Surge Arrestor mounted on three (3) 12-ft T-frames with a RAD center elevation of ±242.5-ft above the existing tower base.
  Coax Cables: Twelve (12) 1-5/8" ∅ coax cables, one (1) fiber line and two (2) DC power cables running on a leg/face of the existing tower.
- AT&T (Existing to Remove):
  Antennas: Three (3) Powerwave 7770 panel antennas, six (6) diplexers, three (3) Ericsson RRUS-11 remote radio heads and three (3) Ericsson RRUS-32 remote radio heads mounted on three (3) 12-ft T-frames with a RAD center elevation of ±242.5-ft above the existing tower base.
- **AT&T (Proposed):**
  Antennas: Two (2) Kathrein 800-10965 panel antennas, four (4) Kathrein 800-10966 panel antennas, three (3) Ericsson B2/B66A 8843 remote radio heads, three (3) Ericsson B14 4478 remote radio heads, three (3) B5/B12 4449 remote radio heads and two (2) surge arrestors mounted on three (3) 12-ft T-frames with a RAD center elevation of ±242.5-ft above the existing tower base.
  Coax Cables: One (1) fiber line, four (4) DC power cables and (3) RET cables running on a leg/face of the existing tower.
  Note: Existing mount to be modified per the design prepared by Hudson Design Group dated 12/18/18.

Primary Assumptions Used in the Analysis

- The tower structure's theoretical capacity not including any assessment of the condition of the tower.
- The tower carries the horizontal and vertical loads due to the weight of antennas, ice load and wind.
- Tower is properly installed and maintained.
- Tower is in plumb condition.
- Tower loading for antennas and mounts as listed in this report.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All welds are fabricated with ER-70S-6 electrodes.
- All members are assumed to be as specified in the original tower design documents.
- All members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
- All member protective coatings are in good condition.
- All tower members were properly designed, detailed, fabricated, installed and have been properly maintained since erection.
- Any deviation from the analyzed antenna loading will require a new analysis for verification of structural adequacy.
- All previous reinforcements per the aforementioned URS report dated July 24, 2013 are complete as detailed.

Analysis

The existing tower was analyzed using a comprehensive computer program entitled tnxTower. The program analyzes the tower, considering the worst case loading condition. The tower is considered as loaded by concentric forces along the tower, and the model assumes that the tower members are subjected to bending, axial, and shear forces.

The existing tower was analyzed for the controlling basic wind speed (3-second gust) with no ice and the applicable wind and ice combination to determine stresses in members as per guidelines of TIA-222-G-2005 entitled "Structural Standard for Antenna Support Structures and Antennas", the American Institute of Steel Construction (AISC) and the Manual of Steel Construction; Load and Resistance Factor Design (LRFD).

The controlling wind speed is determined by evaluating the local available wind speed data as provided in Appendix N of the CSBC[1] and the wind speed data available in the TIA-222-G-2005 Standard.

Tower Loading

Tower loading was determined by the basic wind speed as applied to projected surface areas with modification factors per TIA-222-G-2005, gravity loads of the tower structure and its components, and the application of 0.75" radial ice on the tower structure and its components.

Basic Wind Speed:	New London; v = 105-120 mph (3-second gust)	*[Annex B of TIA-222-G-2005]*
	Montville; v = 105 mph (3 second gust)	*[Appendix N of the 2016 CT Building Code]*
Load Cases:	Load Case 1; 105 mph wind speed w/ no ice plus gravity load – used in calculation of tower stresses and rotation.	*[Appendix N of the 2016 CT Building Code]*
	Load Case 2; 50 mph wind speed w/ 0.75" radial ice plus gravity load – used in calculation of tower stresses.	*[Annex B of TIA-222-G-2005]*

[1] The 2012 International Building Code as amended by the 2016 Connecticut State Building Code (CSBC).

Tower Capacity

Tower stresses were calculated utilizing the structural analysis software tnxTower. Allowable stresses were determined based on Table 4-8 of the TIA code.

- Calculated stresses were found to be within allowable limits. This tower was found to be at **99.8%** of its total capacity.

Tower Section	Elevation	Stress Ratio (percentage of capacity)	Result
Leg (T27)	200.00' - 206.25'	90.1%	**PASS**
Diagonal (T22)	231.25' - 237.5'	99.8%	**PASS**
Guy B @ 201.41' radius (T31)	162.5'-0"	71.9%	**PASS**

Foundations and Anchorage

The existing tower base foundation consists of a 3.0-ft square x 3-ft long reinforced concrete pedestal with a 7.0-ft square x 2.0-ft thick reinforced concrete pad bearing directly on the existing sub grade. Additionally, guy wire loading is transferred to twelve (12) existing concrete anchor support blocks. The sub-grade conditions used as the basis for the foundation analysis were derived from the aforementioned structural report.

- The worst case tower base and guy anchor reactions developed from the governing Load Case 1 were used in the verification of the anchorage foundations:

Tower Guy Reactions				
Vector	**Inner**	**Mid-Inner**	**Mid-Outer**	**Outer**
Horizontal (In Plane of GW)	12 kips	43 kips	65 kips	27 kips
Horizontal (Out of Plane of GW)	0 kips	1 kips	3 kips	2 kips
Vertical	6 kips	28 kips	74 kips	37 kips
Resultant Force at end of Guy Wire	13 kips	52 kips	98 kips	45 kips

Tower Base Reactions	
Vector	**Proposed Reaction**
Horizontal Shear	1.0 kips
Axial Compression	457.0 kips

Foundation	Design Limit	TIA-222-G Section 9.4 FS[(1)]	Proposed Loading (FS)[(1)]	Result
Reinf. Conc. Anchor Block (C) at 114.41-ft radius.	Uplift	1.0	8.14	**PASS**
	Sliding	1.0	5.70	**PASS**
Reinf. Conc. Anchor Block (B) at 193.65-ft radius.	Uplift	1.0	3.52	**PASS**
	Sliding	1.0	3.20	**PASS**
Reinf. Conc. Anchor Block (A) at 224.79-ft radius.	Uplift	1.0	2.60	**PASS**
	Sliding	1.0	3.40	**PASS**
Reinf. Conc. Anchor Block (A) at 247.15-ft radius.	Uplift	1.0	3.41	**PASS**
	Sliding	1.0	5.00	**PASS**
		Ultimate Bearing	**Proposed**	
Base Foundation	Bearing	16.0 ksf	9.71 ksf	**PASS**

Note 1: FS denotes 'Factor of Safety'.

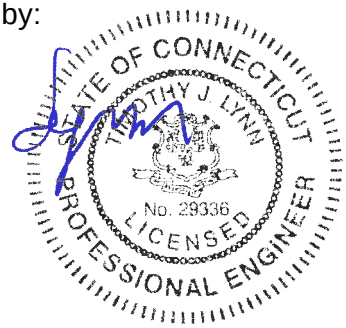
Conclusion

This analysis shows that the subject tower **is adequate** to support the proposed modified antenna configuration.

The analysis is based, in part, on the information provided to this office by AT&T. If the existing conditions are different than the information in this report, Centek Engineering, Inc. must be contacted for resolution of any potential issues.

Please feel free to call with any questions or comments.

Respectfully Submitted by:



Timothy J. Lynn, PE
Structural Engineer

Standard Conditions for Furnishing of Professional Engineering Services on Existing Structures

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessarily limited to:

- Information supplied by the client regarding the structure itself, its foundations, the soil conditions, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from the field and/or drawings in the possession of Centek Engineering, Inc. or generated by field inspections or measurements of the structure.
- It is the responsibility of the client to ensure that the information provided to Centek Engineering, Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated. It is therefore assumed that its capacity has not significantly changed from the “as new” condition.
- All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest revision of ANSI/ASCE10 & ANSI/EIA-222
- All services performed, results obtained, and recommendations made are in accordance with generally accepted engineering principles and practices. Centek Engineering, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAM

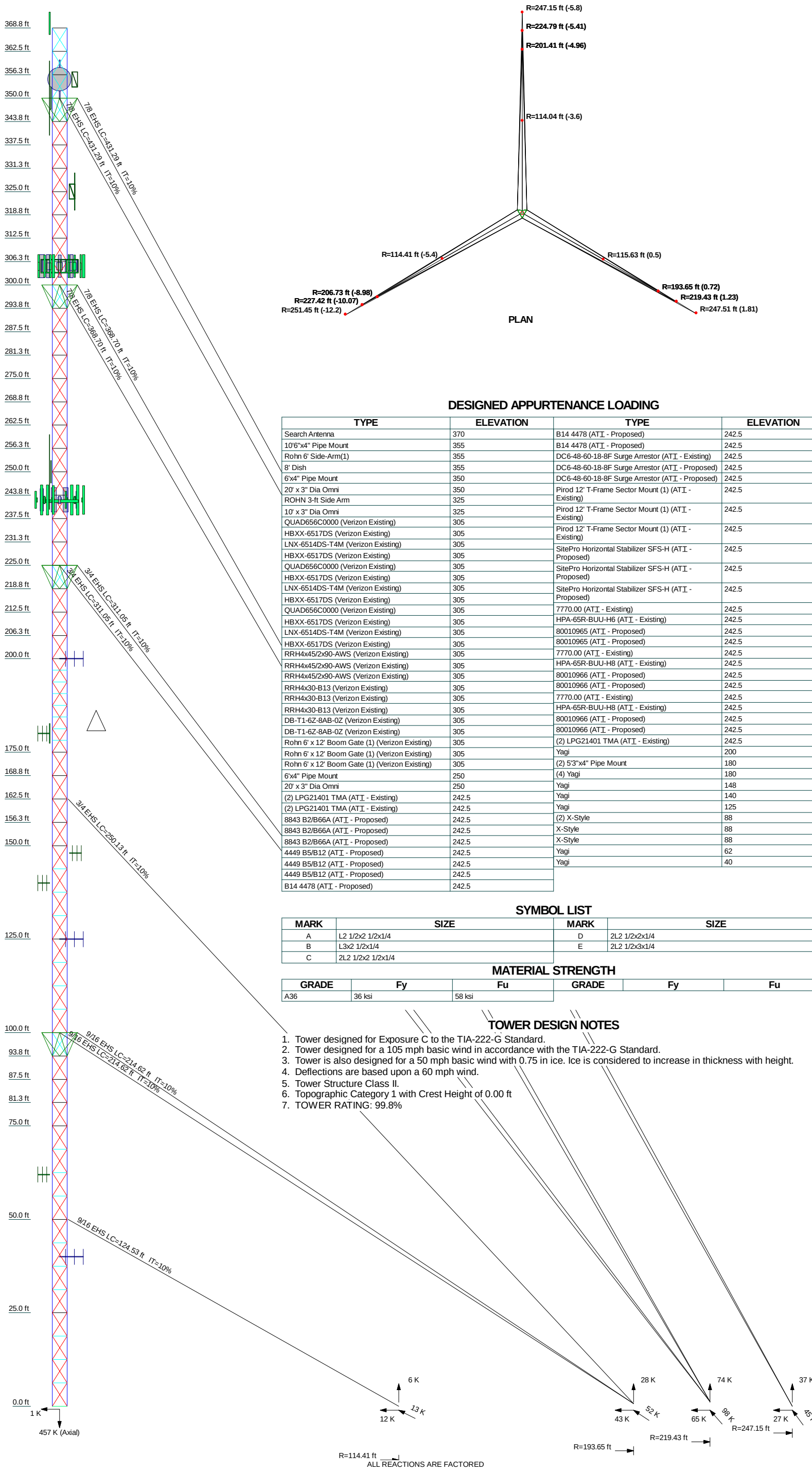
tnxTower, is an integrated structural analysis and design software package for Designed specifically for the telecommunications industry, tnxTower, formerly ERITower and RISATower, automates much of the tower analysis and design required by the TIA/EIA 222 Standard.

tnxTower Features:

- tnxTower can analyze and design 3- and 4-sided guyed towers, 3- and 4-sided self-supporting towers and either round or tapered ground mounted poles with or without guys.
- The program analyzes towers using the TIA-222-G (2005) standard or any of the previous TIA/EIA standards back to RS-222 (1959). Steel design is checked using the AISC ASD 9th Edition or the AISC LRFD specifications.
- Linear and non-linear (P-delta) analyses can be used in determining displacements and forces in the structure. Wind pressures and forces are automatically calculated.
- Extensive graphics plots include material take-off, shear-moment, leg compression, displacement, twist, feed line, guy anchor and stress plots.
- tnxTower contains unique features such as True Cable behavior, hog rod take-up, foundation stiffness and much more.

Section	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	T16	T17	T18	T19	T20	T21	T22	T23	T24	T25	T26	T27	T28	T29	T30	T31	T32	T33	T34	T35	T36	T37	T38	T39	T40	T41
Legs	SR 2 3/4			SR 3				SR 3 1/4																SR 3				SR 3 1/4													
Leg Grade								A36																				A36													
Diagonals	A	2L3x3x5/16		B	SR 5/8			SR 3/4					SR 3/4	B	SR 5/8								SR 1	C	SR 5/8				SR 1				L2 1/2x2 1/2x3/16		C	SR 3/4			SR 5/8		
Diagonal Grade																																									
Top Girts	D	E	D	P1.25x.14																																					
Horizontals																																									
Sec. Horizontals																																									
Face Width (ft)																																									
# Panels @ (ft)																																									
Weight (K)	0.7	1.1	1.1	1.6	0.6	0.5	0.5	0.6	0.6	0.6	0.7	1.6	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.8	1.7	0.6	0.5	0.5	2.3	0.7	1.6	0.7	0.6	2.5	2.8	1.8	0.7	0.6	0.6	2.5	2.5	2.5

59 @ 6.25 = 368.8 ft



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Search Antenna	370	B14 4478 (ATI - Proposed)	242.5
10'6"x4" Pipe Mount	355	B14 4478 (ATI - Proposed)	242.5
Rohn 6' Side-Arm(1)	355	DC6-48-60-18-8F Surge Arrestor (ATI - Existing)	242.5
8' Dish	355	DC6-48-60-18-8F Surge Arrestor (ATI - Proposed)	242.5
6'x4" Pipe Mount	350	DC6-48-60-18-8F Surge Arrestor (ATI - Proposed)	242.5
20' x 3" Dia Omni	350	Pirod 12' T-Frame Sector Mount (1) (ATI - Existing)	242.5
ROHN 3-ft Side Arm	325	Pirod 12' T-Frame Sector Mount (1) (ATI - Existing)	242.5
10' x 3" Dia Omni	325	Pirod 12' T-Frame Sector Mount (1) (ATI - Existing)	242.5
QUAD656C0000 (Verizon Existing)	305	SitePro Horizontal Stabilizer SFS-H (ATI - Proposed)	242.5
HBXX-6517DS (Verizon Existing)	305	SitePro Horizontal Stabilizer SFS-H (ATI - Proposed)	242.5
LNX-6514DS-T4M (Verizon Existing)	305	SitePro Horizontal Stabilizer SFS-H (ATI - Proposed)	242.5
HBXX-6517DS (Verizon Existing)	305	7770.00 (ATI - Existing)	242.5
QUAD656C0000 (Verizon Existing)	305	HPA-65R-BUU-H6 (ATI - Existing)	242.5
HBXX-6517DS (Verizon Existing)	305	80010965 (ATI - Proposed)	242.5
LNX-6514DS-T4M (Verizon Existing)	305	80010965 (ATI - Proposed)	242.5
HBXX-6517DS (Verizon Existing)	305	7770.00 (ATI - Existing)	242.5
RRH4x45/2x90-AWS (Verizon Existing)	305	HPA-65R-BUU-H8 (ATI - Existing)	242.5
RRH4x45/2x90-AWS (Verizon Existing)	305	80010966 (ATI - Proposed)	242.5
RRH4x45/2x90-AWS (Verizon Existing)	305	80010966 (ATI - Proposed)	242.5
RRH4x30-B13 (Verizon Existing)	305	7770.00 (ATI - Existing)	242.5
RRH4x30-B13 (Verizon Existing)	305	HPA-65R-BUU-H8 (ATI - Existing)	242.5
RRH4x30-B13 (Verizon Existing)	305	80010966 (ATI - Proposed)	242.5
DB-T1-6Z-8AB-0Z (Verizon Existing)	305	80010966 (ATI - Proposed)	242.5
DB-T1-6Z-8AB-0Z (Verizon Existing)	305	(2) LPG21401 TMA (ATI - Existing)	242.5
Rohn 6' x 12' Boom Gate (1) (Verizon Existing)	305	Yagi	200
Rohn 6' x 12' Boom Gate (1) (Verizon Existing)	305	(2) 5'3"x4" Pipe Mount	180
Rohn 6' x 12' Boom Gate (1) (Verizon Existing)	305	(4) Yagi	180
6'x4" Pipe Mount	250	Yagi	148
20' x 3" Dia Omni	250	Yagi	140
(2) LPG21401 TMA (ATI - Existing)	242.5	Yagi	125
(2) LPG21401 TMA (ATI - Existing)	242.5	(2) X-Style	88
8843 B2/B66A (ATI - Proposed)	242.5	X-Style	88
8843 B2/B66A (ATI - Proposed)	242.5	X-Style	88
8843 B2/B66A (ATI - Proposed)	242.5	Yagi	62
4449 B5/B12 (ATI - Proposed)	242.5	Yagi	40
4449 B5/B12 (ATI - Proposed)	242.5		
4449 B5/B12 (ATI - Proposed)	242.5		
B14 4478 (ATI - Proposed)	242.5		

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L2 1/2x2 1/2x1/4	D	2L2 1/2x2x1/4
B	L3x2 1/2x1/4	E	2L2 1/2x3x1/4
C	2L2 1/2x2 1/2x1/4		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36	36 ksi	58 ksi			

TOWER DESIGN NOTES

1. Tower designed for Exposure C to the TIA-222-G Standard.
2. Tower designed for a 105 mph basic wind in accordance with the TIA-222-G Standard.
3. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Structure Class II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. TOWER RATING: 99.8%

Centek Engineering Inc.
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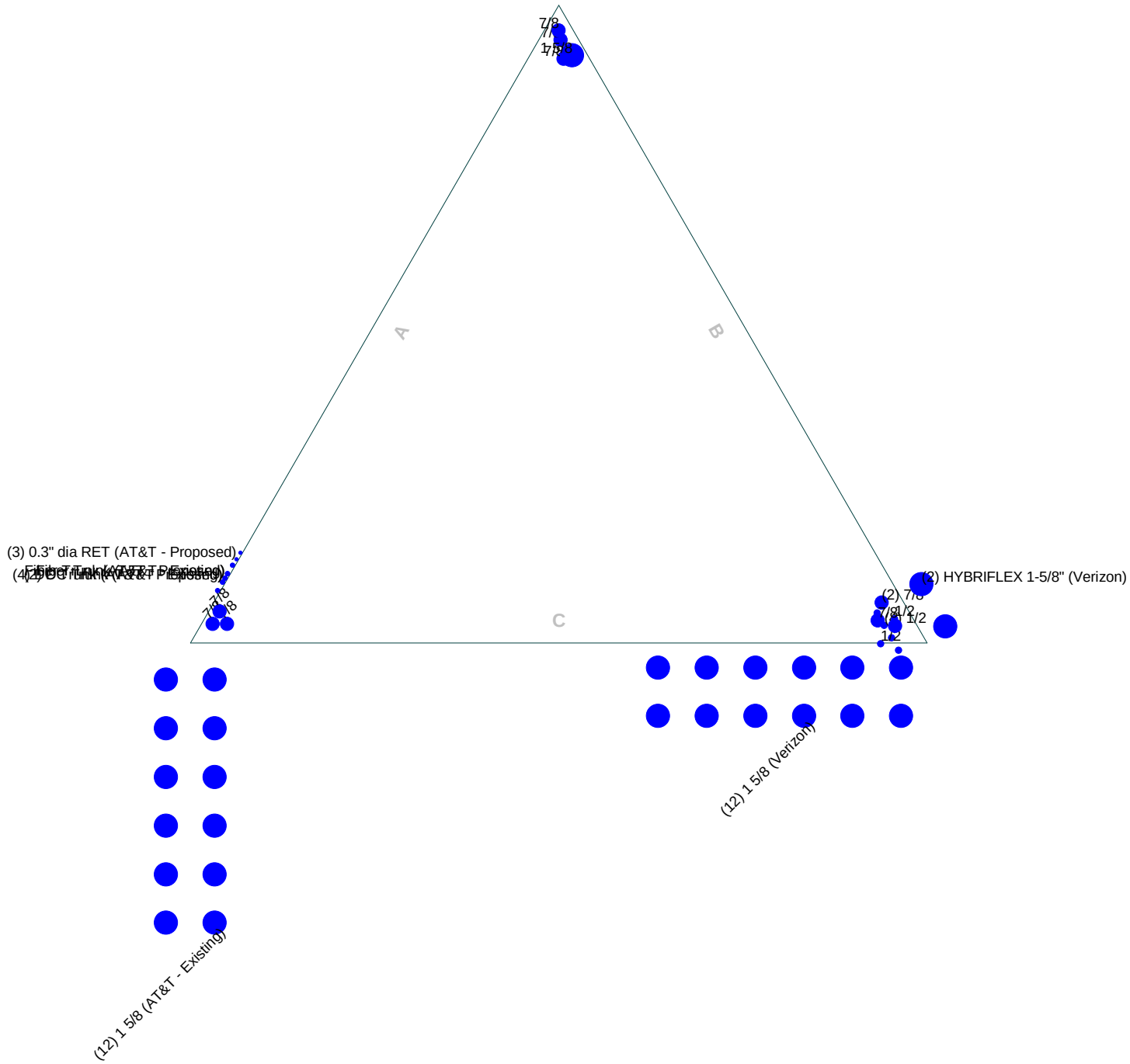
Branford, CT 06405
Phone: (203) 488-0580
FAX: (203) 488-8587

Job: ***19002.00 - CT2049***			
Project: ***370' Guyed Tower - 689 Old Colchester Road, Montville, CT***			
Client: AT&T Mobility	Drawn by: TJL	App'd:	
Code: TIA-222-G	Date: 02/07/19	Scale: NTS	
Path: J:\Jobs\1900200.W\04_Structural\Backup Documentation\tnxTower Files\370' Guyed Rohn Tower.eri		Dwg No. E-1	

Feed Line Plan

Round Flat App In Face App Out Face



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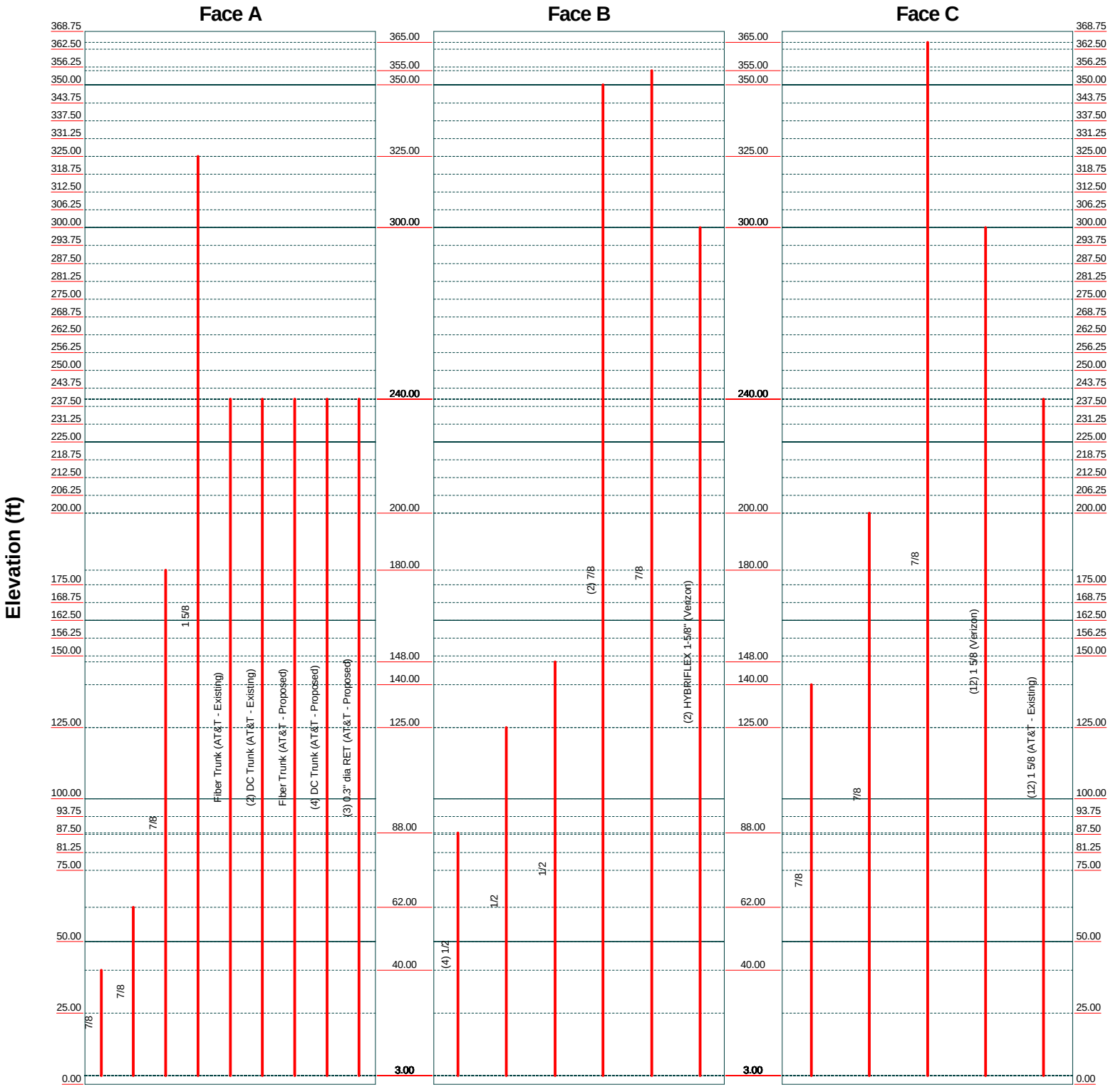
Feed Line Distribution Chart
0' - 368'9"

Round | Flat | App In Face | App Out Face | Truss Leg



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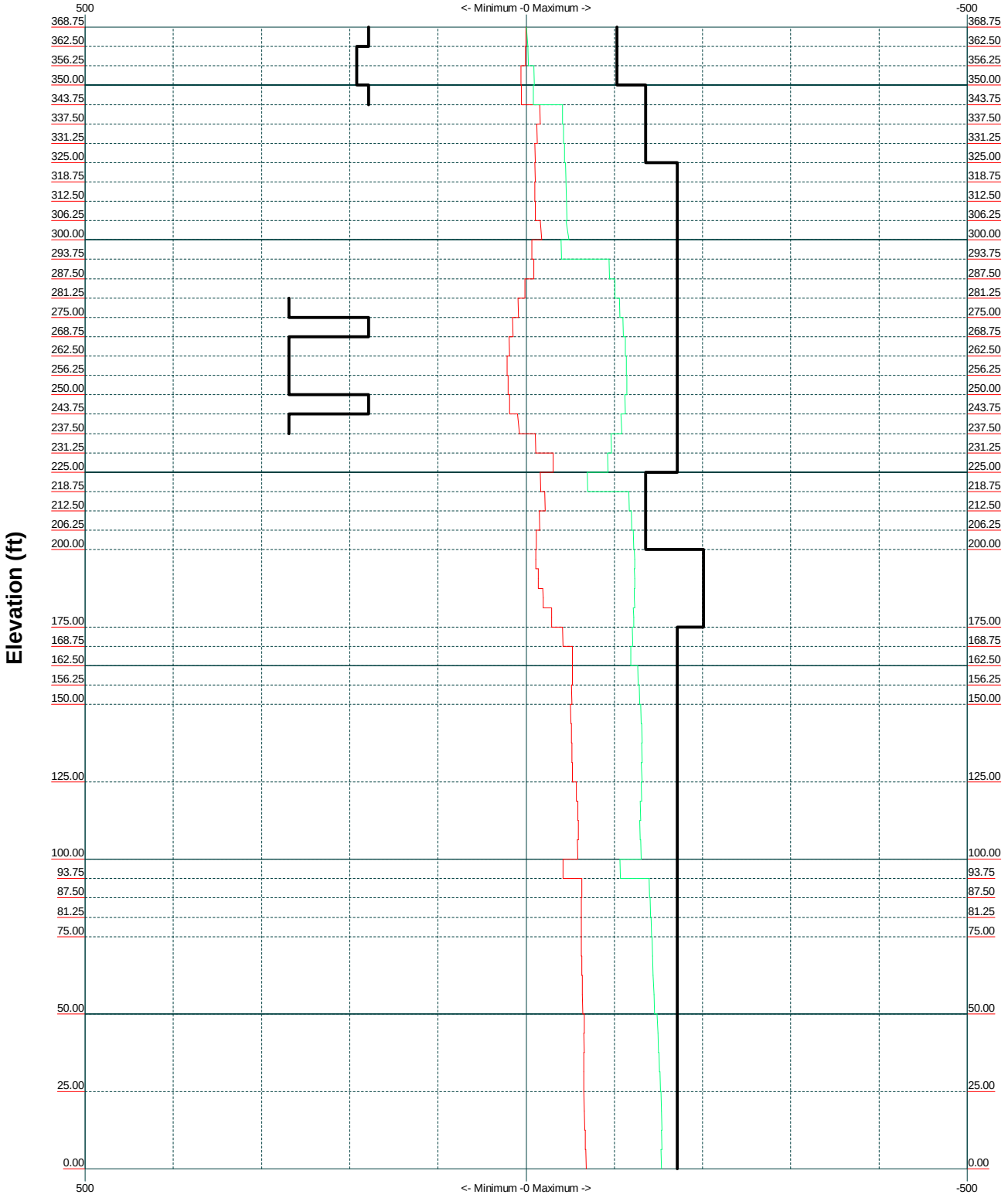
Path: J:\Jobs\1900200.WI\04_Structural\Backup Documentation\tnxTower Files\370' Guyed Rohn Tower.eri		Dwg No. E-7

TIA-222-G - 105 mph/50 mph 0.7500 in Ice Exposure C

Leg Capacity ——— **Leg Compression (K)**



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Job: ***19002.00 - CT2049***		
Project: ***370' Guyed Tower - 689 Old Colchester Road, Montville, CT***		
Client: AT&T Mobility	Drawn by: TJL	App'd:
Code: TIA-222-G	Date: 02/07/19	Scale: NTS
Path: J:\Jobs\1900200.WI\04_Structural\Backup Documentation\tnxTower Files\370' Guyed Rohn Tower.eri		Dwg No. E-3

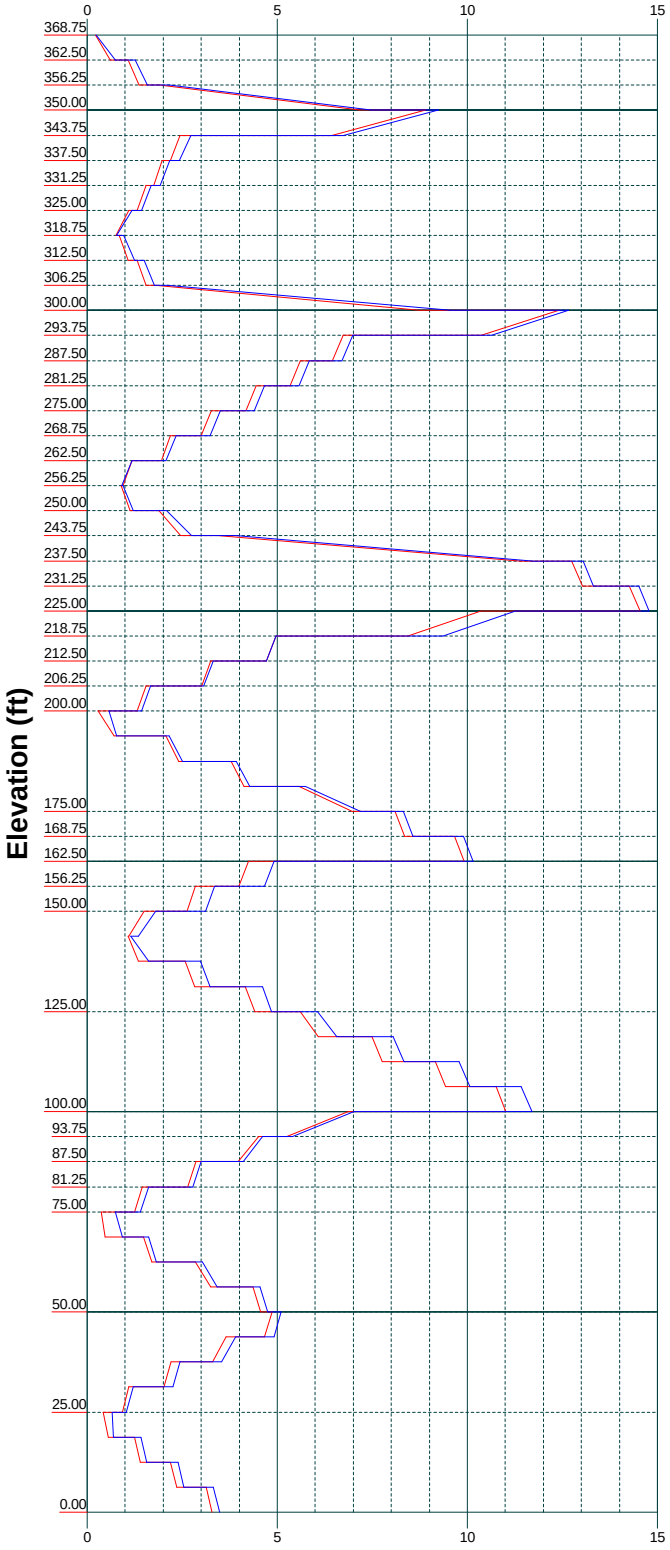
TIA-222-G - 105 mph/50 mph 0.7500 in Ice Exposure C

Vx Vz

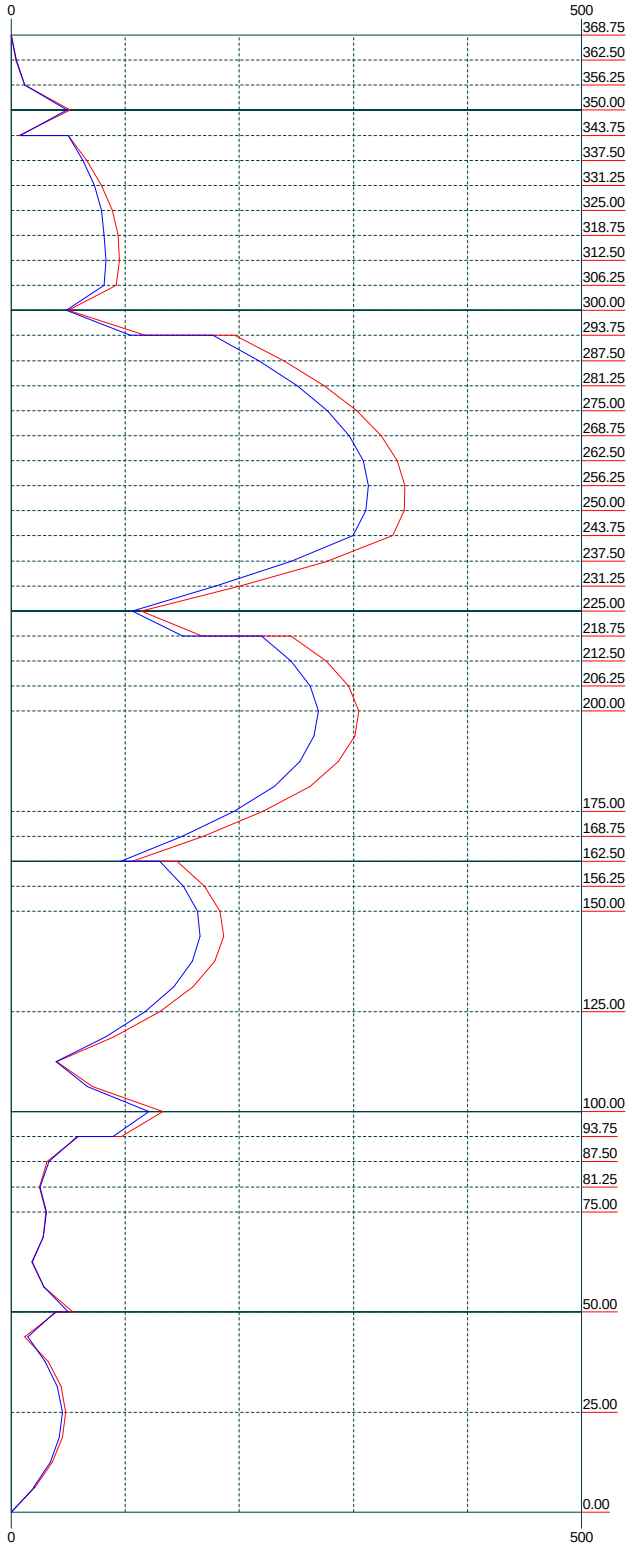
Maximum Values

Mx Mz

Global Mast Shear (K)



Global Mast Moment (kip-ft)



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Job: ***19002.00 - CT2049***		
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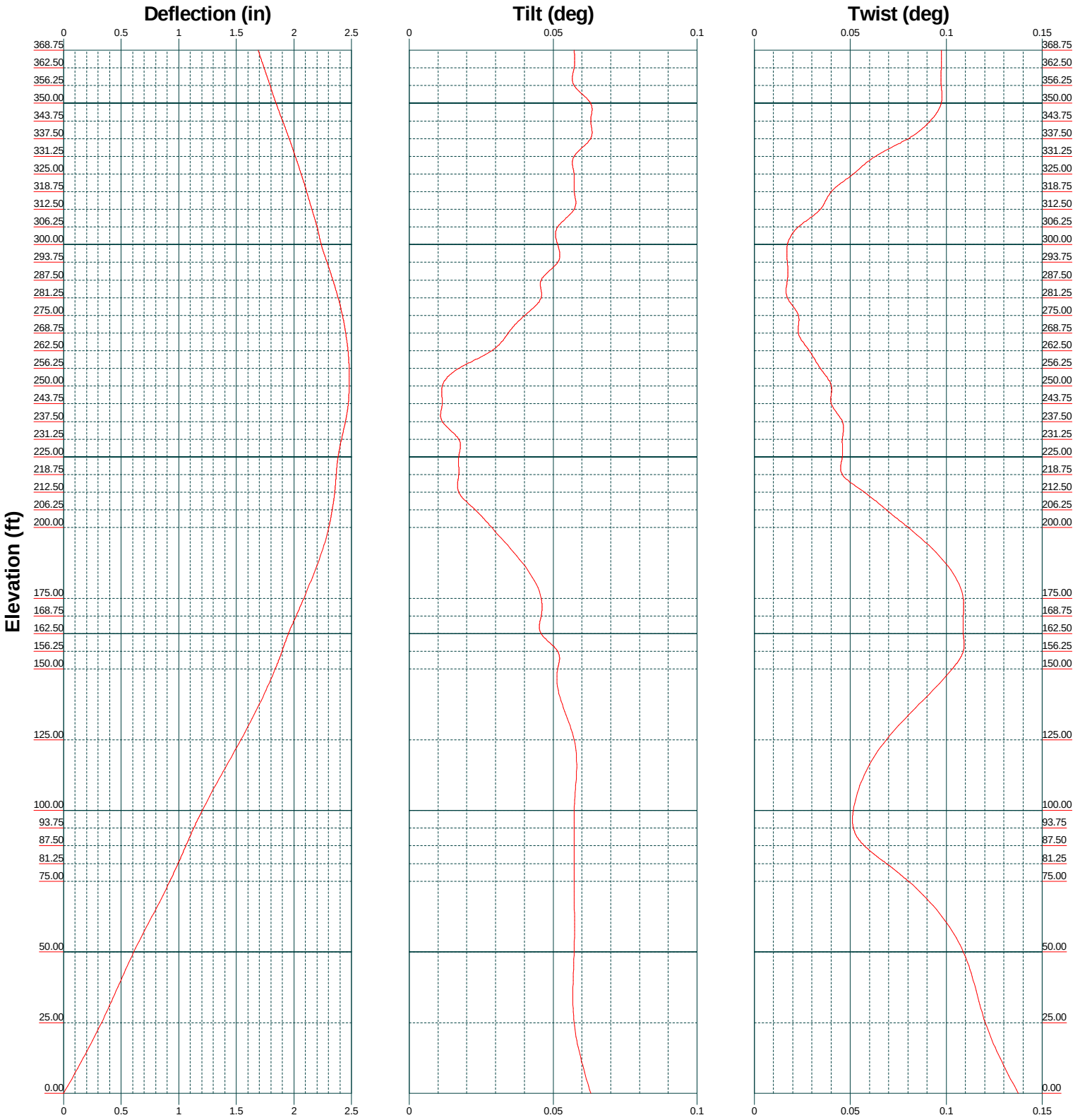
Client: AT&T Mobility	Drawn by: TJL	App'd:
Code: TIA-222-G	Date: 02/07/19	Scale: NTS
Path: J:\Jobs\1900200.WI\04_Structural\Backup Documentation\tnxTower Files\370' Guyed Rohn Tower.eri		Dwg No. E-4

TIA-222-G - Service - 60 mph

Maximum Values



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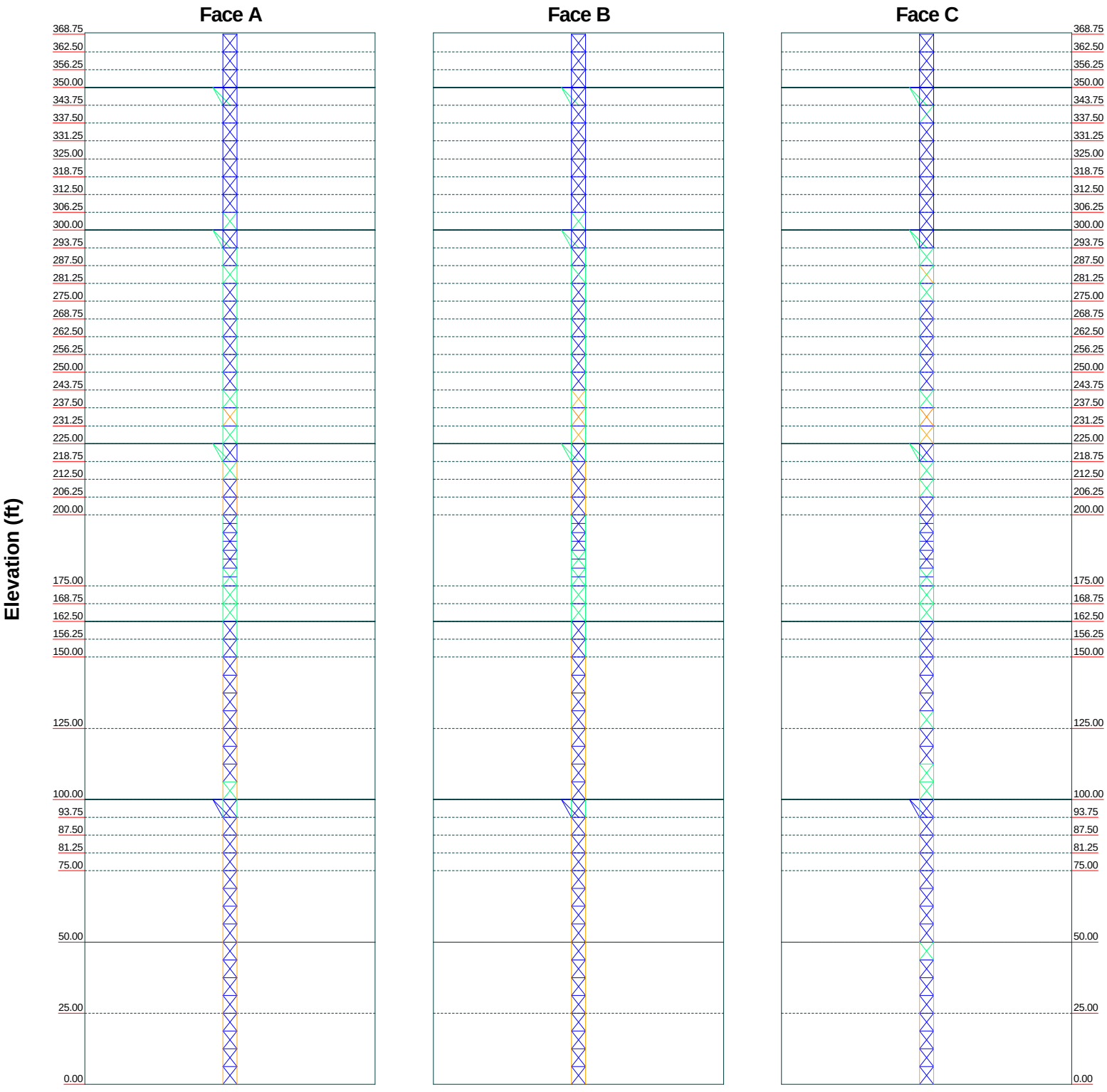
Code: TIA-222-G	Date: 02/07/19	Scale: NTS
Path: J:\Jobs\1900200.WI\04_Structural\Backup Documentation\tnxTower Files\370' Guyed Rohn Tower.eri		Dwg No. E-5

Stress Distribution Chart
0' - 368'9"

> 100% | 90%-100% | 75%-90% | 50%-75% | < 50% Overstress



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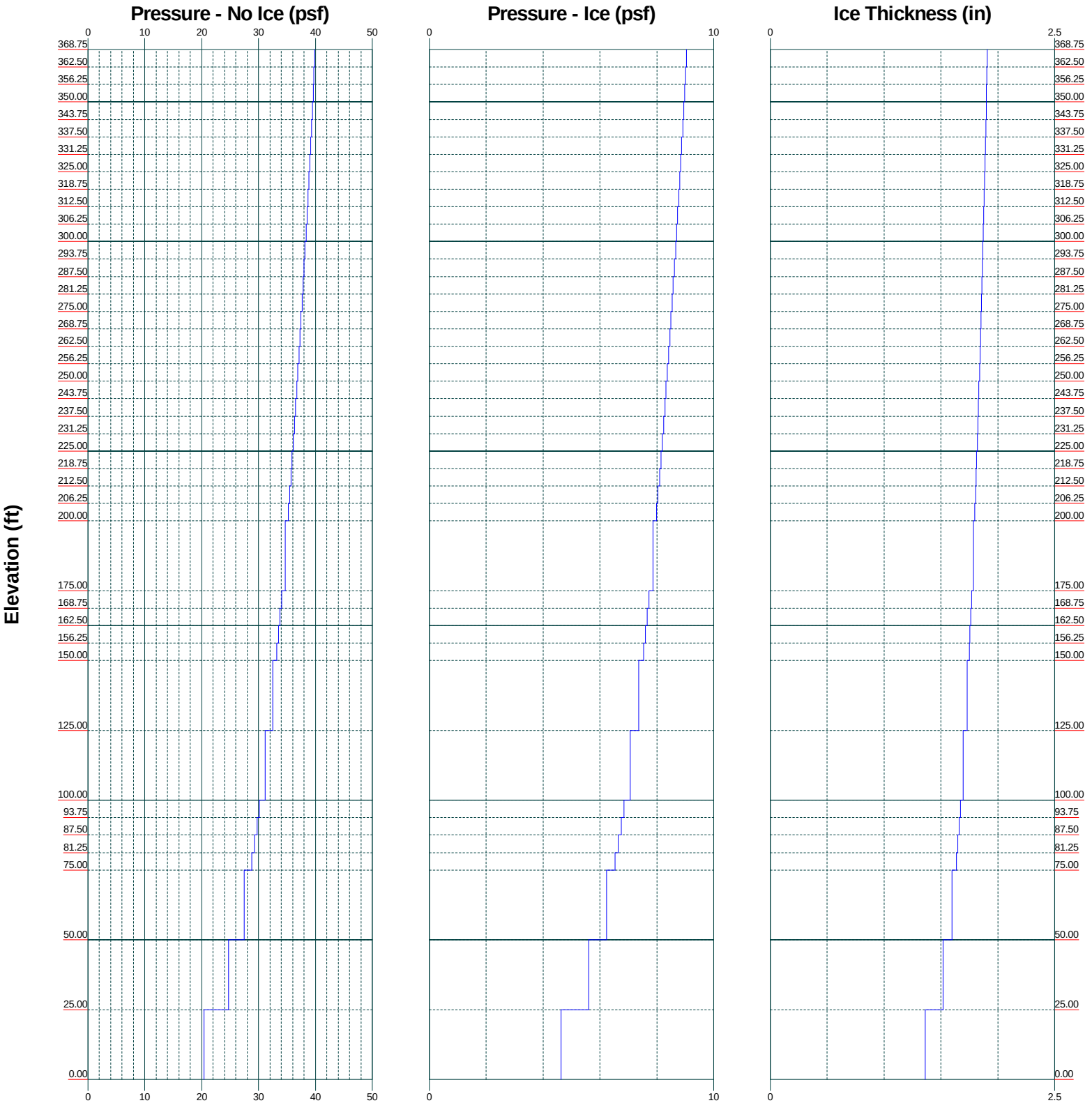
Path: J:\Jobs\1900200.WI\04_Structural\Backup Documentation\tnxTower Files\370' Guyed Rohn Tower.eri		Dwg No. E-8

Wind Pressures and Ice Thickness

TIA-222-G - 105 mph/50 mph 0.7500 in Ice Exposure C



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Job: ***19002.00 - CT2049***		
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Client: AT&T Mobility	Drawn by: TJL	App'd:
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Path: J:\Jobs\1900200.WI\04_Structural\Backup Documentation\tnxTower Files\370' Guyed Rohn Tower.eri		Dwg No. E-9

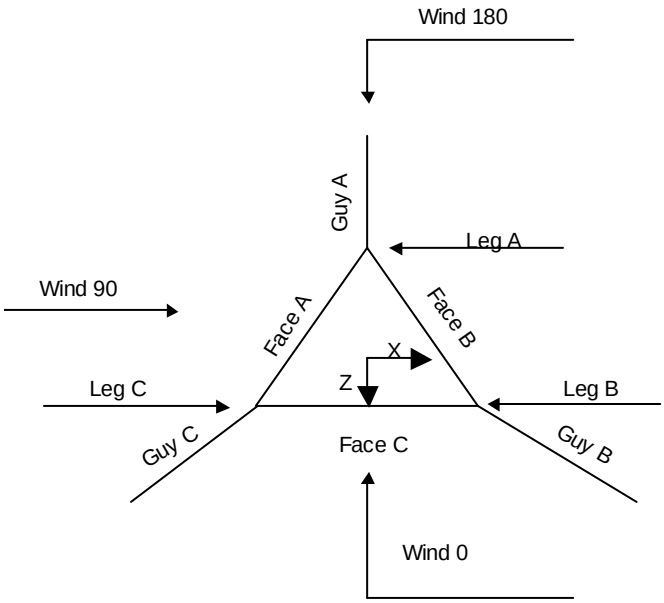
Tower Input Data

The main tower is a 3x guyed tower with an overall height of 368.75 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 5.00 ft at the top and 5.00 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

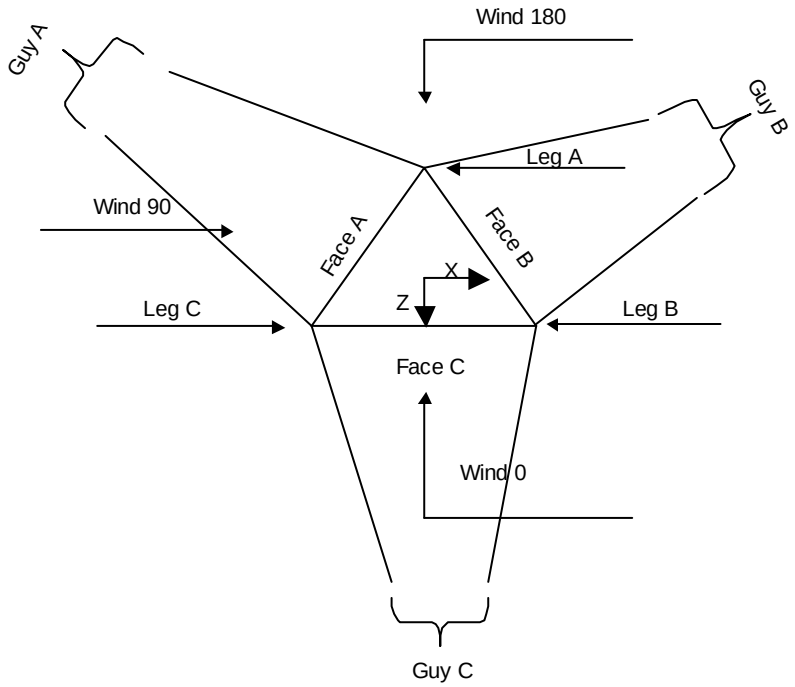
Basic wind speed of 105 mph.
Structure Class II.
Exposure Category C.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Tension only take-up is 0.0313 in.
Pressures are calculated at each section.
Safety factor used in guy design is 1.
Stress ratio used in tower member design is 1.
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-G Bracing Resist. Exemption
√	Include Bolts In Member Capacity	√	Autocalc Torque Arm Areas		Use TIA-222-G 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				



Corner & Starmount Guyed Tower



Face Guyed

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	368.75-362.50			5.00	1	6.25
T2	362.50-356.25			5.00	1	6.25
T3	356.25-350.00			5.00	1	6.25
T4	350.00-343.75			5.00	1	6.25
T5	343.75-337.50			5.00	1	6.25
T6	337.50-331.25			5.00	1	6.25
T7	331.25-325.00			5.00	1	6.25
T8	325.00-318.75			5.00	1	6.25
T9	318.75-312.50			5.00	1	6.25
T10	312.50-306.25			5.00	1	6.25
T11	306.25-300.00			5.00	1	6.25
T12	300.00-293.75			5.00	1	6.25
T13	293.75-287.50			5.00	1	6.25
T14	287.50-281.25			5.00	1	6.25
T15	281.25-275.00			5.00	1	6.25
T16	275.00-268.75			5.00	1	6.25

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T17	268.75-262.50			5.00	1	6.25
T18	262.50-256.25			5.00	1	6.25
T19	256.25-250.00			5.00	1	6.25
T20	250.00-243.75			5.00	1	6.25
T21	243.75-237.50			5.00	1	6.25
T22	237.50-231.25			5.00	1	6.25
T23	231.25-225.00			5.00	1	6.25
T24	225.00-218.75			5.00	1	6.25
T25	218.75-212.50			5.00	1	6.25
T26	212.50-206.25			5.00	1	6.25
T27	206.25-200.00			5.00	1	6.25
T28	200.00-175.00			5.00	1	25.00
T29	175.00-168.75			5.00	1	6.25
T30	168.75-162.50			5.00	1	6.25
T31	162.50-156.25			5.00	1	6.25
T32	156.25-150.00			5.00	1	6.25
T33	150.00-125.00			5.00	1	25.00
T34	125.00-100.00			5.00	1	25.00
T35	100.00-93.75			5.00	1	6.25
T36	93.75-87.50			5.00	1	6.25
T37	87.50-81.25			5.00	1	6.25
T38	81.25-75.00			5.00	1	6.25
T39	75.00-50.00			5.00	1	25.00
T40	50.00-25.00			5.00	1	25.00
T41	25.00-0.00			5.00	1	25.00

Tower Section Geometry *(cont'd)*

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
T1	368.75-362.50	6.25	X Brace	No	No	0.0000	0.0000
T2	362.50-356.25	6.25	X Brace	No	No	0.0000	0.0000
T3	356.25-350.00	6.25	X Brace	No	No	0.0000	0.0000
T4	350.00-343.75	6.25	X Brace	No	Yes	0.0000	0.0000
T5	343.75-337.50	6.25	TX Brace	No	Yes	0.0000	0.0000
T6	337.50-331.25	6.25	TX Brace	No	Yes	0.0000	0.0000
T7	331.25-325.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T8	325.00-318.75	6.25	TX Brace	No	Yes	0.0000	0.0000
T9	318.75-312.50	6.25	TX Brace	No	Yes	0.0000	0.0000
T10	312.50-306.25	6.25	TX Brace	No	Yes	0.0000	0.0000
T11	306.25-300.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T12	300.00-293.75	6.25	X Brace	No	Yes	0.0000	0.0000
T13	293.75-287.50	6.25	TX Brace	No	Yes	0.0000	0.0000
T14	287.50-281.25	6.25	TX Brace	No	Yes	0.0000	0.0000
T15	281.25-275.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T16	275.00-268.75	6.25	TX Brace	No	Yes	0.0000	0.0000
T17	268.75-262.50	6.25	TX Brace	No	Yes	0.0000	0.0000
T18	262.50-256.25	6.25	TX Brace	No	Yes	0.0000	0.0000
T19	256.25-250.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T20	250.00-243.75	6.25	TX Brace	No	Yes	0.0000	0.0000
T21	243.75-237.50	6.25	TX Brace	No	Yes	0.0000	0.0000
T22	237.50-231.25	6.25	TX Brace	No	Yes	0.0000	0.0000
T23	231.25-225.00	6.25	TX Brace	No	Yes	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
T24	225.00-218.75	6.25	X Brace	No	Yes	0.0000	0.0000
T25	218.75-212.50	6.25	TX Brace	No	Yes	0.0000	0.0000
T26	212.50-206.25	6.25	TX Brace	No	Yes	0.0000	0.0000
T27	206.25-200.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T28	200.00-175.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T29	175.00-168.75	6.25	TX Brace	No	Yes	0.0000	0.0000
T30	168.75-162.50	6.25	TX Brace	No	Yes	0.0000	0.0000
T31	162.50-156.25	6.25	TX Brace	No	Yes	0.0000	0.0000
T32	156.25-150.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T33	150.00-125.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T34	125.00-100.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T35	100.00-93.75	6.25	X Brace	No	Yes	0.0000	0.0000
T36	93.75-87.50	6.25	TX Brace	No	Yes	0.0000	0.0000
T37	87.50-81.25	6.25	TX Brace	No	Yes	0.0000	0.0000
T38	81.25-75.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T39	75.00-50.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T40	50.00-25.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T41	25.00-0.00	6.25	TX Brace	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 368.75-362.50	Solid Round	2 3/4	A36 (36 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T2 362.50-356.25	Solid Round	2 3/4	A36 (36 ksi)	Double Angle	2L3x3x5/16	A36 (36 ksi)
T3 356.25-350.00	Solid Round	2 3/4	A36 (36 ksi)	Double Angle	2L3x3x5/16	A36 (36 ksi)
T4 350.00-343.75	Solid Round	3	A36 (36 ksi)	Single Angle	L3x2 1/2x1/4	A36 (36 ksi)
T5 343.75-337.50	Solid Round	3	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T6 337.50-331.25	Solid Round	3	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T7 331.25-325.00	Solid Round	3	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T8 325.00-318.75	Solid Round	3 1/4	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T9 318.75-312.50	Solid Round	3 1/4	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T10 312.50-306.25	Solid Round	3 1/4	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T11 306.25-300.00	Solid Round	3 1/4	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T12 300.00-293.75	Solid Round	3 1/4	A36 (36 ksi)	Single Angle	L3x2 1/2x1/4	A36 (36 ksi)
T13 293.75-287.50	Solid Round	3 1/4	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T14 287.50-281.25	Solid Round	3 1/4	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T15 281.25-275.00	Solid Round	3 1/4	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T16 275.00-268.75	Solid Round	3 1/4	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T17	Solid Round	3 1/4	A36	Solid Round	5/8	A36

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
268.75-262.50			(36 ksi)			(36 ksi)
T18	Solid Round	3 1/4	A36	Solid Round	5/8	A36
262.50-256.25			(36 ksi)			(36 ksi)
T19	Solid Round	3 1/4	A36	Solid Round	3/4	A36
256.25-250.00			(36 ksi)			(36 ksi)
T20	Solid Round	3 1/4	A36	Solid Round	3/4	A36
250.00-243.75			(36 ksi)			(36 ksi)
T21	Solid Round	3 1/4	A36	Solid Round	3/4	A36
243.75-237.50			(36 ksi)			(36 ksi)
T22	Solid Round	3 1/4	A36	Solid Round	3/4	A36
237.50-231.25			(36 ksi)			(36 ksi)
T23	Solid Round	3 1/4	A36	Solid Round	1	A36
231.25-225.00			(36 ksi)			(36 ksi)
T24	Solid Round	3	A36	Double Angle	2L2 1/2x2 1/2x1/4	A36
225.00-218.75			(36 ksi)			(36 ksi)
T25	Solid Round	3	A36	Solid Round	5/8	A36
218.75-212.50			(36 ksi)			(36 ksi)
T26	Solid Round	3	A36	Solid Round	5/8	A36
212.50-206.25			(36 ksi)			(36 ksi)
T27	Solid Round	3	A36	Solid Round	5/8	A36
206.25-200.00			(36 ksi)			(36 ksi)
T28	Solid Round	3	A36	Solid Round	5/8	A36
200.00-175.00			(36 ksi)			(36 ksi)
T29	Solid Round	3 1/4	A36	Solid Round	1	A36
175.00-168.75			(36 ksi)			(36 ksi)
T30	Solid Round	3 1/4	A36	Solid Round	1	A36
168.75-162.50			(36 ksi)			(36 ksi)
T31	Solid Round	3 1/4	A36	Solid Round	5/8	A36
162.50-156.25			(36 ksi)			(36 ksi)
T32	Solid Round	3 1/4	A36	Solid Round	5/8	A36
156.25-150.00			(36 ksi)			(36 ksi)
T33	Solid Round	3 1/4	A36	Solid Round	5/8	A36
150.00-125.00			(36 ksi)			(36 ksi)
T34	Solid Round	3 1/4	A36	Single Angle	L2 1/2x2 1/2x3/16	A36
125.00-100.00			(36 ksi)			(36 ksi)
T35 100.00-93.75	Solid Round	3 1/4	A36	Double Angle	2L2 1/2x2 1/2x1/4	A36
			(36 ksi)			(36 ksi)
T36 93.75-87.50	Solid Round	3 1/4	A36	Solid Round	3/4	A36
			(36 ksi)			(36 ksi)
T37 87.50-81.25	Solid Round	3 1/4	A36	Solid Round	5/8	A36
			(36 ksi)			(36 ksi)
T38 81.25-75.00	Solid Round	3 1/4	A36	Solid Round	5/8	A36
			(36 ksi)			(36 ksi)
T39 75.00-50.00	Solid Round	3 1/4	A36	Solid Round	5/8	A36
			(36 ksi)			(36 ksi)
T40 50.00-25.00	Solid Round	3 1/4	A36	Solid Round	5/8	A36
			(36 ksi)			(36 ksi)
T41 25.00-0.00	Solid Round	3 1/4	A36	Solid Round	5/8	A36
			(36 ksi)			(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 368.75-362.50	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
			(36 ksi)			(36 ksi)
T2 362.50-356.25	Double Angle	2L2 1/2x3x1/4	A36	Pipe		A36
			(36 ksi)			(36 ksi)
T3 356.25-350.00	Double Angle	2L2 1/2x3x1/4	A36	Pipe		A36
			(36 ksi)			(36 ksi)
T4 350.00-343.75	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36
			(36 ksi)			(36 ksi)
T5 343.75-337.50	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36
			(36 ksi)			(36 ksi)
T6 337.50-331.25	Pipe	P1.25x.14	A36	Pipe		A36
			(36 ksi)			(36 ksi)
T7 331.25-325.00	Pipe	P1.25x.14	A36	Pipe		A36
			(36 ksi)			(36 ksi)
T8 325.00-318.75	Pipe	P1.25x.14	A36	Pipe		A36
			(36 ksi)			(36 ksi)
T9 318.75-312.50	Pipe	P1.25x.14	A36	Pipe		A36
			(36 ksi)			(36 ksi)
T10	Pipe	P1.25x.14	A36	Pipe		A36
312.50-306.25			(36 ksi)			(36 ksi)
T11	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36
306.25-300.00			(36 ksi)			(36 ksi)
T12	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36
300.00-293.75			(36 ksi)			(36 ksi)
T13	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36
293.75-287.50			(36 ksi)			(36 ksi)
T14	Pipe	P1.25x.14	A36	Pipe		A36
287.50-281.25			(36 ksi)			(36 ksi)
T15	Pipe	P1.25x.14	A36	Pipe		A36
281.25-275.00			(36 ksi)			(36 ksi)
T16	Pipe	P1.25x.14	A36	Pipe		A36
275.00-268.75			(36 ksi)			(36 ksi)
T17	Pipe	P1.25x.14	A36	Pipe		A36
268.75-262.50			(36 ksi)			(36 ksi)
T18	Pipe	P1.25x.14	A36	Pipe		A36
262.50-256.25			(36 ksi)			(36 ksi)
T19	Pipe	P1.25x.14	A36	Pipe		A36
256.25-250.00			(36 ksi)			(36 ksi)
T20	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36
250.00-243.75			(36 ksi)			(36 ksi)
T21	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36
243.75-237.50			(36 ksi)			(36 ksi)
T22	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36
237.50-231.25			(36 ksi)			(36 ksi)
T23	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36
231.25-225.00			(36 ksi)			(36 ksi)
T24	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36
225.00-218.75			(36 ksi)			(36 ksi)
T25	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36
218.75-212.50			(36 ksi)			(36 ksi)
T26	Pipe	P1.25x.14	A36	Pipe		A36
212.50-206.25			(36 ksi)			(36 ksi)
T27	Pipe	P1.25x.14	A36	Pipe		A36
206.25-200.00			(36 ksi)			(36 ksi)
T28	Pipe	P1.25x.14	A36	Pipe		A36
200.00-175.00			(36 ksi)			(36 ksi)
T29	Pipe	P1.25x.14	A36	Pipe		A36
175.00-168.75			(36 ksi)			(36 ksi)
T30	Pipe	P1.25x.14	A36	Pipe		A36
168.75-162.50			(36 ksi)			(36 ksi)
T31	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36
162.50-156.25			(36 ksi)			(36 ksi)

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T32 156.25-150.00	Pipe	P1.25x.14	A36 (36 ksi)	Pipe		A36 (36 ksi)
T33 150.00-125.00	Pipe	P1.25x.14	A36 (36 ksi)	Pipe		A36 (36 ksi)
T34 125.00-100.00	Pipe	P1.25x.14	A36 (36 ksi)	Pipe		A36 (36 ksi)
T35 100.00-93.75	Double Angle	2L2 1/2x2x1/4	A36 (36 ksi)	Pipe		A36 (36 ksi)
T36 93.75-87.50	Double Angle	2L2 1/2x2x1/4	A36 (36 ksi)	Pipe		A36 (36 ksi)
T37 87.50-81.25	Pipe	P1.25x.14	A36 (36 ksi)	Pipe		A36 (36 ksi)
T38 81.25-75.00	Pipe	P1.25x.14	A36 (36 ksi)	Pipe		A36 (36 ksi)
T39 75.00-50.00	Pipe	P1.25x.14	A36 (36 ksi)	Pipe		A36 (36 ksi)
T40 50.00-25.00	Single Angle	L2 1/2x2x1/4	A36 (36 ksi)	Pipe		A36 (36 ksi)
T41 25.00-0.00	Pipe	P1.25x.14	A36 (36 ksi)	Pipe		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
T4 350.00-343.75	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T5 343.75-337.50	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T6 337.50-331.25	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T7 331.25-325.00	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T8 325.00-318.75	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T9 318.75-312.50	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T10 312.50-306.25	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T11 306.25-300.00	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T12 300.00-293.75	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T13 293.75-287.50	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T14 287.50-281.25	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T15 281.25-275.00	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T16 275.00-268.75	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T17 268.75-262.50	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T18	None	Flat Bar		A36	Pipe	P1.25x.14	A36

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
262.50-256.25				(36 ksi)			(36 ksi)
T19	None	Flat Bar		A36	Pipe	P1.25x.14	A36
256.25-250.00				(36 ksi)			(36 ksi)
T20	None	Flat Bar		A36	Pipe	P1.25x.14	A36
250.00-243.75				(36 ksi)			(36 ksi)
T21	None	Flat Bar		A36	Pipe	P1.25x.14	A36
243.75-237.50				(36 ksi)			(36 ksi)
T22	None	Flat Bar		A36	Pipe	P1.25x.14	A36
237.50-231.25				(36 ksi)			(36 ksi)
T23	None	Flat Bar		A36	Pipe	P1.25x.14	A36
231.25-225.00				(36 ksi)			(36 ksi)
T24	None	Flat Bar		A36	Pipe	P1.25x.14	A36
225.00-218.75				(36 ksi)			(36 ksi)
T25	None	Flat Bar		A36	Pipe	P1.25x.14	A36
218.75-212.50				(36 ksi)			(36 ksi)
T26	None	Flat Bar		A36	Pipe	P1.25x.14	A36
212.50-206.25				(36 ksi)			(36 ksi)
T27	None	Flat Bar		A36	Pipe	P1.25x.14	A36
206.25-200.00				(36 ksi)			(36 ksi)
T28	None	Flat Bar		A36	Pipe	P1.25x.14	A36
200.00-175.00				(36 ksi)			(36 ksi)
T29	None	Single Angle		A36	Pipe	P1.25x.14	A36
175.00-168.75				(36 ksi)			(36 ksi)
T30	None	Single Angle		A36	Pipe	P1.25x.14	A36
168.75-162.50				(36 ksi)			(36 ksi)
T31	None	Single Angle		A36	Pipe	P1.25x.14	A36
162.50-156.25				(36 ksi)			(36 ksi)
T32	None	Single Angle		A36	Pipe	P1.25x.14	A36
156.25-150.00				(36 ksi)			(36 ksi)
T33	None	Single Angle		A36	Pipe	P1.25x.14	A36
150.00-125.00				(36 ksi)			(36 ksi)
T34	None	Single Angle		A36	Pipe	P1.25x.14	A36
125.00-100.00				(36 ksi)			(36 ksi)
T35 100.00-93.75	None	Single Angle		A36	Pipe	P1.25x.14	A36
				(36 ksi)			(36 ksi)
T36 93.75-87.50	None	Single Angle		A36	Pipe	P1.25x.14	A36
				(36 ksi)			(36 ksi)
T37 87.50-81.25	None	Single Angle		A36	Pipe	P1.25x.14	A36
				(36 ksi)			(36 ksi)
T38 81.25-75.00	None	Single Angle		A36	Pipe	P1.25x.14	A36
				(36 ksi)			(36 ksi)
T39 75.00-50.00	None	Single Angle		A36	Pipe	P1.25x.14	A36
				(36 ksi)			(36 ksi)
T40 50.00-25.00	None	Single Angle		A36	Pipe	P1.25x.14	A36
				(36 ksi)			(36 ksi)
T41 25.00-0.00	None	Single Angle		A36	Pipe	P1.25x.14	A36
				(36 ksi)			(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
T28	Pipe	P1.25x.14	A36	Solid Round		A572-50

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
200.00-175.00			(36 ksi)			(50 ksi)

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 368.75-362.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T2 362.50-356.25	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T3 356.25-350.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T4 350.00-343.75	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T5 343.75-337.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T6 337.50-331.25	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T7 331.25-325.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T8 325.00-318.75	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T9 318.75-312.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T10 312.50-306.25	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T11 306.25-300.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T12 300.00-293.75	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T13 293.75-287.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T14 287.50-281.25	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T15 281.25-275.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T16 275.00-268.75	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T17 268.75-262.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T18 262.50-256.25	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T19 256.25-250.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T20 250.00-243.75	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T21 243.75-237.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T22 237.50-231.25	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T23 231.25-225.00	0.00	0.0000	A36 (36 ksi)	1	1	1	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
T24 225.00-218.75	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T25 218.75-212.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T26 212.50-206.25	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T27 206.25-200.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T28 200.00-175.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T29 175.00-168.75	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T30 168.75-162.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T31 162.50-156.25	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T32 156.25-150.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T33 150.00-125.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T34 125.00-100.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T35 100.00-93.75	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T36 93.75-87.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T37 87.50-81.25	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T38 81.25-75.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T39 75.00-50.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T40 50.00-25.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T41 25.00-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000

Tower Section Geometry *(cont'd)*

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
T1 368.75-362.50	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 362.50-356.25	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 356.25-350.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 350.00-343.75	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5 343.75-337.50	Yes	Yes	1	1 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
T6	Yes	Yes	1	1	1	1	1	1	1	1
337.50-331.25				1	1	1	1	1	1	1
T7	Yes	Yes	1	1	1	1	1	1	1	1
331.25-325.00				1	1	1	1	1	1	1
T8	Yes	Yes	1	1	1	1	1	1	1	1
325.00-318.75				1	1	1	1	1	1	1
T9	Yes	Yes	1	1	1	1	1	1	1	1
318.75-312.50				1	1	1	1	1	1	1
T10	Yes	Yes	1	1	1	1	1	1	1	1
312.50-306.25				1	1	1	1	1	1	1
T11	Yes	Yes	1	1	1	1	1	1	1	1
306.25-300.00				1	1	1	1	1	1	1
T12	Yes	Yes	1	1	1	1	1	1	1	1
300.00-293.75				1	1	1	1	1	1	1
T13	Yes	Yes	1	1	1	1	1	1	1	1
293.75-287.50				1	1	1	1	1	1	1
T14	Yes	Yes	1	1	1	1	1	1	1	1
287.50-281.25				1	1	1	1	1	1	1
T15	Yes	Yes	1	1	1	1	1	1	1	1
281.25-275.00				1	1	1	1	1	1	1
T16	Yes	Yes	1	1	1	1	1	1	1	1
275.00-268.75				1	1	1	1	1	1	1
T17	Yes	Yes	1	1	1	1	1	1	1	1
268.75-262.50				1	1	1	1	1	1	1
T18	Yes	Yes	1	1	1	1	1	1	1	1
262.50-256.25				1	1	1	1	1	1	1
T19	Yes	Yes	1	1	1	1	1	1	1	1
256.25-250.00				1	1	1	1	1	1	1
T20	Yes	Yes	1	1	1	1	1	1	1	1
250.00-243.75				1	1	1	1	1	1	1
T21	Yes	Yes	1	1	1	1	1	1	1	1
243.75-237.50				1	1	1	1	1	1	1
T22	Yes	Yes	1	1	1	1	1	1	1	1
237.50-231.25				1	1	1	1	1	1	1
T23	Yes	Yes	1	1	1	1	1	1	1	1
231.25-225.00				1	1	1	1	1	1	1
T24	Yes	Yes	1	1	1	1	1	1	1	1
225.00-218.75				1	1	1	1	1	1	1
T25	Yes	Yes	1	1	1	1	1	1	1	1
218.75-212.50				1	1	1	1	1	1	1
T26	Yes	Yes	1	1	1	1	1	1	1	1
212.50-206.25				1	1	1	1	1	1	1
T27	Yes	Yes	1	1	1	1	1	1	1	1
206.25-200.00				1	1	1	1	1	1	1
T28	Yes	Yes	1	1	1	1	1	1	1	1
200.00-175.00				1	1	1	1	1	1	1
T29	Yes	Yes	1	1	1	1	1	1	1	1
175.00-168.75				1	1	1	1	1	1	1
T30	Yes	Yes	1	1	1	1	1	1	1	1
168.75-162.50				1	1	1	1	1	1	1
T31	Yes	Yes	1	1	1	1	1	1	1	1
162.50-156.25				1	1	1	1	1	1	1
T32	Yes	Yes	1	1	1	1	1	1	1	1
156.25-150.00				1	1	1	1	1	1	1
T33	Yes	Yes	1	1	1	1	1	1	1	1
150.00-125.00				1	1	1	1	1	1	1
T34	Yes	Yes	1	1	1	1	1	1	1	1
125.00-100.00				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
T35	Yes	Yes	1	1	1	1	1	1	1	1
100.00-93.75				1	1	1	1	1	1	1
T36	Yes	Yes	1	1	1	1	1	1	1	1
93.75-87.50				1	1	1	1	1	1	1
T37	Yes	Yes	1	1	1	1	1	1	1	1
87.50-81.25				1	1	1	1	1	1	1
T38	Yes	Yes	1	1	1	1	1	1	1	1
81.25-75.00				1	1	1	1	1	1	1
T39	Yes	Yes	1	1	1	1	1	1	1	1
75.00-50.00				1	1	1	1	1	1	1
T40	Yes	Yes	1	1	1	1	1	1	1	1
50.00-25.00				1	1	1	1	1	1	1
T41	Yes	Yes	1	1	1	1	1	1	1	1
25.00-0.00				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 Net Width Deduct in	Leg U	Diagonal Net Width Deduct in	Diagonal U	Top Girt Net Width Deduct in	Top Girt U	Bottom Girt Net Width Deduct in	Bottom Girt U	Mid Girt Net Width Deduct in	Mid Girt U	Long Horizontal Net Width Deduct in	Long Horizontal U	Short Horizontal Net Width Deduct in	Short Horizontal U
T1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
368.75-362.50														
T2	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
362.50-356.25														
T3	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
356.25-350.00														
T4	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
350.00-343.75														
T5	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
343.75-337.50														
T6	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
337.50-331.25														
T7	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
331.25-325.00														
T8	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
325.00-318.75														
T9	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
318.75-312.50														
T10	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
312.50-306.25														
T11	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
306.25-300.00														
T12	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
300.00-293.75														
T13	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
293.75-287.50														
T14	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
287.50-281.25														

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
T15 281.25-275.00	0.0000	1	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 275.00-268.75	0.0000	1	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 268.75-262.50	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T18 262.50-256.25	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T19 256.25-250.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T20 250.00-243.75	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T21 243.75-237.50	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T22 237.50-231.25	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T23 231.25-225.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T24 225.00-218.75	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T25 218.75-212.50	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T26 212.50-206.25	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T27 206.25-200.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T28 200.00-175.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T29 175.00-168.75	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T30 168.75-162.50	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T31 162.50-156.25	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T32 156.25-150.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T33 150.00-125.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T34 125.00-100.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T35 100.00-93.75	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T36 93.75-87.50	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T37 87.50-81.25	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T38 81.25-75.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T39 75.00-50.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T40 50.00-25.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T41 25.00-0.00	0.0000	1	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	Flange	0.7500	6	0.5000	2	0.6250	2	0.6250	0	0.6250	0	0.6250	2	0.6250	0
368.75-362.50		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T2	Flange	0.7500	0	0.5000	2	0.5000	2	0.6250	0	0.6250	0	0.6250	2	0.6250	0
362.50-356.25		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T3	Flange	0.7500	0	0.5000	2	0.5000	2	0.6250	0	0.6250	0	0.6250	2	0.6250	0
356.25-350.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T4	Flange	0.7500	6	0.6250	2	0.6250	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
350.00-343.75		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T5	Flange	0.7500	0	0.5000	2	0.6250	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
343.75-337.50		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T6	Flange	0.7500	0	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
337.50-331.25		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T7	Flange	0.7500	0	0.5000	2	0.5000	2	0.5000	0	0.6250	0	0.6250	2	0.6250	0
331.25-325.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T8	Flange	0.7500	6	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	1
325.00-318.75		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T9	Flange	0.7500	0	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	1
318.75-312.50		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T10	Flange	0.7500	0	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	1
312.50-306.25		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T11	Flange	0.7500	0	0.5000	2	0.6250	2	0.6250	0	0.6250	0	0.6250	2	0.6250	1
306.25-300.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T12	Flange	0.7500	6	0.6250	2	0.6250	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
300.00-293.75		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T13	Flange	0.7500	0	0.5000	2	0.6250	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
293.75-287.50		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T14	Flange	0.7500	0	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
287.50-281.25		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T15	Flange	0.7500	0	0.5000	2	0.6250	2	0.5000	0	0.6250	0	0.6250	2	0.6250	0
281.25-275.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T16	Flange	0.7500	6	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
275.00-268.75		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T17	Flange	0.7500	0	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
268.75-262.50		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T18	Flange	0.7500	0	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
262.50-256.25		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T19	Flange	0.7500	0	0.5000	2	0.5000	2	0.5000	0	0.6250	0	0.6250	2	0.6250	0
256.25-250.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T20	Flange	0.7500	6	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
250.00-243.75		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T21	Flange	0.7500	0	0.5000	2	0.6250	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
243.75-237.50		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T22	Flange	0.7500	0	0.5000	2	0.6250	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
237.50-231.25		A325N		A325X		A325N		A325N		A325N		A325N		A325N	
T23	Flange	0.7500	0	0.5000	2	0.6250	2	0.5000	0	0.6250	0	0.6250	2	0.6250	0
231.25-225.00		A325N		A325X		A325N		A325N		A325N		A325N		A325N	
T24	Flange	0.7500	6	0.6250	2	0.6250	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
225.00-218.75		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T25	Flange	0.7500	0	0.5000	2	0.6250	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
218.75-212.50		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T26	Flange	0.7500	0	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
212.50-206.25		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T27	Flange	0.7500	0	0.5000	2	0.5000	2	0.5000	0	0.6250	0	0.6250	2	0.6250	0
206.25-200.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T28	Flange	0.7500	6	0.5000	2	0.5000	2	0.6250	0	0.6250	0	0.6250	2	0.6250	0
200.00-175.00		A325N		A325N		A325N		A490X		A325N		A325N		A325N	

Tower Elevation ft	Leg Connection Type	Leg Bolt Size in	Leg No.	Diagonal Bolt Size in	Diagonal No.	Top Girt Bolt Size in	Top Girt No.	Bottom Girt Bolt Size in	Bottom Girt No.	Mid Girt Bolt Size in	Mid Girt No.	Long Horizontal Bolt Size in	Long Horizontal No.	Short Horizontal Bolt Size in	Short Horizontal No.
T29	Flange	0.7500	6	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
175.00-168.75		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T30	Flange	0.7500	0	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
168.75-162.50		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T31	Flange	0.7500	0	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
162.50-156.25		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T32	Flange	0.7500	0	0.5000	2	0.5000	2	0.5000	0	0.6250	0	0.6250	2	0.6250	0
156.25-150.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T33	Flange	0.7500	6	0.5000	2	0.5000	2	0.5000	0	0.6250	0	0.6250	2	0.6250	0
150.00-125.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T34	Flange	0.7500	6	0.6250	2	0.6250	2	0.5000	0	0.6250	0	0.6250	2	0.6250	0
125.00-100.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T35	Flange	0.7500	6	0.6250	2	0.6250	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
100.00-93.75		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T36	Flange	0.7500	0	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
93.75-87.50		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T37	Flange	0.7500	0	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
87.50-81.25		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T38	Flange	0.7500	0	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
81.25-75.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T39	Flange	0.7500	6	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
75.00-50.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T40	Flange	0.7500	6	0.5000	2	0.5000	2	0.5000	0	0.6250	0	0.6250	2	0.6250	0
50.00-25.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T41 25.00-0.00	Flange	0.7500	6	0.5000	2	0.5000	2	0.5000	0	0.6250	0	0.6250	2	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	

Guy Data

Guy Elevation ft	Guy Grade		Guy Size	Initial Tension K	%	Guy Modulus ksi	Guy Weight plf	L_u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
350	EHS	A	7/8	7.97	10%	19000	1.581	430.92	247.15	0.0000	-5.80	100%
		B	7/8	7.97	10%	19000	1.581	424.88	247.51	0.0000	1.81	100%
		C	7/8	7.97	10%	19000	1.581	438.63	251.45	0.0000	-12.20	100%
300	EHS	A	7/8	7.97	10%	19000	1.581	376.90	224.79	0.0000	-5.41	100%
		B	7/8	7.97	10%	19000	1.581	368.38	219.43	0.0000	1.23	100%
		C	7/8	7.97	10%	19000	1.581	382.21	227.42	0.0000	-10.07	100%
225	EHS	A	3/4	5.83	10%	19000	1.155	319.27	224.79	0.0000	-5.41	100%
		B	3/4	5.83	10%	19000	1.155	310.78	219.43	0.0000	1.23	100%
		C	3/4	5.83	10%	19000	1.155	324.45	227.42	0.0000	-10.07	100%
162.5	EHS	A	3/4	5.83	10%	19000	1.155	259.49	201.41	0.0000	-4.96	100%
		B	3/4	5.83	10%	19000	1.155	249.91	193.65	0.0000	0.72	100%
		C	3/4	5.83	10%	19000	1.155	266.15	206.73	0.0000	-8.98	100%
100	EHS	A	9/16	3.50	10%	21000	0.671	223.95	201.41	0.0000	-4.96	100%
		B	9/16	3.50	10%	21000	0.671	214.45	193.65	0.0000	0.72	100%
		C	9/16	3.50	10%	21000	0.671	230.53	206.73	0.0000	-8.98	100%
50	EHS	A	9/16	3.50	10%	21000	0.671	123.30	114.04	0.0000	-3.60	100%
		B	9/16	3.50	10%	21000	0.671	123.03	115.63	0.0000	0.50	100%
		C	9/16	3.50	10%	21000	0.671	124.42	114.41	0.0000	-5.40	100%

Guy Data*(cont'd)*

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
350	Torque Arm	12.00	49.0000	Bat Ear	A36 (36 ksi)	Double Angle	2L3x2 1/2x1/4
300	Torque Arm	12.00	49.0000	Bat Ear	A36 (36 ksi)	Double Angle	2L3x2 1/2x1/4
225	Torque Arm	12.00	49.0000	Bat Ear	A36 (36 ksi)	Double Angle	2L3x2 1/2x1/4
162.5	Corner						
100	Torque Arm	12.00	49.0000	Bat Ear	A36 (36 ksi)	Double Angle	2L3x2 1/2x1/4
50	Corner						

Guy Data *(cont'd)*

Guy Elevation ft	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-Off Grade	Pull-Off Type	Pull-Off Size
350.00	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Channel	
300.00	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Channel	
225.00	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Channel	
162.50	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Channel	
100.00	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Channel	
50.00	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Channel	

Guy Data *(cont'd)*

Guy Elevation ft	Cable Weight A K	Cable Weight B K	Cable Weight C K	Cable Weight D K	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
350	0.68	0.67	0.69		17.81 7.3 sec/pulse	17.33 7.2 sec/pulse	18.44 7.4 sec/pulse	
300	0.60	0.58	0.60		13.69 6.4 sec/pulse	13.09 6.2 sec/pulse	14.07 6.5 sec/pulse	
225	0.37	0.36	0.37		9.88 5.4 sec/pulse	9.37 5.3 sec/pulse	10.20 5.5 sec/pulse	
162.5	0.30	0.29	0.31		6.57 4.4 sec/pulse	6.10 4.3 sec/pulse	6.91 4.5 sec/pulse	
100	0.15	0.14	0.15		4.76 3.8 sec/pulse	4.37 3.6 sec/pulse	5.05 3.9 sec/pulse	
50	0.08	0.08	0.08		1.45	1.45	1.48	

Guy Elevation ft	Cable Weight A K	Cable Weight B K	Cable Weight C K	Cable Weight D K	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
					2.1 sec/pulse	2.1 sec/pulse	2.1 sec/pulse	

Guy Data *(cont'd)*

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm K_x	Torque Arm K_y	Pull Off K_x	Pull Off K_y	Diagonal K_x	Diagonal K_y
350	No	No	1	1	1	1	1	1
300	No	No	1	1	1	1	1	1
225	No	No	1	1	1	1	1	1
162.5	No	No			1	1	1	1
100	No	No	1	1	1	1	1	1
50	No	No			1	1	1	1

Guy Data *(cont'd)*

Guy Elevation ft	Torque-Arm Bolt Size in	Torque-Arm Number	Torque-Arm Net Width Deduct in	Torque-Arm U	Pull Off Bolt Size in	Pull Off Number	Pull Off Net Width Deduct in	Pull Off U	Diagonal Bolt Size in	Diagonal Number	Diagonal Net Width Deduct in	Diagonal U
350	0.8750 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
300	0.8750 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
225	0.8750 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
162.5	0.8750 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
100	0.8750 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
50	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
350	A	172.10	34	8	1.7694
	B	175.91	34	8	1.7732
	C	168.90	34	8	1.7660
300	A	147.30	33	7	1.7420
	B	150.62	33	8	1.7459
	C	144.97	33	7	1.7393
225	A	109.80	31	7	1.6916
	B	113.12	31	7	1.6966
	C	107.47	31	7	1.6880

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
162.5	A	78.77	29	7	1.6363
	B	81.61	29	7	1.6422
	C	76.76	29	7	1.6321
100	A	47.52	26	6	1.5557
	B	50.36	26	6	1.5648
	C	45.51	26	6	1.5490
50	A	23.20	22	5	1.4481
	B	25.25	23	5	1.4604
	C	22.30	22	5	1.4423

Guy-Mast Forces (Excluding Wind) - No Ice

Guy Elevation ft	Guy Location	Chord Angle °	Guy Tension Top / Bottom K	F_x K	F_y K	F_z K	M_x kip-ft	M_y kip-ft	M_z kip-ft
350	A	55.5848	8.53 / 7.97	-0.11	7.15	-4.66	-24.76	28.35	-42.88
	A	55.5848	8.53 / 7.97	0.11	7.15	-4.66	-24.76	-28.35	42.88
	B	54.9653	8.52 / 7.97	4.15	7.09	2.26	49.10	28.78	0.00
	B	54.9653	8.52 / 7.97	4.04	7.09	2.47	-24.55	-28.78	-42.52
	C	55.5941	8.54 / 7.97	-3.98	7.16	2.43	-24.80	28.35	42.95
	C	55.5941	8.54 / 7.97	-4.09	7.16	2.23	49.59	-28.35	0.00
			Sum:	**0.12**	42.78	**0.07**	**-0.17**	0.00	**0.43**
300	A	54.0597	8.45 / 7.97	-0.13	6.95	-4.82	-24.06	29.34	-41.67
	A	54.0597	8.45 / 7.97	0.13	6.95	-4.82	-24.06	-29.34	41.67
	B	54.1282	8.44 / 7.97	4.23	6.94	2.29	48.08	29.29	0.00
	B	54.1282	8.44 / 7.97	4.09	6.94	2.52	-24.04	-29.29	-41.64
	C	54.1506	8.46 / 7.97	-4.10	6.96	2.51	-24.11	29.29	41.76
	C	54.1506	8.46 / 7.97	-4.23	6.96	2.29	48.22	-29.29	0.00
			Sum:	**-0.00**	41.69	**-0.02**	**0.03**	0.00	**0.12**
225	A	46.1415	6.10 / 5.83	-0.11	4.48	-4.13	-15.53	25.16	-26.90
	A	46.1415	6.10 / 5.83	0.11	4.48	-4.13	-15.53	-25.16	26.90
	B	46.0057	6.09 / 5.83	3.64	4.47	1.97	30.94	25.21	0.00
	B	46.0057	6.09 / 5.83	3.52	4.47	2.17	-15.47	-25.21	-26.80
	C	46.3767	6.10 / 5.83	-3.51	4.51	2.15	-15.61	25.06	27.03
	C	46.3767	6.10 / 5.83	-3.62	4.51	1.96	31.21	-25.06	0.00
			Sum:	**0.04**	26.91	**-0.01**	**0.02**	0.00	**0.24**
162.5	A	40.1486	6.02 / 5.83	0.00	3.97	-4.53	-11.46	0.00	0.00

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
	B	40.3002	6.02 5.83	3.91	3.98	2.26	5.74	0.00	-9.94
	C	40.0717	6.03 5.83	-3.93	3.97	2.27	5.73	-0.00	9.93
			Sum:	**-0.02**	11.92	**-0.00**	**0.01**	0.00	**-0.01**
100	A	27.9237	3.57 3.50	-0.09	1.73	-3.12	-5.99	19.06	-10.38
	A	27.9237	3.57 3.50	0.09	1.73	-3.12	-5.99	-19.06	10.38
	B	27.5536	3.57 3.50	2.76	1.71	1.48	11.82	19.12	0.00
	B	27.5536	3.57 3.50	2.66	1.71	1.65	-5.91	-19.12	-10.24
	C	28.1874	3.57 3.50	-2.65	1.75	1.64	-6.05	19.01	10.49
	C	28.1874	3.57 3.50	-2.74	1.75	1.48	12.11	-19.01	0.00
			Sum:	**0.03**	10.37	**0.00**	**-0.02**	0.00	**0.25**
50	A	25.7442	3.54 3.50	0.00	1.57	-3.17	-4.53	0.00	0.00
	B	23.7039	3.53 3.50	2.79	1.45	1.61	2.10	0.00	-3.64
	C	26.4162	3.54 3.50	-2.73	1.61	1.58	2.32	-0.00	4.02
			Sum:	**0.06**	4.63	**0.02**	**-0.11**	0.00	**0.38**

Guy-Mast Forces (Excluding Wind) - Ice

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
350	A	55.5848	16.57 13.98	-0.21	14.17	-8.60	-49.08	52.31	-85.01
	A	55.5848	16.57 13.98	0.21	14.17	-8.60	-49.08	-52.31	85.01
	B	54.9653	16.57 14.02	7.68	14.07	4.19	97.49	53.20	0.00
	B	54.9653	16.57 14.02	7.46	14.07	4.56	-48.75	-53.20	-84.43
	C	55.5941	16.67 14.04	-7.38	14.26	4.50	-49.39	52.55	85.55
	C	55.5941	16.67 14.04	-7.58	14.26	4.14	98.78	-52.55	0.00
			Sum:	**0.18**	84.99	**0.19**	**-0.02**	0.00	**1.11**
300	A	54.0597	15.75 13.57	-0.23	13.21	-8.57	-45.77	52.25	-79.28
	A	54.0597	15.75 13.57	0.23	13.21	-8.57	-45.77	-52.25	79.28
	B	54.1282	15.63 13.49	7.48	13.12	4.05	90.87	51.84	0.00
	B	54.1282	15.63 13.49	7.25	13.12	4.46	-45.44	-51.84	-78.70

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top / Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
	C	54.1506	15.81 13.60	-7.32	13.28	4.49	-46.01	52.29	79.68
	C	54.1506	15.81 13.60	-7.55	13.28	4.09	92.01	-52.29	0.00
			Sum:	**-0.14**	79.22	**-0.06**	**-0.10**	0.00	**0.98**
225	A	46.1415	12.14 10.71	-0.21	9.22	-7.89	-31.95	48.07	-55.33
	A	46.1415	12.14 10.71	0.21	9.22	-7.89	-31.95	-48.07	55.33
	B	46.0057	12.04 10.65	6.91	9.12	3.74	63.20	47.86	0.00
	B	46.0057	12.04 10.65	6.69	9.12	4.11	-31.60	-47.86	-54.73
	C	46.3767	12.19 10.73	-6.72	9.29	4.12	-32.19	48.00	55.76
	C	46.3767	12.19 10.73	-6.93	9.29	3.76	64.39	-48.00	0.00
			Sum:	**-0.05**	55.27	**-0.05**	**-0.10**	0.00	**1.03**
162.5	A	40.1486	11.28 10.29	0.00	7.72	-8.22	-22.28	0.00	0.00
	B	40.3002	11.14 10.18	7.03	7.63	4.06	11.02	0.00	-19.09
	C	40.0717	11.37 10.36	-7.18	7.78	4.15	11.22	-0.00	19.44
			Sum:	**-0.16**	23.13	**-0.02**	**-0.03**	0.00	**0.35**
100	A	27.9237	7.60 7.10	-0.20	3.97	-6.48	-13.74	39.54	-23.80
	A	27.9237	7.60 7.10	0.20	3.97	-6.48	-13.74	-39.54	23.80
	B	27.5536	7.50 7.03	5.66	3.86	3.03	26.78	39.22	0.00
	B	27.5536	7.50 7.03	5.46	3.86	3.39	-13.39	-39.22	-23.19
	C	28.1874	7.66 7.15	-5.54	4.04	3.42	-13.98	39.73	24.21
	C	28.1874	7.66 7.15	-5.74	4.04	3.09	27.96	-39.73	0.00
			Sum:	**-0.16**	23.73	**-0.02**	**-0.11**	0.00	**1.02**
50	A	25.7442	5.98 5.75	0.00	2.81	-5.28	-8.10	0.00	0.00
	B	23.7039	6.01 5.80	4.68	2.64	2.70	3.81	0.00	-6.59
	C	26.4162	5.98 5.74	-4.54	2.87	2.62	4.14	-0.00	7.17
			Sum:	**0.14**	8.31	**0.05**	**-0.16**	0.00	**0.58**

Guy-Mast Forces (Excluding Wind) - Service

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top / Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
350	A	55.5848	8.53	-0.11	7.15	-4.66	-24.76	28.35	-42.88

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top / Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
			7.97						
	A	55.5848	8.53	0.11	7.15	-4.66	-24.76	-28.35	42.88
			7.97						
	B	54.9653	8.52	4.15	7.09	2.26	49.10	28.78	0.00
			7.97						
	B	54.9653	8.52	4.04	7.09	2.47	-24.55	-28.78	-42.52
			7.97						
	C	55.5941	8.54	-3.98	7.16	2.43	-24.80	28.35	42.95
			7.97						
	C	55.5941	8.54	-4.09	7.16	2.23	49.59	-28.35	0.00
			7.97						
			Sum:	**0.12**	42.78	**0.07**	**-0.17**	0.00	**0.43**
300	A	54.0597	8.45	-0.13	6.95	-4.82	-24.06	29.34	-41.67
			7.97						
	A	54.0597	8.45	0.13	6.95	-4.82	-24.06	-29.34	41.67
			7.97						
	B	54.1282	8.44	4.23	6.94	2.29	48.08	29.29	0.00
			7.97						
	B	54.1282	8.44	4.09	6.94	2.52	-24.04	-29.29	-41.64
			7.97						
	C	54.1506	8.46	-4.10	6.96	2.51	-24.11	29.29	41.76
			7.97						
	C	54.1506	8.46	-4.23	6.96	2.29	48.22	-29.29	0.00
			7.97						
			Sum:	**-0.00**	41.69	**-0.02**	**0.03**	0.00	**0.12**
225	A	46.1415	6.10	-0.11	4.48	-4.13	-15.53	25.16	-26.90
			5.83						
	A	46.1415	6.10	0.11	4.48	-4.13	-15.53	-25.16	26.90
			5.83						
	B	46.0057	6.09	3.64	4.47	1.97	30.94	25.21	0.00
			5.83						
	B	46.0057	6.09	3.52	4.47	2.17	-15.47	-25.21	-26.80
			5.83						
	C	46.3767	6.10	-3.51	4.51	2.15	-15.61	25.06	27.03
			5.83						
	C	46.3767	6.10	-3.62	4.51	1.96	31.21	-25.06	0.00
			5.83						
			Sum:	**0.04**	26.91	**-0.01**	**0.02**	0.00	**0.24**
162.5	A	40.1486	6.02	0.00	3.97	-4.53	-11.46	0.00	0.00
			5.83						
	B	40.3002	6.02	3.91	3.98	2.26	5.74	0.00	-9.94
			5.83						
	C	40.0717	6.03	-3.93	3.97	2.27	5.73	-0.00	9.93
			5.83						
			Sum:	**-0.02**	11.92	**-0.00**	**0.01**	0.00	**-0.01**
100	A	27.9237	3.57	-0.09	1.73	-3.12	-5.99	19.06	-10.38
			3.50						
	A	27.9237	3.57	0.09	1.73	-3.12	-5.99	-19.06	10.38
			3.50						
	B	27.5536	3.57	2.76	1.71	1.48	11.82	19.12	0.00
			3.50						
	B	27.5536	3.57	2.66	1.71	1.65	-5.91	-19.12	-10.24
			3.50						
	C	28.1874	3.57	-2.65	1.75	1.64	-6.05	19.01	10.49
			3.50						
	C	28.1874	3.57	-2.74	1.75	1.48	12.11	-19.01	0.00
			3.50						
			Sum:	**0.03**	10.37	**0.00**	**-0.02**	0.00	**0.25**
50	A	25.7442	3.54	0.00	1.57	-3.17	-4.53	0.00	0.00

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top / Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
			3.50						
	B	23.7039	3.53	2.79	1.45	1.61	2.10	0.00	-3.64
			3.50						
	C	26.4162	3.54	-2.73	1.61	1.58	2.32	-0.00	4.02
			3.50						
			Sum:	**0.06**	4.63	**0.02**	**-0.11**	0.00	**0.38**

Guy-Tensioning Information

Guy Elevation		H	V	Temperature At Time Of Tensioning: 0 F Initial Tension	0 F Intercept	20 F Initial Tension	20 F Intercept	40 F Initial Tension	40 F Intercept	60 F Initial Tension	60 F Intercept	80 F Initial Tension	80 F Intercept	100 F Initial Tension	100 F Intercept	120 F Initial Tension	120 F Intercept
ft		ft	ft	K	ft	K	ft	K	ft	K	ft	K	ft	K	ft	K	ft
350	A	243.76	355.80	8.905	15.99	8.589	16.56	8.277	17.17	7.970	17.81	7.669	18.49	7.374	19.20	7.085	19.96
	B	244.12	348.19	8.934	15.51	8.608	16.08	8.286	16.68	7.970	17.33	7.660	18.01	7.356	18.73	7.059	19.49
	C	248.06	362.20	8.900	16.57	8.585	17.16	8.275	17.78	7.970	18.44	7.671	19.14	7.377	19.87	7.091	20.65
300	A	221.41	305.41	9.004	12.15	8.654	12.63	8.310	13.14	7.970	13.69	7.636	14.27	7.309	14.89	6.989	15.55
	B	216.05	298.77	9.006	11.61	8.656	12.07	8.311	12.56	7.970	13.09	7.635	13.65	7.307	14.24	6.985	14.88
	C	224.04	310.07	8.997	12.50	8.650	12.99	8.307	13.52	7.970	14.07	7.639	14.67	7.314	15.30	6.997	15.97
225	A	221.41	230.41	6.891	8.39	6.531	8.84	6.177	9.34	5.830	9.88	5.492	10.48	5.163	11.13	4.846	11.84
	B	216.05	223.77	6.902	7.94	6.538	8.37	6.181	8.85	5.830	9.37	5.488	9.94	5.155	10.57	4.834	11.26
	C	224.04	235.07	6.878	8.67	6.522	9.14	6.173	9.65	5.830	10.20	5.496	10.81	5.171	11.47	4.858	12.19
162.5	A	198.52	167.46	7.154	5.37	6.705	5.72	6.263	6.12	5.830	6.57	5.408	7.07	5.000	7.64	4.609	8.28
	B	190.76	161.78	7.157	4.98	6.707	5.31	6.264	5.68	5.830	6.10	5.406	6.57	4.995	7.10	4.600	7.70
	C	203.84	171.48	7.150	5.65	6.702	6.02	6.261	6.44	5.830	6.91	5.410	7.43	5.005	8.03	4.616	8.69
100	A	198.04	104.96	4.641	3.60	4.252	3.93	3.871	4.31	3.500	4.76	3.143	5.30	2.804	5.94	2.488	6.68
	B	190.28	99.28	4.656	3.29	4.263	3.59	3.877	3.95	3.500	4.37	3.137	4.87	2.791	5.47	2.469	6.18
	C	203.35	108.98	4.630	3.82	4.245	4.17	3.867	4.57	3.500	5.05	3.147	5.61	2.812	6.27	2.501	7.04
50	A	111.15	53.60	4.758	1.07	4.335	1.17	3.916	1.30	3.500	1.45	3.091	1.64	2.690	1.89	2.305	2.20
	B	112.74	49.50	4.799	1.05	4.363	1.16	3.929	1.29	3.500	1.45	3.078	1.64	2.665	1.90	2.270	2.22
	C	111.52	55.40	4.743	1.09	4.326	1.20	3.911	1.32	3.500	1.48	3.095	1.67	2.700	1.91	2.319	2.23

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
7/8	A	No	Ar (CaAa)	40.00 - 3.00	-1.0000	0.46	1	1	1.1100	1.1100		0.54
7/8	A	No	Ar (CaAa)	62.00 - 3.00	-0.5000	0.47	1	1	1.1100	1.1100		0.54
1/2	B	No	Ar (CaAa)	88.00 - 3.00	-2.0000	0.46	4	4	0.5800	0.5800		0.25
1/2	B	No	Ar (CaAa)	125.00 - 3.00	-1.0000	0.45	1	1	0.5800	0.5800		0.25
7/8	C	No	Ar (CaAa)	140.00 - 3.00	-1.0000	0.47	1	1	1.1100	1.1100		0.54
1/2	B	No	Ar (CaAa)	148.00 - 3.00	-3.0000	0.47	1	1	0.5800	0.5800		0.25
7/8	A	No	Ar (CaAa)	180.00 - 3.00	-2.0000	0.44	1	1	1.1100	1.1100		0.54
7/8	C	No	Ar (CaAa)	200.00 - 3.00	-1.0000	0.45	1	1	1.1100	1.1100		0.54
1 5/8	A	No	Ar (CaAa)	325.00 - 3.00	-2.0000	0.45	1	1	1.9800	1.9800		1.04
7/8	B	No	Ar (CaAa)	350.00 - 3.00	-1.0000	0.44	2	2	1.1100	1.1100		0.54
7/8	B	No	Ar (CaAa)	355.00 - 3.00	-2.0000	0.44	1	1	1.1100	1.1100		0.54
7/8	C	No	Ar (CaAa)	365.00 - 3.00	-2.0000	0.46	1	1	1.1100	1.1100		0.54
1 5/8 (Verizon)	C	No	Ar (CaAa)	300.00 - 3.00	1.0000	-0.3	12	6	1.9800	1.9800		1.04
HYBRIFLEX 1-5/8" (Verizon)	B	No	Ar (CaAa)	300.00 - 3.00	1.0000	0.46	2	2	1.9800	1.9800		1.90

Description	Face or Leg	Allow Shield	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 5/8 (AT&T - Existing)	C	No	Ar (CaAa)	240.00 - 3.00	2.0000	0.5	12	2	1.9800	1.9800		1.04
Fiber Trunk (AT&T - Existing)	A	No	Ar (CaAa)	240.00 - 3.00	0.0000	-0.4	1	1	0.4000	0.4000		1.00
DC Trunk (AT&T - Existing)	A	No	Ar (CaAa)	240.00 - 3.00	0.0000	-0.4	2	2	0.4000	0.4000		0.11
Fiber Trunk (AT&T - Proposed)	A	No	Ar (CaAa)	240.00 - 3.00	0.0000	-0.4	1	1	0.4000	0.4000		1.00
DC Trunk (AT&T - Proposed)	A	No	Ar (CaAa)	240.00 - 3.00	0.0000	-0.4	4	4	0.4000	0.4000		0.11
0.3" dia RET (AT&T - Proposed)	A	No	Ar (CaAa)	240.00 - 3.00	0.0000	-0.37	3	3	0.3000	0.3000		0.00

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 K
T1	368.75-362.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.278	0.000	0.00
T2	362.50-356.25	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.694	0.000	0.00
T3	356.25-350.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.555	0.000	0.00
		C	0.000	0.000	0.694	0.000	0.00
T4	350.00-343.75	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	2.081	0.000	0.01
		C	0.000	0.000	0.694	0.000	0.00
T5	343.75-337.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	2.081	0.000	0.01
		C	0.000	0.000	0.694	0.000	0.00
T6	337.50-331.25	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	2.081	0.000	0.01
		C	0.000	0.000	0.694	0.000	0.00
T7	331.25-325.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	2.081	0.000	0.01
		C	0.000	0.000	0.694	0.000	0.00
T8	325.00-318.75	A	0.000	0.000	1.238	0.000	0.01
		B	0.000	0.000	2.081	0.000	0.01
		C	0.000	0.000	0.694	0.000	0.00
T9	318.75-312.50	A	0.000	0.000	1.238	0.000	0.01
		B	0.000	0.000	2.081	0.000	0.01
		C	0.000	0.000	0.694	0.000	0.00
T10	312.50-306.25	A	0.000	0.000	1.238	0.000	0.01
		B	0.000	0.000	2.081	0.000	0.01
		C	0.000	0.000	0.694	0.000	0.00
T11	306.25-300.00	A	0.000	0.000	1.238	0.000	0.01
		B	0.000	0.000	2.081	0.000	0.01
		C	0.000	0.000	0.694	0.000	0.00

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 K
T12	300.00-293.75	A	0.000	0.000	1.238	0.000	0.01
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	15.544	0.000	0.08
T13	293.75-287.50	A	0.000	0.000	1.238	0.000	0.01
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	15.544	0.000	0.08
T14	287.50-281.25	A	0.000	0.000	1.238	0.000	0.01
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	15.544	0.000	0.08
T15	281.25-275.00	A	0.000	0.000	1.238	0.000	0.01
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	15.544	0.000	0.08
T16	275.00-268.75	A	0.000	0.000	1.238	0.000	0.01
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	15.544	0.000	0.08
T17	268.75-262.50	A	0.000	0.000	1.238	0.000	0.01
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	15.544	0.000	0.08
T18	262.50-256.25	A	0.000	0.000	1.238	0.000	0.01
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	15.544	0.000	0.08
T19	256.25-250.00	A	0.000	0.000	1.238	0.000	0.01
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	15.544	0.000	0.08
T20	250.00-243.75	A	0.000	0.000	1.238	0.000	0.01
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	15.544	0.000	0.08
T21	243.75-237.50	A	0.000	0.000	2.263	0.000	0.01
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	21.484	0.000	0.11
T22	237.50-231.25	A	0.000	0.000	3.800	0.000	0.02
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	30.394	0.000	0.16
T23	231.25-225.00	A	0.000	0.000	3.800	0.000	0.02
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	30.394	0.000	0.16
T24	225.00-218.75	A	0.000	0.000	3.800	0.000	0.02
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	30.394	0.000	0.16
T25	218.75-212.50	A	0.000	0.000	3.800	0.000	0.02
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	30.394	0.000	0.16
T26	212.50-206.25	A	0.000	0.000	3.800	0.000	0.02
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	30.394	0.000	0.16
T27	206.25-200.00	A	0.000	0.000	3.800	0.000	0.02
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	30.394	0.000	0.16
T28	200.00-175.00	A	0.000	0.000	15.755	0.000	0.10
		B	0.000	0.000	18.225	0.000	0.14
		C	0.000	0.000	124.350	0.000	0.65
T29	175.00-168.75	A	0.000	0.000	4.494	0.000	0.03
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	31.087	0.000	0.16
T30	168.75-162.50	A	0.000	0.000	4.494	0.000	0.03
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	31.087	0.000	0.16
T31	162.50-156.25	A	0.000	0.000	4.494	0.000	0.03
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	31.087	0.000	0.16
T32	156.25-150.00	A	0.000	0.000	4.494	0.000	0.03

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 K
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	31.087	0.000	0.16
T33	150.00-125.00	A	0.000	0.000	17.975	0.000	0.11
		B	0.000	0.000	19.559	0.000	0.14
		C	0.000	0.000	126.015	0.000	0.66
T34	125.00-100.00	A	0.000	0.000	17.975	0.000	0.11
		B	0.000	0.000	21.125	0.000	0.15
		C	0.000	0.000	127.125	0.000	0.66
T35	100.00-93.75	A	0.000	0.000	4.494	0.000	0.03
		B	0.000	0.000	5.281	0.000	0.04
		C	0.000	0.000	31.781	0.000	0.17
T36	93.75-87.50	A	0.000	0.000	4.494	0.000	0.03
		B	0.000	0.000	5.397	0.000	0.04
		C	0.000	0.000	31.781	0.000	0.17
T37	87.50-81.25	A	0.000	0.000	4.494	0.000	0.03
		B	0.000	0.000	6.731	0.000	0.04
		C	0.000	0.000	31.781	0.000	0.17
T38	81.25-75.00	A	0.000	0.000	4.494	0.000	0.03
		B	0.000	0.000	6.731	0.000	0.04
		C	0.000	0.000	31.781	0.000	0.17
T39	75.00-50.00	A	0.000	0.000	19.307	0.000	0.11
		B	0.000	0.000	26.925	0.000	0.17
		C	0.000	0.000	127.125	0.000	0.66
T40	50.00-25.00	A	0.000	0.000	22.415	0.000	0.13
		B	0.000	0.000	26.925	0.000	0.17
		C	0.000	0.000	127.125	0.000	0.66
T41	25.00-0.00	A	0.000	0.000	20.702	0.000	0.12
		B	0.000	0.000	23.694	0.000	0.15
		C	0.000	0.000	111.870	0.000	0.58

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 K
T1	368.75-362.50	A	1.908	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	1.231	0.000	0.02
T2	362.50-356.25	A	1.905	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	3.074	0.000	0.05
T3	356.25-350.00	A	1.901	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	2.456	0.000	0.04
		C		0.000	0.000	3.070	0.000	0.05
T4	350.00-343.75	A	1.898	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	9.825	0.000	0.12
		C		0.000	0.000	3.066	0.000	0.05
T5	343.75-337.50	A	1.894	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	9.813	0.000	0.12
		C		0.000	0.000	3.062	0.000	0.05
T6	337.50-331.25	A	1.891	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	9.801	0.000	0.12
		C		0.000	0.000	3.057	0.000	0.05
T7	331.25-325.00	A	1.887	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	9.789	0.000	0.12
		C		0.000	0.000	3.053	0.000	0.05
T8	325.00-318.75	A	1.884	0.000	0.000	3.592	0.000	0.06
		B		0.000	0.000	9.776	0.000	0.12

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 K
		C		0.000	0.000	3.048	0.000	0.05
T9	318.75-312.50	A	1.880	0.000	0.000	3.587	0.000	0.06
		B		0.000	0.000	9.764	0.000	0.12
		C		0.000	0.000	3.044	0.000	0.05
T10	312.50-306.25	A	1.876	0.000	0.000	3.583	0.000	0.06
		B		0.000	0.000	9.751	0.000	0.12
		C		0.000	0.000	3.039	0.000	0.05
T11	306.25-300.00	A	1.872	0.000	0.000	3.578	0.000	0.06
		B		0.000	0.000	9.738	0.000	0.12
		C		0.000	0.000	3.034	0.000	0.05
T12	300.00-293.75	A	1.869	0.000	0.000	3.573	0.000	0.06
		B		0.000	0.000	18.505	0.000	0.25
		C		0.000	0.000	24.350	0.000	0.62
T13	293.75-287.50	A	1.865	0.000	0.000	3.568	0.000	0.06
		B		0.000	0.000	18.483	0.000	0.24
		C		0.000	0.000	24.337	0.000	0.62
T14	287.50-281.25	A	1.860	0.000	0.000	3.563	0.000	0.06
		B		0.000	0.000	18.461	0.000	0.24
		C		0.000	0.000	24.324	0.000	0.62
T15	281.25-275.00	A	1.856	0.000	0.000	3.558	0.000	0.06
		B		0.000	0.000	18.438	0.000	0.24
		C		0.000	0.000	24.310	0.000	0.61
T16	275.00-268.75	A	1.852	0.000	0.000	3.553	0.000	0.06
		B		0.000	0.000	18.414	0.000	0.24
		C		0.000	0.000	24.297	0.000	0.61
T17	268.75-262.50	A	1.848	0.000	0.000	3.547	0.000	0.06
		B		0.000	0.000	18.390	0.000	0.24
		C		0.000	0.000	24.283	0.000	0.61
T18	262.50-256.25	A	1.843	0.000	0.000	3.542	0.000	0.06
		B		0.000	0.000	18.366	0.000	0.24
		C		0.000	0.000	24.268	0.000	0.61
T19	256.25-250.00	A	1.839	0.000	0.000	3.536	0.000	0.06
		B		0.000	0.000	18.341	0.000	0.24
		C		0.000	0.000	24.254	0.000	0.61
T20	250.00-243.75	A	1.834	0.000	0.000	3.530	0.000	0.06
		B		0.000	0.000	18.315	0.000	0.24
		C		0.000	0.000	24.239	0.000	0.61
T21	243.75-237.50	A	1.830	0.000	0.000	11.949	0.000	0.14
		B		0.000	0.000	18.289	0.000	0.24
		C		0.000	0.000	32.720	0.000	0.84
T22	237.50-231.25	A	1.825	0.000	0.000	24.537	0.000	0.27
		B		0.000	0.000	18.263	0.000	0.24
		C		0.000	0.000	45.440	0.000	1.17
T23	231.25-225.00	A	1.820	0.000	0.000	24.486	0.000	0.27
		B		0.000	0.000	18.235	0.000	0.24
		C		0.000	0.000	45.414	0.000	1.17
T24	225.00-218.75	A	1.815	0.000	0.000	24.434	0.000	0.27
		B		0.000	0.000	18.207	0.000	0.24
		C		0.000	0.000	45.388	0.000	1.17
T25	218.75-212.50	A	1.810	0.000	0.000	24.381	0.000	0.27
		B		0.000	0.000	18.178	0.000	0.24
		C		0.000	0.000	45.360	0.000	1.17
T26	212.50-206.25	A	1.804	0.000	0.000	24.326	0.000	0.27
		B		0.000	0.000	18.149	0.000	0.24
		C		0.000	0.000	45.332	0.000	1.17
T27	206.25-200.00	A	1.799	0.000	0.000	24.270	0.000	0.27
		B		0.000	0.000	18.118	0.000	0.23
		C		0.000	0.000	45.303	0.000	1.16
T28	200.00-175.00	A	1.785	0.000	0.000	98.829	0.000	1.08
		B		0.000	0.000	72.155	0.000	0.93
		C		0.000	0.000	192.609	0.000	4.81

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 K
T29	175.00-168.75	A	1.769	0.000	0.000	26.868	0.000	0.30
		B		0.000	0.000	17.953	0.000	0.23
		C		0.000	0.000	48.051	0.000	1.20
T30	168.75-162.50	A	1.763	0.000	0.000	26.793	0.000	0.30
		B		0.000	0.000	17.916	0.000	0.23
		C		0.000	0.000	48.009	0.000	1.19
T31	162.50-156.25	A	1.756	0.000	0.000	26.715	0.000	0.30
		B		0.000	0.000	17.879	0.000	0.23
		C		0.000	0.000	47.965	0.000	1.19
T32	156.25-150.00	A	1.749	0.000	0.000	26.634	0.000	0.30
		B		0.000	0.000	17.840	0.000	0.23
		C		0.000	0.000	47.919	0.000	1.19
T33	150.00-125.00	A	1.730	0.000	0.000	105.672	0.000	1.17
		B		0.000	0.000	80.236	0.000	1.02
		C		0.000	0.000	198.043	0.000	4.82
T34	125.00-100.00	A	1.696	0.000	0.000	104.085	0.000	1.13
		B		0.000	0.000	90.038	0.000	1.13
		C		0.000	0.000	201.545	0.000	4.83
T35	100.00-93.75	A	1.671	0.000	0.000	25.731	0.000	0.28
		B		0.000	0.000	22.307	0.000	0.28
		C		0.000	0.000	50.191	0.000	1.20
T36	93.75-87.50	A	1.659	0.000	0.000	25.603	0.000	0.27
		B		0.000	0.000	22.739	0.000	0.28
		C		0.000	0.000	50.105	0.000	1.19
T37	87.50-81.25	A	1.648	0.000	0.000	25.467	0.000	0.27
		B		0.000	0.000	28.617	0.000	0.34
		C		0.000	0.000	50.013	0.000	1.19
T38	81.25-75.00	A	1.635	0.000	0.000	25.321	0.000	0.27
		B		0.000	0.000	28.489	0.000	0.33
		C		0.000	0.000	49.915	0.000	1.18
T39	75.00-50.00	A	1.599	0.000	0.000	104.789	0.000	1.11
		B		0.000	0.000	112.491	0.000	1.30
		C		0.000	0.000	198.539	0.000	4.67
T40	50.00-25.00	A	1.519	0.000	0.000	112.543	0.000	1.19
		B		0.000	0.000	109.259	0.000	1.23
		C		0.000	0.000	196.069	0.000	4.54
T41	25.00-0.00	A	1.361	0.000	0.000	94.892	0.000	0.94
		B		0.000	0.000	90.513	0.000	0.96
		C		0.000	0.000	168.232	0.000	3.77

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	368.75-362.50	-0.2109	0.1128	-0.3101	0.1659
T2	362.50-356.25	-0.4652	0.2489	-0.6804	0.3640
T3	356.25-350.00	-0.1089	0.4342	-0.1557	0.6207
T4	350.00-343.75	0.7122	0.8231	0.2578	0.7352
T5	343.75-337.50	1.0142	1.1722	0.3271	0.9316
T6	337.50-331.25	1.0639	1.2295	0.3358	0.9553
T7	331.25-325.00	1.0639	1.2295	0.3365	0.9560
T8	325.00-318.75	0.9143	0.0967	0.3222	0.0597
T9	318.75-312.50	0.9148	0.0968	0.3233	0.0600
T10	312.50-306.25	0.9148	0.0968	0.3239	0.0601
T11	306.25-300.00	0.8793	0.0930	0.3175	0.0589
T12	300.00-293.75	3.0154	2.8177	1.4801	1.3559

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
T13	293.75-287.50	3.3978	3.1750	1.6680	1.5281
T14	287.50-281.25	3.4737	3.2458	1.7009	1.5581
T15	281.25-275.00	3.4737	3.2458	1.7032	1.5603
T16	275.00-268.75	3.4737	3.2458	1.7055	1.5624
T17	268.75-262.50	3.4737	3.2458	1.7079	1.5646
T18	262.50-256.25	3.4737	3.2458	1.7104	1.5668
T19	256.25-250.00	3.4488	3.2226	1.7030	1.5601
T20	250.00-243.75	3.3978	3.1750	1.6848	1.5434
T21	243.75-237.50	1.2482	3.9116	0.4564	1.9835
T22	237.50-231.25	-0.7394	4.5927	-0.6928	2.3951
T23	231.25-225.00	-0.7331	4.5532	-0.6878	2.3804
T24	225.00-218.75	-0.7017	4.3582	-0.6590	2.2833
T25	218.75-212.50	-0.7479	4.6452	-0.6990	2.4246
T26	212.50-206.25	-0.7549	4.6886	-0.7044	2.4460
T27	206.25-200.00	-0.7549	4.6886	-0.7046	2.4495
T28	200.00-175.00	-0.8290	4.5570	-0.8336	2.3297
T29	175.00-168.75	-0.8163	4.4040	-0.8399	2.1953
T30	168.75-162.50	-0.8164	4.4047	-0.8404	2.2005
T31	162.50-156.25	-0.8195	4.4215	-0.8430	2.2116
T32	156.25-150.00	-0.8269	4.4611	-0.8490	2.2316
T33	150.00-125.00	-0.8295	4.4557	-0.7874	2.3168
T34	125.00-100.00	-0.7559	4.1877	-0.6336	2.2754
T35	100.00-93.75	-0.7497	4.1537	-0.6300	2.2724
T36	93.75-87.50	-0.7747	4.3909	-0.6455	2.3889
T37	87.50-81.25	-0.5809	4.4376	-0.4735	2.3938
T38	81.25-75.00	-0.5809	4.4376	-0.4733	2.4002
T39	75.00-50.00	-0.5769	4.3527	-0.4670	2.2986
T40	50.00-25.00	-0.5665	4.1522	-0.4525	2.0756
T41	25.00-0.00	-0.5553	4.0284	-0.4371	2.0493

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	12	7/8	362.50 - 365.00	0.6000	0.4984
T2	12	7/8	356.25 - 362.50	0.6000	0.4805
T3	11	7/8	350.00 - 355.00	0.6000	0.4810
T3	12	7/8	350.00 - 356.25	0.6000	0.4810
T4	10	7/8	343.75 - 350.00	0.6000	0.4765
T4	11	7/8	343.75 - 350.00	0.6000	0.4765
T4	12	7/8	343.75 - 350.00	0.6000	0.4765
T5	10	7/8	337.50 - 343.75	0.6000	0.5644
T5	11	7/8	337.50 - 343.75	0.6000	0.5644
T5	12	7/8	337.50 - 343.75	0.6000	0.5644
T6	10	7/8	331.25 -	0.6000	0.5744

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T6	11	7/8	331.25 - 337.50	0.6000	0.5744
T6	12	7/8	331.25 - 337.50	0.6000	0.5744
T7	10	7/8	325.00 - 331.25	0.6000	0.5749
T7	11	7/8	325.00 - 331.25	0.6000	0.5749
T7	12	7/8	325.00 - 331.25	0.6000	0.5749
T8	9	1 5/8	318.75 - 325.00	0.6000	0.5654
T8	10	7/8	318.75 - 325.00	0.6000	0.5654
T8	11	7/8	318.75 - 325.00	0.6000	0.5654
T8	12	7/8	318.75 - 325.00	0.6000	0.5654
T9	9	1 5/8	312.50 - 318.75	0.6000	0.5665
T9	10	7/8	312.50 - 318.75	0.6000	0.5665
T9	11	7/8	312.50 - 318.75	0.6000	0.5665
T9	12	7/8	312.50 - 318.75	0.6000	0.5665
T10	9	1 5/8	306.25 - 312.50	0.6000	0.5671
T10	10	7/8	306.25 - 312.50	0.6000	0.5671
T10	11	7/8	306.25 - 312.50	0.6000	0.5671
T10	12	7/8	306.25 - 312.50	0.6000	0.5671
T11	9	1 5/8	300.00 - 306.25	0.6000	0.5581
T11	10	7/8	300.00 - 306.25	0.6000	0.5581
T11	11	7/8	300.00 - 306.25	0.6000	0.5581
T11	12	7/8	300.00 - 306.25	0.6000	0.5581
T12	9	1 5/8	293.75 - 300.00	0.6000	0.4773
T12	10	7/8	293.75 - 300.00	0.6000	0.4773
T12	11	7/8	293.75 - 300.00	0.6000	0.4773
T12	12	7/8	293.75 - 300.00	0.6000	0.4773
T12	13	1 5/8	293.75 - 300.00	0.6000	0.4773
T12	14	HYBRIFLEX 1-5/8"	293.75 - 300.00	0.6000	0.4773
T13	9	1 5/8	287.50 - 293.75	0.6000	0.5592
T13	10	7/8	287.50 - 293.75	0.6000	0.5592
T13	11	7/8	287.50 - 293.75	0.6000	0.5592
T13	12	7/8	287.50 -	0.6000	0.5592

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T13	13	1 5/8	287.50 - 293.75	0.6000	0.5592
T13	14	HYBRIFLEX 1-5/8"	287.50 - 293.75	0.6000	0.5592
T14	9	1 5/8	281.25 - 287.50	0.6000	0.5738
T14	10	7/8	281.25 - 287.50	0.6000	0.5738
T14	11	7/8	281.25 - 287.50	0.6000	0.5738
T14	12	7/8	281.25 - 287.50	0.6000	0.5738
T14	13	1 5/8	281.25 - 287.50	0.6000	0.5738
T14	14	HYBRIFLEX 1-5/8"	281.25 - 287.50	0.6000	0.5738
T15	9	1 5/8	275.00 - 281.25	0.6000	0.5744
T15	10	7/8	275.00 - 281.25	0.6000	0.5744
T15	11	7/8	275.00 - 281.25	0.6000	0.5744
T15	12	7/8	275.00 - 281.25	0.6000	0.5744
T15	13	1 5/8	275.00 - 281.25	0.6000	0.5744
T15	14	HYBRIFLEX 1-5/8"	275.00 - 281.25	0.6000	0.5744
T16	9	1 5/8	268.75 - 275.00	0.6000	0.5750
T16	10	7/8	268.75 - 275.00	0.6000	0.5750
T16	11	7/8	268.75 - 275.00	0.6000	0.5750
T16	12	7/8	268.75 - 275.00	0.6000	0.5750
T16	13	1 5/8	268.75 - 275.00	0.6000	0.5750
T16	14	HYBRIFLEX 1-5/8"	268.75 - 275.00	0.6000	0.5750
T17	9	1 5/8	262.50 - 268.75	0.6000	0.5756
T17	10	7/8	262.50 - 268.75	0.6000	0.5756
T17	11	7/8	262.50 - 268.75	0.6000	0.5756
T17	12	7/8	262.50 - 268.75	0.6000	0.5756
T17	13	1 5/8	262.50 - 268.75	0.6000	0.5756
T17	14	HYBRIFLEX 1-5/8"	262.50 - 268.75	0.6000	0.5756
T18	9	1 5/8	256.25 - 262.50	0.6000	0.5762
T18	10	7/8	256.25 - 262.50	0.6000	0.5762
T18	11	7/8	256.25 - 262.50	0.6000	0.5762
T18	12	7/8	256.25 - 262.50	0.6000	0.5762
T18	13	1 5/8	256.25 -	0.6000	0.5762

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T18	14	HYBRIFLEX 1-5/8"	262.50 256.25 - 262.50	0.6000	0.5762
T19	9	1 5/8	250.00 - 256.25	0.6000	0.5724
T19	10	7/8	250.00 - 256.25	0.6000	0.5724
T19	11	7/8	250.00 - 256.25	0.6000	0.5724
T19	12	7/8	250.00 - 256.25	0.6000	0.5724
T19	13	1 5/8	250.00 - 256.25	0.6000	0.5724
T19	14	HYBRIFLEX 1-5/8"	250.00 - 256.25	0.6000	0.5724
T20	9	1 5/8	243.75 - 250.00	0.6000	0.5635
T20	10	7/8	243.75 - 250.00	0.6000	0.5635
T20	11	7/8	243.75 - 250.00	0.6000	0.5635
T20	12	7/8	243.75 - 250.00	0.6000	0.5635
T20	13	1 5/8	243.75 - 250.00	0.6000	0.5635
T20	14	HYBRIFLEX 1-5/8"	243.75 - 250.00	0.6000	0.5635
T21	9	1 5/8	237.50 - 243.75	0.6000	0.5642
T21	10	7/8	237.50 - 243.75	0.6000	0.5642
T21	11	7/8	237.50 - 243.75	0.6000	0.5642
T21	12	7/8	237.50 - 243.75	0.6000	0.5642
T21	13	1 5/8	237.50 - 243.75	0.6000	0.5642
T21	14	HYBRIFLEX 1-5/8"	237.50 - 243.75	0.6000	0.5642
T21	15	1 5/8	237.50 - 240.00	0.6000	0.5642
T21	16	Fiber Trunk	237.50 - 240.00	0.6000	0.5642
T21	17	DC Trunk	237.50 - 240.00	0.6000	0.5642
T21	18	Fiber Trunk	237.50 - 240.00	0.6000	0.5642
T21	19	DC Trunk	237.50 - 240.00	0.6000	0.5642
T21	20	0.3" dia RET	237.50 - 240.00	0.6000	0.5642
T22	9	1 5/8	231.25 - 237.50	0.6000	0.5649
T22	10	7/8	231.25 - 237.50	0.6000	0.5649
T22	11	7/8	231.25 - 237.50	0.6000	0.5649
T22	12	7/8	231.25 - 237.50	0.6000	0.5649
T22	13	1 5/8	231.25 - 237.50	0.6000	0.5649
T22	14	HYBRIFLEX 1-5/8"	231.25 -	0.6000	0.5649

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T22	15	1 5/8	231.25 - 237.50	0.6000	0.5649
T22	16	Fiber Trunk	231.25 - 237.50	0.6000	0.5649
T22	17	DC Trunk	231.25 - 237.50	0.6000	0.5649
T22	18	Fiber Trunk	231.25 - 237.50	0.6000	0.5649
T22	19	DC Trunk	231.25 - 237.50	0.6000	0.5649
T22	20	0.3" dia RET	231.25 - 237.50	0.6000	0.5649
T23	9	1 5/8	225.00 - 231.25	0.6000	0.5565
T23	10	7/8	225.00 - 231.25	0.6000	0.5565
T23	11	7/8	225.00 - 231.25	0.6000	0.5565
T23	12	7/8	225.00 - 231.25	0.6000	0.5565
T23	13	1 5/8	225.00 - 231.25	0.6000	0.5565
T23	14	HYBRIFLEX 1-5/8"	225.00 - 231.25	0.6000	0.5565
T23	15	1 5/8	225.00 - 231.25	0.6000	0.5565
T23	16	Fiber Trunk	225.00 - 231.25	0.6000	0.5565
T23	17	DC Trunk	225.00 - 231.25	0.6000	0.5565
T23	18	Fiber Trunk	225.00 - 231.25	0.6000	0.5565
T23	19	DC Trunk	225.00 - 231.25	0.6000	0.5565
T23	20	0.3" dia RET	225.00 - 231.25	0.6000	0.5565
T24	9	1 5/8	218.75 - 225.00	0.6000	0.5080
T24	10	7/8	218.75 - 225.00	0.6000	0.5080
T24	11	7/8	218.75 - 225.00	0.6000	0.5080
T24	12	7/8	218.75 - 225.00	0.6000	0.5080
T24	13	1 5/8	218.75 - 225.00	0.6000	0.5080
T24	14	HYBRIFLEX 1-5/8"	218.75 - 225.00	0.6000	0.5080
T24	15	1 5/8	218.75 - 225.00	0.6000	0.5080
T24	16	Fiber Trunk	218.75 - 225.00	0.6000	0.5080
T24	17	DC Trunk	218.75 - 225.00	0.6000	0.5080
T24	18	Fiber Trunk	218.75 - 225.00	0.6000	0.5080
T24	19	DC Trunk	218.75 - 225.00	0.6000	0.5080
T24	20	0.3" dia RET	218.75 - 225.00	0.6000	0.5080
T25	9	1 5/8	212.50 -	0.6000	0.5764

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T25	10	7/8	212.50 - 218.75	0.6000	0.5764
T25	11	7/8	212.50 - 218.75	0.6000	0.5764
T25	12	7/8	212.50 - 218.75	0.6000	0.5764
T25	13	1 5/8	212.50 - 218.75	0.6000	0.5764
T25	14	HYBRIFLEX 1-5/8"	212.50 - 218.75	0.6000	0.5764
T25	15	1 5/8	212.50 - 218.75	0.6000	0.5764
T25	16	Fiber Trunk	212.50 - 218.75	0.6000	0.5764
T25	17	DC Trunk	212.50 - 218.75	0.6000	0.5764
T25	18	Fiber Trunk	212.50 - 218.75	0.6000	0.5764
T25	19	DC Trunk	212.50 - 218.75	0.6000	0.5764
T25	20	0.3" dia RET	212.50 - 218.75	0.6000	0.5764
T26	9	1 5/8	206.25 - 212.50	0.6000	0.5868
T26	10	7/8	206.25 - 212.50	0.6000	0.5868
T26	11	7/8	206.25 - 212.50	0.6000	0.5868
T26	12	7/8	206.25 - 212.50	0.6000	0.5868
T26	13	1 5/8	206.25 - 212.50	0.6000	0.5868
T26	14	HYBRIFLEX 1-5/8"	206.25 - 212.50	0.6000	0.5868
T26	15	1 5/8	206.25 - 212.50	0.6000	0.5868
T26	16	Fiber Trunk	206.25 - 212.50	0.6000	0.5868
T26	17	DC Trunk	206.25 - 212.50	0.6000	0.5868
T26	18	Fiber Trunk	206.25 - 212.50	0.6000	0.5868
T26	19	DC Trunk	206.25 - 212.50	0.6000	0.5868
T26	20	0.3" dia RET	206.25 - 212.50	0.6000	0.5868
T27	9	1 5/8	200.00 - 206.25	0.6000	0.5876
T27	10	7/8	200.00 - 206.25	0.6000	0.5876
T27	11	7/8	200.00 - 206.25	0.6000	0.5876
T27	12	7/8	200.00 - 206.25	0.6000	0.5876
T27	13	1 5/8	200.00 - 206.25	0.6000	0.5876
T27	14	HYBRIFLEX 1-5/8"	200.00 - 206.25	0.6000	0.5876
T27	15	1 5/8	200.00 - 206.25	0.6000	0.5876
T27	16	Fiber Trunk	200.00 -	0.6000	0.5876

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T27	17	DC Trunk	206.25 200.00 -	0.6000	0.5876
T27	18	Fiber Trunk	206.25 200.00 -	0.6000	0.5876
T27	19	DC Trunk	206.25 200.00 -	0.6000	0.5876
T27	20	0.3" dia RET	206.25 200.00 -	0.6000	0.5876
T28	7	7/8	206.25 175.00 -	0.6000	0.5299
T28	8	7/8	180.00 175.00 -	0.6000	0.5299
T28	9	1 5/8	200.00 175.00 -	0.6000	0.5299
T28	10	7/8	200.00 175.00 -	0.6000	0.5299
T28	11	7/8	200.00 175.00 -	0.6000	0.5299
T28	12	7/8	200.00 175.00 -	0.6000	0.5299
T28	13	1 5/8	200.00 175.00 -	0.6000	0.5299
T28	14	HYBRIFLEX 1-5/8"	200.00 175.00 -	0.6000	0.5299
T28	15	1 5/8	200.00 175.00 -	0.6000	0.5299
T28	16	Fiber Trunk	200.00 175.00 -	0.6000	0.5299
T28	17	DC Trunk	200.00 175.00 -	0.6000	0.5299
T28	18	Fiber Trunk	200.00 175.00 -	0.6000	0.5299
T28	19	DC Trunk	200.00 175.00 -	0.6000	0.5299
T28	20	0.3" dia RET	200.00 175.00 -	0.6000	0.5299
T29	7	7/8	200.00 168.75 -	0.6000	0.5726
T29	8	7/8	175.00 168.75 -	0.6000	0.5726
T29	9	1 5/8	175.00 168.75 -	0.6000	0.5726
T29	10	7/8	175.00 168.75 -	0.6000	0.5726
T29	11	7/8	175.00 168.75 -	0.6000	0.5726
T29	12	7/8	175.00 168.75 -	0.6000	0.5726
T29	13	1 5/8	175.00 168.75 -	0.6000	0.5726
T29	14	HYBRIFLEX 1-5/8"	175.00 168.75 -	0.6000	0.5726
T29	15	1 5/8	175.00 168.75 -	0.6000	0.5726
T29	16	Fiber Trunk	175.00 168.75 -	0.6000	0.5726
T29	17	DC Trunk	175.00 168.75 -	0.6000	0.5726
T29	18	Fiber Trunk	175.00 168.75 -	0.6000	0.5726
T29	19	DC Trunk	175.00 168.75 -	0.6000	0.5726

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T29	20	0.3" dia RET	175.00 168.75 -	0.6000	0.5726
T30	7	7/8	175.00 162.50 -	0.6000	0.5742
T30	8	7/8	168.75 162.50 -	0.6000	0.5742
T30	9	1 5/8	168.75 162.50 -	0.6000	0.5742
T30	10	7/8	168.75 162.50 -	0.6000	0.5742
T30	11	7/8	168.75 162.50 -	0.6000	0.5742
T30	12	7/8	168.75 162.50 -	0.6000	0.5742
T30	13	1 5/8	168.75 162.50 -	0.6000	0.5742
T30	14	HYBRIFLEX 1-5/8"	168.75 162.50 -	0.6000	0.5742
T30	15	1 5/8	168.75 162.50 -	0.6000	0.5742
T30	16	Fiber Trunk	168.75 162.50 -	0.6000	0.5742
T30	17	DC Trunk	168.75 162.50 -	0.6000	0.5742
T30	18	Fiber Trunk	168.75 162.50 -	0.6000	0.5742
T30	19	DC Trunk	168.75 162.50 -	0.6000	0.5742
T30	20	0.3" dia RET	168.75 162.50 -	0.6000	0.5742
T31	7	7/8	168.75 156.25 -	0.6000	0.5792
T31	8	7/8	162.50 156.25 -	0.6000	0.5792
T31	9	1 5/8	162.50 156.25 -	0.6000	0.5792
T31	10	7/8	162.50 156.25 -	0.6000	0.5792
T31	11	7/8	162.50 156.25 -	0.6000	0.5792
T31	12	7/8	162.50 156.25 -	0.6000	0.5792
T31	13	1 5/8	162.50 156.25 -	0.6000	0.5792
T31	14	HYBRIFLEX 1-5/8"	162.50 156.25 -	0.6000	0.5792
T31	15	1 5/8	162.50 156.25 -	0.6000	0.5792
T31	16	Fiber Trunk	162.50 156.25 -	0.6000	0.5792
T31	17	DC Trunk	162.50 156.25 -	0.6000	0.5792
T31	18	Fiber Trunk	162.50 156.25 -	0.6000	0.5792
T31	19	DC Trunk	162.50 156.25 -	0.6000	0.5792
T31	20	0.3" dia RET	162.50 156.25 -	0.6000	0.5792
T32	7	7/8	162.50 150.00 -	0.6000	0.5897
T32	8	7/8	156.25 150.00 -	0.6000	0.5897

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T32	9	1 5/8	150.00 - 156.25	0.6000	0.5897
T32	10	7/8	150.00 - 156.25	0.6000	0.5897
T32	11	7/8	150.00 - 156.25	0.6000	0.5897
T32	12	7/8	150.00 - 156.25	0.6000	0.5897
T32	13	1 5/8	150.00 - 156.25	0.6000	0.5897
T32	14	HYBRIFLEX 1-5/8"	150.00 - 156.25	0.6000	0.5897
T32	15	1 5/8	150.00 - 156.25	0.6000	0.5897
T32	16	Fiber Trunk	150.00 - 156.25	0.6000	0.5897
T32	17	DC Trunk	150.00 - 156.25	0.6000	0.5897
T32	18	Fiber Trunk	150.00 - 156.25	0.6000	0.5897
T32	19	DC Trunk	150.00 - 156.25	0.6000	0.5897
T32	20	0.3" dia RET	150.00 - 156.25	0.6000	0.5897
T33	5	7/8	125.00 - 140.00	0.6000	0.5924
T33	6	1/2	125.00 - 148.00	0.6000	0.5924
T33	7	7/8	125.00 - 150.00	0.6000	0.5924
T33	8	7/8	125.00 - 150.00	0.6000	0.5924
T33	9	1 5/8	125.00 - 150.00	0.6000	0.5924
T33	10	7/8	125.00 - 150.00	0.6000	0.5924
T33	11	7/8	125.00 - 150.00	0.6000	0.5924
T33	12	7/8	125.00 - 150.00	0.6000	0.5924
T33	13	1 5/8	125.00 - 150.00	0.6000	0.5924
T33	14	HYBRIFLEX 1-5/8"	125.00 - 150.00	0.6000	0.5924
T33	15	1 5/8	125.00 - 150.00	0.6000	0.5924
T33	16	Fiber Trunk	125.00 - 150.00	0.6000	0.5924
T33	17	DC Trunk	125.00 - 150.00	0.6000	0.5924
T33	18	Fiber Trunk	125.00 - 150.00	0.6000	0.5924
T33	19	DC Trunk	125.00 - 150.00	0.6000	0.5924
T33	20	0.3" dia RET	125.00 - 150.00	0.6000	0.5924
T34	4	1/2	100.00 - 125.00	0.6000	0.5292
T34	5	7/8	100.00 - 125.00	0.6000	0.5292
T34	6	1/2	100.00 -	0.6000	0.5292

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			125.00		
T34	7	7/8	100.00 - 125.00	0.6000	0.5292
T34	8	7/8	100.00 - 125.00	0.6000	0.5292
T34	9	1 5/8	100.00 - 125.00	0.6000	0.5292
T34	10	7/8	100.00 - 125.00	0.6000	0.5292
T34	11	7/8	100.00 - 125.00	0.6000	0.5292
T34	12	7/8	100.00 - 125.00	0.6000	0.5292
T34	13	1 5/8	100.00 - 125.00	0.6000	0.5292
T34	14	HYBRIFLEX 1-5/8"	100.00 - 125.00	0.6000	0.5292
T34	15	1 5/8	100.00 - 125.00	0.6000	0.5292
T34	16	Fiber Trunk	100.00 - 125.00	0.6000	0.5292
T34	17	DC Trunk	100.00 - 125.00	0.6000	0.5292
T34	18	Fiber Trunk	100.00 - 125.00	0.6000	0.5292
T34	19	DC Trunk	100.00 - 125.00	0.6000	0.5292
T34	20	0.3" dia RET	100.00 - 125.00	0.6000	0.5292
T35	4	1/2	93.75 - 100.00	0.6000	0.5232
T35	5	7/8	93.75 - 100.00	0.6000	0.5232
T35	6	1/2	93.75 - 100.00	0.6000	0.5232
T35	7	7/8	93.75 - 100.00	0.6000	0.5232
T35	8	7/8	93.75 - 100.00	0.6000	0.5232
T35	9	1 5/8	93.75 - 100.00	0.6000	0.5232
T35	10	7/8	93.75 - 100.00	0.6000	0.5232
T35	11	7/8	93.75 - 100.00	0.6000	0.5232
T35	12	7/8	93.75 - 100.00	0.6000	0.5232
T35	13	1 5/8	93.75 - 100.00	0.6000	0.5232
T35	14	HYBRIFLEX 1-5/8"	93.75 - 100.00	0.6000	0.5232
T35	15	1 5/8	93.75 - 100.00	0.6000	0.5232
T35	16	Fiber Trunk	93.75 - 100.00	0.6000	0.5232
T35	17	DC Trunk	93.75 - 100.00	0.6000	0.5232
T35	18	Fiber Trunk	93.75 - 100.00	0.6000	0.5232
T35	19	DC Trunk	93.75 - 100.00	0.6000	0.5232
T35	20	0.3" dia RET	93.75 - 100.00	0.6000	0.5232
T36	3	1/2	87.50 - 88.00	0.6000	0.5884
T36	4	1/2	87.50 - 93.75	0.6000	0.5884
T36	5	7/8	87.50 - 93.75	0.6000	0.5884
T36	6	1/2	87.50 - 93.75	0.6000	0.5884
T36	7	7/8	87.50 - 93.75	0.6000	0.5884
T36	8	7/8	87.50 - 93.75	0.6000	0.5884
T36	9	1 5/8	87.50 - 93.75	0.6000	0.5884
T36	10	7/8	87.50 - 93.75	0.6000	0.5884
T36	11	7/8	87.50 - 93.75	0.6000	0.5884
T36	12	7/8	87.50 - 93.75	0.6000	0.5884
T36	13	1 5/8	87.50 - 93.75	0.6000	0.5884
T36	14	HYBRIFLEX 1-5/8"	87.50 - 93.75	0.6000	0.5884
T36	15	1 5/8	87.50 - 93.75	0.6000	0.5884
T36	16	Fiber Trunk	87.50 - 93.75	0.6000	0.5884
T36	17	DC Trunk	87.50 - 93.75	0.6000	0.5884
T36	18	Fiber Trunk	87.50 - 93.75	0.6000	0.5884

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T36	19	DC Trunk	87.50 - 93.75	0.6000	0.5884
T36	20	0.3" dia RET	87.50 - 93.75	0.6000	0.5884
T37	3	1/2	81.25 - 87.50	0.6000	0.6000
T37	4	1/2	81.25 - 87.50	0.6000	0.6000
T37	5	7/8	81.25 - 87.50	0.6000	0.6000
T37	6	1/2	81.25 - 87.50	0.6000	0.6000
T37	7	7/8	81.25 - 87.50	0.6000	0.6000
T37	8	7/8	81.25 - 87.50	0.6000	0.6000
T37	9	1 5/8	81.25 - 87.50	0.6000	0.6000
T37	10	7/8	81.25 - 87.50	0.6000	0.6000
T37	11	7/8	81.25 - 87.50	0.6000	0.6000
T37	12	7/8	81.25 - 87.50	0.6000	0.6000
T37	13	1 5/8	81.25 - 87.50	0.6000	0.6000
T37	14	HYBRIFLEX 1-5/8"	81.25 - 87.50	0.6000	0.6000
T37	15	1 5/8	81.25 - 87.50	0.6000	0.6000
T37	16	Fiber Trunk	81.25 - 87.50	0.6000	0.6000
T37	17	DC Trunk	81.25 - 87.50	0.6000	0.6000
T37	18	Fiber Trunk	81.25 - 87.50	0.6000	0.6000
T37	19	DC Trunk	81.25 - 87.50	0.6000	0.6000
T37	20	0.3" dia RET	81.25 - 87.50	0.6000	0.6000
T38	3	1/2	75.00 - 81.25	0.6000	0.6000
T38	4	1/2	75.00 - 81.25	0.6000	0.6000
T38	5	7/8	75.00 - 81.25	0.6000	0.6000
T38	6	1/2	75.00 - 81.25	0.6000	0.6000
T38	7	7/8	75.00 - 81.25	0.6000	0.6000
T38	8	7/8	75.00 - 81.25	0.6000	0.6000
T38	9	1 5/8	75.00 - 81.25	0.6000	0.6000
T38	10	7/8	75.00 - 81.25	0.6000	0.6000
T38	11	7/8	75.00 - 81.25	0.6000	0.6000
T38	12	7/8	75.00 - 81.25	0.6000	0.6000
T38	13	1 5/8	75.00 - 81.25	0.6000	0.6000
T38	14	HYBRIFLEX 1-5/8"	75.00 - 81.25	0.6000	0.6000
T38	15	1 5/8	75.00 - 81.25	0.6000	0.6000
T38	16	Fiber Trunk	75.00 - 81.25	0.6000	0.6000
T38	17	DC Trunk	75.00 - 81.25	0.6000	0.6000
T38	18	Fiber Trunk	75.00 - 81.25	0.6000	0.6000
T38	19	DC Trunk	75.00 - 81.25	0.6000	0.6000
T38	20	0.3" dia RET	75.00 - 81.25	0.6000	0.6000
T39	2	7/8	50.00 - 62.00	0.6000	0.6000
T39	3	1/2	50.00 - 75.00	0.6000	0.6000
T39	4	1/2	50.00 - 75.00	0.6000	0.6000
T39	5	7/8	50.00 - 75.00	0.6000	0.6000
T39	6	1/2	50.00 - 75.00	0.6000	0.6000
T39	7	7/8	50.00 - 75.00	0.6000	0.6000
T39	8	7/8	50.00 - 75.00	0.6000	0.6000
T39	9	1 5/8	50.00 - 75.00	0.6000	0.6000
T39	10	7/8	50.00 - 75.00	0.6000	0.6000
T39	11	7/8	50.00 - 75.00	0.6000	0.6000
T39	12	7/8	50.00 - 75.00	0.6000	0.6000
T39	13	1 5/8	50.00 - 75.00	0.6000	0.6000
T39	14	HYBRIFLEX 1-5/8"	50.00 - 75.00	0.6000	0.6000
T39	15	1 5/8	50.00 - 75.00	0.6000	0.6000
T39	16	Fiber Trunk	50.00 - 75.00	0.6000	0.6000
T39	17	DC Trunk	50.00 - 75.00	0.6000	0.6000
T39	18	Fiber Trunk	50.00 - 75.00	0.6000	0.6000
T39	19	DC Trunk	50.00 - 75.00	0.6000	0.6000
T39	20	0.3" dia RET	50.00 - 75.00	0.6000	0.6000
T40	1	7/8	25.00 - 40.00	0.6000	0.6000
T40	2	7/8	25.00 - 50.00	0.6000	0.6000
T40	3	1/2	25.00 - 50.00	0.6000	0.6000
T40	4	1/2	25.00 - 50.00	0.6000	0.6000
T40	5	7/8	25.00 - 50.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T40	6	1/2	25.00 - 50.00	0.6000	0.6000
T40	7	7/8	25.00 - 50.00	0.6000	0.6000
T40	8	7/8	25.00 - 50.00	0.6000	0.6000
T40	9	1 5/8	25.00 - 50.00	0.6000	0.6000
T40	10	7/8	25.00 - 50.00	0.6000	0.6000
T40	11	7/8	25.00 - 50.00	0.6000	0.6000
T40	12	7/8	25.00 - 50.00	0.6000	0.6000
T40	13	1 5/8	25.00 - 50.00	0.6000	0.6000
T40	14	HYBRIFLEX 1-5/8"	25.00 - 50.00	0.6000	0.6000
T40	15	1 5/8	25.00 - 50.00	0.6000	0.6000
T40	16	Fiber Trunk	25.00 - 50.00	0.6000	0.6000
T40	17	DC Trunk	25.00 - 50.00	0.6000	0.6000
T40	18	Fiber Trunk	25.00 - 50.00	0.6000	0.6000
T40	19	DC Trunk	25.00 - 50.00	0.6000	0.6000
T40	20	0.3" dia RET	25.00 - 50.00	0.6000	0.6000
T41	1	7/8	3.00 - 25.00	0.6000	0.6000
T41	2	7/8	3.00 - 25.00	0.6000	0.6000
T41	3	1/2	3.00 - 25.00	0.6000	0.6000
T41	4	1/2	3.00 - 25.00	0.6000	0.6000
T41	5	7/8	3.00 - 25.00	0.6000	0.6000
T41	6	1/2	3.00 - 25.00	0.6000	0.6000
T41	7	7/8	3.00 - 25.00	0.6000	0.6000
T41	8	7/8	3.00 - 25.00	0.6000	0.6000
T41	9	1 5/8	3.00 - 25.00	0.6000	0.6000
T41	10	7/8	3.00 - 25.00	0.6000	0.6000
T41	11	7/8	3.00 - 25.00	0.6000	0.6000
T41	12	7/8	3.00 - 25.00	0.6000	0.6000
T41	13	1 5/8	3.00 - 25.00	0.6000	0.6000
T41	14	HYBRIFLEX 1-5/8"	3.00 - 25.00	0.6000	0.6000
T41	15	1 5/8	3.00 - 25.00	0.6000	0.6000
T41	16	Fiber Trunk	3.00 - 25.00	0.6000	0.6000
T41	17	DC Trunk	3.00 - 25.00	0.6000	0.6000
T41	18	Fiber Trunk	3.00 - 25.00	0.6000	0.6000
T41	19	DC Trunk	3.00 - 25.00	0.6000	0.6000
T41	20	0.3" dia RET	3.00 - 25.00	0.6000	0.6000

Discrete Tower Loads

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 K
Search Antenna	C	From Leg	1.00	0.0000	370.00	No Ice	1.28	3.73	0.30
			0.00			1/2" Ice	3.73	4.39	0.45
			0.00			1" Ice	6.18	5.05	0.60
10'6"x4" Pipe Mount	A	From Leg	0.50	0.0000	355.00	No Ice	2.99	2.99	0.11
			0.00			1/2" Ice	5.62	5.62	0.15
			0.00			1" Ice	6.25	6.25	0.19
Rohn 6' Side-Arm(1)	B	From Leg	3.00	0.0000	355.00	No Ice	6.00	6.00	0.14
			0.00			1/2" Ice	8.50	8.50	0.21
			0.00			1" Ice	11.00	11.00	0.28
20' x 3" Dia Omni	C	From Leg	1.00	0.0000	350.00	No Ice	5.70	5.70	0.05

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 K
			0.00			1/2" Ice	8.03	8.03	0.09
			0.00			1" Ice	10.08	10.08	0.15
6'x4" Pipe Mount	C	From Leg	0.50	0.0000	350.00	No Ice	1.59	1.59	0.05
			0.00			1/2" Ice	2.46	2.46	0.07
			0.00			1" Ice	2.83	2.83	0.09
10' x 3" Dia Omni	B	From Leg	3.00	0.0000	325.00	No Ice	2.87	2.87	0.03
			0.00			1/2" Ice	4.03	4.03	0.05
			0.00			1" Ice	5.03	5.03	0.08
ROHN 3-ft Side Arm	B	From Leg	2.00	0.0000	325.00	No Ice	3.10	3.10	0.07
			0.00			1/2" Ice	5.00	5.00	0.10
			0.00			1" Ice	6.90	6.90	0.13
20' x 3" Dia Omni	C	From Leg	1.00	0.0000	250.00	No Ice	5.90	5.90	0.05
			0.00			1/2" Ice	8.03	8.03	0.09
			0.00			1" Ice	10.08	10.08	0.15
6'x4" Pipe Mount	C	From Leg	0.50	0.0000	250.00	No Ice	1.63	1.63	0.05
			0.00			1/2" Ice	2.46	2.46	0.07
			0.00			1" Ice	2.83	2.83	0.09
Yagi	A	From Leg	1.00	0.0000	200.00	No Ice	5.00	5.00	0.04
			0.00			1/2" Ice	6.50	6.50	0.06
			0.00			1" Ice	8.00	8.00	0.08
(4) Yagi	C	From Leg	1.00	0.0000	180.00	No Ice	5.00	5.00	0.04
			0.00			1/2" Ice	6.50	6.50	0.06
			0.00			1" Ice	8.00	8.00	0.08
(2) 5'3"x4" Pipe Mount	C	From Leg	1.00	0.0000	180.00	No Ice	1.44	1.44	0.06
			0.00			1/2" Ice	2.21	2.21	0.07
			0.00			1" Ice	2.54	2.54	0.09
Yagi	B	From Leg	1.00	0.0000	148.00	No Ice	5.00	5.00	0.04
			0.00			1/2" Ice	6.50	6.50	0.06
			0.00			1" Ice	8.00	8.00	0.08
Yagi	C	From Leg	1.00	0.0000	140.00	No Ice	5.00	5.00	0.04
			0.00			1/2" Ice	6.50	6.50	0.06
			0.00			1" Ice	8.00	8.00	0.08
Yagi	A	From Leg	1.00	0.0000	125.00	No Ice	5.00	5.00	0.04
			0.00			1/2" Ice	6.50	6.50	0.06
			0.00			1" Ice	8.00	8.00	0.08
X-Style	A	From Leg	1.00	0.0000	88.00	No Ice	1.50	2.00	0.02
			0.00			1/2" Ice	1.50	2.00	0.03
			0.00			1" Ice	1.50	2.00	0.04
(2) X-Style	B	From Leg	1.00	0.0000	88.00	No Ice	1.50	2.00	0.02
			0.00			1/2" Ice	1.50	2.00	0.03
			0.00			1" Ice	1.50	2.00	0.04
X-Style	A	From Leg	1.00	0.0000	88.00	No Ice	1.50	2.00	0.02
			0.00			1/2" Ice	1.50	2.00	0.03
			0.00			1" Ice	1.50	2.00	0.04
Yagi	C	From Leg	1.00	0.0000	62.00	No Ice	5.00	5.00	0.04
			0.00			1/2" Ice	6.50	6.50	0.06
			0.00			1" Ice	8.00	8.00	0.08
Yagi	A	From Leg	1.00	0.0000	40.00	No Ice	5.00	5.00	0.04
			0.00			1/2" Ice	6.50	6.50	0.06
			0.00			1" Ice	8.00	8.00	0.08
HPA-65R-BUU-H6	A	From Leg	3.00	0.0000	242.50	No Ice	9.66	6.45	0.05
(AT&T - Existing)			-6.00			1/2" Ice	10.13	6.91	0.11
			0.00			1" Ice	10.61	7.38	0.18
80010965	A	From Leg	3.00	0.0000	242.50	No Ice	13.81	5.83	0.11
(AT&T - Proposed)			-2.00			1/2" Ice	14.35	6.32	0.19
			0.00			1" Ice	14.89	6.82	0.27
80010965	A	From Leg	3.00	0.0000	242.50	No Ice	13.81	5.83	0.11

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(AT&T - Proposed)			2.00			1/2" Ice	14.35	6.32	0.19
			0.00			1" Ice	14.89	6.82	0.27
7770.00	A	From Leg	3.00	0.0000	242.50	No Ice	5.51	2.93	0.04
(AT&T - Existing)			6.00			1/2" Ice	5.87	3.27	0.07
			0.00			1" Ice	6.23	3.63	0.11
HPA-65R-BUU-H8	B	From Leg	3.00	0.0000	242.50	No Ice	12.98	7.52	0.07
(AT&T - Existing)			-6.00			1/2" Ice	13.56	8.09	0.14
			0.00			1" Ice	14.15	8.67	0.22
80010966	B	From Leg	3.00	0.0000	242.50	No Ice	17.36	7.50	0.13
(AT&T - Proposed)			-2.00			1/2" Ice	17.99	8.09	0.22
			0.00			1" Ice	18.63	8.69	0.32
80010966	B	From Leg	3.00	0.0000	242.50	No Ice	17.36	7.50	0.13
(AT&T - Proposed)			2.00			1/2" Ice	17.99	8.09	0.22
			0.00			1" Ice	18.63	8.69	0.32
7770.00	B	From Leg	3.00	0.0000	242.50	No Ice	5.51	2.93	0.04
(AT&T - Existing)			6.00			1/2" Ice	5.87	3.27	0.07
			0.00			1" Ice	6.23	3.63	0.11
HPA-65R-BUU-H8	C	From Leg	3.00	0.0000	242.50	No Ice	12.98	7.52	0.07
(AT&T - Existing)			-6.00			1/2" Ice	13.56	8.09	0.14
			0.00			1" Ice	14.15	8.67	0.22
80010966	C	From Leg	3.00	0.0000	242.50	No Ice	17.36	7.50	0.13
(AT&T - Proposed)			-2.00			1/2" Ice	17.99	8.09	0.22
			0.00			1" Ice	18.63	8.69	0.32
80010966	C	From Leg	3.00	0.0000	242.50	No Ice	17.36	7.50	0.13
(AT&T - Proposed)			2.00			1/2" Ice	17.99	8.09	0.22
			0.00			1" Ice	18.63	8.69	0.32
7770.00	C	From Leg	3.00	0.0000	242.50	No Ice	5.51	2.93	0.04
(AT&T - Existing)			6.00			1/2" Ice	5.87	3.27	0.07
			0.00			1" Ice	6.23	3.63	0.11
(2) LPG21401 TMA	A	From Leg	3.00	0.0000	242.50	No Ice	0.82	0.35	0.02
(AT&T - Existing)			0.00			1/2" Ice	0.94	0.44	0.02
			0.00			1" Ice	1.06	0.54	0.03
(2) LPG21401 TMA	B	From Leg	3.00	0.0000	242.50	No Ice	0.82	0.35	0.02
(AT&T - Existing)			0.00			1/2" Ice	0.94	0.44	0.02
			0.00			1" Ice	1.06	0.54	0.03
(2) LPG21401 TMA	C	From Leg	3.00	0.0000	242.50	No Ice	0.82	0.35	0.02
(AT&T - Existing)			0.00			1/2" Ice	0.94	0.44	0.02
			0.00			1" Ice	1.06	0.54	0.03
8843 B2/B66A	A	From Leg	3.00	0.0000	242.50	No Ice	1.64	1.35	0.07
(AT&T - Proposed)			0.00			1/2" Ice	1.80	1.50	0.09
			0.00			1" Ice	1.97	1.65	0.11
8843 B2/B66A	B	From Leg	3.00	0.0000	242.50	No Ice	1.64	1.35	0.07
(AT&T - Proposed)			0.00			1/2" Ice	1.80	1.50	0.09
			0.00			1" Ice	1.97	1.65	0.11
8843 B2/B66A	C	From Leg	3.00	0.0000	242.50	No Ice	1.64	1.35	0.07
(AT&T - Proposed)			0.00			1/2" Ice	1.80	1.50	0.09
			0.00			1" Ice	1.97	1.65	0.11
4449 B5/B12	A	From Leg	3.00	0.0000	242.50	No Ice	1.97	1.41	0.07
(AT&T - Proposed)			0.00			1/2" Ice	2.14	1.56	0.09
			0.00			1" Ice	2.33	1.73	0.11
4449 B5/B12	B	From Leg	3.00	0.0000	242.50	No Ice	1.97	1.41	0.07
(AT&T - Proposed)			0.00			1/2" Ice	2.14	1.56	0.09
			0.00			1" Ice	2.33	1.73	0.11
4449 B5/B12	C	From Leg	3.00	0.0000	242.50	No Ice	1.97	1.41	0.07
(AT&T - Proposed)			0.00			1/2" Ice	2.14	1.56	0.09
			0.00			1" Ice	2.33	1.73	0.11
B14 4478	A	From Leg	3.00	0.0000	242.50	No Ice	1.84	1.06	0.06

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 K
(AT&T - Proposed)			0.00			1/2" Ice	2.01	1.20	0.08
			0.00			1" Ice	2.19	1.34	0.09
B14 4478	B	From Leg	3.00	0.0000	242.50	No Ice	1.84	1.06	0.06
(AT&T - Proposed)			0.00			1/2" Ice	2.01	1.20	0.08
			0.00			1" Ice	2.19	1.34	0.09
B14 4478	C	From Leg	3.00	0.0000	242.50	No Ice	1.84	1.06	0.06
(AT&T - Proposed)			0.00			1/2" Ice	2.01	1.20	0.08
			0.00			1" Ice	2.19	1.34	0.09
DC6-48-60-18-8F Surge	A	From Leg	3.00	0.0000	242.50	No Ice	1.91	1.91	0.02
Arrestor			0.00			1/2" Ice	2.10	2.10	0.04
(AT&T - Existing)			0.00			1" Ice	2.29	2.29	0.06
DC6-48-60-18-8F Surge	B	From Leg	3.00	0.0000	242.50	No Ice	1.91	1.91	0.02
Arrestor			0.00			1/2" Ice	2.10	2.10	0.04
(AT&T - Proposed)			0.00			1" Ice	2.29	2.29	0.06
DC6-48-60-18-8F Surge	C	From Leg	3.00	0.0000	242.50	No Ice	1.91	1.91	0.02
Arrestor			0.00			1/2" Ice	2.10	2.10	0.04
(AT&T - Proposed)			0.00			1" Ice	2.29	2.29	0.06
Pirod 12' T-Frame Sector	A	From Leg	1.00	0.0000	242.50	No Ice	13.60	13.60	0.47
Mount (1)			0.00			1/2" Ice	18.40	18.40	0.60
(AT&T - Existing)			0.00			1" Ice	23.20	23.20	0.73
Pirod 12' T-Frame Sector	B	From Leg	1.00	0.0000	242.50	No Ice	13.60	13.60	0.47
Mount (1)			0.00			1/2" Ice	18.40	18.40	0.60
(AT&T - Existing)			0.00			1" Ice	23.20	23.20	0.73
Pirod 12' T-Frame Sector	C	From Leg	1.00	0.0000	242.50	No Ice	13.60	13.60	0.47
Mount (1)			0.00			1/2" Ice	18.40	18.40	0.60
(AT&T - Existing)			0.00			1" Ice	23.20	23.20	0.73
SitePro Horizontal Stabilizer	A	From Leg	1.00	0.0000	242.50	No Ice	2.00	2.00	0.07
SFS-H			0.00			1/2" Ice	3.50	3.50	0.10
(AT&T - Proposed)			0.00			1" Ice	5.00	5.00	0.13
SitePro Horizontal Stabilizer	B	From Leg	1.00	0.0000	242.50	No Ice	2.00	2.00	0.07
SFS-H			0.00			1/2" Ice	3.50	3.50	0.10
(AT&T - Proposed)			0.00			1" Ice	5.00	5.00	0.13
SitePro Horizontal Stabilizer	C	From Leg	1.00	0.0000	242.50	No Ice	2.00	2.00	0.07
SFS-H			0.00			1/2" Ice	3.50	3.50	0.10
(AT&T - Proposed)			0.00			1" Ice	5.00	5.00	0.13
QUAD656C0000	A	From Leg	3.00	0.0000	305.00	No Ice	13.24	5.62	0.06
(Verizon Existing)			-6.00			1/2" Ice	13.75	6.09	0.13
			0.00			1" Ice	14.27	6.56	0.21
HBXX-6517DS	A	From Leg	3.00	0.0000	305.00	No Ice	8.53	5.24	0.05
(Verizon Existing)			-4.00			1/2" Ice	9.00	5.71	0.10
			0.00			1" Ice	9.48	6.18	0.16
LNX-6514DS-T4M	A	From Leg	3.00	0.0000	305.00	No Ice	8.17	5.41	0.04
(Verizon Existing)			0.00			1/2" Ice	8.63	5.86	0.09
			0.00			1" Ice	9.10	6.33	0.15
HBXX-6517DS	A	From Leg	3.00	0.0000	305.00	No Ice	8.53	5.24	0.05
(Verizon Existing)			4.00			1/2" Ice	9.00	5.71	0.10
			0.00			1" Ice	9.48	6.18	0.16
QUAD656C0000	B	From Leg	3.00	0.0000	305.00	No Ice	13.24	5.62	0.06
(Verizon Existing)			-6.00			1/2" Ice	13.75	6.09	0.13
			0.00			1" Ice	14.27	6.56	0.21
HBXX-6517DS	B	From Leg	3.00	0.0000	305.00	No Ice	8.53	5.24	0.05
(Verizon Existing)			-4.00			1/2" Ice	9.00	5.71	0.10
			0.00			1" Ice	9.48	6.18	0.16
LNX-6514DS-T4M	B	From Leg	3.00	0.0000	305.00	No Ice	8.17	5.41	0.04
(Verizon Existing)			0.00			1/2" Ice	8.63	5.86	0.09
			0.00			1" Ice	9.10	6.33	0.15
HBXX-6517DS	B	From Leg	3.00	0.0000	305.00	No Ice	8.53	5.24	0.05

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(Verizon Existing)			4.00			1/2" Ice	9.00	5.71	0.10
			0.00			1" Ice	9.48	6.18	0.16
QUAD656C0000	C	From Leg	3.00	0.0000	305.00	No Ice	13.24	5.62	0.06
(Verizon Existing)			-6.00			1/2" Ice	13.75	6.09	0.13
			0.00			1" Ice	14.27	6.56	0.21
HBXX-6517DS	C	From Leg	3.00	0.0000	305.00	No Ice	8.53	5.24	0.05
(Verizon Existing)			-4.00			1/2" Ice	9.00	5.71	0.10
			0.00			1" Ice	9.48	6.18	0.16
LNX-6514DS-T4M	C	From Leg	3.00	0.0000	305.00	No Ice	8.17	5.41	0.04
(Verizon Existing)			0.00			1/2" Ice	8.63	5.86	0.09
			0.00			1" Ice	9.10	6.33	0.15
HBXX-6517DS	C	From Leg	3.00	0.0000	305.00	No Ice	8.53	5.24	0.05
(Verizon Existing)			4.00			1/2" Ice	9.00	5.71	0.10
			0.00			1" Ice	9.48	6.18	0.16
RRH4x45/2x90-AWS	A	From Leg	3.00	0.0000	305.00	No Ice	2.58	1.69	0.08
(Verizon Existing)			4.00			1/2" Ice	2.79	1.87	0.10
			0.00			1" Ice	3.01	2.06	0.12
RRH4x45/2x90-AWS	B	From Leg	3.00	0.0000	305.00	No Ice	2.58	1.69	0.08
(Verizon Existing)			4.00			1/2" Ice	2.79	1.87	0.10
			0.00			1" Ice	3.01	2.06	0.12
RRH4x45/2x90-AWS	C	From Leg	3.00	0.0000	305.00	No Ice	2.58	1.69	0.08
(Verizon Existing)			4.00			1/2" Ice	2.79	1.87	0.10
			0.00			1" Ice	3.01	2.06	0.12
RRH4x30-B13	A	From Leg	3.00	0.0000	305.00	No Ice	2.16	1.62	0.06
(Verizon Existing)			-4.00			1/2" Ice	2.35	1.79	0.08
			0.00			1" Ice	2.55	1.97	0.10
RRH4x30-B13	B	From Leg	3.00	0.0000	305.00	No Ice	2.16	1.62	0.06
(Verizon Existing)			-4.00			1/2" Ice	2.35	1.79	0.08
			0.00			1" Ice	2.55	1.97	0.10
RRH4x30-B13	C	From Leg	3.00	0.0000	305.00	No Ice	2.16	1.62	0.06
(Verizon Existing)			-4.00			1/2" Ice	2.35	1.79	0.08
			0.00			1" Ice	2.55	1.97	0.10
DB-T1-6Z-8AB-0Z	A	From Leg	3.00	0.0000	305.00	No Ice	4.80	2.00	0.04
(Verizon Existing)			0.00			1/2" Ice	5.07	2.19	0.08
			0.00			1" Ice	5.35	2.39	0.12
DB-T1-6Z-8AB-0Z	B	From Leg	3.00	0.0000	305.00	No Ice	4.80	2.00	0.04
(Verizon Existing)			0.00			1/2" Ice	5.07	2.19	0.08
			0.00			1" Ice	5.35	2.39	0.12
Rohn 6' x 12' Boom Gate (1)	A	From Leg	1.00	0.0000	305.00	No Ice	16.60	16.60	0.56
(Verizon Existing)			0.00			1/2" Ice	19.80	19.80	0.70
			0.00			1" Ice	23.00	23.00	0.84
Rohn 6' x 12' Boom Gate (1)	B	From Leg	1.00	0.0000	305.00	No Ice	16.60	16.60	0.56
(Verizon Existing)			0.00			1/2" Ice	19.80	19.80	0.70
			0.00			1" Ice	23.00	23.00	0.84
Rohn 6' x 12' Boom Gate (1)	C	From Leg	1.00	0.0000	305.00	No Ice	16.60	16.60	0.56
(Verizon Existing)			0.00			1/2" Ice	19.80	19.80	0.70
			0.00			1" Ice	23.00	23.00	0.84

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
8' Dish	A	Paraboloid w/o Radome	From Leg	1.00 0.00 0.00	Worst		355.00	8.00	No Ice 1/2" Ice 1" Ice	50.27 51.32 52.37	0.10 0.26 0.49

Tower Pressures - No Ice

G_H = 0.850

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg % %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
T1	365.63	1.663	40	32.682	A	4.176	2.865	2.865	40.69	0.000	0.000
368.75-362.50					B	4.176	2.865		40.69	0.000	0.000
					C	4.176	2.865		40.69	0.278	0.000
T2	359.38	1.657	40	32.682	A	4.812	2.865	2.865	37.31	0.000	0.000
362.50-356.25					B	4.812	2.865		37.31	0.000	0.000
					C	4.812	2.865		37.31	0.694	0.000
T3	353.13	1.651	40	32.682	A	4.812	2.865	2.865	37.31	0.000	0.000
356.25-350.00					B	4.812	2.865		37.31	0.555	0.000
					C	4.812	2.865		37.31	0.694	0.000
T4	346.88	1.644	39	32.813	A	4.804	3.125	3.125	39.41	0.000	0.000
350.00-343.75					B	4.804	3.125		39.41	2.081	0.000
					C	4.804	3.125		39.41	0.694	0.000
T5	340.63	1.638	39	32.813	A	0.990	3.917	3.125	63.69	0.000	0.000
343.75-337.50					B	0.990	3.917		63.69	2.081	0.000
					C	0.990	3.917		63.69	0.694	0.000
T6	334.38	1.632	39	32.813	A	0.000	4.574	3.125	68.32	0.000	0.000
337.50-331.25					B	0.000	4.574		68.32	2.081	0.000
					C	0.000	4.574		68.32	0.694	0.000
T7	328.13	1.625	39	32.813	A	0.000	4.574	3.125	68.32	0.000	0.000
331.25-325.00					B	0.000	4.574		68.32	2.081	0.000
					C	0.000	4.574		68.32	0.694	0.000
T8	321.88	1.619	39	32.943	A	0.000	4.991	3.385	67.83	1.238	0.000
325.00-318.75					B	0.000	4.991		67.83	2.081	0.000
					C	0.000	4.991		67.83	0.694	0.000
T9	315.63	1.612	39	32.943	A	0.000	4.986	3.385	67.90	1.238	0.000
318.75-312.50					B	0.000	4.986		67.90	2.081	0.000
					C	0.000	4.986		67.90	0.694	0.000
T10	309.38	1.605	39	32.943	A	0.000	4.986	3.385	67.90	1.238	0.000
312.50-306.25					B	0.000	4.986		67.90	2.081	0.000
					C	0.000	4.986		67.90	0.694	0.000
T11	303.13	1.598	38	32.943	A	0.985	4.332	3.385	63.67	1.238	0.000
306.25-300.00					B	0.985	4.332		63.67	2.081	0.000
					C	0.985	4.332		63.67	0.694	0.000
T12	296.88	1.591	38	32.943	A	4.770	3.385	3.385	41.51	1.238	0.000
300.00-293.75					B	4.770	3.385		41.51	4.556	0.000
					C	4.770	3.385		41.51	15.544	0.000
T13	290.63	1.584	38	32.943	A	0.985	4.332	3.385	63.67	1.238	0.000
293.75-287.50					B	0.985	4.332		63.67	4.556	0.000
					C	0.985	4.332		63.67	15.544	0.000
T14	284.38	1.577	38	32.943	A	0.000	4.828	3.385	70.12	1.238	0.000
287.50-281.25					B	0.000	4.828		70.12	4.556	0.000
					C	0.000	4.828		70.12	15.544	0.000
T15	278.13	1.57	38	32.943	A	0.000	4.828	3.385	70.12	1.238	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
281.25-275.00					B	0.000	4.828		70.12	4.556	0.000
					C	0.000	4.828		70.12	15.544	0.000
T16	271.88	1.562	37	32.943	A	0.000	4.828	3.385	70.12	1.238	0.000
275.00-268.75					B	0.000	4.828		70.12	4.556	0.000
					C	0.000	4.828		70.12	15.544	0.000
T17	265.63	1.555	37	32.943	A	0.000	4.828	3.385	70.12	1.238	0.000
268.75-262.50					B	0.000	4.828		70.12	4.556	0.000
					C	0.000	4.828		70.12	15.544	0.000
T18	259.38	1.547	37	32.943	A	0.000	4.828	3.385	70.12	1.238	0.000
262.50-256.25					B	0.000	4.828		70.12	4.556	0.000
					C	0.000	4.828		70.12	15.544	0.000
T19	253.13	1.539	37	32.943	A	0.000	4.986	3.385	67.90	1.238	0.000
256.25-250.00					B	0.000	4.986		67.90	4.556	0.000
					C	0.000	4.986		67.90	15.544	0.000
T20	246.88	1.531	37	32.943	A	0.985	4.332	3.385	63.67	1.238	0.000
250.00-243.75					B	0.985	4.332		63.67	4.556	0.000
					C	0.985	4.332		63.67	15.544	0.000
T21	240.63	1.523	37	32.943	A	0.985	4.332	3.385	63.67	2.263	0.000
243.75-237.50					B	0.985	4.332		63.67	4.556	0.000
					C	0.985	4.332		63.67	21.484	0.000
T22	234.38	1.514	36	32.943	A	0.985	4.332	3.385	63.67	3.800	0.000
237.50-231.25					B	0.985	4.332		63.67	4.556	0.000
					C	0.985	4.332		63.67	30.394	0.000
T23	228.13	1.506	36	32.943	A	0.985	4.647	3.385	60.11	3.800	0.000
231.25-225.00					B	0.985	4.647		60.11	4.556	0.000
					C	0.985	4.647		60.11	30.394	0.000
T24	221.88	1.497	36	32.813	A	4.147	3.125	3.125	42.98	3.800	0.000
225.00-218.75					B	4.147	3.125		42.98	4.556	0.000
					C	4.147	3.125		42.98	30.394	0.000
T25	215.63	1.488	36	32.813	A	0.990	3.917	3.125	63.69	3.800	0.000
218.75-212.50					B	0.990	3.917		63.69	4.556	0.000
					C	0.990	3.917		63.69	30.394	0.000
T26	209.38	1.479	35	32.813	A	0.000	4.574	3.125	68.32	3.800	0.000
212.50-206.25					B	0.000	4.574		68.32	4.556	0.000
					C	0.000	4.574		68.32	30.394	0.000
T27	203.13	1.469	35	32.813	A	0.000	4.574	3.125	68.32	3.800	0.000
206.25-200.00					B	0.000	4.574		68.32	4.556	0.000
					C	0.000	4.574		68.32	30.394	0.000
T28	187.50	1.445	35	131.250	A	0.000	20.925	12.500	59.74	15.755	0.000
200.00-175.00					B	0.000	20.925		59.74	18.225	0.000
					C	0.000	20.925		59.74	124.350	0.000
T29	171.88	1.418	34	32.943	A	0.000	5.307	3.385	63.79	4.494	0.000
175.00-168.75					B	0.000	5.307		63.79	4.556	0.000
					C	0.000	5.307		63.79	31.087	0.000
T30	165.63	1.407	34	32.943	A	0.000	5.301	3.385	63.86	4.494	0.000
168.75-162.50					B	0.000	5.301		63.86	4.556	0.000
					C	0.000	5.301		63.86	31.087	0.000
T31	159.38	1.396	33	32.943	A	0.985	4.174	3.385	65.62	4.494	0.000
162.50-156.25					B	0.985	4.174		65.62	4.556	0.000
					C	0.985	4.174		65.62	31.087	0.000
T32	153.13	1.384	33	32.943	A	0.000	4.828	3.385	70.12	4.494	0.000
156.25-150.00					B	0.000	4.828		70.12	4.556	0.000
					C	0.000	4.828		70.12	31.087	0.000
T33	137.50	1.353	32	131.771	A	0.000	19.313	13.542	70.12	17.975	0.000
150.00-125.00					B	0.000	19.313		70.12	19.559	0.000
					C	0.000	19.313		70.12	126.015	0.000
T34	112.50	1.297	31	131.771	A	12.617	16.158	13.542	47.06	17.975	0.000
125.00-100.00					B	12.617	16.158		47.06	21.125	0.000
					C	12.617	16.158		47.06	127.125	0.000
T35	96.88	1.257	30	32.943	A	4.140	3.385	3.385	44.99	4.494	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
100.00-93.75					B	4.140	3.385		44.99	5.281	0.000
					C	4.140	3.385		44.99	31.781	0.000
T36	90.63	1.24	30	32.943	A	0.985	4.332	3.385	63.67	4.494	0.000
93.75-87.50					B	0.985	4.332		63.67	5.397	0.000
					C	0.985	4.332		63.67	31.781	0.000
T37	84.38	1.221	29	32.943	A	0.000	4.828	3.385	70.12	4.494	0.000
87.50-81.25					B	0.000	4.828		70.12	6.731	0.000
					C	0.000	4.828		70.12	31.781	0.000
T38	78.13	1.202	29	32.943	A	0.000	4.828	3.385	70.12	4.494	0.000
81.25-75.00					B	0.000	4.828		70.12	6.731	0.000
					C	0.000	4.828		70.12	31.781	0.000
T39	62.50	1.146	28	131.771	A	0.000	19.313	13.542	70.12	19.307	0.000
75.00-50.00					B	0.000	19.313		70.12	26.925	0.000
					C	0.000	19.313		70.12	127.125	0.000
T40	37.50	1.029	25	131.771	A	0.985	18.659	13.542	68.94	22.415	0.000
50.00-25.00					B	0.985	18.659		68.94	26.925	0.000
					C	0.985	18.659		68.94	127.125	0.000
T41 25.00-0.00	12.50	0.85	20	131.771	A	0.000	19.313	13.542	70.12	20.702	0.000
					B	0.000	19.313		70.12	23.694	0.000
					C	0.000	19.313		70.12	111.870	0.000

Tower Pressure - With Ice

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	365.63	1.663	9	1.9078	34.670	A	4.176	13.213	6.839	39.33	0.000	0.000
368.75-362.50						B	4.176	13.213		39.33	0.000	0.000
						C	4.176	13.213		39.33	1.231	0.000
T2	359.38	1.657	9	1.9046	34.666	A	4.812	13.195	6.832	37.94	0.000	0.000
362.50-356.25						B	4.812	13.195		37.94	0.000	0.000
						C	4.812	13.195		37.94	3.074	0.000
T3	353.13	1.651	9	1.9012	34.663	A	4.812	13.177	6.825	37.94	0.000	0.000
356.25-350.00						B	4.812	13.177		37.94	2.456	0.000
						C	4.812	13.177		37.94	3.070	0.000
T4	346.88	1.644	9	1.8978	34.789	A	4.804	13.409	7.079	38.87	0.000	0.000
350.00-343.75						B	4.804	13.409		38.87	9.825	0.000
						C	4.804	13.409		38.87	3.066	0.000
T5	340.63	1.638	9	1.8944	34.786	A	0.990	14.165	7.072	46.66	0.000	0.000
343.75-337.50						B	0.990	14.165		46.66	9.813	0.000
						C	0.990	14.165		46.66	3.062	0.000
T6	334.38	1.632	9	1.8909	34.782	A	0.000	14.803	7.064	47.72	0.000	0.000
337.50-331.25						B	0.000	14.803		47.72	9.801	0.000
						C	0.000	14.803		47.72	3.057	0.000
T7	328.13	1.625	9	1.8873	34.778	A	0.000	14.784	7.057	47.73	0.000	0.000
331.25-325.00						B	0.000	14.784		47.73	9.789	0.000
						C	0.000	14.784		47.73	3.053	0.000
T8	321.88	1.619	9	1.8837	34.905	A	0.000	15.170	7.310	48.18	3.592	0.000
325.00-318.75						B	0.000	15.170		48.18	9.776	0.000
						C	0.000	15.170		48.18	3.048	0.000
T9	315.63	1.612	9	1.8800	34.901	A	0.000	15.128	7.302	48.27	3.587	0.000
318.75-312.50						B	0.000	15.128		48.27	9.764	0.000
						C	0.000	15.128		48.27	3.044	0.000

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T10	309.38	1.605	9	1.8762	34.897	A	0.000	15.108	7.294	48.28	3.583	0.000
312.50-306.25						B	0.000	15.108		48.28	9.751	0.000
						C	0.000	15.108		48.28	3.039	0.000
T11	303.13	1.598	9	1.8724	34.893	A	0.985	14.433	7.286	47.26	3.578	0.000
306.25-300.00						B	0.985	14.433		47.26	9.738	0.000
						C	0.985	14.433		47.26	3.034	0.000
T12	296.88	1.591	9	1.8685	34.889	A	4.770	13.466	7.278	39.91	3.573	0.000
300.00-293.75						B	4.770	13.466		39.91	18.505	0.000
						C	4.770	13.466		39.91	24.350	0.000
T13	290.63	1.584	9	1.8645	34.885	A	0.985	14.391	7.270	47.28	3.568	0.000
293.75-287.50						B	0.985	14.391		47.28	18.483	0.000
						C	0.985	14.391		47.28	24.337	0.000
T14	284.38	1.577	9	1.8605	34.881	A	0.000	14.866	7.261	48.85	3.563	0.000
287.50-281.25						B	0.000	14.866		48.85	18.461	0.000
						C	0.000	14.866		48.85	24.324	0.000
T15	278.13	1.57	9	1.8564	34.876	A	0.000	14.843	7.253	48.86	3.558	0.000
281.25-275.00						B	0.000	14.843		48.86	18.438	0.000
						C	0.000	14.843		48.86	24.310	0.000
T16	271.88	1.562	8	1.8522	34.872	A	0.000	14.821	7.244	48.88	3.553	0.000
275.00-268.75						B	0.000	14.821		48.88	18.414	0.000
						C	0.000	14.821		48.88	24.297	0.000
T17	265.63	1.555	8	1.8479	34.868	A	0.000	14.797	7.235	48.89	3.547	0.000
268.75-262.50						B	0.000	14.797		48.89	18.390	0.000
						C	0.000	14.797		48.89	24.283	0.000
T18	259.38	1.547	8	1.8435	34.863	A	0.000	14.774	7.226	48.91	3.542	0.000
262.50-256.25						B	0.000	14.774		48.91	18.366	0.000
						C	0.000	14.774		48.91	24.268	0.000
T19	253.13	1.539	8	1.8390	34.858	A	0.000	14.907	7.217	48.41	3.536	0.000
256.25-250.00						B	0.000	14.907		48.41	18.341	0.000
						C	0.000	14.907		48.41	24.254	0.000
T20	246.88	1.531	8	1.8344	34.854	A	0.985	14.228	7.207	47.37	3.530	0.000
250.00-243.75						B	0.985	14.228		47.37	18.315	0.000
						C	0.985	14.228		47.37	24.239	0.000
T21	240.63	1.523	8	1.8297	34.849	A	0.985	14.203	7.197	47.39	11.949	0.000
243.75-237.50						B	0.985	14.203		47.39	18.289	0.000
						C	0.985	14.203		47.39	32.720	0.000
T22	234.38	1.514	8	1.8249	34.844	A	0.985	14.177	7.187	47.40	24.537	0.000
237.50-231.25						B	0.985	14.177		47.40	18.263	0.000
						C	0.985	14.177		47.40	45.440	0.000
T23	228.13	1.506	8	1.8199	34.838	A	0.985	14.466	7.177	46.45	24.486	0.000
231.25-225.00						B	0.985	14.466		46.45	18.235	0.000
						C	0.985	14.466		46.45	45.414	0.000
T24	221.88	1.497	8	1.8149	34.703	A	4.147	12.926	6.906	40.45	24.434	0.000
225.00-218.75						B	4.147	12.926		40.45	18.207	0.000
						C	4.147	12.926		40.45	45.388	0.000
T25	215.63	1.488	8	1.8097	34.698	A	0.990	13.707	6.895	46.92	24.381	0.000
218.75-212.50						B	0.990	13.707		46.92	18.178	0.000
						C	0.990	13.707		46.92	45.360	0.000
T26	209.38	1.479	8	1.8044	34.692	A	0.000	14.335	6.884	48.02	24.326	0.000
212.50-206.25						B	0.000	14.335		48.02	18.149	0.000
						C	0.000	14.335		48.02	45.332	0.000
T27	203.13	1.469	8	1.7989	34.686	A	0.000	14.306	6.873	48.04	24.270	0.000
206.25-200.00						B	0.000	14.306		48.04	18.118	0.000
						C	0.000	14.306		48.04	45.303	0.000
T28	187.50	1.445	8	1.7846	138.686	A	0.000	65.192	27.372	41.99	98.829	0.000
200.00-175.00						B	0.000	65.192		41.99	72.155	0.000
						C	0.000	65.192		41.99	192.609	0.000
T29	171.88	1.418	8	1.7691	34.786	A	0.000	14.867	7.071	47.56	26.868	0.000
175.00-168.75						B	0.000	14.867		47.56	17.953	0.000
						C	0.000	14.867		47.56	48.051	0.000

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T30	165.63	1.407	8	1.7626	34.779	A	0.000	14.811	7.057	47.65	26.793	0.000
168.75-162.50						B	0.000	14.811		47.65	17.916	0.000
						C	0.000	14.811		47.65	48.009	0.000
T31	159.38	1.396	8	1.7558	34.772	A	0.985	13.647	7.043	48.14	26.715	0.000
162.50-156.25						B	0.985	13.647		48.14	17.879	0.000
						C	0.985	13.647		48.14	47.965	0.000
T32	153.13	1.384	8	1.7488	34.764	A	0.000	14.263	7.029	49.28	26.634	0.000
156.25-150.00						B	0.000	14.263		49.28	17.840	0.000
						C	0.000	14.263		49.28	47.919	0.000
T33	137.50	1.353	7	1.7301	138.980	A	0.000	56.648	27.959	49.36	105.672	0.000
150.00-125.00						B	0.000	56.648		49.36	80.236	0.000
						C	0.000	56.648		49.36	198.043	0.000
T34	112.50	1.297	7	1.6957	138.836	A	12.617	52.752	27.673	42.33	104.085	0.000
125.00-100.00						B	12.617	52.752		42.33	90.038	0.000
						C	12.617	52.752		42.33	201.545	0.000
T35	96.88	1.257	7	1.6706	34.683	A	4.140	12.398	6.866	41.52	25.731	0.000
100.00-93.75						B	4.140	12.398		41.52	22.307	0.000
						C	4.140	12.398		41.52	50.191	0.000
T36 93.75-87.50	90.63	1.24	7	1.6595	34.671	A	0.985	13.284	6.843	47.95	25.603	0.000
						B	0.985	13.284		47.95	22.739	0.000
						C	0.985	13.284		47.95	50.105	0.000
T37 87.50-81.25	84.38	1.221	7	1.6476	34.659	A	0.000	13.717	6.818	49.70	25.467	0.000
						B	0.000	13.717		49.70	28.617	0.000
						C	0.000	13.717		49.70	50.013	0.000
T38 81.25-75.00	78.13	1.202	7	1.6350	34.646	A	0.000	13.649	6.792	49.76	25.321	0.000
						B	0.000	13.649		49.76	28.489	0.000
						C	0.000	13.649		49.76	49.915	0.000
T39 75.00-50.00	62.50	1.146	6	1.5989	138.433	A	0.000	53.817	26.866	49.92	104.789	0.000
						B	0.000	53.817		49.92	112.491	0.000
						C	0.000	53.817		49.92	198.539	0.000
T40 50.00-25.00	37.50	1.029	6	1.5193	138.101	A	0.985	51.445	26.202	49.98	112.543	0.000
						B	0.985	51.445		49.98	109.259	0.000
						C	0.985	51.445		49.98	196.069	0.000
T41 25.00-0.00	12.50	0.85	5	1.3612	137.443	A	0.000	48.688	24.885	51.11	94.892	0.000
						B	0.000	48.688		51.11	90.513	0.000
						C	0.000	48.688		51.11	168.232	0.000

Tower Pressure - Service

G_H = 0.850

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	365.63	1.663	13	32.682	A	4.176	2.865	2.865	40.69	0.000	0.000
368.75-362.50					B	4.176	2.865		40.69	0.000	0.000
					C	4.176	2.865		40.69	0.278	0.000
T2	359.38	1.657	13	32.682	A	4.812	2.865	2.865	37.31	0.000	0.000
362.50-356.25					B	4.812	2.865		37.31	0.000	0.000
					C	4.812	2.865		37.31	0.694	0.000
T3	353.13	1.651	13	32.682	A	4.812	2.865	2.865	37.31	0.000	0.000
356.25-350.00					B	4.812	2.865		37.31	0.555	0.000
					C	4.812	2.865		37.31	0.694	0.000
T4	346.88	1.644	13	32.813	A	4.804	3.125	3.125	39.41	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
350.00-343.75					B	4.804	3.125		39.41	2.081	0.000
					C	4.804	3.125		39.41	0.694	0.000
T5	340.63	1.638	13	32.813	A	0.990	3.917	3.125	63.69	0.000	0.000
343.75-337.50					B	0.990	3.917		63.69	2.081	0.000
					C	0.990	3.917		63.69	0.694	0.000
T6	334.38	1.632	13	32.813	A	0.000	4.574	3.125	68.32	0.000	0.000
337.50-331.25					B	0.000	4.574		68.32	2.081	0.000
					C	0.000	4.574		68.32	0.694	0.000
T7	328.13	1.625	13	32.813	A	0.000	4.574	3.125	68.32	0.000	0.000
331.25-325.00					B	0.000	4.574		68.32	2.081	0.000
					C	0.000	4.574		68.32	0.694	0.000
T8	321.88	1.619	13	32.943	A	0.000	4.991	3.385	67.83	1.238	0.000
325.00-318.75					B	0.000	4.991		67.83	2.081	0.000
					C	0.000	4.991		67.83	0.694	0.000
T9	315.63	1.612	13	32.943	A	0.000	4.986	3.385	67.90	1.238	0.000
318.75-312.50					B	0.000	4.986		67.90	2.081	0.000
					C	0.000	4.986		67.90	0.694	0.000
T10	309.38	1.605	13	32.943	A	0.000	4.986	3.385	67.90	1.238	0.000
312.50-306.25					B	0.000	4.986		67.90	2.081	0.000
					C	0.000	4.986		67.90	0.694	0.000
T11	303.13	1.598	13	32.943	A	0.985	4.332	3.385	63.67	1.238	0.000
306.25-300.00					B	0.985	4.332		63.67	2.081	0.000
					C	0.985	4.332		63.67	0.694	0.000
T12	296.88	1.591	12	32.943	A	4.770	3.385	3.385	41.51	1.238	0.000
300.00-293.75					B	4.770	3.385		41.51	4.556	0.000
					C	4.770	3.385		41.51	15.544	0.000
T13	290.63	1.584	12	32.943	A	0.985	4.332	3.385	63.67	1.238	0.000
293.75-287.50					B	0.985	4.332		63.67	4.556	0.000
					C	0.985	4.332		63.67	15.544	0.000
T14	284.38	1.577	12	32.943	A	0.000	4.828	3.385	70.12	1.238	0.000
287.50-281.25					B	0.000	4.828		70.12	4.556	0.000
					C	0.000	4.828		70.12	15.544	0.000
T15	278.13	1.57	12	32.943	A	0.000	4.828	3.385	70.12	1.238	0.000
281.25-275.00					B	0.000	4.828		70.12	4.556	0.000
					C	0.000	4.828		70.12	15.544	0.000
T16	271.88	1.562	12	32.943	A	0.000	4.828	3.385	70.12	1.238	0.000
275.00-268.75					B	0.000	4.828		70.12	4.556	0.000
					C	0.000	4.828		70.12	15.544	0.000
T17	265.63	1.555	12	32.943	A	0.000	4.828	3.385	70.12	1.238	0.000
268.75-262.50					B	0.000	4.828		70.12	4.556	0.000
					C	0.000	4.828		70.12	15.544	0.000
T18	259.38	1.547	12	32.943	A	0.000	4.828	3.385	70.12	1.238	0.000
262.50-256.25					B	0.000	4.828		70.12	4.556	0.000
					C	0.000	4.828		70.12	15.544	0.000
T19	253.13	1.539	12	32.943	A	0.000	4.986	3.385	67.90	1.238	0.000
256.25-250.00					B	0.000	4.986		67.90	4.556	0.000
					C	0.000	4.986		67.90	15.544	0.000
T20	246.88	1.531	12	32.943	A	0.985	4.332	3.385	63.67	1.238	0.000
250.00-243.75					B	0.985	4.332		63.67	4.556	0.000
					C	0.985	4.332		63.67	15.544	0.000
T21	240.63	1.523	12	32.943	A	0.985	4.332	3.385	63.67	2.263	0.000
243.75-237.50					B	0.985	4.332		63.67	4.556	0.000
					C	0.985	4.332		63.67	21.484	0.000
T22	234.38	1.514	12	32.943	A	0.985	4.332	3.385	63.67	3.800	0.000
237.50-231.25					B	0.985	4.332		63.67	4.556	0.000
					C	0.985	4.332		63.67	30.394	0.000
T23	228.13	1.506	12	32.943	A	0.985	4.647	3.385	60.11	3.800	0.000
231.25-225.00					B	0.985	4.647		60.11	4.556	0.000
					C	0.985	4.647		60.11	30.394	0.000
T24	221.88	1.497	12	32.813	A	4.147	3.125	3.125	42.98	3.800	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
225.00-218.75					B	4.147	3.125		42.98	4.556	0.000
					C	4.147	3.125		42.98	30.394	0.000
T25	215.63	1.488	12	32.813	A	0.990	3.917	3.125	63.69	3.800	0.000
218.75-212.50					B	0.990	3.917		63.69	4.556	0.000
					C	0.990	3.917		63.69	30.394	0.000
T26	209.38	1.479	12	32.813	A	0.000	4.574	3.125	68.32	3.800	0.000
212.50-206.25					B	0.000	4.574		68.32	4.556	0.000
					C	0.000	4.574		68.32	30.394	0.000
T27	203.13	1.469	12	32.813	A	0.000	4.574	3.125	68.32	3.800	0.000
206.25-200.00					B	0.000	4.574		68.32	4.556	0.000
					C	0.000	4.574		68.32	30.394	0.000
T28	187.50	1.445	11	131.250	A	0.000	20.925	12.500	59.74	15.755	0.000
200.00-175.00					B	0.000	20.925		59.74	18.225	0.000
					C	0.000	20.925		59.74	124.350	0.000
T29	171.88	1.418	11	32.943	A	0.000	5.307	3.385	63.79	4.494	0.000
175.00-168.75					B	0.000	5.307		63.79	4.556	0.000
					C	0.000	5.307		63.79	31.087	0.000
T30	165.63	1.407	11	32.943	A	0.000	5.301	3.385	63.86	4.494	0.000
168.75-162.50					B	0.000	5.301		63.86	4.556	0.000
					C	0.000	5.301		63.86	31.087	0.000
T31	159.38	1.396	11	32.943	A	0.985	4.174	3.385	65.62	4.494	0.000
162.50-156.25					B	0.985	4.174		65.62	4.556	0.000
					C	0.985	4.174		65.62	31.087	0.000
T32	153.13	1.384	11	32.943	A	0.000	4.828	3.385	70.12	4.494	0.000
156.25-150.00					B	0.000	4.828		70.12	4.556	0.000
					C	0.000	4.828		70.12	31.087	0.000
T33	137.50	1.353	11	131.771	A	0.000	19.313	13.542	70.12	17.975	0.000
150.00-125.00					B	0.000	19.313		70.12	19.559	0.000
					C	0.000	19.313		70.12	126.015	0.000
T34	112.50	1.297	10	131.771	A	12.617	16.158	13.542	47.06	17.975	0.000
125.00-100.00					B	12.617	16.158		47.06	21.125	0.000
					C	12.617	16.158		47.06	127.125	0.000
T35	96.88	1.257	10	32.943	A	4.140	3.385	3.385	44.99	4.494	0.000
100.00-93.75					B	4.140	3.385		44.99	5.281	0.000
					C	4.140	3.385		44.99	31.781	0.000
T36	90.63	1.24	10	32.943	A	0.985	4.332	3.385	63.67	4.494	0.000
93.75-87.50					B	0.985	4.332		63.67	5.397	0.000
					C	0.985	4.332		63.67	31.781	0.000
T37	84.38	1.221	10	32.943	A	0.000	4.828	3.385	70.12	4.494	0.000
87.50-81.25					B	0.000	4.828		70.12	6.731	0.000
					C	0.000	4.828		70.12	31.781	0.000
T38	78.13	1.202	9	32.943	A	0.000	4.828	3.385	70.12	4.494	0.000
81.25-75.00					B	0.000	4.828		70.12	6.731	0.000
					C	0.000	4.828		70.12	31.781	0.000
T39	62.50	1.146	9	131.771	A	0.000	19.313	13.542	70.12	19.307	0.000
75.00-50.00					B	0.000	19.313		70.12	26.925	0.000
					C	0.000	19.313		70.12	127.125	0.000
T40	37.50	1.029	8	131.771	A	0.985	18.659	13.542	68.94	22.415	0.000
50.00-25.00					B	0.985	18.659		68.94	26.925	0.000
					C	0.985	18.659		68.94	127.125	0.000
T41 25.00-0.00	12.50	0.85	7	131.771	A	0.000	19.313	13.542	70.12	20.702	0.000
					B	0.000	19.313		70.12	23.694	0.000
					C	0.000	19.313		70.12	111.870	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.00	0.68	A	0.215	2.545	40	1	1	5.830	0.51	81.41	C
368.75-362.50			B	0.215	2.545		1	1	5.830			
			C	0.215	2.545		1	1	5.830			
T2	0.00	1.09	A	0.235	2.484	40	1	1	6.478	0.56	89.22	C
362.50-356.25			B	0.235	2.484		1	1	6.478			
			C	0.235	2.484		1	1	6.478			
T3	0.01	1.09	A	0.235	2.484	40	1	1	6.478	0.57	90.68	C
356.25-350.00			B	0.235	2.484		1	1	6.478			
			C	0.235	2.484		1	1	6.478			
T4	0.01	0.77	A	0.242	2.463	39	1	1	6.608	0.60	96.25	C
350.00-343.75		TA 0.79	B	0.242	2.463		1	1	6.608			
			C	0.242	2.463		1	1	6.608			
T5	0.01	0.61	A	0.15	2.773	39	1	1	3.189	0.35	56.17	C
343.75-337.50			B	0.15	2.773		1	1	3.189			
			C	0.15	2.773		1	1	3.189			
T6	0.01	0.54	A	0.139	2.811	39	1	1	2.569	0.30	47.30	C
337.50-331.25			B	0.139	2.811		1	1	2.569			
			C	0.139	2.811		1	1	2.569			
T7	0.01	0.54	A	0.139	2.811	39	1	1	2.570	0.29	47.13	C
331.25-325.00			B	0.139	2.811		1	1	2.570			
			C	0.139	2.811		1	1	2.570			
T8	0.02	0.64	A	0.152	2.766	39	1	1	2.768	0.33	53.15	C
325.00-318.75			B	0.152	2.766		1	1	2.768			
			C	0.152	2.766		1	1	2.768			
T9	0.02	0.64	A	0.151	2.767	39	1	1	2.766	0.33	52.91	C
318.75-312.50			B	0.151	2.767		1	1	2.766			
			C	0.151	2.767		1	1	2.766			
T10	0.02	0.64	A	0.151	2.767	39	1	1	2.767	0.33	52.71	C
312.50-306.25			B	0.151	2.767		1	1	2.767			
			C	0.151	2.767		1	1	2.767			
T11	0.02	0.71	A	0.161	2.73	38	1	1	3.389	0.38	60.80	C
306.25-300.00			B	0.161	2.73		1	1	3.389			
			C	0.161	2.73		1	1	3.389			
T12	0.12	0.85	A	0.248	2.445	38	1	1	6.704	0.95	151.58	C
300.00-293.75		TA 0.79	B	0.248	2.445		1	1	6.704			
			C	0.248	2.445		1	1	6.704			
T13	0.12	0.71	A	0.161	2.73	38	1	1	3.391	0.71	114.04	C
293.75-287.50			B	0.161	2.73		1	1	3.391			
			C	0.161	2.73		1	1	3.391			
T14	0.12	0.61	A	0.147	2.784	38	1	1	2.680	0.65	104.26	C
287.50-281.25			B	0.147	2.784		1	1	2.680			
			C	0.147	2.784		1	1	2.680			
T15	0.12	0.61	A	0.147	2.784	38	1	1	2.681	0.65	103.80	C
281.25-275.00			B	0.147	2.784		1	1	2.681			
			C	0.147	2.784		1	1	2.681			
T16	0.12	0.61	A	0.147	2.784	37	1	1	2.682	0.65	103.32	C
275.00-268.75			B	0.147	2.784		1	1	2.682			
			C	0.147	2.784		1	1	2.682			
T17	0.12	0.61	A	0.147	2.784	37	1	1	2.684	0.64	102.84	C
268.75-262.50			B	0.147	2.784		1	1	2.684			
			C	0.147	2.784		1	1	2.684			
T18	0.12	0.61	A	0.147	2.784	37	1	1	2.685	0.64	102.34	C
262.50-256.25			B	0.147	2.784		1	1	2.685			
			C	0.147	2.784		1	1	2.685			
T19	0.12	0.64	A	0.151	2.767	37	1	1	2.779	0.64	102.88	C
256.25-250.00			B	0.151	2.767		1	1	2.779			
			C	0.151	2.767		1	1	2.779			
T20	0.12	0.71	A	0.161	2.73	37	1	1	3.401	0.69	110.31	C
250.00-243.75			B	0.161	2.73		1	1	3.401			
			C	0.161	2.73		1	1	3.401			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T21	0.16	0.71	A	0.161	2.73	37	1	1	3.402	0.82	130.50	C
243.75-237.50			B	0.161	2.73		1	1	3.402			
			C	0.161	2.73		1	1	3.402			
T22	0.22	0.71	A	0.161	2.73	36	1	1	3.403	1.00	160.76	C
237.50-231.25			B	0.161	2.73		1	1	3.403			
			C	0.161	2.73		1	1	3.403			
T23	0.22	0.77	A	0.171	2.696	36	1	1	3.591	1.01	161.77	C
231.25-225.00			B	0.171	2.696		1	1	3.591			
			C	0.171	2.696		1	1	3.591			
T24	0.22	0.95	A	0.222	2.525	36	1	1	5.953	1.17	186.97	C
225.00-218.75		TA 0.79	B	0.222	2.525		1	1	5.953			
			C	0.222	2.525		1	1	5.953			
T25	0.22	0.61	A	0.15	2.773	36	1	1	3.212	0.98	156.11	C
218.75-212.50			B	0.15	2.773		1	1	3.212			
			C	0.15	2.773		1	1	3.212			
T26	0.22	0.54	A	0.139	2.811	35	1	1	2.591	0.92	147.31	C
212.50-206.25			B	0.139	2.811		1	1	2.591			
			C	0.139	2.811		1	1	2.591			
T27	0.22	0.54	A	0.139	2.811	35	1	1	2.591	0.91	146.37	C
206.25-200.00			B	0.139	2.811		1	1	2.591			
			C	0.139	2.811		1	1	2.591			
T28	0.88	2.28	A	0.159	2.737	35	1	1	11.897	3.76	150.32	C
200.00-175.00			B	0.159	2.737		1	1	11.897			
			C	0.159	2.737		1	1	11.897			
T29	0.22	0.69	A	0.161	2.731	34	1	1	2.990	0.93	149.25	C
175.00-168.75			B	0.161	2.731		1	1	2.990			
			C	0.161	2.731		1	1	2.990			
T30	0.22	0.69	A	0.161	2.732	34	1	1	2.989	0.93	148.08	C
168.75-162.50			B	0.161	2.732		1	1	2.989			
			C	0.161	2.732		1	1	2.989			
T31	0.22	0.69	A	0.157	2.747	33	1	1	3.332	0.95	151.40	C
162.50-156.25			B	0.157	2.747		1	1	3.332			
			C	0.157	2.747		1	1	3.332			
T32	0.22	0.61	A	0.147	2.784	33	1	1	2.715	0.89	142.92	C
156.25-150.00			B	0.147	2.784		1	1	2.715			
			C	0.147	2.784		1	1	2.715			
T33	0.91	2.45	A	0.147	2.784	32	1	1	10.885	3.54	141.78	C
150.00-125.00			B	0.147	2.784		1	1	10.885			
			C	0.147	2.784		1	1	10.885			
T34	0.92	2.84	A	0.218	2.536	31	1	1	21.936	4.11	164.41	C
125.00-100.00			B	0.218	2.536		1	1	21.936			
			C	0.218	2.536		1	1	21.936			
T35	0.23	1.03	A	0.228	2.504	30	1	1	6.103	1.03	164.95	C
100.00-93.75		TA 0.79	B	0.228	2.504		1	1	6.103			
			C	0.228	2.504		1	1	6.103			
T36	0.23	0.71	A	0.161	2.73	30	1	1	3.449	0.87	139.21	C
93.75-87.50			B	0.161	2.73		1	1	3.449			
			C	0.161	2.73		1	1	3.449			
T37	0.24	0.61	A	0.147	2.784	29	1	1	2.739	0.83	133.19	C
87.50-81.25			B	0.147	2.784		1	1	2.739			
			C	0.147	2.784		1	1	2.739			
T38	0.24	0.61	A	0.147	2.784	29	1	1	2.739	0.82	131.05	C
81.25-75.00			B	0.147	2.784		1	1	2.739			
			C	0.147	2.784		1	1	2.739			
T39	0.95	2.45	A	0.147	2.784	28	1	1	10.954	3.14	125.78	C
75.00-50.00			B	0.147	2.784		1	1	10.954			
			C	0.147	2.784		1	1	10.954			
T40	0.97	2.47	A	0.149	2.775	25	1	1	11.573	2.90	115.88	C
50.00-25.00			B	0.149	2.775		1	1	11.573			
			C	0.149	2.775		1	1	11.573			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T41	0.85	2.45	A	0.147	2.784	20	1	1	10.954	2.15	86.15	C
25.00-0.00			B	0.147	2.784		1	1	10.954			
			C	0.147	2.784		1	1	10.954			
Sum Weight:	10.00	42.50								44.44		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.00	0.68	A	0.215	2.545	40	0.8	1	4.995	0.44	69.87	C
368.75-362.50			B	0.215	2.545		0.8	1	4.995			
			C	0.215	2.545		0.8	1	4.995			
T2	0.00	1.09	A	0.235	2.484	40	0.8	1	5.516	0.48	76.30	C
362.50-356.25			B	0.235	2.484		0.8	1	5.516			
			C	0.235	2.484		0.8	1	5.516			
T3	0.01	1.09	A	0.235	2.484	40	0.8	1	5.516	0.49	77.81	C
356.25-350.00			B	0.235	2.484		0.8	1	5.516			
			C	0.235	2.484		0.8	1	5.516			
T4	0.01	0.77	A	0.242	2.463	39	0.8	1	5.647	0.52	83.55	C
350.00-343.75		TA 0.79	B	0.242	2.463		0.8	1	5.647			
			C	0.242	2.463		0.8	1	5.647			
T5	0.01	0.61	A	0.15	2.773	39	0.8	1	2.991	0.33	53.24	C
343.75-337.50			B	0.15	2.773		0.8	1	2.991			
			C	0.15	2.773		0.8	1	2.991			
T6	0.01	0.54	A	0.139	2.811	39	0.8	1	2.569	0.30	47.30	C
337.50-331.25			B	0.139	2.811		0.8	1	2.569			
			C	0.139	2.811		0.8	1	2.569			
T7	0.01	0.54	A	0.139	2.811	39	0.8	1	2.570	0.29	47.13	C
331.25-325.00			B	0.139	2.811		0.8	1	2.570			
			C	0.139	2.811		0.8	1	2.570			
T8	0.02	0.64	A	0.152	2.766	39	0.8	1	2.768	0.33	53.15	C
325.00-318.75			B	0.152	2.766		0.8	1	2.768			
			C	0.152	2.766		0.8	1	2.768			
T9	0.02	0.64	A	0.151	2.767	39	0.8	1	2.766	0.33	52.91	C
318.75-312.50			B	0.151	2.767		0.8	1	2.766			
			C	0.151	2.767		0.8	1	2.766			
T10	0.02	0.64	A	0.151	2.767	39	0.8	1	2.767	0.33	52.71	C
312.50-306.25			B	0.151	2.767		0.8	1	2.767			
			C	0.151	2.767		0.8	1	2.767			
T11	0.02	0.71	A	0.161	2.73	38	0.8	1	3.192	0.36	58.00	C
306.25-300.00			B	0.161	2.73		0.8	1	3.192			
			C	0.161	2.73		0.8	1	3.192			
T12	0.12	0.85	A	0.248	2.445	38	0.8	1	5.750	0.87	139.46	C
300.00-293.75		TA 0.79	B	0.248	2.445		0.8	1	5.750			
			C	0.248	2.445		0.8	1	5.750			
T13	0.12	0.71	A	0.161	2.73	38	0.8	1	3.194	0.70	111.25	C
293.75-287.50			B	0.161	2.73		0.8	1	3.194			
			C	0.161	2.73		0.8	1	3.194			
T14	0.12	0.61	A	0.147	2.784	38	0.8	1	2.680	0.65	104.26	C
287.50-281.25			B	0.147	2.784		0.8	1	2.680			
			C	0.147	2.784		0.8	1	2.680			
T15	0.12	0.61	A	0.147	2.784	38	0.8	1	2.681	0.65	103.80	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
281.25-275.00			B	0.147	2.784		0.8	1	2.681			
			C	0.147	2.784		0.8	1	2.681			
T16	0.12	0.61	A	0.147	2.784	37	0.8	1	2.682	0.65	103.32	C
275.00-268.75			B	0.147	2.784		0.8	1	2.682			
			C	0.147	2.784		0.8	1	2.682			
T17	0.12	0.61	A	0.147	2.784	37	0.8	1	2.684	0.64	102.84	C
268.75-262.50			B	0.147	2.784		0.8	1	2.684			
			C	0.147	2.784		0.8	1	2.684			
T18	0.12	0.61	A	0.147	2.784	37	0.8	1	2.685	0.64	102.34	C
262.50-256.25			B	0.147	2.784		0.8	1	2.685			
			C	0.147	2.784		0.8	1	2.685			
T19	0.12	0.64	A	0.151	2.767	37	0.8	1	2.779	0.64	102.88	C
256.25-250.00			B	0.151	2.767		0.8	1	2.779			
			C	0.151	2.767		0.8	1	2.779			
T20	0.12	0.71	A	0.161	2.73	37	0.8	1	3.203	0.67	107.62	C
250.00-243.75			B	0.161	2.73		0.8	1	3.203			
			C	0.161	2.73		0.8	1	3.203			
T21	0.16	0.71	A	0.161	2.73	37	0.8	1	3.205	0.80	127.83	C
243.75-237.50			B	0.161	2.73		0.8	1	3.205			
			C	0.161	2.73		0.8	1	3.205			
T22	0.22	0.71	A	0.161	2.73	36	0.8	1	3.206	0.99	158.11	C
237.50-231.25			B	0.161	2.73		0.8	1	3.206			
			C	0.161	2.73		0.8	1	3.206			
T23	0.22	0.77	A	0.171	2.696	36	0.8	1	3.394	0.99	159.16	C
231.25-225.00			B	0.171	2.696		0.8	1	3.394			
			C	0.171	2.696		0.8	1	3.394			
T24	0.22	0.95	A	0.222	2.525	36	0.8	1	5.124	1.10	176.74	C
225.00-218.75		TA 0.79	B	0.222	2.525		0.8	1	5.124			
			C	0.222	2.525		0.8	1	5.124			
T25	0.22	0.61	A	0.15	2.773	36	0.8	1	3.014	0.96	153.44	C
218.75-212.50			B	0.15	2.773		0.8	1	3.014			
			C	0.15	2.773		0.8	1	3.014			
T26	0.22	0.54	A	0.139	2.811	35	0.8	1	2.591	0.92	147.31	C
212.50-206.25			B	0.139	2.811		0.8	1	2.591			
			C	0.139	2.811		0.8	1	2.591			
T27	0.22	0.54	A	0.139	2.811	35	0.8	1	2.591	0.91	146.37	C
206.25-200.00			B	0.139	2.811		0.8	1	2.591			
			C	0.139	2.811		0.8	1	2.591			
T28	0.88	2.28	A	0.159	2.737	35	0.8	1	11.897	3.76	150.32	C
200.00-175.00			B	0.159	2.737		0.8	1	11.897			
			C	0.159	2.737		0.8	1	11.897			
T29	0.22	0.69	A	0.161	2.731	34	0.8	1	2.990	0.93	149.25	C
175.00-168.75			B	0.161	2.731		0.8	1	2.990			
			C	0.161	2.731		0.8	1	2.990			
T30	0.22	0.69	A	0.161	2.732	34	0.8	1	2.989	0.93	148.08	C
168.75-162.50			B	0.161	2.732		0.8	1	2.989			
			C	0.161	2.732		0.8	1	2.989			
T31	0.22	0.69	A	0.157	2.747	33	0.8	1	3.135	0.93	148.93	C
162.50-156.25			B	0.157	2.747		0.8	1	3.135			
			C	0.157	2.747		0.8	1	3.135			
T32	0.22	0.61	A	0.147	2.784	33	0.8	1	2.715	0.89	142.92	C
156.25-150.00			B	0.147	2.784		0.8	1	2.715			
			C	0.147	2.784		0.8	1	2.715			
T33	0.91	2.45	A	0.147	2.784	32	0.8	1	10.885	3.54	141.78	C
150.00-125.00			B	0.147	2.784		0.8	1	10.885			
			C	0.147	2.784		0.8	1	10.885			
T34	0.92	2.84	A	0.218	2.536	31	0.8	1	19.412	3.94	157.64	C
125.00-100.00			B	0.218	2.536		0.8	1	19.412			
			C	0.218	2.536		0.8	1	19.412			
T35	0.23	1.03	A	0.228	2.504	30	0.8	1	5.275	0.98	156.45	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
100.00-93.75		TA 0.79	B	0.228	2.504		0.8	1	5.275			
			C	0.228	2.504		0.8	1	5.275			
T36	0.23	0.71	A	0.161	2.73	30	0.8	1	3.252	0.86	137.04	C
93.75-87.50			B	0.161	2.73		0.8	1	3.252			
			C	0.161	2.73		0.8	1	3.252			
T37	0.24	0.61	A	0.147	2.784	29	0.8	1	2.739	0.83	133.19	C
87.50-81.25			B	0.147	2.784		0.8	1	2.739			
			C	0.147	2.784		0.8	1	2.739			
T38	0.24	0.61	A	0.147	2.784	29	0.8	1	2.739	0.82	131.05	C
81.25-75.00			B	0.147	2.784		0.8	1	2.739			
			C	0.147	2.784		0.8	1	2.739			
T39	0.95	2.45	A	0.147	2.784	28	0.8	1	10.954	3.14	125.78	C
75.00-50.00			B	0.147	2.784		0.8	1	10.954			
			C	0.147	2.784		0.8	1	10.954			
T40	0.97	2.47	A	0.149	2.775	25	0.8	1	11.376	2.89	115.42	C
50.00-25.00			B	0.149	2.775		0.8	1	11.376			
			C	0.149	2.775		0.8	1	11.376			
T41	0.85	2.45	A	0.147	2.784	20	0.8	1	10.954	2.15	86.15	C
25.00-0.00			B	0.147	2.784		0.8	1	10.954			
			C	0.147	2.784		0.8	1	10.954			
Sum Weight:	10.00	42.50								43.59		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.00	0.68	A	0.215	2.545	40	0.85	1	5.204	0.45	72.76	C
368.75-362.50			B	0.215	2.545		0.85	1	5.204			
			C	0.215	2.545		0.85	1	5.204			
T2	0.00	1.09	A	0.235	2.484	40	0.85	1	5.756	0.50	79.53	C
362.50-356.25			B	0.235	2.484		0.85	1	5.756			
			C	0.235	2.484		0.85	1	5.756			
T3	0.01	1.09	A	0.235	2.484	40	0.85	1	5.756	0.51	81.03	C
356.25-350.00			B	0.235	2.484		0.85	1	5.756			
			C	0.235	2.484		0.85	1	5.756			
T4	0.01	0.77	A	0.242	2.463	39	0.85	1	5.887	0.54	86.72	C
350.00-343.75		TA 0.79	B	0.242	2.463		0.85	1	5.887			
			C	0.242	2.463		0.85	1	5.887			
T5	0.01	0.61	A	0.15	2.773	39	0.85	1	3.041	0.34	53.97	C
343.75-337.50			B	0.15	2.773		0.85	1	3.041			
			C	0.15	2.773		0.85	1	3.041			
T6	0.01	0.54	A	0.139	2.811	39	0.85	1	2.569	0.30	47.30	C
337.50-331.25			B	0.139	2.811		0.85	1	2.569			
			C	0.139	2.811		0.85	1	2.569			
T7	0.01	0.54	A	0.139	2.811	39	0.85	1	2.570	0.29	47.13	C
331.25-325.00			B	0.139	2.811		0.85	1	2.570			
			C	0.139	2.811		0.85	1	2.570			
T8	0.02	0.64	A	0.152	2.766	39	0.85	1	2.768	0.33	53.15	C
325.00-318.75			B	0.152	2.766		0.85	1	2.768			
			C	0.152	2.766		0.85	1	2.768			
T9	0.02	0.64	A	0.151	2.767	39	0.85	1	2.766	0.33	52.91	C
318.75-312.50			B	0.151	2.767		0.85	1	2.766			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
			C	0.151	2.767		0.85	1	2.766			
T10	0.02	0.64	A	0.151	2.767	39	0.85	1	2.767	0.33	52.71	C
312.50-306.25			B	0.151	2.767		0.85	1	2.767			
			C	0.151	2.767		0.85	1	2.767			
T11	0.02	0.71	A	0.161	2.73	38	0.85	1	3.241	0.37	58.70	C
306.25-300.00			B	0.161	2.73		0.85	1	3.241			
			C	0.161	2.73		0.85	1	3.241			
T12	0.12	0.85	A	0.248	2.445	38	0.85	1	5.988	0.89	142.49	C
300.00-293.75		TA 0.79	B	0.248	2.445		0.85	1	5.988			
			C	0.248	2.445		0.85	1	5.988			
T13	0.12	0.71	A	0.161	2.73	38	0.85	1	3.243	0.70	111.95	C
293.75-287.50			B	0.161	2.73		0.85	1	3.243			
			C	0.161	2.73		0.85	1	3.243			
T14	0.12	0.61	A	0.147	2.784	38	0.85	1	2.680	0.65	104.26	C
287.50-281.25			B	0.147	2.784		0.85	1	2.680			
			C	0.147	2.784		0.85	1	2.680			
T15	0.12	0.61	A	0.147	2.784	38	0.85	1	2.681	0.65	103.80	C
281.25-275.00			B	0.147	2.784		0.85	1	2.681			
			C	0.147	2.784		0.85	1	2.681			
T16	0.12	0.61	A	0.147	2.784	37	0.85	1	2.682	0.65	103.32	C
275.00-268.75			B	0.147	2.784		0.85	1	2.682			
			C	0.147	2.784		0.85	1	2.682			
T17	0.12	0.61	A	0.147	2.784	37	0.85	1	2.684	0.64	102.84	C
268.75-262.50			B	0.147	2.784		0.85	1	2.684			
			C	0.147	2.784		0.85	1	2.684			
T18	0.12	0.61	A	0.147	2.784	37	0.85	1	2.685	0.64	102.34	C
262.50-256.25			B	0.147	2.784		0.85	1	2.685			
			C	0.147	2.784		0.85	1	2.685			
T19	0.12	0.64	A	0.151	2.767	37	0.85	1	2.779	0.64	102.88	C
256.25-250.00			B	0.151	2.767		0.85	1	2.779			
			C	0.151	2.767		0.85	1	2.779			
T20	0.12	0.71	A	0.161	2.73	37	0.85	1	3.253	0.68	108.30	C
250.00-243.75			B	0.161	2.73		0.85	1	3.253			
			C	0.161	2.73		0.85	1	3.253			
T21	0.16	0.71	A	0.161	2.73	37	0.85	1	3.254	0.80	128.49	C
243.75-237.50			B	0.161	2.73		0.85	1	3.254			
			C	0.161	2.73		0.85	1	3.254			
T22	0.22	0.71	A	0.161	2.73	36	0.85	1	3.256	0.99	158.77	C
237.50-231.25			B	0.161	2.73		0.85	1	3.256			
			C	0.161	2.73		0.85	1	3.256			
T23	0.22	0.77	A	0.171	2.696	36	0.85	1	3.443	1.00	159.81	C
231.25-225.00			B	0.171	2.696		0.85	1	3.443			
			C	0.171	2.696		0.85	1	3.443			
T24	0.22	0.95	A	0.222	2.525	36	0.85	1	5.331	1.12	179.30	C
225.00-218.75		TA 0.79	B	0.222	2.525		0.85	1	5.331			
			C	0.222	2.525		0.85	1	5.331			
T25	0.22	0.61	A	0.15	2.773	36	0.85	1	3.064	0.96	154.11	C
218.75-212.50			B	0.15	2.773		0.85	1	3.064			
			C	0.15	2.773		0.85	1	3.064			
T26	0.22	0.54	A	0.139	2.811	35	0.85	1	2.591	0.92	147.31	C
212.50-206.25			B	0.139	2.811		0.85	1	2.591			
			C	0.139	2.811		0.85	1	2.591			
T27	0.22	0.54	A	0.139	2.811	35	0.85	1	2.591	0.91	146.37	C
206.25-200.00			B	0.139	2.811		0.85	1	2.591			
			C	0.139	2.811		0.85	1	2.591			
T28	0.88	2.28	A	0.159	2.737	35	0.85	1	11.897	3.76	150.32	C
200.00-175.00			B	0.159	2.737		0.85	1	11.897			
			C	0.159	2.737		0.85	1	11.897			
T29	0.22	0.69	A	0.161	2.731	34	0.85	1	2.990	0.93	149.25	C
175.00-168.75			B	0.161	2.731		0.85	1	2.990			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
			C	0.161	2.731		0.85	1	2.990			
T30	0.22	0.69	A	0.161	2.732	34	0.85	1	2.989	0.93	148.08	C
168.75-162.50			B	0.161	2.732		0.85	1	2.989			
			C	0.161	2.732		0.85	1	2.989			
T31	0.22	0.69	A	0.157	2.747	33	0.85	1	3.185	0.93	149.55	C
162.50-156.25			B	0.157	2.747		0.85	1	3.185			
			C	0.157	2.747		0.85	1	3.185			
T32	0.22	0.61	A	0.147	2.784	33	0.85	1	2.715	0.89	142.92	C
156.25-150.00			B	0.147	2.784		0.85	1	2.715			
			C	0.147	2.784		0.85	1	2.715			
T33	0.91	2.45	A	0.147	2.784	32	0.85	1	10.885	3.54	141.78	C
150.00-125.00			B	0.147	2.784		0.85	1	10.885			
			C	0.147	2.784		0.85	1	10.885			
T34	0.92	2.84	A	0.218	2.536	31	0.85	1	20.043	3.98	159.33	C
125.00-100.00			B	0.218	2.536		0.85	1	20.043			
			C	0.218	2.536		0.85	1	20.043			
T35	0.23	1.03	A	0.228	2.504	30	0.85	1	5.482	0.99	158.58	C
100.00-93.75		TA 0.79	B	0.228	2.504		0.85	1	5.482			
			C	0.228	2.504		0.85	1	5.482			
T36	0.23	0.71	A	0.161	2.73	30	0.85	1	3.301	0.86	137.58	C
93.75-87.50			B	0.161	2.73		0.85	1	3.301			
			C	0.161	2.73		0.85	1	3.301			
T37	0.24	0.61	A	0.147	2.784	29	0.85	1	2.739	0.83	133.19	C
87.50-81.25			B	0.147	2.784		0.85	1	2.739			
			C	0.147	2.784		0.85	1	2.739			
T38	0.24	0.61	A	0.147	2.784	29	0.85	1	2.739	0.82	131.05	C
81.25-75.00			B	0.147	2.784		0.85	1	2.739			
			C	0.147	2.784		0.85	1	2.739			
T39	0.95	2.45	A	0.147	2.784	28	0.85	1	10.954	3.14	125.78	C
75.00-50.00			B	0.147	2.784		0.85	1	10.954			
			C	0.147	2.784		0.85	1	10.954			
T40	0.97	2.47	A	0.149	2.775	25	0.85	1	11.425	2.89	115.53	C
50.00-25.00			B	0.149	2.775		0.85	1	11.425			
			C	0.149	2.775		0.85	1	11.425			
T41	0.85	2.45	A	0.147	2.784	20	0.85	1	10.954	2.15	86.15	C
25.00-0.00			B	0.147	2.784		0.85	1	10.954			
			C	0.147	2.784		0.85	1	10.954			
Sum Weight:	10.00	42.50								43.80		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.02	1.74	A	0.502	1.898	9	1	1	13.238	0.20	31.66	C
368.75-362.50			B	0.502	1.898		1	1	13.238			
			C	0.502	1.898		1	1	13.238			
T2	0.05	2.42	A	0.519	1.876	9	1	1	13.992	0.21	33.99	C
362.50-356.25			B	0.519	1.876		1	1	13.992			
			C	0.519	1.876		1	1	13.992			
T3	0.08	2.42	A	0.519	1.877	9	1	1	13.976	0.22	35.28	C
356.25-350.00			B	0.519	1.877		1	1	13.976			
			C	0.519	1.877		1	1	13.976			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T4	0.17	1.87	A	0.524	1.871	9	1	1	14.163	0.25	39.72	C
350.00-343.75		TA 2.41	B	0.524	1.871		1	1	14.163			
			C	0.524	1.871		1	1	14.163			
T5	0.17	1.34	A	0.436	1.998	9	1	1	10.231	0.21	33.58	C
343.75-337.50			B	0.436	1.998		1	1	10.231			
			C	0.436	1.998		1	1	10.231			
T6	0.17	1.15	A	0.426	2.016	9	1	1	9.588	0.20	32.25	C
337.50-331.25			B	0.426	2.016		1	1	9.588			
			C	0.426	2.016		1	1	9.588			
T7	0.17	1.15	A	0.425	2.016	9	1	1	9.572	0.20	32.09	C
331.25-325.00			B	0.425	2.016		1	1	9.572			
			C	0.425	2.016		1	1	9.572			
T8	0.23	1.27	A	0.435	2	9	1	1	9.890	0.22	34.80	C
325.00-318.75			B	0.435	2		1	1	9.890			
			C	0.435	2		1	1	9.890			
T9	0.23	1.27	A	0.433	2.002	9	1	1	9.854	0.22	34.60	C
318.75-312.50			B	0.433	2.002		1	1	9.854			
			C	0.433	2.002		1	1	9.854			
T10	0.23	1.27	A	0.433	2.002	9	1	1	9.837	0.22	34.42	C
312.50-306.25			B	0.433	2.002		1	1	9.837			
			C	0.433	2.002		1	1	9.837			
T11	0.23	1.45	A	0.442	1.987	9	1	1	10.444	0.22	35.33	C
306.25-300.00			B	0.442	1.987		1	1	10.444			
			C	0.442	1.987		1	1	10.444			
T12	0.92	1.94	A	0.523	1.872	9	1	1	14.163	0.36	57.31	C
300.00-293.75		TA 2.38	B	0.523	1.872		1	1	14.163			
			C	0.523	1.872		1	1	14.163			
T13	0.92	1.45	A	0.441	1.989	9	1	1	10.409	0.34	54.67	C
293.75-287.50			B	0.441	1.989		1	1	10.409			
			C	0.441	1.989		1	1	10.409			
T14	0.92	1.22	A	0.426	2.014	9	1	1	9.632	0.34	53.67	C
287.50-281.25			B	0.426	2.014		1	1	9.632			
			C	0.426	2.014		1	1	9.632			
T15	0.92	1.22	A	0.426	2.016	9	1	1	9.614	0.33	53.39	C
281.25-275.00			B	0.426	2.016		1	1	9.614			
			C	0.426	2.016		1	1	9.614			
T16	0.92	1.22	A	0.425	2.017	8	1	1	9.595	0.33	53.11	C
275.00-268.75			B	0.425	2.017		1	1	9.595			
			C	0.425	2.017		1	1	9.595			
T17	0.92	1.22	A	0.424	2.018	8	1	1	9.576	0.33	52.82	C
268.75-262.50			B	0.424	2.018		1	1	9.576			
			C	0.424	2.018		1	1	9.576			
T18	0.91	1.21	A	0.424	2.019	8	1	1	9.556	0.33	52.53	C
262.50-256.25			B	0.424	2.019		1	1	9.556			
			C	0.424	2.019		1	1	9.556			
T19	0.91	1.25	A	0.428	2.012	8	1	1	9.669	0.33	52.21	C
256.25-250.00			B	0.428	2.012		1	1	9.669			
			C	0.428	2.012		1	1	9.669			
T20	0.91	1.43	A	0.436	1.996	8	1	1	10.273	0.33	52.64	C
250.00-243.75			B	0.436	1.996		1	1	10.273			
			C	0.436	1.996		1	1	10.273			
T21	1.22	1.43	A	0.436	1.997	8	1	1	10.252	0.39	63.08	C
243.75-237.50			B	0.436	1.997		1	1	10.252			
			C	0.436	1.997		1	1	10.252			
T22	1.68	1.43	A	0.435	1.999	8	1	1	10.231	0.49	78.74	C
237.50-231.25			B	0.435	1.999		1	1	10.231			
			C	0.435	1.999		1	1	10.231			
T23	1.68	1.51	A	0.444	1.984	8	1	1	10.477	0.49	77.79	C
231.25-225.00			B	0.444	1.984		1	1	10.477			
			C	0.444	1.984		1	1	10.477			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T24	1.68	2.10	A	0.492	1.911	8	1	1	12.945	0.48	76.92	C
225.00-218.75		TA 2.32	B	0.492	1.911		1	1	12.945			
			C	0.492	1.911		1	1	12.945			
T25	1.67	1.29	A	0.424	2.019	8	1	1	9.854	0.49	77.69	C
218.75-212.50			B	0.424	2.019		1	1	9.854			
			C	0.424	2.019		1	1	9.854			
T26	1.67	1.11	A	0.413	2.038	8	1	1	9.204	0.48	76.89	C
212.50-206.25			B	0.413	2.038		1	1	9.204			
			C	0.413	2.038		1	1	9.204			
T27	1.66	1.10	A	0.412	2.04	8	1	1	9.180	0.48	76.36	C
206.25-200.00			B	0.412	2.04		1	1	9.180			
			C	0.412	2.04		1	1	9.180			
T28	6.82	4.97	A	0.47	1.942	8	1	1	43.632	1.85	74.13	C
200.00-175.00			B	0.47	1.942		1	1	43.632			
			C	0.47	1.942		1	1	43.632			
T29	1.73	1.29	A	0.427	2.012	8	1	1	9.642	0.48	76.17	C
175.00-168.75			B	0.427	2.012		1	1	9.642			
			C	0.427	2.012		1	1	9.642			
T30	1.72	1.29	A	0.426	2.015	8	1	1	9.594	0.47	75.56	C
168.75-162.50			B	0.426	2.015		1	1	9.594			
			C	0.426	2.015		1	1	9.594			
T31	1.72	1.35	A	0.421	2.024	8	1	1	9.794	0.47*	75.42	C
162.50-156.25			B	0.421	2.024		1	1	9.794			
			C	0.421	2.024		1	1	9.794			
T32	1.71	1.17	A	0.41	2.044	8	1	1	9.139	0.47*	74.77	C
156.25-150.00			B	0.41	2.044		1	1	9.139			
			C	0.41	2.044		1	1	9.139			
T33	7.01	4.63	A	0.408	2.049	7	1	1	36.230	1.83*	73.06	C
150.00-125.00			B	0.408	2.049		1	1	36.230			
			C	0.408	2.049		1	1	36.230			
T34	7.09	6.11	A	0.471	1.941	7	1	1	47.944	1.75*	69.96	C
125.00-100.00			B	0.471	1.941		1	1	47.944			
			C	0.471	1.941		1	1	47.944			
T35	1.75	2.07	A	0.477	1.932	7	1	1	12.480	0.42*	67.74	C
100.00-93.75		TA 2.17	B	0.477	1.932		1	1	12.480			
			C	0.477	1.932		1	1	12.480			
T36	1.75	1.33	A	0.412	2.042	7	1	1	9.505	0.42*	66.78	C
93.75-87.50			B	0.412	2.042		1	1	9.505			
			C	0.412	2.042		1	1	9.505			
T37	1.80	1.12	A	0.396	2.072	7	1	1	8.702	0.41*	65.76	C
87.50-81.25			B	0.396	2.072		1	1	8.702			
			C	0.396	2.072		1	1	8.702			
T38	1.79	1.11	A	0.394	2.076	7	1	1	8.649	0.40*	64.68	C
81.25-75.00			B	0.394	2.076		1	1	8.649			
			C	0.394	2.076		1	1	8.649			
T39	7.09	4.38	A	0.389	2.087	6	1	1	33.983	1.54*	61.64	C
75.00-50.00			B	0.389	2.087		1	1	33.983			
			C	0.389	2.087		1	1	33.983			
T40	6.96	4.30	A	0.38	2.106	6	1	1	33.276	1.38*	55.22	C
50.00-25.00			B	0.38	2.106		1	1	33.276			
			C	0.38	2.106		1	1	33.276			
T41	5.67	3.97	A	0.354	2.162	5	1	1	30.072	1.09	43.58	C
25.00-0.00			B	0.354	2.162		1	1	30.072			
			C	0.354	2.162		1	1	30.072			
Sum Weight:	75.85	87.84			*2.1A_g limit					21.65		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.02	1.74	A	0.502	1.898	9	0.8	1	12.403	0.19	29.71	C
368.75-362.50			B	0.502	1.898		0.8	1	12.403			
			C	0.502	1.898		0.8	1	12.403			
T2	0.05	2.42	A	0.519	1.876	9	0.8	1	13.030	0.20	31.77	C
362.50-356.25			B	0.519	1.876		0.8	1	13.030			
			C	0.519	1.876		0.8	1	13.030			
T3	0.08	2.42	A	0.519	1.877	9	0.8	1	13.014	0.21	33.07	C
356.25-350.00			B	0.519	1.877		0.8	1	13.014			
			C	0.519	1.877		0.8	1	13.014			
T4	0.17	1.87	A	0.524	1.871	9	0.8	1	13.202	0.23	37.53	C
350.00-343.75		TA 2.41	B	0.524	1.871		0.8	1	13.202			
			C	0.524	1.871		0.8	1	13.202			
T5	0.17	1.34	A	0.436	1.998	9	0.8	1	10.033	0.21	33.10	C
343.75-337.50			B	0.436	1.998		0.8	1	10.033			
			C	0.436	1.998		0.8	1	10.033			
T6	0.17	1.15	A	0.426	2.016	9	0.8	1	9.588	0.20	32.25	C
337.50-331.25			B	0.426	2.016		0.8	1	9.588			
			C	0.426	2.016		0.8	1	9.588			
T7	0.17	1.15	A	0.425	2.016	9	0.8	1	9.572	0.20	32.09	C
331.25-325.00			B	0.425	2.016		0.8	1	9.572			
			C	0.425	2.016		0.8	1	9.572			
T8	0.23	1.27	A	0.435	2	9	0.8	1	9.890	0.22	34.80	C
325.00-318.75			B	0.435	2		0.8	1	9.890			
			C	0.435	2		0.8	1	9.890			
T9	0.23	1.27	A	0.433	2.002	9	0.8	1	9.854	0.22	34.60	C
318.75-312.50			B	0.433	2.002		0.8	1	9.854			
			C	0.433	2.002		0.8	1	9.854			
T10	0.23	1.27	A	0.433	2.002	9	0.8	1	9.837	0.22	34.42	C
312.50-306.25			B	0.433	2.002		0.8	1	9.837			
			C	0.433	2.002		0.8	1	9.837			
T11	0.23	1.45	A	0.442	1.987	9	0.8	1	10.247	0.22	34.87	C
306.25-300.00			B	0.442	1.987		0.8	1	10.247			
			C	0.442	1.987		0.8	1	10.247			
T12	0.92	1.94	A	0.523	1.872	9	0.8	1	13.209	0.35	55.21	C
300.00-293.75		TA 2.38	B	0.523	1.872		0.8	1	13.209			
			C	0.523	1.872		0.8	1	13.209			
T13	0.92	1.45	A	0.441	1.989	9	0.8	1	10.212	0.34	54.21	C
293.75-287.50			B	0.441	1.989		0.8	1	10.212			
			C	0.441	1.989		0.8	1	10.212			
T14	0.92	1.22	A	0.426	2.014	9	0.8	1	9.632	0.34	53.67	C
287.50-281.25			B	0.426	2.014		0.8	1	9.632			
			C	0.426	2.014		0.8	1	9.632			
T15	0.92	1.22	A	0.426	2.016	9	0.8	1	9.614	0.33	53.39	C
281.25-275.00			B	0.426	2.016		0.8	1	9.614			
			C	0.426	2.016		0.8	1	9.614			
T16	0.92	1.22	A	0.425	2.017	8	0.8	1	9.595	0.33	53.11	C
275.00-268.75			B	0.425	2.017		0.8	1	9.595			
			C	0.425	2.017		0.8	1	9.595			
T17	0.92	1.22	A	0.424	2.018	8	0.8	1	9.576	0.33	52.82	C
268.75-262.50			B	0.424	2.018		0.8	1	9.576			
			C	0.424	2.018		0.8	1	9.576			
T18	0.91	1.21	A	0.424	2.019	8	0.8	1	9.556	0.33	52.53	C
262.50-256.25			B	0.424	2.019		0.8	1	9.556			
			C	0.424	2.019		0.8	1	9.556			
T19	0.91	1.25	A	0.428	2.012	8	0.8	1	9.669	0.33	52.21	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
256.25-250.00			B	0.428	2.012		0.8	1	9.669			
			C	0.428	2.012		0.8	1	9.669			
T20	0.91	1.43	A	0.436	1.996	8	0.8	1	10.076	0.33	52.19	C
250.00-243.75			B	0.436	1.996		0.8	1	10.076			
			C	0.436	1.996		0.8	1	10.076			
T21	1.22	1.43	A	0.436	1.997	8	0.8	1	10.055	0.39	62.64	C
243.75-237.50			B	0.436	1.997		0.8	1	10.055			
			C	0.436	1.997		0.8	1	10.055			
T22	1.68	1.43	A	0.435	1.999	8	0.8	1	10.034	0.49	78.30	C
237.50-231.25			B	0.435	1.999		0.8	1	10.034			
			C	0.435	1.999		0.8	1	10.034			
T23	1.68	1.51	A	0.444	1.984	8	0.8	1	10.280	0.48	77.35	C
231.25-225.00			B	0.444	1.984		0.8	1	10.280			
			C	0.444	1.984		0.8	1	10.280			
T24	1.68	2.10	A	0.492	1.911	8	0.8	1	12.116	0.47	75.16	C
225.00-218.75		TA 2.32	B	0.492	1.911		0.8	1	12.116			
			C	0.492	1.911		0.8	1	12.116			
T25	1.67	1.29	A	0.424	2.019	8	0.8	1	9.657	0.48	77.25	C
218.75-212.50			B	0.424	2.019		0.8	1	9.657			
			C	0.424	2.019		0.8	1	9.657			
T26	1.67	1.11	A	0.413	2.038	8	0.8	1	9.204	0.48	76.89	C
212.50-206.25			B	0.413	2.038		0.8	1	9.204			
			C	0.413	2.038		0.8	1	9.204			
T27	1.66	1.10	A	0.412	2.04	8	0.8	1	9.180	0.48	76.36	C
206.25-200.00			B	0.412	2.04		0.8	1	9.180			
			C	0.412	2.04		0.8	1	9.180			
T28	6.82	4.97	A	0.47	1.942	8	0.8	1	43.632	1.85	74.13	C
200.00-175.00			B	0.47	1.942		0.8	1	43.632			
			C	0.47	1.942		0.8	1	43.632			
T29	1.73	1.29	A	0.427	2.012	8	0.8	1	9.642	0.48	76.17	C
175.00-168.75			B	0.427	2.012		0.8	1	9.642			
			C	0.427	2.012		0.8	1	9.642			
T30	1.72	1.29	A	0.426	2.015	8	0.8	1	9.594	0.47	75.56	C
168.75-162.50			B	0.426	2.015		0.8	1	9.594			
			C	0.426	2.015		0.8	1	9.594			
T31	1.72	1.35	A	0.421	2.024	8	0.8	1	9.597	0.47*	75.42	C
162.50-156.25			B	0.421	2.024		0.8	1	9.597			
			C	0.421	2.024		0.8	1	9.597			
T32	1.71	1.17	A	0.41	2.044	8	0.8	1	9.139	0.47*	74.77	C
156.25-150.00			B	0.41	2.044		0.8	1	9.139			
			C	0.41	2.044		0.8	1	9.139			
T33	7.01	4.63	A	0.408	2.049	7	0.8	1	36.230	1.83*	73.06	C
150.00-125.00			B	0.408	2.049		0.8	1	36.230			
			C	0.408	2.049		0.8	1	36.230			
T34	7.09	6.11	A	0.471	1.941	7	0.8	1	45.421	1.75*	69.96	C
125.00-100.00			B	0.471	1.941		0.8	1	45.421			
			C	0.471	1.941		0.8	1	45.421			
T35	1.75	2.07	A	0.477	1.932	7	0.8	1	11.653	0.42*	67.74	C
100.00-93.75		TA 2.17	B	0.477	1.932		0.8	1	11.653			
			C	0.477	1.932		0.8	1	11.653			
T36	1.75	1.33	A	0.412	2.042	7	0.8	1	9.308	0.42*	66.78	C
93.75-87.50			B	0.412	2.042		0.8	1	9.308			
			C	0.412	2.042		0.8	1	9.308			
T37	1.80	1.12	A	0.396	2.072	7	0.8	1	8.702	0.41*	65.76	C
87.50-81.25			B	0.396	2.072		0.8	1	8.702			
			C	0.396	2.072		0.8	1	8.702			
T38	1.79	1.11	A	0.394	2.076	7	0.8	1	8.649	0.40*	64.68	C
81.25-75.00			B	0.394	2.076		0.8	1	8.649			
			C	0.394	2.076		0.8	1	8.649			
T39	7.09	4.38	A	0.389	2.087	6	0.8	1	33.983	1.54*	61.64	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
75.00-50.00			B	0.389	2.087		0.8	1	33.983			
			C	0.389	2.087		0.8	1	33.983			
T40	6.96	4.30	A	0.38	2.106	6	0.8	1	33.079	1.38*	55.22	C
50.00-25.00			B	0.38	2.106		0.8	1	33.079			
			C	0.38	2.106		0.8	1	33.079			
T41	5.67	3.97	A	0.354	2.162	5	0.8	1	30.072	1.09	43.58	C
25.00-0.00			B	0.354	2.162		0.8	1	30.072			
			C	0.354	2.162		0.8	1	30.072			
Sum Weight:	75.85	87.84			*2.1A_g limit					21.55		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.02	1.74	A	0.502	1.898	9	0.85	1	12.612	0.19	30.20	C
368.75-362.50			B	0.502	1.898		0.85	1	12.612			
			C	0.502	1.898		0.85	1	12.612			
T2	0.05	2.42	A	0.519	1.876	9	0.85	1	13.270	0.20	32.33	C
362.50-356.25			B	0.519	1.876		0.85	1	13.270			
			C	0.519	1.876		0.85	1	13.270			
T3	0.08	2.42	A	0.519	1.877	9	0.85	1	13.254	0.21	33.62	C
356.25-350.00			B	0.519	1.877		0.85	1	13.254			
			C	0.519	1.877		0.85	1	13.254			
T4	0.17	1.87	A	0.524	1.871	9	0.85	1	13.442	0.24	38.08	C
350.00-343.75		TA 2.41	B	0.524	1.871		0.85	1	13.442			
			C	0.524	1.871		0.85	1	13.442			
T5	0.17	1.34	A	0.436	1.998	9	0.85	1	10.082	0.21	33.22	C
343.75-337.50			B	0.436	1.998		0.85	1	10.082			
			C	0.436	1.998		0.85	1	10.082			
T6	0.17	1.15	A	0.426	2.016	9	0.85	1	9.588	0.20	32.25	C
337.50-331.25			B	0.426	2.016		0.85	1	9.588			
			C	0.426	2.016		0.85	1	9.588			
T7	0.17	1.15	A	0.425	2.016	9	0.85	1	9.572	0.20	32.09	C
331.25-325.00			B	0.425	2.016		0.85	1	9.572			
			C	0.425	2.016		0.85	1	9.572			
T8	0.23	1.27	A	0.435	2	9	0.85	1	9.890	0.22	34.80	C
325.00-318.75			B	0.435	2		0.85	1	9.890			
			C	0.435	2		0.85	1	9.890			
T9	0.23	1.27	A	0.433	2.002	9	0.85	1	9.854	0.22	34.60	C
318.75-312.50			B	0.433	2.002		0.85	1	9.854			
			C	0.433	2.002		0.85	1	9.854			
T10	0.23	1.27	A	0.433	2.002	9	0.85	1	9.837	0.22	34.42	C
312.50-306.25			B	0.433	2.002		0.85	1	9.837			
			C	0.433	2.002		0.85	1	9.837			
T11	0.23	1.45	A	0.442	1.987	9	0.85	1	10.296	0.22	34.99	C
306.25-300.00			B	0.442	1.987		0.85	1	10.296			
			C	0.442	1.987		0.85	1	10.296			
T12	0.92	1.94	A	0.523	1.872	9	0.85	1	13.448	0.35	55.74	C
300.00-293.75		TA 2.38	B	0.523	1.872		0.85	1	13.448			
			C	0.523	1.872		0.85	1	13.448			
T13	0.92	1.45	A	0.441	1.989	9	0.85	1	10.261	0.34	54.33	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
293.75-287.50			B	0.441	1.989		0.85	1	10.261			
			C	0.441	1.989		0.85	1	10.261			
T14	0.92	1.22	A	0.426	2.014	9	0.85	1	9.632	0.34	53.67	C
287.50-281.25			B	0.426	2.014		0.85	1	9.632			
			C	0.426	2.014		0.85	1	9.632			
T15	0.92	1.22	A	0.426	2.016	9	0.85	1	9.614	0.33	53.39	C
281.25-275.00			B	0.426	2.016		0.85	1	9.614			
			C	0.426	2.016		0.85	1	9.614			
T16	0.92	1.22	A	0.425	2.017	8	0.85	1	9.595	0.33	53.11	C
275.00-268.75			B	0.425	2.017		0.85	1	9.595			
			C	0.425	2.017		0.85	1	9.595			
T17	0.92	1.22	A	0.424	2.018	8	0.85	1	9.576	0.33	52.82	C
268.75-262.50			B	0.424	2.018		0.85	1	9.576			
			C	0.424	2.018		0.85	1	9.576			
T18	0.91	1.21	A	0.424	2.019	8	0.85	1	9.556	0.33	52.53	C
262.50-256.25			B	0.424	2.019		0.85	1	9.556			
			C	0.424	2.019		0.85	1	9.556			
T19	0.91	1.25	A	0.428	2.012	8	0.85	1	9.669	0.33	52.21	C
256.25-250.00			B	0.428	2.012		0.85	1	9.669			
			C	0.428	2.012		0.85	1	9.669			
T20	0.91	1.43	A	0.436	1.996	8	0.85	1	10.125	0.33	52.30	C
250.00-243.75			B	0.436	1.996		0.85	1	10.125			
			C	0.436	1.996		0.85	1	10.125			
T21	1.22	1.43	A	0.436	1.997	8	0.85	1	10.104	0.39	62.75	C
243.75-237.50			B	0.436	1.997		0.85	1	10.104			
			C	0.436	1.997		0.85	1	10.104			
T22	1.68	1.43	A	0.435	1.999	8	0.85	1	10.083	0.49	78.41	C
237.50-231.25			B	0.435	1.999		0.85	1	10.083			
			C	0.435	1.999		0.85	1	10.083			
T23	1.68	1.51	A	0.444	1.984	8	0.85	1	10.329	0.48	77.46	C
231.25-225.00			B	0.444	1.984		0.85	1	10.329			
			C	0.444	1.984		0.85	1	10.329			
T24	1.68	2.10	A	0.492	1.911	8	0.85	1	12.323	0.47	75.60	C
225.00-218.75		TA 2.32	B	0.492	1.911		0.85	1	12.323			
			C	0.492	1.911		0.85	1	12.323			
T25	1.67	1.29	A	0.424	2.019	8	0.85	1	9.706	0.48	77.36	C
218.75-212.50			B	0.424	2.019		0.85	1	9.706			
			C	0.424	2.019		0.85	1	9.706			
T26	1.67	1.11	A	0.413	2.038	8	0.85	1	9.204	0.48	76.89	C
212.50-206.25			B	0.413	2.038		0.85	1	9.204			
			C	0.413	2.038		0.85	1	9.204			
T27	1.66	1.10	A	0.412	2.04	8	0.85	1	9.180	0.48	76.36	C
206.25-200.00			B	0.412	2.04		0.85	1	9.180			
			C	0.412	2.04		0.85	1	9.180			
T28	6.82	4.97	A	0.47	1.942	8	0.85	1	43.632	1.85	74.13	C
200.00-175.00			B	0.47	1.942		0.85	1	43.632			
			C	0.47	1.942		0.85	1	43.632			
T29	1.73	1.29	A	0.427	2.012	8	0.85	1	9.642	0.48	76.17	C
175.00-168.75			B	0.427	2.012		0.85	1	9.642			
			C	0.427	2.012		0.85	1	9.642			
T30	1.72	1.29	A	0.426	2.015	8	0.85	1	9.594	0.47	75.56	C
168.75-162.50			B	0.426	2.015		0.85	1	9.594			
			C	0.426	2.015		0.85	1	9.594			
T31	1.72	1.35	A	0.421	2.024	8	0.85	1	9.646	0.47*	75.42	C
162.50-156.25			B	0.421	2.024		0.85	1	9.646			
			C	0.421	2.024		0.85	1	9.646			
T32	1.71	1.17	A	0.41	2.044	8	0.85	1	9.139	0.47*	74.77	C
156.25-150.00			B	0.41	2.044		0.85	1	9.139			
			C	0.41	2.044		0.85	1	9.139			
T33	7.01	4.63	A	0.408	2.049	7	0.85	1	36.230	1.83*	73.06	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
150.00-125.00			B	0.408	2.049		0.85	1	36.230			
			C	0.408	2.049		0.85	1	36.230			
T34	7.09	6.11	A	0.471	1.941	7	0.85	1	46.052	1.75*	69.96	C
125.00-100.00			B	0.471	1.941		0.85	1	46.052			
			C	0.471	1.941		0.85	1	46.052			
T35	1.75	2.07	A	0.477	1.932	7	0.85	1	11.859	0.42*	67.74	C
100.00-93.75		TA 2.17	B	0.477	1.932		0.85	1	11.859			
			C	0.477	1.932		0.85	1	11.859			
T36	1.75	1.33	A	0.412	2.042	7	0.85	1	9.357	0.42*	66.78	C
93.75-87.50			B	0.412	2.042		0.85	1	9.357			
			C	0.412	2.042		0.85	1	9.357			
T37	1.80	1.12	A	0.396	2.072	7	0.85	1	8.702	0.41*	65.76	C
87.50-81.25			B	0.396	2.072		0.85	1	8.702			
			C	0.396	2.072		0.85	1	8.702			
T38	1.79	1.11	A	0.394	2.076	7	0.85	1	8.649	0.40*	64.68	C
81.25-75.00			B	0.394	2.076		0.85	1	8.649			
			C	0.394	2.076		0.85	1	8.649			
T39	7.09	4.38	A	0.389	2.087	6	0.85	1	33.983	1.54*	61.64	C
75.00-50.00			B	0.389	2.087		0.85	1	33.983			
			C	0.389	2.087		0.85	1	33.983			
T40	6.96	4.30	A	0.38	2.106	6	0.85	1	33.128	1.38*	55.22	C
50.00-25.00			B	0.38	2.106		0.85	1	33.128			
			C	0.38	2.106		0.85	1	33.128			
T41	5.67	3.97	A	0.354	2.162	5	0.85	1	30.072	1.09	43.58	C
25.00-0.00			B	0.354	2.162		0.85	1	30.072			
			C	0.354	2.162		0.85	1	30.072			
Sum Weight:	75.85	87.84			*2.1A_g limit					21.58		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.00	0.68	A	0.215	2.545	13	1	1	5.830	0.17	26.58	C
368.75-362.50			B	0.215	2.545		1	1	5.830			
			C	0.215	2.545		1	1	5.830			
T2	0.00	1.09	A	0.235	2.484	13	1	1	6.478	0.18	29.13	C
362.50-356.25			B	0.235	2.484		1	1	6.478			
			C	0.235	2.484		1	1	6.478			
T3	0.01	1.09	A	0.235	2.484	13	1	1	6.478	0.19	29.61	C
356.25-350.00			B	0.235	2.484		1	1	6.478			
			C	0.235	2.484		1	1	6.478			
T4	0.01	0.77	A	0.242	2.463	13	1	1	6.608	0.20	31.43	C
350.00-343.75		TA 0.79	B	0.242	2.463		1	1	6.608			
			C	0.242	2.463		1	1	6.608			
T5	0.01	0.61	A	0.15	2.773	13	1	1	3.189	0.11	18.34	C
343.75-337.50			B	0.15	2.773		1	1	3.189			
			C	0.15	2.773		1	1	3.189			
T6	0.01	0.54	A	0.139	2.811	13	1	1	2.569	0.10	15.45	C
337.50-331.25			B	0.139	2.811		1	1	2.569			
			C	0.139	2.811		1	1	2.569			
T7	0.01	0.54	A	0.139	2.811	13	1	1	2.570	0.10	15.39	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
331.25-325.00			B	0.139	2.811		1	1	2.570			
			C	0.139	2.811		1	1	2.570			
T8	0.02	0.64	A	0.152	2.766	13	1	1	2.768	0.11	17.35	C
325.00-318.75			B	0.152	2.766		1	1	2.768			
			C	0.152	2.766		1	1	2.768			
T9	0.02	0.64	A	0.151	2.767	13	1	1	2.766	0.11	17.28	C
318.75-312.50			B	0.151	2.767		1	1	2.766			
			C	0.151	2.767		1	1	2.766			
T10	0.02	0.64	A	0.151	2.767	13	1	1	2.767	0.11	17.21	C
312.50-306.25			B	0.151	2.767		1	1	2.767			
			C	0.151	2.767		1	1	2.767			
T11	0.02	0.71	A	0.161	2.73	13	1	1	3.389	0.12	19.85	C
306.25-300.00			B	0.161	2.73		1	1	3.389			
			C	0.161	2.73		1	1	3.389			
T12	0.12	0.85	A	0.248	2.445	12	1	1	6.704	0.31	49.49	C
300.00-293.75		TA 0.79	B	0.248	2.445		1	1	6.704			
			C	0.248	2.445		1	1	6.704			
T13	0.12	0.71	A	0.161	2.73	12	1	1	3.391	0.23	37.24	C
293.75-287.50			B	0.161	2.73		1	1	3.391			
			C	0.161	2.73		1	1	3.391			
T14	0.12	0.61	A	0.147	2.784	12	1	1	2.680	0.21	34.05	C
287.50-281.25			B	0.147	2.784		1	1	2.680			
			C	0.147	2.784		1	1	2.680			
T15	0.12	0.61	A	0.147	2.784	12	1	1	2.681	0.21	33.89	C
281.25-275.00			B	0.147	2.784		1	1	2.681			
			C	0.147	2.784		1	1	2.681			
T16	0.12	0.61	A	0.147	2.784	12	1	1	2.682	0.21	33.74	C
275.00-268.75			B	0.147	2.784		1	1	2.682			
			C	0.147	2.784		1	1	2.682			
T17	0.12	0.61	A	0.147	2.784	12	1	1	2.684	0.21	33.58	C
268.75-262.50			B	0.147	2.784		1	1	2.684			
			C	0.147	2.784		1	1	2.684			
T18	0.12	0.61	A	0.147	2.784	12	1	1	2.685	0.21	33.42	C
262.50-256.25			B	0.147	2.784		1	1	2.685			
			C	0.147	2.784		1	1	2.685			
T19	0.12	0.64	A	0.151	2.767	12	1	1	2.779	0.21	33.59	C
256.25-250.00			B	0.151	2.767		1	1	2.779			
			C	0.151	2.767		1	1	2.779			
T20	0.12	0.71	A	0.161	2.73	12	1	1	3.401	0.23	36.02	C
250.00-243.75			B	0.161	2.73		1	1	3.401			
			C	0.161	2.73		1	1	3.401			
T21	0.16	0.71	A	0.161	2.73	12	1	1	3.402	0.27	42.61	C
243.75-237.50			B	0.161	2.73		1	1	3.402			
			C	0.161	2.73		1	1	3.402			
T22	0.22	0.71	A	0.161	2.73	12	1	1	3.403	0.33	52.49	C
237.50-231.25			B	0.161	2.73		1	1	3.403			
			C	0.161	2.73		1	1	3.403			
T23	0.22	0.77	A	0.171	2.696	12	1	1	3.591	0.33	52.82	C
231.25-225.00			B	0.171	2.696		1	1	3.591			
			C	0.171	2.696		1	1	3.591			
T24	0.22	0.95	A	0.222	2.525	12	1	1	5.953	0.38	61.05	C
225.00-218.75		TA 0.79	B	0.222	2.525		1	1	5.953			
			C	0.222	2.525		1	1	5.953			
T25	0.22	0.61	A	0.15	2.773	12	1	1	3.212	0.32	50.97	C
218.75-212.50			B	0.15	2.773		1	1	3.212			
			C	0.15	2.773		1	1	3.212			
T26	0.22	0.54	A	0.139	2.811	12	1	1	2.591	0.30	48.10	C
212.50-206.25			B	0.139	2.811		1	1	2.591			
			C	0.139	2.811		1	1	2.591			
T27	0.22	0.54	A	0.139	2.811	12	1	1	2.591	0.30	47.80	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
206.25-200.00			B	0.139	2.811		1	1	2.591			
			C	0.139	2.811		1	1	2.591			
T28	0.88	2.28	A	0.159	2.737	11	1	1	11.897	1.23	49.08	C
200.00-175.00			B	0.159	2.737		1	1	11.897			
			C	0.159	2.737		1	1	11.897			
T29	0.22	0.69	A	0.161	2.731	11	1	1	2.990	0.30	48.73	C
175.00-168.75			B	0.161	2.731		1	1	2.990			
			C	0.161	2.731		1	1	2.990			
T30	0.22	0.69	A	0.161	2.732	11	1	1	2.989	0.30	48.35	C
168.75-162.50			B	0.161	2.732		1	1	2.989			
			C	0.161	2.732		1	1	2.989			
T31	0.22	0.69	A	0.157	2.747	11	1	1	3.332	0.31	49.44	C
162.50-156.25			B	0.157	2.747		1	1	3.332			
			C	0.157	2.747		1	1	3.332			
T32	0.22	0.61	A	0.147	2.784	11	1	1	2.715	0.29	46.67	C
156.25-150.00			B	0.147	2.784		1	1	2.715			
			C	0.147	2.784		1	1	2.715			
T33	0.91	2.45	A	0.147	2.784	11	1	1	10.885	1.16	46.30	C
150.00-125.00			B	0.147	2.784		1	1	10.885			
			C	0.147	2.784		1	1	10.885			
T34	0.92	2.84	A	0.218	2.536	10	1	1	21.936	1.34	53.68	C
125.00-100.00			B	0.218	2.536		1	1	21.936			
			C	0.218	2.536		1	1	21.936			
T35	0.23	1.03	A	0.228	2.504	10	1	1	6.103	0.34	53.86	C
100.00-93.75		TA 0.79	B	0.228	2.504		1	1	6.103			
			C	0.228	2.504		1	1	6.103			
T36	0.23	0.71	A	0.161	2.73	10	1	1	3.449	0.28	45.46	C
93.75-87.50			B	0.161	2.73		1	1	3.449			
			C	0.161	2.73		1	1	3.449			
T37	0.24	0.61	A	0.147	2.784	10	1	1	2.739	0.27	43.49	C
87.50-81.25			B	0.147	2.784		1	1	2.739			
			C	0.147	2.784		1	1	2.739			
T38	0.24	0.61	A	0.147	2.784	9	1	1	2.739	0.27	42.79	C
81.25-75.00			B	0.147	2.784		1	1	2.739			
			C	0.147	2.784		1	1	2.739			
T39	0.95	2.45	A	0.147	2.784	9	1	1	10.954	1.03	41.07	C
75.00-50.00			B	0.147	2.784		1	1	10.954			
			C	0.147	2.784		1	1	10.954			
T40	0.97	2.47	A	0.149	2.775	8	1	1	11.573	0.95	37.84	C
50.00-25.00			B	0.149	2.775		1	1	11.573			
			C	0.149	2.775		1	1	11.573			
T41	0.85	2.45	A	0.147	2.784	7	1	1	10.954	0.70	28.13	C
25.00-0.00			B	0.147	2.784		1	1	10.954			
			C	0.147	2.784		1	1	10.954			
Sum Weight:	10.00	42.50								14.51		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.00	0.68	A	0.215	2.545	13	0.8	1	4.995	0.14	22.82	C
368.75-362.50			B	0.215	2.545		0.8	1	4.995			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
			C	0.215	2.545		0.8	1	4.995			
T2	0.00	1.09	A	0.235	2.484	13	0.8	1	5.516	0.16	24.91	C
362.50-356.25			B	0.235	2.484		0.8	1	5.516			
			C	0.235	2.484		0.8	1	5.516			
T3	0.01	1.09	A	0.235	2.484	13	0.8	1	5.516	0.16	25.41	C
356.25-350.00			B	0.235	2.484		0.8	1	5.516			
			C	0.235	2.484		0.8	1	5.516			
T4	0.01	0.77	A	0.242	2.463	13	0.8	1	5.647	0.17	27.28	C
350.00-343.75		TA 0.79	B	0.242	2.463		0.8	1	5.647			
			C	0.242	2.463		0.8	1	5.647			
T5	0.01	0.61	A	0.15	2.773	13	0.8	1	2.991	0.11	17.38	C
343.75-337.50			B	0.15	2.773		0.8	1	2.991			
			C	0.15	2.773		0.8	1	2.991			
T6	0.01	0.54	A	0.139	2.811	13	0.8	1	2.569	0.10	15.45	C
337.50-331.25			B	0.139	2.811		0.8	1	2.569			
			C	0.139	2.811		0.8	1	2.569			
T7	0.01	0.54	A	0.139	2.811	13	0.8	1	2.570	0.10	15.39	C
331.25-325.00			B	0.139	2.811		0.8	1	2.570			
			C	0.139	2.811		0.8	1	2.570			
T8	0.02	0.64	A	0.152	2.766	13	0.8	1	2.768	0.11	17.35	C
325.00-318.75			B	0.152	2.766		0.8	1	2.768			
			C	0.152	2.766		0.8	1	2.768			
T9	0.02	0.64	A	0.151	2.767	13	0.8	1	2.766	0.11	17.28	C
318.75-312.50			B	0.151	2.767		0.8	1	2.766			
			C	0.151	2.767		0.8	1	2.766			
T10	0.02	0.64	A	0.151	2.767	13	0.8	1	2.767	0.11	17.21	C
312.50-306.25			B	0.151	2.767		0.8	1	2.767			
			C	0.151	2.767		0.8	1	2.767			
T11	0.02	0.71	A	0.161	2.73	13	0.8	1	3.192	0.12	18.94	C
306.25-300.00			B	0.161	2.73		0.8	1	3.192			
			C	0.161	2.73		0.8	1	3.192			
T12	0.12	0.85	A	0.248	2.445	12	0.8	1	5.750	0.28	45.54	C
300.00-293.75		TA 0.79	B	0.248	2.445		0.8	1	5.750			
			C	0.248	2.445		0.8	1	5.750			
T13	0.12	0.71	A	0.161	2.73	12	0.8	1	3.194	0.23	36.33	C
293.75-287.50			B	0.161	2.73		0.8	1	3.194			
			C	0.161	2.73		0.8	1	3.194			
T14	0.12	0.61	A	0.147	2.784	12	0.8	1	2.680	0.21	34.05	C
287.50-281.25			B	0.147	2.784		0.8	1	2.680			
			C	0.147	2.784		0.8	1	2.680			
T15	0.12	0.61	A	0.147	2.784	12	0.8	1	2.681	0.21	33.89	C
281.25-275.00			B	0.147	2.784		0.8	1	2.681			
			C	0.147	2.784		0.8	1	2.681			
T16	0.12	0.61	A	0.147	2.784	12	0.8	1	2.682	0.21	33.74	C
275.00-268.75			B	0.147	2.784		0.8	1	2.682			
			C	0.147	2.784		0.8	1	2.682			
T17	0.12	0.61	A	0.147	2.784	12	0.8	1	2.684	0.21	33.58	C
268.75-262.50			B	0.147	2.784		0.8	1	2.684			
			C	0.147	2.784		0.8	1	2.684			
T18	0.12	0.61	A	0.147	2.784	12	0.8	1	2.685	0.21	33.42	C
262.50-256.25			B	0.147	2.784		0.8	1	2.685			
			C	0.147	2.784		0.8	1	2.685			
T19	0.12	0.64	A	0.151	2.767	12	0.8	1	2.779	0.21	33.59	C
256.25-250.00			B	0.151	2.767		0.8	1	2.779			
			C	0.151	2.767		0.8	1	2.779			
T20	0.12	0.71	A	0.161	2.73	12	0.8	1	3.203	0.22	35.14	C
250.00-243.75			B	0.161	2.73		0.8	1	3.203			
			C	0.161	2.73		0.8	1	3.203			
T21	0.16	0.71	A	0.161	2.73	12	0.8	1	3.205	0.26	41.74	C
243.75-237.50			B	0.161	2.73		0.8	1	3.205			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
			C	0.161	2.73		0.8	1	3.205			
T22	0.22	0.71	A	0.161	2.73	12	0.8	1	3.206	0.32	51.63	C
237.50-231.25			B	0.161	2.73		0.8	1	3.206			
			C	0.161	2.73		0.8	1	3.206			
T23	0.22	0.77	A	0.171	2.696	12	0.8	1	3.394	0.32	51.97	C
231.25-225.00			B	0.171	2.696		0.8	1	3.394			
			C	0.171	2.696		0.8	1	3.394			
T24	0.22	0.95	A	0.222	2.525	12	0.8	1	5.124	0.36	57.71	C
225.00-218.75		TA 0.79	B	0.222	2.525		0.8	1	5.124			
			C	0.222	2.525		0.8	1	5.124			
T25	0.22	0.61	A	0.15	2.773	12	0.8	1	3.014	0.31	50.10	C
218.75-212.50			B	0.15	2.773		0.8	1	3.014			
			C	0.15	2.773		0.8	1	3.014			
T26	0.22	0.54	A	0.139	2.811	12	0.8	1	2.591	0.30	48.10	C
212.50-206.25			B	0.139	2.811		0.8	1	2.591			
			C	0.139	2.811		0.8	1	2.591			
T27	0.22	0.54	A	0.139	2.811	12	0.8	1	2.591	0.30	47.80	C
206.25-200.00			B	0.139	2.811		0.8	1	2.591			
			C	0.139	2.811		0.8	1	2.591			
T28	0.88	2.28	A	0.159	2.737	11	0.8	1	11.897	1.23	49.08	C
200.00-175.00			B	0.159	2.737		0.8	1	11.897			
			C	0.159	2.737		0.8	1	11.897			
T29	0.22	0.69	A	0.161	2.731	11	0.8	1	2.990	0.30	48.73	C
175.00-168.75			B	0.161	2.731		0.8	1	2.990			
			C	0.161	2.731		0.8	1	2.990			
T30	0.22	0.69	A	0.161	2.732	11	0.8	1	2.989	0.30	48.35	C
168.75-162.50			B	0.161	2.732		0.8	1	2.989			
			C	0.161	2.732		0.8	1	2.989			
T31	0.22	0.69	A	0.157	2.747	11	0.8	1	3.135	0.30	48.63	C
162.50-156.25			B	0.157	2.747		0.8	1	3.135			
			C	0.157	2.747		0.8	1	3.135			
T32	0.22	0.61	A	0.147	2.784	11	0.8	1	2.715	0.29	46.67	C
156.25-150.00			B	0.147	2.784		0.8	1	2.715			
			C	0.147	2.784		0.8	1	2.715			
T33	0.91	2.45	A	0.147	2.784	11	0.8	1	10.885	1.16	46.30	C
150.00-125.00			B	0.147	2.784		0.8	1	10.885			
			C	0.147	2.784		0.8	1	10.885			
T34	0.92	2.84	A	0.218	2.536	10	0.8	1	19.412	1.29	51.47	C
125.00-100.00			B	0.218	2.536		0.8	1	19.412			
			C	0.218	2.536		0.8	1	19.412			
T35	0.23	1.03	A	0.228	2.504	10	0.8	1	5.275	0.32	51.09	C
100.00-93.75		TA 0.79	B	0.228	2.504		0.8	1	5.275			
			C	0.228	2.504		0.8	1	5.275			
T36	0.23	0.71	A	0.161	2.73	10	0.8	1	3.252	0.28	44.75	C
93.75-87.50			B	0.161	2.73		0.8	1	3.252			
			C	0.161	2.73		0.8	1	3.252			
T37	0.24	0.61	A	0.147	2.784	10	0.8	1	2.739	0.27	43.49	C
87.50-81.25			B	0.147	2.784		0.8	1	2.739			
			C	0.147	2.784		0.8	1	2.739			
T38	0.24	0.61	A	0.147	2.784	9	0.8	1	2.739	0.27	42.79	C
81.25-75.00			B	0.147	2.784		0.8	1	2.739			
			C	0.147	2.784		0.8	1	2.739			
T39	0.95	2.45	A	0.147	2.784	9	0.8	1	10.954	1.03	41.07	C
75.00-50.00			B	0.147	2.784		0.8	1	10.954			
			C	0.147	2.784		0.8	1	10.954			
T40	0.97	2.47	A	0.149	2.775	8	0.8	1	11.376	0.94	37.69	C
50.00-25.00			B	0.149	2.775		0.8	1	11.376			
			C	0.149	2.775		0.8	1	11.376			
T41	0.85	2.45	A	0.147	2.784	7	0.8	1	10.954	0.70	28.13	C
25.00-0.00			B	0.147	2.784		0.8	1	10.954			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
Sum Weight:	10.00	42.50	C	0.147	2.784		0.8	1	10.954	14.23		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.00	0.68	A	0.215	2.545	13	0.85	1	5.204	0.15	23.76	C
368.75-362.50			B	0.215	2.545		0.85	1	5.204			
			C	0.215	2.545		0.85	1	5.204			
T2	0.00	1.09	A	0.235	2.484	13	0.85	1	5.756	0.16	25.97	C
362.50-356.25			B	0.235	2.484		0.85	1	5.756			
			C	0.235	2.484		0.85	1	5.756			
T3	0.01	1.09	A	0.235	2.484	13	0.85	1	5.756	0.17	26.46	C
356.25-350.00			B	0.235	2.484		0.85	1	5.756			
			C	0.235	2.484		0.85	1	5.756			
T4	0.01	0.77	A	0.242	2.463	13	0.85	1	5.887	0.18	28.32	C
350.00-343.75		TA 0.79	B	0.242	2.463		0.85	1	5.887			
			C	0.242	2.463		0.85	1	5.887			
T5	0.01	0.61	A	0.15	2.773	13	0.85	1	3.041	0.11	17.62	C
343.75-337.50			B	0.15	2.773		0.85	1	3.041			
			C	0.15	2.773		0.85	1	3.041			
T6	0.01	0.54	A	0.139	2.811	13	0.85	1	2.569	0.10	15.45	C
337.50-331.25			B	0.139	2.811		0.85	1	2.569			
			C	0.139	2.811		0.85	1	2.569			
T7	0.01	0.54	A	0.139	2.811	13	0.85	1	2.570	0.10	15.39	C
331.25-325.00			B	0.139	2.811		0.85	1	2.570			
			C	0.139	2.811		0.85	1	2.570			
T8	0.02	0.64	A	0.152	2.766	13	0.85	1	2.768	0.11	17.35	C
325.00-318.75			B	0.152	2.766		0.85	1	2.768			
			C	0.152	2.766		0.85	1	2.768			
T9	0.02	0.64	A	0.151	2.767	13	0.85	1	2.766	0.11	17.28	C
318.75-312.50			B	0.151	2.767		0.85	1	2.766			
			C	0.151	2.767		0.85	1	2.766			
T10	0.02	0.64	A	0.151	2.767	13	0.85	1	2.767	0.11	17.21	C
312.50-306.25			B	0.151	2.767		0.85	1	2.767			
			C	0.151	2.767		0.85	1	2.767			
T11	0.02	0.71	A	0.161	2.73	13	0.85	1	3.241	0.12	19.17	C
306.25-300.00			B	0.161	2.73		0.85	1	3.241			
			C	0.161	2.73		0.85	1	3.241			
T12	0.12	0.85	A	0.248	2.445	12	0.85	1	5.988	0.29	46.53	C
300.00-293.75		TA 0.79	B	0.248	2.445		0.85	1	5.988			
			C	0.248	2.445		0.85	1	5.988			
T13	0.12	0.71	A	0.161	2.73	12	0.85	1	3.243	0.23	36.55	C
293.75-287.50			B	0.161	2.73		0.85	1	3.243			
			C	0.161	2.73		0.85	1	3.243			
T14	0.12	0.61	A	0.147	2.784	12	0.85	1	2.680	0.21	34.05	C
287.50-281.25			B	0.147	2.784		0.85	1	2.680			
			C	0.147	2.784		0.85	1	2.680			
T15	0.12	0.61	A	0.147	2.784	12	0.85	1	2.681	0.21	33.89	C
281.25-275.00			B	0.147	2.784		0.85	1	2.681			
			C	0.147	2.784		0.85	1	2.681			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T16	0.12	0.61	A	0.147	2.784	12	0.85	1	2.682	0.21	33.74	C
275.00-268.75			B	0.147	2.784		0.85	1	2.682			
			C	0.147	2.784		0.85	1	2.682			
T17	0.12	0.61	A	0.147	2.784	12	0.85	1	2.684	0.21	33.58	C
268.75-262.50			B	0.147	2.784		0.85	1	2.684			
			C	0.147	2.784		0.85	1	2.684			
T18	0.12	0.61	A	0.147	2.784	12	0.85	1	2.685	0.21	33.42	C
262.50-256.25			B	0.147	2.784		0.85	1	2.685			
			C	0.147	2.784		0.85	1	2.685			
T19	0.12	0.64	A	0.151	2.767	12	0.85	1	2.779	0.21	33.59	C
256.25-250.00			B	0.151	2.767		0.85	1	2.779			
			C	0.151	2.767		0.85	1	2.779			
T20	0.12	0.71	A	0.161	2.73	12	0.85	1	3.253	0.22	35.36	C
250.00-243.75			B	0.161	2.73		0.85	1	3.253			
			C	0.161	2.73		0.85	1	3.253			
T21	0.16	0.71	A	0.161	2.73	12	0.85	1	3.254	0.26	41.96	C
243.75-237.50			B	0.161	2.73		0.85	1	3.254			
			C	0.161	2.73		0.85	1	3.254			
T22	0.22	0.71	A	0.161	2.73	12	0.85	1	3.256	0.32	51.84	C
237.50-231.25			B	0.161	2.73		0.85	1	3.256			
			C	0.161	2.73		0.85	1	3.256			
T23	0.22	0.77	A	0.171	2.696	12	0.85	1	3.443	0.33	52.18	C
231.25-225.00			B	0.171	2.696		0.85	1	3.443			
			C	0.171	2.696		0.85	1	3.443			
T24	0.22	0.95	A	0.222	2.525	12	0.85	1	5.331	0.37	58.55	C
225.00-218.75		TA 0.79	B	0.222	2.525		0.85	1	5.331			
			C	0.222	2.525		0.85	1	5.331			
T25	0.22	0.61	A	0.15	2.773	12	0.85	1	3.064	0.31	50.32	C
218.75-212.50			B	0.15	2.773		0.85	1	3.064			
			C	0.15	2.773		0.85	1	3.064			
T26	0.22	0.54	A	0.139	2.811	12	0.85	1	2.591	0.30	48.10	C
212.50-206.25			B	0.139	2.811		0.85	1	2.591			
			C	0.139	2.811		0.85	1	2.591			
T27	0.22	0.54	A	0.139	2.811	12	0.85	1	2.591	0.30	47.80	C
206.25-200.00			B	0.139	2.811		0.85	1	2.591			
			C	0.139	2.811		0.85	1	2.591			
T28	0.88	2.28	A	0.159	2.737	11	0.85	1	11.897	1.23	49.08	C
200.00-175.00			B	0.159	2.737		0.85	1	11.897			
			C	0.159	2.737		0.85	1	11.897			
T29	0.22	0.69	A	0.161	2.731	11	0.85	1	2.990	0.30	48.73	C
175.00-168.75			B	0.161	2.731		0.85	1	2.990			
			C	0.161	2.731		0.85	1	2.990			
T30	0.22	0.69	A	0.161	2.732	11	0.85	1	2.989	0.30	48.35	C
168.75-162.50			B	0.161	2.732		0.85	1	2.989			
			C	0.161	2.732		0.85	1	2.989			
T31	0.22	0.69	A	0.157	2.747	11	0.85	1	3.185	0.31	48.83	C
162.50-156.25			B	0.157	2.747		0.85	1	3.185			
			C	0.157	2.747		0.85	1	3.185			
T32	0.22	0.61	A	0.147	2.784	11	0.85	1	2.715	0.29	46.67	C
156.25-150.00			B	0.147	2.784		0.85	1	2.715			
			C	0.147	2.784		0.85	1	2.715			
T33	0.91	2.45	A	0.147	2.784	11	0.85	1	10.885	1.16	46.30	C
150.00-125.00			B	0.147	2.784		0.85	1	10.885			
			C	0.147	2.784		0.85	1	10.885			
T34	0.92	2.84	A	0.218	2.536	10	0.85	1	20.043	1.30	52.03	C
125.00-100.00			B	0.218	2.536		0.85	1	20.043			
			C	0.218	2.536		0.85	1	20.043			
T35	0.23	1.03	A	0.228	2.504	10	0.85	1	5.482	0.32	51.78	C
100.00-93.75		TA 0.79	B	0.228	2.504		0.85	1	5.482			
			C	0.228	2.504		0.85	1	5.482			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T36	0.23	0.71	A	0.161	2.73	10	0.85	1	3.301	0.28	44.92	C
93.75-87.50			B	0.161	2.73		0.85	1	3.301			
			C	0.161	2.73		0.85	1	3.301			
T37	0.24	0.61	A	0.147	2.784	10	0.85	1	2.739	0.27	43.49	C
87.50-81.25			B	0.147	2.784		0.85	1	2.739			
			C	0.147	2.784		0.85	1	2.739			
T38	0.24	0.61	A	0.147	2.784	9	0.85	1	2.739	0.27	42.79	C
81.25-75.00			B	0.147	2.784		0.85	1	2.739			
			C	0.147	2.784		0.85	1	2.739			
T39	0.95	2.45	A	0.147	2.784	9	0.85	1	10.954	1.03	41.07	C
75.00-50.00			B	0.147	2.784		0.85	1	10.954			
			C	0.147	2.784		0.85	1	10.954			
T40	0.97	2.47	A	0.149	2.775	8	0.85	1	11.425	0.94	37.73	C
50.00-25.00			B	0.149	2.775		0.85	1	11.425			
			C	0.149	2.775		0.85	1	11.425			
T41	0.85	2.45	A	0.147	2.784	7	0.85	1	10.954	0.70	28.13	C
25.00-0.00			B	0.147	2.784		0.85	1	10.954			
			C	0.147	2.784		0.85	1	10.954			
Sum Weight:	10.00	42.50								14.30		

Force Totals (Does not include forces on guys)

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Torques kip-ft
Leg Weight	29.84			
Bracing Weight	12.66			
Total Member Self-Weight	42.50			
Guy Weight	11.91			
Total Weight	72.18			
Wind 0 deg - No Ice		-0.06	-63.22	-1.54
Wind 30 deg - No Ice		31.28	-54.17	1.54
Wind 60 deg - No Ice		54.06	-31.14	4.18
Wind 90 deg - No Ice		62.67	0.06	5.76
Wind 120 deg - No Ice		54.85	31.66	5.87
Wind 150 deg - No Ice		31.38	54.23	4.22
Wind 180 deg - No Ice		0.06	62.37	1.55
Wind 210 deg - No Ice		-31.28	54.17	-1.54
Wind 240 deg - No Ice		-54.79	31.56	-4.34
Wind 270 deg - No Ice		-62.67	-0.06	-5.76
Wind 300 deg - No Ice		-54.11	-31.23	-5.72
Wind 330 deg - No Ice		-31.38	-54.23	-4.22
Member Ice	45.34			
Guy Ice	47.42			
Total Weight Ice	246.17			
Wind 0 deg - Ice		0.01	-28.30	-1.18
Wind 30 deg - Ice		14.14	-24.45	0.12
Wind 60 deg - Ice		24.46	-14.11	1.38
Wind 90 deg - Ice		28.27	-0.01	2.28
Wind 120 deg - Ice		24.54	14.14	2.57
Wind 150 deg - Ice		14.13	24.44	2.16
Wind 180 deg - Ice		-0.01	28.20	1.18
Wind 210 deg - Ice		-14.14	24.45	-0.12

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Torques kip-ft
Wind 240 deg - Ice		-24.55	14.16	-1.39
Wind 270 deg - Ice		-28.27	0.01	-2.28
Wind 300 deg - Ice		-24.45	-14.09	-2.56
Wind 330 deg - Ice		-14.13	-24.44	-2.16
Total Weight	72.18			
Wind 0 deg - Service		-0.02	-20.64	-0.50
Wind 30 deg - Service		10.22	-17.69	0.50
Wind 60 deg - Service		17.65	-10.17	1.36
Wind 90 deg - Service		20.46	0.02	1.88
Wind 120 deg - Service		17.91	10.34	1.92
Wind 150 deg - Service		10.25	17.71	1.38
Wind 180 deg - Service		0.02	20.37	0.50
Wind 210 deg - Service		-10.22	17.69	-0.50
Wind 240 deg - Service		-17.89	10.31	-1.42
Wind 270 deg - Service		-20.46	-0.02	-1.88
Wind 300 deg - Service		-17.67	-10.20	-1.87
Wind 330 deg - Service		-10.25	-17.71	-1.38

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice+1.0 Guy
3	1.2 Dead+1.6 Wind 30 deg - No Ice+1.0 Guy
4	1.2 Dead+1.6 Wind 60 deg - No Ice+1.0 Guy
5	1.2 Dead+1.6 Wind 90 deg - No Ice+1.0 Guy
6	1.2 Dead+1.6 Wind 120 deg - No Ice+1.0 Guy
7	1.2 Dead+1.6 Wind 150 deg - No Ice+1.0 Guy
8	1.2 Dead+1.6 Wind 180 deg - No Ice+1.0 Guy
9	1.2 Dead+1.6 Wind 210 deg - No Ice+1.0 Guy
10	1.2 Dead+1.6 Wind 240 deg - No Ice+1.0 Guy
11	1.2 Dead+1.6 Wind 270 deg - No Ice+1.0 Guy
12	1.2 Dead+1.6 Wind 300 deg - No Ice+1.0 Guy
13	1.2 Dead+1.6 Wind 330 deg - No Ice+1.0 Guy
14	1.2 Dead+1.0 Ice+1.0 Temp+Guy
15	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy
16	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy
17	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy
18	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy
19	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy
20	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy
21	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy
22	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy
23	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy
24	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy
25	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy
26	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy
27	Dead+Wind 0 deg - Service+Guy
28	Dead+Wind 30 deg - Service+Guy
29	Dead+Wind 60 deg - Service+Guy
30	Dead+Wind 90 deg - Service+Guy
31	Dead+Wind 120 deg - Service+Guy
32	Dead+Wind 150 deg - Service+Guy

Comb. No.	Description
33	Dead+Wind 180 deg - Service+Guy
34	Dead+Wind 210 deg - Service+Guy
35	Dead+Wind 240 deg - Service+Guy
36	Dead+Wind 270 deg - Service+Guy
37	Dead+Wind 300 deg - Service+Guy
38	Dead+Wind 330 deg - Service+Guy

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	368.75 - 362.5	Leg	Max Tension	12	0.34	-0.00	-0.00
			Max. Compression	23	-1.67	0.00	0.02
			Max. Mx	5	-0.11	0.27	0.00
			Max. My	12	0.28	0.01	-0.20
			Max. Vy	6	-0.12	-0.00	0.00
			Max. Vx	2	0.19	-0.00	-0.00
		Diagonal	Max Tension	8	0.36	0.00	0.00
			Max. Compression	2	-0.45	0.00	0.00
			Max. Mx	24	0.04	0.02	0.00
			Max. My	2	0.13	0.01	0.00
			Max. Vy	18	-0.03	0.02	-0.00
			Max. Vx	7	-0.00	0.00	0.00
		Top Girt	Max Tension	2	0.11	0.00	0.00
			Max. Compression	12	-0.09	0.00	0.00
			Max. Mx	14	0.01	0.08	0.00
			Max. My	5	0.00	0.00	0.00
			Max. Vy	14	-0.06	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
T2	362.5 - 356.25	Leg	Max Tension	12	0.92	0.01	-0.20
			Max. Compression	23	-2.34	0.06	-0.13
			Max. Mx	11	-0.51	1.41	-0.01
			Max. My	6	-1.66	-0.21	-0.97
			Max. Vy	11	-0.32	1.41	-0.01
			Max. Vx	7	0.22	-0.10	-0.96
		Diagonal	Max Tension	12	0.92	0.00	0.00
			Max. Compression	6	-1.32	0.00	0.00
			Max. Mx	24	-0.07	-0.05	0.00
			Max. My	6	-0.20	-0.02	0.01
			Max. Vy	24	0.05	-0.05	0.00
			Max. Vx	6	0.00	0.00	0.00
		Top Girt	Max Tension	8	0.33	0.00	0.00
			Max. Compression	10	-0.17	0.00	0.00
			Max. Mx	14	0.21	0.08	0.00
			Max. My	5	0.10	0.00	0.00
			Max. Vy	14	0.07	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
T3	356.25 - 350	Leg	Max Tension	8	6.18	-0.07	-0.66
			Max. Compression	6	-9.21	-0.40	-0.80
			Max. Mx	5	-0.81	2.29	-0.01
			Max. My	7	-7.49	-0.10	1.53
			Max. Vy	11	2.97	1.41	-0.01
			Max. Vx	7	-2.00	-0.10	-0.96
		Diagonal	Max Tension	6	5.78	0.00	0.00
			Max. Compression	12	-5.45	0.00	0.00
			Max. Mx	7	-0.56	-0.06	-0.01
			Max. My	6	-4.43	0.00	-0.09
			Max. Vy	25	0.05	-0.05	-0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	6	0.02	0.00	-0.09
		Top Girt	Max Tension	6	1.34	0.00	0.00
			Max. Compression	4	-1.29	0.00	0.00
			Max. Mx	14	0.32	0.08	0.00
			Max. My	5	0.02	0.00	0.00
			Max. Vy	14	-0.07	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
T4	350 - 343.75	Leg	Max Tension	12	5.26	0.43	0.79
			Max. Compression	2	-8.03	0.02	0.17
			Max. Mx	5	-1.58	-1.35	-0.02
			Max. My	7	-6.66	-0.18	-0.94
			Max. Vy	5	-0.75	-1.35	-0.02
			Max. Vx	2	0.83	0.00	0.78
		Diagonal	Max Tension	5	3.74	0.00	0.00
			Max. Compression	5	-4.12	0.00	0.00
			Max. Mx	21	-0.19	0.03	-0.00
			Max. My	5	-4.09	0.02	0.01
			Max. Vy	21	-0.03	0.03	-0.00
			Max. Vx	5	-0.00	0.02	0.01
		Top Girt	Max Tension	8	9.85	0.00	0.00
			Max. Compression	6	-6.86	0.00	0.00
			Max. Mx	14	2.20	0.08	0.00
			Max. My	5	2.14	0.00	0.00
			Max. Vy	14	-0.06	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
		Guy A	Bottom Tension	8	22.79		
			Top Tension	8	23.35		
			Top Cable Vert	8	19.66		
			Top Cable Norm	8	12.59		
			Top Cable Tan	8	0.02		
			Bot Cable Vert	8	-18.31		
			Bot Cable Norm	8	13.57		
			Bot Cable Tan	8	0.02		
		Guy B	Bottom Tension	12	23.14		
			Top Tension	12	23.69		
			Top Cable Vert	12	19.80		
			Top Cable Norm	12	13.01		
			Top Cable Tan	12	0.02		
			Bot Cable Vert	12	-18.46		
			Bot Cable Norm	12	13.96		
			Bot Cable Tan	12	0.02		
		Guy C	Bottom Tension	4	23.05		
			Top Tension	4	23.61		
			Top Cable Vert	4	19.89		
			Top Cable Norm	4	12.73		
			Top Cable Tan	4	0.02		
			Bot Cable Vert	4	-18.52		
			Bot Cable Norm	4	13.72		
			Bot Cable Tan	4	0.02		
		Torque Arm Top	Max Tension	11	22.32	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	23	17.68	0.13	0.00
			Max. My	5	22.09	0.00	-0.00
			Max. Vy	23	-0.09	0.00	0.00
			Max. Vx	5	0.00	0.00	0.00
		Torque Arm Bottom	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-24.83	0.00	0.00
			Max. Mx	23	-20.45	0.19	0.00
			Max. My	5	-8.44	0.00	0.00
			Max. Vy	23	0.09	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T5	343.75 - 337.5	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	17	-41.53	0.02	-0.00
			Max. Mx	11	-17.31	0.29	0.20
			Max. My	10	-35.40	0.25	-0.25
			Max. Vy	11	0.10	0.29	-0.22
			Max. Vx	3	0.09	-0.10	0.23
		Diagonal	Max Tension	11	4.98	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-4.25	0.00	0.00
			Max. Mx	14	-2.39	0.08	0.00
			Max. My	5	-2.61	0.00	0.00
			Max. Vy	14	0.06	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
T6	337.5 - 331.25	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-42.43	-0.05	-0.01
			Max. Mx	11	-40.55	-0.08	0.05
			Max. My	3	-31.33	-0.02	-0.06
			Max. Vy	5	0.06	-0.04	-0.02
			Max. Vx	2	-0.05	0.00	0.04
		Diagonal	Max Tension	11	4.72	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-3.09	0.00	0.00
			Max. Mx	14	-2.70	0.03	0.00
			Max. My	5	-2.99	0.00	0.00
			Max. Vy	14	-0.03	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
T7	331.25 - 325	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-43.34	0.04	0.06
			Max. Mx	11	-12.52	-0.08	-0.04
			Max. My	3	-32.70	0.02	-0.08
			Max. Vy	5	-0.06	-0.04	-0.02
			Max. Vx	2	0.06	0.00	0.04
		Diagonal	Max Tension	10	4.28	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-2.99	0.00	0.00
			Max. Mx	14	-2.57	0.03	0.00
			Max. My	5	-2.84	0.00	0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
T8	325 - 318.75	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-45.21	0.01	0.00
			Max. Mx	10	-41.85	-0.07	-0.03
			Max. My	3	-35.39	0.02	-0.08
			Max. Vy	4	-0.20	0.03	-0.06
			Max. Vx	9	-0.29	-0.04	0.04
		Diagonal	Max Tension	6	4.67	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-3.61	0.00	0.00
			Max. Mx	14	-3.11	0.03	0.00
			Max. My	5	-3.35	0.00	0.00
			Max. Vy	14	-0.03	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
T9	318.75 - 312.5	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-45.45	-0.05	-0.03
			Max. Mx	11	-44.06	-0.19	0.00
			Max. My	8	-43.11	-0.00	0.18
			Max. Vy	11	0.09	0.07	-0.00
			Max. Vx	8	-0.09	-0.01	-0.07
		Diagonal	Max Tension	5	4.54	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-4.11	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	14	-3.62	0.03	0.00
			Max. My	5	-3.90	0.00	0.00
			Max. Vy	14	-0.03	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
T10	312.5 - 306.25	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-45.98	0.13	0.07
			Max. Mx	5	-43.20	-0.74	-0.00
			Max. My	8	-42.10	-0.00	-0.76
			Max. Vy	11	-0.19	0.74	0.01
			Max. Vx	8	0.20	-0.00	-0.76
		Diagonal	Max Tension	5	4.87	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	13	-4.10	0.00	0.00
			Max. Mx	14	-3.72	0.03	0.00
			Max. My	5	-4.03	0.00	0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
T11	306.25 - 300	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-48.69	0.21	0.15
			Max. Mx	5	-43.11	1.68	0.01
			Max. My	8	-33.05	0.09	1.69
			Max. Vy	11	1.88	0.74	0.01
			Max. Vx	2	1.91	0.05	0.69
		Diagonal	Max Tension	12	9.22	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	12	-5.96	0.00	0.00
			Max. Mx	14	-4.16	0.08	0.00
			Max. My	5	-4.56	0.00	0.00
			Max. Vy	14	-0.06	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
T12	300 - 293.75	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-40.30	0.03	-0.01
			Max. Mx	5	-33.66	-1.39	0.01
			Max. My	8	-22.74	0.09	-1.30
			Max. Vy	5	-0.68	-1.39	0.01
			Max. Vx	8	-0.68	0.09	-1.30
		Diagonal	Max Tension	5	3.61	0.00	0.00
			Max. Compression	4	-8.33	0.00	0.00
			Max. Mx	5	1.52	0.05	-0.00
			Max. My	5	-7.93	0.00	0.01
			Max. Vy	22	-0.03	0.05	-0.00
			Max. Vx	5	-0.00	0.00	0.01
		Top Girt	Max Tension	8	12.32	0.00	0.00
			Max. Compression	6	-9.15	0.00	0.00
			Max. Mx	14	1.21	0.08	0.00
			Max. My	5	0.19	0.00	0.00
			Max. Vy	14	0.06	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
		Guy A	Bottom Tension	8	26.07		
			Top Tension	8	26.55		
			Top Cable Vert	8	21.83		
			Top Cable Norm	8	15.11		
			Top Cable Tan	8	0.01		
			Bot Cable Vert	8	-20.66		
			Bot Cable Norm	8	15.89		
			Bot Cable Tan	8	0.02		
		Guy B	Bottom Tension	12	26.04		
			Top Tension	12	26.51		
			Top Cable Vert	12	21.81		
			Top Cable Norm	12	15.07		
			Top Cable Tan	12	0.01		

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Bot Cable Vert	12	-20.67		
			Bot Cable Norm	12	15.84		
			Bot Cable Tan	12	0.02		
		Guy C	Bottom Tension	4	25.96		
			Top Tension	4	26.45		
			Top Cable Vert	4	21.78		
			Top Cable Norm	4	15.01		
			Top Cable Tan	4	0.01		
			Bot Cable Vert	4	-20.60		
			Bot Cable Norm	4	15.80		
			Bot Cable Tan	4	0.02		
		Torque Arm Top	Max Tension	5	23.87	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	19	16.33	0.13	0.00
			Max. My	11	23.86	0.00	0.00
			Max. Vy	19	0.09	0.00	0.00
			Max. Vx	11	-0.00	0.00	0.00
		Torque Arm Bottom	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-29.01	0.00	0.00
			Max. Mx	23	-19.26	0.19	0.00
			Max. My	23	-12.77	0.00	0.00
			Max. Vy	23	-0.09	0.00	0.00
			Max. Vx	23	-0.00	0.00	0.00
T13	293.75 - 287.5	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	12	-94.30	0.02	-0.04
			Max. Mx	5	-92.22	-0.21	-0.14
			Max. My	5	-92.22	-0.21	-0.14
			Max. Vy	5	-0.09	-0.21	-0.14
			Max. Vx	8	0.08	-0.01	-0.08
		Diagonal	Max Tension	5	8.89	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-3.03	0.00	0.00
			Max. Mx	14	-0.83	0.08	0.00
			Max. My	5	-2.13	0.00	0.00
			Max. Vy	14	-0.06	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
T14	287.5 - 281.25	Leg	Max Tension	6	1.57	-0.07	0.04
			Max. Compression	12	-100.74	-0.09	-0.00
			Max. Mx	11	-99.02	-0.14	0.05
			Max. My	2	-87.60	0.00	-0.16
			Max. Vy	5	-0.09	-0.10	0.07
			Max. Vx	8	-0.09	-0.01	-0.08
		Diagonal	Max Tension	5	7.59	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	5	-5.12	0.00	0.00
			Max. Mx	14	-2.54	0.03	0.00
			Max. My	22	-2.51	0.00	0.00
			Max. Vy	14	-0.03	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
T15	281.25 - 275	Leg	Max Tension	6	9.20	0.13	0.04
			Max. Compression	12	-106.30	-0.08	-0.01
			Max. Mx	11	0.79	-0.20	0.01
			Max. My	2	-90.82	0.00	-0.19
			Max. Vy	5	0.06	0.10	0.01
			Max. Vx	2	-0.07	-0.01	-0.06
		Diagonal	Max Tension	5	6.36	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	5	-4.40	0.00	0.00
			Max. Mx	14	-2.00	0.03	0.00
			Max. My	26	-1.95	0.00	0.00
			Max. Vy	14	0.03	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	26	0.00	0.00	0.00
T16	275 - 268.75	Leg	Max Tension	6	15.26	0.10	0.03
			Max. Compression	12	-110.19	-0.07	-0.02
			Max. Mx	5	-107.46	0.19	0.04
			Max. My	2	-94.21	-0.01	-0.17
			Max. Vy	10	-0.05	-0.07	0.06
			Max. Vx	2	0.06	-0.01	-0.06
		Diagonal	Max Tension	5	4.96	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	5	-3.59	0.00	0.00
			Max. Mx	14	-2.01	0.03	0.00
			Max. My	26	-1.95	0.00	0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	26	0.00	0.00	0.00
T17	268.75 - 262.5	Leg	Max Tension	6	19.36	0.09	0.05
			Max. Compression	12	-112.67	-0.06	-0.04
			Max. Mx	5	10.38	0.19	0.01
			Max. My	2	-96.45	-0.00	-0.18
			Max. Vy	5	0.06	0.08	0.00
			Max. Vx	8	-0.06	0.00	0.05
		Diagonal	Max Tension	6	3.86	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-3.08	0.00	0.00
			Max. Mx	14	-1.99	0.03	0.00
			Max. My	26	-1.94	0.00	0.00
			Max. Vy	14	-0.03	0.00	0.00
			Max. Vx	26	-0.00	0.00	0.00
T18	262.5 - 256.25	Leg	Max Tension	6	21.69	0.10	0.08
			Max. Compression	12	-113.69	-0.03	0.01
			Max. Mx	5	-111.14	0.15	0.00
			Max. My	2	-97.53	-0.00	-0.17
			Max. Vy	11	-0.06	-0.02	0.01
			Max. Vx	8	0.07	-0.02	-0.01
		Diagonal	Max Tension	6	3.27	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-3.05	0.00	0.00
			Max. Mx	14	-1.96	0.03	0.00
			Max. My	26	-1.90	0.00	0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	26	0.00	0.00	0.00
T19	256.25 - 250	Leg	Max Tension	6	20.54	0.03	0.01
			Max. Compression	12	-114.21	-0.24	-0.10
			Max. Mx	5	10.85	0.32	0.06
			Max. My	2	18.66	0.03	-0.34
			Max. Vy	11	0.10	-0.02	0.01
			Max. Vx	8	-0.10	-0.02	-0.01
		Diagonal	Max Tension	12	4.02	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-3.75	0.00	0.00
			Max. Mx	14	-2.39	0.03	0.00
			Max. My	26	-2.31	0.00	0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	26	0.00	0.00	0.00
T20	250 - 243.75	Leg	Max Tension	6	19.10	0.31	0.16
			Max. Compression	4	-112.37	-0.70	0.31
			Max. Mx	5	9.51	-0.81	0.01
			Max. My	2	17.06	0.01	0.79
			Max. Vy	5	0.24	-0.81	0.01
			Max. Vx	2	-0.23	-0.01	0.77
		Diagonal	Max Tension	6	4.12	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	4	-4.52	0.00	0.00
			Max. Mx	14	-2.96	0.08	0.00
			Max. My	4	-2.87	0.00	0.00
			Max. Vy	14	-0.06	0.00	0.00
			Max. Vx	4	-0.00	0.00	0.00
T21	243.75 - 237.5	Leg	Max Tension	6	9.57	-0.73	-0.35
			Max. Compression	4	-108.85	-0.37	0.16
			Max. Mx	11	-106.44	-1.99	-0.03
			Max. My	8	-40.13	-0.00	1.97
			Max. Vy	5	-2.25	-0.81	0.01
			Max. Vx	2	2.20	-0.01	0.77
		Diagonal	Max Tension	13	11.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-5.86	0.00	0.00
			Max. Mx	14	-2.98	0.07	0.00
			Max. My	4	-3.79	0.00	0.00
			Max. Vy	14	-0.06	0.00	0.00
			Max. Vx	4	-0.00	0.00	0.00
T22	237.5 - 231.25	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	3	-96.52	-0.06	-0.07
			Max. Mx	11	-95.48	0.40	-0.01
			Max. My	8	-51.47	0.03	-0.43
			Max. Vy	5	-0.13	-0.40	-0.01
			Max. Vx	13	0.14	0.22	0.39
		Diagonal	Max Tension	13	14.29	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	13	-7.94	0.00	0.00
			Max. Mx	14	-2.87	0.07	0.00
			Max. My	12	-6.37	0.00	0.00
			Max. Vy	14	-0.06	0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
T23	231.25 - 225	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-92.77	0.11	0.07
			Max. Mx	12	-64.90	0.62	0.26
			Max. My	8	-64.89	0.09	-0.68
			Max. Vy	11	-0.15	0.53	-0.02
			Max. Vx	13	-0.16	0.30	0.50
		Diagonal	Max Tension	13	15.23	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	13	-9.17	0.00	0.00
			Max. Mx	18	-3.55	0.07	0.00
			Max. My	12	-7.92	0.00	0.00
			Max. Vy	18	0.06	0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
T24	225 - 218.75	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	24	-69.90	0.09	-0.02
			Max. Mx	12	-45.17	0.61	0.26
			Max. My	8	-45.08	0.09	-0.68
			Max. Vy	11	0.48	0.60	0.01
			Max. Vx	8	-0.50	0.09	-0.68
		Diagonal	Max Tension	1	0.00	0.00	0.00
			Max. Compression	7	-15.07	0.00	0.00
			Max. Mx	11	-3.55	-0.09	-0.01
			Max. My	12	-14.01	0.02	0.03
			Max. Vy	23	0.05	-0.09	0.01
			Max. Vx	12	0.01	0.00	0.00
		Top Girt	Max Tension	12	16.80	0.00	0.00
			Max. Compression	2	-7.16	0.00	0.00
			Max. Mx	21	3.30	0.07	0.00
			Max. My	12	-4.99	0.00	-0.00
			Max. Vy	21	0.06	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	12	0.00	0.00	0.00
		Guy A	Bottom Tension	8	23.40		
			Top Tension	8	23.66		
			Top Cable Vert	8	17.28		
			Top Cable Norm	8	16.16		
			Top Cable Tan	8	0.01		
			Bot Cable Vert	8	-16.55		
			Bot Cable Norm	8	16.54		
			Bot Cable Tan	8	0.01		
		Guy B	Bottom Tension	12	23.90		
			Top Tension	12	24.15		
			Top Cable Vert	12	17.59		
			Top Cable Norm	12	16.56		
			Top Cable Tan	12	0.01		
			Bot Cable Vert	12	-16.87		
			Bot Cable Norm	12	16.93		
			Bot Cable Tan	12	0.01		
		Guy C	Bottom Tension	5	23.70		
			Top Tension	5	23.97		
			Top Cable Vert	5	17.56		
			Top Cable Norm	5	16.31		
			Top Cable Tan	5	0.11		
			Bot Cable Vert	5	-16.83		
			Bot Cable Norm	5	16.68		
			Bot Cable Tan	5	0.28		
		Torque Arm Top	Max Tension	9	22.89	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	14	12.09	0.13	0.00
			Max. My	12	5.74	0.00	-0.00
			Max. Vy	14	-0.08	0.00	0.00
			Max. Vx	12	0.00	0.00	0.00
		Torque Arm Bottom	Max Tension	1	0.00	0.00	0.00
			Max. Compression	5	-24.50	0.00	0.00
			Max. Mx	15	-14.49	0.18	0.00
			Max. My	12	-24.03	0.00	0.00
			Max. Vy	15	-0.08	0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
T25	218.75 - 212.5	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-116.94	-0.05	-0.02
			Max. Mx	12	-108.44	0.42	-0.08
			Max. My	7	-98.58	-0.15	-0.36
			Max. Vy	5	-0.16	-0.42	-0.14
			Max. Vx	2	0.13	-0.01	0.33
		Diagonal	Max Tension	5	6.91	0.00	0.00
		Top Girt	Max Tension	15	6.01	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	18	5.83	0.07	0.00
			Max. My	12	3.47	0.00	0.00
			Max. Vy	14	-0.06	0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
T26	212.5 - 206.25	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	5	-119.58	0.06	0.04
			Max. Mx	5	-119.34	0.23	0.04
			Max. My	2	-114.95	0.03	-0.21
			Max. Vy	5	0.08	0.06	0.04
			Max. Vx	13	-0.07	-0.03	-0.04
		Diagonal	Max Tension	5	5.21	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	5	-3.82	0.00	0.00
			Max. Mx	25	-0.81	0.03	0.00
			Max. My	12	-3.43	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	25	0.03	0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
T27	206.25 - 200	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	5	-121.93	0.07	-0.04
			Max. Mx	5	-121.93	0.16	-0.04
			Max. My	2	-116.61	0.01	-0.16
			Max. Vy	5	0.07	0.01	0.03
			Max. Vx	13	0.06	-0.03	-0.04
		Diagonal	Max Tension	12	3.18	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	6	-2.70	0.00	0.00
			Max. Mx	14	-0.91	0.03	0.00
			Max. My	12	-2.43	0.00	0.00
			Max. Vy	14	-0.03	0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
T28	200 - 175	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-123.26	-0.05	-0.05
			Max. Mx	6	-112.29	0.54	0.33
			Max. My	2	-112.50	-0.16	-0.73
			Max. Vy	6	-0.58	-0.22	-0.05
			Max. Vx	8	-0.64	0.06	-0.14
		Diagonal	Max Tension	3	6.99	0.00	0.00
		Horizontal	Max Tension	25	2.13	0.00	0.00
			Max. Compression	13	-3.57	0.00	0.00
			Max. Mx	14	1.80	0.03	0.00
			Max. My	6	2.04	0.00	-0.00
			Max. Vy	14	-0.03	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
		Secondary Horizontal	Max Tension	25	2.13	0.00	0.00
			Max. Compression	25	-2.13	0.00	0.00
			Max. Mx	14	1.80	0.03	0.00
			Max. My	6	2.04	0.00	-0.00
			Max. Vy	14	-0.03	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-2.31	0.00	0.00
			Max. Mx	14	-0.87	0.03	0.00
			Max. My	6	-1.94	0.00	-0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
T29	175 - 168.75	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-120.66	-0.09	-0.05
			Max. Mx	11	-47.56	0.48	0.05
			Max. My	8	-71.27	-0.02	-0.54
			Max. Vy	5	-0.16	-0.47	0.06
			Max. Vx	8	-0.16	-0.02	-0.54
		Diagonal	Max Tension	3	9.40	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	3	-5.02	0.00	0.00
			Max. Mx	14	-1.50	0.03	0.00
			Max. My	6	-4.31	0.00	-0.00
			Max. Vy	14	-0.03	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
T30	168.75 - 162.5	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	24	-118.86	0.15	0.02
			Max. Mx	11	-96.42	0.53	-0.02
			Max. My	8	-87.67	-0.02	-0.54
			Max. Vy	5	0.18	-0.52	-0.02
			Max. Vx	8	0.16	-0.02	-0.54
		Diagonal	Max Tension	5	10.35	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	3	-6.17	0.00	0.00
			Max. Mx	14	-2.58	0.03	0.00
			Max. My	6	-5.02	0.00	-0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
T31	162.5 - 156.25	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	24	-126.84	-0.04	-0.01
			Max. Mx	11	-106.14	0.53	-0.02
			Max. My	8	-97.42	-0.02	-0.54
			Max. Vy	5	-0.18	-0.52	-0.02
			Max. Vx	8	-0.16	-0.02	-0.54
		Diagonal	Max Tension	7	4.93	0.00	0.00
		Top Girt	Max Tension	6	7.41	0.00	0.00
			Max. Compression	4	-2.02	0.00	0.00
			Max. Mx	14	2.33	0.07	0.00
			Max. My	6	0.50	0.00	-0.00
			Max. Vy	14	0.06	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
		Guy A	Bottom Tension	9	24.85		
			Top Tension	9	25.04		
			Top Cable Vert	9	16.30		
			Top Cable Norm	9	19.01		
			Top Cable Tan	9	0.05		
			Bot Cable Vert	9	-15.76		
			Bot Cable Norm	9	19.21		
			Bot Cable Tan	9	0.24		
		Guy B	Bottom Tension	11	24.98		
			Top Tension	11	25.17		
			Top Cable Vert	11	16.43		
			Top Cable Norm	11	19.06		
			Top Cable Tan	11	0.04		
			Bot Cable Vert	11	-15.90		
			Bot Cable Norm	11	19.27		
			Bot Cable Tan	11	0.24		
		Guy C	Bottom Tension	5	24.88		
			Top Tension	5	25.07		
			Top Cable Vert	5	16.30		
			Top Cable Norm	5	19.05		
			Top Cable Tan	5	0.05		
			Bot Cable Vert	5	-15.74		
			Bot Cable Norm	5	19.26		
			Bot Cable Tan	5	0.24		
T32	156.25 - 150	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-128.78	0.03	0.01
			Max. Mx	5	-111.87	0.22	0.02
			Max. My	2	-112.98	-0.03	-0.21
			Max. Vy	5	0.10	-0.04	-0.03
			Max. Vx	2	-0.07	-0.00	0.03
		Diagonal	Max Tension	7	3.78	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	7	-2.72	0.00	0.00
			Max. Mx	14	-1.01	0.03	0.00
			Max. My	6	-2.22	0.00	-0.00
			Max. Vy	14	-0.03	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
T33	150 - 125	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	17	-131.56	0.02	-0.02
			Max. Mx	11	-67.44	0.27	0.14
			Max. My	13	-102.99	0.16	0.32
			Max. Vy	11	0.12	0.04	-0.02

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	3	0.15	-0.02	0.02
		Diagonal	Max Tension	6	5.89	0.00	0.00
		Horizontal	Max Tension	17	2.28	0.00	0.00
			Max. Compression	6	-3.39	0.00	0.00
			Max. Mx	14	2.05	0.03	0.00
			Max. My	6	2.00	0.00	-0.00
			Max. Vy	14	0.02	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-2.06	0.00	0.00
			Max. Mx	14	-0.91	0.03	0.00
			Max. My	6	-1.88	0.00	-0.00
			Max. Vy	14	0.02	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
T34	125 - 100	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	16	-130.90	0.00	-0.02
			Max. Mx	11	-81.10	0.63	-0.16
			Max. My	2	-96.05	0.04	0.67
			Max. Vy	5	0.18	-0.63	-0.16
			Max. Vx	2	-0.18	0.04	0.67
		Diagonal	Max Tension	5	13.18	0.00	0.00
		Horizontal	Max Tension	16	2.27	0.00	0.00
			Max. Compression	5	-7.74	0.00	0.00
			Max. Mx	14	2.17	0.03	0.00
			Max. My	6	1.99	0.00	0.00
			Max. Vy	14	-0.02	0.00	0.00
			Max. Vx	6	-0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	6	-4.42	0.00	0.00
			Max. Mx	14	-1.30	0.03	0.00
			Max. My	6	-4.42	0.00	0.00
			Max. Vy	14	-0.02	0.00	0.00
			Max. Vx	6	-0.00	0.00	0.00
T35	100 - 93.75	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-107.05	0.05	0.04
			Max. Mx	11	-53.79	0.63	-0.16
			Max. My	2	-69.71	0.04	0.67
			Max. Vy	5	-0.42	-0.63	-0.16
			Max. Vx	2	0.44	0.04	0.67
		Diagonal	Max Tension	1	0.00	0.00	0.00
			Max. Compression	21	-15.50	0.00	0.00
			Max. Mx	25	-14.34	-0.10	0.00
			Max. My	11	-14.15	0.01	0.02
			Max. Vy	25	0.05	-0.10	0.00
			Max. Vx	11	0.01	0.00	0.00
		Top Girt	Max Tension	12	15.82	0.00	0.00
			Max. Compression	10	-5.28	0.00	0.00
			Max. Mx	14	8.26	0.07	0.00
			Max. My	6	10.81	0.00	-0.00
			Max. Vy	14	0.06	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
		Guy A	Bottom Tension	7	14.00		
			Top Tension	7	14.07		
			Top Cable Vert	7	6.68		
			Top Cable Norm	7	12.39		
			Top Cable Tan	7	0.04		
			Bot Cable Vert	7	-6.43		
			Bot Cable Norm	7	12.44		
			Bot Cable Tan	7	0.12		
		Guy B	Bottom Tension	13	14.06		
			Top Tension	13	14.13		

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Top Cable Vert	13	6.62		
			Top Cable Norm	13	12.48		
			Top Cable Tan	13	0.03		
			Bot Cable Vert	13	-6.38		
			Bot Cable Norm	13	12.53		
			Bot Cable Tan	13	0.12		
		Guy C	Bottom Tension	5	13.94		
			Top Tension	5	14.01		
			Top Cable Vert	5	6.71		
			Top Cable Norm	5	12.30		
			Top Cable Tan	5	0.03		
			Bot Cable Vert	5	-6.45		
			Bot Cable Norm	5	12.35		
			Bot Cable Tan	5	0.11		
		Torque Arm Top	Max Tension	11	14.99	0.00	0.00
			Max. Compression	11	-1.46	0.00	0.00
			Max. Mx	23	8.99	0.12	0.00
			Max. My	6	11.56	0.00	-0.00
			Max. Vy	23	-0.08	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
		Torque Arm Bottom	Max Tension	6	1.53	0.00	0.00
			Max. Compression	5	-11.42	0.00	0.00
			Max. Mx	22	-5.99	0.17	0.00
			Max. My	6	1.53	0.00	-0.00
			Max. Vy	22	-0.08	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
T36	93.75 - 87.5	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	15	-140.25	0.03	0.00
			Max. Mx	11	-97.06	0.38	-0.07
			Max. My	8	-86.43	0.01	-0.30
			Max. Vy	6	0.12	0.04	0.02
			Max. Vx	8	0.14	-0.03	-0.04
		Diagonal	Max Tension	11	6.37	0.00	0.00
		Top Girt	Max Tension	21	8.27	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	14	7.83	0.07	0.00
			Max. My	6	5.48	0.00	0.00
			Max. Vy	14	0.06	0.00	0.00
			Max. Vx	6	-0.00	0.00	0.00
T37	87.5 - 81.25	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	15	-141.11	-0.01	0.02
			Max. Mx	12	-100.44	0.12	0.06
			Max. My	7	-105.57	-0.02	-0.13
			Max. Vy	11	0.08	0.11	0.06
			Max. Vx	7	-0.08	-0.02	-0.13
		Diagonal	Max Tension	11	4.70	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	11	-3.45	0.00	0.00
			Max. Mx	14	-0.78	0.03	0.00
			Max. My	6	-3.05	0.00	0.00
			Max. Vy	14	-0.02	0.00	0.00
			Max. Vx	6	-0.00	0.00	0.00
T38	81.25 - 75	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	15	-142.42	0.00	0.01
			Max. Mx	5	-97.19	0.12	-0.01
			Max. My	7	-104.90	0.02	0.10
			Max. Vy	5	0.06	0.01	0.01
			Max. Vx	7	0.06	-0.01	-0.01
		Diagonal	Max Tension	12	3.11	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	11	-2.43	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	14	-0.45	0.03	0.00
			Max. My	6	-2.16	0.00	0.00
			Max. Vy	14	0.02	0.00	0.00
			Max. Vx	6	-0.00	0.00	0.00
T39	75 - 50	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-145.77	0.06	0.17
			Max. Mx	5	-99.35	-0.63	-0.11
			Max. My	2	-106.67	-0.06	0.58
			Max. Vy	5	0.17	-0.63	-0.11
			Max. Vx	13	0.18	0.01	0.04
		Diagonal	Max Tension	3	4.80	0.00	0.00
		Horizontal	Max Tension	26	2.52	0.00	0.00
			Max. Compression	6	-2.72	0.00	0.00
			Max. Mx	14	2.41	0.03	0.00
			Max. My	6	1.94	0.00	0.00
			Max. Vy	14	0.02	0.00	0.00
			Max. Vx	6	-0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-1.54	0.00	0.00
			Max. Mx	14	-0.44	0.03	0.00
			Max. My	6	-1.47	0.00	0.00
			Max. Vy	14	0.02	0.00	0.00
			Max. Vx	6	-0.00	0.00	0.00
T40	50 - 25	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	15	-152.37	-0.01	-0.00
			Max. Mx	5	-106.17	-0.63	-0.11
			Max. My	2	-111.74	-0.06	0.58
			Max. Vy	5	-0.17	-0.63	-0.11
			Max. Vx	2	0.15	-0.06	0.58
		Diagonal	Max Tension	11	5.57	0.00	0.00
		Horizontal	Max Tension	15	2.64	0.00	0.00
			Max. Compression	11	-3.15	0.00	0.00
			Max. Mx	14	2.52	0.03	0.00
			Max. My	6	2.03	0.00	0.00
			Max. Vy	14	-0.02	0.00	0.00
			Max. Vx	6	-0.00	0.00	0.00
		Top Girt	Max Tension	6	4.71	0.00	0.00
			Max. Compression	4	-0.86	0.00	0.00
			Max. Mx	14	2.39	-0.04	0.00
			Max. My	6	0.38	0.00	-0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
		Guy A	Bottom Tension	9	13.04		
			Top Tension	9	13.07		
			Top Cable Vert	9	5.72		
			Top Cable Norm	9	11.75		
			Top Cable Tan	9	0.00		
			Bot Cable Vert	9	-5.59		
			Bot Cable Norm	9	11.77		
			Bot Cable Tan	9	0.06		
		Guy B	Bottom Tension	11	12.78		
			Top Tension	11	12.81		
			Top Cable Vert	11	5.19		
			Top Cable Norm	11	11.71		
			Top Cable Tan	11	0.00		
			Bot Cable Vert	11	-5.07		
			Bot Cable Norm	11	11.73		
			Bot Cable Tan	11	0.07		
		Guy C	Bottom Tension	5	13.20		
			Top Tension	5	13.24		
			Top Cable Vert	5	5.93		

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Top Cable Norm	5	11.83		
			Top Cable Tan	5	0.00		
			Bot Cable Vert	5	-5.80		
			Bot Cable Norm	5	11.86		
			Bot Cable Tan	5	0.07		
T41	25 - 0	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	16	-153.91	0.47	-0.31
			Max. Mx	18	-153.59	-1.84	0.98
			Max. My	21	-152.59	-0.03	-1.99
			Max. Vy	18	0.38	-1.84	0.98
			Max. Vx	21	0.41	-0.03	-1.99
		Diagonal	Max Tension	3	3.26	0.00	0.00
		Horizontal	Max Tension	16	2.67	0.00	0.00
			Max. Compression	16	-2.67	0.00	0.00
			Max. Mx	17	2.63	0.02	0.00
			Max. My	6	2.04	0.00	0.00
			Max. Vy	17	-0.02	0.00	0.00
			Max. Vx	6	-0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-1.49	0.00	0.00
			Max. Mx	14	-0.20	0.02	0.00
			Max. My	6	-1.12	0.00	0.00
			Max. Vy	14	-0.02	0.00	0.00
			Max. Vx	6	-0.00	0.00	0.00
		Base Beam	Max Tension	6	0.05	-321.19	-0.01
			Max. Compression	4	-2.94	1.55	0.00
			Max. Mx	15	-152.56	-438.35	1.26
			Max. My	2	-111.80	-321.13	2.29
			Max. Vy	15	-152.56	-438.35	1.26
			Max. Vx	2	0.79	-321.13	2.29

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Guy C @ 251.45 ft Elev -12.2 ft Azimuth 240 deg	Max. Vert	10	-6.59	-3.05	1.76
	Max. H_x	10	-6.59	-3.05	1.76
	Max. H_z	3	-34.78	-21.86	13.63
	Min. Vert	4	-36.28	-23.30	13.47
	Min. H_x	4	-36.28	-23.30	13.47
	Min. H_z	10	-6.59	-3.05	1.76
Guy B @ 247.51 ft Elev 1.81 ft Azimuth 120 deg	Max. Vert	6	-6.06	2.86	1.65
	Max. H_x	12	-36.09	23.65	13.67
	Max. H_z	13	-34.46	22.13	13.76
	Min. Vert	12	-36.09	23.65	13.67
	Min. H_x	6	-6.06	2.86	1.65
	Min. H_z	6	-6.06	2.86	1.65
Guy A @ 247.15 ft Elev -5.8 ft	Max. Vert	2	-6.44	-0.00	-3.43

Location	*Condition*	*Gov. Load Comb.*	*Vertical K*	*Horizontal, X K*	*Horizontal, Z K*
Azimuth 0 deg					
	Max. H_x	11	-22.72	1.85	-16.04
	Max. H_z	2	-6.44	-0.00	-3.43
	Min. Vert	8	-36.56	0.00	-27.08
	Min. H_x	5	-22.54	-1.86	-15.92
	Min. H_z	8	-36.56	0.00	-27.08
Guy C @ 227.42 ft	Max. Vert	10	-5.63	-2.80	1.61
Elev -10.07 ft					
Azimuth 240 deg					
	Max. H_x	10	-5.63	-2.80	1.61
	Max. H_z	3	-72.32	-53.67	32.57
	Min. Vert	4	-74.18	-55.73	32.16
	Min. H_x	4	-74.18	-55.73	32.16
	Min. H_z	10	-5.63	-2.80	1.61
Guy B @ 219.43 ft	Max. Vert	6	-5.28	2.60	1.50
Elev 1.23 ft					
Azimuth 120 deg					
	Max. H_x	12	-74.23	56.07	32.35
	Max. H_z	13	-72.00	53.74	32.58
	Min. Vert	12	-74.23	56.07	32.35
	Min. H_x	6	-5.28	2.60	1.50
	Min. H_z	6	-5.28	2.60	1.50
Guy A @ 224.79 ft	Max. Vert	2	-5.47	-0.00	-3.14
Elev -5.41 ft					
Azimuth 0 deg					
	Max. H_x	11	-39.66	2.75	-33.60
	Max. H_z	2	-5.47	-0.00	-3.14
	Min. Vert	8	-74.14	0.01	-64.60
	Min. H_x	5	-39.30	-2.76	-33.29
	Min. H_z	8	-74.14	0.01	-64.60
Guy C @ 206.73 ft	Max. Vert	10	-0.22	-0.27	0.15
Elev -8.98 ft					
Azimuth 240 deg					
	Max. H_x	10	-0.22	-0.27	0.15
	Max. H_z	3	-28.24	-37.21	22.00
	Min. Vert	5	-28.26	-37.67	21.19
	Min. H_x	5	-28.26	-37.67	21.19
	Min. H_z	10	-0.22	-0.27	0.15
Guy B @ 193.65 ft	Max. Vert	6	-0.21	0.26	0.15
Elev 0.72 ft					
Azimuth 120 deg					
	Max. H_x	11	-28.24	37.91	21.33
	Max. H_z	13	-28.12	37.32	22.03
	Min. Vert	11	-28.24	37.91	21.33
	Min. H_x	6	-0.21	0.26	0.15
	Min. H_z	6	-0.21	0.26	0.15
Guy A @ 201.41 ft	Max. Vert	2	-0.22	-0.00	-0.30
Elev -4.96 ft					
Azimuth 0 deg					
	Max. H_x	11	-14.85	0.92	-22.91
	Max. H_z	2	-0.22	-0.00	-0.30
	Min. Vert	9	-28.22	0.44	-43.32
	Min. H_x	5	-14.71	-0.93	-22.69
	Min. H_z	9	-28.22	0.44	-43.32
Guy C @ 114.41	Max. Vert	10	-0.03	-0.09	0.05

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
ft Elev -5.4 ft Azimuth 240 deg					
	Max. H_x	10	-0.03	-0.09	0.05
	Max. H_z	3	-5.80	-10.23	5.98
	Min. Vert	5	-5.80	-10.30	5.87
	Min. H_x	5	-5.80	-10.30	5.87
	Min. H_z	10	-0.03	-0.09	0.05
Guy B @ 115.63 ft Elev 0.5 ft Azimuth 120 deg	Max. Vert	6	-0.03	0.11	0.06
	Max. H_x	11	-5.07	10.19	5.81
	Max. H_z	13	-5.04	10.08	5.89
	Min. Vert	11	-5.07	10.19	5.81
	Min. H_x	6	-0.03	0.11	0.06
	Min. H_z	6	-0.03	0.11	0.06
Guy A @ 114.04 ft Elev -3.6 ft Azimuth 0 deg	Max. Vert	2	-0.03	-0.00	-0.11
	Max. H_x	11	-2.96	0.13	-6.23
	Max. H_z	2	-0.03	-0.00	-0.11
	Min. Vert	9	-5.59	0.06	-11.77
	Min. H_x	5	-2.94	-0.13	-6.19
	Min. H_z	9	-5.59	0.06	-11.77
Mast	Max. Vert	23	457.43	-0.12	0.33
	Max. H_x	12	303.26	1.01	0.71
	Max. H_z	11	323.34	0.54	0.72
	Max. M_x	1	0.00	-0.03	0.05
	Max. M_z	1	0.00	-0.03	0.05
	Max. Torsion	1	0.00	-0.03	0.05
	Min. Vert	1	198.50	-0.03	0.05
	Min. H_x	4	301.41	-1.04	0.62
	Min. H_z	8	302.32	-0.10	-1.15
	Min. M_x	1	0.00	-0.03	0.05
	Min. M_z	1	0.00	-0.03	0.05
	Min. Torsion	1	0.00	-0.03	0.05

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	198.50	0.03	-0.05	0.00	0.00	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice+1.0 Guy	335.03	-0.03	-0.09	0.00	0.00	0.00
1.2 Dead+1.6 Wind 30 deg - No Ice+1.0 Guy	322.58	0.82	-0.18	0.00	0.00	0.00
1.2 Dead+1.6 Wind 60 deg - No Ice+1.0 Guy	301.41	1.04	-0.62	0.00	0.00	0.00
1.2 Dead+1.6 Wind 90 deg - No Ice+1.0 Guy	322.64	0.50	-0.68	0.00	0.00	0.00
1.2 Dead+1.6 Wind 120 deg - No Ice+1.0 Guy	335.69	-0.03	-0.04	0.00	0.00	0.00
1.2 Dead+1.6 Wind 150 deg - No Ice+1.0 Guy	322.65	-0.28	0.75	0.00	0.00	0.00

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.6 Wind 180 deg - No Ice+1.0 Guy	302.32	0.10	1.15	0.00	0.00	0.00
1.2 Dead+1.6 Wind 210 deg - No Ice+1.0 Guy	323.30	0.35	0.73	0.00	0.00	0.00
1.2 Dead+1.6 Wind 240 deg - No Ice+1.0 Guy	335.37	-0.00	-0.05	0.00	0.00	0.00
1.2 Dead+1.6 Wind 270 deg - No Ice+1.0 Guy	323.34	-0.54	-0.72	0.00	0.00	0.00
1.2 Dead+1.6 Wind 300 deg - No Ice+1.0 Guy	303.26	-1.01	-0.71	0.00	0.00	0.00
1.2 Dead+1.6 Wind 330 deg - No Ice+1.0 Guy	322.62	-0.85	-0.25	0.00	0.00	0.00
1.2 Dead+1.0 Ice+1.0 Temp+Guy	447.60	0.20	-0.38	0.00	0.00	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy	457.39	0.18	-0.48	0.00	0.00	0.00
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy	456.28	0.13	-0.46	0.00	0.00	0.00
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy	455.69	0.17	-0.34	0.00	0.00	0.00
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy	456.28	0.25	-0.25	0.00	0.00	0.00
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy	457.31	0.29	-0.30	0.00	0.00	0.00
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy	456.62	0.33	-0.35	0.00	0.00	0.00
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy	456.12	0.23	-0.37	0.00	0.00	0.00
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy	456.53	0.11	-0.36	0.00	0.00	0.00
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy	457.43	0.12	-0.33	0.00	0.00	0.00
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy	456.70	0.13	-0.30	0.00	0.00	0.00
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy	456.34	0.19	-0.40	0.00	0.00	0.00
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy	456.79	0.22	-0.50	0.00	0.00	0.00
Dead+Wind 0 deg - Service+Guy	201.33	0.03	-0.56	0.00	0.00	0.00
Dead+Wind 30 deg - Service+Guy	201.14	0.26	-0.49	0.00	0.00	0.00
Dead+Wind 60 deg - Service+Guy	201.14	0.44	-0.28	0.00	0.00	0.00
Dead+Wind 90 deg - Service+Guy	201.02	0.52	-0.02	0.00	0.00	0.00
Dead+Wind 120 deg - Service+Guy	201.07	0.47	0.21	0.00	0.00	0.00
Dead+Wind 150 deg - Service+Guy	201.20	0.30	0.37	0.00	0.00	0.00
Dead+Wind 180 deg - Service+Guy	201.41	0.04	0.43	0.00	0.00	0.00
Dead+Wind 210 deg - Service+Guy	201.39	-0.23	0.37	0.00	0.00	0.00
Dead+Wind 240 deg - Service+Guy	201.50	-0.40	0.20	0.00	0.00	0.00
Dead+Wind 270 deg - Service+Guy	201.62	-0.46	-0.03	0.00	0.00	0.00
Dead+Wind 300 deg - Service+Guy	201.77	-0.38	-0.29	0.00	0.00	0.00
Dead+Wind 330 deg -	201.56	-0.20	-0.49	0.00	0.00	0.00

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Service+Guy						

Solution Summary

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
1	0.00	-72.18	0.00	0.01	72.18	0.00	0.008%
2	-0.12	-85.17	-123.15	0.12	85.17	123.15	0.003%
3	61.01	-84.29	-105.67	-61.01	84.29	105.67	0.002%
4	105.51	-83.39	-60.78	-105.52	83.39	60.78	0.001%
5	122.24	-84.35	0.12	-122.23	84.35	-0.12	0.003%
6	106.84	-85.28	61.69	-106.84	85.28	-61.69	0.004%
7	61.23	-84.30	105.82	-61.23	84.30	-105.82	0.003%
8	0.12	-83.30	121.79	-0.13	83.30	-121.79	0.002%
9	-61.01	-84.19	105.67	61.00	84.19	-105.67	0.002%
10	-106.69	-85.09	61.46	106.69	85.09	-61.46	0.003%
11	-122.24	-84.13	-0.12	122.24	84.13	0.13	0.002%
12	-105.66	-83.20	-61.01	105.66	83.20	61.01	0.002%
13	-61.23	-84.18	-105.82	61.23	84.18	105.82	0.002%
14	0.00	-258.22	0.00	-0.00	258.22	0.00	0.000%
15	-0.01	-258.95	-44.64	0.01	258.95	44.64	0.000%
16	22.28	-258.25	-38.57	-22.28	258.25	38.56	0.001%
17	38.60	-257.55	-22.26	-38.60	257.55	22.26	0.000%
18	44.59	-258.30	0.01	-44.59	258.30	-0.01	0.001%
19	38.71	-259.02	22.34	-38.71	259.02	-22.33	0.000%
20	22.31	-258.26	38.59	-22.31	258.26	-38.59	0.001%
21	0.01	-257.50	44.54	-0.01	257.50	-44.54	0.000%
22	-22.28	-258.19	38.57	22.28	258.19	-38.56	0.001%
23	-38.68	-258.89	22.31	38.68	258.89	-22.31	0.000%
24	-44.59	-258.15	-0.01	44.58	258.15	0.01	0.001%
25	-38.62	-257.43	-22.29	38.62	257.43	22.28	0.001%
26	-22.31	-258.18	-38.59	22.31	258.18	38.59	0.001%
27	-0.03	-72.37	-25.13	0.03	72.37	25.13	0.002%
28	12.45	-72.19	-21.57	-12.45	72.19	21.56	0.001%
29	21.53	-72.01	-12.40	-21.53	72.01	12.40	0.004%
30	24.95	-72.20	0.03	-24.95	72.20	-0.02	0.001%
31	21.80	-72.39	12.59	-21.80	72.39	-12.59	0.001%
32	12.50	-72.19	21.60	-12.50	72.19	-21.60	0.001%
33	0.03	-71.99	24.86	-0.03	71.99	-24.85	0.004%
34	-12.45	-72.17	21.57	12.45	72.17	-21.57	0.001%
35	-21.77	-72.35	12.54	21.77	72.35	-12.54	0.002%
36	-24.95	-72.16	-0.03	24.95	72.16	0.03	0.001%
37	-21.56	-71.97	-12.45	21.56	71.97	12.45	0.004%
38	-12.50	-72.17	-21.60	12.50	72.17	21.60	0.001%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	7	0.00000001	0.00004590
2	Yes	14	0.00005098	0.00008062
3	Yes	14	0.00000001	0.00005959

4	Yes	10	0.00000001	0.00007122
5	Yes	14	0.00004628	0.00006777
6	Yes	14	0.00005866	0.00008966
7	Yes	14	0.00004799	0.00006858
8	Yes	11	0.00000001	0.00006325
9	Yes	14	0.00000001	0.00005365
10	Yes	14	0.00004601	0.00007382
11	Yes	14	0.00000001	0.00005366
12	Yes	11	0.00000001	0.00004883
13	Yes	14	0.00004178	0.00005995
14	Yes	9	0.00000001	0.00003132
15	Yes	12	0.00000001	0.00004022
16	Yes	11	0.00000001	0.00008966
17	Yes	11	0.00000001	0.00001977
18	Yes	11	0.00000001	0.00008144
19	Yes	12	0.00000001	0.00003826
20	Yes	11	0.00000001	0.00007810
21	Yes	11	0.00000001	0.00002038
22	Yes	11	0.00000001	0.00009834
23	Yes	12	0.00000001	0.00004374
24	Yes	11	0.00000001	0.00009629
25	Yes	10	0.00000001	0.00005957
26	Yes	11	0.00000001	0.00008419
27	Yes	9	0.00000001	0.00005798
28	Yes	9	0.00000001	0.00004174
29	Yes	8	0.00000001	0.00005858
30	Yes	9	0.00000001	0.00003814
31	Yes	9	0.00000001	0.00005444
32	Yes	9	0.00000001	0.00003740
33	Yes	8	0.00000001	0.00005474
34	Yes	9	0.00000001	0.00004363
35	Yes	9	0.00000001	0.00006033
36	Yes	9	0.00000001	0.00004288
37	Yes	8	0.00000001	0.00005295
38	Yes	9	0.00000001	0.00004025

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	368.75 - 362.5	1.690	33	0.0595	0.0973
T2	362.5 - 356.25	1.741	33	0.0597	0.0974
T3	356.25 - 350	1.793	33	0.0601	0.0977
T4	350 - 343.75	1.845	33	0.0612	0.0952
T5	343.75 - 337.5	1.902	33	0.0622	0.0945
T6	337.5 - 331.25	1.959	33	0.0609	0.0807
T7	331.25 - 325	2.012	33	0.0594	0.0658
T8	325 - 318.75	2.063	33	0.0577	0.0516
T9	318.75 - 312.5	2.111	33	0.0562	0.0427
T10	312.5 - 306.25	2.156	33	0.0548	0.0340
T11	306.25 - 300	2.202	29	0.0535	0.0253
T12	300 - 293.75	2.238	29	0.0528	0.0165
T13	293.75 - 287.5	2.288	29	0.0520	0.0162
T14	287.5 - 281.25	2.339	29	0.0481	0.0161
T15	281.25 - 275	2.384	29	0.0433	0.0199
T16	275 - 268.75	2.422	29	0.0380	0.0228
T17	268.75 - 262.5	2.450	29	0.0322	0.0249
T18	262.5 - 256.25	2.470	29	0.0261	0.0292
T19	256.25 - 250	2.480	29	0.0199	0.0334

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T20	250 - 243.75	2.480	29	0.0138	0.0383
T21	243.75 - 237.5	2.473	29	0.0091	0.0413
T22	237.5 - 231.25	2.448	29	0.0127	0.0432
T23	231.25 - 225	2.414	29	0.0154	0.0443
T24	225 - 218.75	2.384	29	0.0159	0.0444
T25	218.75 - 212.5	2.368	29	0.0160	0.0447
T26	212.5 - 206.25	2.355	29	0.0196	0.0574
T27	206.25 - 200	2.333	29	0.0239	0.0693
T28	200 - 175	2.303	29	0.0287	0.0800
T29	175 - 168.75	2.086	29	0.0459	0.1115
T30	168.75 - 162.5	2.020	29	0.0477	0.1106
T31	162.5 - 156.25	1.952	29	0.0483	0.1095
T32	156.25 - 150	1.897	29	0.0495	0.1062
T33	150 - 125	1.838	29	0.0513	0.1017
T34	125 - 100	1.540	29	0.0598	0.0686
T35	100 - 93.75	1.204	29	0.0588	0.0525
T36	93.75 - 87.5	1.130	29	0.0565	0.0526
T37	87.5 - 81.25	1.062	35	0.0560	0.0599
T38	81.25 - 75	0.994	35	0.0559	0.0707
T39	75 - 50	0.923	35	0.0563	0.0805
T40	50 - 25	0.610	29	0.0569	0.1072
T41	25 - 0	0.329	29	0.0589	0.1217

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
370.00	Search Antenna	33	1.690	0.0595	0.0973	262047
355.00	8' Dish	33	1.803	0.0602	0.0972	475201
350.00	Guy	33	1.845	0.0612	0.0952	61120
325.00	10' x 3" Dia Omni	33	2.063	0.0577	0.0516	133144
305.00	QUAD656C0000	29	2.209	0.0533	0.0232	51820
300.00	Guy	29	2.238	0.0528	0.0165	25410
250.00	20' x 3" Dia Omni	29	2.480	0.0138	0.0383	60191
242.50	HPA-65R-BUU-H6	29	2.469	0.0094	0.0417	24939
225.00	Guy	29	2.384	0.0159	0.0444	30906
200.00	Yagi	29	2.303	0.0287	0.0800	37079
180.00	(4) Yagi	29	2.137	0.0434	0.1092	97643
162.50	Guy	29	1.952	0.0483	0.1095	28648
148.00	Yagi	29	1.817	0.0520	0.0998	66040
140.00	Yagi	29	1.729	0.0549	0.0897	75684
125.00	Yagi	29	1.540	0.0598	0.0686	102628
100.00	Guy	29	1.204	0.0588	0.0525	66014
88.00	X-Style	35	1.068	0.0560	0.0591	583874
62.00	Yagi	35	0.760	0.0567	0.0965	Inf
50.00	Guy	29	0.610	0.0569	0.1072	82804
40.00	Yagi	29	0.497	0.0575	0.1137	304188

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	368.75 - 362.5	18.161	6	0.3273	0.6495
T2	362.5 - 356.25	18.588	6	0.3275	0.6498
T3	356.25 - 350	19.017	6	0.3284	0.6514
T4	350 - 343.75	19.443	6	0.3339	0.6392
T5	343.75 - 337.5	19.901	6	0.3379	0.6357
T6	337.5 - 331.25	20.361	6	0.3296	0.5540
T7	331.25 - 325	20.805	6	0.3193	0.4660
T8	325 - 318.75	21.229	6	0.3075	0.3845
T9	318.75 - 312.5	21.630	6	0.2967	0.3334
T10	312.5 - 306.25	22.011	6	0.2855	0.2834
T11	306.25 - 300	22.378	6	0.2743	0.2328
T12	300 - 293.75	22.686	6	0.2656	0.1801
T13	293.75 - 287.5	23.053	6	0.2561	0.1782
T14	287.5 - 281.25	23.425	6	0.2302	0.1172
T15	281.25 - 275	23.777	6	0.1997	0.1163
T16	275 - 268.75	24.070	6	0.1802	0.1445
T17	268.75 - 262.5	24.297	6	0.1672	0.1827
T18	262.5 - 256.25	24.460	6	0.1535	0.2128
T19	256.25 - 250	24.559	6	0.1396	0.2382
T20	250 - 243.75	24.592	6	0.1273	0.2530
T21	243.75 - 237.5	24.566	6	0.1282	0.2653
T22	237.5 - 231.25	24.416	6	0.1512	0.2831
T23	231.25 - 225	24.180	6	0.1660	0.3000
T24	225 - 218.75	23.977	6	0.1696	0.3045
T25	218.75 - 212.5	23.822	6	0.1704	0.3060
T26	212.5 - 206.25	23.679	6	0.1894	0.4103
T27	206.25 - 200	23.465	6	0.2206	0.5051
T28	200 - 175	23.170	6	0.2622	0.5715
T29	175 - 168.75	21.204	6	0.4154	0.7941
T30	168.75 - 162.5	20.601	6	0.4386	0.7835
T31	162.5 - 156.25	19.970	6	0.4551	0.7717
T32	156.25 - 150	19.400	6	0.4744	0.7494
T33	150 - 125	18.789	6	0.4958	0.7179
T34	125 - 100	15.857	6	0.5781	0.5247
T35	100 - 93.75	12.562	6	0.5934	0.3842
T36	93.75 - 87.5	11.800	6	0.5846	0.3848
T37	87.5 - 81.25	11.071	6	0.5845	0.4365
T38	81.25 - 75	10.340	6	0.5867	0.5159
T39	75 - 50	9.584	6	0.5903	0.5746
T40	50 - 25	6.333	6	0.5964	0.7336
T41	25 - 0	3.329	6	0.6091	0.8597

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
370.00	Search Antenna	6	18.161	0.3273	0.6495	12144
355.00	8' Dish	6	19.101	0.3291	0.6490	11653
350.00	Guy	6	19.443	0.3339	0.6392	10699
325.00	10' x 3" Dia Omni	6	21.229	0.3075	0.3845	10558
305.00	QUAD656C0000	6	22.442	0.2723	0.2203	8962
300.00	Guy	6	22.686	0.2656	0.1801	4671
250.00	20' x 3" Dia Omni	6	24.592	0.1273	0.2530	8867
242.50	HPA-65R-BUU-H6	6	24.546	0.1332	0.2666	3492
225.00	Guy	6	23.977	0.1696	0.3045	4954
200.00	Yagi	6	23.170	0.2622	0.5715	4876

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
180.00	(4) Yagi	6	21.665	0.3912	0.7779	13019
162.50	Guy	6	19.970	0.4551	0.7717	4505
148.00	Yagi	6	18.581	0.5029	0.7058	9187
140.00	Yagi	6	17.698	0.5317	0.6482	10602
125.00	Yagi	6	15.857	0.5781	0.5247	15151
100.00	Guy	6	12.562	0.5934	0.3842	10527
88.00	X-Style	6	11.129	0.5843	0.4307	37641
62.00	Yagi	6	7.896	0.5943	0.6657	78682
50.00	Guy	6	6.333	0.5964	0.7336	11670
40.00	Yagi	6	5.121	0.6006	0.7852	37375

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	368.75	Leg	A325N	0.7500	6	0.09	29.82	0.003 ✓	1	Bolt Tension
		Diagonal	A325N	0.5000	2	0.22	7.95	0.028 ✓	1	Bolt Shear
		Top Girt	A325N	0.6250	2	0.06	24.85	0.002 ✓	1	Bolt Shear
T2	362.5	Diagonal	A325N	0.5000	2	0.66	15.90	0.042 ✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	0.16	15.90	0.010 ✓	1	Bolt Shear
T3	356.25	Diagonal	A325N	0.5000	2	2.89	15.90	0.182 ✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	0.67	15.90	0.042 ✓	1	Bolt Shear
T4	350	Leg	A325N	0.7500	6	0.88	29.82	0.029 ✓	1	Bolt Tension
		Diagonal	A325N	0.6250	2	2.06	12.43	0.166 ✓	1	Bolt Shear
		Top Girt	A325N	0.6250	2	4.93	24.85	0.198 ✓	1	Bolt Shear
T5	343.75	Diagonal	A325N	0.5000	2	2.49	7.95	0.313 ✓	1	Bolt Shear
		Top Girt	A325N	0.6250	2	2.13	24.85	0.086 ✓	1	Bolt Shear
T6	337.5	Diagonal	A325N	0.5000	2	2.36	7.95	0.297 ✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	1.55	7.95	0.194 ✓	1	Bolt Shear
T7	331.25	Diagonal	A325N	0.5000	2	2.14	7.95	0.269 ✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	1.50	7.95	0.188 ✓	1	Bolt Shear
T8	325	Leg	A325N	0.7500	6	2.51	29.82	0.084 ✓	1	Bolt Tension
		Diagonal	A325N	0.5000	2	2.34	7.95	0.294 ✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	1.80	7.95	0.227 ✓	1	Bolt Shear
T9	318.75	Diagonal	A325N	0.5000	2	2.27	7.95	0.285 ✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	2.05	7.95	0.258 ✓	1	Bolt Shear
T10	312.5	Diagonal	A325N	0.5000	2	2.43	7.95	0.306 ✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	2.05	7.95	0.258 ✓	1	Bolt Shear
T11	306.25	Diagonal	A325N	0.5000	2	4.61	7.95	0.580 ✓	1	Bolt Shear
		Top Girt	A325N	0.6250	2	2.98	24.85	0.120 ✓	1	Bolt Shear
T12	300	Leg	A325N	0.7500	6	2.24	29.82	0.075 ✓	1	Bolt Tension

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load / Allowable	Allowable Ratio	Criteria
		Diagonal	A325N	0.6250	2	4.16	12.43	0.335 ✓	1	Bolt Shear
		Top Girt	A325N	0.6250	2	6.16	24.85	0.248 ✓	1	Bolt Shear
T13	293.75	Diagonal	A325N	0.5000	2	4.44	7.95	0.559 ✓	1	Bolt Shear
		Top Girt	A325N	0.6250	2	1.51	24.85	0.061 ✓	1	Bolt Shear
T14	287.5	Diagonal	A325N	0.5000	2	3.80	7.95	0.477 ✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	2.56	7.95	0.322 ✓	1	Bolt Shear
T15	281.25	Diagonal	A325N	0.5000	2	3.18	7.95	0.400 ✓	1	Bolt Shear
		Top Girt	A325N	0.6250	2	2.20	12.43	0.177 ✓	1	Bolt Shear
T16	275	Leg	A325N	0.7500	6	6.12	29.82	0.205 ✓	1	Bolt Tension
		Diagonal	A325N	0.5000	2	2.48	7.95	0.312 ✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	1.79	7.95	0.226 ✓	1	Bolt Shear
T17	268.75	Diagonal	A325N	0.5000	2	1.93	7.95	0.242 ✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	1.54	7.95	0.193 ✓	1	Bolt Shear
T18	262.5	Diagonal	A325N	0.5000	2	1.64	7.95	0.206 ✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	1.53	7.95	0.192 ✓	1	Bolt Shear
T19	256.25	Diagonal	A325N	0.5000	2	2.01	7.95	0.253 ✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	1.87	7.95	0.235 ✓	1	Bolt Shear
T20	250	Leg	A325N	0.7500	6	6.24	29.82	0.209 ✓	1	Bolt Tension
		Diagonal	A325N	0.5000	2	2.06	7.95	0.259 ✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	2.26	15.90	0.142 ✓	1	Bolt Shear
T21	243.75	Diagonal	A325N	0.5000	2	5.50	7.95	0.692 ✓	1	Bolt Shear
		Top Girt	A325N	0.6250	2	2.93	24.85	0.118 ✓	1	Bolt Shear
T22	237.5	Diagonal	A325X	0.5000	2	7.14	9.72	0.735 ✓	1	Bolt Shear
		Top Girt	A325N	0.6250	2	3.97	24.85	0.160 ✓	1	Bolt Shear
T23	231.25	Diagonal	A325X	0.5000	2	7.62	9.72	0.784 ✓	1	Bolt Shear
		Top Girt	A325N	0.6250	2	4.59	24.85	0.185 ✓	1	Bolt Shear
T24	225	Leg	A325N	0.7500	6	3.88	29.82	0.130 ✓	1	Bolt Tension
		Diagonal	A325N	0.6250	2	7.54	24.85	0.303 ✓	1	Bolt Shear
		Top Girt	A325N	0.6250	2	8.40	24.85	0.338 ✓	1	Bolt Shear
T25	218.75	Diagonal	A325N	0.5000	2	3.46	7.95	0.435 ✓	1	Bolt Shear
		Top Girt	A325N	0.6250	2	3.01	24.85	0.121 ✓	1	Bolt Shear
T26	212.5	Diagonal	A325N	0.5000	2	2.60	7.95	0.327 ✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	1.91	7.95	0.240 ✓	1	Bolt Shear
T27	206.25	Diagonal	A325N	0.5000	2	1.59	7.95	0.200 ✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	1.35	7.95	0.170 ✓	1	Bolt Shear
T28	200	Leg	A325N	0.7500	6	6.83	29.82	0.229 ✓	1	Bolt Tension
		Diagonal	A325N	0.5000	2	3.50	7.95	0.440 ✓	1	Bolt Shear
		Horizontal	A325N	0.6250	2	1.79	12.43	0.144 ✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	1.16	7.95	0.145 ✓	1	Bolt Shear
T29	175	Leg	A325N	0.7500	6	6.70	29.82	0.225 ✓	1	Bolt Tension

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load / Allowable	Allowable Ratio	Criteria
		Diagonal	A325N	0.5000	2	4.70	7.95	0.591 ✔	1	Bolt Shear
		Top Girt	A325N	0.5000	2	2.51	7.95	0.315 ✔	1	Bolt Shear
T30	168.75	Diagonal	A325N	0.5000	2	5.18	7.95	0.651 ✔	1	Bolt Shear
		Top Girt	A325N	0.5000	2	3.09	7.95	0.388 ✔	1	Bolt Shear
T31	162.5	Diagonal	A325N	0.5000	2	2.47	7.95	0.310 ✔	1	Bolt Shear
		Top Girt	A325N	0.5000	2	3.71	15.90	0.233 ✔	1	Bolt Shear
T32	156.25	Diagonal	A325N	0.5000	2	1.89	7.95	0.238 ✔	1	Bolt Shear
		Top Girt	A325N	0.5000	2	1.36	7.95	0.171 ✔	1	Bolt Shear
T33	150	Leg	A325N	0.7500	6	7.25	29.82	0.243 ✔	1	Bolt Tension
		Diagonal	A325N	0.5000	2	2.94	7.95	0.370 ✔	1	Bolt Shear
		Horizontal	A325N	0.6250	2	1.70	12.43	0.137 ✔	1	Bolt Shear
		Top Girt	A325N	0.5000	2	1.03	7.95	0.130 ✔	1	Bolt Shear
T34	125	Leg	A325N	0.7500	6	7.27	29.82	0.244 ✔	1	Bolt Tension
		Diagonal	A325N	0.6250	2	6.59	10.44	0.631 ✔	1	Member Bearing
		Horizontal	A325N	0.6250	2	3.87	12.43	0.311 ✔	1	Bolt Shear
		Top Girt	A325N	0.6250	2	2.21	12.43	0.178 ✔	1	Bolt Shear
T35	100	Leg	A325N	0.7500	6	5.95	29.82	0.199 ✔	1	Bolt Tension
		Diagonal	A325N	0.6250	2	7.75	24.85	0.312 ✔	1	Bolt Shear
		Top Girt	A325N	0.6250	2	7.91	24.85	0.318 ✔	1	Bolt Shear
T36	93.75	Diagonal	A325N	0.5000	2	3.18	7.95	0.400 ✔	1	Bolt Shear
		Top Girt	A325N	0.5000	2	4.13	15.90	0.260 ✔	1	Bolt Shear
T37	87.5	Diagonal	A325N	0.5000	2	2.35	7.95	0.296 ✔	1	Bolt Shear
		Top Girt	A325N	0.5000	2	1.73	7.95	0.217 ✔	1	Bolt Shear
T38	81.25	Diagonal	A325N	0.5000	2	1.55	7.95	0.195 ✔	1	Bolt Shear
		Top Girt	A325N	0.5000	2	1.21	7.95	0.153 ✔	1	Bolt Shear
T39	75	Leg	A325N	0.7500	6	7.97	29.82	0.267 ✔	1	Bolt Tension
		Diagonal	A325N	0.5000	2	2.40	7.95	0.302 ✔	1	Bolt Shear
		Horizontal	A325N	0.6250	2	1.36	12.43	0.110 ✔	1	Bolt Shear
		Top Girt	A325N	0.5000	2	0.77	7.95	0.097 ✔	1	Bolt Shear
T40	50	Leg	A325N	0.7500	6	8.29	29.82	0.278 ✔	1	Bolt Tension
		Diagonal	A325N	0.5000	2	2.78	7.95	0.350 ✔	1	Bolt Shear
		Horizontal	A325N	0.6250	2	1.58	12.43	0.127 ✔	1	Bolt Shear
		Top Girt	A325N	0.5000	2	2.36	7.95	0.296 ✔	1	Bolt Shear
T41	25	Leg	A325N	0.7500	6	8.51	29.82	0.285 ✔	1	Bolt Tension
		Diagonal	A325N	0.5000	2	1.63	7.95	0.205 ✔	1	Bolt Shear
		Horizontal	A325N	0.6250	2	1.33	12.43	0.107 ✔	1	Bolt Shear
		Top Girt	A325N	0.5000	2	0.75	7.95	0.094 ✔	1	Bolt Shear

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T_u K	Allowable ϕT_n K	Required S.F.	Actual S.F.
T4	350.00 (A) (679)	7/8 EHS	7.97	79.70	23.35	47.82	1.000	2.048 ✔
	350.00 (A) (680)	7/8 EHS	7.97	79.70	23.27	47.82	1.000	2.055 ✔
	350.00 (B) (673)	7/8 EHS	7.97	79.70	22.67	47.82	1.000	2.110 ✔
	350.00 (B) (674)	7/8 EHS	7.97	79.70	23.69	47.82	1.000	2.019 ✔
	350.00 (C) (667)	7/8 EHS	7.97	79.70	23.61	47.82	1.000	2.025 ✔
	350.00 (C) (668)	7/8 EHS	7.97	79.70	22.70	47.82	1.000	2.106 ✔
T12	300.00 (A) (697)	7/8 EHS	7.97	79.70	26.55	47.82	1.000	1.801 ✔
	300.00 (A) (698)	7/8 EHS	7.97	79.70	26.40	47.82	1.000	1.812 ✔
	300.00 (B) (691)	7/8 EHS	7.97	79.70	26.26	47.82	1.000	1.821 ✔
	300.00 (B) (692)	7/8 EHS	7.97	79.70	26.51	47.82	1.000	1.804 ✔
	300.00 (C) (685)	7/8 EHS	7.97	79.70	26.45	47.82	1.000	1.808 ✔
	300.00 (C) (686)	7/8 EHS	7.97	79.70	26.35	47.82	1.000	1.815 ✔
T24	225.00 (A) (715)	3/4 EHS	5.83	58.30	23.44	34.98	1.000	1.493 ✔
	225.00 (A) (716)	3/4 EHS	5.83	58.30	23.66	34.98	1.000	1.478 ✔
	225.00 (B) (709)	3/4 EHS	5.83	58.30	24.16	34.98	1.000	1.448 ✔
	225.00 (B) (710)	3/4 EHS	5.83	58.30	23.28	34.98	1.000	1.503 ✔
	225.00 (C) (703)	3/4 EHS	5.83	58.30	23.46	34.98	1.000	1.491 ✔
	225.00 (C) (704)	3/4 EHS	5.83	58.30	23.97	34.98	1.000	1.459 ✔
T31	162.50 (A) (723)	3/4 EHS	5.83	58.30	25.04	34.98	1.000	1.397 ✔
	162.50 (B) (722)	3/4 EHS	5.83	58.30	25.17	34.98	1.000	1.390 ✔
	162.50 (C) (721)	3/4 EHS	5.83	58.30	25.07	34.98	1.000	1.395 ✔
T35	100.00 (A) (736)	9/16 EHS	3.50	35.00	13.85	21.00	1.000	1.516 ✔
	100.00 (A) (737)	9/16 EHS	3.50	35.00	14.07	21.00	1.000	1.492 ✔
	100.00 (B) (730)	9/16 EHS	3.50	35.00	14.13	21.00	1.000	1.486 ✔
	100.00 (B) (731)	9/16 EHS	3.50	35.00	13.23	21.00	1.000	1.588 ✔
	100.00 (C) (724)	9/16 EHS	3.50	35.00	13.41	21.00	1.000	1.566 ✔
	100.00 (C) (725)	9/16 EHS	3.50	35.00	14.01	21.00	1.000	1.499 ✔
T40	50.00 (A) (744)	9/16 EHS	3.50	35.00	13.07	21.00	1.000	1.607 ✔

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T_u K	Allowable ϕT_n K	Required S.F.	Actual S.F.
	50.00 (B) (743)	9/16 EHS	3.50	35.00	12.81	21.00	1.000	1.639 ✔
	50.00 (C) (742)	9/16 EHS	3.50	35.00	13.24	21.00	1.000	1.587 ✔

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	Mast Stability Index	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	368.75 - 362.5	2 3/4	6.25	6.25	109.1 K=1.00	5.9396	1.00	-1.67	102.85	0.016 [1] ✔
T2	362.5 - 356.25	2 3/4	6.25	6.25	109.1 K=1.00	5.9396	1.00	-2.34	102.85	0.023 [1] ✔
T3	356.25 - 350	2 3/4	6.25	6.25	109.1 K=1.00	5.9396	1.00	-9.21	102.85	0.090 [1] ✔
T4	350 - 343.75	3	6.25	6.25	100.0 K=1.00	7.0686	1.00	-8.03	135.28	0.059 [1] ✔
T5	343.75 - 337.5	3	6.25	6.25	100.0 K=1.00	7.0686	1.00	-41.53	135.28	0.307 [1] ✔
T6	337.5 - 331.25	3	6.25	6.25	100.0 K=1.00	7.0686	1.00	-42.43	135.28	0.314 [1] ✔
T7	331.25 - 325	3	6.25	6.25	100.0 K=1.00	7.0686	1.00	-43.34	135.28	0.320 [1] ✔
T8	325 - 318.75	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-45.21	171.63	0.263 [1] ✔
T9	318.75 - 312.5	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-45.45	171.63	0.265 [1] ✔
T10	312.5 - 306.25	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-45.98	171.63	0.268 [1] ✔
T11	306.25 - 300	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-48.69	171.63	0.284 [1] ✔
T12	300 - 293.75	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-40.30	171.63	0.235 [1] ✔
T13	293.75 - 287.5	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-94.30	171.63	0.549 [1] ✔
T14	287.5 - 281.25	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-100.74	171.63	0.587 [1] ✔
T15	281.25 - 275	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-106.30	171.63	0.619 [1] ✔
T16	275 - 268.75	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-110.19	171.63	0.642 [1] ✔
T17	268.75 - 262.5	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-112.67	171.63	0.656 [1] ✔
T18	262.5 - 256.25	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-113.69	171.63	0.662 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	Mast Stability Index	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T19	256.25 - 250	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-114.21	171.63	0.665 [1]
T20	250 - 243.75	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-112.37	171.63	0.655 [1]
T21	243.75 - 237.5	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-108.85	171.63	0.634 [1]
T22	237.5 - 231.25	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-96.52	171.63	0.562 [1]
T23	231.25 - 225	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-92.77	171.63	0.541 [1]
T24	225 - 218.75	3	6.25	6.25	100.0 K=1.00	7.0686	1.00	-69.90	135.28	0.517 [1]
T25	218.75 - 212.5	3	6.25	6.25	100.0 K=1.00	7.0686	1.00	-116.94	135.28	0.864 [1]
T26	212.5 - 206.25	3	6.25	6.25	100.0 K=1.00	7.0686	1.00	-119.58	135.28	0.884 [1]
T27	206.25 - 200	3	6.25	6.25	100.0 K=1.00	7.0686	1.00	-121.93	135.28	0.901 [1]
T28	200 - 175	3	25.00	3.13	50.0 K=1.00	7.0686	1.00	-123.26	200.78	0.614 [1]
T29	175 - 168.75	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-120.66	171.63	0.703 [1]
T30	168.75 - 162.5	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-118.86	171.63	0.693 [1]
T31	162.5 - 156.25	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-126.84	171.63	0.739 [1]
T32	156.25 - 150	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-128.78	171.63	0.750 [1]
T33	150 - 125	3 1/4	25.00	6.25	92.3 K=1.00	8.2958	1.00	-131.56	171.63	0.767 [1]
T34	125 - 100	3 1/4	25.00	6.25	92.3 K=1.00	8.2958	1.00	-130.90	171.63	0.763 [1]
T35	100 - 93.75	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-107.05	171.63	0.624 [1]
T36	93.75 - 87.5	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-140.25	171.63	0.817 [1]
T37	87.5 - 81.25	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-141.10	171.63	0.822 [1]
T38	81.25 - 75	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-142.41	171.63	0.830 [1]
T39	75 - 50	3 1/4	25.00	6.25	92.3 K=1.00	8.2958	1.00	-145.77	171.63	0.849 [1]
T40	50 - 25	3 1/4	25.00	6.25	92.3 K=1.00	8.2958	1.00	-152.37	171.63	0.888 [1]
T41	25 - 0	3 1/4	25.00	6.25	92.3 K=1.00	8.2958	1.00	-153.91	171.63	0.897 [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 K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	368.75 - 362.5	L2 1/2x2 1/2x1/4	8.00	3.65	96.9 K=1.09	1.1900	-0.45	23.51	0.019 [1] ✔
T2	362.5 - 356.25	2L3x3x5/16	8.00	3.65	47.5 K=1.00	3.5500	-1.32	102.12	0.013 [1] ✔
T3	356.25 - 350	2L3x3x5/16	8.00	3.65	47.5 K=1.00	3.5500	-5.45	102.12	0.053 [1] ✔
T4	350 - 343.75	L3x2 1/2x1/4	8.00	3.62	91.7 K=1.11	1.3100	-4.12	27.26	0.151 [1] ✔
T12	300 - 293.75	L3x2 1/2x1/4	8.00	3.59	91.1 K=1.12	1.3100	-8.33	27.41	0.304 [1] ✔
T24	225 - 218.75	2L2 1/2x2 1/2x1/4	8.00	3.60	56.2 K=1.00	2.3800	-15.07	65.28	0.231 [1] ✔
T35	100 - 93.75	2L2 1/2x2 1/2x1/4	8.00	3.59	56.0 K=1.00	2.3800	-15.50	65.39	0.237 [1] ✔

[1] $P_u / \phi P_n$ controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T28	200 - 175	P1.25x.14	5.00	4.75	105.6 K=1.00	0.6685	-3.57	12.04	0.297 [1] ✔
T33	150 - 125	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-3.39	12.10	0.280 [1] ✔
T34	125 - 100	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-7.74	12.10	0.640 [1] ✔
T39	75 - 50	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-2.72	12.10	0.225 [1] ✔
T40	50 - 25	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-3.15	12.10	0.260 [1] ✔
T41	25 - 0	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-2.67	12.10	0.220 [1] ✔

[1] $P_u / \phi P_n$ controls

Secondary Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T28	200 - 175	P1.25x.14	5.00	4.75	105.6 K=1.00	0.6685	-2.13	12.04	0.177 [1] ✔

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	K	K	

[1] $P_u / \phi P_n$ controls

Top Girt 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	K	K	
T1	368.75 - 362.5	2L2 1/2x2x1/4	5.00	4.38	67.0 K=1.00	2.1300	-0.09	54.50	0.002 [1] ✔
T2	362.5 - 356.25	2L2 1/2x3x1/4	5.00	4.44	70.7 K=1.00	2.6300	-0.17	65.49	0.003 [1] ✔
T3	356.25 - 350	2L2 1/2x3x1/4	5.00	4.44	70.7 K=1.00	2.6300	-1.29	65.49	0.020 [1] ✔
T4	350 - 343.75	2L2 1/2x2x1/4	5.00	4.38	67.0 K=1.00	2.1300	-6.86	54.50	0.126 [1] ✔
T5	343.75 - 337.5	2L2 1/2x2x1/4	5.00	4.35	66.6 K=1.00	2.1300	-4.25	54.62	0.078 [1] ✔
T6	337.5 - 331.25	P1.25x.14	5.00	4.75	105.6 K=1.00	0.6685	-3.09	12.04	0.257 [1] ✔
T7	331.25 - 325	P1.25x.14	5.00	4.75	105.6 K=1.00	0.6685	-2.99	12.04	0.249 [1] ✔
T8	325 - 318.75	P1.25x.14	5.00	4.75	105.6 K=1.00	0.6685	-3.61	12.04	0.299 [1] ✔
T9	318.75 - 312.5	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-4.11	12.10	0.339 [1] ✔
T10	312.5 - 306.25	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-4.10	12.10	0.339 [1] ✔
T11	306.25 - 300	2L2 1/2x2x1/4	5.00	4.33	66.3 K=1.00	2.1300	-5.96	54.74	0.109 [1] ✔
T12	300 - 293.75	2L2 1/2x2x1/4	5.00	4.33	66.3 K=1.00	2.1300	-9.15	54.74	0.167 [1] ✔
T13	293.75 - 287.5	2L2 1/2x2x1/4	5.00	4.33	66.3 K=1.00	2.1300	-3.03	54.74	0.055 [1] ✔
T14	287.5 - 281.25	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-5.12	12.10	0.423 [1] ✔
T15	281.25 - 275	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-4.40	12.10	0.364 [1] ✔
T16	275 - 268.75	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-3.59	12.10	0.296 [1] ✔
T17	268.75 - 262.5	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-3.08	12.10	0.254 [1] ✔
T18	262.5 - 256.25	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-3.05	12.10	0.252 [1] ✔
T19	256.25 - 250	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-3.75	12.10	0.309 [1] ✔
T20	250 - 243.75	2L2 1/2x2x1/4	5.00	4.40	67.3 K=1.00	2.1300	-4.52	54.38	0.083 [1] ✔
T21	243.75 - 237.5	2L2 1/2x2x1/4	5.00	4.33	66.3 K=1.00	2.1300	-5.86	54.74	0.107 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T22	237.5 - 231.25	2L2 1/2x2x1/4	5.00	4.33	66.3 K=1.00	2.1300	-7.94	54.74	0.145 [1]
T23	231.25 - 225	2L2 1/2x2x1/4	5.00	4.33	66.3 K=1.00	2.1300	-9.17	54.74	0.168 [1]
T24	225 - 218.75	2L2 1/2x2x1/4	5.00	4.33	66.3 K=1.00	2.1300	-7.16	54.74	0.131 [1]
T26	212.5 - 206.25	P1.25x.14	5.00	4.75	105.6 K=1.00	0.6685	-3.82	12.04	0.317 [1]
T27	206.25 - 200	P1.25x.14	5.00	4.75	105.6 K=1.00	0.6685	-2.70	12.04	0.224 [1]
T28	200 - 175	P1.25x.14	5.00	4.75	105.6 K=1.00	0.6685	-2.31	12.04	0.192 [1]
T29	175 - 168.75	P1.25x.14	5.00	4.75	105.6 K=1.00	0.6685	-5.02	12.04	0.417 [1]
T30	168.75 - 162.5	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-6.17	12.10	0.510 [1]
T31	162.5 - 156.25	2L2 1/2x2x1/4	5.00	4.40	67.3 K=1.00	2.1300	-2.02	54.38	0.037 [1]
T32	156.25 - 150	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-2.72	12.10	0.225 [1]
T33	150 - 125	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-2.06	12.10	0.171 [1]
T34	125 - 100	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-4.42	12.10	0.365 [1]
T35	100 - 93.75	2L2 1/2x2x1/4	5.00	4.33	66.3 K=1.00	2.1300	-5.28	54.74	0.096 [1]
T37	87.5 - 81.25	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-3.45	12.10	0.285 [1]
T38	81.25 - 75	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-2.43	12.10	0.200 [1]
T39	75 - 50	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-1.54	12.10	0.127 [1]
T40	50 - 25	L2 1/2x2x1/4	5.00	4.40	122.7 K=0.99	1.0600	-0.86	15.54	0.055 [1]
T41	25 - 0	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-1.49	12.10	0.123 [1]

[1] P_u / ϕP_n controls

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T35	100 - 93.75 (726)	2L3x2 1/2x1/4	6.03	5.89	74.8 K=1.00	2.6300	-1.31	63.46	0.021 [1]
T35	100 - 93.75 (727)	2L3x2 1/2x1/4	6.03	5.89	74.8 K=1.00	2.6300	-1.35	63.46	0.021 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T35	100 - 93.75 (732)	2L3x2 1/2x1/4	6.03	5.89	74.8 K=1.00	2.6300	-1.30	63.46	0.020 [1] ✔
T35	100 - 93.75 (733)	2L3x2 1/2x1/4	6.03	5.89	74.8 K=1.00	2.6300	-1.46	63.46	0.023 [1] ✔
T35	100 - 93.75 (738)	2L3x2 1/2x1/4	6.03	5.89	74.8 K=1.00	2.6300	-1.41	63.46	0.022 [1] ✔
T35	100 - 93.75 (739)	2L3x2 1/2x1/4	6.03	5.89	74.8 K=1.00	2.6300	-1.28	63.46	0.020 [1] ✔

[1] P_u / ϕP_n controls

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T4	350 - 343.75 (671)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	2.6300	-23.98	46.13	0.520 [1] ✔
T4	350 - 343.75 (672)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	2.6300	-24.49	46.13	0.531 [1] ✔
T4	350 - 343.75 (677)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	2.6300	-24.83	46.13	0.538 [1] ✔
T4	350 - 343.75 (678)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	2.6300	-24.80	46.13	0.538 [1] ✔
T4	350 - 343.75 (683)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	2.6300	-24.08	46.13	0.522 [1] ✔
T4	350 - 343.75 (684)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	2.6300	-24.59	46.13	0.533 [1] ✔
T12	300 - 293.75 (689)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	2.6300	-28.20	46.23	0.610 [1] ✔
T12	300 - 293.75 (690)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	2.6300	-28.64	46.23	0.620 [1] ✔
T12	300 - 293.75 (695)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	2.6300	-29.01	46.23	0.628 [1] ✔
T12	300 - 293.75 (696)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	2.6300	-29.00	46.23	0.627 [1] ✔
T12	300 - 293.75 (701)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	2.6300	-28.23	46.23	0.611 [1] ✔
T12	300 - 293.75 (702)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	2.6300	-28.66	46.23	0.620 [1] ✔
T24	225 - 218.75 (707)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	2.6300	-23.79	46.13	0.516 [1] ✔
T24	225 - 218.75 (708)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	2.6300	-23.76	46.13	0.515 [1] ✔
T24	225 - 218.75 (713)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	2.6300	-24.50	46.13	0.531 [1] ✔
T24	225 - 218.75 (714)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	2.6300	-24.47	46.13	0.530 [1] ✔
T24	225 - 218.75 (719)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	2.6300	-23.16	46.13	0.502 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T24	225 - 218.75 (720)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	2.6300	-23.17	46.13	0.502 [1]
T35	100 - 93.75 (728)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	2.6300	-10.70	46.23	0.231 [1]
T35	100 - 93.75 (729)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	2.6300	-10.66	46.23	0.231 [1]
T35	100 - 93.75 (734)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	2.6300	-11.42	46.23	0.247 [1]
T35	100 - 93.75 (735)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	2.6300	-11.31	46.23	0.245 [1]
T35	100 - 93.75 (740)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	2.6300	-10.33	46.23	0.224 [1]
T35	100 - 93.75 (741)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	2.6300	-10.41	46.23	0.225 [1]

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	368.75 - 362.5	2 3/4	6.25	6.25	109.1	5.9396	0.34	192.44	0.002 [1]
T2	362.5 - 356.25	2 3/4	6.25	6.25	109.1	5.9396	0.92	192.44	0.005 [1]
T3	356.25 - 350	2 3/4	6.25	6.25	109.1	5.9396	6.18	192.44	0.032 [1]
T4	350 - 343.75	3	6.25	6.25	100.0	7.0686	5.26	229.02	0.023 [1]
T14	287.5 - 281.25	3 1/4	6.25	6.25	92.3	8.2958	1.57	268.78	0.006 [1]
T15	281.25 - 275	3 1/4	6.25	6.25	92.3	8.2958	9.20	268.78	0.034 [1]
T16	275 - 268.75	3 1/4	6.25	6.25	92.3	8.2958	15.26	268.78	0.057 [1]
T17	268.75 - 262.5	3 1/4	6.25	6.25	92.3	8.2958	19.36	268.78	0.072 [1]
T18	262.5 - 256.25	3 1/4	6.25	6.25	92.3	8.2958	21.69	268.78	0.081 [1]
T19	256.25 - 250	3 1/4	6.25	6.25	92.3	8.2958	20.54	268.78	0.076 [1]
T20	250 - 243.75	3 1/4	6.25	6.25	92.3	8.2958	19.10	268.78	0.071 [1]
T21	243.75 - 237.5	3 1/4	6.25	6.25	92.3	8.2958	9.57	268.78	0.036 [1]

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

[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 K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	368.75 - 362.5	L2 1/2x2 1/2x1/4	8.00	3.65	59.6	0.7753	0.36	33.73	0.011 [1]
T2	362.5 - 356.25	2L3x3x5/16	8.00	3.65	49.7	2.3695	0.92	103.08	0.009 [1]
T3	356.25 - 350	2L3x3x5/16	8.00	3.65	49.7	2.3695	5.78	103.08	0.056 [1]
T4	350 - 343.75	L3x2 1/2x1/4	8.00	3.62	61.0	0.8419	3.74	36.62	0.102 [1]
T5	343.75 - 337.5	5/8	8.00	7.60	584.0	0.3068	4.98	9.94	0.501 [1]
T6	337.5 - 331.25	5/8	8.00	7.60	584.0	0.3068	4.72	9.94	0.475 [1]
T7	331.25 - 325	5/8	8.00	7.60	584.0	0.3068	4.28	9.94	0.430 [1]
T8	325 - 318.75	3/4	8.00	7.59	485.6	0.4418	4.67	14.31	0.326 [1]
T9	318.75 - 312.5	3/4	8.00	7.57	484.5	0.4418	4.54	14.31	0.317 [1]
T10	312.5 - 306.25	3/4	8.00	7.57	484.5	0.4418	4.87	14.31	0.340 [1]
T11	306.25 - 300	3/4	8.00	7.57	484.5	0.4418	9.22	14.31	0.644 [1]
T12	300 - 293.75	L3x2 1/2x1/4	8.00	3.59	60.4	0.8419	3.61	36.62	0.099 [1]
T13	293.75 - 287.5	3/4	8.00	7.57	484.5	0.4418	8.89	14.31	0.621 [1]
T14	287.5 - 281.25	5/8	8.00	7.57	581.4	0.3068	7.59	9.94	0.764 [1]
T15	281.25 - 275	5/8	8.00	7.57	581.4	0.3068	6.36	9.94	0.640 [1]
T16	275 - 268.75	5/8	8.00	7.57	581.4	0.3068	4.96	9.94	0.499 [1]
T17	268.75 - 262.5	5/8	8.00	7.57	581.4	0.3068	3.86	9.94	0.388 [1]
T18	262.5 - 256.25	5/8	8.00	7.57	581.4	0.3068	3.27	9.94	0.329 [1]
T19	256.25 - 250	3/4	8.00	7.57	484.5	0.4418	4.02	14.31	0.281 [1]
T20	250 - 243.75	3/4	8.00	7.57	484.5	0.4418	4.12	14.31	0.288 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T21	243.75 - 237.5	3/4	8.00	7.57	484.5	0.4418	11.00	14.31	0.769 [1] ✔
T22	237.5 - 231.25	3/4	8.00	7.57	484.5	0.4418	14.29	14.31	0.998 [1] ✔
T23	231.25 - 225	1	8.00	7.57	363.4	0.7854	15.23	25.45	0.599 [1] ✔
T25	218.75 - 212.5	5/8	8.00	7.60	584.0	0.3068	6.91	9.94	0.695 [1] ✔
T26	212.5 - 206.25	5/8	8.00	7.60	584.0	0.3068	5.21	9.94	0.524 [1] ✔
T27	206.25 - 200	5/8	8.00	7.60	584.0	0.3068	3.18	9.94	0.320 [1] ✔
T28	200 - 175	5/8	8.00	7.60	584.0	0.3068	6.99	9.94	0.703 [1] ✔
T29	175 - 168.75	1	8.00	7.59	364.2	0.7854	9.40	25.45	0.370 [1] ✔
T30	168.75 - 162.5	1	8.00	7.57	363.4	0.7854	10.35	25.45	0.407 [1] ✔
T31	162.5 - 156.25	5/8	8.00	7.57	581.4	0.3068	4.93	9.94	0.496 [1] ✔
T32	156.25 - 150	5/8	8.00	7.57	581.4	0.3068	3.78	9.94	0.381 [1] ✔
T33	150 - 125	5/8	8.00	7.57	581.4	0.3068	5.89	9.94	0.592 [1] ✔
T34	125 - 100	L2 1/2x2 1/2x3/16	8.00	7.17	116.8	0.5710	13.18	24.84	0.530 [1] ✔
T36	93.75 - 87.5	3/4	8.00	7.57	484.5	0.4418	6.37	14.31	0.445 [1] ✔
T37	87.5 - 81.25	5/8	8.00	7.57	581.4	0.3068	4.70	9.94	0.473 [1] ✔
T38	81.25 - 75	5/8	8.00	7.57	581.4	0.3068	3.11	9.94	0.313 [1] ✔
T39	75 - 50	5/8	8.00	7.57	581.4	0.3068	4.80	9.94	0.483 [1] ✔
T40	50 - 25	5/8	8.00	7.57	581.4	0.3068	5.57	9.94	0.560 [1] ✔
T41	25 - 0	5/8	8.00	7.57	581.4	0.3068	3.26	9.94	0.328 [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 K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T28	200 - 175	P1.25x.14	5.00	4.75	105.6	0.6685	2.13	21.66	0.099 [1] ✔
T33	150 - 125	P1.25x.14	5.00	4.73	105.2	0.6685	2.28	21.66	0.105 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T34	125 - 100	P1.25x.14	5.00	4.73	105.2	0.6685	2.27	21.66	0.105 [1]
T39	75 - 50	P1.25x.14	5.00	4.73	105.2	0.6685	2.52	21.66	0.117 [1]
T40	50 - 25	P1.25x.14	5.00	4.73	105.2	0.6685	2.64	21.66	0.122 [1]
T41	25 - 0	P1.25x.14	5.00	4.73	105.2	0.6685	2.67	21.66	0.123 [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 K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T28	200 - 175	P1.25x.14	5.00	4.75	105.6	0.6685	2.13	21.66	0.099 [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 K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	368.75 - 362.5	2L2 1/2x2x1/4	5.00	4.38	73.0	1.3162	0.11	57.26	0.002 [1]
T2	362.5 - 356.25	2L2 1/2x3x1/4	5.00	4.44	76.0	1.7381	0.33	75.61	0.004 [1]
T3	356.25 - 350	2L2 1/2x3x1/4	5.00	4.44	76.0	1.7381	1.34	75.61	0.018 [1]
T4	350 - 343.75	2L2 1/2x2x1/4	5.00	4.38	73.0	1.3162	9.85	57.26	0.172 [1]
T12	300 - 293.75	2L2 1/2x2x1/4	5.00	4.33	72.4	1.3162	12.32	57.26	0.215 [1]
T24	225 - 218.75	2L2 1/2x2x1/4	5.00	4.33	72.4	1.3162	16.80	57.26	0.293 [1]
T25	218.75 - 212.5	2L2 1/2x2x1/4	5.00	4.35	72.7	1.3162	6.01	57.26	0.105 [1]
T31	162.5 - 156.25	2L2 1/2x2x1/4	5.00	4.40	72.4	1.3631	7.41	59.30	0.125 [1]
T35	100 - 93.75	2L2 1/2x2x1/4	5.00	4.33	72.4	1.3162	15.82	57.26	0.276 [1]
T36	93.75 - 87.5	2L2 1/2x2x1/4	5.00	4.40	72.4	1.3631	8.27	59.30	0.139 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T40	50 - 25	L2 1/2x2x1/4	5.00	4.40	95.8	0.6778	4.71	29.48	0.160 [1]

[1] P_u / ϕP_n controls

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T4	350 - 343.75 (669)	2L3x2 1/2x1/4	6.03	5.91	75.1	2.6300	20.96	85.21	0.246 [1]
T4	350 - 343.75 (670)	2L3x2 1/2x1/4	6.03	5.91	75.1	2.6300	22.09	85.21	0.259 [1]
T4	350 - 343.75 (675)	2L3x2 1/2x1/4	6.03	5.91	75.1	2.6300	20.51	85.21	0.241 [1]
T4	350 - 343.75 (676)	2L3x2 1/2x1/4	6.03	5.91	75.1	2.6300	20.24	85.21	0.238 [1]
T4	350 - 343.75 (681)	2L3x2 1/2x1/4	6.03	5.91	75.1	2.6300	20.85	85.21	0.245 [1]
T4	350 - 343.75 (682)	2L3x2 1/2x1/4	6.03	5.91	75.1	2.6300	22.32	85.21	0.262 [1]
T12	300 - 293.75 (687)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	23.16	85.21	0.272 [1]
T12	300 - 293.75 (688)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	23.87	85.21	0.280 [1]
T12	300 - 293.75 (693)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	23.05	85.21	0.270 [1]
T12	300 - 293.75 (694)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	23.30	85.21	0.273 [1]
T12	300 - 293.75 (699)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	23.41	85.21	0.275 [1]
T12	300 - 293.75 (700)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	23.86	85.21	0.280 [1]
T24	225 - 218.75 (705)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	22.80	85.21	0.268 [1]
T24	225 - 218.75 (706)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	22.39	85.21	0.263 [1]
T24	225 - 218.75 (711)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	22.89	85.21	0.269 [1]
T24	225 - 218.75 (712)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	22.78	85.21	0.267 [1]
T24	225 - 218.75 (717)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	22.89	85.21	0.269 [1]
T24	225 - 218.75 (718)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	22.58	85.21	0.265 [1]
T35	100 - 93.75 (726)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	14.36	85.21	0.169 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T35	100 - 93.75 (727)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	14.31	85.21	0.168 [1] ✔
T35	100 - 93.75 (732)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	14.99	85.21	0.176 [1] ✔
T35	100 - 93.75 (733)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	14.80	85.21	0.174 [1] ✔
T35	100 - 93.75 (738)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	13.99	85.21	0.164 [1] ✔
T35	100 - 93.75 (739)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	14.10	85.21	0.165 [1] ✔

[1] P_u / ϕP_n controls

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T35	100 - 93.75 (728)	2L3x2 1/2x1/4	8.68	8.49	107.8	2.6300	1.09	85.21	0.013 [1] ✔
T35	100 - 93.75 (729)	2L3x2 1/2x1/4	8.68	8.49	107.8	2.6300	1.29	85.21	0.015 [1] ✔
T35	100 - 93.75 (734)	2L3x2 1/2x1/4	8.68	8.49	107.8	2.6300	1.50	85.21	0.018 [1] ✔
T35	100 - 93.75 (735)	2L3x2 1/2x1/4	8.68	8.49	107.8	2.6300	1.53	85.21	0.018 [1] ✔
T35	100 - 93.75 (740)	2L3x2 1/2x1/4	8.68	8.49	107.8	2.6300	1.11	85.21	0.013 [1] ✔
T35	100 - 93.75 (741)	2L3x2 1/2x1/4	8.68	8.49	107.8	2.6300	1.28	85.21	0.015 [1] ✔

[1] P_u / ϕP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	368.75 - 362.5	Leg	2 3/4	1	-1.67	102.85	1.6	Pass
T2	362.5 - 356.25	Leg	2 3/4	13	-2.34	102.85	2.3	Pass
T3	356.25 - 350	Leg	2 3/4	26	-9.21	102.85	9.0	Pass
T4	350 - 343.75	Leg	3	39	-8.03	135.28	5.9	Pass
T5	343.75 - 337.5	Leg	3	49	-41.53	135.28	30.7	Pass
T6	337.5 - 331.25	Leg	3	61	-42.43	135.28	31.4	Pass
T7	331.25 - 325	Leg	3	73	-43.34	135.28	32.0	Pass
T8	325 - 318.75	Leg	3 1/4	86	-45.21	171.63	26.3	Pass
T9	318.75 - 312.5	Leg	3 1/4	98	-45.45	171.63	26.5	Pass
T10	312.5 - 306.25	Leg	3 1/4	110	-45.98	171.63	26.8	Pass
T11	306.25 - 300	Leg	3 1/4	122	-48.69	171.63	28.4	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T12	300 - 293.75	Leg	3 1/4	134	-40.30	171.63	23.5	Pass
T13	293.75 - 287.5	Leg	3 1/4	146	-94.30	171.63	54.9	Pass
T14	287.5 - 281.25	Leg	3 1/4	158	-100.74	171.63	58.7	Pass
T15	281.25 - 275	Leg	3 1/4	170	-106.30	171.63	61.9	Pass
T16	275 - 268.75	Leg	3 1/4	182	-110.19	171.63	64.2	Pass
T17	268.75 - 262.5	Leg	3 1/4	194	-112.67	171.63	65.6	Pass
T18	262.5 - 256.25	Leg	3 1/4	206	-113.69	171.63	66.2	Pass
T19	256.25 - 250	Leg	3 1/4	218	-114.21	171.63	66.5	Pass
T20	250 - 243.75	Leg	3 1/4	229	-112.37	171.63	65.5	Pass
T21	243.75 - 237.5	Leg	3 1/4	241	-108.85	171.63	63.4	Pass
T22	237.5 - 231.25	Leg	3 1/4	253	-96.52	171.63	56.2	Pass
T23	231.25 - 225	Leg	3 1/4	266	-92.77	171.63	54.1	Pass
T24	225 - 218.75	Leg	3	278	-69.90	135.28	51.7	Pass
T25	218.75 - 212.5	Leg	3	290	-116.94	135.28	86.4	Pass
T26	212.5 - 206.25	Leg	3	301	-119.58	135.28	88.4	Pass
T27	206.25 - 200	Leg	3	313	-121.93	135.28	90.1	Pass
T28	200 - 175	Leg	3	326	-123.26	200.78	61.4	Pass
T29	175 - 168.75	Leg	3 1/4	377	-120.66	171.63	70.3	Pass
T30	168.75 - 162.5	Leg	3 1/4	389	-118.86	171.63	69.3	Pass
T31	162.5 - 156.25	Leg	3 1/4	401	-126.84	171.63	73.9	Pass
T32	156.25 - 150	Leg	3 1/4	413	-128.78	171.63	75.0	Pass
T33	150 - 125	Leg	3 1/4	424	-131.56	171.63	76.7	Pass
T34	125 - 100	Leg	3 1/4	463	-130.90	171.63	76.3	Pass
T35	100 - 93.75	Leg	3 1/4	502	-107.05	171.63	62.4	Pass
T36	93.75 - 87.5	Leg	3 1/4	514	-140.25	171.63	81.7	Pass
T37	87.5 - 81.25	Leg	3 1/4	526	-141.10	171.63	82.2	Pass
T38	81.25 - 75	Leg	3 1/4	538	-142.41	171.63	83.0	Pass
T39	75 - 50	Leg	3 1/4	550	-145.77	171.63	84.9	Pass
T40	50 - 25	Leg	3 1/4	589	-152.37	171.63	88.8	Pass
T41	25 - 0	Leg	3 1/4	628	-153.91	171.63	89.7	Pass
T1	368.75 - 362.5	Diagonal	L2 1/2x2 1/2x1/4	11	-0.45	23.51	1.9 2.8 (b)	Pass
T2	362.5 - 356.25	Diagonal	2L3x3x5/16	20	-1.32	102.12	1.3 4.2 (b)	Pass
T3	356.25 - 350	Diagonal	2L3x3x5/16	34	5.78	103.08	5.6 18.2 (b)	Pass
T4	350 - 343.75	Diagonal	L3x2 1/2x1/4	43	-4.12	27.26	15.1 16.6 (b)	Pass
T5	343.75 - 337.5	Diagonal	5/8	55	4.98	9.94	50.1	Pass
T6	337.5 - 331.25	Diagonal	5/8	67	4.72	9.94	47.5	Pass
T7	331.25 - 325	Diagonal	5/8	79	4.28	9.94	43.0	Pass
T8	325 - 318.75	Diagonal	3/4	92	4.67	14.31	32.6	Pass
T9	318.75 - 312.5	Diagonal	3/4	108	4.54	14.31	31.7	Pass
T10	312.5 - 306.25	Diagonal	3/4	120	4.87	14.31	34.0	Pass
T11	306.25 - 300	Diagonal	3/4	129	9.22	14.31	64.4	Pass
T12	300 - 293.75	Diagonal	L3x2 1/2x1/4	139	-8.33	27.41	30.4 33.5 (b)	Pass
T13	293.75 - 287.5	Diagonal	3/4	152	8.89	14.31	62.1	Pass
T14	287.5 - 281.25	Diagonal	5/8	164	7.59	9.94	76.4	Pass
T15	281.25 - 275	Diagonal	5/8	176	6.36	9.94	64.0	Pass
T16	275 - 268.75	Diagonal	5/8	188	4.96	9.94	49.9	Pass
T17	268.75 - 262.5	Diagonal	5/8	200	3.86	9.94	38.8	Pass
T18	262.5 - 256.25	Diagonal	5/8	212	3.27	9.94	32.9	Pass
T19	256.25 - 250	Diagonal	3/4	227	4.02	14.31	28.1	Pass
T20	250 - 243.75	Diagonal	3/4	238	4.12	14.31	28.8	Pass
T21	243.75 - 237.5	Diagonal	3/4	249	11.00	14.31	76.9	Pass
T22	237.5 - 231.25	Diagonal	3/4	261	14.29	14.31	99.8	Pass
T23	231.25 - 225	Diagonal	1	273	15.23	25.45	59.9 78.4 (b)	Pass
T24	225 - 218.75	Diagonal	2L2 1/2x2 1/2x1/4	287	-15.07	65.28	23.1 30.3 (b)	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T25	218.75 - 212.5	Diagonal	5/8	296	6.91	9.94	69.5	Pass
T26	212.5 - 206.25	Diagonal	5/8	308	5.21	9.94	52.4	Pass
T27	206.25 - 200	Diagonal	5/8	319	3.18	9.94	32.0	Pass
T28	200 - 175	Diagonal	5/8	336	6.99	9.94	70.3	Pass
T29	175 - 168.75	Diagonal	1	387	9.40	25.45	37.0	Pass
							59.1 (b)	
T30	168.75 - 162.5	Diagonal	1	394	10.35	25.45	40.7	Pass
							65.1 (b)	
T31	162.5 - 156.25	Diagonal	5/8	408	4.93	9.94	49.6	Pass
T32	156.25 - 150	Diagonal	5/8	420	3.78	9.94	38.1	Pass
T33	150 - 125	Diagonal	5/8	430	5.89	9.94	59.2	Pass
T34	125 - 100	Diagonal	L2 1/2x2 1/2x3/16	469	13.18	24.84	53.0	Pass
							63.1 (b)	
T35	100 - 93.75	Diagonal	2L2 1/2x2 1/2x1/4	511	-15.50	65.39	23.7	Pass
							31.2 (b)	
T36	93.75 - 87.5	Diagonal	3/4	520	6.37	14.31	44.5	Pass
T37	87.5 - 81.25	Diagonal	5/8	532	4.70	9.94	47.3	Pass
T38	81.25 - 75	Diagonal	5/8	544	3.11	9.94	31.3	Pass
T39	75 - 50	Diagonal	5/8	561	4.80	9.94	48.3	Pass
T40	50 - 25	Diagonal	5/8	622	5.57	9.94	56.0	Pass
T41	25 - 0	Diagonal	5/8	639	3.26	9.94	32.8	Pass
T28	200 - 175	Horizontal	P1.25x.14	338	-3.57	12.04	29.7	Pass
T33	150 - 125	Horizontal	P1.25x.14	436	-3.39	12.10	28.0	Pass
T34	125 - 100	Horizontal	P1.25x.14	475	-7.74	12.10	64.0	Pass
T39	75 - 50	Horizontal	P1.25x.14	563	-2.72	12.10	22.5	Pass
T40	50 - 25	Horizontal	P1.25x.14	619	-3.15	12.10	26.0	Pass
T41	25 - 0	Horizontal	P1.25x.14	640	-2.67	12.10	22.0	Pass
T28	200 - 175	Secondary Horizontal	P1.25x.14	352	-2.13	12.04	17.7	Pass
T1	368.75 - 362.5	Top Girt	2L2 1/2x2x1/4	4	0.11	57.26	0.3	Pass
T2	362.5 - 356.25	Top Girt	2L2 1/2x3x1/4	16	0.33	75.61	0.4	Pass
							1.0 (b)	
T3	356.25 - 350	Top Girt	2L2 1/2x3x1/4	29	-1.29	65.49	2.0	Pass
							4.2 (b)	
T4	350 - 343.75	Top Girt	2L2 1/2x2x1/4	40	9.85	57.26	17.2	Pass
							19.8 (b)	
T5	343.75 - 337.5	Top Girt	2L2 1/2x2x1/4	52	-4.25	54.62	7.8	Pass
							8.6 (b)	
T6	337.5 - 331.25	Top Girt	P1.25x.14	65	-3.09	12.04	25.7	Pass
T7	331.25 - 325	Top Girt	P1.25x.14	77	-2.99	12.04	24.9	Pass
T8	325 - 318.75	Top Girt	P1.25x.14	89	-3.61	12.04	29.9	Pass
T9	318.75 - 312.5	Top Girt	P1.25x.14	101	-4.11	12.10	33.9	Pass
T10	312.5 - 306.25	Top Girt	P1.25x.14	114	-4.10	12.10	33.9	Pass
T11	306.25 - 300	Top Girt	2L2 1/2x2x1/4	126	-5.96	54.74	10.9	Pass
							12.0 (b)	
T12	300 - 293.75	Top Girt	2L2 1/2x2x1/4	136	12.32	57.26	21.5	Pass
							24.8 (b)	
T13	293.75 - 287.5	Top Girt	2L2 1/2x2x1/4	149	-3.03	54.74	5.5	Pass
							6.1 (b)	
T14	287.5 - 281.25	Top Girt	P1.25x.14	160	-5.12	12.10	42.3	Pass
T15	281.25 - 275	Top Girt	P1.25x.14	172	-4.40	12.10	36.4	Pass
T16	275 - 268.75	Top Girt	P1.25x.14	184	-3.59	12.10	29.6	Pass
T17	268.75 - 262.5	Top Girt	P1.25x.14	197	-3.08	12.10	25.4	Pass
T18	262.5 - 256.25	Top Girt	P1.25x.14	209	-3.05	12.10	25.2	Pass
T19	256.25 - 250	Top Girt	P1.25x.14	221	-3.75	12.10	30.9	Pass
T20	250 - 243.75	Top Girt	2L2 1/2x2x1/4	233	-4.52	54.38	8.3	Pass
							14.2 (b)	
T21	243.75 - 237.5	Top Girt	2L2 1/2x2x1/4	245	-5.86	54.74	10.7	Pass
							11.8 (b)	
T22	237.5 - 231.25	Top Girt	2L2 1/2x2x1/4	257	-7.94	54.74	14.5	Pass
							16.0 (b)	
T23	231.25 - 225	Top Girt	2L2 1/2x2x1/4	269	-9.17	54.74	16.8	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
							18.5 (b)	
T24	225 - 218.75	Top Girt	2L2 1/2x2x1/4	282	16.80	57.26	29.3	Pass
							33.8 (b)	
T25	218.75 - 212.5	Top Girt	2L2 1/2x2x1/4	292	6.01	57.26	10.5	Pass
							12.1 (b)	
T26	212.5 - 206.25	Top Girt	P1.25x.14	304	-3.82	12.04	31.7	Pass
T27	206.25 - 200	Top Girt	P1.25x.14	316	-2.70	12.04	22.4	Pass
T28	200 - 175	Top Girt	P1.25x.14	329	-2.31	12.04	19.2	Pass
T29	175 - 168.75	Top Girt	P1.25x.14	381	-5.02	12.04	41.7	Pass
T30	168.75 - 162.5	Top Girt	P1.25x.14	393	-6.17	12.10	51.0	Pass
T31	162.5 - 156.25	Top Girt	2L2 1/2x2x1/4	405	7.41	59.30	12.5	Pass
							23.3 (b)	
T32	156.25 - 150	Top Girt	P1.25x.14	416	-2.72	12.10	22.5	Pass
T33	150 - 125	Top Girt	P1.25x.14	428	-2.06	12.10	17.1	Pass
T34	125 - 100	Top Girt	P1.25x.14	466	-4.42	12.10	36.5	Pass
T35	100 - 93.75	Top Girt	2L2 1/2x2x1/4	507	15.82	57.26	27.6	Pass
							31.8 (b)	
T36	93.75 - 87.5	Top Girt	2L2 1/2x2x1/4	517	8.27	59.30	13.9	Pass
							26.0 (b)	
T37	87.5 - 81.25	Top Girt	P1.25x.14	529	-3.45	12.10	28.5	Pass
T38	81.25 - 75	Top Girt	P1.25x.14	541	-2.43	12.10	20.0	Pass
T39	75 - 50	Top Girt	P1.25x.14	554	-1.54	12.10	12.7	Pass
T40	50 - 25	Top Girt	L2 1/2x2x1/4	594	4.71	29.48	16.0	Pass
							29.6 (b)	
T41	25 - 0	Top Girt	P1.25x.14	632	-1.49	12.10	12.3	Pass
T4	350 - 343.75	Guy A@350	7/8	679	23.35	47.82	48.8	Pass
T12	300 - 293.75	Guy A@300	7/8	697	26.55	47.82	55.5	Pass
T24	225 - 218.75	Guy A@225	3/4	716	23.66	34.98	67.6	Pass
T31	162.5 - 156.25	Guy A@162.5	3/4	723	25.04	34.98	71.6	Pass
T35	100 - 93.75	Guy A@100	9/16	737	14.07	21.00	67.0	Pass
T40	50 - 25	Guy A@50	9/16	744	13.07	21.00	62.2	Pass
T4	350 - 343.75	Guy B@350	7/8	674	23.69	47.82	49.5	Pass
T12	300 - 293.75	Guy B@300	7/8	692	26.51	47.82	55.4	Pass
T24	225 - 218.75	Guy B@225	3/4	709	24.16	34.98	69.1	Pass
T31	162.5 - 156.25	Guy B@162.5	3/4	722	25.17	34.98	71.9	Pass
T35	100 - 93.75	Guy B@100	9/16	730	14.13	21.00	67.3	Pass
T40	50 - 25	Guy B@50	9/16	743	12.81	21.00	61.0	Pass
T4	350 - 343.75	Guy C@350	7/8	667	23.61	47.82	49.4	Pass
T12	300 - 293.75	Guy C@300	7/8	685	26.45	47.82	55.3	Pass
T24	225 - 218.75	Guy C@225	3/4	704	23.97	34.98	68.5	Pass
T31	162.5 - 156.25	Guy C@162.5	3/4	721	25.07	34.98	71.7	Pass
T35	100 - 93.75	Guy C@100	9/16	725	14.01	21.00	66.7	Pass
T40	50 - 25	Guy C@50	9/16	742	13.24	21.00	63.0	Pass
T4	350 - 343.75	Torque Arm Top@350	2L3x2 1/2x1/4	682	22.32	85.21	26.2	Pass
T12	300 - 293.75	Torque Arm Top@300	2L3x2 1/2x1/4	688	23.87	85.21	28.0	Pass
T24	225 - 218.75	Torque Arm Top@225	2L3x2 1/2x1/4	717	22.89	85.21	26.9	Pass
T35	100 - 93.75	Torque Arm Top@100	2L3x2 1/2x1/4	732	14.99	85.21	17.6	Pass
T4	350 - 343.75	Torque Arm Bottom@350	2L3x2 1/2x1/4	677	-24.83	46.13	53.8	Pass
T12	300 - 293.75	Torque Arm Bottom@300	2L3x2 1/2x1/4	695	-29.01	46.23	62.8	Pass
T24	225 - 218.75	Torque Arm Bottom@225	2L3x2 1/2x1/4	713	-24.50	46.13	53.1	Pass
T35	100 - 93.75	Torque Arm Bottom@100	2L3x2 1/2x1/4	734	-11.42	46.23	24.7	Pass
							Summary	
						Leg (T27)	90.1	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
						Diagonal (T22)	99.8	Pass
						Horizontal (T34)	64.0	Pass
						Secondary Horizontal (T28)	17.7	Pass
						Top Girt (T30)	51.0	Pass
						Guy A (T31)	71.6	Pass
						Guy B (T31)	71.9	Pass
						Guy C (T31)	71.7	Pass
						Torque Arm Top (T12)	28.0	Pass
						Torque Arm Bottom (T12)	62.8	Pass
						Bolt Checks	78.4	Pass
						RATING =	**99.8**	**Pass**

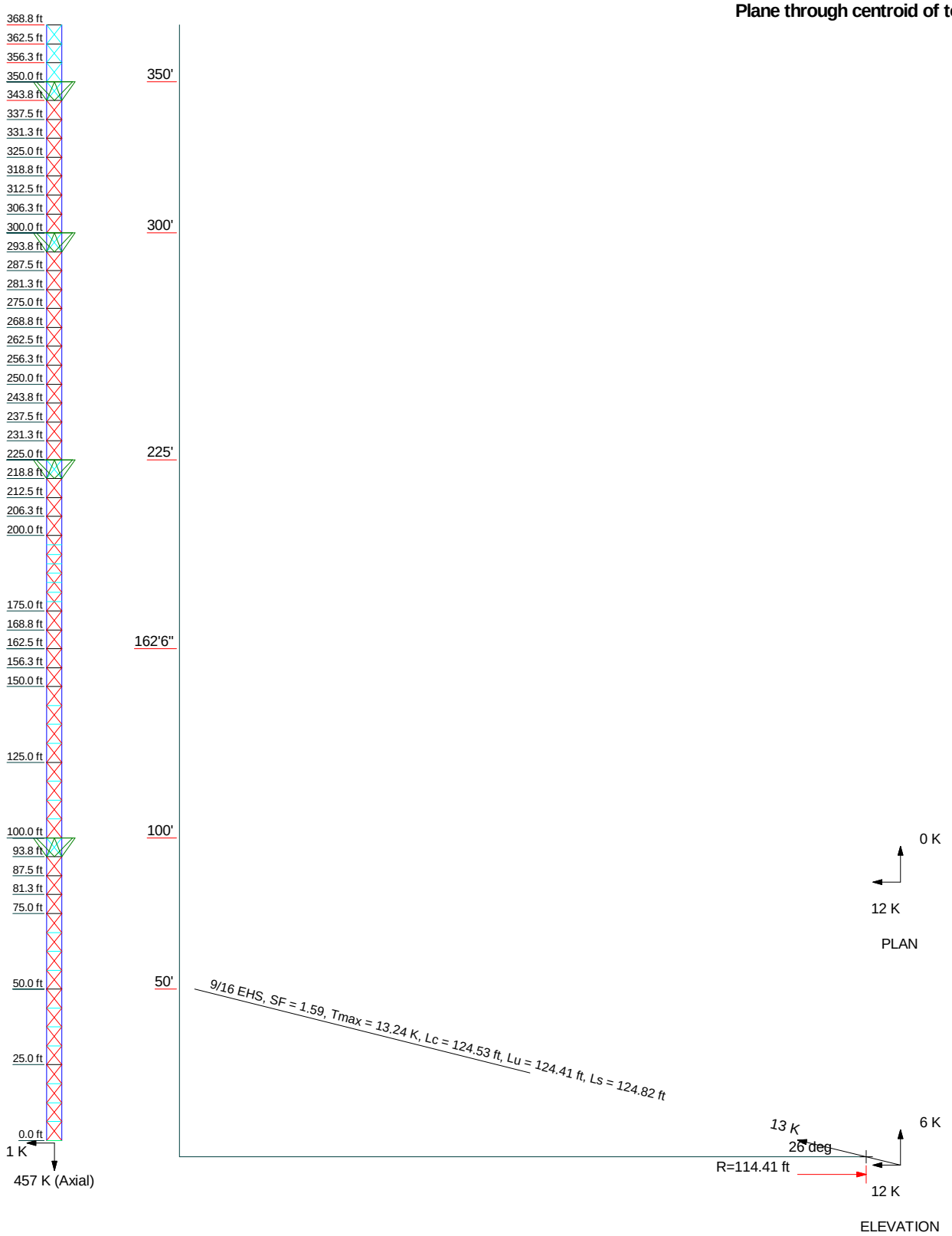
Guy Tensions and Tower Reactions

TIA-222-G - 105 mph/50 mph 0.7500 in Ice Exposure C

Maximum Values

Anchor 'C'@114.41 ft Azimuth 240 deg Elev -5.4 ft

Plane through centroid of tower



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63-2 North Branford Rd.
Branford, CT 06405
Phone: (203) 488-0580
FAX: (203) 488-8587

Job: ***19002.00 - CT2049***		
Project: ***370' Guyed Tower - 689 Old Colchester Road, Montville, CT***		
Client: AT&T Mobility	Drawn by: TJL	App'd:
Code: TIA-222-G	Date: 02/07/19	Scale: NTS
Path: J:\Jobs\1900200.WI\04_Structural\Backup Documentation\tnxTower Files\370' Guyed Rohn Tower.eri		Dwg No. E-6

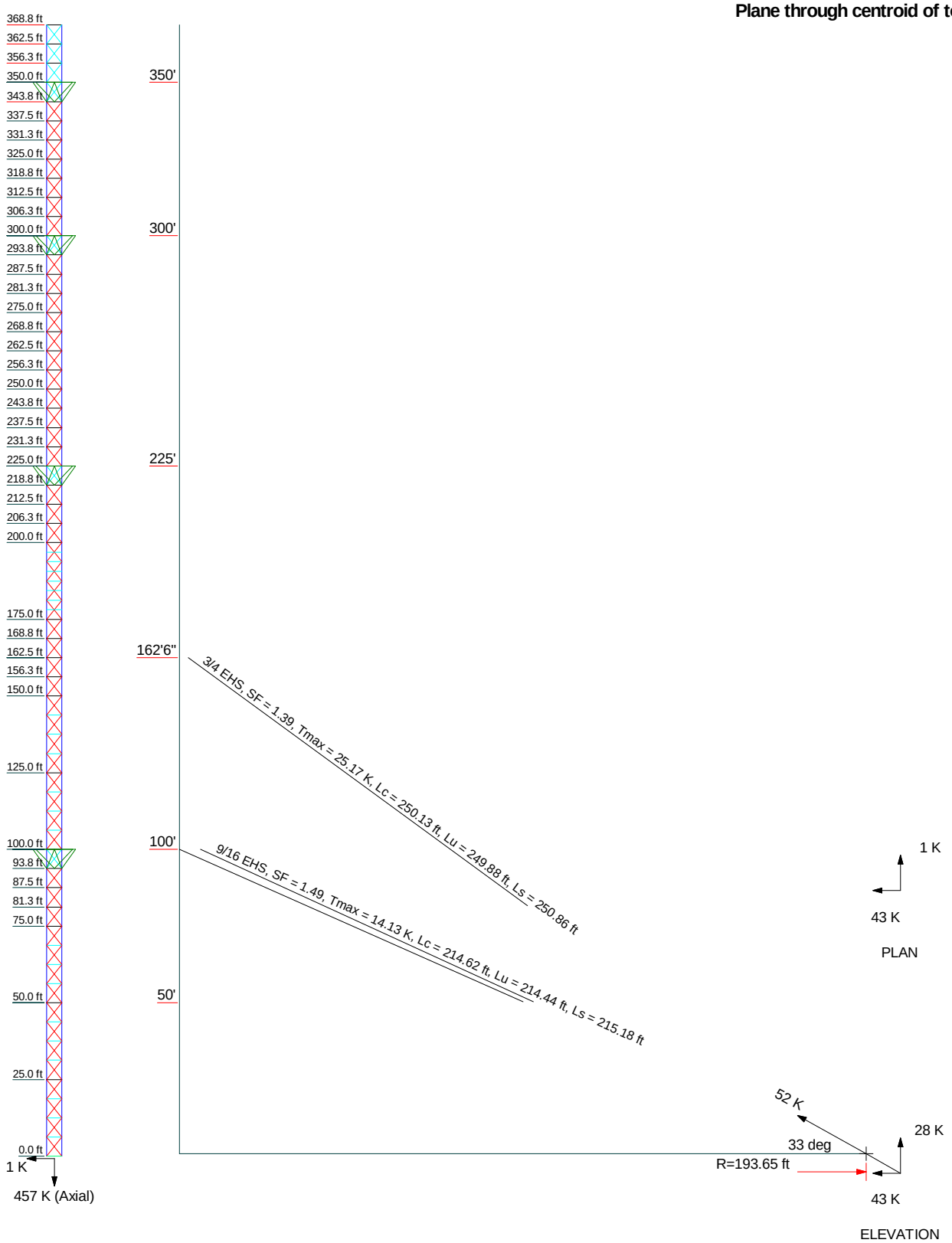
Guy Tensions and Tower Reactions

TIA-222-G - 105 mph/50 mph 0.7500 in Ice Exposure C

Maximum Values

Anchor 'B'@193.65 ft Azimuth 120 deg Elev 0.72 ft

Plane through centroid of tower



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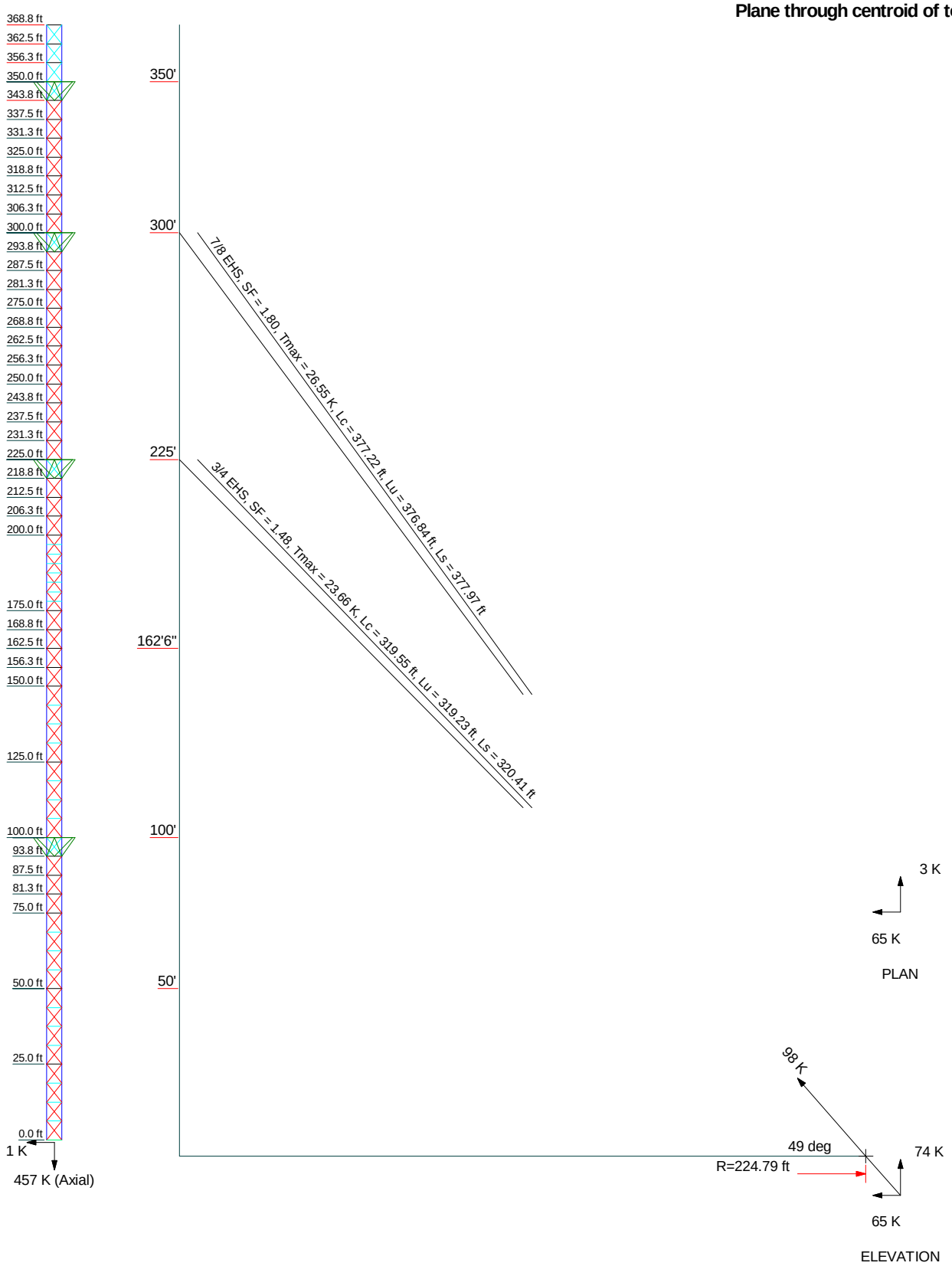
Guy Tensions and Tower Reactions

TIA-222-G - 105 mph/50 mph 0.7500 in Ice Exposure C

Maximum Values

Anchor 'A'@224.79 ft Azimuth 0 deg Elev -5.41 ft

Plane through centroid of tower



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Code: TIA-222-G	Date: 02/07/19	Scale: NTS
Path: J:\Jobs\1900200.WI\04_Structural\Backup Documentation\tnxTower Files\370' Guyed Rohn Tower.eri		Dwg No. E-6

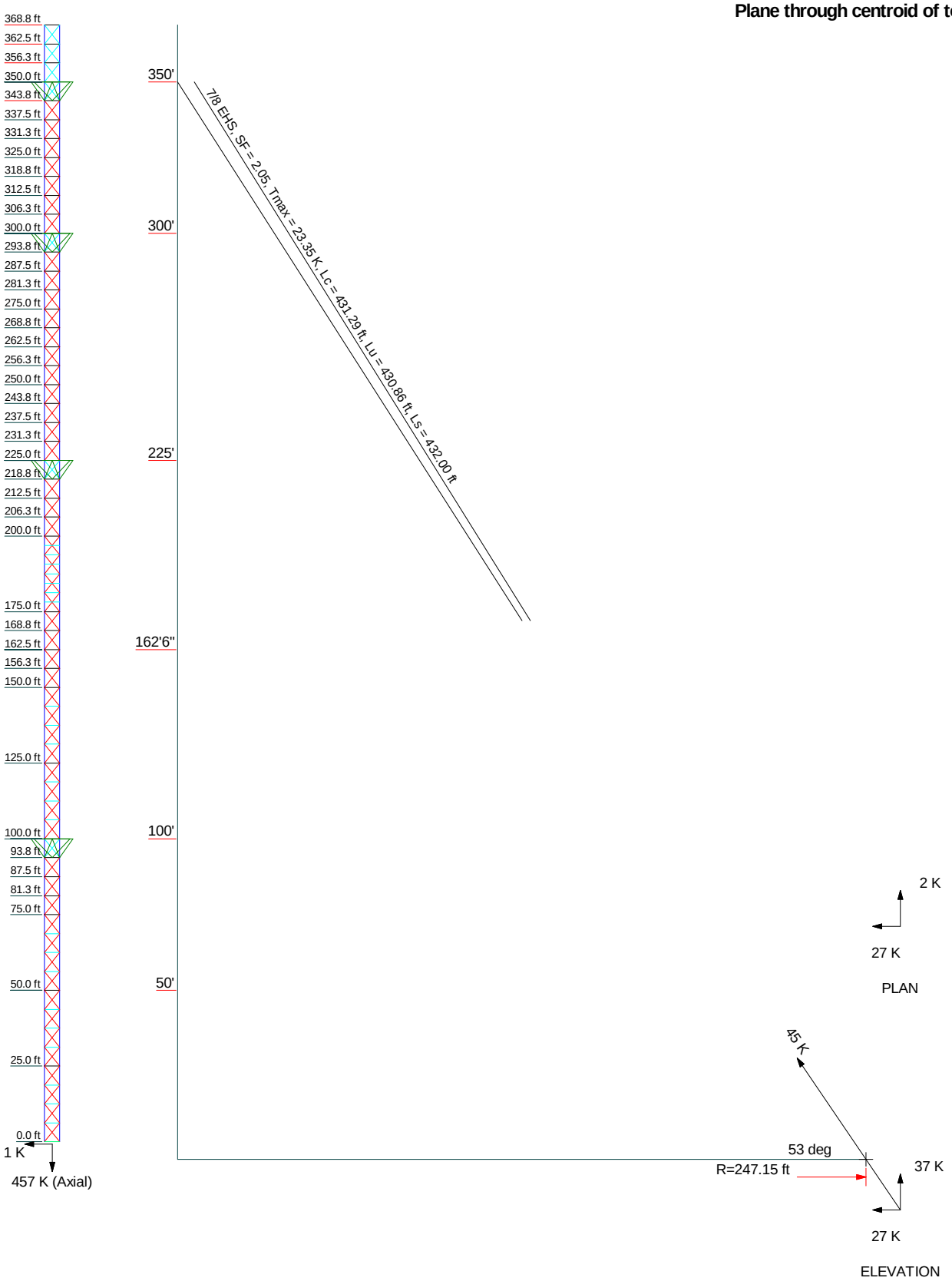
Guy Tensions and Tower Reactions

TIA-222-G - 105 mph/50 mph 0.7500 in Ice Exposure C

Maximum Values

Anchor 'A'@247.15 ft Azimuth 0 deg Elev -5.8 ft

Plane through centroid of tower



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Job :	AT&T ~ CT2049: 370-ft Guyed Lattice Tower	Project No.	19002	Sheet	1	of	2
Address:	689 Old Colchester Rd., Montville, CT	Computed by	TJL	Date		2/7/19	
Description:	Guy Anchor Evaluation	Checked by	CFC	Date			

CHECK UPLIFT RESISTANCE

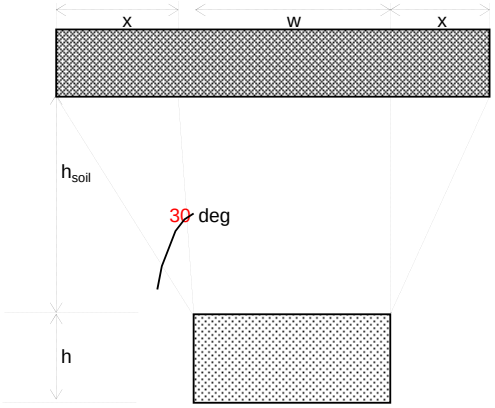
ANCHOR (C) AT 114.41ft RADIUS

RESULTS FROM COMPUTER ANALYSIS:

Uplift =	6	kips
Sliding =	12	kips
Wdepth =	50	ft

CONCRETE PARAMETERS:

γ_{conc} =	150	pcf
$\gamma_{conc.sub}$ =	87.6	pcf
w =	4	ft
h =	3	ft
d =	10	ft
Vol. =	120.00	ft^3
Vol.sub =	0.00	ft^3
Wc =	*18.00*	kips
Ø =	*0.90*	
	16.20	



Foundation Section

SOIL PARAMETERS:

γ_{soil} =	120	pcf
$\gamma_{soil.sub}$ =	57.6	pcf
h_{soil} =	3.5	ft
x =	*2.02*	ft

Soil Weight (Wr):

B1 =	40.00
B2 =	40.00
B3 =	112.91

W.soil =	30.82	kips
W.soil.sub =	0.00	kips
Total =	*30.82*	kips
Ø =	*0.75*	
	23.11	

SF AGAINST SLIDING

8.14 **>** *1* ***OK***

GUY ANCHORS AGAINST UPLIFT ARE ADEQUATE

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Address:	689 Old Colchester Rd., Montville, CT	Computed by	TJL	Date		2/7/19	
Description:	Guy Anchor Evaluation	Checked by	CFC	Date			

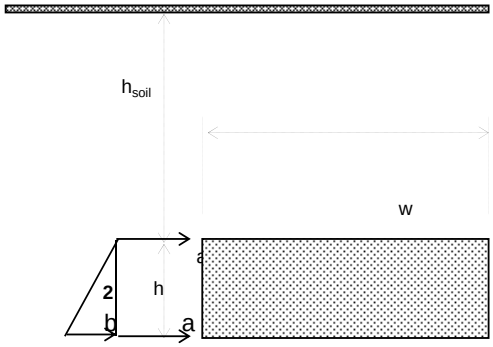
CHECK SLIDING RESISTANCE

SOIL PARAMETERS

$\gamma soil$ =	120	pcf
$\gamma soil$ =	57.6	pcf
h_{soil} =	3.5	ft
h =	3	ft
ϕ =	30	degrees

ANCHOR PARAMETERS

w =	4.0	ft
h =	3.0	ft
d =	10.0	ft



Foundation Elevation View

K_p = 3.00

HORIZONTAL FORCES

		1.26	ksf
		2.34	ksf
RESIST TO SLIDING =		54.00	k
SOIL & CONCRETE WEIGHT =	Wr + Wc =	39.31	k
UPLIFT REACTIONS =		-6	k
SUM =		33.31	k
COEF. OF FRICTION, (0.45) =		14.99	k
RESIST TO SLIDING =		54.00	k
SUM =		68.99	k

SF AGAINST SLIDING

SF = 5.7 > 1 OK

GUY ANCHORS AGAINST SLIDING ARE ADEQUATE

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Description:	Guy Anchor Evaluation	Checked by	CFC	Date			

CHECK UPLIFT RESISTANCE

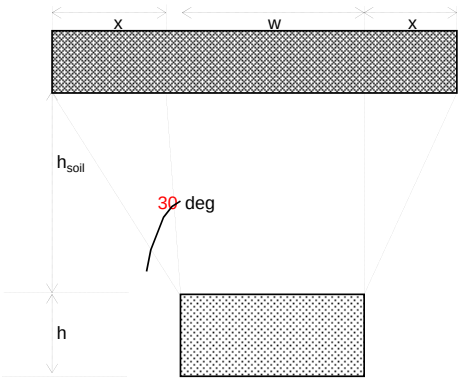
ANCHOR (B) AT 193.65ft RADIUS

RESULTS FROM COMPUTER ANALYSIS:

Uplift =	28	kips
Sliding =	43	kips
Wdepth =	50	ft

CONCRETE PARAMETERS:

γ_{conc} =	150	pcf
$\gamma_{conc.sub}$ =	87.6	pcf
w =	4	ft
h =	4	ft
d =	10	ft
Vol. =	160.00	ft^3
Vol.sub =	0.00	ft^3
Wc =	*24.00*	kips
Ø =	*0.90*	
	21.60	



Foundation Section

SOIL PARAMETERS:

γ_{soil} =	120	pcf
$\gamma_{soil.sub}$ =	57.6	pcf
h_{soil} =	6	ft
x =	*3.46*	ft

Soil Weight (Wr):

B1 =	40.00	
B2 =	40.00	
B3 =	184.99	
W.soil =	74.64	kips
W.soil.sub =	0.00	kips
Total =	*74.64*	kips
Ø =	*0.75*	
	55.98	

SF AGAINST SLIDING

3.52 **>** *1* ***OK***

GUY ANCHORS AGAINST UPLIFT ARE ADEQUATE

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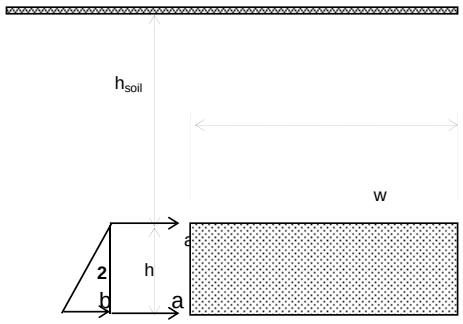
CHECK SLIDING RESISTANCE

SOIL PARAMETERS

$\gamma soil$ =	120	pcf
$\gamma soil$ =	57.6	pcf
h_{soil} =	6	ft
h =	4	ft
ϕ =	30	degrees

ANCHOR PARAMETERS

w =	4.0	ft
h =	4.0	ft
d =	10.0	ft



Foundation Elevation View

K_p = 3.00

HORIZONTAL FORCES

	2.16	ksf
	3.60	ksf
RESIST TO SLIDING =	115.20	k

SOIL & CONCRETE WEIGHT =	Wr + Wc =	77.58	k
UPLIFT REACTIONS =		-28	k
SUM =		49.58	k

COEF. OF FRICTION, (0.45) =	22.31	k
RESIST TO SLIDING =	115.20	k
SUM =	137.51	k

SF AGAINST SLIDING

SF = 3.2 > 1 OK

GUY ANCHORS AGAINST SLIDING ARE ADEQUATE

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Description:	Guy Anchor Evaluation	Checked by	CFC	Date			

CHECK UPLIFT RESISTANCE

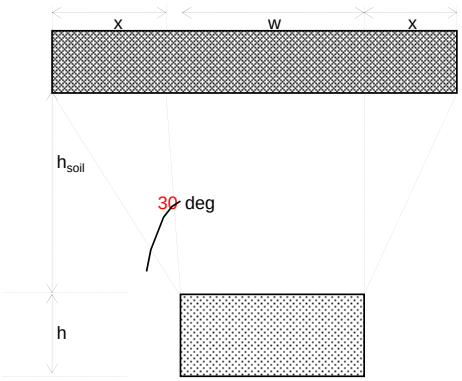
ANCHOR (A) AT 224.79ft RADIUS

RESULTS FROM COMPUTER ANALYSIS:

Uplift =	74	kips
Sliding =	65	kips
Wdepth =	50	ft

CONCRETE PARAMETERS:

γ_{conc} =	150	pcf
$\gamma_{conc.sub}$ =	87.6	pcf
w =	6	ft
h =	4	ft
d =	16	ft
Vol. =	384.00	ft^3
Vol.sub =	0.00	ft^3
Wc =	*57.60*	kips
Ø =	*0.90*	
	51.84	



Foundation Section

SOIL PARAMETERS:

γ_{soil} =	120	pcf
$\gamma_{soil.sub}$ =	57.6	pcf
h_{soil} =	6	ft
x =	*3.46*	ft

Soil Weight (Wr):

B1 =	96.00	
B2 =	96.00	
B3 =	296.42	
W.soil =	134.67	kips
W.soil.sub =	0.00	kips
Total =	*134.67*	kips
Ø =	*0.75*	
	101.00	

SF AGAINST SLIDING

2.60 **>** *1* ***OK***

GUY ANCHORS AGAINST UPLIFT ARE ADEQUATE

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Address:	689 Old Colchester Rd., Montville, CT	Computed by	TJL	Date		2/7/19	
Description:	Guy Anchor Evaluation	Checked by	CFC	Date			

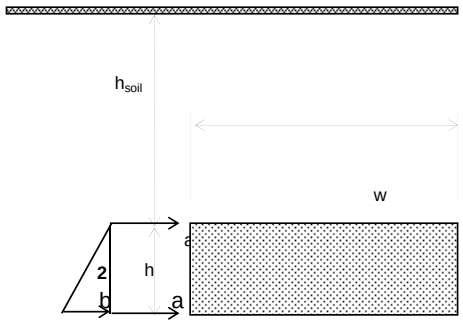
CHECK SLIDING RESISTANCE

SOIL PARAMETERS

$\gamma soil$ =	120	pcf
$\gamma soil$ =	57.6	pcf
h_{soil} =	6	ft
h =	4	ft
ϕ =	30	degrees

ANCHOR PARAMETERS

w =	6.0	ft
h =	4.0	ft
d =	16.0	ft



Foundation Elevation View

κ_p = 3.00

HORIZONTAL FORCES

	2.16	ksf
	3.60	ksf
RESIST TO SLIDING =	184.32	k

SOIL & CONCRETE WEIGHT =	Wr + Wc =	152.84	k
UPLIFT REACTIONS =		-74	k
SUM =		78.84	k

COEF. OF FRICTION, (0.45) =	35.48	k
RESIST TO SLIDING =	184.32	k
SUM =	219.80	k

SF AGAINST SLIDING

SF = 3.4 > 1 OK

GUY ANCHORS AGAINST SLIDING ARE ADEQUATE

CENTEK engineering
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63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

CHECK UPLIFT RESISTANCE

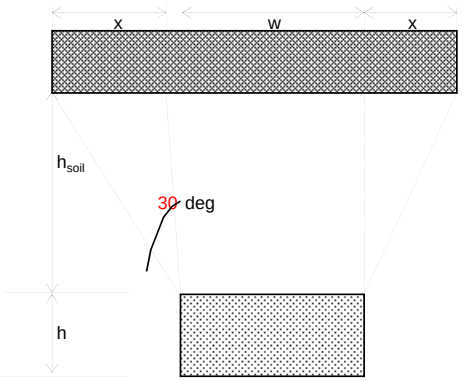
ANCHOR (A) AT 247.15ft RADIUS

RESULTS FROM COMPUTER ANALYSIS:

Uplift =	37	kips
Sliding =	27	kips
Wdepth =	50	ft

CONCRETE PARAMETERS:

γ_{conc} =	150	pcf
$\gamma_{conc.sub}$ =	87.6	pcf
w =	4	ft
h =	3	ft
d =	12	ft
Vol. =	144.00	ft^3
Vol.sub =	0.00	ft^3
Wc =	*21.60*	kips
Ø =	*0.90*	
	19.44	



Foundation Section

SOIL PARAMETERS:

γ_{soil} =	120	pcf
$\gamma_{soil.sub}$ =	57.6	pcf
h_{soil} =	6.75	ft
x =	*3.90*	ft

Soil Weight (Wr):

B1 =	48.00	
B2 =	48.00	
B3 =	233.46	
W.soil =	104.58	kips
W.soil.sub =	0.00	kips
Total =	*104.58*	kips
Ø =	*0.75*	
	78.43	

SF AGAINST SLIDING

3.41 **>** *1* ***OK***

→ ***GUY ANCHORS AGAINST UPLIFT ARE ADEQUATE***

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Branford, CT 06405 F: (203) 488-8587

Job :	AT&T ~ CT2049: 370-ft Guyed Lattice Tower	Project No.	19002	Sheet	2	of	2
Address:	689 Old Colchester Rd., Montville, CT	Computed by	TJL	Date		2/7/19	
Description:	Guy Anchor Evaluation	Checked by	CFC	Date			

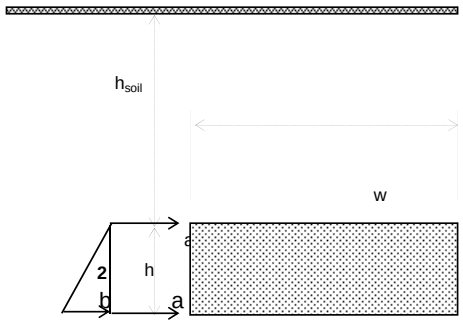
CHECK SLIDING RESISTANCE

SOIL PARAMETERS

$\gamma soil$ =	120	pcf
$\gamma soil$ =	57.6	pcf
h_{soil} =	6.75	ft
h =	3	ft
ϕ =	30	degrees

ANCHOR PARAMETERS

w =	4.0	ft
h =	3.0	ft
d =	12.0	ft



Foundation Elevation View

K_p = 3.00

HORIZONTAL FORCES

		2.43	ksf
		3.51	ksf
RESIST TO SLIDING =		106.92	k
SOIL & CONCRETE WEIGHT =	Wr + Wc =	97.87	k
UPLIFT REACTIONS =		-37	k
SUM =		60.87	k
COEF. OF FRICTION, (0.45) =		27.39	k
RESIST TO SLIDING =		106.92	k
SUM =		134.31	k

SF AGAINST SLIDING

SF = 5.0 > 1 OK

→ ***GUY ANCHORS AGAINST SLIDING ARE ADEQUATE***

CENTEK engineering
Centered on Solutions℠ www.centekeng.com
63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

Subject: Base Foundation Analysis

Location: 370-ft Guyed Lattice Tower
Montville, CT

Rev. 0: 2/7/19

Prepared by: T.J.L. Checked by: C.A.G.
Job No. 19002.00

Guyed Tower Base Foundation:

Input Data:

Tower Data

Shear Force =	Shear := 1·kip	(User Input from tnxTower)	
Axial Force =	Axial := 457·kip	(User Input from tnxTower)	
Tower Height =	$H_t := 370 \cdot ft$	(User Input)	

Footing Data:

Overall Depth of Footing =	$D_f := 3.5 \cdot ft$	(User Input)	
Length of Pier =	$L_p := 3.0 \cdot ft$	(User Input)	
Extension of Pier Above Grade =	$L_{pag} := 1.50 \cdot ft$	(User Input)	
Width of Pier =	$W_p := 3.0 \cdot ft$	(User Input)	
Thickness of Footing =	$T_f := 2.0 \cdot ft$	(User Input)	
Width of Footing =	$W_{f1} := 7 \cdot ft$	(User Input)	
Length of Footing =	$W_{f2} := 7 \cdot ft$	(User Input)	

Material Properties:

Concrete Compressive Strength =	$f_c := 3000 \cdot psi$	(User Input)	
Steel Reinforcment Yield Strength =	$f_y := 60000 \cdot psi$	(User Input)	
Internal Friction Angle of Soil =	$\Phi_s := 30 \cdot deg$	(User Input)	
Ultimate Soil Bearing Capacity =	$q_s := 16000 \cdot psf$	(User Input)	
Unit Weight of Soil =	$\gamma_{soil} := 120 \cdot pcf$	(User Input)	
Unit Weight of Concrete =	$\gamma_{conc} := 150 \cdot pcf$	(User Input)	
Foundation Bouyancy =	Bouyancy := 0	(User Input)	(Yes=1 / No=0)
Depth to Neglect =	$n := 0 \cdot ft$	(User Input)	
Cohesion of Clay Type Soil =	$c := 0 \cdot ksf$	(User Input)	(Use 0 for Sandy Soil)
Seismic Zone Factor =	Z := 2	(User Input)	
Coefficient of Friction Between Concrete =	$\mu := 0.45$	(User Input)	

Calculated Factors:

Coefficient of Lateral Soil Pressure =

$$K_p := \frac{1 + \sin(\Phi_s)}{1 - \sin(\Phi_s)} = 3$$

Load Factor =

$$LF := \begin{cases} 1.333 & \text{if } H_t \le 700 \cdot ft \\ 1.7 & \text{if } H_t \ge 1200 \cdot ft \\ 1.333 + \left(\frac{H_t - 700ft}{1200ft - 700ft}\right) \cdot 0.4 & \text{otherwise} \end{cases} = 1.333$$

Stability of Footing:

Adjusted Concrete Unit Weight = $\gamma_c := if\left(Bouyancy = 1, \gamma_{conc} - 62.4pcf, \gamma_{conc}\right) = 150 \cdot pcf$

Adjusted Soil Unit Weight = $\gamma_s := if\left(Bouyancy = 1, \gamma_{soil} - 62.4pcf, \gamma_{soil}\right) = 120 \cdot pcf$

Passive Pressure = $P_{pn} := K_p \cdot \gamma_s \cdot n + c \cdot 2 \cdot \sqrt{K_p} = 0 \cdot ksf$

$P_{pt} := K_p \cdot \gamma_s \cdot \left(D_f - T_f\right) + c \cdot 2 \cdot \sqrt{K_p} = 0.54 \cdot ksf$

$P_{top} := if\left[n < \left(D_f - T_f\right), P_{pt}, P_{pn}\right] = 0.54 \cdot ksf$

$P_{bot} := K_p \cdot \gamma_s \cdot D_f + c \cdot 2 \cdot \sqrt{K_p} = 1.26 \cdot ksf$

$P_{ave} := \frac{P_{top} + P_{bot}}{2} = 0.9 \cdot ksf$

$T_p := if\left[n < \left(D_f - T_f\right), T_f, \left(D_f - n\right)\right] = 2$

$A_p := W_{f1} \cdot T_p = 14$

Soil Shear Resistance = $Sl_1 := P_{ave} \cdot A_p = 12.6 \cdot kip$

Weight of Concrete = $WT_c := \left[\left(W_{f1} \cdot W_{f2} \cdot T_f\right) + W_p^2 L_p\right] \cdot \gamma_c = 18.75 \cdot kip$

Total Weight = $WT_{tot} := WT_c + Axial = 475.75 \cdot kip$

Soil/Concrete Friction Resistance = $Sl_2 := \mu \cdot WT_{tot} = 214.09 \cdot kips$

Total Sliding Resistance = $Sl_{tot} := Sl_1 + Sl_2 = 226.69 \cdot kips$

Sliding Resistance Ratio = $Sliding\_Resistance_{ratio} := \frac{0.75 Sl_{tot}}{Shear} = 170.02$

$Sliding\_Resistance\_Check := if\left[\left(\frac{Shear}{0.75 Sl_{tot}} < 1.0\right), "Okay", "No Good"\right]$

Sliding_Resistance_Check = "Okay"

Bearing Pressure Caused by Footing:

Area of the Mat = $A_{mat} := W_{f1} \cdot W_{f2} = 49$

Maximum Pressure in Mat = $P_{max} := \frac{WT_{tot}}{A_{mat}} = 9.71 \cdot ksf$

$Max\_Pressure\_Check := if\left(P_{max} < 0.6 q_s, "Okay", "No Good"\right)$

Max_Pressure_Check = "No Good"

Section 1 - RFDS GENERAL INFORMATION

RFDS NAME:	CTL02049	DATE:	9/19/2018	RF DESIGN ENG:	Mohammad Minhaj Hussain	RF PERF ENG:	Folarin Ayo	RFDS PROGRAM TYPE:	2019 LTE Next Carrier
ISSUE:	Bronze Standard	Approved? (Y/N):	No	RF DESIGN PHONE:	510-493-3024	RF PERF PHONE:		RFDS TECHNOLOGY:	LTE
REVISION:	Preliminary	RF MANAGER:	John Benedetto	RF DESIGN EMAIL:	mh705r@att.com	RF PERF EMAIL:		STATE/STATUS:	Preliminary/Approved
INITIATIVE / PROJECT:	LTE 3C[AWS F & J], LTE 4C[700 UPPER D], LTE 5C[850 B/U], 4TX4RX Software Retrofit[1900 A3-A4 & E], 4TX4RX Software Retrofit[700 B-C]					RFDS VERSION:	2.00	RFDS ID:	2572009
						GSM FREQUENCY:		Created By:	mh705r / Updated By: mm093q
						UMTS FREQUENCY:	850,1900	Created:	9/19/2018 / Updated: 11/27/2018
						LTE FREQUENCY:	700,850,1900 AWS		
						5G FREQUENCY:	850		
						IPLAN JOB # 1:	NER-RCTB-18-07119	PRD || SUB GRP #1:	LTE Next Carrier || LTE 3C
						IPLAN JOB # 2:	NER-RCTB-18-07191	PRD || SUB GRP #2:	LTE Next Carrier || LTE 4C
						IPLAN JOB # 3:	NER-RCTB-18-07254	PRD || SUB GRP #3:	LTE Next Carrier || LTE 5C
						IPLAN JOB # 4:	NER-RCTB-18-07447	PRD || SUB GRP #4:	LTE Next Carrier || 4TX4RX Software Retrofit
						IPLAN JOB # 5:	NER-RCTB-18-07448	PRD || SUB GRP #5:	Antenna Modifications || 4TX4RX Software Retrofit
						IPLAN JOB # 6:		PRD || SUB GRP #6:	
						IPLAN JOB # 7:		PRD || SUB GRP #7:	
						IPLAN JOB # 8:		PRD || SUB GRP #8:	

Section 2 - LOCATION INFORMATION

USID:	65064	FA LOCATION CODE:	10035001	LOCATION NAME:	MONTVILLE-OLD COLCHESTER RD	ORACLE PRJT # 1:	2051A0KPJH	PACE JOB #1:	MRCTB035261
REGION:	NORTHEAST	MARKET CLUSTER:	NEW ENGLAND	MARKET:	CONNECTICUT	ORACLE PRJT # 2:	2051A0KPH0	PACE JOB #2:	MRCTB035131
ADDRESS:	695 OLD COLCHESTER ROAD	CITY:	MONTVILLE	STATE:	CT	ORACLE PRJT # 3:	2051A0KQ8X	PACE JOB #3:	MRCTB035140
ZIP CODE:	06353	COUNTY:	NEW LONDON	LONG (DEC. DEG.):	-72.1540819	ORACLE PRJT # 4:	2051A0KQBX	PACE JOB #4:	MRCTB035294
LATITUDE (D-M-S):	41d 27m10.97316s	LONGITUDE (D-M-S):	-72d -9m-14.69484s	LAT (DEC. DEG.):	41.4530481	ORACLE PRJT # 5:	2051A0KQBY	PACE JOB #5:	MRCTB035301
						ORACLE PRJT # 6:		PACE JOB #6:	
						ORACLE PRJT # 7:		PACE JOB #7:	
						ORACLE PRJT # 8:		PACE JOB #8:	
						BORDER CELL WITH CONTOUR COORD:	TBD	SEARCH RING NAME:	N/A
						AM STUDY REQ'D (Y/N):	No	SEARCH RING ID:	N/A
						FREQ COORD:	TBD	BTA: TBD	MSA / RSA: TBD
						OPS DISTRICT:	CT-North	LAC(GSM):	
						OPS ZONE:	NE_CT_S_NWLN_NE_CS	LAC(UMTS):	05990
						RF DISTRICT:	NPO Triage	BSC(GSM):	
						RF ZONE:	Hotseat	RNC(UMTS):	MIDDLETOWN RNC05
						PARENT NAME(GSM):		MME POOL ID(LTE):	FF01
						PARENT NAME(UMTS):	MDTWCTNICRBR05		

DIRECTIONS, ACCESS AND EQUIPMENT LOCATION:

CT-2049
MONTVILLE
I 395N TO EXIT 79 TURN RIGHT ONTO RT 163 APPROX 1 1 MILES JUST PASSED PAPERBOARD FACTORY TURN LEFT ON BRIDGE ST TURN RIGHT AT END MAPLE AVE TAKE 1ST LEFT ONTO SHARP HILL ROAD TO END TURN RIGHT ON OLD COLECHESTER ROAD ACCESS ROAD APPROX 3 MILES ON RIGHT. FOLLOW ACCESS ROAD AROUND SITE COMPOUND TO FAR RIGHT HAND CORNER NEAR THE REAR OF COMPOUND.
ACCESS:24/7 COMBO 0043.
BSC 07
MASTER-BCF 6 (ALPHA&BETA)
SLAVE-BCF 7 (GAMMA)
T-1 INF
GSM-
ET-85 DHKV 238725
ET-39 DHKV 238724

POWER METER # 89 173 120

Section 3 - LICENSE COVERAGE/FILING INFORMATION

CGSA - NO FILING TRIGGERED (Yes/No):	Yes	CGSA LOSS:	TBD	PCS REDUCED - UPS ZIP:	TBD	CGSA CALL SIGNS:	
CGSA - MINOR FILING NEEDED (Yes/No):	No	CGSA EXT AGMT NEEDED:	TBD	PCS POPS REDUCED:	TBD		
CGSA - MAJOR FILING NEEDED (Yes/No):	No	CGSA SCORECARD UPDATED:	TBD				

Section 4 - TOWER/REGULATORY INFORMATION

STRUCTURE AT&T OWNED?:	Yes	GROUND ELEVATION (ft):	0	STRUCTURE TYPE:	SELF SUPPORT	MARKET LOCATION 700 MHz Band:	
ADDITIONAL REGULATORY?:	Yes	HEIGHT OVERALL (ft):	374.00	FCC ASR NUMBER:	NR	MARKET LOCATION 850 MHz Band:	TBD
SUB-LEASE RIGHTS?:	Yes	STRUCTURE HEIGHT (ft):	372.00			MARKET LOCATION 1900 MHz Band:	TBD
LIGHTING TYPE:	PAINT AND RED LIGHT					MARKET LOCATION AWS Band:	
						MARKET LOCATION WCS Band:	
						MARKET LOCATION Future Band:	

Section 5 - E-911 INFORMATION - existing

	PSAP NAME:	PSAP ID:	E911 PHASE:	MPC SVC PROVIDER:	LMU REQUIRED:	ESRN:	DATE LIVE PH1:	DATE LIVE PH2:
SECTOR A E-911				INTRADO_MIAMI		0		
SECTOR B				INTRADO_MIAMI		0		
SECTOR C				INTRADO_MIAMI		0		
SECTOR D								
SECTOR E								
SECTOR F								
OMNI								

Section 5 - E-911 INFORMATION - final

	PSAP NAME:	PSAP ID:	E911 PHASE:	MPC SVC PROVIDER:	LMU REQUIRED:	ESRN:	DATE LIVE PH1:	DATE LIVE PH2:
SECTOR A E-911				INTRADO_MIAMI		0		
SECTOR B				INTRADO_MIAMI		0		
SECTOR C				INTRADO_MIAMI		0		
SECTOR D								
SECTOR E								
SECTOR F								
OMNI								

Section 6 - RBS GENERAL INFORMATION - existing

	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS	5G 1ST RBS
RBS ID:	218824	246968	418626	
CTS COMMON ID:	CTV2049	CTU2049	CTU2049	
CELL ID / BCF:	CTV2049	CTV2049	CTU2049	
BTA/TID:	319U	319V	319L	
4-9 DIGIT SITE ID:	2049	2049	02049	
COW OR TOY?:	No	No	No	
CELL SITE TYPE:	SECTORIZED	SECTORIZED	SECTORIZED	
SITE TYPE:	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	
BTS LOCATION ID:	INTERNAL	INTERNAL	INTERNAL	
BASE STATION TYPE:	BASE	OVERLAY	BASE	
EQUIPMENT NAME:	MONTVILLE-OLD COLCHESTER RD	MONTVILLE	MONTVILLE LTE	
DISASTER PRIORITY:	0	0	0	

Section 6 - RBS GENERAL INFORMATION - final

	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS	5G 1ST RBS
RBS ID:	218824		418626	RFDS_43117944
CTS COMMON ID:	CTV2049		CTU2049	CTCN002049
CELL ID / BCF:	CTV2049		CTU2049	CTCN002049
BTA/TID:	319U		319L	319L
4-9 DIGIT SITE ID:	2049		02049	002049
COW OR TOY?:	No		No	No
CELL SITE TYPE:	SECTORIZED		SECTORIZED	SECTORIZED
SITE TYPE:	MACRO-CONVENTIONAL		MACRO-CONVENTIONAL	MACRO-CONVENTIONAL
BTS LOCATION ID:	INTERNAL		INTERNAL	INTERNAL
BASE STATION TYPE:	BASE		BASE	BASE
EQUIPMENT NAME:	MONTVILLE-OLD COLCHESTER RD		MONTVILLE LTE	MONTVILLE LTE
DISASTER PRIORITY:	0		0	0

Section 7 - RBS SPECIFIC INFORMATION - existing

	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS	5G 1ST RBS
RAC:				
EQUIPMENT VENDOR:	ERICSSON	ERICSSON	ERICSSON	
EQUIPMENT TYPE:	3206 INDOOR	3206 INDOOR	6601 INDOOR MU	
BASEBAND CONFIGURATION:				
LOCATION:				
CABINET LOCATION:				
MARKET STATE CODE:			CT	
AGPS:	Yes	Yes	Yes	
NODE B NUMBER:	0	0	2049	

Section 7 - RBS SPECIFIC INFORMATION - final

	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS	5G 1ST RBS
RAC:				
EQUIPMENT VENDOR:	ERICSSON		ERICSSON	ERICSSON
EQUIPMENT TYPE:	3206 INDOOR		6601 INDOOR MU	6630
BASEBAND CONFIGURATION:			1x6601 / 1x6630 / 1xXMU03	xxxx / 1x6630 / xxxx
LOCATION:				
CABINET LOCATION:				
MARKET STATE CODE:			CT	CT
AGPS:	Yes		Yes	Yes
NODE B NUMBER:	0		2049	2049

Section 8 - RBS/SECTOR ASSOCIATION - existing

	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS	5G 1ST RBS
CTS Common ID	CTV20491	CTL02049	CTL02049	
Soft Sector IDs	CTV20491	CTL02497	CTL02049_7A_1	
	CTV20492	CTL02498	CTL02049_7A_3_F	
	CTV20493	CTL02499	CTL02049_7B_1	
			CTL02049_7B_3_F	
			CTL02049_7C_1	
			CTL02049_7C_3_F	
			CTL02049_9A_1	
			CTL02049_9A_2	
			CTL02049_9B_1	
			CTL02049_9B_2	
			CTL02049_9C_1	
			CTL02049_9C_2	

Section 8 - RBS/SECTOR ASSOCIATION - final

	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS	5G 1ST RBS
CTS Common ID	CTV20491		CTL02049	CTCN002049
Soft Sector IDs	CTV20491		CTL02049_2A_1	CTCN002049_N005A_1
	CTV20492		CTL02049_2A_2	CTCN002049_N005B_1
	CTV20493		CTL02049_2B_1	CTCN002049_N005C_1
			CTL02049_2B_2	
			CTL02049_2C_1	
			CTL02049_2C_2	
			CTL02049_7A_1	
			CTL02049_7A_3_F	
			CTL02049_7B_1	
			CTL02049_7B_3_F	
			CTL02049_7C_1	
			CTL02049_7C_3_F	
			CTL02049_8A_1	
			CTL02049_8B_1	
			CTL02049_8C_1	
			CTL02049_9A_1	
			CTL02049_9A_2	
			CTL02049_9B_1	
			CTL02049_9B_2	
			CTL02049_9C_1	
			CTL02049_9C_2	

Section 9 - SOFT SECTOR ID - existing

	UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 700	LTE 2ND 1900	LTE 4TH AWS	5G 1ST 850
USEID (excluding Hard Sector)	65064.850.3G.1	65064.1900.3G.1								
SECTOR A SOFT SECTOR ID	CTV20491	CTL02497	CTL02049_7A_1		CTL02049_9A_1		CTL02049_7A_3_F	CTL02049_9A_2		
SECTOR B	CTV20492	CTL02498	CTL02049_7B_1		CTL02049_9B_1		CTL02049_7B_3_F	CTL02049_9B_2		
SECTOR C	CTV20493	CTL02499	CTL02049_7C_1		CTL02049_9C_1		CTL02049_7C_3_F	CTL02049_9C_2		
SECTOR D										
SECTOR E										
SECTOR F										
OMNI										

Section 9 - SOFT SECTOR ID - final

	UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 700	LTE 2ND 1900	LTE 4TH AWS	5G 1ST 850
USEID (excluding Hard Sector)	65064.850.3G.1									
SECTOR A SOFT SECTOR ID	CTV20491		CTL02049_7A_1	CTL02049_8A_1	CTL02049_9A_1	CTL02049_2A_1	CTL02049_7A_3_F	CTL02049_9A_2	CTL02049_2A_2	CTCN002049_N005A_1
SECTOR B	CTV20492		CTL02049_7B_1	CTL02049_8B_1	CTL02049_9B_1	CTL02049_2B_1	CTL02049_7B_3_F	CTL02049_9B_2	CTL02049_2B_2	CTCN002049_N005B_1
SECTOR C	CTV20493		CTL02049_7C_1	CTL02049_8C_1	CTL02049_9C_1	CTL02049_2C_1	CTL02049_7C_3_F	CTL02049_9C_2	CTL02049_2C_2	CTCN002049_N005C_1
SECTOR D										
SECTOR E										
SECTOR F										
OMNI										

Section 9 - Cell Number - existing

	UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 700	LTE 2ND 1900	LTE 4TH AWS	5G 1ST 850
USEID (excluding Hard Sector)	65064.850.3G.1	65064.1900.3G.1								
SECTOR A CELL NUMBER			15		8		171	178		
SECTOR B			16		9		172	179		
SECTOR C			17		10		173	180		
SECTOR D										
SECTOR E										
SECTOR F										
OMNI										

Section 9 - Cell Number - final

	UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 700	LTE 2ND 1900	LTE 4TH AWS	5G 1ST 850
USEID (excluding Hard Sector)	65064.850.3G.1									
SECTOR A CELL NUMBER			15	1	8	22	171	178	182	1
SECTOR B			16	2	9	23	172	179	183	2
SECTOR C			17	3	10	24	173	180	184	3
SECTOR D										
SECTOR E										
SECTOR F										
OMNI										

Section 10 - CID/SAC - existing

	UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 700	LTE 2ND 1900	LTE 4TH AWS	5G 1ST 850
SECTOR A CID/SAC	20491	20497								
SECTOR B	20492	20498								
SECTOR C	20493	20499								
SECTOR D										
SECTOR E										
SECTOR F										
OMNI										

Section 10 - CID/SAC - final

	UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 700	LTE 2ND 1900	LTE 4TH AWS	5G 1ST 850
SECTOR A CID/SAC	20491									
SECTOR B	20492									
SECTOR C	20493									
SECTOR D										
SECTOR E										
SECTOR F										
OMNI										

Section 11 - CURRENT RADIO COUNTS existing

	GSM 1ST 850	GSM 1ST 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	UMTS 3RD 850	UMTS 3RD 1900	UMTS 4TH 850	UMTS 4TH 1900	LTE 1ST 700	LTE 1ST AWS												
SECTOR A RADIO COUNTS		2			TBD	TBD	N/A	N/A	N/A	N/A														
SECTOR B		2			TBD	TBD	N/A	N/A	N/A	N/A														
SECTOR C		2			TBD	TBD	N/A	N/A	N/A	N/A														
SECTOR D																								
SECTOR E																								
SECTOR F																								
OMNI																								

Section 12 - CURRENT T1 COUNTS existing

Section 13 - NEW/PROPOSED RADIO COUNTS

	GSM 1ST 850	GSM 1ST 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	UMTS 3RD 850	UMTS 3RD 1900	UMTS 4TH 850	UMTS 4TH 1900	LTE 1ST 700	LTE 1ST AWS												
SECTOR A RADIO COUNTS		2			TBD	TBD	N/A	N/A	N/A	N/A														
SECTOR B		2			TBD	TBD	N/A	N/A	N/A	N/A														
SECTOR C		2			TBD	TBD	N/A	N/A	N/A	N/A														
SECTOR D																								
SECTOR E																								
SECTOR F																								
OMNI																								

Section 14 - NEW/PROPOSED T1 COUNTS

Section 15A - CURRENT TOWER CONFIGURATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	HPA-65R-BUU-H6		7770	7770			
ANTENNA VENDOR	CCI Products		Powerwave	Powerwave			
ANTENNA SIZE (H x W x D)	72X14.8X9		55X11X5	55X11X5			
ANTENNA WEIGHT	51		35	35			
AZIMUTH	70		143	143			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	240		240	240			
ANTENNA TIP HEIGHT	243		242	242			
MECHANICAL DOWNTILT	0		0	0			
FEEDER AMOUNT			2	2			
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Internal		2 Powerwave 7020	2 Powerwave 7020			
SURGE ARRESTOR (QTY/MODEL)	1 DC/Fiber Squid			1 POLYPHASER 1003B60			
DIPLEXER (QTY/MODEL)			2 Powerwave / LGP 13519	4 Powerwave / LGP 13519			
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)	LTE RRH			1 Powerwave 7070			
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)			2 LGP 21401 (Dual Band - POLYPHASER 1003B60				
CURRENT INJECTORS FOR TMA (QTY/MODEL)			2				
PDU FOR TMAS (QTY/MODEL)			1 (1900 AND 850 Bypass TMA)				
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)	1 RRUS-11 (REUSE ONLY)						
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)	1 RRUS-32 B2						
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)				2 (1) & 1001940 (1)			
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1							
Local Market Note 2							
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Aloll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RX/ATT KIT MODULE?	TRIPLEXER or LLC (Q'TY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	PORT 1			CTL02049_7A_1	CTL02049_7A_1		LTE 700	H6_719MHz_06DT	14.08	70	6	Top	Fiber	0						1475.7065			
	PORT 3			CTL02049_9A_1	CTL02049_9A_1		LTE 1900	H6_1930MHz_06DT	17.18	70	6	Top	Fiber	0						2421.029			
	PORT 4			CTL02049_9A_2	CTL02049_9A_2		LTE 1900	H6_1930MHz_06DT	17.18	70	6	Top	Fiber	0						2421.029			
ANTENNA POSITION 3	PORT 1			CTV20491	CTV20491		UMTS 850	7770.00.850.04	13.5	143	4	None	Andrew 1-5/8	295						225.94			
	PORT 3			CTU20497	CTU20497		UMTS 1900	7770.00.1900.06	15.5	143	0	None	Andrew 1-5/8	295						269.15			
ANTENNA POSITION 4	PORT 1			319G20491	319G20491	Decom	GSM 850	7770.00.850.04	13.5	143	4	None	Andrew 1-5/8	295						225.94			

Section 15B - CURRENT TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	HPA-65R-BUU-H8		7770	7770			
ANTENNA VENDOR	CCI Products		Powerwave	Powerwave			
ANTENNA SIZE (H x W x D)	82.4X14.8X7.4		55X11X5	55X11X5			
ANTENNA WEIGHT	68		35	35			
AZIMUTH	190		263	263			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	240		240	240			
ANTENNA TIP HEIGHT	244		242	242			
MECHANICAL DOWNTILT	0		2	2			
FEEDER AMOUNT			2	2			
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Internal	2	Powerwave 7020	2 Powerwave 7020			
SURGE ARRESTOR (QTY/MODEL)		1		1 POLYPHASER 1003B60			
DIPLEXER (QTY/MODEL)		2	Powerwave / LGP 13519	4 Powerwave / LGP 13519			
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)	LTE RRH						
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)		2	LGP 21401 (Dual Band - POLYPHASER 1003B60				
CURRENT INJECTORS FOR TMA (QTY/MODEL)		2					
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)	1 RRUS-11 (REUSE ONLY)						
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)	1 RRUS-32 B2						
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)				2 (1) & 1001940 (1)			
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1							
Local Market Note 2							
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Aloll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RX/ATT KIT MODULE?	TRIPLEXER or LLC (Q'TY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	PORT 1			CTL02049_7B_1	CTL02049_7B_1		LTE 700	H8_719MHz_06DT	15	190	6	Top	Fiber	0						1475.7065			
	PORT 3			CTL02049_9B_1	CTL02049_9B_1		LTE 1900	H8_1930MHz_06DT	17.4	190	6	Top	Fiber	0						2421.029			
	PORT 4			CTL02049_9B_2	CTL02049_9B_2		LTE 1900	H8_1930MHz_06DT	17.4	190	6	Top	Fiber	0						2421.029			
ANTENNA POSITION 3	PORT 1			CTV20492	CTV20492		UMTS 850	7770.00.850.04	13.5	263	4	None	Andrew 1-5/8	295						225.94			
	PORT 3			CTU20498	CTU20498		UMTS 1900	7770.00.1900.06	15.5	263	0	None	Andrew 1-5/8	295						269.15			
ANTENNA POSITION 4	PORT 1			319G20492	319G20492	Decom	GSM 850	7770.00.850.04	13.5	263	4	None	Andrew 1-5/8	295						225.94			

Section 15C - CURRENT TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	HPA-65R-BUU-H8		7770	7770			
ANTENNA VENDOR	CCI Products		Powerwave	Powerwave			
ANTENNA SIZE (H x W x D)	82.4X14.8X7.4		55X11X5	55X11X5			
ANTENNA WEIGHT	68		35	35			
AZIMUTH	310		23	23			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	240		240	240			
ANTENNA TIP HEIGHT	244		242	242			
MECHANICAL DOWNTILT	0		2	2			
FEEDER AMOUNT			2	2			
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Internal	2	Powerwave 7020	2 Powerwave 7020			
SURGE ARRESTOR (QTY/MODEL)		1		1 POLYPHASER 1003B60			
DIPLEXER (QTY/MODEL)		2	Powerwave / LGP 13519	4 Powerwave / LGP 13519			
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)	LTE RRH						
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)		2	LGP 21401 (Dual Band - POLYPHASER 1003B60				
CURRENT INJECTORS FOR TMA (QTY/MODEL)		2					
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)	1 RRUS-11 (REUSE ONLY)						
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)	1 RRUS-32 B2						
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)		2	(1) & 1001940 (1)				
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1							
Local Market Note 2							
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Aloll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RX/ATT KIT MODULE?	TRIPLEXER or LLC (Q'TY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	PORT 1			CTL02049_7C_1	CTL02049_7C_1		LTE 700	H8_719MHz_06DT	15	310	6	Top	Fiber	0						1475.7065			
	PORT 3			CTL02049_9C_1	CTL02049_9C_1		LTE 1900	H8_1930MHz_03DT	17.1	310	3	Top	Fiber	0						2421.029			
	PORT 4			CTL02049_9C_2	CTL02049_9C_2		LTE 1900	H8_1930MHz_03DT	17.1	310	3	Top	Fiber	0						2421.029			
ANTENNA POSITION 3	PORT 1			CTV20493	CTV20493		UMTS 850	7770.00.850.04	13.5	23	4	None	Andrew 1-5/8	295						225.94			
	PORT 3			CTU20499	CTU20499		UMTS 1900	7770.00.1900.00	15.5	23	0	None	Andrew 1-5/8	295						269.15			
ANTENNA POSITION 4	PORT 1			319G20493	319G20493	Decom	GSM 850	7770.00.850.04	13.5	23	4	None	Andrew 1-5/8	295						225.94			

Section 16A - PLANNED/PROPOSED TOWER CONFIGURATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?	Yes						
ANTENNA MAKE - MODEL		800-10965	800-10965				
ANTENNA VENDOR		Kathrein	Kathrein				
ANTENNA SIZE (H x W x D)		78.7X20X6.9	78.7X20X6.9				
ANTENNA WEIGHT		108.6	108.6				
AZIMUTH		70	70				
MAGNETIC DECLINATION							
RADIATION CENTER (feet)		240	240				
ANTENNA TIP HEIGHT		243	243				
MECHANICAL DOWNTILT		0	0				
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)		Internal	Internal				
SURGE ARRESTOR (QTY/MODEL)	1 DC/Squid Only	1 DC/Fiber Squid					
DIPLEXER (QTY/MODEL)	1 DBCT108F1V62-1						
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)	LTE RRH	LTE RRH	LTE RRH				
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)		1 B14 4478	1 B5/B12 4449				
RRH - 850 band (QTY/MODEL)			with another band				
RRH - 1900 band (QTY/MODEL)	1 B2/B66A 8843						
RRH - AWS band (QTY/MODEL)		with another band					
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Antennas/RRH						
Local Market Note 2							
Local Market Note 3	1x6630 / 1xXMU03 ||						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AtoII)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RX/ATT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	PORT 3			CTL02049_9A_1	CTL02049_9A_1		LTE 1900	H6_1930MHz_06DT	17.07	70	6	Top	Fiber	0						3837.0724			
	PORT 4			CTL02049_9A_2	CTL02049_9A_2		LTE 1900	H6_1930MHz_06DT	17.07	70	6	Top	Fiber	0						3837.0724			
ANTENNA POSITION 2	PORT 1			CTL02049_7A_3_F	CTL02049_7A_3_F		LTE 700	80010965_777 MHz_06DT	15.3	70	6	Top	Fiber	0						2951.413			
	PORT 3			CTL02049_2A_1	CTL02049_2A_1		LTE AWS	80010965_2133 MHz_06DT	18.5	70	6	Top	Fiber	0						3664.3757			
	PORT 4			CTL02049_2A_2	CTL02049_2A_2		LTE AWS	80010965_2170 MHz_06DT	18.5	70	6	Top	Fiber	0						3664.3757			
ANTENNA POSITION 3	PORT 1			CTL02049_7A_1	CTL02049_7A_1		LTE 700	80010965_716 MHz_06DT	14.7	70	6	Top	Fiber	0						1475.7065			
	PORT 2			CTL02049_8A_1	CTL02049_8A_1		LTE 850	80010965_849 MHz_06DT	15.4	70	6	Top	Fiber	0						1000			
	PORT 5			CTCN002049_N005A_1	CTCN002049_N005A_1		5G 850	80010965_849 MHz_06DT	15.4	70	6	Top	Fiber	0						1000			

Section 16B - PLANNED/PROPOSED TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?	Yes						
ANTENNA MAKE - MODEL		800-10966	800-10966				
ANTENNA VENDOR		Kathrein	Kathrein				
ANTENNA SIZE (H x W x D)		96X20X6.9	96X20X6.9				
ANTENNA WEIGHT		114.6	114.6				
AZIMUTH		190	190				
MAGNETIC DECLINATION							
RADIATION CENTER (feet)		240	240				
ANTENNA TIP HEIGHT		244	244				
MECHANICAL DOWNTILT		0	0				
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)		Internal	Internal				
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)	1 OBCT108F1V92-1						
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)	LTE RRH	LTE RRH	LTE RRH				
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)	1 B14 4478	1	B5/B12 4449				
RRH - 850 band (QTY/MODEL)			with another band				
RRH - 1900 band (QTY/MODEL)	1 B2/B66A 8843						
RRH - AWS band (QTY/MODEL)		with another band					
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Follow Antennas/RRH positions as per PDs Replace/Add Antennas and RRHs.						
Local Market Note 2							
Local Market Note 3	1x6601 / 1x6630 / 1xXMU03 || xxxxx / 1x6630 / xxxxx						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AtoII)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RX/ATT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	PORT 3			CTL02049_9B_1	CTL02049_9B_1		LTE 1900	H8_1930MHz_06DT	17.4	190	6	Top	Fiber	0						3837.0724			
	PORT 4			CTL02049_9B_2	CTL02049_9B_2		LTE 1900	H8_1930MHz_06DT	17.4	190	6	Top	Fiber	0						3837.0724			
ANTENNA POSITION 2	PORT 1			CTL02049_7B_3 F	CTL02049_7B_3 F		LTE 700	B0010966_777 MHz_06DT	15.7	190	6	Top	Fiber	0						2951.413			
	PORT 3			CTL02049_2B_1	CTL02049_2B_1		LTE AWS	B0010966_2133 MHz_06DT	18.5	190	6	Top	Fiber	0						3664.3757			
	PORT 4			CTL02049_2B_2	CTL02049_2B_2		LTE AWS	B0010966_2170 MHz_06DT	18.3	190	6	Top	Fiber	0						3664.3757			
ANTENNA POSITION 3	PORT 1			CTL02049_7B_1	CTL02049_7B_1		LTE 700	B0010966_716 MHz_06DT	15.2	190	6	Top	Fiber	0						1475.7065			
	PORT 2			CTL02049_8B_1	CTL02049_8B_1		LTE 850	B0010966_849 MHz_06DT	16.3	190	6	Top	Fiber	0						1000			
	PORT 5			CTCN002049_N005B_1	CTCN002049_N005B_1		5G 850	B0010966_849 MHz_06DT	16.3	190	6	Top	Fiber	0						1000			

Section 16C - PLANNED/PROPOSED TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?	Yes						
ANTENNA MAKE - MODEL		800-10966	800-10966				
ANTENNA VENDOR		Kathrein	Kathrein				
ANTENNA SIZE (H x W x D)		96X20X6.9	96X20X6.9				
ANTENNA WEIGHT		114.6	114.6				
AZIMUTH		310	310				
MAGNETIC DECLINATION							
RADIATION CENTER (feet)		240	240				
ANTENNA TIP HEIGHT		244	244				
MECHANICAL DOWNTILT		0	0				
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)		Internal	Internal				
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)	1 OBCT108F1V92-1						
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)	LTE RRH	LTE RRH	LTE RRH				
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)		1 B14 4478	1 B5/B12 4449				
RRH - 850 band (QTY/MODEL)			with another band				
RRH - 1900 band (QTY/MODEL)	1 B2/B66A 8843						
RRH - AWS band (QTY/MODEL)		with another band					
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Follow Antennas/RRH positions as per PDs. Replace/Add Antennas and RRHs.						
Local Market Note 2							
Local Market Note 3	1x6601 / 1x6630 / 1xXMU03 || xxxxx / 1x6630 / xxxxx						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RX/ATT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	PORT 3			CTL02049_9C_1	CTL02049_9C_1		LTE 1900	H8_1930MHz_03DT	17.1	310	3	Top	Fiber	0						3837.0724			
	PORT 4			CTL02049_9C_2	CTL02049_9C_2		LTE 1900	H8_1930MHz_03DT	17.1	310	3	Top	Fiber	0						3837.0724			
ANTENNA POSITION 2	PORT 1			CTL02049_7C_3_F	CTL02049_7C_3_F		LTE 700	80010966_777 MHz_06DT	15.7	310	6	Top	Fiber	0						2951.413			
	PORT 3			CTL02049_2C_1	CTL02049_2C_1		LTE AWS	80010966_2133 MHz_06DT	18.5	310	3	Top	Fiber	0						3664.3757			
	PORT 4			CTL02049_2C_2	CTL02049_2C_2		LTE AWS	80010966_2170 MHz_06DT	18.3	310	3	Top	Fiber	0						3664.3757			
ANTENNA POSITION 3	PORT 1			CTL02049_7C_1	CTL02049_7C_1		LTE 700	80010966_716 MHz_06DT	15.2	310	6	Top	Fiber	0						1475.7065			
	PORT 2			CTL02049_8C_1	CTL02049_8C_1		LTE 850	80010966_849 MHz_06DT	16.3	310	6	Top	Fiber	0						1000			
	PORT 5			CTCN002049_N005C_1	CTCN002049_N005C_1		5G 850	80010966_849 MHz_06DT	16.3	310	6	Top	Fiber	0						1000			

Section 16.5A - SCOPING TOWER CONFIGURATION - SECTOR A (OR OMNI)

Section 17A - FINAL TOWER CONFIGURATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	HPA-65R-BUU-H6	800-10965	800-10965	7770			
ANTENNA VENDOR	CCI Products	Kathrein	Kathrein	Powerwave			
ANTENNA SIZE (H x W x D)	72X14.8X9	78.7X20X6.9	78.7X20X6.9	55X11X5			
ANTENNA WEIGHT	51	108.6	108.6	35			
AZIMUTH	70	70	70	143			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	240	240	240	240			
ANTENNA TIP HEIGHT	243	243	243	242			
MECHANICAL DOWNTILT	0	0	0	0			
FEEDER AMOUNT	Fiber+2 Coax			2			
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)		Internal	Internal	Internal	2	Powerwave 7020	
SURGE ARRESTOR (QTY/MODEL)	2	DC Squid Only	1 DC/Fiber Squid	1 DC/Fiber Squid			
DIPLEXER (QTY/MODEL)	1	DBCT108F1V92-1			2	Powerwave / LGP 13519	
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)		LTE RRH	LTE RRH	LTE RRH	1	Powerwave 7070	
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)					2	LGP 21401 (Dual Band -	
CURRENT INJECTORS FOR TMA (QTY/MODEL)					2	POLYPHASER 1000860	
PDU FOR TMAS (QTY/MODEL)					1	(1900 AND 850 BypassTMA)	
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)		1 B14 4478	1 B5/B12 4449				
RRH - 850 band (QTY/MODEL)			with another band				
RRH - 1900 band (QTY/MODEL)	1 B2/B66A 8843						
RRH - AWS band (QTY/MODEL)		with another band					
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Follow Antennas/RRH positions as per PDs Replace/Add Antennas and RRHs						
Local Market Note 2	LTE sector Beta (190 Az) mounsed on UMTS Beta arm mounts (263) LTE sector Gamma (310 Az) mounted on UMTS Gamma arm mounts (23)						
Local Market Note 3	1x6601 / 1x6630 / 1xXMU03 || xxxxx / 1x6630 / xxxxx						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Aisil)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RX/ATT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	PORT 3	65064.A.1900.4G.1		CTL02049_9A_1	CTL02049_9A_1		LTE 1900	H6_1930MHz_06DT	17.07	70	6	Top	Fiber	0						3837.0724		2	
	PORT 4	65064.A.1900.4G.2		CTL02049_9A_2	CTL02049_9A_2		LTE 1900	H6_1930MHz_06DT	17.07	70	6	Top	Fiber	0						3837.0724		2	
ANTENNA POSITION 2	PORT 1	65064.A.700.4G.5		CTL02049_7A_3_F	CTL02049_7A_3_F		LTE 700	80010965_777 MHz_06DT	15.3	70	6	Top	Fiber	0						2951.413		3	
	PORT 3	65064.A.AWS.4G.mp1		CTL02049_2A_1	CTL02049_2A_1		LTE AWS	80010965_2133 MHz_06DT	18.5	70	6	Top	Fiber	0						3664.3757		4	
	PORT 4	65064.A.AWS.4G.mp4		CTL02049_2A_2	CTL02049_2A_2		LTE AWS	80010965_2170 MHz_06DT	18.5	70	6	Top	Fiber	0						3664.3757		4	
ANTENNA POSITION 3	PORT 1	65064.A.700.4G.1		CTL02049_7A_1	CTL02049_7A_1		LTE 700	80010965_716 MHz_06DT	14.7	70	6	Top	Fiber	0						1475.7065		5	
	PORT 2	65064.A.850.4G.mp1		CTL02049_8A_1	CTL02049_8A_1		LTE 850	80010965_849 MHz_06DT	15.4	70	6	Top	Fiber	0						1000		5	
	PORT 5	65064.A.850.5G.mp1		CTCN002049_N005A_1	CTCN002049_N005A_1		5G 850	80010965_849 MHz_06DT	15.4	70	6	Top	Fiber	0						1000		5	
ANTENNA POSITION 4	PORT 1	65064.A.850.3G.1		CTV20491	CTV20491		UMTS 850	7770.00.850.04	13.5	143	4	None	Andrew 1-5/8	295						225.94		7	

Section 17B - FINAL TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	HPA-65R-BUU-H8	800-10966	800-10966	7770			
ANTENNA VENDOR	CCI Products	Kathrein	Kathrein	Powerwave			
ANTENNA SIZE (H x W x D)	82.4X14.8X7.4	96X20X6.9	96X20X6.9	55X11X5			
ANTENNA WEIGHT	68	114.6	114.6	35			
AZIMUTH	190	190	190	263			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	240	240	240	240			
ANTENNA TIP HEIGHT	244	244	244	242			
MECHANICAL DOWNTILT	0	0	0	2			
FEEDER AMOUNT	Fiber+2 Coax			2			
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)		Internal	Internal	Internal	2	Powerwave 7020							
SURGE ARRESTOR (QTY/MODEL)	1	POLYPHASER 1000860											
DIPLEXER (QTY/MODEL)	1	DBCT108F1V92-1			2	Powerwave / LGP 13519							
DUPLEXER (QTY/MODEL)													
Antenna RET CONTROL UNIT (QTY/MODEL)		LTE RRH	LTE RRH	LTE RRH									
DC BLOCK (QTY/MODEL)													
TMA/LNA (QTY/MODEL)					2	LGP 21401 (Dual Band -							
CURRENT INJECTORS FOR TMA (QTY/MODEL)					2	POLYPHASER 1000860							
PDU FOR TMAS (QTY/MODEL)													
FILTER (QTY/MODEL)													
SQUID (QTY/MODEL)													
FIBER TRUNK (QTY/MODEL)													
DC TRUNK (QTY/MODEL)													
REPEATER (QTY/MODEL)													
RRH - 700 band (QTY/MODEL)		1	B14 4478	1	B5/B12 4449								
RRH - 850 band (QTY/MODEL)					with another band								
RRH - 1900 band (QTY/MODEL)	1	B2/B66A 8843											
RRH - AWS band (QTY/MODEL)			with another band										
RRH - WCS band (QTY/MODEL)													
Additional RRH #1 - any band (QTY/MODEL)													
Additional RRH #2 - any band (QTY/MODEL)													
Additional Component 1 (QTY/MODEL)													
Additional Component 2 (QTY/MODEL)													
Additional Component 3 (QTY/MODEL)													
Local Market Note 1	Follow Antennas/RRH positions as per PDs Replace/Add Antennas and RRHs						
Local Market Note 2	LTE sector Beta (190 Az) mounsed on UMTS Beta arm mounts (263). LTE sector Gamma (310 Az) mounted on UMTS Gamma arm mounts (23)						
Local Market Note 3	1x6601 / 1x6630 / 1xXMU03 || xxxxx / 1x6630 / xxxxx						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AtoII)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RX/ATT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	PORT 3	65064.B.1900.4G.1		CTL02049_9B_1	CTL02049_9B_1		LTE 1900	HB_1930MHz_06DT	17.4	190	6	Top	Fiber	0						3837.0724		10	
	PORT 4	65064.B.1900.4G.2		CTL02049_9B_2	CTL02049_9B_2		LTE 1900	HB_1930MHz_06DT	17.4	190	6	Top	Fiber	0						3837.0724		10	
ANTENNA POSITION 2	PORT 1	65064.B.700.4G.5		CTL02049_7B_3_F	CTL02049_7B_3_F		LTE 700	80010966_777 MHz_06DT	15.7	190	6	Top	Fiber	0						2951.413		11	
	PORT 3	65064.B.AWS.4G.mp1		CTL02049_2B_1	CTL02049_2B_1		LTE AWS	80010966_2133 MHz_06DT	18.5	190	6	Top	Fiber	0						3664.3757		12	
	PORT 4	65064.B.AWS.4G.mp4		CTL02049_2B_2	CTL02049_2B_2		LTE AWS	80010966_2170 MHz_06DT	18.3	190	6	Top	Fiber	0						3664.3757		12	
ANTENNA POSITION 3	PORT 1	65064.B.700.4G.1		CTL02049_7B_1	CTL02049_7B_1		LTE 700	80010966_716 MHz_06DT	15.2	190	6	Top	Fiber	0						1475.7065		13	
	PORT 2	65064.B.850.4G.mp1		CTL02049_8B_1	CTL02049_8B_1		LTE 850	80010966_849 MHz_06DT	16.3	190	6	Top	Fiber	0						1000		13	
	PORT 5	65064.B.850.5G.mp1		CTCN002049_N005B_1	CTCN002049_N005B_1		5G 850	80010966_849 MHz_06DT	16.3	190	6	Top	Fiber	0						1000		13	
ANTENNA POSITION 4	PORT 1	65064.B.850.3G.1		CTV20492	CTV20492		UMTS 850	7770.00.850.04	13.5	263	4	None	Andrew 1-5/8	295						225.94		15	

Section 17C - FINAL TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	HPA-65R-BUU-H8	800-10966	800-10966	7770			
ANTENNA VENDOR	CCI Products	Kathrein	Kathrein	Powerwave			
ANTENNA SIZE (H x W x D)	92.4X14.8X7.4	96X20X6.9	96X20X6.9	55X11X5			
ANTENNA WEIGHT	68	114.6	114.6	35			
AZIMUTH	310	310	310	23			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	240	240	240	240			
ANTENNA TIP HEIGHT	244	244	244	242			
MECHANICAL DOWNTILT	0	0	0	2			
FEEDER AMOUNT	Fiber+2 Coax			2			
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)		Internal	Internal	Internal	2	Powerwave 7020	
SURGE ARRESTOR (QTY/MODEL)	1	POLYPHASER 1000860					
DIPLEXER (QTY/MODEL)	1	DBCT108F1V92-1			2	Powerwave / LGP 13519	
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)		LTE RRH	LTE RRH	LTE RRH			
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)					2	LGP 21401 (Dual Band -	
CURRENT INJECTORS FOR TMA (QTY/MODEL)					2	POLYPHASER 1000860	
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)		1	B14 4478	1	B5/B12 4449		
RRH - 850 band (QTY/MODEL)				with another band			
RRH - 1900 band (QTY/MODEL)	1	B2/B66A 8843					
RRH - AWS band (QTY/MODEL)			with another band				
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Follow Antennas/RRH positions as per PDs Replace/Add Antennas and RRHs						
Local Market Note 2	LTE sector Beta (190 Az) mounted on UMTS Beta arm mounts (263) LTE sector Gamma (310 Az) mounted on UMTS Gamma arm mounts (23)						
Local Market Note 3	1x6601 / 1x6630 / 1xXMU03 || xxxxx / 1x6630 / xxxxx						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Aisil)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RX/ATT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	PORT 3	65064.C.1900.4G.1		CTL02049_9C_1	CTL02049_9C_1		LTE 1900	H8_1930MHz_03DT	17.1	310	3	Top	Fiber	0						3837.0724		18	
	PORT 4	65064.C.1900.4G.2		CTL02049_9C_2	CTL02049_9C_2		LTE 1900	H8_1930MHz_03DT	17.1	310	3	Top	Fiber	0						3837.0724		18	
ANTENNA POSITION 2	PORT 1	65064.C.700.4G.5		CTL02049_7C_3_F	CTL02049_7C_3_F		LTE 700	80010966_777 MHz_06DT	15.7	310	6	Top	Fiber	0						2951.413		19	
	PORT 3	65064.C.AWS.4G.mp1		CTL02049_2C_1	CTL02049_2C_1		LTE AWS	80010966_2133 MHz_06DT	18.5	310	3	Top	Fiber	0						3664.3757		20	
	PORT 4	65064.C.AWS.4G.mp4		CTL02049_2C_2	CTL02049_2C_2		LTE AWS	80010966_2170 MHz_06DT	18.3	310	3	Top	Fiber	0						3664.3757		20	
ANTENNA POSITION 3	PORT 1	65064.C.700.4G.1		CTL02049_7C_1	CTL02049_7C_1		LTE 700	80010966_716 MHz_06DT	15.2	310	6	Top	Fiber	0						1475.7065		21	
	PORT 2	65064.C.850.4G.mp1		CTL02049_8C_1	CTL02049_8C_1		LTE 850	80010966_849 MHz_06DT	16.3	310	6	Top	Fiber	0						1000		21	
	PORT 5	65064.C.850.5G.mp1		CTCN002049_N005C_1	CTCN002049_N005C_1		5G 850	80010966_849 MHz_06DT	16.3	310	6	Top	Fiber	0						1000		21	
ANTENNA POSITION 4	PORT 1	65064.C.850.3G.1		CTV20493	CTV20493		UMTS 850	7770.00.850.04	13.5	23	4	None	Andrew 1-5/8	295						225.94		23	

8-Port Antenna	R1	R2	Y1	Y2
Frequency Range	698–960	698–960	1695–2690	1695–2690
Dual Polarization	X	X	X	X
HPBW	65°	65°	65°	65°
Adjust. Electr. DT	2°–12°	2°–12°	2.5°–12°	2.5°–12°

set by *FlexRET*

KATHREIN

AISG Antenna Interface Standards Group

8-Port Antenna 698–960/698–960/1695–2690/1695–2690 65°/65°/65°/65° 15.5/15.5/18/18dBi 2°–12°/2°–12°/2.5°–12°/2.5°–12°T

Type No.		80010965			
Left side, lowband		R1, connector 1–2			
		698–960			
Frequency Range	MHz	698 – 806	790 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.8	15.4	15.6	15.9
Gain over all Tilts	dBi	14.8 ± 0.6	15.4 ± 0.4	15.6 ± 0.2	15.8 ± 0.2
Horizontal Pattern:					
Azimuth Beamwidth	°	62 ± 3.9	61 ± 3.2	60 ± 2.7	60 ± 2.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 25	> 27	> 25
Vertical Pattern:					
Elevation Beamwidth	°	11.9 ± 0.8	11.0 ± 0.8	10.5 ± 0.4	10.2 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0			
Tilt Accuracy	°	< 0.7	< 0.7	< 0.7	< 0.7
First Upper Side Lobe Suppression	dB	> 14	> 14	> 15	> 14
Cross Polar Isolation	dB	> 30			
Port to Port Isolation	dB	> 27 (R1 // R2) > 30 (R1 // Y1, Y2)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			
Max. Effective Power Port 1–2	W	800 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 9.6) requirements.

936.5306/b.1 ngmn 04.24.02.03 Subject to alteration.

Kathrein USA Greenway Plaza II, 2400 Lakeside Blvd., Suite 650, Richardson TX 75082
Phone: 214.238.8800 Fax: 214.238.8801 Email: info@kathrein.com

Electrical specifications, all systems		
Impedance	Ω	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 27
Passive Intermodulation	dBc	< –153 (2 x 43 dBm carrier)
Polarization	°	+45, –45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 9.6) requirements.

Mechanical specifications		
Input		8 x 4.3-10 female
Connector Position		bottom
Adjustment Mechanism		FlexRET, continuously adjustable
Wind load (at Rated Wind Speed: 150 km/h) (93 mph)	N | lbf	Frontal: 1130 | 254 Maximal: 1140 | 256
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1999 / 508 / 175 78.7 / 20.0 / 6.9
Category of Mounting Hardware		XH (X-Heavy)
Weight	kg lb	44.3 / 49.3 (clamps incl.) 97.6 / 108.6 (clamps incl.)
Packing Size	mm inches	2200 / 542 / 268 86.6 / 21.3 / 10.6
Scope of Supply		Panel, FlexRET and clamps for 55–115 mm | 2.2–4.5 inches diameter

Accessories (order separately if required)

Type No.	Description	Remarks mm | inches	Weight approx. kg | lb	Units per antenna
85010097	2 clamps	Mast diameter: 110 – 220 | 4.3 – 8.7	9.4 | 20.7	1
85010099	1 downtilt kit	Downtilt angle: 0° – 13°	10.6 | 23.4	1
86010154	Site Sharing Adapter	3-way (see figure below)	0.7 | 1.5	
86010155	Site Sharing Adapter	6-way (see figure below)	1.4 | 3.1	
86010162	Gender Adapter	Solely to be used in combination with the FlexRET module 86010153V01	0.045 | 0.099	1
86010163	Port Extender		0.16 | 0.35	1

Accessories (included in the scope of supply)

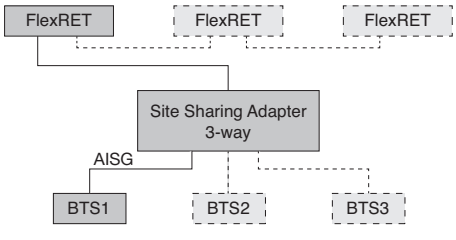
85010096	2 clamps	Mast diameter: 55 – 115 | 2.2 – 4.5	5.0 | 11.0	1
86010153V01	FlexRET			1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.
Wall mounting: No additional mounting kit needed.

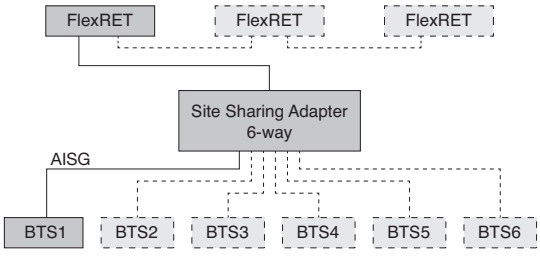
Material: **Reflector screen:** Aluminum.
Fiberglass housing: It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.
All nuts and bolts: Stainless steel or hot-dip galvanized steel.

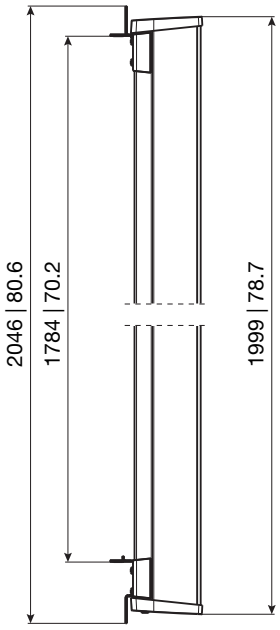
Grounding: The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

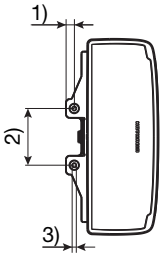
Configuration example with Site Sharing Adapter 86010154



Configuration example with Site Sharing Adapter 86010155







1) 22 | 0.9
2) 150 | 5.9
3) ∅ 11 | 0.4

All dimensions in mm | inches

936.5306/b.1 ngmn 04.24.02.03 Subject to alteration.

For more information please refer to the respective data sheets.

8-Port Antenna	R1	R2	Y1	Y2
Frequency Range	698–960	698–960	1695–2690	1695–2690
Dual Polarization	X	X	X	X
HPBW	65°	65°	65°	65°
Adjust. Electr. DT	1°–10°	1°–10°	2.5°–12°	2.5°–12°

set by *FlexRET*

KATHREIN

AISG Antenna Interface Standards Group

8-Port Antenna 698–960/698–960/1695–2690/1695–2690 65°/65°/65°/65° 16.5/16.5/18/18dBi 1°–10°/1°–10°/2.5°–12°/2.5°–12°T

Type No.		80010966			
Left side, lowband		R1, connector 1–2			
		698–960			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.7	16.1	16.4	16.5
Gain over all Tilts	dBi	15.6 ± 0.4	16.1 ± 0.3	16.3 ± 0.3	16.4 ± 0.3
Horizontal Pattern:					
Azimuth Beamwidth	°	66 ± 2.9	65 ± 2.3	65 ± 2.6	64 ± 2.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 23	> 24	> 25
Cross Polar Discrimination over Sector	dB	> 10.0	> 9.5	> 10.0	> 11.5
Vertical Pattern:					
Elevation Beamwidth	°	9.7 ± 0.7	9.0 ± 0.5	8.7 ± 0.5	8.3 ± 0.4
Electrical Downtilt continuously adjustable	°	1.0 – 10.0			
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.4
First Upper Side Lobe Suppression	dB	> 16	> 18	> 18	> 20
Cross Polar Isolation	dB	> 30			
Port to Port Isolation	dB	> 27 (R1 // R2) > 30 (R1 // Y1, Y2)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			
Max. Effective Power Port 1–2	W	800 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 9.6) requirements.

936.5298/d.1 ngmn 04.25.02.01 Subject to alteration.

Kathrein USA Greenway Plaza II, 2400 Lakeside Blvd., Suite 650, Richardson TX 75082
Phone: 214.238.8800 Fax: 214.238.8801 Email: info@kathrein.com

Electrical specifications, all systems		
Impedance	Ω	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 27
Passive Intermodulation	dBc	< –153 (2 x 43 dBm carrier)
Polarization	°	+45, –45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 9.6) requirements.

Mechanical specifications		
Input		8 x 4.3-10 female
Connector Position		bottom
Adjustment Mechanism		FlexRET, continuously adjustable
Wind load (at Rated Wind Speed: 150 km/h) (93 mph)	N | lbf	Frontal: 1400 | 315 Maximal: 1405 | 316
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2438 / 508 / 175 96.0 / 20.0 / 6.9
Category of Mounting Hardware		XH (X-Heavy)
Weight	kg lb	52.0 / 57.0 (clamps incl.) 114.6 / 125.7 (clamps incl.)
Packing Size	mm inches	2635 / 542 / 268 103.7 / 21.3 / 10.6
Scope of Supply		Panel, FlexRET and clamps for 55–115 mm | 2.2–4.5 inches diameter

Accessories (order separately if required)

Type No.	Description	Remarks mm | inches	Weight approx. kg | lb	Units per antenna
85010097	2 clamps	Mast diameter: 110 – 220 | 4.3 – 8.7	9.4 | 20.7	1
85010099	1 downtilt kit	Downtilt angle: 0° – 10°	10.6 | 23.4	1
86010154	Site Sharing Adapter	3-way (see figure below)	0.7 | 1.5	
86010155	Site Sharing Adapter	6-way (see figure below)	1.4 | 3.1	
86010162	Gender Adapter	Solely to be used in combination with the FlexRET module 86010153V01	0.045 | 0.099	1
86010163	Port Extender		0.16 | 0.35	1

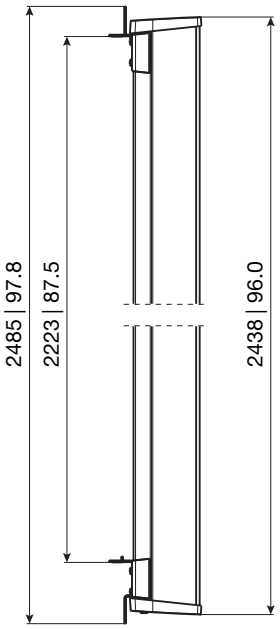
Accessories (included in the scope of supply)

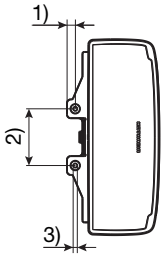
85010096	2 clamps	Mast diameter: 55 – 115 | 2.2 – 4.5	5.0 | 11.0	1
86010153V01	FlexRET			1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.
Wall mounting: No additional mounting kit needed.

Material: **Reflector screen:** Aluminum.
Fiberglass housing: It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.
All nuts and bolts: Stainless steel or hot-dip galvanized steel.

Grounding: The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

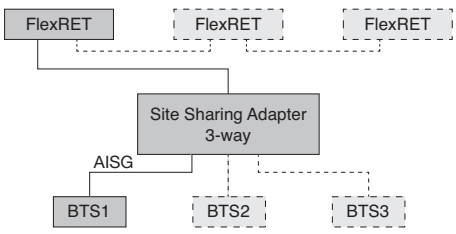




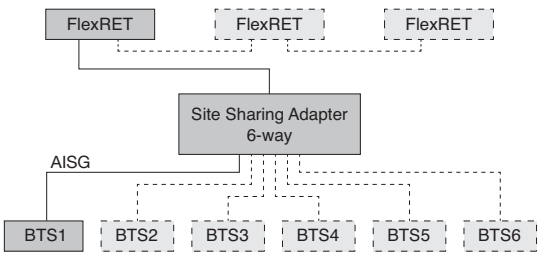
1) 22 | 0.9
2) 150 | 5.9
3) ∅ 11 | 0.4

All dimensions in mm | inches

Configuration example with Site Sharing Adapter 86010154



Configuration example with Site Sharing Adapter 86010155



For more information please refer to the respective data sheets.

936.5298/d.1 ngmn 04.25.02.01 Subject to alteration.

Kathrein USA Greenway Plaza II, 2400 Lakeside Blvd., Suite 650, Richardson TX 75082
Phone: 214.238.8800 Fax: 214.238.8801 Email: info@kathrein.com

RRUS 8843 B2, B66A

- B2, B66A
  - B2 TX =1930 - 1990 MHz, B66A TX =2110 - 2180 MHz
  - B2 RX = 1850 – 1910 MHz, B66A RX = 1710-1780 MHz
- CPRI 2 ports x 2.5/4.9/9.8/10.1 Gbps. Install 2 SFP7s and connect 2 fiber pair to the RRUS 8843 during initial install. 2nd CPRI is reserved for 5G NR deployment later. Do not connect SFP7 to DUL20.
- Only use Ericsson supplied and approved SFP7s RDH10265/25.
  - Install 2 SFP RDH 10265/3 for CPRI length 1.4 km – 10 km
  - Install SFP7 (pair): RDH 102 70/1 and RDH 102 70/2 (bi-directional SFP7 for CPRI length > 10 km
- 2 external alarm inputs
- Max wind load @ 50m/sec = 260 N
- Breaker size = 2x30A, DC Power Consumption = 1520 W (for dimensioning). Both power connections must be connected and operational for the radio to operate.
- 40 mm horizontal separation required between radios mounted side by side
- 200mm separation required from antenna backplane to radio
- 400mm vertical outdoor/indoor separation required between 2 radios
- 500mm vertical separation below antenna
- 200mm horizontal separation between radio and side edge of antenna
- Min, Max DC cable size from squid to radio = 10,8 AWG
  - Adapter is required for 2-wire connection
  - Shielded DC cable is required
- Ground cable size = 2AWG
- Dimensions (incl. handles, feet and sunshield, w/o fan unit)
  - Height: 14.9” (380 mm)
  - Width: 13.2” (335 mm)
  - Depth: 10.9” (277 mm)
- Weight, excl. mounting hardware = 72 lbs (32.6 kg)

RRUS 4478 B14

- B14
  - TX = 758 – 768 MHz
  - RX = 788 – 798 MHz
- CPRI 2 ports x 2.5/4.9/9.8/10.1 Gbps. Install 1 SFP and connect 1 fiber pair to the RRUS 4478 during initial install.
- Only use Ericsson supplied and approved SFPs RDH10265/25
- 2 external alarm inputs
- Max wind load @ 50m/sec = 260N
- Breaker size = 25A, DC Power Consumption = 670 W (for dimensioning)
- 200mm horizontal separation required for side by side mounting
- 200mm separation required from antenna backplane to radio
- 400mm vertical outdoor/indoor separation required between 2 radios
- 500mm vertical separation below antenna
- Min, Max DC cable size from squid to radio = 10,8 AWG
  - Adapter is required for 2-wire connection
  - Shielded DC cable is required
- Ground cable size = 2AWG
- Dimensions (incl. handles, feet and sunshield, w/o fan unit)
  - Height: 16.5” (420 mm)
  - Width: 13.4” (340 mm)
  - Depth: 7.7” (196 mm)
- Weight, excl. mounting hardware = 59.9 lbs (27.2 kg)

RRUS 4449 B5, B12

- B5, B12
  - B5 TX = 869 – 894 MHz, B12 TX = 729 – 746 MHz
  - B5 RX = 824 – 849 MHz, B12 RX = 699 – 716 MHz

  Both frequency bands are combined to transmit/receive out the same RF connectors.
- CPRI 2 ports x 2.5/4.9/9.8/10.1 Gbps. Install 2 SFP7s and connect 2 fiber pair to the RRUS 4449 during initial install. 2nd CPRI is reserved for 5G NR deployment later. Do not connect SFP7 to DUL20.
- Only use Ericsson supplied and approved SFP7s RDH10265/25.
  - Install 2 SFP RDH 10265/3 for CPRI length 1.4 km – 10 km
  - Install SFP7 (pair): RDH 102 70/1 and RDH 102 70/2 (bi-directional SFP7 for CPRI length > 10 km
- 2 external alarm inputs
- Max wind load @ 50m/sec = 260 N
- Breaker size = 2x25A, DC Power Consumption = 1440 W (for dimensioning). Both power connections must be connected and operational for the radio to operate. Each power feed must support 900W.
- 40mm horizontal separation required for side by side mounting
- 200mm separation required from antenna backplane to radio
- 400mm vertical outdoor/indoor separation required between 2 radios
- 500mm vertical separation below antenna
- Min, Max DC cable size from squid to radio = 10,8 AWG
  - Adapter is required for 2-wire connection
  - Shielded DC cable is required
- Ground cable size = 2AWG
- Dimensions (incl. handles, feet and sunshield, w/o fan unit)
  - Height: 17.9” (455 mm)
  - Width: 13.19” (335 mm)
  - Depth: 9.44” (240 mm)
- Weight, excl. mounting hardware = 71 lbs (32 kg)

December 18, 2018

SAI Communications
12 Industrial Way
Salem NH, 03079

RE:		
	Site Number:	CT2049 (LTE 3C/4C/5C)
	FA Number:	10035001
	PACE Number:	MRCTB035131
	PT Number:	2051A0KPH0
	Site Name:	MONTVILLE – OLD COLCHESTER RD
	Site Address:	695 Old Colchester Road Montville, CT 06353

To Whom It May Concern:

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

- (3) 7770 Antenna (55.0"x11.0"x5.0" – Wt. = 35 lbs. /each)
- (1) HPA-65R-BUU-H6 Antenna (72.0"x14.8"x9.0" – Wt. = 51 lbs.)
- (2) HPA-65R-BUU-H8 Antennas (92.4"x14.8"x7.4" – Wt. = 73 lbs. /each)
- (6) LPG21401 TMA's (14.4"x9.0"x2.7" – Wt. = 19 lbs. /each)
- (1) Squid Surge Arrestor (24.0"x9.7" Ø – Wt. = 33 lbs.) (Tower Mounted)
- **(2) 800-10965 Antennas (78.7"x20.0"x6.9" – Wt. = 109 lbs. /each)**
- **(4) 800-10966 Antennas (96.0"x20.0"x6.9" – Wt. = 115 lbs. /each)**
- **(3) B2/B66A 8843 RRH's (14.9"x13.2"x10.9" – Wt. = 72 lbs. /each)**
- **(3) B5/B12 4449 RRH's (17.9"x13.2"x9.4" – Wt. = 71 lbs. /each)**
- **(3) B14 4478 RRH's (18.1"x13.4"x8.3" – Wt. = 60 lbs. /each)**
- **(1) Squid Surge Arrestor (24.0"x9.7" Ø – Wt. = 33 lbs.) (Tower Mounted)**

**Proposed equipment shown in bold*

No original structural design documents or fabrication drawings were available for the existing mounts. HDG's subconsultant, ProVertic LLC, conducted a survey climb and mapping of the existing AT&T antenna mounts on December 6, 2018.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-G, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2015 with 2018 Connecticut State Building Code Amendments and AT&T Mount Technical Directive – R11.
- HDG considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-G Annex B, 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 0.75 in. Per the AT&T Mount Technical Directive and Appendix N of the Connecticut State Building Code, an ultimate wind speed of 135 mph converted to a nominal wind speed of 105 mph and an escalated ice thickness of 1.90 in was used for this analysis.
- HDG considers this site to be exposure category B; tower is located in an urban/suburban and wooded area with numerous closely spaced obstructions.
- HDG considers this site to be topographic category 3; tower is located at the upper half of a hill.
- The mount has been analyzed with load combinations consisting of 250 lbs. live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 3.
- The mount has been analyzed with load combinations consisting of a 250 lbs. live load in a worst case location on the mount.
- The existing mount is secured to the existing tower with bent plates. The connection is considered OK by visual inspection.

Based on our evaluation, we have determined that the existing mounts **ARE NOT CAPABLE** of supporting the proposed installation. HDG recommends the following modifications:

- **Remove existing pipe masts and replace with new 2-1/2" std. (2.88" O.D.) pipe masts secured to the existing mount (typ. of 2 per sector, total of 6).**
- **Install new 2" std. (2.38" O.D.) pipe brace secured to the existing mount and tower leg (typ. of 1 per sector, total of 3).**
- **Install new Sector Frame Stabilizer Kit, SitePro1 SFS-V (or approved equal) (typ. of 1 per sector, total of 3).**
- **Reinforce existing L2-1/2x2-1/2x3/16 steel angles with new L2-1/2x2-1/2x3/16 steel angles (typ. of 2 per sector, total of 6).**
- **Reinforce existing L3x2x1/4 horizontal steel angles with new L3x2x1/4 steel angles (typ. of 1 per sector, total of 3). Reference the attached sketch.**
- **Relocate the existing standoff arms so that they are perpendicular to the mount face (typ. of 2 sectors).**

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing (LTE 3C/4C/5C) Mount Rating	2	LC1	428%	**FAIL**
Proposed (LTE 3C/4C/5C) Mount Rating	1	LC36	94%	**PASS**

Reference Documents:

- Mount mapping report prepared by ProVertic dated December 6, 2018.

This determination was based on the following limitations and assumptions:

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

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

Respectfully Submitted,
Hudson Design Group LLC

Michael Cabral
Structural Dept. Head

Daniel P. Hamm, PE
Principal

FIELD PHOTOS:






p: 978.557.5553 f: 978.336.5586 a: 45 Beechwood Drive, N. Andover, MA 01845
p: 413.588.8139 f: 413.517.0590 a: 116 Pleasant Street, Ste 302, Easthampton, MA 01027






p: 978.557.5553 f: 978.336.5586 a: 45 Beechwood Drive, N. Andover, MA 01845
p: 413.588.8139 f: 413.517.0590 a: 116 Pleasant Street, Ste 302, Easthampton, MA 01027

HUDSON
Design Group LLC

Wind & Ice
Calculations

Date: 12/18/2018
Project Name: MONTVILLE – OLD COLCHESTER RD
Project Number: CT2049
Designed By: BD **Checked By:** MSC

HUDSON Design Group LLC

2.6.5.2 Velocity Pressure Coeff:

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

	z=	240 (ft)
	z_g=	1200 (ft)
K_z= **1.269**	α=	7.0

$Kzmin \le Kz \le 2.01$

Table 2-4

Exposure	Z_g	α	K_{zmin}	K_e
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

2.6.6.4 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

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

K_{zt}= **1.1116942**	K_h=	8.7733657
	K_e=	0.9 (from Table 2-4)
(If Category 1 then K_{zt} =1.0)	K_t=	0.53 (from Table 2-5)
	f=	2 (from Table 2-5)
Category= **3**	z=	240
	H=	221 (Ht. of the crest above surrounding terrain)
	K_{zt}=	1.11
	K_{iz} =	1.22 (from Sec. 2.6.8)

2.6.8 Design Ice Thickness

Max Ice Thickness = t_i = 0.75 in

$t_{iz} = 2.0*t_i*I*K_{iz}*(Kzt)^{0.35}$ t_{iz} = 1.90 in

Date: 12/18/2018
Project Name: MONTVILLE – OLD COLCHESTER RD
Project Number: CT2049
Designed By: BD Checked By: MSC

HUDSON Design Group LLC

2.6.7 Gust Effect Factor

2.6.7.1 Self Supporting Lattice Structures

Gh = 1.0 Latticed Structures > 600 ft

Gh = 0.85 Latticed Structures 450 ft or less

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

h=	372	Gh=	0.85

2.6.7.2 Guyed Masts Gh= 0.85

2.6.7.3 Pole Structures Gh= 1.1

2.6.9 Appurtenances Gh= 1.0

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

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

2.6.9.2 Design Wind Force on Appurtenances

State Code Ultimate Design Wind Speed: V_{ult} = 135 mph

Nomial Design Wind Speed, $V_{asd} = V_{ult}\sqrt{(0.6)}$ V_{asd} = 105 mph

V_{asd} per the AT&T Mount Technical Directive and Connecticut Supplement, Latest Addition.
Per TIA-222-G, V_{min} = 105 mph V_{max} = 120 mph

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

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

		K_z=	1.269
		K_{zt}=	1.1
q_z=	**37.83**	K_d=	0.95
$q_{z\,(ice)}$=	**8.58**	V_{asd}=	105 mph
$q_{z\,(30)}$=	**3.09**	$V_{max\,(ice)}$=	50 mph
		V_{30}=	30 mph
		I=	1.0

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

Date: 12/18/2018
Project Name: MONTVILLE – OLD COLCHESTER RD
Project Number: CT2049
Designed By: BD Checked By: MSC

HUDSON Design Group LLC

Determine Ca:

Table 2-8

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
Round	C < 32 (Subcritical)	0.7	0.8	1.2
	32 ≤ C ≤ 64 (Transitional)	$3.76/(C^{0.485})$	$3.37/(C^{0.415})$	$38.4/(C^{1.0})$
	C > 64 (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 = 1.90 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)
7770 Antenna	55.0	11.0	5.0	4.20	5.00	1.31	208	68	17
HPA-65R-BUU-H6 Antenna	72.0	14.8	9.0	7.40	4.86	1.31	365	110	30
HPA-65R-BUU-H8 Antenna	92.4	14.8	7.4	9.50	6.24	1.37	491	146	40
800-10965 Antenna	78.7	20.0	6.9	10.93	3.94	1.26	523	148	43
800-10966 Antenna	96.0	20.0	6.9	13.33	4.80	1.30	657	184	54
B14 4478 RRH	18.1	13.4	8.3	1.68	1.35	1.20	76	27	6
B14 4478 RRH (Shielded)	18.1	0.0	8.3	0.00	0.00	1.20	0	0	0
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.36	1.20	74	26	6
B5/B12 4449 RRH (Shielded)	17.9	0.0	9.4	0.00	0.00	1.20	0	0	0
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.20	62	23	5
B2/B66A 8843 RRH (Shielded)	14.9	0.0	10.9	0.00	0.00	1.20	0	0	0
LPG21401 TMA	14.4	9.0	2.7	0.90	1.60	1.20	41	17	3
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	43	16	3
2" Pipe	2.4	12.0	2.4	0.20	0.20	1.20	9	7	1
2-1/2" Pipe	2.9	12.0	2.4	0.24	0.24	1.20	11	8	1
L 2x2x3/16 Angle	2.0	12.0	2.0	0.17	0.17	2.00	13	11	1
L 2-1/2x2-1/2x3/16 Angle	2.5	12.0	2.5	0.21	0.21	2.00	16	12	1
L 3x2x1/4 Angle	3.0	12.0	2.0	0.25	0.25	2.00	19	13	2
HSS 4x3	4.0	12.0	3.0	0.33	0.33	2.00	25	15	2

Date: 12/18/2018
Project Name: MONTVILLE – OLD COLCHESTER RD
Project Number: CT2049
Designed By: BD Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	30	(deg)	Ice Thickness =	1.90	in.	Equivalent Angle =	210	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	208	111	184
HPA-65R-BUU-H6 Antenna	72.0	14.8	9.0	7.40	4.50	4.86	8.00	1.31	1.43	365	244	335
HPA-65R-BUU-H8 Antenna	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	491	284	439
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	523	221	447
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	657	284	564
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	76	47	69
B14 4478 RRH (Shielded)	18.1	6.7	8.3	0.84	1.04	2.70	2.18	1.21	1.20	39	47	41
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	74	53	69
B5/B12 4449 RRH (Shielded)	17.9	6.6	9.4	0.82	1.17	2.71	1.90	1.21	1.20	38	53	41
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	62	51	59
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	31	51	36
LPG21401 TMA	14.4	9.0	2.7	0.90	0.27	1.60	5.33	1.20	1.33	41	14	34

WIND LOADS WITH ICE:

7770 Antenna	58.8	14.8	8.8	6.04	3.59	3.97	6.68	1.27	1.39	66	43	60
HPA-65R-BUU-H6 Antenna	75.8	18.6	12.8	9.79	6.74	4.08	5.92	1.27	1.35	107	78	100
HPA-65R-BUU-H8 Antenna	96.2	18.6	11.2	12.42	7.48	5.17	8.59	1.32	1.45	141	93	129
800-10965 Antenna	82.5	23.8	10.7	13.63	6.13	3.47	7.71	1.24	1.42	145	75	128
800-10966 Antenna	99.8	23.8	10.7	16.49	7.41	4.19	9.33	1.28	1.48	180	94	159
B14 4478 RRH	21.9	17.2	12.1	2.61	1.84	1.27	1.81	1.20	1.20	27	19	25
B14 4478 RRH (Shielded)	21.9	8.6	12.1	1.31	1.84	2.55	1.81	1.20	1.20	13	19	15
B5/B12 4449 RRH	21.7	17.0	13.2	2.56	1.99	1.28	1.64	1.20	1.20	26	20	25
B5/B12 4449 RRH (Shielded)	21.7	8.5	13.2	1.28	1.99	2.55	1.64	1.20	1.20	13	20	15
B2/B66A 8843 RRH	18.7	17.0	14.7	2.21	1.91	1.10	1.27	1.20	1.20	23	20	22
B2/B66A 8843 RRH (Shielded)	18.7	8.5	14.7	1.10	1.91	2.20	1.27	1.20	1.20	11	20	13
LPG21401 TMA	18.2	12.8	6.5	1.62	0.82	1.42	2.80	1.20	1.21	17	9	15

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	17	9	15
HPA-65R-BUU-H6 Antenna	72.0	14.8	9.0	7.40	4.50	4.86	8.00	1.31	1.43	30	20	27
HPA-65R-BUU-H8 Antenna	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	40	23	36
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	43	18	36
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	54	23	46
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	6	4	6
B14 4478 RRH (Shielded)	18.1	6.7	8.3	0.84	1.04	2.70	2.18	1.21	1.20	3	4	3
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	6	4	6
B5/B12 4449 RRH (Shielded)	17.9	6.6	9.4	0.82	1.17	2.71	1.90	1.21	1.20	3	4	3
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	5
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	3	4	3
LPG21401 TMA	14.4	9.0	2.7	0.90	0.27	1.60	5.33	1.20	1.33	3	1	3

Date: 12/18/2018
Project Name: MONTVILLE – OLD COLCHESTER RD
Project Number: CT2049
Designed By: BD Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	60	(deg)	Ice Thickness =	1.90	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) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	208	111	135
HPA-65R-BUU-H6 Antenna	72.0	14.8	9.0	7.40	4.50	4.86	8.00	1.31	1.43	365	244	274
HPA-65R-BUU-H8 Antenna	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	491	284	336
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	523	221	296
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	657	284	377
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	76	47	55
B14 4478 RRH (Shielded)	18.1	10.1	8.3	1.26	1.04	1.80	2.18	1.20	1.20	57	47	50
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	74	53	58
B5/B12 4449 RRH (Shielded)	17.9	9.9	9.4	1.23	1.17	1.81	1.90	1.20	1.20	56	53	54
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	62	51	54
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	47	51	50
LPG21401 TMA	14.4	9.0	2.7	0.90	0.27	1.60	5.33	1.20	1.33	41	14	20

WIND LOADS WITH ICE:

7770 Antenna	58.8	14.8	8.8	6.04	3.59	3.97	6.68	1.27	1.39	66	43	48
HPA-65R-BUU-H6 Antenna	75.8	18.6	12.8	9.79	6.74	4.08	5.92	1.27	1.35	107	78	85
HPA-65R-BUU-H8 Antenna	96.2	18.6	11.2	12.42	7.48	5.17	8.59	1.32	1.45	141	93	105
800-10965 Antenna	82.5	23.8	10.7	13.63	6.13	3.47	7.71	1.24	1.42	145	75	92
800-10966 Antenna	99.8	23.8	10.7	16.49	7.41	4.19	9.33	1.28	1.48	180	94	116
B14 4478 RRH	21.9	17.2	12.1	2.61	1.84	1.27	1.81	1.20	1.20	27	19	21
B14 4478 RRH (Shielded)	21.9	12.9	12.1	1.96	1.84	1.70	1.81	1.20	1.20	20	19	19
B5/B12 4449 RRH	21.7	17.0	13.2	2.56	1.99	1.28	1.64	1.20	1.20	26	20	22
B5/B12 4449 RRH (Shielded)	21.7	12.7	13.2	1.92	1.99	1.70	1.64	1.20	1.20	20	20	20
B2/B66A 8843 RRH	18.7	17.0	14.7	2.21	1.91	1.10	1.27	1.20	1.20	23	20	20
B2/B66A 8843 RRH (Shielded)	18.7	12.7	14.7	1.66	1.91	1.47	1.27	1.20	1.20	17	20	19
LPG21401 TMA	18.2	12.8	6.5	1.62	0.82	1.42	2.80	1.20	1.21	17	9	11

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	17	9	11
HPA-65R-BUU-H6 Antenna	72.0	14.8	9.0	7.40	4.50	4.86	8.00	1.31	1.43	30	20	22
HPA-65R-BUU-H8 Antenna	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	40	23	27
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	43	18	24
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	54	23	31
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	6	4	4
B14 4478 RRH (Shielded)	18.1	10.1	8.3	1.26	1.04	1.80	2.18	1.20	1.20	5	4	4
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	6	4	5
B5/B12 4449 RRH (Shielded)	17.9	9.9	9.4	1.23	1.17	1.81	1.90	1.20	1.20	5	4	4
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	4
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	4	4	4
LPG21401 TMA	14.4	9.0	2.7	0.90	0.27	1.60	5.33	1.20	1.33	3	1	2

Date: 12/18/2018
Project Name: MONTVILLE – OLD COLCHESTER RD
Project Number: CT2049
Designed By: BD Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	90	(deg)	Ice Thickness =	1.90	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) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	208	111	111
HPA-65R-BUU-H6 Antenna	72.0	14.8	9.0	7.40	4.50	4.86	8.00	1.31	1.43	365	244	244
HPA-65R-BUU-H8 Antenna	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	491	284	284
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	523	221	221
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	657	284	284
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	76	47	47
B14 4478 RRH (Shielded)	18.1	0.0	8.3	0.00	1.04	0.00	2.18	1.20	1.20	0	47	47
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	74	53	53
B5/B12 4449 RRH (Shielded)	17.9	0.0	9.4	0.00	1.17	0.00	1.90	1.20	1.20	0	53	53
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	62	51	51
B2/B66A 8843 RRH (Shielded)	14.9	0.0	10.9	0.00	1.13	0.00	1.37	1.20	1.20	0	51	51
LPG21401 TMA	14.4	9.0	2.7	0.90	0.27	1.60	5.33	1.20	1.33	41	14	14

WIND LOADS WITH ICE:

7770 Antenna	58.8	14.8	8.8	6.04	3.59	3.97	6.68	1.27	1.39	66	43	43
HPA-65R-BUU-H6 Antenna	75.8	18.6	12.8	9.79	6.74	4.08	5.92	1.27	1.35	107	78	78
HPA-65R-BUU-H8 Antenna	96.2	18.6	11.2	12.42	7.48	5.17	8.59	1.32	1.45	141	93	93
800-10965 Antenna	82.5	23.8	10.7	13.63	6.13	3.47	7.71	1.24	1.42	145	75	75
800-10966 Antenna	99.8	23.8	10.7	16.49	7.41	4.19	9.33	1.28	1.48	180	94	94
B14 4478 RRH	21.9	17.2	12.1	2.61	1.84	1.27	1.81	1.20	1.20	27	19	19
B14 4478 RRH (Shielded)	21.9	3.8	12.1	0.58	1.84	5.77	1.81	1.35	1.20	7	19	19
B5/B12 4449 RRH	21.7	17.0	13.2	2.56	1.99	1.28	1.64	1.20	1.20	26	20	20
B5/B12 4449 RRH (Shielded)	21.7	3.8	13.2	0.57	1.99	5.71	1.64	1.34	1.20	7	20	20
B2/B66A 8843 RRH	18.7	17.0	14.7	2.21	1.91	1.10	1.27	1.20	1.20	23	20	20
B2/B66A 8843 RRH (Shielded)	18.7	3.8	14.7	0.49	1.91	4.92	1.27	1.31	1.20	6	20	20
LPG21401 TMA	18.2	12.8	6.5	1.62	0.82	1.42	2.80	1.20	1.21	17	9	9

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	17	9	9
HPA-65R-BUU-H6 Antenna	72.0	14.8	9.0	7.40	4.50	4.86	8.00	1.31	1.43	30	20	20
HPA-65R-BUU-H8 Antenna	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	40	23	23
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	43	18	18
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	54	23	23
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	6	4	4
B14 4478 RRH (Shielded)	18.1	0.0	8.3	0.00	1.04	0.00	2.18	1.20	1.20	0	4	4
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	6	4	4
B5/B12 4449 RRH (Shielded)	17.9	0.0	9.4	0.00	1.17	0.00	1.90	1.20	1.20	0	4	4
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	4
B2/B66A 8843 RRH (Shielded)	14.9	0.0	10.9	0.00	1.13	0.00	1.37	1.20	1.20	0	4	4
LPG21401 TMA	14.4	9.0	2.7	0.90	0.27	1.60	5.33	1.20	1.33	3	1	1

Date: 12/18/2018

Project Name: MONTVILLE – OLD COLCHESTER RD

Project Number: CT2049

Designed By: BD Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle = 120 (deg)

Ice Thickness = 1.90 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) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	208	111	135
HPA-65R-BUU-H6 Antenna	72.0	14.8	9.0	7.40	4.50	4.86	8.00	1.31	1.43	365	244	274
HPA-65R-BUU-H8 Antenna	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	491	284	336
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	523	221	296
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	657	284	377
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	76	47	55
B14 4478 RRH (Shielded)	18.1	10.1	8.3	1.26	1.04	1.80	2.18	1.20	1.20	57	47	50
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	74	53	58
B5/B12 4449 RRH (Shielded)	17.9	9.9	9.4	1.23	1.17	1.81	1.90	1.20	1.20	56	53	54
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	62	51	54
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	47	51	50
LPG21401 TMA	14.4	9.0	2.7	0.90	0.27	1.60	5.33	1.20	1.33	41	14	20

WIND LOADS WITH ICE:

7770 Antenna	58.8	14.8	8.8	6.04	3.59	3.97	6.68	1.27	1.39	66	43	48
HPA-65R-BUU-H6 Antenna	75.8	18.6	12.8	9.79	6.74	4.08	5.92	1.27	1.35	107	78	85
HPA-65R-BUU-H8 Antenna	96.2	18.6	11.2	12.42	7.48	5.17	8.59	1.32	1.45	141	93	105
800-10965 Antenna	82.5	23.8	10.7	13.63	6.13	3.47	7.71	1.24	1.42	145	75	92
800-10966 Antenna	99.8	23.8	10.7	16.49	7.41	4.19	9.33	1.28	1.48	180	94	116
B14 4478 RRH	21.9	17.2	12.1	2.61	1.84	1.27	1.81	1.20	1.20	27	19	21
B14 4478 RRH (Shielded)	21.9	12.9	12.1	1.96	1.84	1.70	1.81	1.20	1.20	20	19	19
B5/B12 4449 RRH	21.7	17.0	13.2	2.56	1.99	1.28	1.64	1.20	1.20	26	20	22
B5/B12 4449 RRH (Shielded)	21.7	12.7	13.2	1.92	1.99	1.70	1.64	1.20	1.20	20	20	20
B2/B66A 8843 RRH	18.7	17.0	14.7	2.21	1.91	1.10	1.27	1.20	1.20	23	20	20
B2/B66A 8843 RRH (Shielded)	18.7	12.7	14.7	1.66	1.91	1.47	1.27	1.20	1.20	17	20	19
LPG21401 TMA	18.2	12.8	6.5	1.62	0.82	1.42	2.80	1.20	1.21	17	9	11

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	17	9	11
HPA-65R-BUU-H6 Antenna	72.0	14.8	9.0	7.40	4.50	4.86	8.00	1.31	1.43	30	20	22
HPA-65R-BUU-H8 Antenna	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	40	23	27
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	43	18	24
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	54	23	31
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	6	4	4
B14 4478 RRH (Shielded)	18.1	10.1	8.3	1.26	1.04	1.80	2.18	1.20	1.20	5	4	4
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	6	4	5
B5/B12 4449 RRH (Shielded)	17.9	9.9	9.4	1.23	1.17	1.81	1.90	1.20	1.20	5	4	4
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	4
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	4	4	4
LPG21401 TMA	14.4	9.0	2.7	0.90	0.27	1.60	5.33	1.20	1.33	3	1	2

Date: 12/18/2018
Project Name: MONTVILLE – OLD COLCHESTER RD
Project Number: CT2049
Designed By: BD Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	150	(deg)	Ice Thickness =	1.90	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) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	208	111	184
HPA-65R-BUU-H6 Antenna	72.0	14.8	9.0	7.40	4.50	4.86	8.00	1.31	1.43	365	244	335
HPA-65R-BUU-H8 Antenna	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	491	284	439
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	523	221	447
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	657	284	564
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	76	47	69
B14 4478 RRH (Shielded)	18.1	6.7	8.3	0.84	1.04	2.70	2.18	1.21	1.20	39	47	41
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	74	53	69
B5/B12 4449 RRH (Shielded)	17.9	6.6	9.4	0.82	1.17	2.71	1.90	1.21	1.20	38	53	41
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	62	51	59
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	31	51	36
LPG21401 TMA	14.4	9.0	2.7	0.90	0.27	1.60	5.33	1.20	1.33	41	14	34

WIND LOADS WITH ICE:

7770 Antenna	58.8	14.8	8.8	6.04	3.59	3.97	6.68	1.27	1.39	66	43	60
HPA-65R-BUU-H6 Antenna	75.8	18.6	12.8	9.79	6.74	4.08	5.92	1.27	1.35	107	78	100
HPA-65R-BUU-H8 Antenna	96.2	18.6	11.2	12.42	7.48	5.17	8.59	1.32	1.45	141	93	129
800-10965 Antenna	82.5	23.8	10.7	13.63	6.13	3.47	7.71	1.24	1.42	145	75	128
800-10966 Antenna	99.8	23.8	10.7	16.49	7.41	4.19	9.33	1.28	1.48	180	94	159
B14 4478 RRH	21.9	17.2	12.1	2.61	1.84	1.27	1.81	1.20	1.20	27	19	25
B14 4478 RRH (Shielded)	21.9	8.6	12.1	1.31	1.84	2.55	1.81	1.20	1.20	13	19	15
B5/B12 4449 RRH	21.7	17.0	13.2	2.56	1.99	1.28	1.64	1.20	1.20	26	20	25
B5/B12 4449 RRH (Shielded)	21.7	8.5	13.2	1.28	1.99	2.55	1.64	1.20	1.20	13	20	15
B2/B66A 8843 RRH	18.7	17.0	14.7	2.21	1.91	1.10	1.27	1.20	1.20	23	20	22
B2/B66A 8843 RRH (Shielded)	18.7	8.5	14.7	1.10	1.91	2.20	1.27	1.20	1.20	11	20	13
LPG21401 TMA	18.2	12.8	6.5	1.62	0.82	1.42	2.80	1.20	1.21	17	9	15

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	17	9	15
HPA-65R-BUU-H6 Antenna	72.0	14.8	9.0	7.40	4.50	4.86	8.00	1.31	1.43	30	20	27
HPA-65R-BUU-H8 Antenna	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	40	23	36
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	43	18	36
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	54	23	46
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	6	4	6
B14 4478 RRH (Shielded)	18.1	6.7	8.3	0.84	1.04	2.70	2.18	1.21	1.20	3	4	3
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	6	4	6
B5/B12 4449 RRH (Shielded)	17.9	6.6	9.4	0.82	1.17	2.71	1.90	1.21	1.20	3	4	3
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	5
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	3	4	3
LPG21401 TMA	14.4	9.0	2.7	0.90	0.27	1.60	5.33	1.20	1.33	3	1	3

Date: 12/18/2018
Project Name: MONTVILLE – OLD COLCHESTER RD
Project Number: CT2049
Designed By: BD **Checked By:** MSC

HUDSON Design Group LLC

ICE WEIGHT CALCULATIONS

Thickness of ice: 1.90 in.
Density of ice: 56 pcf

7770 Antenna

Weight of ice based on total radial SF area:

Height (in):	55.0	
Width (in):	11.0	
Depth (in):	5.0	
Total weight of ice on object:		149 lbs
Weight of object:	35 lbs	
Combined weight of ice and object:		184 lbs

HPA-65R-BUU-H6 Antenna

Weight of ice based on total radial SF area:

Height (in):	72.0	
Width (in):	14.8	
Depth (in):	9.0	
Total weight of ice on object:		268 lbs
Weight of object:	51 lbs	
Combined weight of ice and object:		319 lbs

HPA-65R-BUU-H8 Antenna

Weight of ice based on total radial SF area:

Height (in):	92.4	
Width (in):	14.8	
Depth (in):	7.4	
Total weight of ice on object:		330 lbs
Weight of object:	73 lbs	
Combined weight of ice and object:		403 lbs

800-10965 Antenna

Weight of ice based on total radial SF area:

Height (in):	78.7	
Width (in):	20.0	
Depth (in):	6.9	
Total weight of ice on object:		351 lbs
Weight of object:	109 lbs	
Combined weight of ice and object:		460 lbs

800-10966 Antenna

Weight of ice based on total radial SF area:

Height (in):	96.0	
Width (in):	20.0	
Depth (in):	6.9	
Total weight of ice on object:		428 lbs
Weight of object:	115 lbs	
Combined weight of ice and object:		543 lbs

B5/B12 4449 RRH

Weight of ice based on total radial SF area:

Height (in):	17.9	
Width (in):	13.2	
Depth (in):	9.4	
Total weight of ice on object:		63 lbs
Weight of object:	71 lbs	
Combined weight of ice and object:		134 lbs

B14 4478 RRH

Weight of ice based on total radial SF area:

Height (in):	18.1	
Width (in):	13.4	
Depth (in):	8.3	
Total weight of ice on object:		62 lbs
Weight of object:	60 lbs	
Combined weight of ice and object:		122 lbs

B2/B66A 8843 RRH

Weight of ice based on total radial SF area:

Height (in):	14.9	
Width (in):	13.2	
Depth (in):	10.9	
Total weight of ice on object:		55 lbs
Weight of object:	72 lbs	
Combined weight of ice and object:		127 lbs

LPG21401 TMA

Weight of ice based on total radial SF area:

Height (in):	14.4	
Width (in):	9.0	
Depth (in):	2.7	
Total weight of ice on object:		31 lbs
Weight of object:	19 lbs	
Combined weight of ice and object:		50 lbs

Squid Surge Arrestor

Weight of ice based on total radial SF area:

Depth (in):	24.0	
Diameter(in):	9.7	
Total weight of ice on object:		54 lbs
Weight of object:	33 lbs	
Combined weight of ice and object:		87 lbs

2" pipe

Per foot weight of ice:

diameter (in):	2.38	
Per foot weight of ice on object:		10 plf

L 2x2x3/16 Angles

Weight of ice based on total radial SF area:

Height (in):	2	
Width (in):	2	
Per foot weight of ice on object:		11 plf

2-1/2" pipe

Per foot weight of ice:

diameter (in):	2.88	
Per foot weight of ice on object:		11 plf

L 2-1/2x2-1/2x3/16 Angles

Weight of ice based on total radial SF area:

Height (in):	2.5	
Width (in):	2.5	
Per foot weight of ice on object:		13 plf

HSS 4x3

Weight of ice based on total radial SF area:

Height (in):	4	
Width (in):	3	
Per foot weight of ice on object:		16 plf

L 3x2x1/4 Angles

Weight of ice based on total radial SF area:

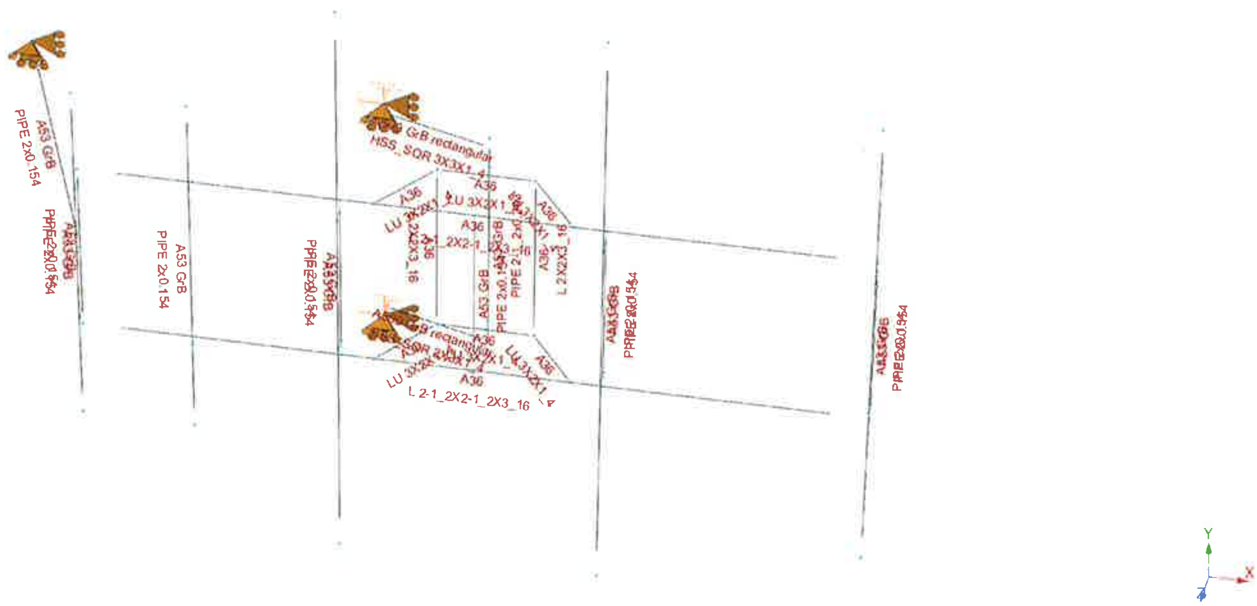
Height (in):	3	
Width (in):	2	
Per foot weight of ice on object:		13 plf

HUDSON
Design Group LLC

Mount Calculations
(Existing Conditions)

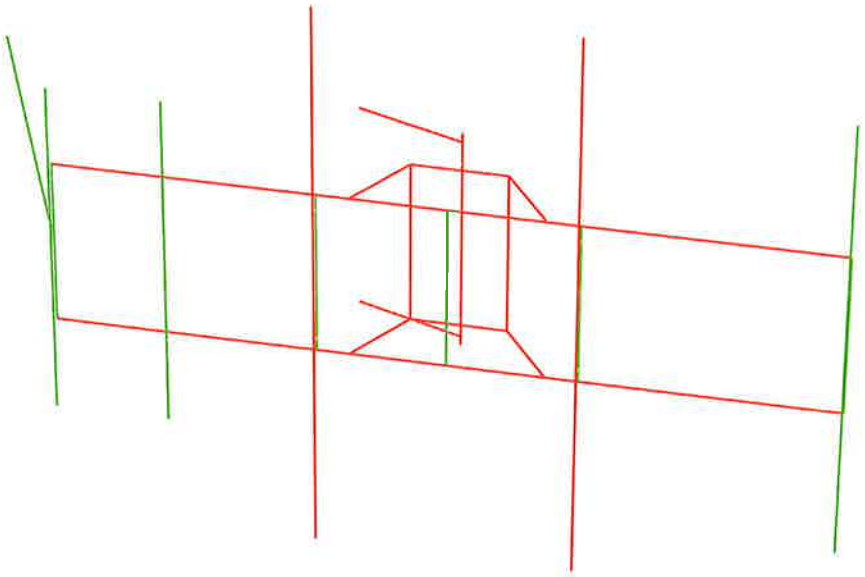

Y
X
Z

Current Date: 12/18/2018 11:08 AM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT2049\CT2049 (LTE 3C-4C-5C).etz\



Design status

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



Bentley

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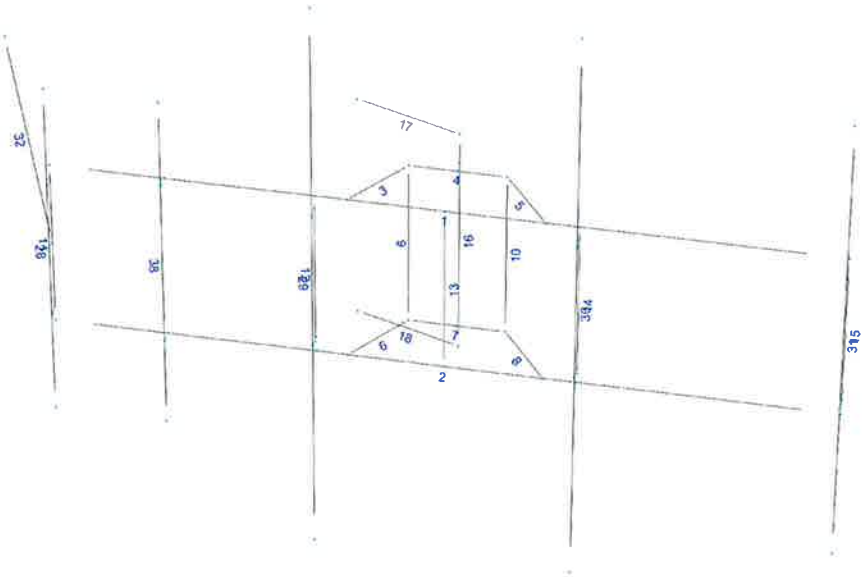

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Load data

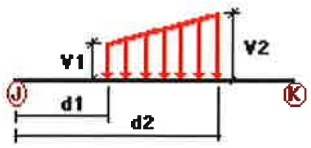
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
D	Dead Load	No	DL
Wo	Wind Load (NO ICE)	No	WIND
W30	WL 30deg	No	WIND
W60	WL 60deg	No	WIND
W90	WL 90deg	No	WIND
W120	WL 120deg	No	WIND
W150	WL 150deg	No	WIND
Di	Ice Load	No	LL
WI0	WL ICE 0deg	No	WIND
WI30	WL ICE 30deg	No	WIND
WI60	WL ICE 60deg	No	WIND
WI90	WL ICE 90deg	No	WIND
WI120	WL ICE 120deg	No	WIND
WI150	WL ICE 150deg	No	WIND
WL0	WL 30 mph 0deg	No	WIND
WL30	WL 30 mph 30deg	No	WIND
WL60	WL 30 mph 60deg	No	WIND
WL90	WL 30 mph 90deg	No	WIND
WL120	WL 30 mph 120deg	No	WIND
WL150	WL 30 mph 150deg	No	WIND
LL1	250 lb Live Load on Left End	No	LL
LL2	250 lb Live Load on Center	No	LL
LL3	250 lb Live Load on Right End	No	LL
LLa1	250 lb Live Load on Antenna 1	No	LL
LLa2	250 lb Live Load on Antenna 2	No	LL
LLa3	250 lb Live Load on Antenna 3	No	LL
LLa4	250 lb Live Load on Antenna 4	No	LL

Distributed force on members

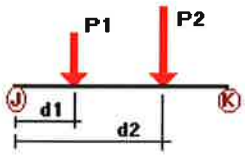


Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
Wo	1	Z	-0.016	-0.016	0.00	Yes	100.00	Yes
	2	Z	-0.016	-0.016	0.00	Yes	100.00	Yes
	3	Z	-0.019	-0.019	0.00	Yes	100.00	Yes
	4	Z	-0.019	-0.019	0.00	Yes	100.00	Yes
	5	Z	-0.019	-0.019	0.00	Yes	100.00	Yes
	6	Z	-0.019	-0.019	0.00	Yes	100.00	Yes
	7	Z	-0.019	-0.019	0.00	Yes	100.00	Yes
	8	Z	-0.019	-0.019	0.00	Yes	100.00	Yes
	9	Z	-0.013	-0.013	0.00	Yes	100.00	Yes
	10	Z	-0.013	-0.013	0.00	Yes	100.00	Yes
	13	Z	-0.009	-0.009	0.00	Yes	100.00	Yes
	16	Z	-0.011	-0.011	0.00	Yes	100.00	Yes
	17	Z	-0.025	-0.025	0.00	Yes	100.00	Yes
	18	Z	-0.025	-0.025	0.00	Yes	100.00	Yes
	32	Z	-0.009	-0.009	0.00	Yes	100.00	Yes
	38	Z	-0.009	-0.009	0.00	Yes	100.00	Yes
W30	1	Z	-0.016	-0.016	0.00	Yes	100.00	Yes
	2	Z	-0.016	-0.016	0.00	Yes	100.00	Yes
	3	Z	-0.019	-0.019	0.00	Yes	100.00	Yes
	4	Z	-0.019	-0.019	0.00	Yes	100.00	Yes
	5	Z	-0.019	-0.019	0.00	Yes	100.00	Yes
	6	Z	-0.019	-0.019	0.00	Yes	100.00	Yes
	7	Z	-0.019	-0.019	0.00	Yes	100.00	Yes
	8	Z	-0.019	-0.019	0.00	Yes	100.00	Yes
	9	Z	-0.013	-0.013	0.00	Yes	100.00	Yes
	10	Z	-0.013	-0.013	0.00	Yes	100.00	Yes
	13	Z	-0.009	-0.009	0.00	Yes	100.00	Yes
	16	Z	-0.011	-0.011	0.00	Yes	100.00	Yes
	17	Z	-0.025	-0.025	0.00	Yes	100.00	Yes
	18	Z	-0.025	-0.025	0.00	Yes	100.00	Yes
	32	Z	-0.009	-0.009	0.00	Yes	100.00	Yes
	38	Z	-0.009	-0.009	0.00	Yes	100.00	Yes
W60	3	X	-0.019	-0.019	0.00	Yes	100.00	Yes
	5	X	-0.019	-0.019	0.00	Yes	100.00	Yes
	6	X	-0.019	-0.019	0.00	Yes	100.00	Yes
	8	X	-0.019	-0.019	0.00	Yes	100.00	Yes
	9	X	-0.013	-0.013	0.00	Yes	100.00	Yes
	10	X	-0.013	-0.013	0.00	Yes	100.00	Yes
	11	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	12	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	13	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	14	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	15	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	16	X	-0.011	-0.011	0.00	Yes	100.00	Yes
	17	X	-0.025	-0.025	0.00	Yes	100.00	Yes
	18	X	-0.025	-0.025	0.00	Yes	100.00	Yes
	28	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	29	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	30	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	31	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	32	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	38	X	-0.009	-0.009	0.00	Yes	100.00	Yes
W90	3	X	-0.019	-0.019	0.00	Yes	100.00	Yes
	5	X	-0.019	-0.019	0.00	Yes	100.00	Yes
	6	X	-0.019	-0.019	0.00	Yes	100.00	Yes
	8	X	-0.019	-0.019	0.00	Yes	100.00	Yes
	9	X	-0.013	-0.013	0.00	Yes	100.00	Yes
	10	X	-0.013	-0.013	0.00	Yes	100.00	Yes
	11	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	12	X	-0.009	-0.009	0.00	Yes	100.00	Yes

	13	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	14	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	15	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	16	X	-0.011	-0.011	0.00	Yes	100.00	Yes
	17	X	-0.025	-0.025	0.00	Yes	100.00	Yes
	18	X	-0.025	-0.025	0.00	Yes	100.00	Yes
	28	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	29	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	30	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	31	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	32	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	38	X	-0.009	-0.009	0.00	Yes	100.00	Yes
W120	3	X	-0.019	-0.019	0.00	Yes	100.00	Yes
	5	X	-0.019	-0.019	0.00	Yes	100.00	Yes
	6	X	-0.019	-0.019	0.00	Yes	100.00	Yes
	8	X	-0.019	-0.019	0.00	Yes	100.00	Yes
	9	X	-0.013	-0.013	0.00	Yes	100.00	Yes
	10	X	-0.013	-0.013	0.00	Yes	100.00	Yes
	11	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	12	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	13	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	14	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	15	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	16	X	-0.011	-0.011	0.00	Yes	100.00	Yes
	17	X	-0.025	-0.025	0.00	Yes	100.00	Yes
	18	X	-0.025	-0.025	0.00	Yes	100.00	Yes
	28	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	29	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	30	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	31	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	32	X	-0.009	-0.009	0.00	Yes	100.00	Yes
	38	X	-0.009	-0.009	0.00	Yes	100.00	Yes
W150	1	Z	0.016	0.016	0.00	Yes	100.00	Yes
	2	Z	0.016	0.016	0.00	Yes	100.00	Yes
	3	Z	0.019	0.019	0.00	Yes	100.00	Yes
	4	Z	0.019	0.019	0.00	Yes	100.00	Yes
	5	Z	0.019	0.019	0.00	Yes	100.00	Yes
	6	Z	0.019	0.019	0.00	Yes	100.00	Yes
	7	Z	0.019	0.019	0.00	Yes	100.00	Yes
	8	Z	0.019	0.019	0.00	Yes	100.00	Yes
	9	Z	0.013	0.013	0.00	Yes	100.00	Yes
	10	Z	0.013	0.013	0.00	Yes	100.00	Yes
	13	Z	0.009	0.009	0.00	Yes	100.00	Yes
	16	Z	0.011	0.011	0.00	Yes	100.00	Yes
	17	Z	0.025	0.025	0.00	Yes	100.00	Yes
	18	Z	0.025	0.025	0.00	Yes	100.00	Yes
	28	Z	0.009	0.009	0.00	Yes	100.00	Yes
	29	Z	0.009	0.009	0.00	Yes	100.00	Yes
	30	Z	0.009	0.009	0.00	Yes	100.00	Yes
	31	Z	0.009	0.009	0.00	Yes	100.00	Yes
	32	Z	0.009	0.009	0.00	Yes	100.00	Yes
	38	Z	0.009	0.009	0.00	Yes	100.00	Yes
Di	1	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
	2	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
	3	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
	4	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
	5	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
	6	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
	7	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
	8	Y	-0.013	-0.013	0.00	Yes	100.00	Yes

9	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
10	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
11	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
12	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
13	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
14	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
15	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
16	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
17	Y	-0.016	-0.016	0.00	Yes	100.00	Yes
18	Y	-0.016	-0.016	0.00	Yes	100.00	Yes
28	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
29	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
30	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
31	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
32	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
38	Y	-0.01	-0.01	0.00	Yes	100.00	Yes

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
D	28	y	-0.018	0.71	No
		y	-0.018	5.29	No
		y	-0.038	2.50	No
	29	y	-0.058	1.50	No
		y	-0.058	8.50	No
		y	-0.071	5.00	No
	30	y	-0.058	1.50	No
		y	-0.058	8.50	No
		y	-0.06	5.00	No
	31	y	-0.037	0.65	No
		y	-0.037	7.35	No
		y	-0.072	1.50	No
Wo	28	z	-0.104	0.71	No
		z	-0.104	5.29	No
	29	z	-0.329	1.50	No
		z	-0.329	8.50	No
	30	z	-0.329	1.50	No
		z	-0.329	8.50	No
	31	z	-0.246	0.65	No
		z	-0.246	7.35	No
W30	28	2	-0.092	0.71	No
		2	-0.092	5.29	No
		2	-0.034	2.50	No
	29	2	-0.282	1.50	No
		2	-0.282	8.50	No
		2	-0.041	5.00	No
	30	2	-0.282	1.50	No
		2	-0.282	8.50	No
		2	-0.041	5.00	No

	31	2	-0.22	0.65	No
		2	-0.22	7.35	No
		2	-0.036	1.50	No
W60	28	2	-0.068	0.71	No
		2	-0.068	5.29	No
		2	-0.02	2.50	No
	29	2	-0.189	1.50	No
		2	-0.189	8.50	No
		2	-0.054	5.00	No
	30	2	-0.189	1.50	No
		2	-0.189	8.50	No
		2	-0.05	5.00	No
	31	2	-0.168	0.65	No
		2	-0.168	7.35	No
		2	-0.05	1.50	No
W90	28	x	-0.056	0.71	No
		x	-0.056	5.29	No
		x	-0.014	2.50	No
	29	x	-0.142	1.50	No
		x	-0.142	8.50	No
		x	-0.053	5.00	No
	30	x	-0.142	1.50	No
		x	-0.142	8.50	No
		x	-0.047	5.00	No
	31	x	-0.142	0.65	No
		x	-0.142	7.35	No
		x	-0.051	1.50	No
W120	28	3	0.068	0.71	No
		3	0.068	5.29	No
		3	0.02	2.50	No
	29	3	0.189	1.50	No
		3	0.189	8.50	No
		3	0.054	5.00	No
	30	3	0.189	1.50	No
		3	0.189	8.50	No
		3	0.05	5.00	No
	31	3	0.168	0.65	No
		3	0.168	7.35	No
		3	0.05	1.50	No
W150	28	3	0.092	0.71	No
		3	0.092	5.29	No
		3	0.034	2.50	No
	29	3	0.282	1.50	No
		3	0.282	8.50	No
		3	0.041	5.00	No
	30	3	0.282	1.50	No
		3	0.282	8.50	No
		3	0.041	5.00	No
	31	3	0.22	0.65	No
		3	0.22	7.35	No
		3	0.036	1.50	No
Di	28	y	-0.075	0.71	No
		y	-0.075	5.29	No
		y	-0.062	2.50	No
	29	y	-0.214	1.50	No
		y	-0.214	8.50	No
		y	-0.063	5.00	No
	30	y	-0.214	1.50	No
		y	-0.214	8.50	No
		y	-0.062	5.00	No

	31	y	-0.165	0.65	No
		y	-0.165	7.35	No
		y	-0.055	1.50	No
WI0	28	z	-0.034	0.71	No
		z	-0.034	5.29	No
	29	z	-0.092	1.50	No
		z	-0.092	8.50	No
	30	z	-0.092	1.50	No
		z	-0.092	8.50	No
	31	z	-0.073	0.65	No
		z	-0.073	7.35	No
WI30	28	2	-0.03	0.71	No
		2	-0.03	5.29	No
		2	-0.015	2.50	No
	29	2	-0.08	1.50	No
		2	-0.08	8.50	No
		2	-0.015	5.00	No
	30	2	-0.08	1.50	No
		2	-0.08	8.50	No
		2	-0.015	5.00	No
	31	2	-0.065	0.65	No
		2	-0.065	7.35	No
		2	-0.013	1.50	No
WI60	28	2	-0.024	0.71	No
		2	-0.024	5.29	No
		2	-0.011	2.50	No
	29	2	-0.058	1.50	No
		2	-0.058	8.50	No
		2	-0.02	5.00	No
	30	2	-0.058	1.50	No
		2	-0.058	8.50	No
		2	-0.019	5.00	No
	31	2	-0.053	0.65	No
		2	-0.053	7.35	No
		2	-0.019	1.50	No
WI90	28	x	-0.022	0.71	No
		x	-0.022	5.29	No
		x	-0.009	2.50	No
	29	x	-0.047	1.50	No
		x	-0.047	8.50	No
		x	-0.02	5.00	No
	30	x	-0.047	1.50	No
		x	-0.047	8.50	No
		x	-0.019	5.00	No
	31	x	-0.047	0.65	No
		x	-0.047	7.35	No
		x	-0.02	1.50	No
WI120	28	3	0.024	0.71	No
		3	0.024	5.29	No
		3	0.011	2.50	No
	29	3	0.058	1.50	No
		3	0.058	8.50	No
		3	0.02	5.00	No
	30	3	0.058	1.50	No
		3	0.058	8.50	No
		3	0.019	5.00	No
	31	3	0.053	0.65	No
		3	0.053	7.35	No
		3	0.019	1.50	No
WI150	28	3	0.03	0.71	No

		3	0.03	5.29	No
		3	0.015	2.50	No
	29	3	0.08	1.50	No
		3	0.08	8.50	No
		3	0.015	5.00	No
	30	3	0.08	1.50	No
		3	0.08	8.50	No
		3	0.015	5.00	No
	31	3	0.065	0.65	No
		3	0.065	7.35	No
		3	0.013	1.50	No
WL0	28	z	-0.009	0.71	No
		z	-0.009	5.29	No
	29	z	-0.027	1.50	No
		z	-0.027	8.50	No
	30	z	-0.027	1.50	No
		z	-0.027	8.50	No
	31	z	-0.02	0.65	No
		z	-0.02	7.35	No
WL30	28	2	-0.008	0.71	No
		2	-0.008	5.29	No
		2	-0.003	2.50	No
	29	2	-0.023	1.50	No
		2	-0.023	8.50	No
		2	-0.003	5.00	No
	30	2	-0.023	1.50	No
		2	-0.023	8.50	No
		2	-0.003	5.00	No
	31	2	-0.018	0.65	No
		2	-0.018	7.35	No
		2	-0.003	1.50	No
WL60	28	2	-0.006	0.71	No
		2	-0.006	5.29	No
		2	-0.002	2.50	No
	29	2	-0.016	1.50	No
		2	-0.016	8.50	No
		2	-0.004	5.00	No
	30	2	-0.016	1.50	No
		2	-0.016	8.50	No
		2	-0.004	5.00	No
	31	2	-0.014	0.65	No
		2	-0.014	7.35	No
		2	-0.004	1.50	No
WL90	28	x	-0.005	0.71	No
		x	-0.005	5.29	No
		x	-0.001	2.50	No
	29	x	-0.012	1.50	No
		x	-0.012	8.50	No
		x	-0.004	5.00	No
	30	x	-0.012	1.50	No
		x	-0.012	8.50	No
		x	-0.004	5.00	No
	31	x	-0.012	0.65	No
		x	-0.012	7.35	No
		x	-0.004	1.50	No
WL120	28	3	0.006	0.71	No
		3	0.006	5.29	No
		3	0.002	2.50	No
	29	3	0.016	1.50	No
		3	0.016	8.50	No

		3	0.004	5.00	No
	30	3	0.016	1.50	No
		3	0.016	8.50	No
		3	0.004	5.00	No
	31	3	0.014	0.65	No
		3	0.014	7.35	No
		3	0.004	1.50	No
WL150	28	3	0.008	0.71	No
		3	0.008	5.29	No
		3	0.003	2.50	No
	29	3	0.023	1.50	No
		3	0.023	8.50	No
		3	0.003	5.00	No
	30	3	0.023	1.50	No
		3	0.023	8.50	No
		3	0.003	5.00	No
	31	3	0.018	0.65	No
		3	0.018	7.35	No
		3	0.003	1.50	No
LL1	1	y	-0.25	0.00	Yes
LL2	1	y	-0.25	50.00	Yes
LL3	1	y	-0.25	100.00	Yes
LLa1	31	y	-0.25	50.00	Yes
LLa2	30	y	-0.25	50.00	Yes
LLa3	29	y	-0.25	50.00	Yes
LLa4	28	y	-0.25	50.00	Yes

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
D	Dead Load	No	0.00	-1.00	0.00
Wo	Wind Load (NO ICE)	No	0.00	0.00	0.00
W30	WL 30deg	No	0.00	0.00	0.00
W60	WL 60deg	No	0.00	0.00	0.00
W90	WL 90deg	No	0.00	0.00	0.00
W120	WL 120deg	No	0.00	0.00	0.00
W150	WL 150deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
WI0	WL ICE 0deg	No	0.00	0.00	0.00
WI30	WL ICE 30deg	No	0.00	0.00	0.00
WI60	WL ICE 60deg	No	0.00	0.00	0.00
WI90	WL ICE 90deg	No	0.00	0.00	0.00
WI120	WL ICE 120deg	No	0.00	0.00	0.00
WI150	WL ICE 150deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30deg	No	0.00	0.00	0.00
WL60	WL 30 mph 60deg	No	0.00	0.00	0.00
WL90	WL 30 mph 90deg	No	0.00	0.00	0.00
WL120	WL 30 mph 120deg	No	0.00	0.00	0.00
WL150	WL 30 mph 150deg	No	0.00	0.00	0.00
LL1	250 lb Live Load on Left End	No	0.00	0.00	0.00
LL2	250 lb Live Load on Center	No	0.00	0.00	0.00
LL3	250 lb Live Load on Right End	No	0.00	0.00	0.00
LLa1	250 lb Live Load on Antenna 1	No	0.00	0.00	0.00

LLa2	250 lb Live Load on Antenna 2	No	0.00	0.00	0.00
LLa3	250 lb Live Load on Antenna 3	No	0.00	0.00	0.00
LLa4	250 lb Live Load on Antenna 4	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
D	0.00	0.00	0.00
Wo	0.00	0.00	0.00
W30	0.00	0.00	0.00
W60	0.00	0.00	0.00
W90	0.00	0.00	0.00
W120	0.00	0.00	0.00
W150	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
WI60	0.00	0.00	0.00
WI90	0.00	0.00	0.00
WI120	0.00	0.00	0.00
WI150	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
WL60	0.00	0.00	0.00
WL90	0.00	0.00	0.00
WL120	0.00	0.00	0.00
WL150	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LL3	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

Bentley

Current Date: 12/18/2018 11:08 AM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT2049\CT2049 (LTE 3C-4C-5C).etz\

Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2D+1.6Wo
LC2=1.2D+1.6W30
LC3=1.2D+1.6W60
LC4=1.2D+1.6W90
LC5=1.2D+1.6W120
LC6=1.2D+1.6W150
LC7=1.2D-1.6Wo
LC8=1.2D-1.6W30
LC9=1.2D-1.6W60
LC10=1.2D-1.6W90
LC11=1.2D-1.6W120
LC12=1.2D-1.6W150
LC13=0.9D+1.6Wo
LC14=0.9D+1.6W30
LC15=0.9D+1.6W60
LC16=0.9D+1.6W90
LC17=0.9D+1.6W120
LC18=0.9D+1.6W150
LC19=0.9D-1.6Wo
LC20=0.9D-1.6W30
LC21=0.9D-1.6W60
LC22=0.9D-1.6W90
LC23=0.9D-1.6W120
LC24=0.9D-1.6W150
LC25=1.2D+Di+WI0
LC26=1.2D+Di+WI30
LC27=1.2D+Di+WI60
LC28=1.2D+Di+WI90
LC29=1.2D+Di+WI120
LC30=1.2D+Di+WI150
LC31=1.2D+Di-WI0
LC32=1.2D+Di-WI30
LC33=1.2D+Di-WI60
LC34=1.2D+Di-WI90
LC35=1.2D+Di-WI120
LC36=1.2D+Di-WI150
LC37=0.9D
LC38=1.2D+1.6LL1
LC39=1.2D+1.6LL2
LC40=1.2D+1.6LL3
LC41=1.2D+WL0+LLa1
LC42=1.2D+WL30+LLa1
LC43=1.2D+WL60+LLa1
LC44=1.2D+WL90+LLa1
LC45=1.2D+WL120+LLa1
LC46=1.2D+WL150+LLa1
LC47=1.2D-WL0+LLa1
LC48=1.2D-WL30+LLa1
LC49=1.2D-WL60+LLa1
LC50=1.2D-WL90+LLa1
LC51=1.2D-WL120+LLa1
LC52=1.2D-WL150+LLa1
LC53=1.2D+WL0+LLa2

LC54=1.2D+WL30+LLa2
LC55=1.2D+WL60+LLa2
LC56=1.2D+WL90+LLa2
LC57=1.2D+WL120+LLa2
LC58=1.2D+WL150+LLa2
LC59=1.2D-WL0+LLa2
LC60=1.2D-WL30+LLa2
LC61=1.2D-WL60+LLa2
LC62=1.2D-WL90+LLa2
LC63=1.2D-WL120+LLa2
LC64=1.2D-WL150+LLa2
LC65=1.2D+WL0+LLa3
LC66=1.2D+WL30+LLa3
LC67=1.2D+WL60+LLa3
LC68=1.2D+WL90+LLa3
LC69=1.2D+WL120+LLa3
LC70=1.2D+WL150+LLa3
LC71=1.2D-WL0+LLa3
LC72=1.2D-WL30+LLa3
LC73=1.2D-WL60+LLa3
LC74=1.2D-WL90+LLa3
LC75=1.2D-WL120+LLa3
LC76=1.2D-WL150+LLa3
LC77=1.2D+WL0+LLa4
LC78=1.2D+WL30+LLa4
LC79=1.2D+WL60+LLa4
LC80=1.2D+WL90+LLa4
LC81=1.2D+WL120+LLa4
LC82=1.2D+WL150+LLa4
LC83=1.2D-WL0+LLa4
LC84=1.2D-WL30+LLa4
LC85=1.2D-WL60+LLa4
LC86=1.2D-WL90+LLa4
LC87=1.2D-WL120+LLa4
LC88=1.2D-WL150+LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	HSS_SQR 3X3X1_4	**17**	LC6 at 0.00%	**1.19**	**N.G.**	Eq. H1-1b
		18	LC12 at 0.00%	1.16	N.G.	Eq. H1-1b
	L 2-1_2X2-1_2X3_16	**1**	LC7 at 62.50%	4.21	N.G.	Sec. F1
		2	LC1 at 62.50%	**4.28**	**N.G.**	Eq. H2-1
	L 2X2X3_16	**9**	LC29 at 0.00%	2.02	N.G.	Sec. F1
		10	LC35 at 0.00%	**2.19**	**N.G.**	Sec. F1
	LU 3X2X1_4	**3**	LC24 at 100.00%	**2.93**	**N.G.**	Eq. H2-1
		4	LC6 at 100.00%	1.93	N.G.	Eq. H2-1
		5	LC7 at 0.00%	2.44	N.G.	Eq. H2-1
		6	LC12 at 0.00%	2.88	N.G.	Eq. H2-1
		7	LC12 at 0.00%	1.92	N.G.	Eq. H2-1
		8	LC1 at 100.00%	2.49	N.G.	Eq. H2-1
	PIPE 2-1_2x0.203	**16**	LC6 at 0.00%	**1.01**	**N.G.**	Eq. H3-6
	PIPE 2x0.154	**11**	LC12 at 0.00%	0.41	OK	Eq. H3-6
		12	LC36 at 0.00%	0.60	OK	Eq. H1-1b
		13	LC40 at 0.00%	0.06	OK	Eq. H3-1
		14	LC30 at 0.00%	0.90	OK	Eq. H1-1b
		15	LC28 at 0.00%	0.66	OK	Eq. H1-1b
		28	LC1 at 29.17%	0.20	OK	Eq. H1-1b
		29	LC1 at 37.50%	**1.35**	**N.G.**	Eq. H1-1b
		30	LC1 at 37.50%	1.35	N.G.	Eq. H1-1b
		31	LC1 at 33.33%	0.91	OK	Eq. H1-1b

32	LC12 at 0.00%	0.61	OK	Eq. H1-1b
38	LC32 at 27.08%	0.44	OK	Eq. H1-1b

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Geometry data

GLOSSARY

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

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
1	-6.00	0.00	0.00	0
2	0.00	0.00	0.00	0
3	6.00	0.00	0.00	0
4	-1.50	0.00	0.00	0
5	1.50	0.00	0.00	0
6	-2.00	0.00	0.00	0
7	2.00	0.00	0.00	0
8	-0.75	0.00	-1.00	0
9	0.75	0.00	-1.00	0
10	0.00	0.5415	-1.20	0
11	-6.00	-2.917	0.00	0
12	0.00	-2.917	0.00	0
13	6.00	-2.917	0.00	0
14	-1.50	-2.917	0.00	0
15	1.50	-2.917	0.00	0
16	-2.00	-2.917	0.00	0
17	2.00	-2.917	0.00	0
18	-0.75	-2.917	-1.00	0
19	0.75	-2.917	-1.00	0
20	0.00	-3.4585	-1.20	0
21	-1.70	0.5415	-1.75	0
22	-1.70	-3.4585	-1.75	0

25	-6.00	-0.25	0.00	0
26	-2.00	-0.25	0.00	0
27	6.00	-0.25	0.00	0
28	2.00	-0.25	0.00	0
29	-6.00	-2.667	0.00	0
30	-2.00	-2.667	0.00	0
31	2.00	-2.667	0.00	0
32	6.00	-2.667	0.00	0
33	-6.00	-0.25	0.20	0
34	-6.00	-2.667	0.20	0
35	-2.00	-0.25	0.20	0
36	-2.00	-2.667	0.20	0
37	2.00	-0.25	0.20	0
38	2.00	-2.667	0.20	0
39	6.00	-0.25	0.20	0
40	6.00	-2.667	0.20	0
41	-6.00	1.54	0.20	0
42	-2.00	3.54	0.20	0
43	2.00	3.54	0.20	0
44	6.00	2.54	0.20	0
45	-6.00	-4.459	0.20	0
46	-2.00	-6.46	0.20	0
47	2.00	-6.46	0.20	0
48	6.00	-5.46	0.20	0
49	-6.00	-1.4585	0.00	0
50	-8.00	-1.4585	-5.00	0
51	0.00	0.00	-1.00	0
52	0.00	-2.917	-1.00	0
53	0.00	0.00	-1.20	0
54	0.00	-2.917	-1.20	0
55	-4.25	0.00	0.00	0
56	-4.25	-2.917	0.00	0
59	-4.25	0.00	0.20	0
60	-4.25	-2.917	0.20	0
61	-4.25	1.54	0.20	0
62	-4.25	-4.459	0.20	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
21	1	1	1	1	1	1
22	1	1	1	1	1	1
50	1	1	1	0	0	0

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
1	1	3		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
2	11	13		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
3	8	4		LU 3X2X1_4	A36	0.00	0.00	0.00
4	9	8		LU 3X2X1_4	A36	0.00	0.00	0.00
5	5	9		LU 3X2X1_4	A36	0.00	0.00	0.00
6	14	18		LU 3X2X1_4	A36	0.00	0.00	0.00
7	18	19		LU 3X2X1_4	A36	0.00	0.00	0.00
8	19	15		LU 3X2X1_4	A36	0.00	0.00	0.00
9	8	18		L 2X2X3_16	A36	0.00	0.00	0.00
10	9	19		L 2X2X3_16	A36	0.00	0.00	0.00
11	1	11		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
12	6	16		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
13	2	12		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
14	7	17		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
15	3	13		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
16	10	20		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
17	21	10		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
18	22	20		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
28	41	45		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
29	42	46		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
30	43	47		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
31	44	48		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
32	49	50		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
38	61	62		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
1	90.00	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	180.00	0	0.00	0.00	0.00
10	90.00	0	0.00	0.00	0.00
28	45.00	0	0.00	0.00	0.00
29	45.00	0	0.00	0.00	0.00
30	45.00	0	0.00	0.00	0.00
31	45.00	0	0.00	0.00	0.00
38	45.00	0	0.00	0.00	0.00

Rigid end offsets

Member	DJX [in]	DJY [in]	DJZ [in]	DKX [in]	DKY [in]	DKZ [in]
17	0.00	-2.00	0.00	0.00	-2.00	0.00
18	0.00	2.00	0.00	0.00	2.00	0.00

HUDSON
Design Group LLC

Mount Calculations
(Proposed Conditions)

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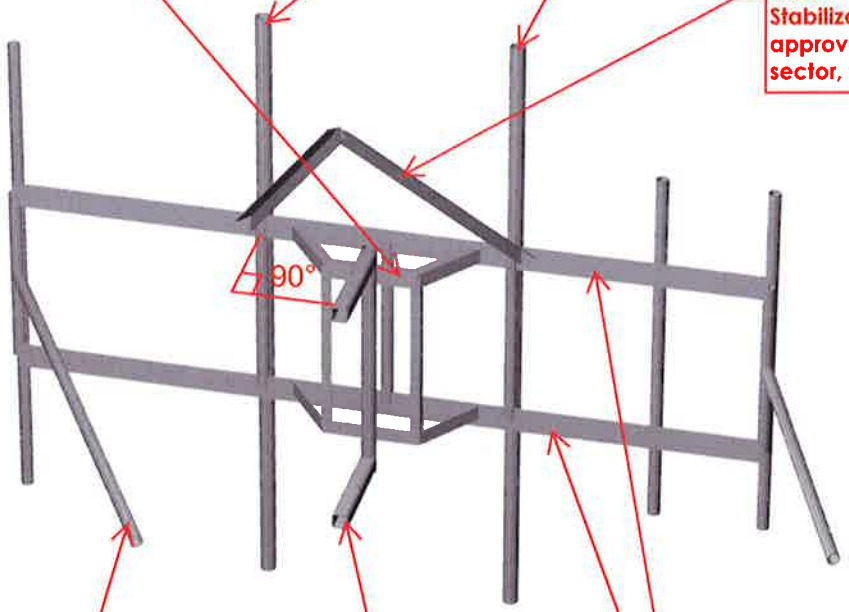


Remove existing pipe masts and replace with new 2-1/2" std. (2.88" O.D.) pipe masts secured to the existing mount (typ. of 2 per sector, total of 6).

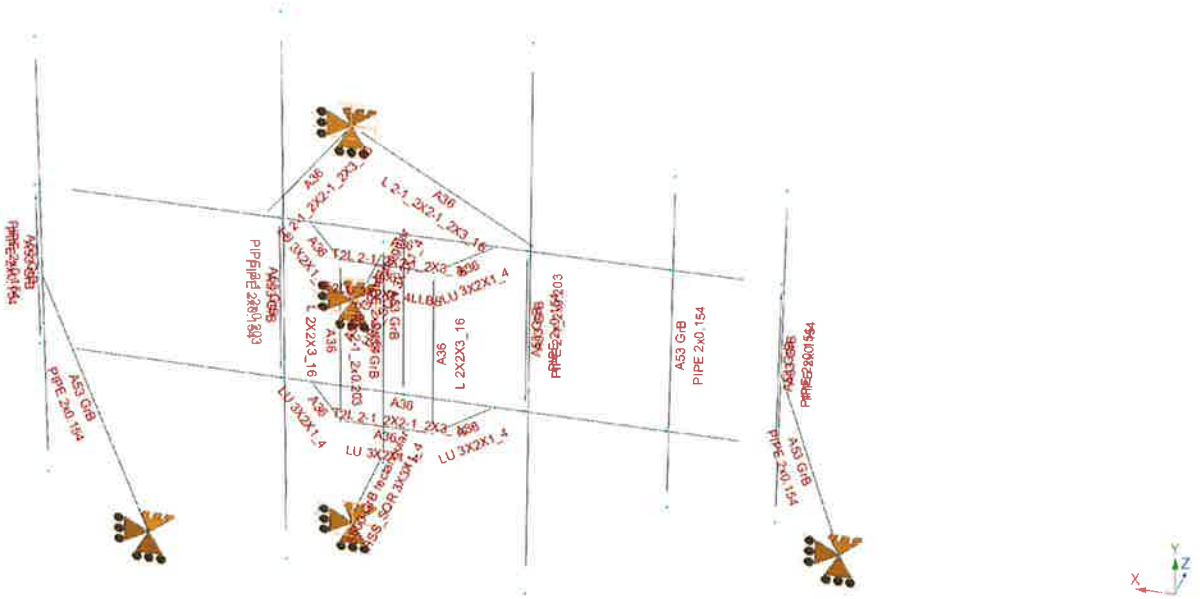
Reinforce existing L3x2x1/4 horizontal steel angles with new L3x2x1/4 steel angles (typ. of 1 per sector, total of 3).

Install new Sector Frame Stabilizer Kit, SitePro1 SFS-V (or approved equal) (typ. of 1 per sector, total of 3).

Reinforce existing L2-1/2x2-1/2x3/16 steel angles with new L2-1/2x2-1/2x3/16 steel angles (typ. of 2 per sector, total of 6).

Install new 2" std. (2.38" O.D.) pipe brace secured to the existing mount and tower leg (typ. of 1 per sector, total of 3).

Relocate the existing standoff arms so that they are perpendicular to the mount face (typ. of 2 sectors).


A53 GrB
PIPE 2x0.154
A36
L 2X2X3_16
LU 3X2X1_4
Y
Z
X

Bentley

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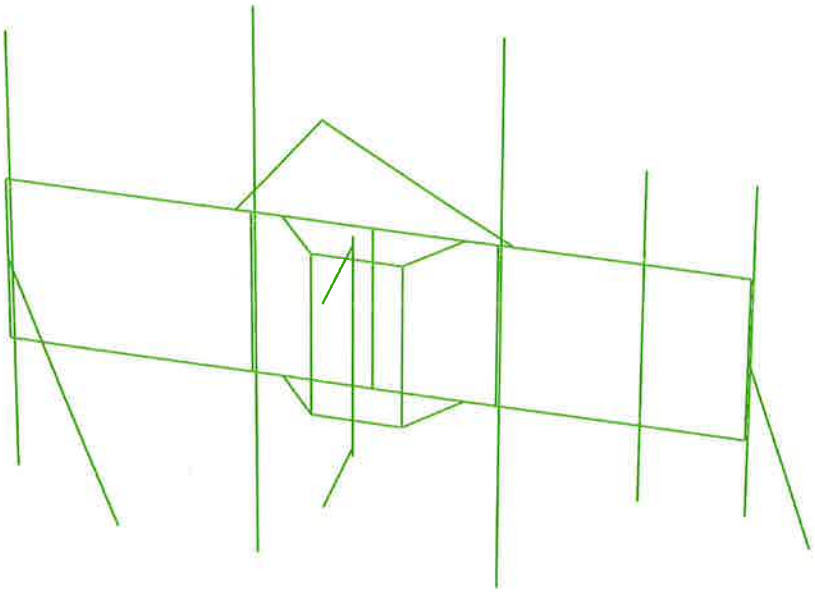
Design status

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



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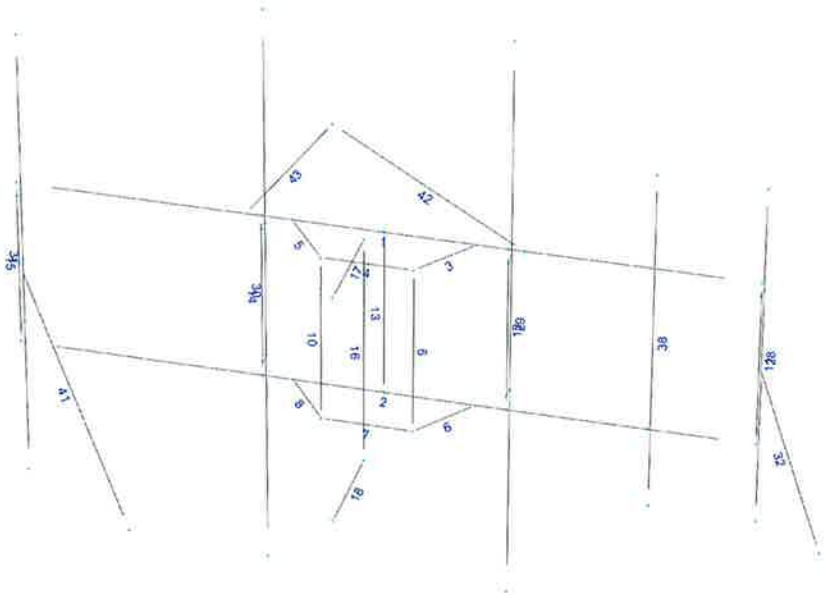

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Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2D+1.6Wo
LC2=1.2D+1.6W30
LC3=1.2D+1.6W60
LC4=1.2D+1.6W90
LC5=1.2D+1.6W120
LC6=1.2D+1.6W150
LC7=1.2D-1.6Wo
LC8=1.2D-1.6W30
LC9=1.2D-1.6W60
LC10=1.2D-1.6W90
LC11=1.2D-1.6W120
LC12=1.2D-1.6W150
LC13=0.9D+1.6Wo
LC14=0.9D+1.6W30
LC15=0.9D+1.6W60
LC16=0.9D+1.6W90
LC17=0.9D+1.6W120
LC18=0.9D+1.6W150
LC19=0.9D-1.6Wo
LC20=0.9D-1.6W30
LC21=0.9D-1.6W60
LC22=0.9D-1.6W90
LC23=0.9D-1.6W120
LC24=0.9D-1.6W150
LC25=1.2D+Di+WI0
LC26=1.2D+Di+WI30
LC27=1.2D+Di+WI60
LC28=1.2D+Di+WI90
LC29=1.2D+Di+WI120
LC30=1.2D+Di+WI150
LC31=1.2D+Di-WI0
LC32=1.2D+Di-WI30
LC33=1.2D+Di-WI60
LC34=1.2D+Di-WI90
LC35=1.2D+Di-WI120
LC36=1.2D+Di-WI150
LC37=0.9D
LC38=1.2D+1.6LL1
LC39=1.2D+1.6LL2
LC40=1.2D+1.6LL3
LC41=1.2D+WL0+LLa1
LC42=1.2D+WL30+LLa1
LC43=1.2D+WL60+LLa1
LC44=1.2D+WL90+LLa1
LC45=1.2D+WL120+LLa1
LC46=1.2D+WL150+LLa1
LC47=1.2D-WL0+LLa1
LC48=1.2D-WL30+LLa1
LC49=1.2D-WL60+LLa1
LC50=1.2D-WL90+LLa1
LC51=1.2D-WL120+LLa1
LC52=1.2D-WL150+LLa1

LC53=1.2D+WL0+LLa2
LC54=1.2D+WL30+LLa2
LC55=1.2D+WL60+LLa2
LC56=1.2D+WL90+LLa2
LC57=1.2D+WL120+LLa2
LC58=1.2D+WL150+LLa2
LC59=1.2D-WL0+LLa2
LC60=1.2D-WL30+LLa2
LC61=1.2D-WL60+LLa2
LC62=1.2D-WL90+LLa2
LC63=1.2D-WL120+LLa2
LC64=1.2D-WL150+LLa2
LC65=1.2D+WL0+LLa3
LC66=1.2D+WL30+LLa3
LC67=1.2D+WL60+LLa3
LC68=1.2D+WL90+LLa3
LC69=1.2D+WL120+LLa3
LC70=1.2D+WL150+LLa3
LC71=1.2D-WL0+LLa3
LC72=1.2D-WL30+LLa3
LC73=1.2D-WL60+LLa3
LC74=1.2D-WL90+LLa3
LC75=1.2D-WL120+LLa3
LC76=1.2D-WL150+LLa3
LC77=1.2D+WL0+LLa4
LC78=1.2D+WL30+LLa4
LC79=1.2D+WL60+LLa4
LC80=1.2D+WL90+LLa4
LC81=1.2D+WL120+LLa4
LC82=1.2D+WL150+LLa4
LC83=1.2D-WL0+LLa4
LC84=1.2D-WL30+LLa4
LC85=1.2D-WL60+LLa4
LC86=1.2D-WL90+LLa4
LC87=1.2D-WL120+LLa4
LC88=1.2D-WL150+LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	HSS_SQR 3X3X1_4	**17**	LC11 at 0.00%	0.50	OK	Eq. H1-1b
		18	LC11 at 0.00%	**0.54**	**OK**	Eq. H1-1b
	L 2-1_2X2-1_2X3_16	**42**	LC11 at 100.00%	**0.46**	**OK**	Sec. F1
		43	LC11 at 100.00%	0.38	OK	Sec. F1
	L 2X2X3_16	**9**	LC12 at 100.00%	0.19	OK	Sec. F1
		10	LC35 at 100.00%	**0.32**	**OK**	Sec. F1
	LU 3X2X1_4	**3**	LC12 at 100.00%	**0.89**	**OK**	Eq. H2-1
		5	LC26 at 0.00%	0.65	OK	Eq. H2-1
		6	LC12 at 0.00%	0.85	OK	Eq. H2-1
		7	LC12 at 46.88%	0.89	OK	Eq. H3-8
		8	LC2 at 0.00%	0.54	OK	Eq. H2-1
	PIPE 2-1_2x0.203	**16**	LC12 at 100.00%	0.48	OK	Eq. H1-1b
		29	LC1 at 37.50%	0.70	OK	Eq. H1-1b
		30	LC1 at 37.50%	**0.70**	**OK**	Eq. H1-1b
	PIPE 2x0.154	**11**	LC2 at 50.00%	0.35	OK	Eq. H1-1b
		12	LC12 at 8.33%	0.44	OK	Eq. H1-1b
		13	LC40 at 100.00%	0.07	OK	Eq. H1-1b
		14	LC12 at 91.67%	0.44	OK	Eq. H1-1b
		15	LC1 at 50.00%	0.72	OK	Eq. H1-1a
		28	LC1 at 29.17%	0.20	OK	Eq. H1-1b
		31	LC1 at 33.33%	**0.91**	**OK**	Eq. H1-1b

	32	LC5 at 0.00%	0.21	OK	Eq. H1-1b
	38	LC34 at 27.08%	0.25	OK	Eq. H1-1b
	41	LC11 at 37.50%	0.20	OK	Eq. H1-1b
T2L 2-1_2X2-1_2X3_16	**1**	LC36 at 68.75%	**0.94**	**OK**	Eq. H2-1
	2	LC18 at 36.61%	0.77	OK	Eq. H2-1
T2LU 3X2X1_4LLBB	**4**	LC12 at 50.00%	**0.32**	**OK**	Eq. H2-1

Bentley

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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	-6.00	0.00	0.00	0
2	0.00	0.00	0.00	0
3	6.00	0.00	0.00	0
4	-1.50	0.00	0.00	0
5	1.50	0.00	0.00	0
6	-2.00	0.00	0.00	0
7	2.00	0.00	0.00	0
8	-0.75	0.00	-1.00	0
9	0.75	0.00	-1.00	0
10	0.00	0.5415	-1.20	0
11	-6.00	-2.917	0.00	0
12	0.00	-2.917	0.00	0
13	6.00	-2.917	0.00	0
14	-1.50	-2.917	0.00	0
15	1.50	-2.917	0.00	0
16	-2.00	-2.917	0.00	0
17	2.00	-2.917	0.00	0
18	-0.75	-2.917	-1.00	0
19	0.75	-2.917	-1.00	0
20	0.00	-3.4585	-1.20	0
21	0.00	0.5415	-3.00	0

22	0.00	-3.4585	-3.00	0
25	-6.00	-0.25	0.00	0
26	-2.00	-0.25	0.00	0
27	6.00	-0.25	0.00	0
28	2.00	-0.25	0.00	0
29	-6.00	-2.667	0.00	0
30	-2.00	-2.667	0.00	0
31	2.00	-2.667	0.00	0
32	6.00	-2.667	0.00	0
33	-6.00	-0.25	0.20	0
34	-6.00	-2.667	0.20	0
35	-2.00	-0.25	0.20	0
36	-2.00	-2.667	0.20	0
37	2.00	-0.25	0.20	0
38	2.00	-2.667	0.20	0
39	6.00	-0.25	0.20	0
40	6.00	-2.667	0.20	0
41	-6.00	1.54	0.20	0
42	-2.00	3.54	0.20	0
43	2.00	3.54	0.20	0
44	6.00	2.54	0.20	0
45	-6.00	-4.459	0.20	0
46	-2.00	-6.46	0.20	0
47	2.00	-6.46	0.20	0
48	6.00	-5.46	0.20	0
49	-6.00	-1.4585	0.00	0
50	-8.00	-1.4585	-5.00	0
52	0.00	-2.917	-1.00	0
53	0.00	0.00	-1.20	0
54	0.00	-2.917	-1.20	0
55	-4.25	0.00	0.00	0
56	-4.25	-2.917	0.00	0
59	-4.25	0.00	0.20	0
60	-4.25	-2.917	0.20	0
61	-4.25	1.54	0.20	0
62	-4.25	-4.459	0.20	0
63	6.00	-1.4585	0.00	0
64	2.00	-1.4585	-7.00	0
65	-2.25	0.00	0.00	0
66	2.25	0.00	0.00	0
67	0.00	3.5415	-3.00	0
51	0.00	0.00	-1.00	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
21	1	1	1	1	1	1
22	1	1	1	1	1	1
50	1	1	1	0	0	0
64	1	1	1	0	0	0
67	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
1	1	3		T2L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
2	11	13		T2L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
3	8	4		LU 3X2X1_4	A36	0.00	0.00	0.00
4	9	8		T2LU 3X2X1_4LLBB	A36	0.00	0.00	0.00
5	5	9		LU 3X2X1_4	A36	0.00	0.00	0.00
6	14	18		LU 3X2X1_4	A36	0.00	0.00	0.00
7	18	19		LU 3X2X1_4	A36	0.00	0.00	0.00
8	19	15		LU 3X2X1_4	A36	0.00	0.00	0.00
9	8	18		L 2X2X3_16	A36	0.00	0.00	0.00
10	9	19		L 2X2X3_16	A36	0.00	0.00	0.00
11	1	11		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
12	6	16		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
13	2	12		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
14	7	17		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
15	3	13		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
16	10	20		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
17	21	10		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
18	22	20		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
28	41	45		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
29	42	46		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
30	43	47		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
31	44	48		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
32	49	50		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
38	61	62		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
41	63	64		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
42	65	67		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
43	66	67		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
1	270.00	0	0.00	0.00	0.00
2	270.00	0	0.00	0.00	0.00
3	180.00	0	0.00	0.00	0.00
4	90.00	0	0.00	0.00	0.00
5	180.00	0	0.00	0.00	0.00
10	90.00	0	0.00	0.00	0.00
28	45.00	0	0.00	0.00	0.00
29	45.00	0	0.00	0.00	0.00
30	45.00	0	0.00	0.00	0.00
31	45.00	0	0.00	0.00	0.00
38	45.00	0	0.00	0.00	0.00
42	180.00	0	0.00	0.00	0.00
43	90.00	0	0.00	0.00	0.00

Rigid end offsets

Member	DJX [in]	DJY [in]	DJZ [in]	DKX [in]	DKY [in]	DKZ [in]
17	0.00	-2.00	0.00	0.00	-2.00	0.00
18	0.00	2.00	0.00	0.00	2.00	0.00

Property Card: **689 OLD COLCHESTER RD**

Town of Montville, CT

Parcel Information

Location:	689 OLD COLCHESTER RD	Property Use:	Industrial	Primary Use:	Utility Building
Unique ID:	Z0252300	Map Block Lot:	030-089-00A	Acres:	8.3
		Zone:	R40	Volume / Page:	0608/0350
		Sale Date:	08/24/2015	Sale Price:	$777,060

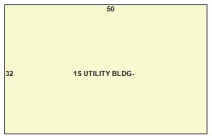
Value Information

	Appraised Value	Assessed Value
Land	117570	82300
Buildings	271183	189830
Detached Outbuildings	390750	273520
Total	779503	545650

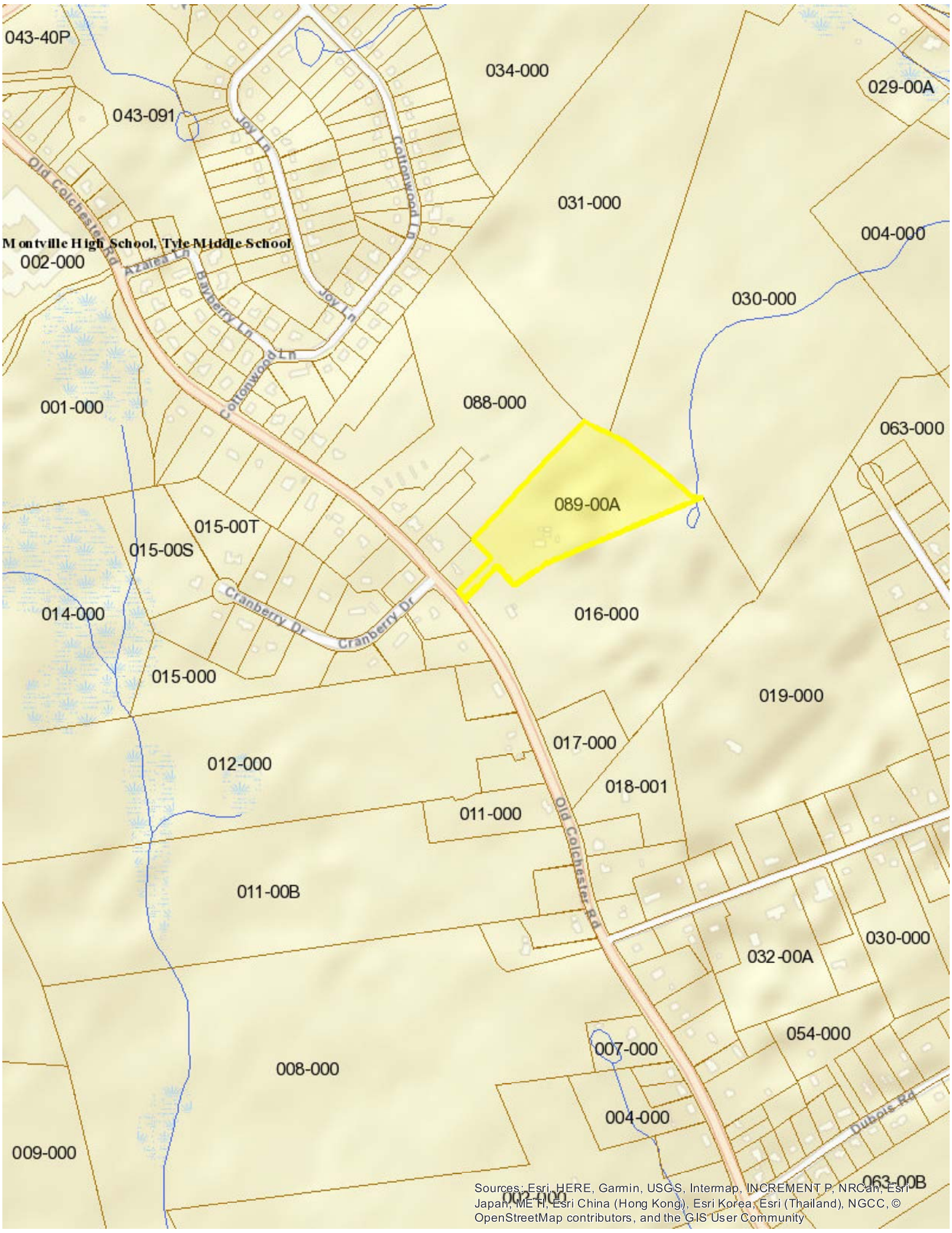
Owner's Information

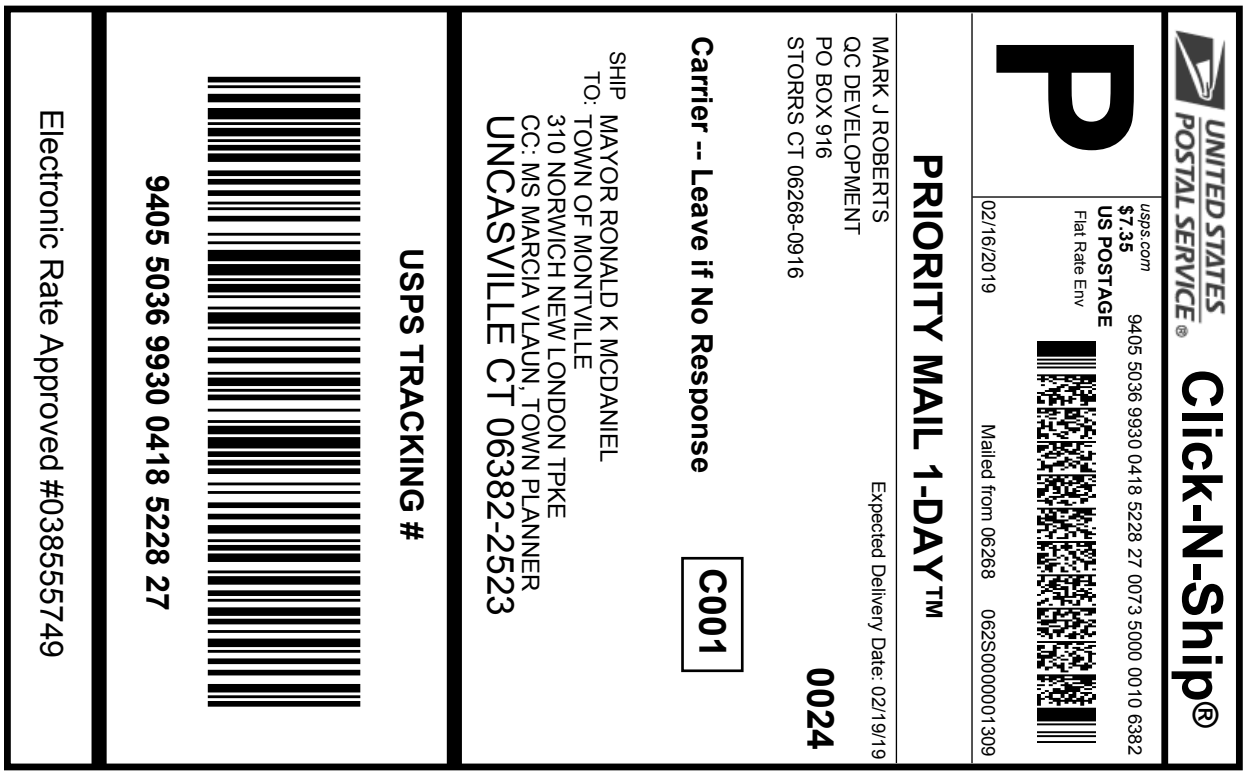
Owner's Data
ATLANTIC BROADBAND (CT) LLC TWO BATTERYMARCH PARK STE 205 QUINCY, MA 02169

Building 1



Category:	Commercial	Siding:	Pre-Cast Concrete	Total Rooms:	0
Stories:	1.00	Fuel:	Electric	Beds/Units:	0
GLA:	1600	Heating:	Forced Hot Air	Baths:	0
Year Built:	2008	Fireplace:	0		
Class:	Reinforced Concrete	Cooling Percent:	Central	Half Baths:	0
Use:	Utility Building	Floors:	Concrete	Basement Garage:	0
Construction Style:	Utility Building	Roof Material:		Finished Basement:	0


043-40P
043-091
034-000
029-00A
031-000
004-000
030-000
Montville High School, Tyle Middle School
002-000
Old Colchester Rd
Azalea Ln
Bayberry Ln
Joy Ln
Cottonwood Ln
001-000
088-000
063-000
089-00A
015-00T
015-00S
014-000
Cranberry Dr
016-000
015-000
019-000
017-000
012-000
018-001
011-000
011-00B
032-00A
030-000
054-000
007-000
008-000
004-000
Dubois Rd
009-000
063-00B
002-000
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community



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 0418 5228 27

Trans. #:	456810187
Print Date:	02/14/2019
Ship Date:	02/16/2019
Expected Delivery Date:	02/19/2019

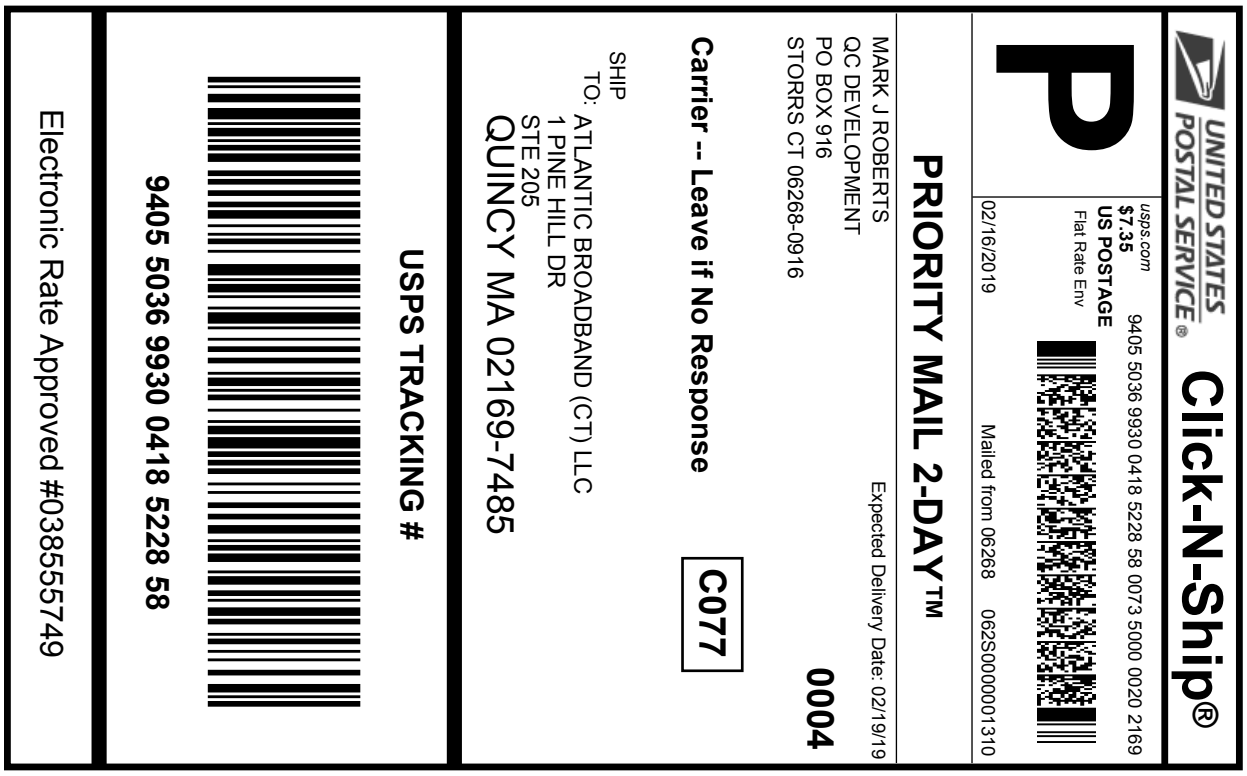
Priority Mail® Postage:	**$7.35**
Total	**$7.35**

From: MARK J ROBERTS
QC DEVELOPMENT
PO BOX 916
STORRS CT 06268-0916

To: MAYOR RONALD K MCDANIEL
TOWN OF MONTVILLE
310 NORWICH NEW LONDON TPKE
CC: MS MARCIA VLAUN, TOWN PLANNER
UNCASVILLE CT 06382-2523

* 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



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Ship Date:	02/16/2019
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Priority Mail® Postage:	**$7.35**
Total	**$7.35**

From: MARK J ROBERTS
QC DEVELOPMENT
PO BOX 916
STORRS CT 06268-0916

To: ATLANTIC BROADBAND (CT) LLC
1 PINE HILL DR
STE 205
QUINCY MA 02169-7485

* 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