March 21, 2019

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

Regarding:	Notice of Exempt Modification – Antenna Modification
Property Address:	6 Progress Ave, Seymour, CT 06820 (the "Property")
Applicant:	AT&T Mobility ("AT&T", Site # CT5633)

Dear Ms. Bachman:

AT&T currently maintains a wireless telecommunications facility on an existing 280-foot self-supporting lattice tower ("tower") at the above-referenced address, latitude 41.3914919°, longitude -73.0532989 °. AT&T's facility consists of nine (9) wireless telecommunications antennas at 160 feet. Said self-supporting lattice tower is owned by EMAC Communications, LLC.

AT&T desires to modify its existing telecommunications facility by swapping (3) panel antennas and adding ancillary equipment, including (9) remote radio head units (RRUs) and (1) squid surge suppressor with associated cabling at its existing mount height. Upgrades to ground equipment are also anticipated, as shown on the Construction Drawings by Maser Consulting, dated November 5, 2018, attached herewith.

Please accept this application as notification pursuant to R.C.S.A. §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16-50j-72 (b)(2). In accordance with R.C.S.A. §16-50j-73, a copy of this letter is being sent to W. Kurt Miller, First Selectman of Seymour; Bill Paecht, as Planning and Zoning Director of the Town of Seymour; Edward MacConnie of EMAC Communications, LLC, as property owner.

The planned modifications to AT&T's facility fall squarely within those activities explicitly provided for in R.C.S.A. §16-50j-72 (b)(2). Specifically:

1. The planned modification will not result in an increase in the height of the existing structure. The added equipment will be installed at the existing height of 160 feet on the 280-foot self-support tower.

2. The proposed modifications will not involve any changes to AT&T's ground-space footprint, and therefore and therefore will not require an extension of the site boundary.

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

Michelle Scharath • Empire Telecom USA, LLC • 16 Esquire Road, Billerica, MA 01862 • 978-935-6913 • mscharath@empiretelecomm.com

4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above Federal Communications Commission (FCC) safety standard. An RF emissions calculation (enclosed) for AT&T's modified facility is herein provided.

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 AT&T's proposed modifications. Please see enclosed structural analysis completed by Maser Consulting, November 2, 2018, and stamped by Petros Tsoukalas.

For the foregoing reasons, AT&T respectfully requests that the proposed swapping of three (3) panel antennas and adding ancillary equipment, including nine (9) remote-radio units (RRUs) and (1) squid surge suppressor with associated cabling be allowed within the exempt modifications under R.C.S.A. §16-50j-72 (b)(2).

Sincerely,

Michelle Scharath

Michelle Scharath
Site Acquisition Specialist
Empire Telecom USA, LLC
mscharath@empiretelecomm.com

Enclosures: Exhibit 1 – Field Card and GIS Map
Exhibit 2 – Construction Drawings
Exhibit 3 – Structural Analysis
Exhibit 4 – RF Emissions Analysis Report Evaluation

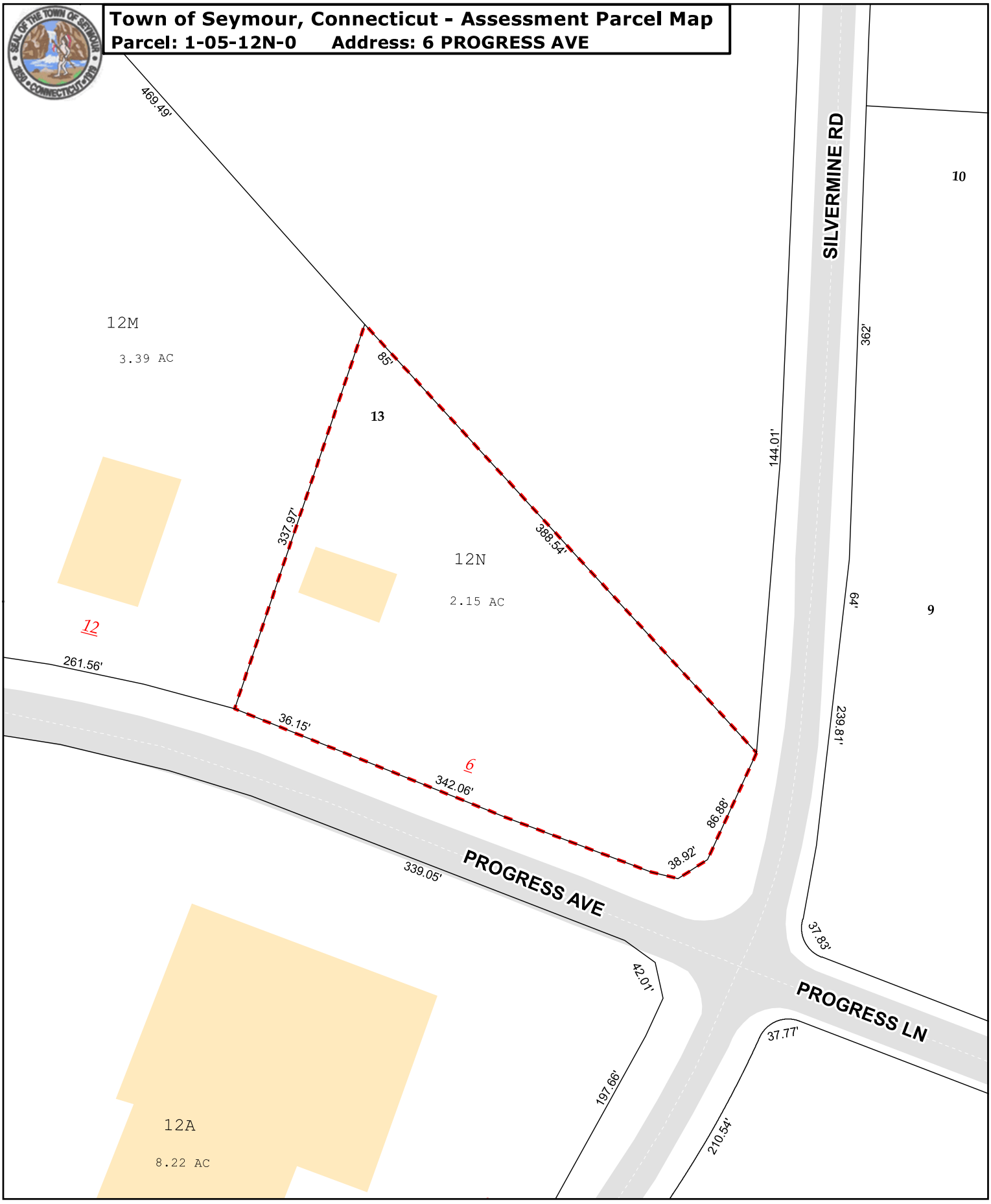
cc:

W. Kurt Miller, First Selectman
Seymour Town Hall
1 First Street
Seymour, CT 06483

Bill Paecht
Seymour Town Hall
1 First Street
Seymour, CT 06483

Edward MacConnie
EMAC Communications, LLC
2702 Forest View Lane
Kissimmee, FL 34744

EXHIBIT 1



Disclaimer:
This map is for informational purposes only.
All information is subject to verification by any user.
The Town of Seymour and its mapping contractors
assume no legal responsibility for the
information contained herein.

Town of Seymour, CT

Property Listing Report

Map Block Lot 1-05-12N-0 Account 015124

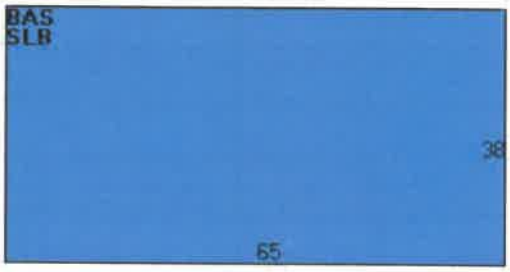
Property Information

Property Location	6 PROGRESS AVE
Owner	EDMAC LLC
Co-Owner	
Mailing Address	2702 FOREST VIEW LANE KISSIMMEE FL 34744
Land Use	4330 RAD/TV TR
Land Class	I
Zoning Code	GI-2
Census Tract	01301

Neighborhood	D
Acreage	2.15
Utilities	
Lot Setting/Desc	Industrial Level
Additional Info	

Photo

Sketch



Primary Construction Details

Year Built	2001
Stories	1
Building Style	Com Garage
Building Use	Comm/Ind
Building Condition	Average
Floors	Precast Concr
Total Rooms	

Bedrooms	
Full Bathrooms	0
Half Bathrooms	
Bath Style	
Kitchen Style	
Roof Style	Flat
Roof Cover	Rolled Compos

Exterior Walls	Concr/Cinder
Interior Walls	Minim/Masonry
Heating Type	Hot Air-no Duc
Heating Fuel	Gas
AC Type	None
Gross Bldg Area	4940
Total Living Area	2470

Report Created On 2/7/2019

Town of Seymour, CT

Property Listing Report | Map Block Lot 1-05-12N-0 | Account 015124

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	52000	36400
Extras	0	0
Outbuildings	7000	4900
Land	157900	110530
Total	216900	151830

Outbuilding and Extra Items

Type	Description
Paving Asph.	7000 S.F.
Fence 8 Ft	215 L.F.

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	2470	2470
Slab	2470	0
Total Area	4940	2470

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
EDMAC LLC	00285/0679	9/25/2001	
MACCONNIE EDWARD H	00269/0272	6/28/2000	
EMAC COMMUNICATIONS CO INC	00266/0050	2/11/2000	110000
HUBBELL REALTY DEVELOPMENT	00150/0777		0

Report Created On 2/7/2019

EXHIBIT 2

PROJECT NOTES

1. SITE INFORMATION OBTAINED FROM THE FOLLOWING:
   - A. PLAN ENTITLED "CT5633 SEYMOUR EAST" PREPARED BY COM EX CONSULTANTS OF MOUNTAIN LAKES, NJ LAST REVISED 03/14/16.
   - B. LIMITED FIELD OBSERVATION BY MASER CONSULTING ON 05/31/2018.
2. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITY COMPANIES OR OTHER PUBLIC/GOVERNING AUTHORITIES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
4. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE AS A RESULT OF CONSTRUCTION OF THIS FACILITY AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
6. THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
7. THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING THE BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND CONSTRUCTION DRAWINGS.
8. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THESE DRAWINGS MUST BE VERIFIED. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
9. SINCE THE CELL SITE MAY BE 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 REQUIRED TO BE WORN TO ALERT OF ANY POTENTIALLY DANGEROUS EXPOSURE LEVELS.
10. THE PROPOSED FACILITY WILL CAUSE AN INSIGNIFICANT OR "DE-MINIMUS" INCREASE IN STORM WATER RUNOFF, THEREFORE, NO DRAINAGE STRUCTURES ARE PROPOSED.
11. NO NOISE, SMOKE, DUST OR ODOR WILL RESULT FROM THIS FACILITY AS TO CAUSE A NUISANCE.
12. THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION (NO HANDICAP ACCESS IS REQUIRED).
13. THE FACILITY DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.
14. CONTRACTOR SHALL VERIFY ANTENNA ELEVATION AND AZIMUTHS WITH RF ENGINEERING PRIOR TO INSTALLATION.
15. THE TOWER, MOUNTS AND ANTENNAS SHALL BE DESIGNED TO MEET EIA/TIA-222-H AS PER IBC REQUIREMENTS.
16. ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL.
17. CONTRACTOR MUST FIELD LOCATE ALL EXISTING UNDERGROUND UTILITIES PRIOR TO ANY EXCAVATION.
18. CONSTRUCTION SHALL NOT COMMENCE UNTIL COMPLETION OF A PASSING STRUCTURAL ANALYSIS CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER. THE STRUCTURAL ANALYSIS IS TO BE PERFORMED BY OTHERS.

SITE NAME: SEYMOUR EAST
FA NUMBER: 10099965
SITE NUMBER: CT5633
4C - MRCTB032000
5C - MRCTB031387
6C - MRCTB031657
6 PROGRESS AVENUE
SEYMOUR, CT 06483
NEW HAVEN COUNTY

VICINITY MAP

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING CODES.

1. 2018 CONNECTICUT STATE BUILDING CODE, INCORPORATING THE 2015 IBC
2. 2017 NATIONAL ELECTRICAL CODE - NFPA 70
3. 2017 NFPA 101
4. AMERICAN INSTITUTE OF STEEL CONSTRUCTION 360-10
5. AMERICAN CONCRETE INSTITUTE
6. TIA-222-G
7. TIA 607 FOR GROUNDING
8. INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS 81 IEEE C2 LATEST EDITION
9. TELCORDIA GR-1275
10. ANSI T1.311
11. PROPOSED USE: UNMANNED TELECOM FACILITY
12. HANDICAP REQUIREMENTS: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS NOT REQUIRED.
13. CONSTRUCTION TYPE: IIB
14. USE GROUP: U

PROJECT INFORMATION

SITE INFORMATION

LATITUDE:	41.3914919° N
LONGITUDE:	73.0532989° W
JURISDICTION:	NEW HAVEN COUNTY

APPLICANT/LESSEE

COMPANY:	NEW CINGULAR WIRELESS PCS, LLC
ADDRESS:	550 COCHITUATE ROAD
CITY, STATE, ZIP:	FRAMINGHAM, MA 01701

TOWER OWNER

COMPANY:	EMAC COMMUNICATIONS
ADDRESS:	6 PROGRESS AVE
CITY, STATE, ZIP:	SEYMOUR, CT 06483

CLIENT REPRESENTATIVE

COMPANY:	EMPIRE TELECOM
ADDRESS:	16 ESQUIRE ROAD
CITY, STATE, ZIP:	BILLERICA, MA 01862
CONTACT:	DAVID COOPER
E-MAIL:	DCOOPER@EMPIRETELECOM.COM

SITE ACQUISITION

COMPANY:	EMPIRE TELECOM
ADDRESS:	16 ESQUIRE ROAD
CITY, STATE, ZIP:	BILLERICA, MA 01862
CONTACT:	DAVID COOPER
E-MAIL:	DCOOPER@EMPIRETELECOM.COM

ENGINEER

COMPANY:	MASER CONSULTING CONNECTICUT
ADDRESS:	331 NEWMAN SPRINGS ROAD, SUITE 203
CITY, STATE, ZIP:	RED BANK, NJ 07701-5699
CONTACT:	ROBERT ANDREWS
PHONE:	(856) 797-0412
E-MAIL:	RANDREWS@MASERCONSULTING.COM

PROJECT DESCRIPTION/ SCOPE OF WORK

- INSTALL (9) NEW RRU'S, (3) PER SECTOR
- INSTALL (3) NEW PANEL ANTENNAS, (1) PER SECTOR
- REMOVE (3) EXISTING PANEL ANTENNAS, 1 PER SECTOR
- INSTALL (1) NEW DC-6 SURGE SUPPRESSION DOME
- INSTALL (2) NEW 6/C DC CABLES
- INSTALL (1) 18-PAIR FIBER TRUNK
- SWAP EXISTING DUS WITH (2) PROPOSED 5216
- INSTALL (1) PROPOSED XMU
- INSTALL (1) PROPOSED IDLE
- INSTALL (1) PROPOSED RBS 6630

PROPOSED PROJECT SCOPE BASED ON RFDS ID# 2285405, VERSION 3.00, LAST UPDATED 09/10/2018.

SHEET INDEX

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FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

SCALE:	JOB NUMBER:
AS SHOWN	18963021A

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
0	03/21/19	REVISED PER COMMENTS	AJC	RA
2	181019	REVISED PER COMMENTS	AJC	RA
1	09/21/18	ISSUED FOR REVIEW	JCM	RA

STATE OF CONNECTICUT
EFTROS TSOUKALAS
3257
PROFESSIONAL ENGINEER

EFTROS TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: 32577

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF THE RESPONSIBLE LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SITE NAME:

SEYMOUR EAST
FA# 10099965
SITE# CT5633

6 PROGRESS AVE
SEYMOUR, CT 06483
NEW HAVEN COUNTY

RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank NJ 07701-5699
Phone: .732.383.1950
Fax: .732.383.1984
email: solutions@maserconsulting.com

SHEET TITLE:

TITLE SHEET

SHEET NUMBER:

T-1

GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING 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 GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5O HMS OR LESS.
4. THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
5. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
6. 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.
7. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE EQUIPMENT GROUND RING WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
8. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
9. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING, SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
10. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
11. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED. ALL BENDS SHALL BE MADE WITH 12" RADIUS OR LARGER.
12. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
13. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS EXCEPT FOR GROUND BAR CONNECTION FROM MGB TO OUTSIDE EXTERIOR GROUND SHALL ALL BE CADWELD CONNECTIONS.
14. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
15. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED TO THE TOWER GROUND BAR.
16. APPROVED ANTIOXIDANT COATINGS (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
17. ALL EXTERIOR AND INTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
18. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
19. BOND ALL METALLIC OBJECTS WITHIN 6 FT OF MAIN GROUND WIRES WITH 1-#2 AWG TIN-PLATED COPPER GROUND CONDUCTOR.
20. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G. NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
21. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/4" 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.
22. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

    CONTRACTOR - EMPIRE TELECOM
    SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)
    OWNER - AT&T (NEW CINGULAR WIRELESS PCS, LLC)

23. ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
24. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
25. 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.
26. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
27. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
28. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
29. 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.
30. 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.
31. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
32. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE RESPONSIBLE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.
33. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE RESPONSIBLE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.
34. THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION.
35. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
36. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
37. THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
38. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
39. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
40. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.
41. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
42. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR.
43. 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.
44. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
45. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS.
46. 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.
47. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."
48. 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.
49. 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.
50. 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 ALERT OF DANGEROUS EXPOSURE LEVELS.

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SCALE :	JOB NUMBER :
AS SHOWN	18963021A

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
0	03/21/19	REVISED PER COMMENTS	AJC	RA
2	181019	REVISED PER COMMENTS	AJC	RA
1	09/21/18	ISSUED FOR REVIEW	JCM	RA

STATE OF CONNECTICUT — EFTROS TSOUKALAS — 32577 — REGISTERED PROFESSIONAL ENGINEER

EFTROS TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: 32577

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF THE RESPONSIBLE LICENSED PROFFESIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SITE NAME:

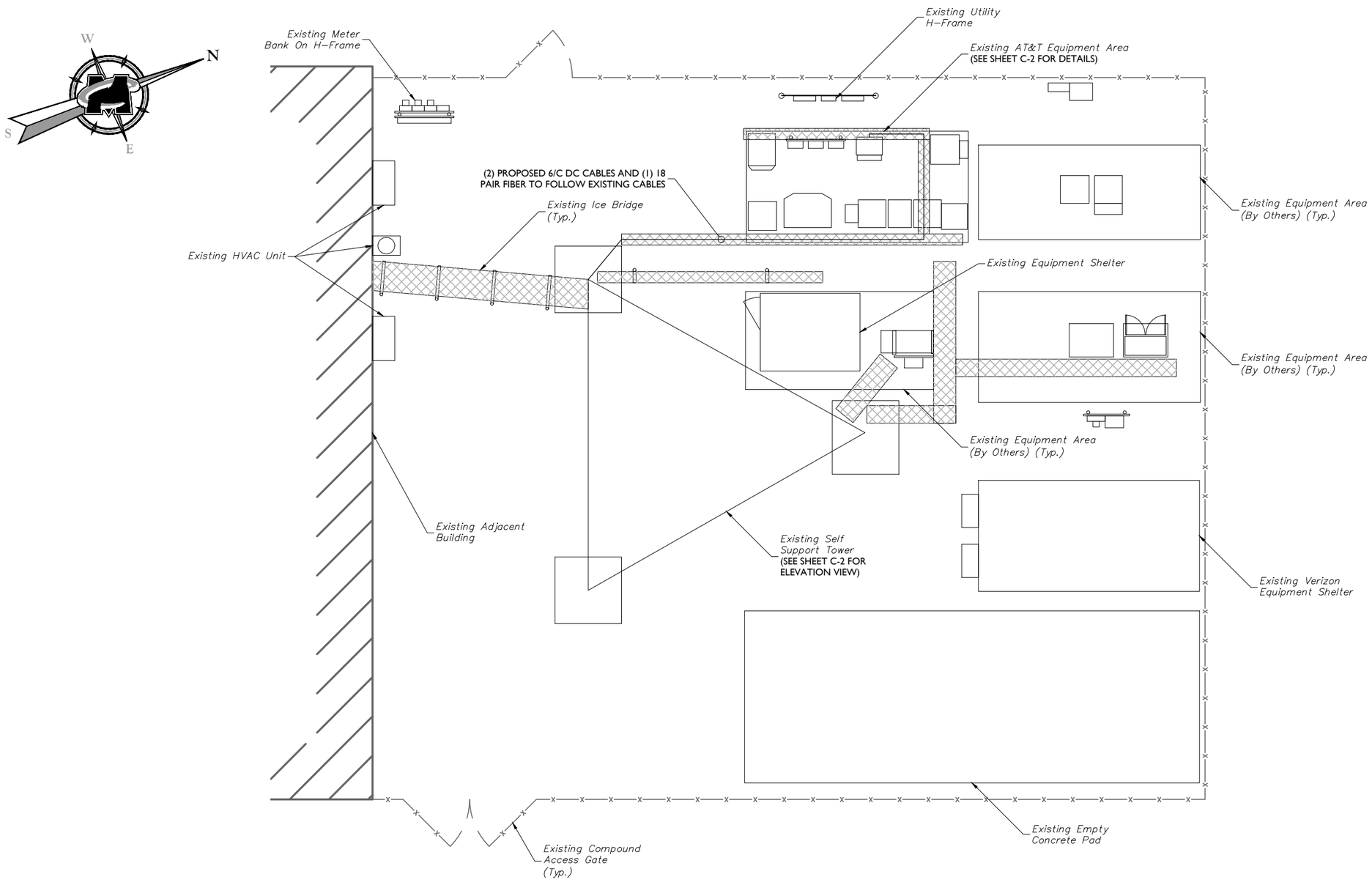
SEYMOUR EAST
FA# 10099965
SITE# CT5633

6 PROGRESS AVE
SEYMOUR, CT 06483
NEW HAVEN COUNTY

RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank NJ 07701-5699
Phone: .732.383.1950
Fax: .732.383.1984
email: solutions@maserconsulting.com

SHEET TITLE :
GENERAL NOTES

SHEET NUMBER :
GN-1



COMPOUND PLAN

5 4 3 2 1 0 2.5 5 10

SCALE : 1" = 5' FOR 22"X34"
(SCALE : 1" = 10' FOR 11"X17")

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STATE OF CONNECTICUT · PETROS TSOUKALAS · 32577 · LICENSED PROFESSIONAL ENGINEER

PETROS TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: 32577

SITE NAME:

SEYMOUR EAST
FA# 10099965
SITE# CT5633

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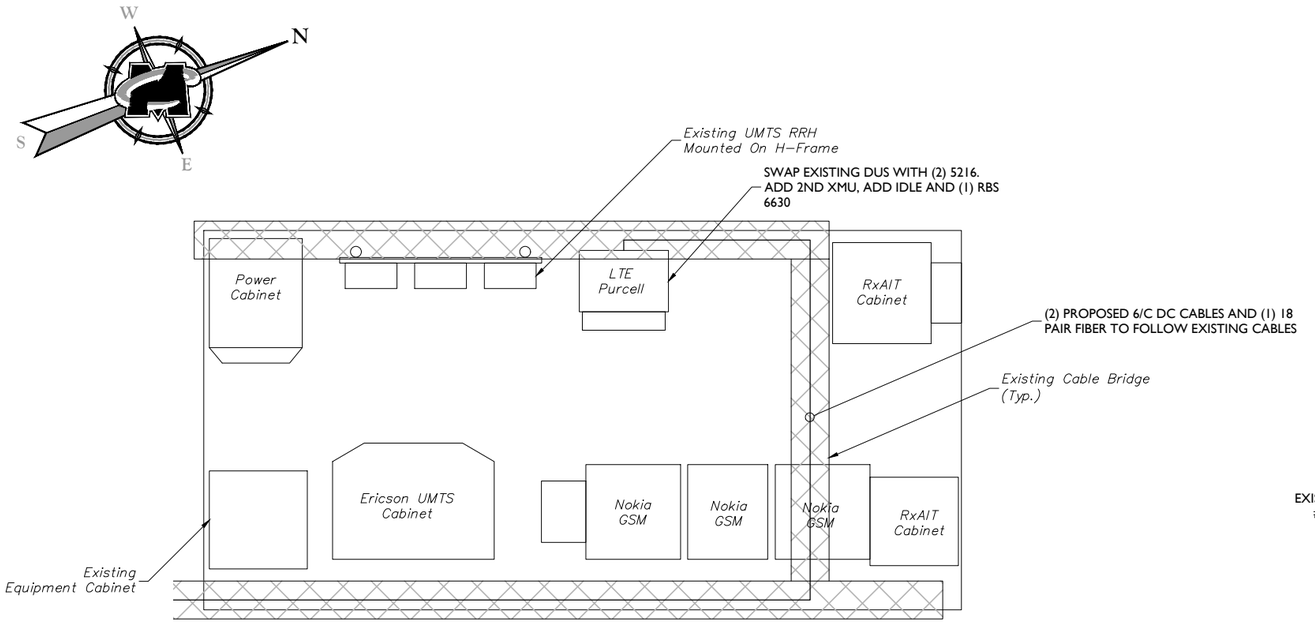
SHEET TITLE :

COMPOUND PLAN

SHEET NUMBER :

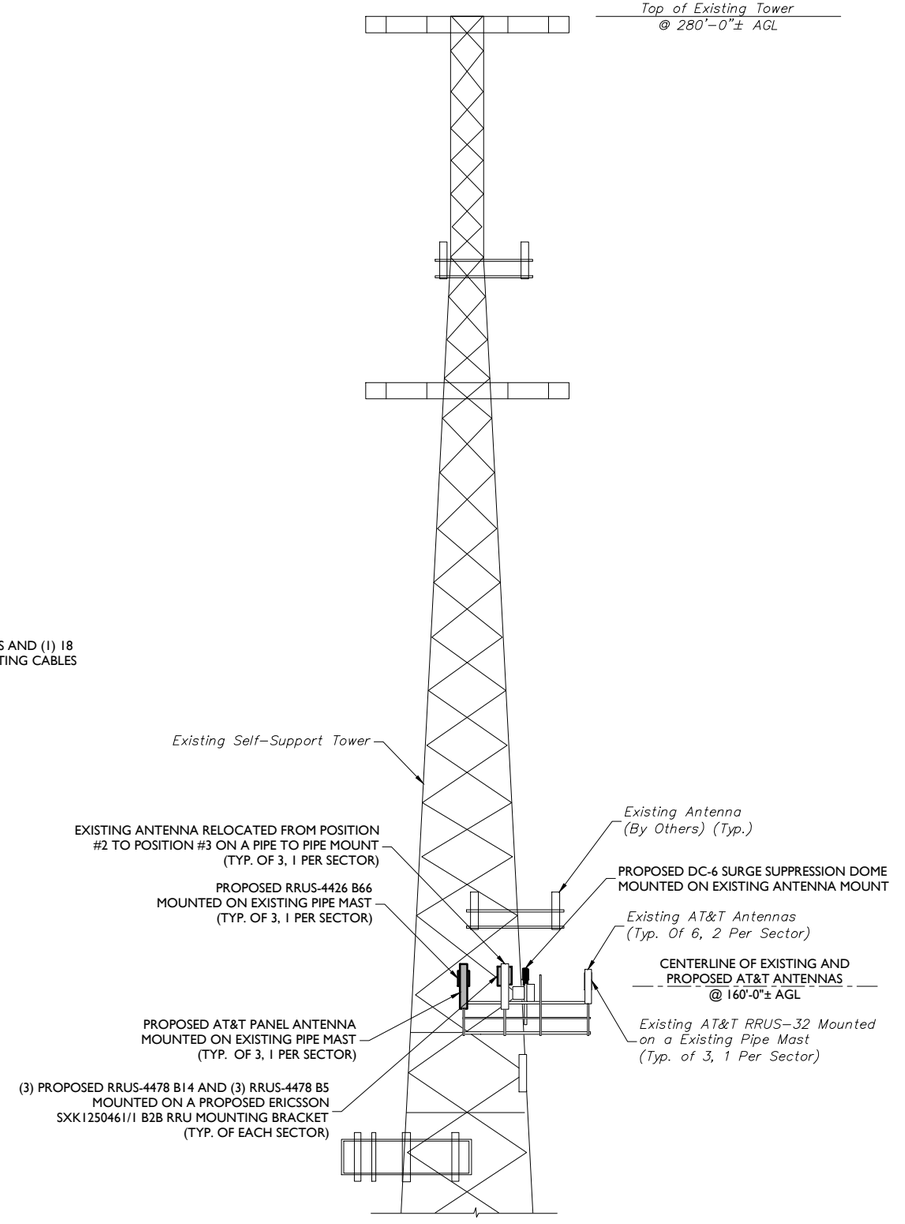
C-1



EQUIPMENT LAYOUT

2 1.6 1.2 0.8 0.4 0 1 2 4

SCALE : 1" = 2' FOR 22"X34"
(SCALE : 1" = 4' FOR 11"X17")



ELEVATION VIEW

10 8 6 4 2 0 5 10 20

SCALE : 1" = 10' FOR 22"X34"
(SCALE : 1" = 20' FOR 11"X17")

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2	181019	REVISED PER COMMENTS	AJC	RA
1	09/21/18	ISSUED FOR [illegible]	JCM	RA

STATE OF CONNECTICUT
PETROS TSOUKALAS
32577
LICENSED PROFESSIONAL ENGINEER

PETROS TSOUKALAS
CONNECTICUT PROFESSIONAL #
ENGINEER - LICENSE NUMBER: 32577

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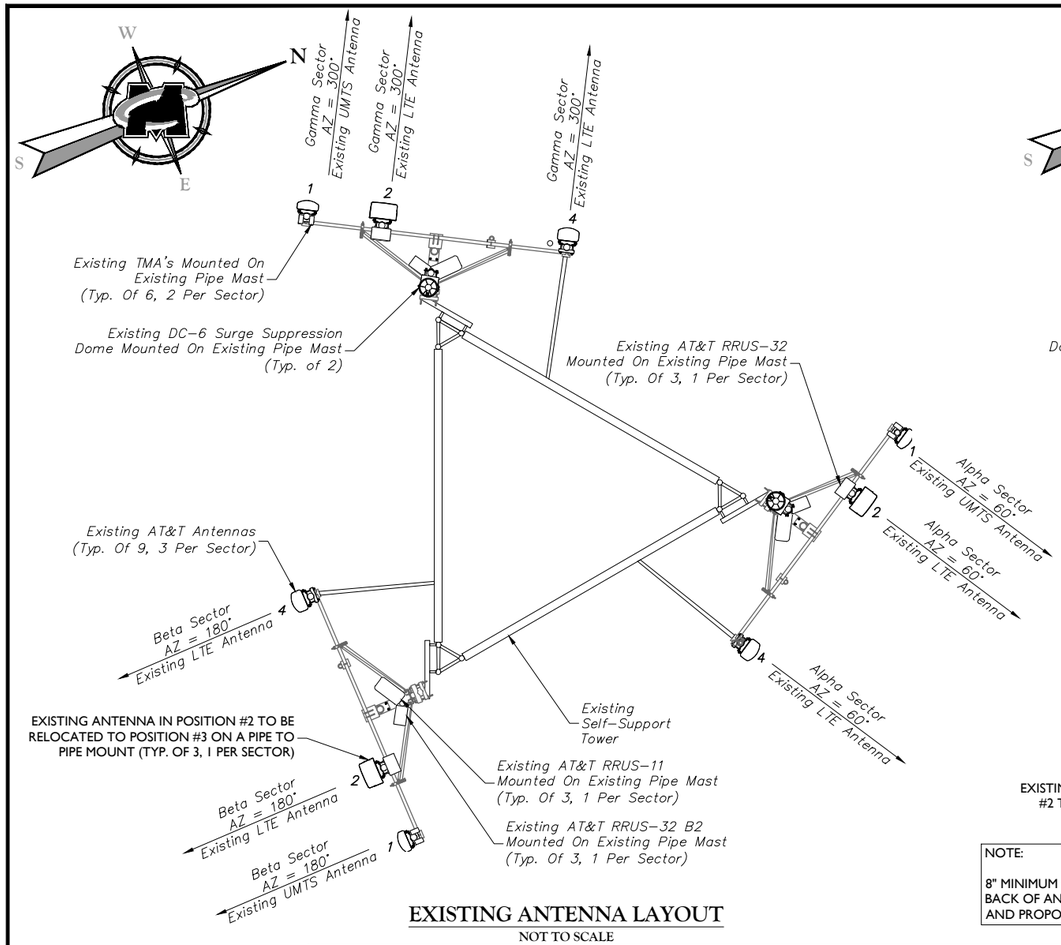
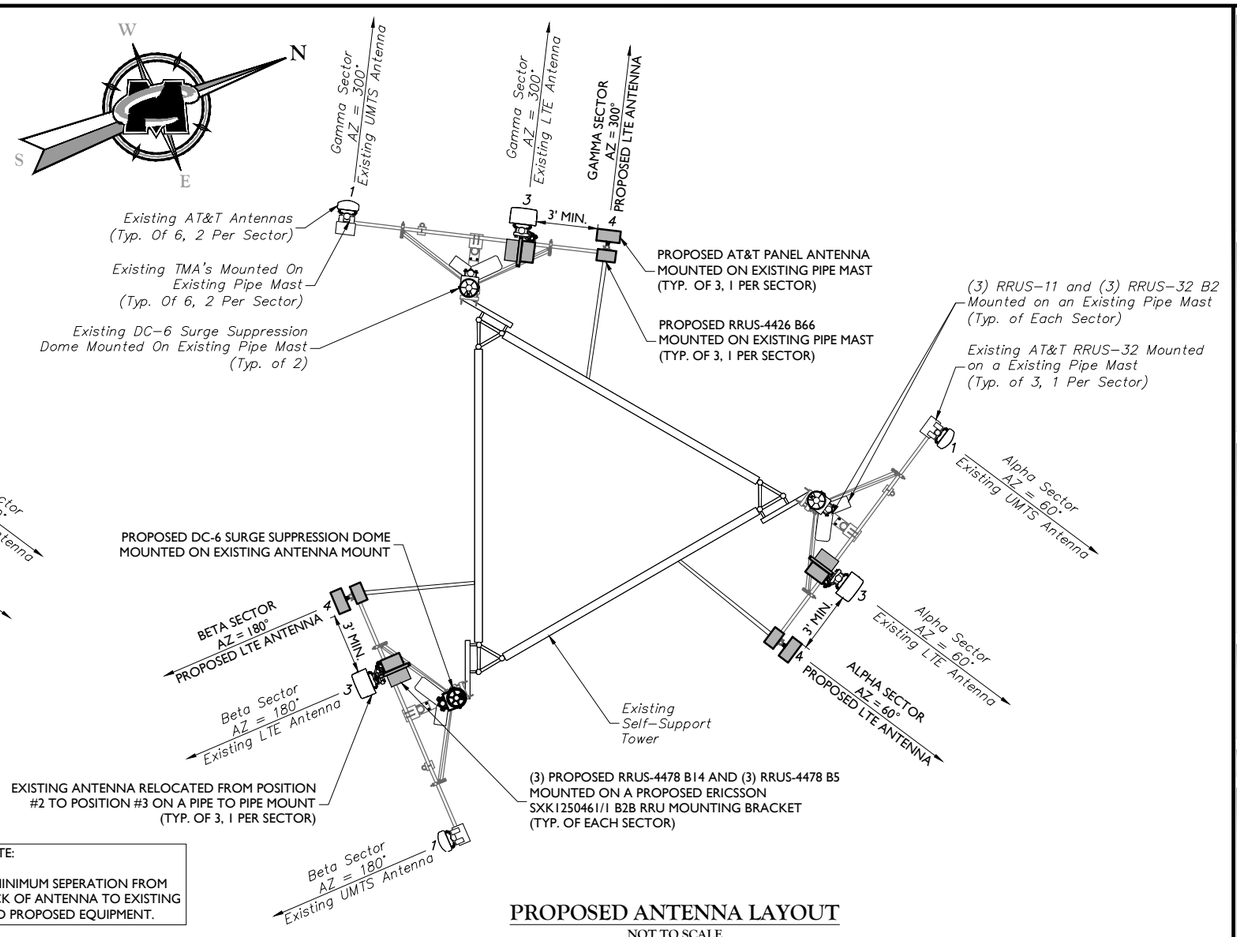
SHEET TITLE :
EQUIPMENT LAYOUT AND
ELEVATION VIEW

SHEET NUMBER :
C-2



EXISTING ANTENNA LAYOUT

NOT TO SCALE



NOTE:

8" MINIMUM SEPERATION FROM BACK OF ANTENNA TO EXISTING AND PROPOSED EQUIPMENT.

PROPOSED ANTENNA LAYOUT

NOT TO SCALE

ANTENNA SCHEDULE

SECTOR		EXISTING ANTENNA	PROPOSED ANTENNA	TECHNOLOGY	ANTENNA STATUS	HEIGHT (in)	WIDTH (in)	DEPTH (in)	WEIGHT (lbs)	ANTENNA AZIMUTH (DEG.)	ANT. CL ELEV. (ft.)	REMOTE RADIO/TMA CONFIGURATION	TRANSMISSION CABLE		
													QUANTITY	TYPE	STATUS
Sector 1	1	KATHREIN	KATHREIN	UMTS	EXISTING	54.90	10.30	5.90	51.20	60°	160'	(2) 782-10250 DIPLEXER (EXISTING) (2) LGP 21401 TMA (EXISTING)	1	1 5/8" COAX	EXISTING
		80010121	80010121												
	2	QUINTEL	-	-	-	-	-	-	-	-	-		-	-	-
		QS66512-2	-												
	3	-	**QUINTEL**	**LTE**	**RELOCATED**	**72.00**	**12.00**	**9.60**	**126.60**	**60°**	**160'**	(1) RRUS-4478 B14 (PROPOSED) (1) RRUS-4478 B5 (PROPOSED) (1) RRUS-32 B2 (EXISTING) (1) RRUS-32 (EXISTING)	6	FIBER	EXISTING
		-	**QS66512-2**												
	4	KMW	**CCI**	**LTE**	**PROPOSED**	**71.10**	**11.70**	**7.60**	**51.00**	**60°**	**160'**	(1) RRUS-11 (EXISTING) (1) RRUS-4426 B66 (PROPOSED)	**1/2**	**DC/FIBER**	**PROPOSED**
		AM-X-CD-16-65-00T-RET	**HPA-65R-BU6A**												
Sector 2	1	KATHREIN	KATHREIN	UMTS	EXISTING	54.90	10.30	5.90	51.20	180°	160'	(2) 782-10250 DIPLEXER (EXISTING) (2) LGP 21401 TMA (EXISTING)	1	1 5/8" COAX	EXISTING
		80010121	80010121												
	2	QUINTEL	-	-	-	-	-	-	-	-	-		-	-	-
		QS66512-2	-												
	3	-	**QUINTEL**	**LTE**	**RELOCATED**	**72.00**	**12.00**	**9.60**	**126.60**	**60°**	**160'**	(1) RRUS-4478 B14 (PROPOSED) (1) RRUS-4478 B5 (PROPOSED) (1) RRUS-32 B2 (EXISTING) (1) RRUS-32 (EXISTING)	6	FIBER	EXISTING
		-	**QS66512-2**												
	4	KMW	**CCI**	**LTE**	**PROPOSED**	**71.10**	**11.70**	**7.60**	**51.00**	**180°**	**160'**	(1) RRUS-11 (EXISTING) (1) RRUS-4426 B66 (PROPOSED)	1/2	DC/FIBER	EXISTING
		AM-X-CD-16-65-00T-RET	**HPA-65R-BU6A**												
Sector 3	1	KATHREIN	KATHREIN	UMTS	EXISTING	54.90	10.30	5.90	51.20	300°	160'	(2) 782-10250 DIPLEXER (EXISTING) (2) LGP 21401 TMA (EXISTING)	1	1 5/8" COAX	EXISTING
		80010121	80010121												
	2	QUINTEL	-	-	-	-	-	-	-	-	-		-	-	-
		QS66512-2	-												
	3	-	**QUINTEL**	**LTE**	**RELOCATED**	**72.00**	**12.00**	**9.60**	**126.60**	**60°**	**160'**	(1) RRUS-4478 B14 (PROPOSED) (1) RRUS-4478 B5 (PROPOSED) (1) RRUS-32 B2 (EXISTING) (1) RRUS-32 (EXISTING)	6	FIBER	EXISTING
		-	**QS66512-2**												
	4	KMW	**CCI**	**LTE**	**PROPOSED**	**71.10**	**11.70**	**7.60**	**51.00**	**300°**	**160'**	(1) RRUS-11 (EXISTING) (1) RRUS-4426 B66 (PROPOSED)	-	-	-
		AM-X-CD-16-65-00T-RET	**HPA-65R-BU6A**												

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1	09/21/18	ISSUED FOR PERMITTING	JCM	RA

STATE OF CONNECTICUT — PETROS TSOUKALAS — 32577 — LICENSED PROFESSIONAL ENGINEER

PETROS TSOUKALAS
CONNECTICUT LICENSED PROFESSIONAL ENGINEER - LICENSE NUMBER: 32577

SITE NAME:

SEYMOUR EAST
FA# 10099965
SITE# CT5633

6 PROGRESS AVE
SEYMOUR, CT 06483
NEW HAVEN COUNTY

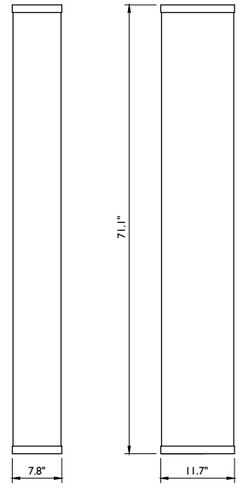
RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank NJ 07701-5699
Phone: 732.383.1950
Fax: .732.383.1984
email: solutions@maserconsulting.com

SHEET TITLE :

ANTENNA LAYOUT AND ANTENNA SCHEDULE

SHEET NUMBER :

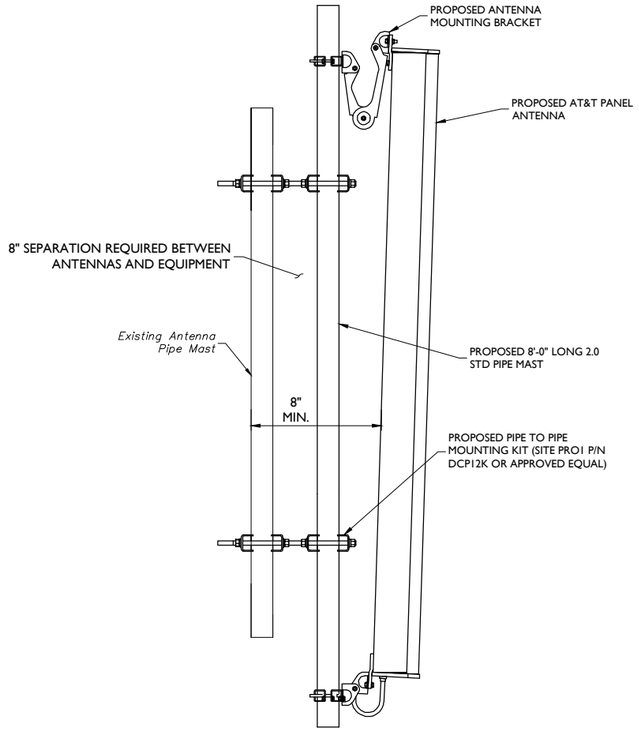
C-3



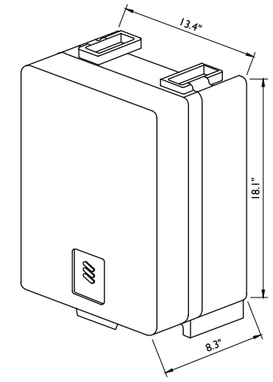
WEIGHT = 51.0 LBS

CCI - HPA65R-BU6A

ANTENNA DETAIL DETAIL
NOT TO SCALE

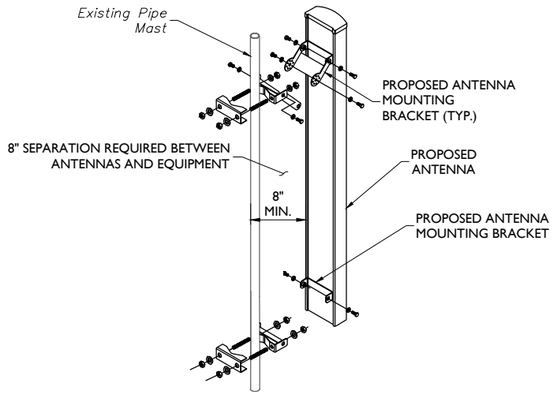


ANTENNA MOUNTING DETAIL
NOT TO SCALE

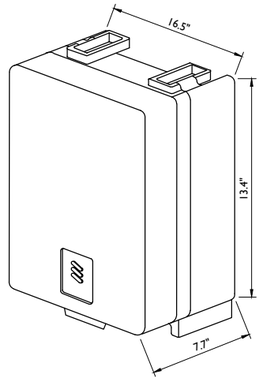


DIMENSIONS (H X W X D): 18.1"H X 13.4"W X 8.3"D (INCLUDES SUNSHIELD)
WEIGHT: 59.4 LBS

RRUS-4478 B14 DETAIL
NOT TO SCALE

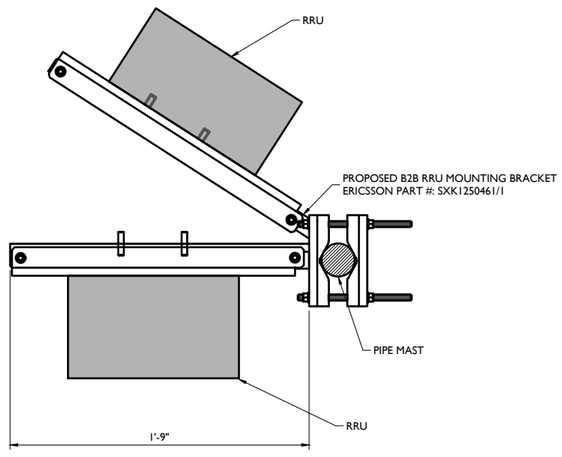


ANTENNA MOUNTING DETAIL
NOT TO SCALE

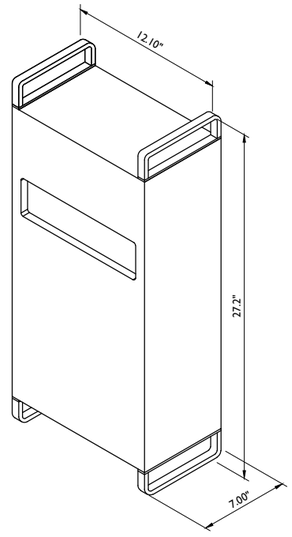


DIMENSIONS (H X W X D): 16.5"H X 13.4"W X 7.7"D (INCLUDES SUNSHIELD)
WEIGHT: 59.9 LBS

RRU-4478-B5 DETAIL
NOT TO SCALE



RRU MOUNTING DETAIL
NOT TO SCALE



RRUS-4426 B66 DIMENSIONS (H X W X D): 27.2" X 12.1" X 7.0"
(INCLUDES HANDLES, FEET AND SUNSHIELD)

WEIGHT: 53 LBS

4426 B66 DETAIL
NOT TO SCALE

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STATE OF CONNECTICUT — PETROS TSOUKALAS — 32577 — PROFESSIONAL ENGINEER

PETROS TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: 32577

SITE NAME:

SEYMOUR EAST
FA# 10099965
SITE# CT5633

6 PROGRESS AVE
SEYMOUR, CT 06483
NEW HAVEN COUNTY

RED BANK OFFICE
331 Newman Springs Road
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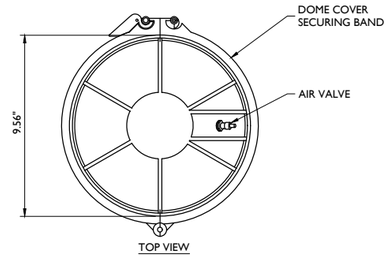
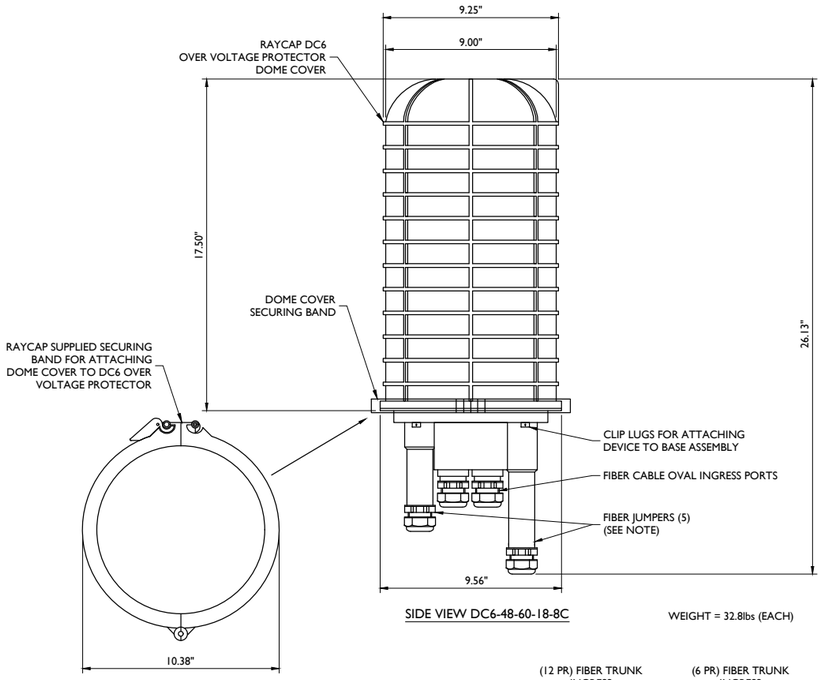
email: solutions@maserconsulting.com

SHEET TITLE :
DETAILS

SHEET NUMBER :
A-1

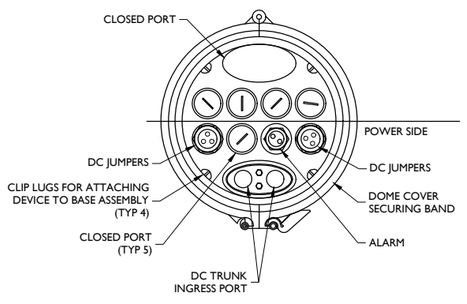


TOP VIEW

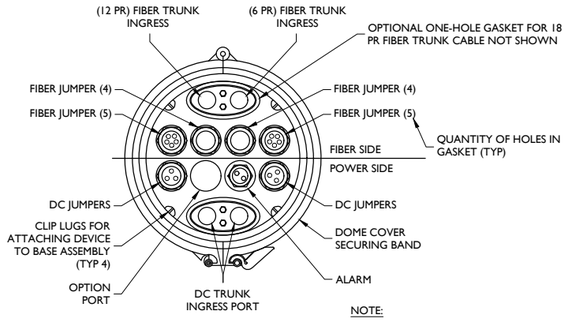


SIDE VIEW DC6-48-60-18-8C

WEIGHT = 32.8lbs (EACH)



BOTTOM VIEW
DC6-48-60-0-8C



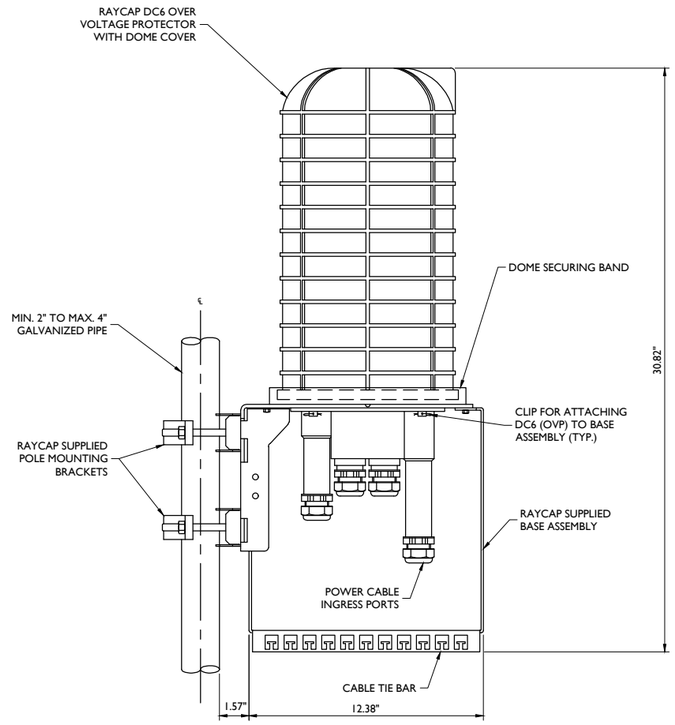
BOTTOM VIEW
DC6-48-60-18-8C

NOTE:

REMOVE CABLE SEALING GLAND AND INSTALL M32x1.5 METRIC-TO-1" NPT ADAPTER (COOPER CROUSE-HINES P/N CAP 740 994 OR EQUIVALENT MFR) WHEN CONNECTING CONDUIT TO OVP.

DC6 SURGE SUPPRESSION DOME DETAIL

NOT TO SCALE



ELEVATION

NOTES:

RAYCAP VIA AT&T SUPPLIES THE DC6 OVER VOLTAGE PROTECTOR AND PIPE MOUNTING BRACKETS. SUBCONTRACTOR SHALL SUPPLY THE PIPE.

RAYCAP DC6-48-60-18-8F & DC6-48-60-0-8F
DC POWER OVER VOLTAGE PROTECTOR (OVP)
POLE MOUNT BASE ASSEMBLY

NOT TO SCALE

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STATE OF CONNECTICUT
PETROS TSOUKALAS
PROFESSIONAL ENGINEER
25257

PETROS TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: 25257

SITE NAME:

SEYMOUR EAST
FA# 10099965
SITE# CT5633

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NEW HAVEN COUNTY

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email: solutions@maserconsulting.com

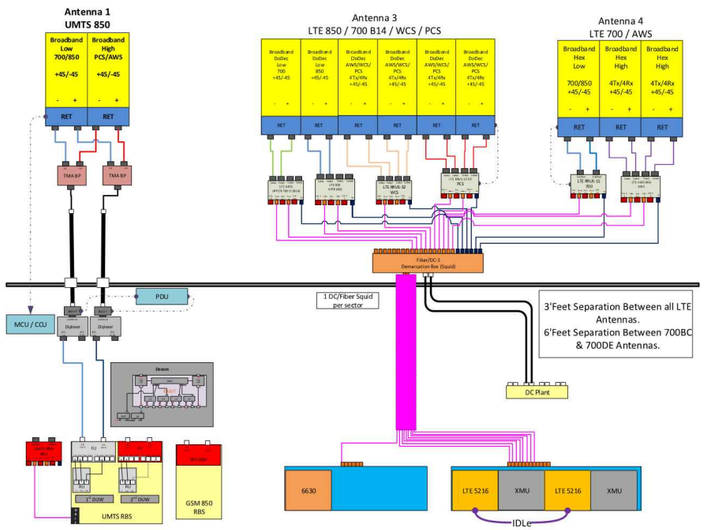
SHEET TITLE :

DETAILS

SHEET NUMBER :

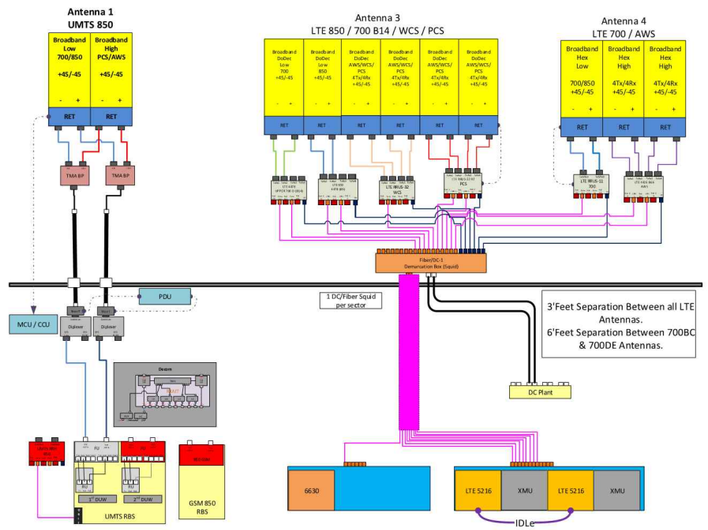
A-2

Diagram - Sector A | Diagram File Name - CT5633_A_B_C_LTEAWS_700_B14_850_Rev1vsd.vsd
Atoll Site Name - CTL05633 | Location Name - SEYMOUR EAST | Market - CONNECTICUT | Market Cluster - NEW ENGLAND
Comments: Important Note: For detailed radio to antenna wiring refer to the latest field notice - Antenna_Radio Connection Drawings Playbook v6.0_Ericsson



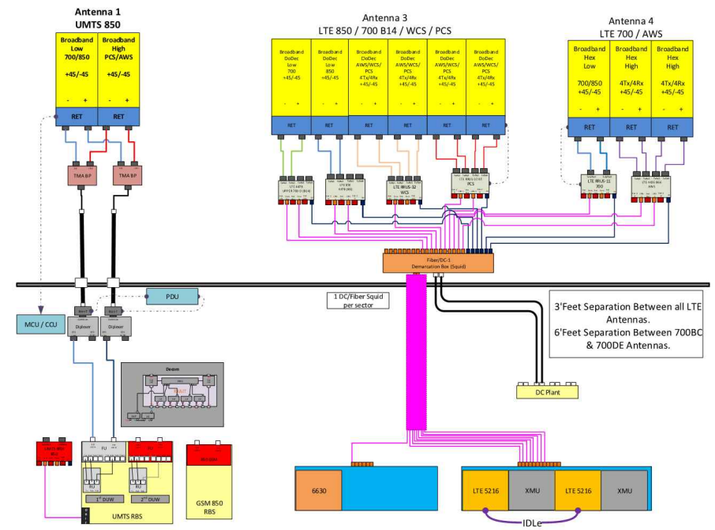
ALPHA SECTOR

Diagram - Sector B | Diagram File Name - CT5633_A_B_C_LTEAWS_700_B14_850_Rev1vsd.vsd
Atoll Site Name - CTL05633 | Location Name - SEYMOUR EAST | Market - CONNECTICUT | Market Cluster - NEW ENGLAND
Comments: Important Note: For detailed radio to antenna wiring refer to the latest field notice - Antenna_Radio Connection Drawings Playbook v6.0_Ericsson



BETA SECTOR

Diagram - Sector C | Diagram File Name - CT5633_A_B_C_LTEAWS_700_B14_850_Rev1vsd.vsd
Atoll Site Name - CTL05633 | Location Name - SEYMOUR EAST | Market - CONNECTICUT | Market Cluster - NEW ENGLAND
Comments: Important Note: For detailed radio to antenna wiring refer to the latest field notice - Antenna_Radio Connection Drawings Playbook v6.0_Ericsson



GAMMA SECTOR

BASED ON: RF ENGINEERING DESIGN ENTITLED "SEYMOUR EAST_CTL05633_2018-LTE-Next-Carrier_LTE_mh705r_2051A0G...", LAST REVISED 09/10/18.

RF PLUMBING DIAGRAMS

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FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

SCALE : AS SHOWN | JOB NUMBER : 18963021A

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
0	03/21/19	REVISED PER COMMENTS	AJC	RA
2	181019	REVISED PER COMMENTS	AJC	RA
1	09/21/18	ISSUED FOR FINAL	JCM	RA

STATE OF CONNECTICUT · PETROS TSOUKALAS · 32577 · REGISTERED PROFESSIONAL ENGINEER

PETROS TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: 32577

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF THE RESPONSIBLE LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SITE NAME:

SEYMOUR EAST
FA# 10099965
SITE# CT5633

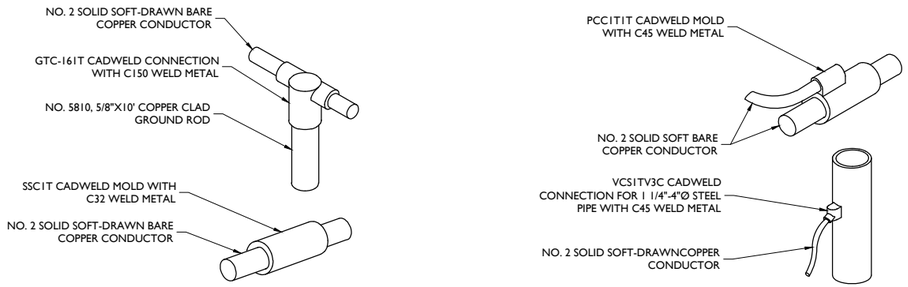
6 PROGRESS AVE
SEYMOUR, CT 06483
NEW HAVEN COUNTY

RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank NJ 07701-5699
Phone: .732.383.1950
Fax: .732.383.1984
email: solutions@maserconsulting.com

SHEET TITLE : RF PLUMBING DIAGRAM

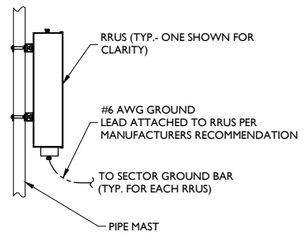
SHEET NUMBER : A-3

100A\18963021A\Connecticut\Fa# 10099965_AE30_181918_CT5633_ REV 1_ CD.dwg\A-3 By: AJCOA



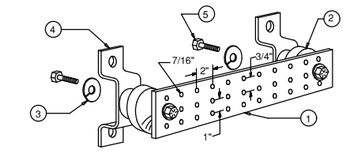
CADWELD DETAILS

NOT TO SCALE



RRU GROUNDING

NOT TO SCALE



LEGEND

1- TINNED COPPER GROUND BAR, 1/4"x4"x20", NEWTON INSTRUMENT CO. CAT. NO. B-6142 OR EQUAL. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.

2- INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4

3- 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8

4- WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-5056

5- 5/8-11 X 1" HHCS BOLTS, NEWTON INSTRUMENT CO. CAT NO. 3012-1

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

SECTION "P" - SURGE PRODUCERS

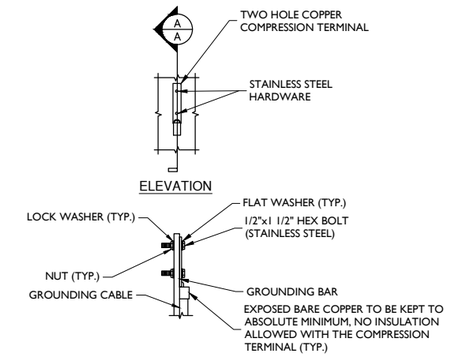
CABLE ENTRY PORTS (HATCH PLATES) (#2)
GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
TELCO GROUND BAR
COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
+24V POWER SUPPLY RETURN BAR (#2)
-48V POWER SUPPLT RETURN BAR (#2)
RECTIFIER FRAMES.

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)

MASTER GROUND BAR

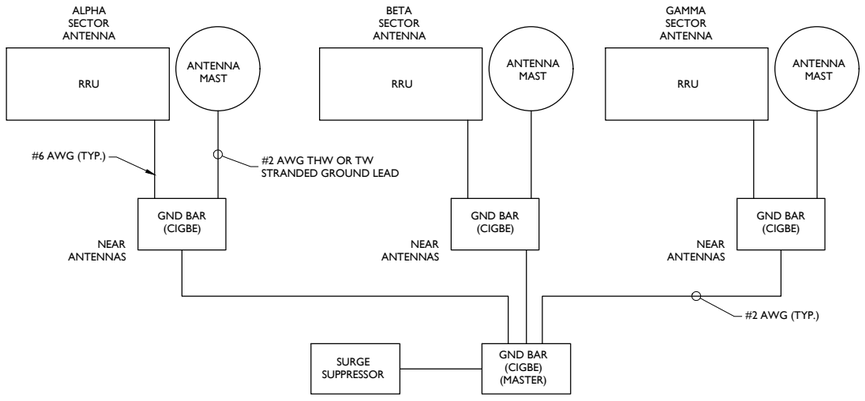
NOT TO SCALE



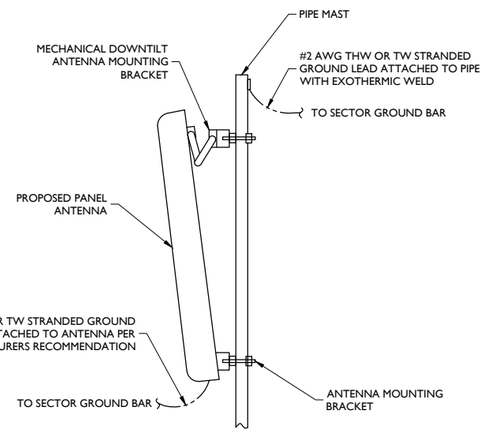
SECTION A-A

TYPICAL GROUND BAR CONNECTION DETAIL

NOT TO SCALE

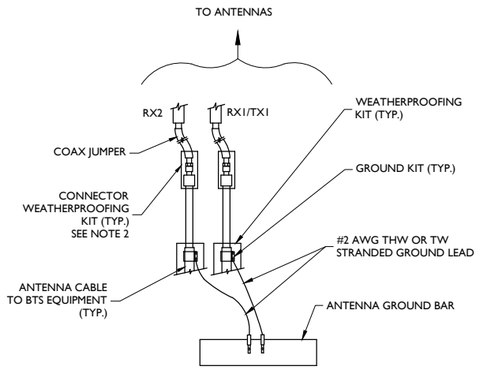


SCHEMATIC DIAGRAM GROUNDING SYSTEM



ANTENNA GROUNDING

NOT TO SCALE



NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.

TYPICAL GROUND WIRE TO GROUNDING BAR

NOT TO SCALE

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EFTYCHIOS TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: 32577

SITE NAME:

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FA# 10099965
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RED BANK OFFICE
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Suite 203
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Phone: .732.383.1950
Fax: .732.383.1984
email: solutions@maserconsulting.com

SHEET TITLE :
GROUNDING DETAILS

SHEET NUMBER :
G-1

EXHIBIT 3

MASER CONSULTING
CONNECTICUT

Self-Support Tower Feasibility Analysis

FOR

CT5633 – Seymour East

FA #: 10099965
6 Progress Avenue
Seymour, CT 06483
New Haven County

LTE 4C - MRCTB032000
LTE 5C - MRCTB031387
LTE 6C - MRCTB031657

Tower Utilization: 65.0%

November 2, 2018

Prepared For

AT&T
550 Cochituate Road
Framingham, MA 01701

Prepared By

Maser Consulting Connecticut
331 Newman Springs Road, Suite 203
Red Bank, NJ 07701
732.383.1950

Petros E. Tsoukalas, P.E.
Geographic Discipline Leader
Connecticut License No. 32557

MC Project No. 18963021A

Objective:

The objective of this report is to determine the utilization of the existing 280' self-support tower structure at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards.

Introduction:

Maser Consulting P.A. has performed limited field observations on May 31, 2018 to verify the existing condition of the structure and to located and quantify the existing wireless appurtenances where possible, from ground level. Maser Consulting P.A. has reviewed the following documents in completing this report:

- Structural Modification Report, prepared by EMAC Communications, dated November 14, 2016
- Structural Analysis, prepared by Destek Engineering, dated August 7, 2015
- RFDS 2285405 Version 3.00, provided by Smartlink LLC, dated September 10, 2018

The proposed **AT&T** equipment is to be supported on an existing 280' self-support tower structure. The main legs are constructed of pipes and the diagonals and horizontals are constructed of angle members. This report is based upon this information.

Discrete and Linear Appurtenances:

Maser Consulting P.A. understands the existing and proposed **AT&T** loading to be as follows:

- *(3) 80010121 Antennas (Existing)*
- *(3) QS66512-2 Antennas (Existing)*
- **(3) HPA65R-BU6A Antennas (Proposed)**
- *(3) RRUS 11 (Existing)*
- *(3) RRUS 32 (Existing)*
- *(3) RRUS 32 B2 (Existing)*
- **(3) RRUS 4478 B5**
- **(3) RRUS B14 4478 (Proposed)**
- **(3) RRUS 4426 B66 (Proposed)**
- **(3) DC6s (Existing/Proposed)**
- *(6) LGP 21401 TMAs (Existing)*

Note: The overall antenna loading is found in the appendix A of this report.

Codes, Standards and Loading:

Maser Consulting P.A. utilized the following codes and standards:

- 2018 Connecticut State Building Code, Incorporating the 2015 IBC
- Structural Standards for Antenna Supporting Structures and Antennas ANSI/TIA-222-G
    - Ultimate Wind Speed – 125 mph
    - Nominal Wind Speed – 97 mph
    - Exposure Category – B
    - Structure Class – II
    - Ice Thickness – 0.75"
    - Ice Wind Speed – 50 mph

Analysis Approach & Assumptions:

The analysis approach used in this structural analysis is based on the premise that if the existing self-support tower is structurally adequate to support the existing and proposed equipment per the aforementioned codes and standards, or if the increase in the forces in the structure are deemed to be negligible or acceptable, then the proposed equipment can be installed as intended. TNX, a 3D finite element modeling and analysis program, was used to determine the capacity and usage of the existing self-support tower.

The following assumptions were utilized in this report:

- Structural steel tower legs are constructed of A572-50 grade steel
- Structural steel tower diagonals and horizontals are constructed of A36 Grade Steel
- The existing tower is constructed to plumb and is properly maintained with no structural deficiencies and deteriorations.
- It is assumed that the telecommunication equipment supports, antenna supports, and existing structure have been designed by a registered licensed professional engineer for the existing loads acting on the structure, as required by all applicable codes.
- It is assumed that information provided by the client regarding the structure itself, the antenna models, feed lines, and other relevant information is current and correct.
- It is assumed all other existing appurtenances, antennas, cables, etc. belonging to others have been installed and supported per code and per specifications so as not to damage any existing structural support members, and that any contributing loads from adjacent equipment has been taken into consideration for their design.
- The modifications of the tower was taken from the Modification Report by EMAC Communications; however, the tower assembly was taken from the structural analysis report by Destek Engineering

Calculations:

The Tower Analysis calculations are found in **Appendix A** of this report.

Conclusion:

The existing tower structure was analyzed for the loading in the applicable codes and standards. The tower structure has been determined to be structurally **ADEQUATE** to support the proposed and existing antennas, based upon the aforementioned assumptions. The tower structure has been determined to be stressed to a maximum of **65.0%** of its structural capacity with the maximum usage occurring at the diagonals within section height 0'-20'. The bolted connections are stressed to a maximum of **63.0%** of their capacity. Therefore, the proposed installation **CAN** be installed as intended.

Maser Consulting P.A**.** reserves the right to amend this report if additional information about the existing structure is provided. The conclusions reached by Maser Consulting P.A. in this report are only valid for the equipment listed in this report. Any change to the installation will require a revision to this structural analysis.

We appreciate the opportunity to be of service on this project. If you should have any questions or require any additional information, please do not hesitate to call our office.

Sincerely,
Maser Consulting P.A.

Petros E. Tsoukalas, P.E.
Geographic Discipline Leader

Vincent DiGirolamo
Engineer

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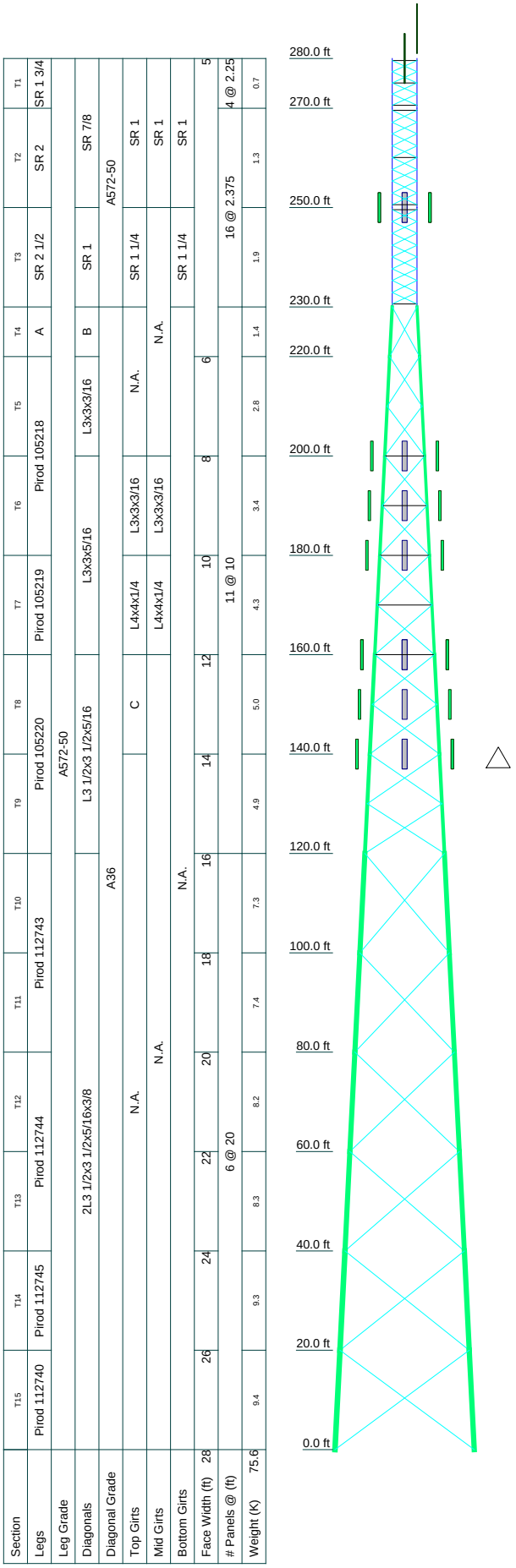
APPENDIX A



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Flash Beacon Lighting	280	80010121 9' Mount Pipe	160
15' Lightning Rod	280	80010121 9' Mount Pipe	160
DB420-A	280	QS66512-2	160
DB420-A	280	QS66512-2	160
Sector Mount [SM 412-1]	280	QS66512-2	160
RR90-17-02DP	250	HPA65R-BU6A	160
RR90-17-02DP	250	HPA65R-BU6A	160
RR90-17-02DP	250	HPA65R-BU6A	160
LNX-6515DS-VTM	250	RRUS-11	160
LNX-6515DS-VTM	250	RRUS-11	160
LNX-6515DS-VTM	250	RRUS-11	160
TMA	250	RRUS 32	160
TMA	250	RRUS 32	160
TMA	250	RRUS 32	160
Pirod 15' T-Frame Sector Mount (1)	250	RRUS 32 B2	160
Pirod 15' T-Frame Sector Mount (1)	250	RRUS 32 B2	160
Pirod 15' T-Frame Sector Mount (1)	250	RRUS 32 B2	160
DB420-A	245	RRUS 4478 B5	160
DB225-2-F	235	RRUS 4478 B5	160
Sector Mount [SM 412-1]	235	RRUS 4478 B5	160
(3) DB980H120E-M	200	RRU B14 4478	160
(3) DB980H120E-M	200	RRU B14 4478	160
(3) DB980H120E-M	200	RRU B14 4478	160
Pirod 12' T-Frame Sector Mount (1)	200	RRUS 4426 B66	160
Pirod 12' T-Frame Sector Mount (1)	200	RRUS 4426 B66	160
Pirod 12' T-Frame Sector Mount (1)	200	RRUS 4426 B66	160
(3) DB980H120E-M	190	LGP 21401	160
(3) DB980H120E-M	190	LGP 21401	160
(3) DB980H120E-M	190	LGP 21401	160
Pirod 12' T-Frame Sector Mount (1)	190	DC6-48-06-18-8F	160
Pirod 12' T-Frame Sector Mount (1)	190	DC6-48-06-18-8F	160
Pirod 12' T-Frame Sector Mount (1)	190	DC6-48-06-18-8F	160
(3) DB980H120E-M	180	Pirod 15' T-Frame Sector Mount (1)	160
(3) DB980H120E-M	180	Pirod 15' T-Frame Sector Mount (1)	160
(3) DB980H120E-M	180	Pirod 15' T-Frame Sector Mount (1)	160
Pirod 12' T-Frame Sector Mount (1)	180	APXV18-206517S-ACU	150
Pirod 12' T-Frame Sector Mount (1)	180	APXV18-206517S-ACU	150
Pirod 12' T-Frame Sector Mount (1)	180	APXV18-206517S-ACU	150
APXVSPP18-C-A20	170	(2) HBXX-6517DS-A2M	140
APXVSPP18-C-A20	170	(2) HBXX-6517DS-A2M	140
APXVSPP18-C-A20	170	(2) HBXX-6517DS-A2M	140
APXVTM14-ALU-I20	170	(2) LNX-6514DS-VTM	140
APXVTM14-ALU-I20	170	(2) LNX-6514DS-VTM	140
APXVTM14-ALU-I20	170	(2) LNX-6514DS-VTM	140
FD-RRH-2X50-800	170	(2) FD9R6004/2C-3L	140
FD-RRH-2X50-800	170	(2) FD9R6004/2C-3L	140
FD-RRH-2X50-800	170	(2) FD9R6004/2C-3L	140
FD-RRH-4X40-1900	170	RRH2X60-AWS	140
FD-RRH-4X40-1900	170	RRH2X60-AWS	140
FD-RRH-4X40-1900	170	RRH2X60-AWS	140
TD-RRH-8x20-25	170	RRH2X60-PCS	140
TD-RRH-8x20-25	170	RRH2X60-PCS	140
TD-RRH-8x20-25	170	RRH2X60-PCS	140
Pirod 15' T-Frame Sector Mount (1)	170	DB-T1-6Z-8AB-0Z	140
Pirod 15' T-Frame Sector Mount (1)	170	Pirod 12' T-Frame Sector Mount (1)	140
Pirod 15' T-Frame Sector Mount (1)	170	Pirod 12' T-Frame Sector Mount (1)	140
80010121 9' Mount Pipe	160	Pirod 12' T-Frame Sector Mount (1)	140

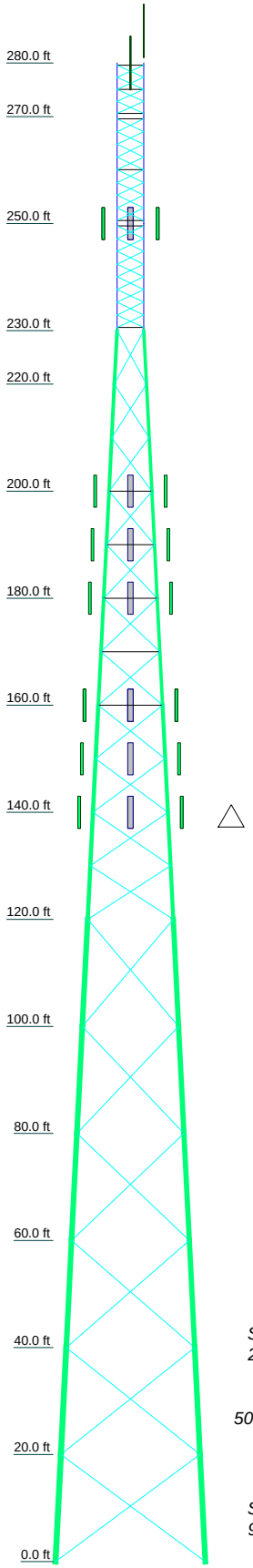
SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	Pirod 105245	C	L3 1/2x3 1/2x5/16
B	L3x3x5/16		

Maser Consulting Connecticut
331 Newman Springs Road, Suite 203
Red Bank, NJ 07701
Phone: 732 383-1950
FAX:

Job: ***CT5633***			
Project: ***18963021A***			
Client: AT&T	Drawn by:	App'd:	
Code: TIA-222-G	Date: 11/02/18	Scale: NTS	
Path: R:\Projects\2018\18963000A\18963021A\Structural\Tower Analysis\Rev 0\TNX\Self Support Tower.er		Dwg No. E-1	

Section		T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15		
Legs		SR 1 3/4	SR 2	SR 2 1/2	A	Pirod 105218		Pirod 105219	Pirod 105220		Pirod 112743		Pirod 112744		Pirod 112745	Pirod 112740		
Leg Grade		A572-50																
Diagonals		SR 7/8		SR 1	B	L3x3x3/16		L3x3x5/16										
Diagonal Grade		A572-50									A36							
Top Girts		SR 1		SR 1 1/4		N.A.		L4x4x1/4	C				N.A.					
Mid Girts		SR 1		N.A.				L4x4x1/4					N.A.					
Bottom Girts		SR 1		SR 1 1/4				N.A.										
Face Width (ft)	28	5		16 @ 2.375			6		8		10		12		14		16	
# Panels @ (ft)	75.6	4 @ 2.25						11 @ 10						6 @ 20				
Weight (K)		0.7	1.3	1.9	1.4	2.8	3.4	4.3	5.0	4.9	7.3	7.4	8.2	8.3	9.3	9.4		



SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	Pirod 105245	C	L3 1/2x3 1/2x5/16
B	L3x3x5/16		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

1. Tower designed for Exposure B to the TIA-222-G Standard.
2. Tower designed for a 97 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. Weld together tower sections have flange connections.
8. Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications.
9. Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
10. Welds are fabricated with ER-70S-6 electrodes.
11. TOWER RATING: 65%

ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 578 K
SHEAR: 62 K

UPLIFT: -488 K
SHEAR: 55 K

AXIAL 390 K
SHEAR 28 K *MOMENT 4137 kip-ft*
TORQUE 2 kip-ft
50 mph WIND - 0.7500 in ICE

AXIAL 129 K
SHEAR 94 K *MOMENT 12973 kip-ft*
TORQUE 11 kip-ft
REACTIONS - 97 mph WIND

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Phone: 732 383-1950
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Job: ***CT5633***		
Project: ***18963021A***		
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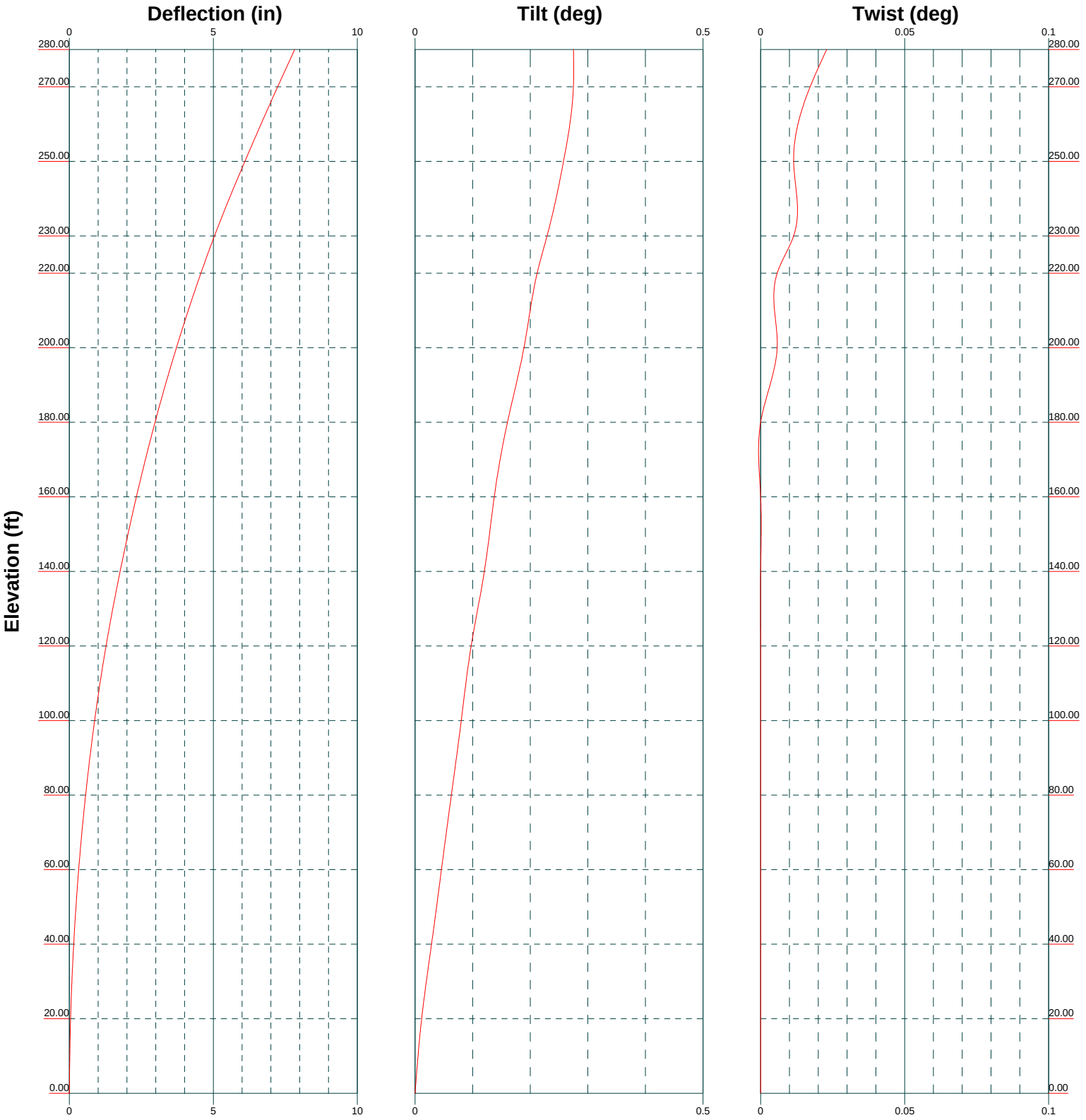
Code: TIA-222-G	Date: 11/02/18	Scale: NTS
Path: R:\Projects\2018\18963000A\18963021A\Structural\Tower Analysis\Rev 0\TNX\Self Support Tower.er		Dwg No. E-1

TIA-222-G - Service - 60 mph

Maximum Values



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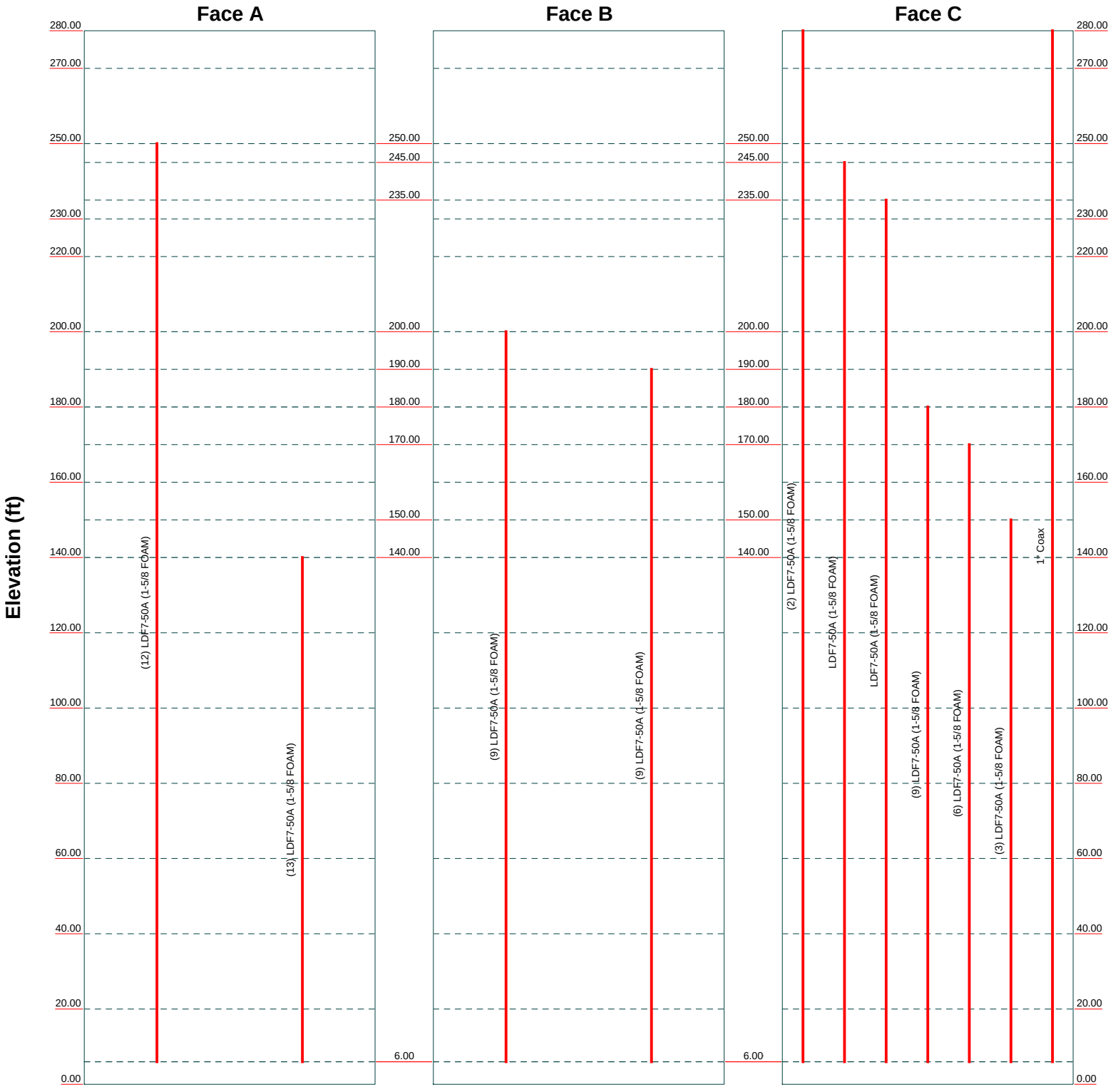
Path: R:\Projects\2018\18963000A\18963021A\Structural\Tower Analysis\Rev 0\TNX\Self Support Tower.er		Dwg No. E-5

Feed Line Distribution Chart
0' - 280'

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



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Code: TIA-222-G	Date: 11/02/18	Scale: NTS
Path: R:\Projects\2018\18963000A\18963021A\Structural\Tower Analysis\Rev 0\TNX\Self Support Tower.er		Dwg No. E-7

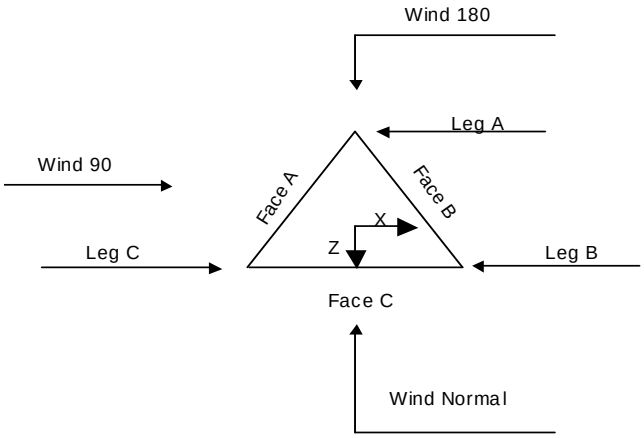
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 280.00 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 28.00 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

ASCE 7-10 Wind Data is used (wind speeds converted to nominal values).
Basic wind speed of 97 mph.
Structure Class II.
Exposure Category B.
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.
Weld together tower sections have flange connections..
Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications..
Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards..
Welds are fabricated with ER-70S-6 electrodes..
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
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		



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	280.00-270.00			5.00	1	10.00
T2	270.00-250.00			5.00	1	20.00
T3	250.00-230.00			5.00	1	20.00
T4	230.00-220.00			5.00	1	10.00
T5	220.00-200.00			6.00	1	20.00
T6	200.00-180.00			8.00	1	20.00
T7	180.00-160.00			10.00	1	20.00
T8	160.00-140.00			12.00	1	20.00
T9	140.00-120.00			14.00	1	20.00
T10	120.00-100.00			16.00	1	20.00
T11	100.00-80.00			18.00	1	20.00
T12	80.00-60.00			20.00	1	20.00
T13	60.00-40.00			22.00	1	20.00
T14	40.00-20.00			24.00	1	20.00
T15	20.00-0.00			26.00	1	20.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in

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	280.00-270.00	2.25	X Brace	No	Steps	5.5000	6.5000
T2	270.00-250.00	2.38	X Brace	No	Steps	5.5000	6.5000
T3	250.00-230.00	2.38	X Brace	No	Steps	5.5000	6.5000
T4	230.00-220.00	10.00	X Brace	No	No	0.0000	0.0000
T5	220.00-200.00	10.00	X Brace	No	No	0.0000	0.0000
T6	200.00-180.00	10.00	X Brace	No	No	0.0000	0.0000
T7	180.00-160.00	10.00	X Brace	No	No	0.0000	0.0000
T8	160.00-140.00	10.00	X Brace	No	No	0.0000	0.0000
T9	140.00-120.00	10.00	X Brace	No	No	0.0000	0.0000
T10	120.00-100.00	20.00	X Brace	No	No	0.0000	0.0000
T11	100.00-80.00	20.00	X Brace	No	No	0.0000	0.0000
T12	80.00-60.00	20.00	X Brace	No	No	0.0000	0.0000
T13	60.00-40.00	20.00	X Brace	No	No	0.0000	0.0000
T14	40.00-20.00	20.00	X Brace	No	No	0.0000	0.0000
T15	20.00-0.00	20.00	X Brace	No	No	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 280.00-270.00	Solid Round	1 3/4	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T2 270.00-250.00	Solid Round	2	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T3 250.00-230.00	Solid Round	2 1/2	A572-50 (50 ksi)	Solid Round	1	A572-50 (50 ksi)
T4 230.00-220.00	Truss Leg	Pirod 105245	A572-50 (50 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)
T5 220.00-200.00	Truss Leg	Pirod 105218	A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T6 200.00-180.00	Truss Leg	Pirod 105218	A572-50 (50 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)
T7 180.00-160.00	Truss Leg	Pirod 105219	A572-50 (50 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)
T8 160.00-140.00	Truss Leg	Pirod 105220	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x5/16	A36 (36 ksi)
T9 140.00-120.00	Truss Leg	Pirod 105220	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x5/16	A36 (36 ksi)
T10 120.00-100.00	Truss Leg	Pirod 112743	A572-50 (50 ksi)	Double Angle	2L3 1/2x3 1/2x5/16x3/8	A36 (36 ksi)
T11 100.00-80.00	Truss Leg	Pirod 112743	A572-50 (50 ksi)	Double Angle	2L3 1/2x3 1/2x5/16x3/8	A36 (36 ksi)
T12 80.00-60.00	Truss Leg	Pirod 112744	A572-50 (50 ksi)	Double Angle	2L3 1/2x3 1/2x5/16x3/8	A36 (36 ksi)
T13 60.00-40.00	Truss Leg	Pirod 112744	A572-50 (50 ksi)	Double Angle	2L3 1/2x3 1/2x5/16x3/8	A36 (36 ksi)
T14 40.00-20.00	Truss Leg	Pirod 112745	A572-50 (50 ksi)	Double Angle	2L3 1/2x3 1/2x5/16x3/8	A36 (36 ksi)
T15 20.00-0.00	Truss Leg	Pirod 112740	A572-50 (50 ksi)	Double Angle	2L3 1/2x3 1/2x5/16x3/8	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 280.00-270.00	Solid Round	1	A572-50 (50 ksi)	Solid Round	1	A572-50 (50 ksi)
T2 270.00-250.00	Solid Round	1	A572-50 (50 ksi)	Solid Round	1	A572-50 (50 ksi)
T3 250.00-230.00	Solid Round	1 1/4	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T6 200.00-180.00	Equal Angle	L3x3x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T7 180.00-160.00	Equal Angle	L4x4x1/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T8 160.00-140.00	Equal Angle	L3 1/2x3 1/2x5/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 280.00-270.00	1	Solid Round	1	A572-50 (50 ksi)	Solid Round		A572-50 (50 ksi)
T2 270.00-250.00	1	Solid Round	1	A572-50 (50 ksi)	Solid Round		A572-50 (50 ksi)
T6 200.00-180.00	1	Equal Angle	L3x3x3/16	A36 (36 ksi)	Pipe		A572-50 (50 ksi)
T7 180.00-160.00	1	Equal Angle	L4x4x1/4	A36 (36 ksi)	Pipe		A572-50 (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 280.00-270.00	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
T2 270.00-250.00	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
T3 250.00-230.00	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
T4 230.00-220.00	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
T5 220.00-200.00	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
T6 200.00-180.00	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
T7	0.00	0.0000	A36	1	1	1.03	36.0000	36.0000	36.0000

Tower Elevation ft	Gusset Area (per face) ft²	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
180.00-160.00			(36 ksi)						
T8	0.00	0.0000	A36	1	1	1.03	36.0000	36.0000	36.0000
160.00-140.00			(36 ksi)						
T9	0.00	0.0000	A36	1	1	1.03	36.0000	36.0000	36.0000
140.00-120.00			(36 ksi)						
T10	0.00	0.0000	A36	1	1	1.03	36.0000	36.0000	36.0000
120.00-100.00			(36 ksi)						
T11	0.00	0.0000	A36	1	1	1.03	36.0000	36.0000	36.0000
100.00-80.00			(36 ksi)						
T12	0.00	0.0000	A36	1	1	1.03	36.0000	36.0000	36.0000
80.00-60.00			(36 ksi)						
T13	0.00	0.0000	A36	1	1	1.03	36.0000	36.0000	36.0000
60.00-40.00			(36 ksi)						
T14	0.00	0.0000	A36	1	1	1.03	36.0000	36.0000	36.0000
40.00-20.00			(36 ksi)						
T15 20.00-0.00	0.00	0.0000	A36	1	1	1.03	36.0000	36.0000	36.0000
			(36 ksi)						

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X 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	No	Yes	1	1	1	1	1	1	1	1
280.00-270.00				1	1	1	1	1	1	1
T2	No	Yes	1	1	1	1	1	1	1	1
270.00-250.00				1	1	1	1	1	1	1
T3	No	Yes	1	1	1	1	1	1	1	1
250.00-230.00				1	1	1	1	1	1	1
T4	Yes	No	1	1	1	1	1	1	1	1
230.00-220.00				1	1	1	1	1	1	1
T5	Yes	No	1	1	1	1	1	1	1	1
220.00-200.00				1	1	1	1	1	1	1
T6	Yes	No	1	1	1	1	1	1	1	1
200.00-180.00				1	1	1	1	1	1	1
T7	Yes	No	1	1	1	1	1	1	1	1
180.00-160.00				1	1	1	1	1	1	1
T8	Yes	No	1	1	1	1	1	1	1	1
160.00-140.00				1	1	1	1	1	1	1
T9	Yes	No	1	1	1	1	1	1	1	1
140.00-120.00				1	1	1	1	1	1	1
T10	Yes	No	1	1	1	1	1	1	1	1
120.00-100.00				1	1	1	1	1	1	1
T11	Yes	No	1	1	1	1	1	1	1	1
100.00-80.00				1	1	1	1	1	1	1
T12	Yes	No	1	1	1	1	1	1	1	1
80.00-60.00				1	1	1	1	1	1	1
T13	Yes	No	1	1	1	1	1	1	1	1
60.00-40.00				1	1	1	1	1	1	1
T14	Yes	No	1	1	1	1	1	1	1	1
40.00-20.00				1	1	1	1	1	1	1
T15	Yes	No	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
20.00-0.00				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	Truss-Leg K Factors: Truss-Legs Used As Leg Members — Leg Panels	X Brace Diagonals	Z Brace Diagonals	Truss-Legs Used As Inner Members — Leg Panels	X Brace Diagonals	Z Brace Diagonals
T4 230.00-220.00	1	0.5	0.85	1	0.5	0.85
T5 220.00-200.00	1	0.5	0.85	1	0.5	0.85
T6 200.00-180.00	1	0.5	0.85	1	0.5	0.85
T7 180.00-160.00	1	0.5	0.85	1	0.5	0.85
T8 160.00-140.00	1	0.5	0.85	1	0.5	0.85
T9 140.00-120.00	1	0.5	0.85	1	0.5	0.85
T10 120.00-100.00	1	0.5	0.85	1	0.5	0.85
T11 100.00-80.00	1	0.5	0.85	1	0.5	0.85
T12 80.00-60.00	1	0.5	0.85	1	0.5	0.85
T13 60.00-40.00	1	0.5	0.85	1	0.5	0.85
T14 40.00-20.00	1	0.5	0.85	1	0.5	0.85
T15 20.00-0.00	1	0.5	0.85	1	0.5	0.85

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 280.00-270.00	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
T2 270.00-250.00	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

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
T3 250.00-230.00	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
T4 230.00-220.00	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
T5 220.00-200.00	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
T6 200.00-180.00	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
T7 180.00-160.00	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
T8 160.00-140.00	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
T9 140.00-120.00	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
T10 120.00-100.00	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
T11 100.00-80.00	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
T12 80.00-60.00	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
T13 60.00-40.00	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
T14 40.00-20.00	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
T15 20.00-0.00	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 280.00-270.00	Sleeve DS	0.6250 A325N	5	0.0000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 270.00-250.00	Sleeve DS	0.7500 A325N	5	0.0000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 250.00-230.00	Flange	1.0000 A325N	6	0.0000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T4 230.00-220.00	Flange	1.0000 A325N	6	1.0000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T5 220.00-200.00	Flange	1.0000 A325N	6	1.0000 A325N	1	0.7500 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	0	0.6250 A325N	0
T6 200.00-180.00	Flange	1.0000 A325N	6	1.0000 A325N	1	1.0000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	0	0.6250 A325N	0
T7 180.00-160.00	Flange	1.2500 A325N	6	1.2500 A325N	1	1.2500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	1.0000 A325N	1	0.6250 A325N	0
T8 160.00-140.00	Flange	1.2500 A325N	6	1.2500 A325N	1	1.2500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	1.2500 A325N	1	0.6250 A325N	0
T9 140.00-120.00	Flange	1.2500 A325N	6	1.2500 A325N	1	0.7500 A325N	0	0.6250 A325N	0	0.6250 A325N	0	1.2500 A325N	1	0.6250 A325N	0

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.
T10 120.00-100.00	Flange	1.2500 A325N	12	1.0000 A325N	2	0.7500 A325N	0	0.6250 A325N	0	0.6250 A325N	0	1.2500 A325N	1	0.6250 A325N	0
T11 100.00-80.00	Flange	1.2500 A325N	12	1.0000 A325N	2	0.7500 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	0	0.6250 A325N	0
T12 80.00-60.00	Flange	1.2500 A325N	12	1.0000 A325N	2	0.7500 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	0	0.6250 A325N	0
T13 60.00-40.00	Flange	1.2500 A325N	12	1.0000 A325N	2	0.7500 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	0	0.6250 A325N	0
T14 40.00-20.00	Flange	1.2500 A325N	12	1.0000 A325N	2	0.7500 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	0	0.6250 A325N	0
T15 20.00-0.00	Flange	1.2500 A325N	12	1.0000 A325N	2	0.7500 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	0	0.6250 A325N	0

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
LDF7-50A (1-5/8 FOAM)	C	No	Ar (CaAa)	280.00 - 6.00	0.0000	0.45	2	2	1.9800	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	A	No	Ar (CaAa)	250.00 - 6.00	0.0000	0.45	12	6	1.9800	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	C	No	Ar (CaAa)	245.00 - 6.00	0.0000	0.45	1	1	1.9800	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	C	No	Ar (CaAa)	235.00 - 6.00	0.0000	0.45	1	1	1.9800	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	B	No	Ar (CaAa)	200.00 - 6.00	0.0000	0.45	9	5	1.9800	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	B	No	Ar (CaAa)	190.00 - 6.00	0.0000	0.45	9	5	1.9800	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	C	No	Ar (CaAa)	180.00 - 6.00	0.0000	0.45	9	5	1.9800	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	C	No	Ar (CaAa)	170.00 - 6.00	0.0000	0.45	6	3	1.9800	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	C	No	Ar (CaAa)	150.00 - 6.00	0.0000	0.45	3	3	1.9800	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	A	No	Ar (CaAa)	140.00 - 6.00	0.0000	0.45	13	6	1.9800	1.9800		0.82
1" Coax	C	No	Ar (CaAa)	280.00 - 6.00	0.0000	0.45	1	1	1.0000	1.0000		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	280.00-270.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	4.960	0.000	0.02
T2	270.00-250.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	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
		C	0.000	0.000	9.920	0.000	0.03
T3	250.00-230.00	A	0.000	0.000	47.520	0.000	0.20
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	13.880	0.000	0.05
T4	230.00-220.00	A	0.000	0.000	23.760	0.000	0.10
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	8.920	0.000	0.03
T5	220.00-200.00	A	0.000	0.000	47.520	0.000	0.20
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	17.840	0.000	0.07
T6	200.00-180.00	A	0.000	0.000	47.520	0.000	0.20
		B	0.000	0.000	53.460	0.000	0.22
		C	0.000	0.000	17.840	0.000	0.07
T7	180.00-160.00	A	0.000	0.000	47.520	0.000	0.20
		B	0.000	0.000	71.280	0.000	0.30
		C	0.000	0.000	65.360	0.000	0.26
T8	160.00-140.00	A	0.000	0.000	47.520	0.000	0.20
		B	0.000	0.000	71.280	0.000	0.30
		C	0.000	0.000	83.180	0.000	0.34
T9	140.00-120.00	A	0.000	0.000	99.000	0.000	0.41
		B	0.000	0.000	71.280	0.000	0.30
		C	0.000	0.000	89.120	0.000	0.36
T10	120.00-100.00	A	0.000	0.000	99.000	0.000	0.41
		B	0.000	0.000	71.280	0.000	0.30
		C	0.000	0.000	89.120	0.000	0.36
T11	100.00-80.00	A	0.000	0.000	99.000	0.000	0.41
		B	0.000	0.000	71.280	0.000	0.30
		C	0.000	0.000	89.120	0.000	0.36
T12	80.00-60.00	A	0.000	0.000	99.000	0.000	0.41
		B	0.000	0.000	71.280	0.000	0.30
		C	0.000	0.000	89.120	0.000	0.36
T13	60.00-40.00	A	0.000	0.000	99.000	0.000	0.41
		B	0.000	0.000	71.280	0.000	0.30
		C	0.000	0.000	89.120	0.000	0.36
T14	40.00-20.00	A	0.000	0.000	99.000	0.000	0.41
		B	0.000	0.000	71.280	0.000	0.30
		C	0.000	0.000	89.120	0.000	0.36
T15	20.00-0.00	A	0.000	0.000	69.300	0.000	0.29
		B	0.000	0.000	49.896	0.000	0.21
		C	0.000	0.000	62.384	0.000	0.25

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	280.00-270.00	A	1.854	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	18.709	0.000	0.24
T2	270.00-250.00	A	1.844	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	37.306	0.000	0.48
T3	250.00-230.00	A	1.829	0.000	0.000	67.972	0.000	1.76
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	48.424	0.000	0.67
T4	230.00-220.00	A	1.817	0.000	0.000	33.948	0.000	0.87
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	29.739	0.000	0.42

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
T5	220.00-200.00	A	1.805	0.000	0.000	67.816	0.000	1.74
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	59.243	0.000	0.84
T6	200.00-180.00	A	1.787	0.000	0.000	67.700	0.000	1.73
		B		0.000	0.000	87.802	0.000	1.99
		C		0.000	0.000	58.905	0.000	0.83
T7	180.00-160.00	A	1.767	0.000	0.000	67.573	0.000	1.72
		B		0.000	0.000	116.809	0.000	2.64
		C		0.000	0.000	137.486	0.000	2.58
T8	160.00-140.00	A	1.745	0.000	0.000	67.432	0.000	1.71
		B		0.000	0.000	116.519	0.000	2.62
		C		0.000	0.000	175.403	0.000	3.25
T9	140.00-120.00	A	1.720	0.000	0.000	138.602	0.000	3.55
		B		0.000	0.000	116.192	0.000	2.60
		C		0.000	0.000	192.520	0.000	3.46
T10	120.00-100.00	A	1.692	0.000	0.000	138.226	0.000	3.52
		B		0.000	0.000	115.816	0.000	2.58
		C		0.000	0.000	191.411	0.000	3.41
T11	100.00-80.00	A	1.658	0.000	0.000	137.783	0.000	3.48
		B		0.000	0.000	115.373	0.000	2.55
		C		0.000	0.000	190.104	0.000	3.36
T12	80.00-60.00	A	1.617	0.000	0.000	137.241	0.000	3.44
		B		0.000	0.000	114.832	0.000	2.51
		C		0.000	0.000	188.505	0.000	3.30
T13	60.00-40.00	A	1.564	0.000	0.000	136.537	0.000	3.38
		B		0.000	0.000	114.128	0.000	2.47
		C		0.000	0.000	186.426	0.000	3.22
T14	40.00-20.00	A	1.486	0.000	0.000	135.513	0.000	3.30
		B		0.000	0.000	113.104	0.000	2.40
		C		0.000	0.000	183.405	0.000	3.10
T15	20.00-0.00	A	1.331	0.000	0.000	93.439	0.000	2.20
		B		0.000	0.000	77.754	0.000	1.59
		C		0.000	0.000	124.191	0.000	2.01

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	280.00-270.00	-2.3907	1.6126	-0.9191	0.6151
T2	270.00-250.00	-2.4290	1.6384	-1.0560	0.7068
T3	250.00-230.00	-1.7345	-4.0903	-1.2929	-1.4309
T4	230.00-220.00	-1.6652	-3.1663	-0.9920	-0.7011
T5	220.00-200.00	-2.0144	-3.9396	-1.4687	-1.0562
T6	200.00-180.00	2.6468	-1.2772	0.7094	-0.0667
T7	180.00-160.00	0.4697	1.4848	-0.2731	1.3949
T8	160.00-140.00	-0.6570	2.3999	-1.0578	2.0897
T9	140.00-120.00	-1.3455	-1.4290	-1.6034	-0.0244
T10	120.00-100.00	-1.4805	-1.5795	-1.7452	-0.0307
T11	100.00-80.00	-1.6363	-1.7522	-1.9281	-0.0416
T12	80.00-60.00	-1.7793	-1.9110	-2.0996	-0.0577
T13	60.00-40.00	-1.9307	-2.0788	-2.2661	-0.0823
T14	40.00-20.00	-2.0638	-2.2268	-2.4139	-0.1220
T15	20.00-0.00	-1.9909	-2.1515	-2.2161	-0.1831

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	1	LDF7-50A (1-5/8 FOAM)	270.00 - 280.00	0.6000	0.4303
T1	11	1" Coax	270.00 - 280.00	0.6000	0.4303
T2	1	LDF7-50A (1-5/8 FOAM)	250.00 - 270.00	0.6000	0.4777
T2	11	1" Coax	250.00 - 270.00	0.6000	0.4777
T3	1	LDF7-50A (1-5/8 FOAM)	230.00 - 250.00	0.6000	0.4795
T3	2	LDF7-50A (1-5/8 FOAM)	230.00 - 250.00	0.6000	0.4795
T3	3	LDF7-50A (1-5/8 FOAM)	230.00 - 245.00	0.6000	0.4795
T3	4	LDF7-50A (1-5/8 FOAM)	230.00 - 235.00	0.6000	0.4795
T3	11	1" Coax	230.00 - 250.00	0.6000	0.4795
T4	1	LDF7-50A (1-5/8 FOAM)	220.00 - 230.00	0.6000	0.2978
T4	2	LDF7-50A (1-5/8 FOAM)	220.00 - 230.00	0.6000	0.2978
T4	3	LDF7-50A (1-5/8 FOAM)	220.00 - 230.00	0.6000	0.2978
T4	4	LDF7-50A (1-5/8 FOAM)	220.00 - 230.00	0.6000	0.2978
T4	11	1" Coax	220.00 - 230.00	0.6000	0.2978
T5	1	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.4038
T5	2	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.4038
T5	3	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.4038
T5	4	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.4038
T5	11	1" Coax	200.00 - 220.00	0.6000	0.4038
T6	1	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.4642
T6	2	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.4642
T6	3	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.4642
T6	4	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.4642
T6	5	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.4642
T6	6	LDF7-50A (1-5/8 FOAM)	180.00 - 190.00	0.6000	0.4642
T6	11	1" Coax	180.00 - 200.00	0.6000	0.4642
T7	1	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.5206
T7	2	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.5206

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T7	3	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.5206
T7	4	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.5206
T7	5	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.5206
T7	6	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.5206
T7	7	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.5206
T7	8	LDF7-50A (1-5/8 FOAM)	160.00 - 170.00	0.6000	0.5206
T7	11	1" Coax	160.00 - 180.00	0.6000	0.5206
T8	1	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.5841
T8	2	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.5841
T8	3	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.5841
T8	4	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.5841
T8	5	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.5841
T8	6	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.5841
T8	7	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.5841
T8	8	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.5841
T8	9	LDF7-50A (1-5/8 FOAM)	140.00 - 150.00	0.6000	0.5841
T8	11	1" Coax	140.00 - 160.00	0.6000	0.5841
T9	1	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T9	2	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T9	3	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T9	4	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T9	5	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T9	6	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T9	7	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T9	8	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T9	9	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T9	10	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T9	11	1" Coax	120.00 - 140.00	0.6000	0.6000
T10	1	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T10	2	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T10	3	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T10	4	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T10	5	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T10	6	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T10	7	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T10	8	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T10	9	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T10	10	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T10	11	1" Coax	100.00 - 120.00	0.6000	0.6000
T11	1	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	2	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	3	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	4	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	5	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	6	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	7	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	8	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	9	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	10	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	11	1" Coax	80.00 - 100.00	0.6000	0.6000
T12	1	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T12	2	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T12	3	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T12	4	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T12	5	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T12	6	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T12	7	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T12	8	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T12	9	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T12	10	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T12	11	1" Coax	60.00 - 80.00	0.6000	0.6000
T13	1	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T13	2	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T13	3	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T13	4	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T13	5	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T13	6	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T13	7	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T13	8	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T13	9	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T13	10	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T13	11	1" Coax	40.00 - 60.00	0.6000	0.6000
T14	1	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	2	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	3	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	4	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	5	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	6	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	7	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	8	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	9	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	10	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	11	1" Coax	20.00 - 40.00	0.6000	0.6000
T15	1	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	0.6000	0.6000
T15	2	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T15	3	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	0.6000	0.6000
T15	4	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	0.6000	0.6000
T15	5	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	0.6000	0.6000
T15	6	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	0.6000	0.6000
T15	7	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	0.6000	0.6000
T15	8	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	0.6000	0.6000
T15	9	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	0.6000	0.6000
T15	10	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	0.6000	0.6000
T15	11	1" Coax	6.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

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
Flash Beacon Lighting	B	None		0.0000	280.00	No Ice	2.70	2.70	0.05
						1/2" Ice	3.10	3.10	0.07
						1" Ice	3.50	3.50	0.09
15' Lightning Rod	B	From Leg	0.00 0.00 6.00	0.0000	280.00	No Ice 1/2" Ice 1" Ice	3.00 4.53 6.06	3.00 4.53 6.06	0.08 0.10 0.12
DB420-A	B	From Centroid-Face	8.00 0.00 9.50	0.0000	280.00	No Ice 1/2" Ice 1" Ice	3.33 5.99 8.65	3.33 5.99 8.65	0.03 0.04 0.05
DB420-A	A	From Centroid-Face	8.00 0.00 3.00	0.0000	280.00	No Ice 1/2" Ice 1" Ice	3.33 5.99 8.65	3.33 5.99 8.65	0.03 0.04 0.05
Sector Mount [SM 412-1]	C	None		0.0000	280.00	No Ice 1/2" Ice 1" Ice	70.47 100.14 129.81	70.47 100.14 129.81	3.08 4.50 5.92
RR90-17-02DP	A	From Leg	3.00 0.00 0.00	0.0000	250.00	No Ice 1/2" Ice 1" Ice	4.91 5.57 6.23	3.64 4.70 5.76	0.04 0.08 0.12
RR90-17-02DP	B	From Leg	3.00 0.00 0.00	0.0000	250.00	No Ice 1/2" Ice 1" Ice	4.91 5.57 6.23	3.64 4.70 5.76	0.04 0.08 0.12
RR90-17-02DP	C	From Leg	3.00 0.00 0.00	0.0000	250.00	No Ice 1/2" Ice 1" Ice	4.91 5.57 6.23	3.64 4.70 5.76	0.04 0.08 0.12
LNX-6515DS-VTM	A	From Leg	3.00 0.00 0.00	0.0000	250.00	No Ice 1/2" Ice 1" Ice	11.45 12.06 12.69	9.60 11.02 12.29	0.08 0.17 0.26
LNX-6515DS-VTM	B	From Leg	3.00 0.00 0.00	0.0000	250.00	No Ice 1/2" Ice 1" Ice	11.45 12.06 12.69	9.60 11.02 12.29	0.08 0.17 0.26
LNX-6515DS-VTM	C	From Leg	3.00 0.00 0.00	0.0000	250.00	No Ice 1/2" Ice 1" Ice	11.45 12.06 12.69	9.60 11.02 12.29	0.08 0.17 0.26
TMA	A	From Leg	3.00 0.00 0.00	0.0000	250.00	No Ice 1/2" Ice 1" Ice	0.78 0.90 1.02	0.29 0.38 0.47	0.02 0.03 0.04

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
TMA	B	From Leg	3.00 0.00 0.00	0.0000	250.00	No Ice 1/2" Ice 1" Ice	0.78 0.90 1.02	0.29 0.38 0.47	0.02 0.03 0.04
TMA	C	From Leg	3.00 0.00 0.00	0.0000	250.00	No Ice 1/2" Ice 1" Ice	0.78 0.90 1.02	0.29 0.38 0.47	0.02 0.03 0.04
Pirod 15' T-Frame Sector Mount (1)	A	None		0.0000	250.00	No Ice 1/2" Ice 1" Ice	15.00 20.60 26.20	15.00 20.60 26.20	0.50 0.65 0.80
Pirod 15' T-Frame Sector Mount (1)	B	None		0.0000	250.00	No Ice 1/2" Ice 1" Ice	15.00 20.60 26.20	15.00 20.60 26.20	0.50 0.65 0.80
Pirod 15' T-Frame Sector Mount (1)	C	None		0.0000	250.00	No Ice 1/2" Ice 1" Ice	15.00 20.60 26.20	15.00 20.60 26.20	0.50 0.65 0.80
DB420-A	B	From Centroid-Face	8.00 0.00 9.00	0.0000	245.00	No Ice 1/2" Ice 1" Ice	3.33 5.99 8.65	3.33 5.99 8.65	0.03 0.04 0.05
DB225-2-F	A	From Centroid-Face	8.00 0.00 0.00	0.0000	235.00	No Ice 1/2" Ice 1" Ice	1.36 2.45 3.54	1.36 2.45 3.54	0.05 0.07 0.09
Sector Mount [SM 412-1]	C	None		0.0000	235.00	No Ice 1/2" Ice 1" Ice	70.47 100.14 129.81	70.47 100.14 129.81	3.08 4.50 5.92
(3) DB980H120E-M	A	From Leg	3.00 0.00 0.00	0.0000	200.00	No Ice 1/2" Ice 1" Ice	4.22 4.81 5.40	3.83 4.92 6.01	0.03 0.07 0.11
(3) DB980H120E-M	B	From Leg	3.00 0.00 0.00	0.0000	200.00	No Ice 1/2" Ice 1" Ice	4.22 4.81 5.40	3.83 4.92 6.01	0.03 0.07 0.11
(3) DB980H120E-M	C	From Leg	3.00 0.00 0.00	0.0000	200.00	No Ice 1/2" Ice 1" Ice	4.22 4.81 5.40	3.83 4.92 6.01	0.03 0.07 0.11
Pirod 12' T-Frame Sector Mount (1)	A	None		0.0000	200.00	No Ice 1/2" Ice 1" Ice	13.60 18.40 23.20	13.60 18.40 23.20	0.47 0.60 0.73
Pirod 12' T-Frame Sector Mount (1)	B	None		0.0000	200.00	No Ice 1/2" Ice 1" Ice	13.60 18.40 23.20	13.60 18.40 23.20	0.47 0.60 0.73
Pirod 12' T-Frame Sector Mount (1)	C	None		0.0000	200.00	No Ice 1/2" Ice 1" Ice	13.60 18.40 23.20	13.60 18.40 23.20	0.47 0.60 0.73
(3) DB980H120E-M	A	From Leg	3.00 0.00 0.00	0.0000	190.00	No Ice 1/2" Ice 1" Ice	4.22 4.81 5.40	3.83 4.92 6.01	0.03 0.07 0.11
(3) DB980H120E-M	B	From Leg	3.00 0.00 0.00	0.0000	190.00	No Ice 1/2" Ice 1" Ice	4.22 4.81 5.40	3.83 4.92 6.01	0.03 0.07 0.11
(3) DB980H120E-M	C	From Leg	3.00 0.00 0.00	0.0000	190.00	No Ice 1/2" Ice 1" Ice	4.22 4.81 5.40	3.83 4.92 6.01	0.03 0.07 0.11
Pirod 12' T-Frame Sector Mount (1)	A	None		0.0000	190.00	No Ice 1/2" Ice 1" Ice	13.60 18.40 23.20	13.60 18.40 23.20	0.47 0.60 0.73
Pirod 12' T-Frame Sector Mount (1)	B	None		0.0000	190.00	No Ice 1/2" Ice 1" Ice	13.60 18.40 23.20	13.60 18.40 23.20	0.47 0.60 0.73

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
Pirod 12' T-Frame Sector Mount (1)	C	None		0.0000	190.00	No Ice	13.60	13.60	0.47
						1/2" Ice	18.40	18.40	0.60
						1" Ice	23.20	23.20	0.73
(3) DB980H120E-M	A	From Leg	3.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice	4.22 4.81 5.40	3.83 4.92 6.01	0.03 0.07 0.11
(3) DB980H120E-M	B	From Leg	3.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice	4.22 4.81 5.40	3.83 4.92 6.01	0.03 0.07 0.11
(3) DB980H120E-M	C	From Leg	3.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice	4.22 4.81 5.40	3.83 4.92 6.01	0.03 0.07 0.11
Pirod 12' T-Frame Sector Mount (1)	A	None		0.0000	180.00	No Ice	13.60	13.60	0.47
						1/2" Ice	18.40	18.40	0.60
						1" Ice	23.20	23.20	0.73
Pirod 12' T-Frame Sector Mount (1)	B	None		0.0000	180.00	No Ice	13.60	13.60	0.47
						1/2" Ice	18.40	18.40	0.60
						1" Ice	23.20	23.20	0.73
Pirod 12' T-Frame Sector Mount (1)	C	None		0.0000	180.00	No Ice	13.60	13.60	0.47
						1/2" Ice	18.40	18.40	0.60
						1" Ice	23.20	23.20	0.73
APXVSPP18-C-A20	A	From Leg	3.00 0.00 0.00	0.0000	170.00	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
APXVSPP18-C-A20	B	From Leg	3.00 0.00 0.00	0.0000	170.00	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
APXVSPP18-C-A20	C	From Leg	3.00 0.00 0.00	0.0000	170.00	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
APXVTM14-ALU-I20	A	From Leg	3.00 0.00 0.00	0.0000	170.00	No Ice 1/2" Ice 1" Ice	7.13 7.66 8.19	4.96 5.75 6.54	0.08 0.13 0.18
APXVTM14-ALU-I20	B	From Leg	3.00 0.00 0.00	0.0000	170.00	No Ice 1/2" Ice 1" Ice	7.13 7.66 8.19	4.96 5.75 6.54	0.08 0.13 0.18
APXVTM14-ALU-I20	C	From Leg	3.00 0.00 0.00	0.0000	170.00	No Ice 1/2" Ice 1" Ice	7.13 7.66 8.19	4.96 5.75 6.54	0.08 0.13 0.18
FD-RRH-2X50-800	A	From Leg	3.00 0.00 0.00	0.0000	170.00	No Ice 1/2" Ice 1" Ice	2.13 2.32 2.51	2.46 2.66 2.86	0.06 0.09 0.12
FD-RRH-2X50-800	B	From Leg	3.00 0.00 0.00	0.0000	170.00	No Ice 1/2" Ice 1" Ice	2.13 2.32 2.51	2.46 2.66 2.86	0.06 0.09 0.12
FD-RRH-2X50-800	C	From Leg	3.00 0.00 0.00	0.0000	170.00	No Ice 1/2" Ice 1" Ice	2.13 2.32 2.51	2.46 2.66 2.86	0.06 0.09 0.12
FD-RRH-4X40-1900	A	From Leg	3.00 0.00 0.00	0.0000	170.00	No Ice 1/2" Ice 1" Ice	2.49 2.70 2.91	3.26 3.48 3.72	0.09 0.12 0.15
FD-RRH-4X40-1900	B	From Leg	3.00 0.00 0.00	0.0000	170.00	No Ice 1/2" Ice 1" Ice	2.49 2.70 2.91	3.26 3.48 3.72	0.09 0.12 0.15
FD-RRH-4X40-1900	C	From Leg	3.00 0.00 0.00	0.0000	170.00	No Ice 1/2" Ice 1" Ice	2.49 2.70 2.91	3.26 3.48 3.72	0.09 0.12 0.15

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
TD-RRH-8x20-25	A	From Leg	3.00	0.0000	170.00	No Ice	3.70	1.29	0.07
			0.00			1/2" Ice	3.95	1.46	0.09
			0.00			1" Ice	4.20	1.64	0.12
TD-RRH-8x20-25	B	From Leg	3.00	0.0000	170.00	No Ice	3.70	1.29	0.07
			0.00			1/2" Ice	3.95	1.46	0.09
			0.00			1" Ice	4.20	1.64	0.12
TD-RRH-8x20-25	C	From Leg	3.00	0.0000	170.00	No Ice	3.70	1.29	0.07
			0.00			1/2" Ice	3.95	1.46	0.09
			0.00			1" Ice	4.20	1.64	0.12
Pirod 15' T-Frame Sector Mount (1)	A	From Leg	3.00	0.0000	170.00	No Ice	15.00	15.00	0.50
			0.00			1/2" Ice	20.60	20.60	0.65
			0.00			1" Ice	26.20	26.20	0.80
Pirod 15' T-Frame Sector Mount (1)	B	From Leg	3.00	0.0000	170.00	No Ice	15.00	15.00	0.50
			0.00			1/2" Ice	20.60	20.60	0.65
			0.00			1" Ice	26.20	26.20	0.80
Pirod 15' T-Frame Sector Mount (1)	C	From Leg	3.00	0.0000	170.00	No Ice	15.00	15.00	0.50
			0.00			1/2" Ice	20.60	20.60	0.65
			0.00			1" Ice	26.20	26.20	0.80
80010121 9' Mount Pipe	A	From Leg	3.00	0.0000	160.00	No Ice	6.22	5.43	0.09
			0.00			1/2" Ice	7.03	6.71	0.15
			0.00			1" Ice	7.86	8.00	0.21
80010121 9' Mount Pipe	B	From Leg	3.00	0.0000	160.00	No Ice	6.22	5.43	0.09
			0.00			1/2" Ice	7.03	6.71	0.15
			0.00			1" Ice	7.86	8.00	0.21
80010121 9' Mount Pipe	C	From Leg	3.00	0.0000	160.00	No Ice	6.22	5.43	0.09
			0.00			1/2" Ice	7.03	6.71	0.15
			0.00			1" Ice	7.86	8.00	0.21
QS66512-2	A	From Leg	3.00	0.0000	160.00	No Ice	8.13	6.80	0.11
			0.00			1/2" Ice	8.59	7.27	0.17
			0.00			1" Ice	9.05	7.72	0.23
QS66512-2	B	From Leg	3.00	0.0000	160.00	No Ice	8.13	6.80	0.11
			0.00			1/2" Ice	8.59	7.27	0.17
			0.00			1" Ice	9.05	7.72	0.23
QS66512-2	C	From Leg	3.00	0.0000	160.00	No Ice	8.13	6.80	0.11
			0.00			1/2" Ice	8.59	7.27	0.17
			0.00			1" Ice	9.05	7.72	0.23
HPA65R-BU6A	A	From Leg	3.00	0.0000	160.00	No Ice	7.87	6.97	0.08
			0.00			1/2" Ice	8.32	7.92	0.15
			0.00			1" Ice	8.79	8.75	0.22
HPA65R-BU6A	B	From Leg	3.00	0.0000	160.00	No Ice	7.87	6.97	0.08
			0.00			1/2" Ice	8.32	7.92	0.15
			0.00			1" Ice	8.79	8.75	0.22
HPA65R-BU6A	C	From Leg	3.00	0.0000	160.00	No Ice	7.87	6.97	0.08
			0.00			1/2" Ice	8.32	7.92	0.15
			0.00			1" Ice	8.79	8.75	0.22
RRUS-11	A	From Leg	3.00	0.0000	160.00	No Ice	2.52	1.02	0.06
			0.00			1/2" Ice	2.72	1.16	0.07
			0.00			1" Ice	2.92	1.30	0.10
RRUS-11	B	From Leg	3.00	0.0000	160.00	No Ice	2.52	1.02	0.06
			0.00			1/2" Ice	2.72	1.16	0.07
			0.00			1" Ice	2.92	1.30	0.10
RRUS-11	C	From Leg	3.00	0.0000	160.00	No Ice	2.52	1.02	0.06
			0.00			1/2" Ice	2.72	1.16	0.07
			0.00			1" Ice	2.92	1.30	0.10
RRUS 32	A	From Leg	3.00	0.0000	160.00	No Ice	2.72	1.67	0.05
			0.00			1/2" Ice	2.94	1.86	0.07
			0.00			1" Ice	3.17	2.05	0.10

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
RRUS 32	B	From Leg	3.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	2.72 2.94 3.17	1.67 1.86 2.05	0.05 0.07 0.10
RRUS 32	C	From Leg	3.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	2.72 2.94 3.17	1.67 1.86 2.05	0.05 0.07 0.10
RRUS 32 B2	A	From Leg	3.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	2.72 2.94 3.17	1.67 1.86 2.05	0.05 0.07 0.10
RRUS 32 B2	B	From Leg	3.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	2.72 2.94 3.17	1.67 1.86 2.05	0.05 0.07 0.10
RRUS 32 B2	C	From Leg	3.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	2.72 2.94 3.17	1.67 1.86 2.05	0.05 0.07 0.10
RRUS 4478 B5	A	From Leg	3.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	1.84 2.01 2.19	1.06 1.20 1.34	0.06 0.08 0.09
RRUS 4478 B5	B	From Leg	3.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	1.84 2.01 2.19	1.06 1.20 1.34	0.06 0.08 0.09
RRUS 4478 B5	C	From Leg	3.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	1.84 2.01 2.19	1.06 1.20 1.34	0.06 0.08 0.09
RRU B14 4478	A	From Leg	3.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	1.86 2.03 2.20	0.82 0.94 1.07	0.05 0.06 0.08
RRU B14 4478	B	From Leg	3.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	1.86 2.03 2.20	0.82 0.94 1.07	0.05 0.06 0.08
RRU B14 4478	C	From Leg	3.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	1.86 2.03 2.20	0.82 0.94 1.07	0.05 0.06 0.08
RRUS 4426 B66	A	From Leg	3.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	1.65 1.81 1.98	0.68 0.79 0.92	0.05 0.06 0.07
RRUS 4426 B66	B	From Leg	3.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	1.65 1.81 1.98	0.68 0.79 0.92	0.05 0.06 0.07
RRUS 4426 B66	C	From Leg	3.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	1.65 1.81 1.98	0.68 0.79 0.92	0.05 0.06 0.07
LGP 21401	A	From Leg	3.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	1.66 1.82 1.98	0.44 0.54 0.65	0.03 0.04 0.05
LGP 21401	B	From Leg	3.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	1.66 1.82 1.98	0.44 0.54 0.65	0.03 0.04 0.05
LGP 21401	C	From Leg	3.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	1.66 1.82 1.98	0.44 0.54 0.65	0.03 0.04 0.05
DC6-48-06-18-8F	A	From Leg	3.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	1.20 1.88 2.09	1.20 1.88 2.09	0.03 0.05 0.08
DC6-48-06-18-8F	B	From Leg	3.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	1.20 1.88 2.09	1.20 1.88 2.09	0.03 0.05 0.08

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
DC6-48-06-18-8F	C	From Leg	3.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	1.20 1.88 2.09	1.20 1.88 2.09	0.03 0.05 0.08
Pirod 15' T-Frame Sector Mount (1)	A	None		0.0000	160.00	No Ice 1/2" Ice 1" Ice	15.00 20.60 26.20	15.00 20.60 26.20	0.50 0.65 0.80
Pirod 15' T-Frame Sector Mount (1)	B	None		0.0000	160.00	No Ice 1/2" Ice 1" Ice	15.00 20.60 26.20	15.00 20.60 26.20	0.50 0.65 0.80
Pirod 15' T-Frame Sector Mount (1)	C	None		0.0000	160.00	No Ice 1/2" Ice 1" Ice	15.00 20.60 26.20	15.00 20.60 26.20	0.50 0.65 0.80
APXV18-206517S-ACU	A	From Leg	3.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	5.40 5.96 6.52	4.70 5.86 7.02	0.05 0.10 0.15
APXV18-206517S-ACU	B	From Leg	3.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	5.40 5.96 6.52	4.70 5.86 7.02	0.05 0.10 0.15
APXV18-206517S-ACU	C	From Leg	3.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	5.40 5.96 6.52	4.70 5.86 7.02	0.05 0.10 0.15
(2) HBXX-6517DS-A2M	A	From Leg	3.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	8.53 9.00 9.48	5.24 5.71 6.18	0.04 0.09 0.15
(2) HBXX-6517DS-A2M	B	From Leg	3.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	8.53 9.00 9.48	5.24 5.71 6.18	0.04 0.09 0.15
(2) HBXX-6517DS-A2M	C	From Leg	3.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	8.53 9.00 9.48	5.24 5.71 6.18	0.04 0.09 0.15
(2) LNX-6514DS-VTM	A	From Leg	3.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	8.65 9.31 9.97	7.08 8.27 9.46	0.06 0.13 0.20
(2) LNX-6514DS-VTM	B	From Leg	3.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	8.65 9.31 9.97	7.08 8.27 9.46	0.06 0.13 0.20
(2) LNX-6514DS-VTM	C	From Leg	3.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	8.65 9.31 9.97	7.08 8.27 9.46	0.06 0.13 0.20
(2) FD9R6004/2C-3L	A	From Leg	3.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	0.37 0.45 0.53	0.08 0.14 0.20	0.00 0.01 0.00
(2) FD9R6004/2C-3L	B	From Leg	3.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	0.37 0.45 0.53	0.08 0.14 0.20	0.00 0.01 0.00
(2) FD9R6004/2C-3L	C	From Leg	3.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	0.37 0.45 0.53	0.08 0.14 0.20	0.00 0.01 0.00
RRH2X60-AWS	A	From Leg	3.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	1.87 2.04 2.23	1.23 1.38 1.53	0.04 0.06 0.08
RRH2X60-AWS	B	From Leg	3.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	1.87 2.04 2.23	1.23 1.38 1.53	0.04 0.06 0.08
RRH2X60-AWS	C	From Leg	3.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	1.87 2.04 2.23	1.23 1.38 1.53	0.04 0.06 0.08

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
RRH2X60-PCS	A	From Leg	3.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	2.20 2.39 2.59	1.72 1.90 2.09	0.06 0.08 0.10
RRH2X60-PCS	B	From Leg	3.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	2.20 2.39 2.59	1.72 1.90 2.09	0.06 0.08 0.10
RRH2X60-PCS	C	From Leg	3.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	2.20 2.39 2.59	1.72 1.90 2.09	0.06 0.08 0.10
DB-T1-6Z-8AB-0Z	C	From Leg	3.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	5.60 5.60 5.60	2.33 2.33 2.33	0.04 0.08 0.12
Pirod 12' T-Frame Sector Mount (1)	A	None		0.0000	140.00	No Ice 1/2" Ice 1" Ice	13.60 18.40 23.20	13.60 18.40 23.20	0.47 0.60 0.73
Pirod 12' T-Frame Sector Mount (1)	B	None		0.0000	140.00	No Ice 1/2" Ice 1" Ice	13.60 18.40 23.20	13.60 18.40 23.20	0.47 0.60 0.73
Pirod 12' T-Frame Sector Mount (1)	C	None		0.0000	140.00	No Ice 1/2" Ice 1" Ice	13.60 18.40 23.20	13.60 18.40 23.20	0.47 0.60 0.73

Truss-Leg Properties

Section Designation	Area in^2	Area Ice in^2	Self Weight K	Ice Weight K	Equiv. Diameter in	Equiv. Diameter Ice in	Leg Area in^2
Pirod 105245	1090.3344	3227.9386	0.66	1.11	7.5718	22.4162	5.3014
Pirod 105218	2263.4687	6700.6084	0.74	2.32	7.8593	23.2660	7.2158
Pirod 105218	2263.4687	6684.7191	0.74	2.31	7.8593	23.2108	7.2158
Pirod 105219	2441.8688	6739.2465	0.93	2.34	8.4787	23.4002	9.4248
Pirod 105220	2578.8005	6791.8153	1.10	2.36	8.9542	23.5827	11.9282
Pirod 105220	2578.8005	6769.8954	1.10	2.35	8.9542	23.5066	11.9282
Pirod 112743	3466.5160	8923.4288	1.66	4.28	12.0365	30.9841	14.7262
Pirod 112743	3466.5160	8898.2322	1.66	4.26	12.0365	30.8966	14.7262
Pirod 112744	3599.5585	8939.3815	1.87	4.19	12.4985	31.0395	17.8187
Pirod 112744	3599.5585	8899.2724	1.87	3.96	12.4985	30.9003	17.8187
Pirod 112745	3789.3331	8912.9018	2.15	3.71	13.1574	30.9476	21.2058
Pirod 112740	3789.3331	8797.0272	2.15	3.10	13.1574	30.5452	21.2058

Tower Pressures - No Ice

$G_H = 0.850$

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	275.00	1.319	27	51.458	A	0.000	7.235	2.917	40.31	0.000	0.000
280.00-270.00					B	0.000	7.235		40.31	0.000	0.000
					C	0.000	7.235		40.31	4.960	0.000
T2	260.00	1.298	27	103.333	A	0.000	14.118	6.667	47.22	0.000	0.000
270.00-250.00					B	0.000	14.118		47.22	0.000	0.000
					C	0.000	14.118		47.22	9.920	0.000
T3	240.00	1.269	26	104.167	A	0.000	16.405	8.333	50.80	47.520	0.000
250.00-230.00					B	0.000	16.405		50.80	0.000	0.000
					C	0.000	16.405		50.80	13.880	0.000
T4	225.00	1.246	26	66.264	A	5.082	12.641	12.641	71.32	23.760	0.000
230.00-220.00					B	5.082	12.641		71.32	0.000	0.000
					C	5.082	12.641		71.32	8.920	0.000
T5	210.00	1.222	25	162.945	A	10.467	26.241	26.241	71.49	47.520	0.000
220.00-200.00					B	10.467	26.241		71.49	0.000	0.000
					C	10.467	26.241		71.49	17.840	0.000
T6	190.00	1.187	24	202.945	A	15.714	26.241	26.241	62.55	47.520	0.000
200.00-180.00					B	15.714	26.241		62.55	53.460	0.000
					C	15.714	26.241		62.55	17.840	0.000
T7	170.00	1.15	24	243.362	A	19.853	28.309	28.309	58.78	47.520	0.000
180.00-160.00					B	19.853	28.309		58.78	71.280	0.000
					C	19.853	28.309		58.78	65.360	0.000
T8	150.00	1.11	23	283.780	A	20.877	29.897	29.897	58.88	47.520	0.000
160.00-140.00					B	20.877	29.897		58.88	71.280	0.000
					C	20.877	29.897		58.88	83.180	0.000
T9	130.00	1.065	22	323.780	A	19.635	29.897	29.897	60.36	99.000	0.000
140.00-120.00					B	19.635	29.897		60.36	71.280	0.000
					C	19.635	29.897		60.36	89.120	0.000
T10	110.00	1.016	21	374.209	A	14.190	40.189	40.189	73.91	99.000	0.000
120.00-100.00					B	14.190	40.189		73.91	71.280	0.000
					C	14.190	40.189		73.91	89.120	0.000
T11	90.00	0.959	20	414.209	A	14.825	40.189	40.189	73.05	99.000	0.000
100.00-80.00					B	14.825	40.189		73.05	71.280	0.000
					C	14.825	40.189		73.05	89.120	0.000
T12	70.00	0.892	18	454.627	A	15.712	41.731	41.731	72.65	99.000	0.000
80.00-60.00					B	15.712	41.731		72.65	71.280	0.000
					C	15.712	41.731		72.65	89.120	0.000
T13	50.00	0.811	17	494.627	A	16.624	41.731	41.731	71.51	99.000	0.000
60.00-40.00					B	16.624	41.731		71.51	71.280	0.000
					C	16.624	41.731		71.51	89.120	0.000
T14	30.00	0.701	14	535.044	A	17.558	43.931	43.931	71.44	99.000	0.000
40.00-20.00					B	17.558	43.931		71.44	71.280	0.000
					C	17.558	43.931		71.44	89.120	0.000
T15 20.00-0.00	10.00	0.7	14	575.044	A	18.514	43.931	43.931	70.35	69.300	0.000
					B	18.514	43.931		70.35	49.896	0.000
					C	18.514	43.931		70.35	62.384	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	275.00	1.319	7	1.8543	54.549	A	0.000	31.077	9.098	29.27	0.000	0.000
280.00-270.00						B	0.000	31.077		29.27	0.000	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
						C	0.000	31.077		29.27	18.709	0.000
T2	260.00	1.298	7	1.8439	109.480	A	0.000	57.177	18.959	33.16	0.000	0.000
270.00-250.00						B	0.000	57.177		33.16	0.000	0.000
						C	0.000	57.177		33.16	37.306	0.000
T3	240.00	1.269	7	1.8292	110.264	A	0.000	57.397	20.528	35.77	67.972	0.000
250.00-230.00						B	0.000	57.397		35.77	0.000	0.000
						C	0.000	57.397		35.77	48.424	0.000
T4	225.00	1.246	7	1.8174	69.297	A	5.082	43.580	37.423	76.90	33.948	0.000
230.00-220.00						B	5.082	43.580		76.90	0.000	0.000
						C	5.082	43.580		76.90	29.739	0.000
T5	210.00	1.222	7	1.8049	168.969	A	10.467	90.277	77.682	77.11	67.816	0.000
220.00-200.00						B	10.467	90.277		77.11	0.000	0.000
						C	10.467	90.277		77.11	59.243	0.000
T6	190.00	1.187	6	1.7870	208.909	A	15.714	96.219	77.498	69.24	67.700	0.000
200.00-180.00						B	15.714	96.219		69.24	87.802	0.000
						C	15.714	96.219		69.24	58.905	0.000
T7	170.00	1.15	6	1.7672	249.260	A	19.853	99.655	78.130	65.38	67.573	0.000
180.00-160.00						B	19.853	99.655		65.38	116.809	0.000
						C	19.853	99.655		65.38	137.486	0.000
T8	150.00	1.11	6	1.7452	289.604	A	20.877	99.559	78.740	65.38	67.432	0.000
160.00-140.00						B	20.877	99.559		65.38	116.519	0.000
						C	20.877	99.559		65.38	175.403	0.000
T9	130.00	1.065	6	1.7204	329.522	A	19.635	97.789	78.486	66.84	138.602	0.000
140.00-120.00						B	19.635	97.789		66.84	116.192	0.000
						C	19.635	97.789		66.84	192.520	0.000
T10	110.00	1.016	6	1.6919	379.856	A	14.190	117.171	103.452	78.75	138.226	0.000
120.00-100.00						B	14.190	117.171		78.75	115.816	0.000
						C	14.190	117.171		78.75	191.411	0.000
T11	90.00	0.959	5	1.6583	419.744	A	14.825	117.209	103.160	78.13	137.783	0.000
100.00-80.00						B	14.825	117.209		78.13	115.373	0.000
						C	14.825	117.209		78.13	190.104	0.000
T12 80.00-60.00	70.00	0.892	5	1.6171	460.024	A	15.712	118.156	103.637	77.42	137.241	0.000
						B	15.712	118.156		77.42	114.832	0.000
						C	15.712	118.156		77.42	188.505	0.000
T13 60.00-40.00	50.00	0.811	4	1.5636	499.845	A	16.624	118.026	103.172	76.62	136.537	0.000
						B	16.624	118.026		76.62	114.128	0.000
						C	16.624	118.026		76.62	186.426	0.000
T14 40.00-20.00	30.00	0.701	4	1.4858	540.002	A	17.558	118.238	103.330	76.09	135.513	0.000
						B	17.558	118.238		76.09	113.104	0.000
						C	17.558	118.238		76.09	183.405	0.000
T15 20.00-0.00	10.00	0.7	4	1.3312	579.487	A	18.514	116.071	101.987	75.78	93.439	0.000
						B	18.514	116.071		75.78	77.754	0.000
						C	18.514	116.071		75.78	124.191	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	275.00	1.319	10	51.458	A	0.000	7.235	2.917	40.31	0.000	0.000
280.00-270.00					B	0.000	7.235		40.31	0.000	0.000
					C	0.000	7.235		40.31	4.960	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
T2	260.00	1.298	10	103.333	A	0.000	14.118	6.667	47.22	0.000	0.000
270.00-250.00					B	0.000	14.118		47.22	0.000	0.000
					C	0.000	14.118		47.22	9.920	0.000
T3	240.00	1.269	10	104.167	A	0.000	16.405	8.333	50.80	47.520	0.000
250.00-230.00					B	0.000	16.405		50.80	0.000	0.000
					C	0.000	16.405		50.80	13.880	0.000
T4	225.00	1.246	10	66.264	A	5.082	12.641	12.641	71.32	23.760	0.000
230.00-220.00					B	5.082	12.641		71.32	0.000	0.000
					C	5.082	12.641		71.32	8.920	0.000
T5	210.00	1.222	10	162.945	A	10.467	26.241	26.241	71.49	47.520	0.000
220.00-200.00					B	10.467	26.241		71.49	0.000	0.000
					C	10.467	26.241		71.49	17.840	0.000
T6	190.00	1.187	9	202.945	A	15.714	26.241	26.241	62.55	47.520	0.000
200.00-180.00					B	15.714	26.241		62.55	53.460	0.000
					C	15.714	26.241		62.55	17.840	0.000
T7	170.00	1.15	9	243.362	A	19.853	28.309	28.309	58.78	47.520	0.000
180.00-160.00					B	19.853	28.309		58.78	71.280	0.000
					C	19.853	28.309		58.78	65.360	0.000
T8	150.00	1.11	9	283.780	A	20.877	29.897	29.897	58.88	47.520	0.000
160.00-140.00					B	20.877	29.897		58.88	71.280	0.000
					C	20.877	29.897		58.88	83.180	0.000
T9	130.00	1.065	8	323.780	A	19.635	29.897	29.897	60.36	99.000	0.000
140.00-120.00					B	19.635	29.897		60.36	71.280	0.000
					C	19.635	29.897		60.36	89.120	0.000
T10	110.00	1.016	8	374.209	A	14.190	40.189	40.189	73.91	99.000	0.000
120.00-100.00					B	14.190	40.189		73.91	71.280	0.000
					C	14.190	40.189		73.91	89.120	0.000
T11	90.00	0.959	8	414.209	A	14.825	40.189	40.189	73.05	99.000	0.000
100.00-80.00					B	14.825	40.189		73.05	71.280	0.000
					C	14.825	40.189		73.05	89.120	0.000
T12	70.00	0.892	7	454.627	A	15.712	41.731	41.731	72.65	99.000	0.000
80.00-60.00					B	15.712	41.731		72.65	71.280	0.000
					C	15.712	41.731		72.65	89.120	0.000
T13	50.00	0.811	6	494.627	A	16.624	41.731	41.731	71.51	99.000	0.000
60.00-40.00					B	16.624	41.731		71.51	71.280	0.000
					C	16.624	41.731		71.51	89.120	0.000
T14	30.00	0.701	5	535.044	A	17.558	43.931	43.931	71.44	99.000	0.000
40.00-20.00					B	17.558	43.931		71.44	71.280	0.000
					C	17.558	43.931		71.44	89.120	0.000
T15 20.00-0.00	10.00	0.7	5	575.044	A	18.514	43.931	43.931	70.35	69.300	0.000
					B	18.514	43.931		70.35	49.896	0.000
					C	18.514	43.931		70.35	62.384	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 ft²	F K	w plf	Ctrl. Face
T1	0.02	0.65	A	0.141	2.806	27	1	1	4.100	0.33	33.25	C
280.00-270.00			B	0.141	2.806		1	1	4.100			
			C	0.141	2.806		1	1	4.100			
T2	0.03	1.34	A	0.137	2.821	27	1	1	7.995	0.64	32.21	C
270.00-250.00			B	0.137	2.821		1	1	7.995			
			C	0.137	2.821		1	1	7.995			
T3	0.25	1.89	A	0.157	2.744	26	1	1	9.323	1.38	68.94	C
250.00-230.00			B	0.157	2.744		1	1	9.323			

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	0.157	2.744		1	1	9.323			
T4	0.13	1.42	A	0.267	2.386	26	1	1	12.533	1.07	107.36	C
230.00-220.00			B	0.267	2.386		1	1	12.533			
			C	0.267	2.386		1	1	12.533			
T5	0.26	2.78	A	0.225	2.514	25	1	1	25.670	2.21	110.27	C
220.00-200.00			B	0.225	2.514		1	1	25.670			
			C	0.225	2.514		1	1	25.670			
T6	0.48	3.43	A	0.207	2.574	24	1	1	30.821	3.11	155.58	C
200.00-180.00			B	0.207	2.574		1	1	30.821			
			C	0.207	2.574		1	1	30.821			
T7	0.75	4.33	A	0.198	2.603	24	1	1	36.106	4.09	204.62	C
180.00-160.00			B	0.198	2.603		1	1	36.106			
			C	0.198	2.603		1	1	36.106			
T8	0.83	5.01	A	0.179	2.668	23	1	1	37.951	4.30	214.77	C
160.00-140.00			B	0.179	2.668		1	1	37.951			
			C	0.179	2.668		1	1	37.951			
T9	1.07	4.89	A	0.153	2.761	22	1	1	36.612	4.76	237.93	C
140.00-120.00			B	0.153	2.761		1	1	36.612			
			C	0.153	2.761		1	1	36.612			
T10	1.07	7.29	A	0.145	2.789	21	1	1	36.980	4.57	228.66	C
120.00-100.00			B	0.145	2.789		1	1	36.980			
			C	0.145	2.789		1	1	36.980			
T11	1.07	7.41	A	0.133	2.836	20	1	1	37.573	4.38	218.77	C
100.00-80.00			B	0.133	2.836		1	1	37.573			
			C	0.133	2.836		1	1	37.573			
T12	1.07	8.16	A	0.126	2.86	18	1	1	39.313	4.16	208.20	C
80.00-60.00			B	0.126	2.86		1	1	39.313			
			C	0.126	2.86		1	1	39.313			
T13	1.07	8.29	A	0.118	2.893	17	1	1	40.204	3.84	191.83	C
60.00-40.00			B	0.118	2.893		1	1	40.204			
			C	0.118	2.893		1	1	40.204			
T14	1.07	9.28	A	0.115	2.905	14	1	1	42.375	3.40	169.92	C
40.00-20.00			B	0.115	2.905		1	1	42.375			
			C	0.115	2.905		1	1	42.375			
T15	0.75	9.42	A	0.109	2.93	14	1	1	43.319	2.87	143.66	C
20.00-0.00			B	0.109	2.93		1	1	43.319			
			C	0.109	2.93		1	1	43.319			
Sum Weight:	9.90	75.61						OTM	5355.21 kip-ft	45.11		

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	0.02	0.65	A	0.141	2.806	27	0.8	1	4.100	0.33	33.25	C
280.00-270.00			B	0.141	2.806		0.8	1	4.100			
			C	0.141	2.806		0.8	1	4.100			
T2	0.03	1.34	A	0.137	2.821	27	0.8	1	7.995	0.64	32.21	C
270.00-250.00			B	0.137	2.821		0.8	1	7.995			
			C	0.137	2.821		0.8	1	7.995			
T3	0.25	1.89	A	0.157	2.744	26	0.8	1	9.323	1.38	68.94	C
250.00-230.00			B	0.157	2.744		0.8	1	9.323			

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	0.157	2.744		0.8	1	9.323			
T4	0.13	1.42	A	0.267	2.386	26	0.8	1	11.517	1.02	102.10	C
230.00-220.00			B	0.267	2.386		0.8	1	11.517			
			C	0.267	2.386		0.8	1	11.517			
T5	0.26	2.78	A	0.225	2.514	25	0.8	1	23.577	2.09	104.68	C
220.00-200.00			B	0.225	2.514		0.8	1	23.577			
			C	0.225	2.514		0.8	1	23.577			
T6	0.48	3.43	A	0.207	2.574	24	0.8	1	27.678	2.94	147.23	C
200.00-180.00			B	0.207	2.574		0.8	1	27.678			
			C	0.207	2.574		0.8	1	27.678			
T7	0.75	4.33	A	0.198	2.603	24	0.8	1	32.135	3.89	194.28	C
180.00-160.00			B	0.198	2.603		0.8	1	32.135			
			C	0.198	2.603		0.8	1	32.135			
T8	0.83	5.01	A	0.179	2.668	23	0.8	1	33.776	4.08	204.01	C
160.00-140.00			B	0.179	2.668		0.8	1	33.776			
			C	0.179	2.668		0.8	1	33.776			
T9	1.07	4.89	A	0.153	2.761	22	0.8	1	32.685	4.56	227.88	C
140.00-120.00			B	0.153	2.761		0.8	1	32.685			
			C	0.153	2.761		0.8	1	32.685			
T10	1.07	7.29	A	0.145	2.789	21	0.8	1	34.142	4.43	221.67	C
120.00-100.00			B	0.145	2.789		0.8	1	34.142			
			C	0.145	2.789		0.8	1	34.142			
T11	1.07	7.41	A	0.133	2.836	20	0.8	1	34.608	4.24	211.75	C
100.00-80.00			B	0.133	2.836		0.8	1	34.608			
			C	0.133	2.836		0.8	1	34.608			
T12	1.07	8.16	A	0.126	2.86	18	0.8	1	36.171	4.02	201.22	C
80.00-60.00			B	0.126	2.86		0.8	1	36.171			
			C	0.126	2.86		0.8	1	36.171			
T13	1.07	8.29	A	0.118	2.893	17	0.8	1	36.879	3.70	185.05	C
60.00-40.00			B	0.118	2.893		0.8	1	36.879			
			C	0.118	2.893		0.8	1	36.879			
T14	1.07	9.28	A	0.115	2.905	14	0.8	1	38.864	3.27	163.70	C
40.00-20.00			B	0.115	2.905		0.8	1	38.864			
			C	0.115	2.905		0.8	1	38.864			
T15	0.75	9.42	A	0.109	2.93	14	0.8	1	39.616	2.74	137.06	C
20.00-0.00			B	0.109	2.93		0.8	1	39.616			
			C	0.109	2.93		0.8	1	39.616			
Sum Weight:	9.90	75.61						OTM	5144.95 kip-ft	43.35		

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	0.02	0.65	A	0.141	2.806	27	0.85	1	4.100	0.33	33.25	C
280.00-270.00			B	0.141	2.806		0.85	1	4.100			
			C	0.141	2.806		0.85	1	4.100			
T2	0.03	1.34	A	0.137	2.821	27	0.85	1	7.995	0.64	32.21	C
270.00-250.00			B	0.137	2.821		0.85	1	7.995			
			C	0.137	2.821		0.85	1	7.995			
T3	0.25	1.89	A	0.157	2.744	26	0.85	1	9.323	1.38	68.94	C
250.00-230.00			B	0.157	2.744		0.85	1	9.323			

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
			C	0.157	2.744		0.85	1	9.323			
T4	0.13	1.42	A	0.267	2.386	26	0.85	1	11.771	1.03	103.42	C
230.00-220.00			B	0.267	2.386		0.85	1	11.771			
			C	0.267	2.386		0.85	1	11.771			
T5	0.26	2.78	A	0.225	2.514	25	0.85	1	24.100	2.12	106.08	C
220.00-200.00			B	0.225	2.514		0.85	1	24.100			
			C	0.225	2.514		0.85	1	24.100			
T6	0.48	3.43	A	0.207	2.574	24	0.85	1	28.464	2.99	149.32	C
200.00-180.00			B	0.207	2.574		0.85	1	28.464			
			C	0.207	2.574		0.85	1	28.464			
T7	0.75	4.33	A	0.198	2.603	24	0.85	1	33.128	3.94	196.86	C
180.00-160.00			B	0.198	2.603		0.85	1	33.128			
			C	0.198	2.603		0.85	1	33.128			
T8	0.83	5.01	A	0.179	2.668	23	0.85	1	34.819	4.13	206.70	C
160.00-140.00			B	0.179	2.668		0.85	1	34.819			
			C	0.179	2.668		0.85	1	34.819			
T9	1.07	4.89	A	0.153	2.761	22	0.85	1	33.667	4.61	230.39	C
140.00-120.00			B	0.153	2.761		0.85	1	33.667			
			C	0.153	2.761		0.85	1	33.667			
T10	1.07	7.29	A	0.145	2.789	21	0.85	1	34.852	4.47	223.42	C
120.00-100.00			B	0.145	2.789		0.85	1	34.852			
			C	0.145	2.789		0.85	1	34.852			
T11	1.07	7.41	A	0.133	2.836	20	0.85	1	35.349	4.27	213.51	C
100.00-80.00			B	0.133	2.836		0.85	1	35.349			
			C	0.133	2.836		0.85	1	35.349			
T12	1.07	8.16	A	0.126	2.86	18	0.85	1	36.956	4.06	202.96	C
80.00-60.00			B	0.126	2.86		0.85	1	36.956			
			C	0.126	2.86		0.85	1	36.956			
T13	1.07	8.29	A	0.118	2.893	17	0.85	1	37.710	3.73	186.74	C
60.00-40.00			B	0.118	2.893		0.85	1	37.710			
			C	0.118	2.893		0.85	1	37.710			
T14	1.07	9.28	A	0.115	2.905	14	0.85	1	39.741	3.31	165.25	C
40.00-20.00			B	0.115	2.905		0.85	1	39.741			
			C	0.115	2.905		0.85	1	39.741			
T15	0.75	9.42	A	0.109	2.93	14	0.85	1	40.542	2.77	138.71	C
20.00-0.00			B	0.109	2.93		0.85	1	40.542			
			C	0.109	2.93		0.85	1	40.542			
Sum Weight:	9.90	75.61						OTM	5197.52 kip-ft	43.79		

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 ft²	F K	w plf	Ctrl. Face
T1	0.24	2.00	A	0.57	1.826	7	1	1	22.531	0.30	30.01	C
280.00-270.00			B	0.57	1.826		1	1	22.531			
			C	0.57	1.826		1	1	22.531			
T2	0.48	3.78	A	0.522	1.873	7	1	1	39.868	0.56	27.76	C
270.00-250.00			B	0.522	1.873		1	1	39.868			
			C	0.522	1.873		1	1	39.868			
T3	2.42	4.36	A	0.521	1.875	7	1	1	39.965	0.77	38.36	C
250.00-230.00			B	0.521	1.875		1	1	39.965			

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
			C	0.521	1.875		1	1	39.965			
T4	1.30	4.01	A	0.702	1.776	7	1	1	40.498	0.52	52.36	C
230.00-220.00			B	0.702	1.776		1	1	40.498			
			C	0.702	1.776		1	1	40.498			
T5	2.58	11.70	A	0.596	1.806	7	1	1	77.397	1.08	53.98	C
220.00-200.00			B	0.596	1.806		1	1	77.397			
			C	0.596	1.806		1	1	77.397			
T6	4.56	13.15	A	0.536	1.858	6	1	1	83.545	1.40	69.92	C
200.00-180.00			B	0.536	1.858		1	1	83.545			
			C	0.536	1.858		1	1	83.545			
T7	6.95	14.67	A	0.479	1.928	6	1	1	87.032	1.78	89.17	C
180.00-160.00			B	0.479	1.928		1	1	87.032			
			C	0.479	1.928		1	1	87.032			
T8	7.58	15.44	A	0.416	2.033	6	1	1	84.918	1.96	98.15	C
160.00-140.00			B	0.416	2.033		1	1	84.918			
			C	0.416	2.033		1	1	84.918			
T9	9.61	14.99	A	0.356	2.157	6	1	1	80.113	2.17	108.65	C
140.00-120.00			B	0.356	2.157		1	1	80.113			
			C	0.356	2.157		1	1	80.113			
T10	9.51	23.11	A	0.346	2.181	6	1	1	86.193	2.14	106.89	C
120.00-100.00			B	0.346	2.181		1	1	86.193			
			C	0.346	2.181		1	1	86.193			
T11	9.39	23.24	A	0.315	2.258	5	1	1	85.571	2.04	101.80	C
100.00-80.00			B	0.315	2.258		1	1	85.571			
			C	0.315	2.258		1	1	85.571			
T12	9.25	23.84	A	0.291	2.32	5	1	1	86.154	1.92	95.79	C
80.00-60.00			B	0.291	2.32		1	1	86.154			
			C	0.291	2.32		1	1	86.154			
T13	9.07	23.31	A	0.269	2.381	4	1	1	86.259	1.75	87.64	C
60.00-40.00			B	0.269	2.381		1	1	86.259			
			C	0.269	2.381		1	1	86.259			
T14	8.80	23.51	A	0.251	2.433	4	1	1	86.770	1.52	76.18	C
40.00-20.00			B	0.251	2.433		1	1	86.770			
			C	0.251	2.433		1	1	86.770			
T15	5.80	21.60	A	0.232	2.492	4	1	1	85.936	1.27	63.34	C
20.00-0.00			B	0.232	2.492		1	1	85.936			
			C	0.232	2.492		1	1	85.936			
Sum Weight:	87.55	222.73						OTM	2599.86 kip-ft	21.18		

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 ft²	F K	w plf	Ctrl. Face
T1	0.24	2.00	A	0.57	1.826	7	0.8	1	22.531	0.30	30.01	C
280.00-270.00			B	0.57	1.826		0.8	1	22.531			
			C	0.57	1.826		0.8	1	22.531			
T2	0.48	3.78	A	0.522	1.873	7	0.8	1	39.868	0.56	27.76	C
270.00-250.00			B	0.522	1.873		0.8	1	39.868			
			C	0.522	1.873		0.8	1	39.868			
T3	2.42	4.36	A	0.521	1.875	7	0.8	1	39.965	0.77	38.36	C
250.00-230.00			B	0.521	1.875		0.8	1	39.965			

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
			C	0.521	1.875		0.8	1	39.965			
T4	1.30	4.01	A	0.702	1.776	7	0.8	1	39.482	0.51	51.32	C
230.00-220.00			B	0.702	1.776		0.8	1	39.482			
			C	0.702	1.776		0.8	1	39.482			
T5	2.58	11.70	A	0.596	1.806	7	0.8	1	75.304	1.06	52.91	C
220.00-200.00			B	0.596	1.806		0.8	1	75.304			
			C	0.596	1.806		0.8	1	75.304			
T6	4.56	13.15	A	0.536	1.858	6	0.8	1	80.402	1.37	68.32	C
200.00-180.00			B	0.536	1.858		0.8	1	80.402			
			C	0.536	1.858		0.8	1	80.402			
T7	6.95	14.67	A	0.479	1.928	6	0.8	1	83.061	1.74	87.13	C
180.00-160.00			B	0.479	1.928		0.8	1	83.061			
			C	0.479	1.928		0.8	1	83.061			
T8	7.58	15.44	A	0.416	2.033	6	0.8	1	80.743	1.92	95.97	C
160.00-140.00			B	0.416	2.033		0.8	1	80.743			
			C	0.416	2.033		0.8	1	80.743			
T9	9.61	14.99	A	0.356	2.157	6	0.8	1	76.186	2.13	106.56	C
140.00-120.00			B	0.356	2.157		0.8	1	76.186			
			C	0.356	2.157		0.8	1	76.186			
T10	9.51	23.11	A	0.346	2.181	6	0.8	1	83.355	2.11	105.44	C
120.00-100.00			B	0.346	2.181		0.8	1	83.355			
			C	0.346	2.181		0.8	1	83.355			
T11	9.39	23.24	A	0.315	2.258	5	0.8	1	82.606	2.01	100.32	C
100.00-80.00			B	0.315	2.258		0.8	1	82.606			
			C	0.315	2.258		0.8	1	82.606			
T12	9.25	23.84	A	0.291	2.32	5	0.8	1	83.011	1.89	94.29	C
80.00-60.00			B	0.291	2.32		0.8	1	83.011			
			C	0.291	2.32		0.8	1	83.011			
T13	9.07	23.31	A	0.269	2.381	4	0.8	1	82.934	1.72	86.16	C
60.00-40.00			B	0.269	2.381		0.8	1	82.934			
			C	0.269	2.381		0.8	1	82.934			
T14	8.80	23.51	A	0.251	2.433	4	0.8	1	83.259	1.50	74.80	C
40.00-20.00			B	0.251	2.433		0.8	1	83.259			
			C	0.251	2.433		0.8	1	83.259			
T15	5.80	21.60	A	0.232	2.492	4	0.8	1	82.233	1.24	61.85	C
20.00-0.00			B	0.232	2.492		0.8	1	82.233			
			C	0.232	2.492		0.8	1	82.233			
Sum Weight:	87.55	222.73						OTM	2557.48 kip-ft	20.81		

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	0.24	2.00	A	0.57	1.826	7	0.85	1	22.531	0.30	30.01	C
280.00-270.00			B	0.57	1.826		0.85	1	22.531			
			C	0.57	1.826		0.85	1	22.531			
T2	0.48	3.78	A	0.522	1.873	7	0.85	1	39.868	0.56	27.76	C
270.00-250.00			B	0.522	1.873		0.85	1	39.868			
			C	0.522	1.873		0.85	1	39.868			
T3	2.42	4.36	A	0.521	1.875	7	0.85	1	39.965	0.77	38.36	C
250.00-230.00			B	0.521	1.875		0.85	1	39.965			

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
			C	0.521	1.875		0.85	1	39.965			
T4	1.30	4.01	A	0.702	1.776	7	0.85	1	39.736	0.52	51.58	C
230.00-220.00			B	0.702	1.776		0.85	1	39.736			
			C	0.702	1.776		0.85	1	39.736			
T5	2.58	11.70	A	0.596	1.806	7	0.85	1	75.827	1.06	53.17	C
220.00-200.00			B	0.596	1.806		0.85	1	75.827			
			C	0.596	1.806		0.85	1	75.827			
T6	4.56	13.15	A	0.536	1.858	6	0.85	1	81.188	1.37	68.72	C
200.00-180.00			B	0.536	1.858		0.85	1	81.188			
			C	0.536	1.858		0.85	1	81.188			
T7	6.95	14.67	A	0.479	1.928	6	0.85	1	84.054	1.75	87.64	C
180.00-160.00			B	0.479	1.928		0.85	1	84.054			
			C	0.479	1.928		0.85	1	84.054			
T8	7.58	15.44	A	0.416	2.033	6	0.85	1	81.786	1.93	96.52	C
160.00-140.00			B	0.416	2.033		0.85	1	81.786			
			C	0.416	2.033		0.85	1	81.786			
T9	9.61	14.99	A	0.356	2.157	6	0.85	1	77.168	2.14	107.08	C
140.00-120.00			B	0.356	2.157		0.85	1	77.168			
			C	0.356	2.157		0.85	1	77.168			
T10	9.51	23.11	A	0.346	2.181	6	0.85	1	84.064	2.12	105.80	C
120.00-100.00			B	0.346	2.181		0.85	1	84.064			
			C	0.346	2.181		0.85	1	84.064			
T11	9.39	23.24	A	0.315	2.258	5	0.85	1	83.347	2.01	100.69	C
100.00-80.00			B	0.315	2.258		0.85	1	83.347			
			C	0.315	2.258		0.85	1	83.347			
T12	9.25	23.84	A	0.291	2.32	5	0.85	1	83.797	1.89	94.66	C
80.00-60.00			B	0.291	2.32		0.85	1	83.797			
			C	0.291	2.32		0.85	1	83.797			
T13	9.07	23.31	A	0.269	2.381	4	0.85	1	83.765	1.73	86.53	C
60.00-40.00			B	0.269	2.381		0.85	1	83.765			
			C	0.269	2.381		0.85	1	83.765			
T14	8.80	23.51	A	0.251	2.433	4	0.85	1	84.137	1.50	75.14	C
40.00-20.00			B	0.251	2.433		0.85	1	84.137			
			C	0.251	2.433		0.85	1	84.137			
T15	5.80	21.60	A	0.232	2.492	4	0.85	1	83.159	1.24	62.22	C
20.00-0.00			B	0.232	2.492		0.85	1	83.159			
			C	0.232	2.492		0.85	1	83.159			
Sum Weight:	87.55	222.73						OTM	2568.07 kip-ft	20.90		

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	0.02	0.65	A	0.141	2.806	10	1	1	4.100	0.13	12.72	C
280.00-270.00			B	0.141	2.806		1	1	4.100			
			C	0.141	2.806		1	1	4.100			
T2	0.03	1.34	A	0.137	2.821	10	1	1	7.995	0.25	12.32	C
270.00-250.00			B	0.137	2.821		1	1	7.995			
			C	0.137	2.821		1	1	7.995			
T3	0.25	1.89	A	0.157	2.744	10	1	1	9.323	0.53	26.38	C
250.00-230.00			B	0.157	2.744		1	1	9.323			

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
			C	0.157	2.744		1	1	9.323			
T4	0.13	1.42	A	0.267	2.386	10	1	1	12.533	0.41	41.08	C
230.00-220.00			B	0.267	2.386		1	1	12.533			
			C	0.267	2.386		1	1	12.533			
T5	0.26	2.78	A	0.225	2.514	10	1	1	25.670	0.84	42.19	C
220.00-200.00			B	0.225	2.514		1	1	25.670			
			C	0.225	2.514		1	1	25.670			
T6	0.48	3.43	A	0.207	2.574	9	1	1	30.821	1.19	59.53	C
200.00-180.00			B	0.207	2.574		1	1	30.821			
			C	0.207	2.574		1	1	30.821			
T7	0.75	4.33	A	0.198	2.603	9	1	1	36.106	1.57	78.29	C
180.00-160.00			B	0.198	2.603		1	1	36.106			
			C	0.198	2.603		1	1	36.106			
T8	0.83	5.01	A	0.179	2.668	9	1	1	37.951	1.64	82.17	C
160.00-140.00			B	0.179	2.668		1	1	37.951			
			C	0.179	2.668		1	1	37.951			
T9	1.07	4.89	A	0.153	2.761	8	1	1	36.612	1.82	91.03	C
140.00-120.00			B	0.153	2.761		1	1	36.612			
			C	0.153	2.761		1	1	36.612			
T10	1.07	7.29	A	0.145	2.789	8	1	1	36.980	1.75	87.49	C
120.00-100.00			B	0.145	2.789		1	1	36.980			
			C	0.145	2.789		1	1	36.980			
T11	1.07	7.41	A	0.133	2.836	8	1	1	37.573	1.67	83.70	C
100.00-80.00			B	0.133	2.836		1	1	37.573			
			C	0.133	2.836		1	1	37.573			
T12	1.07	8.16	A	0.126	2.86	7	1	1	39.313	1.59	79.66	C
80.00-60.00			B	0.126	2.86		1	1	39.313			
			C	0.126	2.86		1	1	39.313			
T13	1.07	8.29	A	0.118	2.893	6	1	1	40.204	1.47	73.40	C
60.00-40.00			B	0.118	2.893		1	1	40.204			
			C	0.118	2.893		1	1	40.204			
T14	1.07	9.28	A	0.115	2.905	5	1	1	42.375	1.30	65.01	C
40.00-20.00			B	0.115	2.905		1	1	42.375			
			C	0.115	2.905		1	1	42.375			
T15	0.75	9.42	A	0.109	2.93	5	1	1	43.319	1.10	54.97	C
20.00-0.00			B	0.109	2.93		1	1	43.319			
			C	0.109	2.93		1	1	43.319			
Sum Weight:	9.90	75.61						OTM	2048.97 kip-ft	17.26		

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 ft²	F K	w plf	Ctrl. Face
T1	0.02	0.65	A	0.141	2.806	10	0.8	1	4.100	0.13	12.72	C
280.00-270.00			B	0.141	2.806		0.8	1	4.100			
			C	0.141	2.806		0.8	1	4.100			
T2	0.03	1.34	A	0.137	2.821	10	0.8	1	7.995	0.25	12.32	C
270.00-250.00			B	0.137	2.821		0.8	1	7.995			
			C	0.137	2.821		0.8	1	7.995			
T3	0.25	1.89	A	0.157	2.744	10	0.8	1	9.323	0.53	26.38	C
250.00-230.00			B	0.157	2.744		0.8	1	9.323			

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
			C	0.157	2.744		0.8	1	9.323			
T4	0.13	1.42	A	0.267	2.386	10	0.8	1	11.517	0.39	39.06	C
230.00-220.00			B	0.267	2.386		0.8	1	11.517			
			C	0.267	2.386		0.8	1	11.517			
T5	0.26	2.78	A	0.225	2.514	10	0.8	1	23.577	0.80	40.05	C
220.00-200.00			B	0.225	2.514		0.8	1	23.577			
			C	0.225	2.514		0.8	1	23.577			
T6	0.48	3.43	A	0.207	2.574	9	0.8	1	27.678	1.13	56.33	C
200.00-180.00			B	0.207	2.574		0.8	1	27.678			
			C	0.207	2.574		0.8	1	27.678			
T7	0.75	4.33	A	0.198	2.603	9	0.8	1	32.135	1.49	74.33	C
180.00-160.00			B	0.198	2.603		0.8	1	32.135			
			C	0.198	2.603		0.8	1	32.135			
T8	0.83	5.01	A	0.179	2.668	9	0.8	1	33.776	1.56	78.06	C
160.00-140.00			B	0.179	2.668		0.8	1	33.776			
			C	0.179	2.668		0.8	1	33.776			
T9	1.07	4.89	A	0.153	2.761	8	0.8	1	32.685	1.74	87.19	C
140.00-120.00			B	0.153	2.761		0.8	1	32.685			
			C	0.153	2.761		0.8	1	32.685			
T10	1.07	7.29	A	0.145	2.789	8	0.8	1	34.142	1.70	84.81	C
120.00-100.00			B	0.145	2.789		0.8	1	34.142			
			C	0.145	2.789		0.8	1	34.142			
T11	1.07	7.41	A	0.133	2.836	8	0.8	1	34.608	1.62	81.02	C
100.00-80.00			B	0.133	2.836		0.8	1	34.608			
			C	0.133	2.836		0.8	1	34.608			
T12	1.07	8.16	A	0.126	2.86	7	0.8	1	36.171	1.54	76.99	C
80.00-60.00			B	0.126	2.86		0.8	1	36.171			
			C	0.126	2.86		0.8	1	36.171			
T13	1.07	8.29	A	0.118	2.893	6	0.8	1	36.879	1.42	70.80	C
60.00-40.00			B	0.118	2.893		0.8	1	36.879			
			C	0.118	2.893		0.8	1	36.879			
T14	1.07	9.28	A	0.115	2.905	5	0.8	1	38.864	1.25	62.63	C
40.00-20.00			B	0.115	2.905		0.8	1	38.864			
			C	0.115	2.905		0.8	1	38.864			
T15	0.75	9.42	A	0.109	2.93	5	0.8	1	39.616	1.05	52.44	C
20.00-0.00			B	0.109	2.93		0.8	1	39.616			
			C	0.109	2.93		0.8	1	39.616			
Sum Weight:	9.90	75.61						OTM	1968.52 kip-ft	16.59		

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	0.02	0.65	A	0.141	2.806	10	0.85	1	4.100	0.13	12.72	C
280.00-270.00			B	0.141	2.806		0.85	1	4.100			
			C	0.141	2.806		0.85	1	4.100			
T2	0.03	1.34	A	0.137	2.821	10	0.85	1	7.995	0.25	12.32	C
270.00-250.00			B	0.137	2.821		0.85	1	7.995			
			C	0.137	2.821		0.85	1	7.995			
T3	0.25	1.89	A	0.157	2.744	10	0.85	1	9.323	0.53	26.38	C
250.00-230.00			B	0.157	2.744		0.85	1	9.323			

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	0.157	2.744		0.85	1	9.323			
T4	0.13	1.42	A	0.267	2.386	10	0.85	1	11.771	0.40	39.57	C
230.00-220.00			B	0.267	2.386		0.85	1	11.771			
			C	0.267	2.386		0.85	1	11.771			
T5	0.26	2.78	A	0.225	2.514	10	0.85	1	24.100	0.81	40.59	C
220.00-200.00			B	0.225	2.514		0.85	1	24.100			
			C	0.225	2.514		0.85	1	24.100			
T6	0.48	3.43	A	0.207	2.574	9	0.85	1	28.464	1.14	57.13	C
200.00-180.00			B	0.207	2.574		0.85	1	28.464			
			C	0.207	2.574		0.85	1	28.464			
T7	0.75	4.33	A	0.198	2.603	9	0.85	1	33.128	1.51	75.32	C
180.00-160.00			B	0.198	2.603		0.85	1	33.128			
			C	0.198	2.603		0.85	1	33.128			
T8	0.83	5.01	A	0.179	2.668	9	0.85	1	34.819	1.58	79.09	C
160.00-140.00			B	0.179	2.668		0.85	1	34.819			
			C	0.179	2.668		0.85	1	34.819			
T9	1.07	4.89	A	0.153	2.761	8	0.85	1	33.667	1.76	88.15	C
140.00-120.00			B	0.153	2.761		0.85	1	33.667			
			C	0.153	2.761		0.85	1	33.667			
T10	1.07	7.29	A	0.145	2.789	8	0.85	1	34.852	1.71	85.48	C
120.00-100.00			B	0.145	2.789		0.85	1	34.852			
			C	0.145	2.789		0.85	1	34.852			
T11	1.07	7.41	A	0.133	2.836	8	0.85	1	35.349	1.63	81.69	C
100.00-80.00			B	0.133	2.836		0.85	1	35.349			
			C	0.133	2.836		0.85	1	35.349			
T12	1.07	8.16	A	0.126	2.86	7	0.85	1	36.956	1.55	77.66	C
80.00-60.00			B	0.126	2.86		0.85	1	36.956			
			C	0.126	2.86		0.85	1	36.956			
T13	1.07	8.29	A	0.118	2.893	6	0.85	1	37.710	1.43	71.45	C
60.00-40.00			B	0.118	2.893		0.85	1	37.710			
			C	0.118	2.893		0.85	1	37.710			
T14	1.07	9.28	A	0.115	2.905	5	0.85	1	39.741	1.26	63.23	C
40.00-20.00			B	0.115	2.905		0.85	1	39.741			
			C	0.115	2.905		0.85	1	39.741			
T15	0.75	9.42	A	0.109	2.93	5	0.85	1	40.542	1.06	53.07	C
20.00-0.00			B	0.109	2.93		0.85	1	40.542			
			C	0.109	2.93		0.85	1	40.542			
Sum Weight:	9.90	75.61						OTM	1988.63 kip-ft	16.75		

Force Totals

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M_x kip-ft	Sum of Overturning Moments, M_z kip-ft	Sum of Torques kip-ft
Leg Weight	50.91					
Bracing Weight	24.70					
Total Member Self-Weight	75.61			-6.60	5.20	
Total Weight	107.21			-6.60	5.20	
Wind 0 deg - No Ice		0.03	-59.11	-8099.93	1.45	-4.23
Wind 30 deg - No Ice		28.93	-50.05	-6880.94	-3968.03	-6.16
Wind 60 deg - No Ice		49.70	-28.69	-3951.39	-6827.37	-6.49
Wind 90 deg - No Ice		57.81	-0.03	-10.35	-7934.76	-5.17

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M_x kip-ft	Sum of Overturning Moments, M_z kip-ft	Sum of Torques kip-ft
Wind 120 deg - No Ice		51.20	29.53	4036.81	-7005.70	-2.46
Wind 150 deg - No Ice		28.88	50.03	6863.98	-3961.53	0.99
Wind 180 deg - No Ice		-0.03	57.34	7876.47	8.96	4.09
Wind 210 deg - No Ice		-28.93	50.05	6867.74	3978.44	6.16
Wind 240 deg - No Ice		-51.23	29.58	4043.31	7019.86	6.69
Wind 270 deg - No Ice		-57.81	0.03	-2.85	7945.17	5.17
Wind 300 deg - No Ice		-49.67	-28.65	-3944.89	6834.02	2.40
Wind 330 deg - No Ice		-28.88	-50.03	-6877.18	3971.94	-0.99
Member Ice	147.12					
Total Weight Ice	368.23			-37.43	61.32	
Wind 0 deg - Ice		0.01	-28.54	-4132.11	60.32	-2.25
Wind 30 deg - Ice		14.14	-24.48	-3556.50	-1971.57	-2.24
Wind 60 deg - Ice		24.41	-14.09	-2064.44	-3449.58	-1.67
Wind 90 deg - Ice		28.27	-0.01	-38.42	-4002.74	-0.65
Wind 120 deg - Ice		24.72	14.26	2009.06	-3485.29	0.56
Wind 150 deg - Ice		14.13	24.47	3480.65	-1969.85	1.59
Wind 180 deg - Ice		-0.01	28.17	4014.88	62.31	2.20
Wind 210 deg - Ice		-14.14	24.48	3481.65	2094.21	2.24
Wind 240 deg - Ice		-24.73	14.28	2010.78	3608.92	1.68
Wind 270 deg - Ice		-28.27	0.01	-36.43	4125.37	0.65
Wind 300 deg - Ice		-24.40	-14.08	-2062.71	3571.22	-0.53
Wind 330 deg - Ice		-14.13	-24.47	-3555.50	2092.48	-1.59
Total Weight	107.21			-6.60	5.20	
Wind 0 deg - Service		0.01	-22.61	-3096.83	-1.11	-1.62
Wind 30 deg - Service		11.07	-19.15	-2630.43	-1519.89	-2.36
Wind 60 deg - Service		19.01	-10.98	-1509.55	-2613.90	-2.48
Wind 90 deg - Service		22.12	-0.01	-1.66	-3037.61	-1.98
Wind 120 deg - Service		19.59	11.30	1546.84	-2682.14	-0.94
Wind 150 deg - Service		11.05	19.14	2628.55	-1517.40	0.38
Wind 180 deg - Service		-0.01	21.94	3015.94	1.76	1.57
Wind 210 deg - Service		-11.07	19.15	2629.98	1520.53	2.36
Wind 240 deg - Service		-19.60	11.32	1549.32	2684.22	2.56
Wind 270 deg - Service		-22.12	0.01	1.21	3038.25	1.98
Wind 300 deg - Service		-19.00	-10.96	-1507.06	2613.11	0.92
Wind 330 deg - Service		-11.05	-19.14	-2628.99	1518.04	-0.38

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice

Comb. No.	Description
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

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	280 - 270	Leg	Max Tension	7	5.57	0.36	-0.24
			Max. Compression	2	-8.30	0.00	0.16
			Max. Mx	20	-1.36	0.43	-0.00
			Max. My	2	-8.29	-0.01	-0.43
			Max. Vy	8	1.00	-0.13	0.00
			Max. Vx	2	-1.08	0.00	0.16
		Diagonal	Max Tension	24	1.40	0.00	0.00
			Max. Compression	24	-1.40	0.00	0.00
			Max. Mx	29	0.63	-0.01	-0.00
			Max. My	22	-0.14	-0.00	0.00
			Max. Vy	38	0.01	-0.01	0.00
			Max. Vx	22	-0.00	-0.00	0.00
		Top Girt	Max Tension	18	0.58	0.00	0.00
			Max. Compression	6	-0.60	0.00	0.00
			Max. Mx	26	-0.03	0.03	0.00
			Max. My	20	0.00	0.00	-0.00
			Max. Vy	26	-0.02	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
		Bottom Girt	Max Tension	6	0.59	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	3	-0.57	0.00	0.00
			Max. Mx	26	0.03	0.03	0.00
			Max. My	20	0.03	0.00	-0.00
			Max. Vy	26	-0.02	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
		Mid Girt	Max Tension	38	0.01	0.00	0.00
			Max. Compression	15	-0.00	0.00	0.00
			Max. Mx	26	0.01	0.03	0.00
			Max. My	20	0.01	0.00	-0.00
			Max. Vy	26	-0.02	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
T2	270 - 250	Leg	Max Tension	7	21.00	0.49	-0.31
			Max. Compression	10	-24.71	-0.21	-0.13
			Max. Mx	8	-7.40	-0.60	-0.09
			Max. My	2	-8.30	0.01	0.65
			Max. Vy	21	-1.40	0.21	-0.06
			Max. Vx	3	-1.54	-0.00	0.25
		Diagonal	Max Tension	17	1.80	0.00	0.00
			Max. Compression	5	-1.80	0.00	0.00
			Max. Mx	36	0.76	-0.01	-0.00
			Max. My	20	-0.81	-0.00	0.00
			Max. Vy	36	0.01	-0.01	-0.00
			Max. Vx	20	-0.00	-0.00	0.00
		Top Girt	Max Tension	18	0.66	0.00	0.00
			Max. Compression	22	-0.66	0.00	0.00
			Max. Mx	26	-0.01	0.03	0.00
			Max. My	20	-0.02	0.00	-0.00
			Max. Vy	26	-0.02	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
		Bottom Girt	Max Tension	6	0.73	0.00	0.00
			Max. Compression	11	-0.73	0.00	0.00
			Max. Mx	26	0.04	0.03	0.00
			Max. My	20	0.06	0.00	-0.00
			Max. Vy	26	-0.02	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
		Mid Girt	Max Tension	6	0.09	0.00	0.00
			Max. Compression	3	-0.07	0.00	0.00
			Max. Mx	26	0.03	0.03	0.00
			Max. My	20	0.01	0.00	-0.00
			Max. Vy	26	-0.02	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
T3	250 - 230	Leg	Max Tension	23	55.76	-0.22	-0.14
			Max. Compression	2	-64.63	0.01	2.17
			Max. Mx	8	-56.22	-1.88	-0.50
			Max. My	3	-63.34	0.01	2.17
			Max. Vy	9	3.89	-1.88	-0.50
			Max. Vx	14	4.44	-0.01	-2.13
		Diagonal	Max Tension	13	4.23	0.00	0.00
			Max. Compression	24	-4.29	0.00	0.00
			Max. Mx	27	1.35	-0.01	0.00
			Max. My	20	-1.69	-0.00	0.00
			Max. Vy	27	0.02	-0.01	-0.00
			Max. Vx	20	-0.00	-0.00	0.00
		Top Girt	Max Tension	18	1.23	0.00	0.00
			Max. Compression	23	-1.21	0.00	0.00
			Max. Mx	26	0.01	0.04	0.00
			Max. My	20	-0.03	0.00	-0.00
			Max. Vy	26	-0.03	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
		Bottom Girt	Max Tension	22	1.29	0.00	0.00
			Max. Compression	3	-1.17	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	26	0.22	0.04	0.00
			Max. My	20	0.05	0.00	-0.00
			Max. Vy	26	-0.03	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
T4	230 - 220	Leg	Max Tension	23	58.64	-2.13	-0.10
			Max. Compression	2	-66.89	2.23	-0.00
			Max. Mx	22	57.22	-2.81	0.04
			Max. My	24	-4.65	-0.30	5.57
			Max. Vy	14	0.20	-2.79	-0.01
			Max. Vx	24	-0.56	-0.30	5.57
		Diagonal	Max Tension	21	5.11	0.00	0.00
			Max. Compression	10	-5.89	0.00	0.00
			Max. Mx	22	4.04	0.13	0.01
			Max. My	24	-4.36	-0.09	-0.04
			Max. Vy	37	0.04	0.08	-0.00
			Max. Vx	24	0.01	0.00	0.00
T5	220 - 200	Leg	Max Tension	23	82.61	-3.49	-0.03
			Max. Compression	2	-94.15	4.49	0.02
			Max. Mx	2	-94.15	4.49	0.02
			Max. My	24	-5.87	-0.30	5.57
			Max. Vy	10	-0.25	3.54	0.02
			Max. Vx	20	-0.33	-0.29	-5.45
		Diagonal	Max Tension	18	4.75	0.00	0.00
			Max. Compression	18	-4.93	0.00	0.00
			Max. Mx	27	2.02	0.09	-0.01
			Max. My	36	0.78	0.08	-0.01
			Max. Vy	38	0.05	0.07	0.01
			Max. Vx	36	0.00	0.00	0.00
T6	200 - 180	Leg	Max Tension	23	106.76	-2.99	-0.02
			Max. Compression	2	-122.46	3.81	-0.01
			Max. Mx	2	-104.36	4.49	0.02
			Max. My	4	-6.86	-0.13	-4.18
			Max. Vy	22	-0.97	-4.21	-0.10
			Max. Vx	4	-0.93	-0.13	-4.18
		Diagonal	Max Tension	23	7.63	0.00	0.00
			Max. Compression	10	-9.03	0.00	0.00
			Max. Mx	27	-0.90	0.12	-0.02
			Max. My	37	-3.84	0.08	-0.02
			Max. Vy	37	0.07	0.11	0.02
			Max. Vx	37	0.00	0.00	0.00
		Top Girt	Max Tension	22	3.69	0.00	0.00
			Max. Compression	3	-2.89	0.00	0.00
			Max. Mx	26	1.41	-0.14	0.00
			Max. My	28	0.12	0.00	0.00
			Max. Vy	26	0.07	0.00	0.00
			Max. Vx	28	0.00	0.00	0.00
		Mid Girt	Max Tension	22	5.42	0.00	0.00
			Max. Compression	3	-4.14	0.00	0.00
			Max. Mx	26	2.16	-0.18	0.00
			Max. My	28	0.44	0.00	0.01
			Max. Vy	26	-0.08	0.00	0.00
			Max. Vx	28	-0.00	0.00	0.00
T7	180 - 160	Leg	Max Tension	7	141.03	-3.32	-0.00
			Max. Compression	2	-163.93	4.91	-0.01
			Max. Mx	2	-163.93	4.91	-0.01
			Max. My	4	-10.15	-0.13	-4.13
			Max. Vy	22	-0.87	-3.64	-0.02
			Max. Vx	4	-1.06	-0.13	-4.13
		Diagonal	Max Tension	23	9.53	0.00	0.00
			Max. Compression	10	-10.99	0.00	0.00
			Max. Mx	27	-0.10	0.13	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. My	37	-3.59	0.11	-0.02
			Max. Vy	37	0.08	0.13	0.02
			Max. Vx	37	0.01	0.00	0.00
		Top Girt	Max Tension	22	5.78	0.00	0.00
			Max. Compression	3	-4.43	0.00	0.00
			Max. Mx	26	2.34	-0.30	0.00
			Max. My	26	2.26	0.00	0.01
			Max. Vy	26	-0.12	0.00	0.00
			Max. Vx	26	-0.00	0.00	0.00
		Mid Girt	Max Tension	6	5.16	0.00	0.00
			Max. Compression	3	-3.85	0.00	0.00
			Max. Mx	26	2.32	-0.37	0.00
			Max. My	26	2.26	0.00	0.01
			Max. Vy	26	0.13	0.00	0.00
			Max. Vx	26	0.00	0.00	0.00
T8	160 - 140	Leg	Max Tension	7	183.98	-3.59	-0.01
			Max. Compression	2	-216.88	4.21	-0.03
			Max. Mx	2	-188.73	4.91	-0.01
			Max. My	24	-15.16	-0.28	6.13
			Max. Vy	6	-1.51	-4.41	0.01
			Max. Vx	12	-0.97	0.20	-2.22
		Diagonal	Max Tension	12	11.44	0.00	0.00
			Max. Compression	12	-11.40	0.00	0.00
			Max. Mx	35	3.49	0.20	0.02
			Max. My	38	-4.09	0.11	-0.03
			Max. Vy	37	0.10	0.18	0.02
			Max. Vx	37	0.01	0.00	0.00
		Top Girt	Max Tension	6	4.11	0.00	0.00
			Max. Compression	3	-3.11	0.00	0.00
			Max. Mx	26	1.80	-0.41	0.00
			Max. My	26	1.77	0.00	0.01
			Max. Vy	26	-0.14	0.00	0.00
			Max. Vx	26	-0.00	0.00	0.00
T9	140 - 120	Leg	Max Tension	7	230.84	-4.13	0.00
			Max. Compression	2	-271.03	10.01	0.03
			Max. Mx	18	-271.03	10.02	-0.06
			Max. My	20	-20.21	0.07	-9.10
			Max. Vy	6	-1.41	-4.20	0.00
			Max. Vx	24	1.57	-0.05	3.95
		Diagonal	Max Tension	5	12.95	0.00	0.00
			Max. Compression	16	-13.46	0.00	0.00
			Max. Mx	35	4.13	0.22	-0.02
			Max. My	37	-2.70	0.18	-0.03
			Max. Vy	37	0.11	0.22	0.03
			Max. Vx	37	0.01	0.00	0.00
T10	120 - 100	Leg	Max Tension	7	262.27	-9.62	0.06
			Max. Compression	18	-306.11	9.76	-0.05
			Max. Mx	6	255.29	-11.56	0.07
			Max. My	20	-22.61	-1.08	-17.66
			Max. Vy	14	0.49	-11.55	-0.05
			Max. Vx	20	0.79	-1.08	-17.66
		Diagonal	Max Tension	17	17.82	0.00	0.00
			Max. Compression	16	-19.02	0.00	0.00
			Max. Mx	37	3.73	-0.58	0.08
			Max. My	4	-18.62	-0.08	-0.12
			Max. Vy	37	-0.21	-0.58	0.08
			Max. Vx	37	-0.02	0.00	0.00
T11	100 - 80	Leg	Max Tension	7	308.97	-11.29	0.07
			Max. Compression	18	-361.01	14.48	-0.05
			Max. Mx	18	-361.01	14.48	-0.05
			Max. My	20	-24.42	-1.08	-17.66

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	10	-0.53	14.47	0.01
			Max. Vx	20	-0.82	-1.08	-17.66
		Diagonal	Max Tension	16	19.03	0.00	0.00
			Max. Compression	16	-19.69	0.00	0.00
			Max. Mx	37	4.88	-0.67	0.11
			Max. My	33	4.95	-0.67	0.11
			Max. Vy	37	-0.23	-0.67	0.11
			Max. Vx	34	0.02	0.00	0.00
T12	80 - 60	Leg	Max Tension	7	351.99	-12.95	0.06
			Max. Compression	18	-411.87	10.54	-0.04
			Max. Mx	18	-409.58	14.48	-0.05
			Max. My	20	-30.11	-1.25	-16.28
			Max. Vy	33	-0.52	-5.40	-0.06
			Max. Vx	20	0.74	-1.25	-16.28
		Diagonal	Max Tension	16	18.94	0.00	0.00
			Max. Compression	16	-19.56	0.00	0.00
			Max. Mx	37	3.57	-0.76	0.11
			Max. My	27	-1.01	-0.73	-0.12
			Max. Vy	37	-0.24	-0.76	0.11
			Max. Vx	27	-0.02	0.00	0.00
T13	60 - 40	Leg	Max Tension	7	392.46	-12.20	0.06
			Max. Compression	18	-459.74	15.33	-0.04
			Max. Mx	18	-459.74	15.33	-0.04
			Max. My	20	-31.19	-1.25	-16.28
			Max. Vy	33	0.84	-12.19	-0.05
			Max. Vx	20	-0.81	-1.25	-16.28
		Diagonal	Max Tension	17	19.44	0.00	0.00
			Max. Compression	16	-20.59	0.00	0.00
			Max. Mx	37	5.67	-0.82	0.11
			Max. My	33	5.77	-0.82	0.12
			Max. Vy	37	-0.26	-0.82	0.11
			Max. Vx	34	0.02	0.00	0.00
T14	40 - 20	Leg	Max Tension	7	434.15	-13.23	0.04
			Max. Compression	18	-511.07	10.99	-0.02
			Max. Mx	18	-508.44	15.33	-0.04
			Max. My	20	-38.39	-1.81	-25.20
			Max. Vy	33	-1.14	-12.19	-0.05
			Max. Vx	20	1.23	-1.81	-25.20
		Diagonal	Max Tension	16	19.34	0.00	0.00
			Max. Compression	16	-19.46	0.00	0.00
			Max. Mx	37	1.75	-0.95	0.14
			Max. My	38	-5.17	-0.80	-0.15
			Max. Vy	37	-0.28	-0.95	0.14
			Max. Vx	38	-0.02	0.00	0.00
T15	20 - 0	Leg	Max Tension	7	468.31	-13.58	0.05
			Max. Compression	18	-552.20	0.00	0.00
			Max. Mx	6	458.66	-14.02	0.06
			Max. My	20	-38.88	-1.81	-25.20
			Max. Vy	14	-1.04	-14.01	-0.05
			Max. Vx	20	-1.54	-1.81	-25.20
		Diagonal	Max Tension	17	20.33	0.00	0.00
			Max. Compression	18	-22.33	0.00	0.00
			Max. Mx	36	7.78	-0.93	0.13
			Max. My	27	6.18	-0.92	-0.13
			Max. Vy	36	-0.28	-0.93	0.13
			Max. Vx	27	-0.02	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	18	577.87	53.91	-31.39
	Max. H_x	18	577.87	53.91	-31.39
	Max. H_z	7	-488.35	-47.21	27.50
	Min. Vert	7	-488.35	-47.21	27.50
	Min. H_x	7	-488.35	-47.21	27.50
	Min. H_z	18	577.87	53.91	-31.39
Leg B	Max. Vert	10	577.00	-53.94	-31.23
	Max. H_x	23	-488.25	47.24	27.36
	Max. H_z	23	-488.25	47.24	27.36
	Min. Vert	23	-488.25	47.24	27.36
	Min. H_x	10	577.00	-53.94	-31.23
	Min. H_z	10	577.00	-53.94	-31.23
Leg A	Max. Vert	2	577.71	-0.15	62.34
	Max. H_x	21	31.94	4.05	2.58
	Max. H_z	2	577.71	-0.15	62.34
	Min. Vert	15	-487.72	0.14	-54.58
	Min. H_x	9	32.44	-4.05	2.64
	Min. H_z	15	-487.72	0.14	-54.58

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	107.21	-0.00	-0.00	-6.60	5.20	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	128.64	0.04	-94.27	-12968.95	0.24	-6.79
0.9 Dead+1.6 Wind 0 deg - No Ice	96.48	0.04	-94.35	-12965.48	-1.32	-6.78
1.2 Dead+1.6 Wind 30 deg - No Ice	128.64	46.11	-79.82	-11014.76	-6349.34	-9.86
0.9 Dead+1.6 Wind 30 deg - No Ice	96.48	46.15	-79.89	-11011.56	-6350.20	-9.83
1.2 Dead+1.6 Wind 60 deg - No Ice	128.64	79.23	-45.74	-6320.01	-10926.47	-10.42
0.9 Dead+1.6 Wind 60 deg - No Ice	96.48	79.29	-45.78	-6317.34	-10926.83	-10.42
1.2 Dead+1.6 Wind 90 deg - No Ice	128.64	92.18	-0.02	-8.72	-12703.74	-8.35
0.9 Dead+1.6 Wind 90 deg - No Ice	96.48	92.26	-0.02	-6.75	-12703.90	-8.35
1.2 Dead+1.6 Wind 120 deg - No Ice	128.64	81.66	47.10	6467.34	-11221.37	-3.96
0.9 Dead+1.6 Wind 120 deg - No Ice	96.48	81.73	47.14	6468.57	-11221.64	-3.95
1.2 Dead+1.6 Wind 150 deg - No Ice	128.64	46.07	79.76	10987.60	-6348.14	1.62
0.9 Dead+1.6 Wind 150 deg - No Ice	96.48	46.11	79.83	10988.36	-6349.00	1.63
1.2 Dead+1.6 Wind 180 deg - No Ice	128.64	-0.04	91.41	12605.75	12.27	6.57
0.9 Dead+1.6 Wind 180 deg - No Ice	96.48	-0.04	91.49	12606.34	10.71	6.57
1.2 Dead+1.6 Wind 210 deg -	128.64	-46.15	79.80	10993.61	6371.08	9.86

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
No Ice						
0.9 Dead+1.6 Wind 210 deg - No Ice	96.48	-46.19	79.87	10994.37	6368.81	9.83
1.2 Dead+1.6 Wind 240 deg - No Ice	128.64	-81.71	47.17	6477.76	11239.89	10.76
0.9 Dead+1.6 Wind 240 deg - No Ice	96.48	-81.78	47.21	6479.00	11237.05	10.73
1.2 Dead+1.6 Wind 270 deg - No Ice	128.64	-92.18	0.07	3.32	12716.25	8.35
0.9 Dead+1.6 Wind 270 deg - No Ice	96.48	-92.26	0.07	5.28	12713.28	8.35
1.2 Dead+1.6 Wind 300 deg - No Ice	128.64	-79.18	-45.67	-6309.58	10932.96	3.86
0.9 Dead+1.6 Wind 300 deg - No Ice	96.48	-79.25	-45.71	-6306.92	10930.20	3.86
1.2 Dead+1.6 Wind 330 deg - No Ice	128.64	-46.03	-79.78	-11008.74	6351.43	-1.62
0.9 Dead+1.6 Wind 330 deg - No Ice	96.48	-46.07	-79.85	-11005.54	6349.17	-1.64
1.2 Dead+1.0 Ice+1.0 Temp	389.67	0.00	0.00	-38.57	62.22	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	389.66	0.01	-28.21	-4136.65	61.34	-2.35
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	389.66	13.98	-24.19	-3560.49	-1970.84	-2.39
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	389.66	24.13	-13.92	-2066.57	-3450.13	-1.78
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	389.66	27.95	-0.00	-38.52	-4004.27	-0.70
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	389.66	24.44	14.10	2009.52	-3487.15	0.56
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	389.66	13.97	24.19	3481.13	-1971.06	1.63
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	389.66	-0.00	27.84	4015.52	63.36	2.31
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	389.66	-13.98	24.20	3482.12	2097.52	2.39
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	389.66	-24.44	14.11	2011.26	3612.85	1.79
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	389.66	-27.94	0.01	-36.49	4128.95	0.70
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	389.66	-24.11	-13.91	-2064.81	3573.79	-0.53
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	389.66	-13.96	-24.19	-3559.48	2093.79	-1.63
Dead+Wind 0 deg - Service	107.21	0.01	-22.55	-3104.20	3.77	-1.62
Dead+Wind 30 deg - Service	107.21	11.03	-19.09	-2637.50	-1515.03	-2.36
Dead+Wind 60 deg - Service	107.21	18.96	-10.94	-1516.06	-2609.27	-2.50
Dead+Wind 90 deg - Service	107.21	22.05	-0.01	-7.71	-3033.34	-1.99
Dead+Wind 120 deg - Service	107.21	19.53	11.27	1540.96	-2678.11	-0.95
Dead+Wind 150 deg - Service	107.21	11.02	19.08	2622.55	-1513.11	0.38
Dead+Wind 180 deg - Service	107.21	-0.01	21.87	3009.86	6.64	1.57
Dead+Wind 210 deg - Service	107.21	-11.04	19.09	2623.99	1526.01	2.36
Dead+Wind 240 deg - Service	107.21	-19.54	11.28	1543.45	2689.97	2.57
Dead+Wind 270 deg - Service	107.21	-22.05	0.01	-4.83	3043.76	1.99
Dead+Wind 300 deg - Service	107.21	-18.95	-10.93	-1513.57	2618.24	0.92
Dead+Wind 330 deg - Service	107.21	-11.02	-19.08	-2636.06	1522.95	-0.38

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	-107.21	0.00	0.00	107.21	0.00	0.000%
2	0.04	-128.66	-94.57	-0.04	128.64	94.27	0.186%
3	0.04	-96.49	-94.57	-0.04	96.48	94.35	0.160%
4	46.29	-128.66	-80.09	-46.11	128.64	79.82	0.200%
5	46.29	-96.49	-80.09	-46.15	96.48	79.89	0.177%
6	79.52	-128.66	-45.91	-79.23	128.64	45.74	0.213%
7	79.52	-96.49	-45.91	-79.29	96.48	45.78	0.193%
8	92.50	-128.66	-0.04	-92.18	128.64	0.02	0.200%
9	92.50	-96.49	-0.04	-92.26	96.48	0.02	0.177%
10	81.92	-128.66	47.25	-81.66	128.64	-47.10	0.186%
11	81.92	-96.49	47.25	-81.73	96.48	-47.14	0.160%
12	46.21	-128.66	80.04	-46.07	128.64	-79.76	0.200%
13	46.21	-96.49	80.04	-46.11	96.48	-79.83	0.177%
14	-0.04	-128.66	91.74	0.04	128.64	-91.41	0.213%
15	-0.04	-96.49	91.74	0.04	96.48	-91.49	0.193%
16	-46.29	-128.66	80.09	46.15	128.64	-79.80	0.200%
17	-46.29	-96.49	80.09	46.19	96.48	-79.87	0.177%
18	-81.96	-128.66	47.32	81.71	128.64	-47.17	0.186%
19	-81.96	-96.49	47.32	81.78	96.48	-47.21	0.161%
20	-92.50	-128.66	0.04	92.18	128.64	-0.07	0.200%
21	-92.50	-96.49	0.04	92.26	96.48	-0.07	0.177%
22	-79.47	-128.66	-45.83	79.18	128.64	45.67	0.213%
23	-79.47	-96.49	-45.83	79.25	96.48	45.71	0.193%
24	-46.21	-128.66	-80.04	46.03	128.64	79.78	0.200%
25	-46.21	-96.49	-80.04	46.07	96.48	79.85	0.177%
26	0.00	-389.67	0.00	-0.00	389.67	-0.00	0.001%
27	0.01	-389.67	-28.54	-0.01	389.66	28.21	0.085%
28	14.14	-389.67	-24.48	-13.98	389.66	24.19	0.085%
29	24.41	-389.67	-14.09	-24.13	389.66	13.92	0.085%
30	28.27	-389.67	-0.01	-27.95	389.66	0.00	0.083%
31	24.72	-389.67	14.26	-24.44	389.66	-14.10	0.083%
32	14.13	-389.67	24.47	-13.97	389.66	-24.19	0.083%
33	-0.01	-389.67	28.17	0.00	389.66	-27.84	0.084%
34	-14.14	-389.67	24.48	13.98	389.66	-24.20	0.085%
35	-24.73	-389.67	14.28	24.44	389.66	-14.11	0.085%
36	-28.27	-389.67	0.01	27.94	389.66	-0.01	0.086%
37	-24.40	-389.67	-14.08	24.11	389.66	13.91	0.087%
38	-14.13	-389.67	-24.47	13.96	389.66	24.19	0.086%
39	0.01	-107.21	-22.61	-0.01	107.21	22.55	0.060%
40	11.07	-107.21	-19.15	-11.03	107.21	19.09	0.061%
41	19.01	-107.21	-10.98	-18.96	107.21	10.94	0.062%
42	22.12	-107.21	-0.01	-22.05	107.21	0.01	0.061%
43	19.59	-107.21	11.30	-19.53	107.21	-11.27	0.060%
44	11.05	-107.21	19.14	-11.02	107.21	-19.08	0.060%
45	-0.01	-107.21	21.94	0.01	107.21	-21.87	0.061%
46	-11.07	-107.21	19.15	11.04	107.21	-19.09	0.061%
47	-19.60	-107.21	11.32	19.54	107.21	-11.28	0.060%
48	-22.12	-107.21	0.01	22.05	107.21	-0.01	0.061%
49	-19.00	-107.21	-10.96	18.95	107.21	10.93	0.062%
50	-11.05	-107.21	-19.14	11.02	107.21	19.08	0.061%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance

1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00025875	0.00027200
3	Yes	5	0.00018973	0.00021880
4	Yes	5	0.00027687	0.00029328
5	Yes	5	0.00020794	0.00023708
6	Yes	5	0.00029349	0.00031257
7	Yes	5	0.00022430	0.00025368
8	Yes	5	0.00027692	0.00029290
9	Yes	5	0.00020797	0.00023662
10	Yes	5	0.00025874	0.00027181
11	Yes	5	0.00018972	0.00021861
12	Yes	5	0.00027687	0.00029315
13	Yes	5	0.00020793	0.00023691
14	Yes	5	0.00029346	0.00031251
15	Yes	5	0.00022427	0.00025359
16	Yes	5	0.00027681	0.00029312
17	Yes	5	0.00020788	0.00023691
18	Yes	5	0.00025871	0.00027183
19	Yes	5	0.00018981	0.00021864
20	Yes	5	0.00027689	0.00029288
21	Yes	5	0.00020793	0.00023660
22	Yes	5	0.00029349	0.00031257
23	Yes	5	0.00022429	0.00025367
24	Yes	5	0.00027690	0.00029328
25	Yes	5	0.00020795	0.00023706
26	Yes	4	0.00000001	0.00002452
27	Yes	4	0.00078622	0.00069411
28	Yes	4	0.00079195	0.00069605
29	Yes	4	0.00079789	0.00070024
30	Yes	4	0.00079186	0.00069186
31	Yes	4	0.00078544	0.00068661
32	Yes	4	0.00079176	0.00069310
33	Yes	4	0.00079783	0.00070230
34	Yes	4	0.00079190	0.00069839
35	Yes	4	0.00078621	0.00069612
36	Yes	4	0.00079273	0.00070270
37	Yes	4	0.00079865	0.00070946
38	Yes	4	0.00079268	0.00070158
39	Yes	4	0.00023214	0.00034156
40	Yes	4	0.00023666	0.00034428
41	Yes	4	0.00024096	0.00034864
42	Yes	4	0.00023668	0.00034340
43	Yes	4	0.00023208	0.00034001
44	Yes	4	0.00023660	0.00034281
45	Yes	4	0.00024089	0.00034766
46	Yes	4	0.00023657	0.00034316
47	Yes	4	0.00023206	0.00034061
48	Yes	4	0.00023666	0.00034399
49	Yes	4	0.00024097	0.00034907
50	Yes	4	0.00023668	0.00034452

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	280 - 270	7.824	39	0.2753	0.0209
T2	270 - 250	7.234	39	0.2728	0.0176
T3	250 - 230	6.096	39	0.2578	0.0141
T4	230 - 220	5.040	39	0.2309	0.0099

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T5	220 - 200	4.568	39	0.2132	0.0078
T6	200 - 180	3.718	39	0.1873	0.0039
T7	180 - 160	2.976	39	0.1610	0.0023
T8	160 - 140	2.329	39	0.1392	0.0015
T9	140 - 120	1.763	39	0.1201	0.0012
T10	120 - 100	1.275	39	0.0991	0.0010
T11	100 - 80	0.878	39	0.0808	0.0009
T12	80 - 60	0.565	39	0.0616	0.0007
T13	60 - 40	0.324	39	0.0452	0.0005
T14	40 - 20	0.152	39	0.0285	0.0003
T15	20 - 0	0.043	47	0.0142	0.0002

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
280.00	Flash Beacon Lighting	39	7.824	0.2753	0.0209	148738
250.00	RR90-17-02DP	39	6.096	0.2578	0.0141	74174
245.00	DB420-A	39	5.822	0.2522	0.0132	52890
235.00	DB225-2-F	39	5.292	0.2389	0.0110	31085
200.00	(3) DB980H120E-M	39	3.718	0.1873	0.0039	43917
190.00	(3) DB980H120E-M	39	3.334	0.1742	0.0029	46939
180.00	(3) DB980H120E-M	39	2.976	0.1610	0.0023	50543
170.00	APXVSPP18-C-A20	39	2.641	0.1494	0.0019	54945
160.00	80010121 9' Mount Pipe	39	2.329	0.1392	0.0015	59941
150.00	APXV18-206517S-ACU	39	2.036	0.1298	0.0014	62832
140.00	(2) HBXX-6517DS-A2M	39	1.763	0.1201	0.0012	64596

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	280 - 270	32.644	2	1.1469	0.0877
T2	270 - 250	30.186	2	1.1367	0.0740
T3	250 - 230	25.447	2	1.0740	0.0590
T4	230 - 220	21.044	2	0.9623	0.0414
T5	220 - 200	19.077	2	0.8893	0.0326
T6	200 - 180	15.529	18	0.7818	0.0164
T7	180 - 160	12.433	18	0.6723	0.0098
T8	160 - 140	9.730	18	0.5816	0.0065
T9	140 - 120	7.366	18	0.5018	0.0052
T10	120 - 100	5.328	18	0.4140	0.0043
T11	100 - 80	3.668	18	0.3376	0.0036
T12	80 - 60	2.361	18	0.2575	0.0029
T13	60 - 40	1.353	18	0.1890	0.0021
T14	40 - 20	0.637	19	0.1192	0.0014
T15	20 - 0	0.179	19	0.0593	0.0007

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
280.00	Flash Beacon Lighting	2	32.644	1.1469	0.0877	35857
250.00	RR90-17-02DP	2	25.447	1.0740	0.0590	17845
245.00	DB420-A	2	24.302	1.0509	0.0551	12711
235.00	DB225-2-F	2	22.093	0.9957	0.0461	7489
200.00	(3) DB980H120E-M	18	15.529	0.7818	0.0164	10554
190.00	(3) DB980H120E-M	18	13.928	0.7272	0.0122	11283
180.00	(3) DB980H120E-M	18	12.433	0.6723	0.0098	12158
170.00	APXVSPP18-C-A20	18	11.036	0.6240	0.0079	13189
160.00	80010121 9' Mount Pipe	18	9.730	0.5816	0.0065	14351
150.00	APXV18-206517S-ACU	18	8.509	0.5423	0.0057	15033
140.00	(2) HBXX-6517DS-A2M	18	7.366	0.5018	0.0052	15447

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	280	Leg	A325N	0.6250	5	1.11	24.85	0.045 ✔	1	Bolt DS
T2	270	Leg	A325N	0.7500	5	4.20	35.78	0.117 ✔	1	Bolt DS
T3	250	Leg	A325N	1.0000	6	9.29	53.01	0.175 ✔	1	Bolt Tension
T4	230	Leg	A325N	1.0000	6	9.77	53.01	0.184 ✔	1	Bolt Tension
		Diagonal	A325N	1.0000	1	5.11	16.94	0.302 ✔	1	Member Block Shear
T5	220	Leg	A325N	1.0000	6	13.77	53.01	0.260 ✔	1	Bolt Tension
		Diagonal	A325N	1.0000	1	4.75	10.16	0.467 ✔	1	Member Block Shear
T6	200	Leg	A325N	1.0000	6	17.72	53.01	0.334 ✔	1	Bolt Tension
		Diagonal	A325N	1.0000	1	7.63	16.94	0.451 ✔	1	Member Block Shear
		Top Girt	A325N	1.0000	1	3.69	10.16	0.363 ✔	1	Member Block Shear
T7	180	Leg	A325N	1.2500	6	23.39	82.83	0.282 ✔	1	Bolt Tension
		Diagonal	A325N	1.2500	1	9.53	17.14	0.556 ✔	1	Member Block Shear
		Top Girt	A325N	1.2500	1	5.78	16.43	0.352 ✔	1	Member Block Shear
T8	160	Leg	A325N	1.2500	6	30.66	82.83	0.370 ✔	1	Bolt Tension
		Diagonal	A325N	1.2500	1	11.44	20.54	0.557 ✔	1	Member Block Shear
		Top Girt	A325N	1.2500	1	4.11	20.54	0.200 ✔	1	Member Block Shear
T9	140	Leg	A325N	1.2500	6	38.47	82.83	0.464 ✔	1	Bolt Tension
		Diagonal	A325N	1.2500	1	12.95	20.54	0.630 ✔	1	Member Block Shear
T10	120	Leg	A325N	1.2500	12	21.86	82.83	0.264 ✔	1	Bolt Tension
		Diagonal	A325N	1.0000	2	8.91	35.53	0.251 ✔	1	Member Block Shear

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
T11	100	Leg	A325N	1.2500	12	25.75	82.83	0.311 ✔	1	Bolt Tension
		Diagonal	A325N	1.0000	2	9.51	35.53	0.268 ✔	1	Member Block Shear
T12	80	Leg	A325N	1.2500	12	29.33	82.83	0.354 ✔	1	Bolt Tension
		Diagonal	A325N	1.0000	2	9.47	35.53	0.267 ✔	1	Member Block Shear
T13	60	Leg	A325N	1.2500	12	32.70	82.83	0.395 ✔	1	Bolt Tension
		Diagonal	A325N	1.0000	2	9.72	35.53	0.274 ✔	1	Member Block Shear
T14	40	Leg	A325N	1.2500	12	36.18	82.83	0.437 ✔	1	Bolt Tension
		Diagonal	A325N	1.0000	2	9.67	35.53	0.272 ✔	1	Member Block Shear
T15	20	Leg	A325N	1.2500	12	39.03	82.83	0.471 ✔	1	Bolt Tension
		Diagonal	A325N	1.0000	2	10.17	35.53	0.286 ✔	1	Member Block Shear

Compression Checks

Leg 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	280 - 270	1 3/4	10.00	2.25	61.7 K=1.00	2.4053	-7.33	81.93	0.090 [1] ✔
T2	270 - 250	2	20.00	2.38	57.0 K=1.00	3.1416	-23.33	111.48	0.209 [1] ✔
T3	250 - 230	2 1/2	20.00	2.38	45.6 K=1.00	4.9087	-61.47	189.74	0.324 [1] ✔
T4	230 - 220	Pirod 105245	10.02	10.02	37.8 K=1.00	5.3014	-66.89	214.86	0.311 [1] ✔
T5	220 - 200	Pirod 105218	20.03	10.02	32.4 K=1.00	7.2158	-94.15	300.68	0.313 [1] ✔
T6	200 - 180	Pirod 105218	20.03	10.02	32.4 K=1.00	7.2158	-122.46	300.68	0.407 [1] ✔
T7	180 - 160	Pirod 105219	20.03	10.02	28.4 K=1.00	9.4248	-163.93	399.87	0.410 [1] ✔
T8	160 - 140	Pirod 105220	20.03	10.02	25.2 K=1.00	11.9282	-216.88	512.38	0.423 [1] ✔
T9	140 - 120	Pirod 105220	20.03	10.02	25.2 K=1.00	11.9282	-271.03	512.38	0.529 [1] ✔
T10	120 - 100	Pirod 112743	20.03	20.03	32.6 K=1.00	14.7262	-306.11	613.14	0.499 [1] ✔
T11	100 - 80	Pirod 112743	20.03	20.03	32.6 K=1.00	14.7262	-361.01	613.14	0.589 [1] ✔
T12	80 - 60	Pirod 112744	20.03	20.03	32.6	17.8187	-411.88	741.99	0.555 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T13	60 - 40	Pirod 112744	20.03	20.03	32.6 K=1.00	17.8187	-459.74	741.99	0.620 [1] ✔
T14	40 - 20	Pirod 112745	20.03	20.03	32.5 K=1.00	21.2057	-511.07	883.14	0.579 [1] ✔
T15	20 - 0	Pirod 112740	20.03	20.03	32.5 K=1.00	21.2057	-552.20	883.14	0.625 [1] ✔

[1] P_u / ϕP_n controls

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n K	A in^2	V_u K	ϕV_n K	Stress Ratio
T4	230 - 220	0.5	1.47	120.0	238.57	0.1963	0.56	3.45	0.163 ✔
T5	220 - 200	0.5	1.46	119.0	324.71	0.1963	0.33	3.38	0.098 ✔
T6	200 - 180	0.5	1.46	119.0	324.71	0.1963	0.97	3.38	0.287 ✔
T7	180 - 160	0.625	1.45	94.4	424.12	0.3068	0.87	6.96	0.125 ✔
T8	160 - 140	0.625	1.43	93.6	536.77	0.3068	1.51	7.01	0.216 ✔
T9	140 - 120	0.625	1.43	93.6	536.77	0.3068	1.57	7.01	0.225 ✔
T10	120 - 100	0.75	1.73	93.9	662.68	0.4418	0.80	14.36	0.056 ✔
T11	100 - 80	0.75	1.73	93.9	662.68	0.4418	0.84	14.36	0.059 ✔
T12	80 - 60	0.75	1.71	93.1	801.84	0.4418	0.76	14.53	0.053 ✔
T13	60 - 40	0.75	1.71	93.1	801.84	0.4418	0.83	14.53	0.058 ✔
T14	40 - 20	0.875	1.70	79.1	954.26	0.6013	1.25	23.59	0.054 ✔
T15	20 - 0	0.875	1.70	79.1	954.26	0.6013	1.55	23.59	0.066 ✔

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	280 - 270	7/8	5.48	2.66	131.4 K=0.90	0.6013	-1.40	7.87	0.178 [1] ✔
T2	270 - 250	7/8	5.54	2.68	132.1	0.6013	-1.80	7.79	0.231 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T3	250 - 230	1	5.54	2.65	114.6 K=0.90	0.7854	-4.29	13.51	0.318 [1]
T4	230 - 220	L3x3x5/16	11.42	5.02	106.8 K=1.04	1.7800	-5.89	31.65	0.186 [1]
T5	220 - 200	L3x3x3/16	12.50	5.67	115.6 K=1.01	1.0900	-4.93	17.29	0.285 [1]
T6	200 - 180	L3x3x5/16	13.80	6.37	129.8 K=1.00	1.7800	-9.03	23.77	0.380 [1]
T7	180 - 160	L3x3x5/16	15.24	7.09	144.5 K=1.00	1.7800	-10.99	19.26	0.570 [1]
T8	160 - 140	L3 1/2x3 1/2x5/16	16.80	7.89	137.3 K=1.00	2.0900	-11.40	25.06	0.455 [1]
T9	140 - 120	L3 1/2x3 1/2x5/16	18.45	8.73	151.8 K=1.00	2.0900	-12.63	20.49	0.616 [1]
T10	120 - 100	2L3 1/2x3 1/2x5/16x3/8	26.26	12.45	134.0 K=0.97	4.1800	-19.02	52.58	0.362 [1]
T11	100 - 80	2L3 1/2x3 1/2x5/16x3/8	27.59	13.14	139.9 K=0.96	4.1800	-19.69	48.27	0.408 [1]
T12	80 - 60	2L3 1/2x3 1/2x5/16x3/8	29.01	13.87	146.0 K=0.95	4.1800	-19.56	44.30	0.441 [1]
T13	60 - 40	2L3 1/2x3 1/2x5/16x3/8	30.49	14.62	152.4 K=0.94	4.1800	-20.59	40.67	0.506 [1]
T14	40 - 20	2L3 1/2x3 1/2x5/16x3/8	32.02	15.40	159.0 K=0.93	4.1800	-19.46	37.36	0.521 [1]
T15	20 - 0	2L3 1/2x3 1/2x5/16x3/8	33.61	16.20	165.8 K=0.92	4.1800	-22.33	34.37	0.650 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 270	1	5.00	4.85	163.1 K=0.70	0.7854	-0.60	6.67	0.090 [1]
T2	270 - 250	1	5.00	4.83	162.4 K=0.70	0.7854	-0.66	6.73	0.097 [1]
T3	250 - 230	1 1/4	5.00	4.79	128.8 K=0.70	1.2272	-1.21	16.71	0.072 [1]
T6	200 - 180	L3x3x3/16	8.00	6.67	134.2 K=1.00	1.0900	-2.89	13.65	0.212 [1]
T7	180 - 160	L4x4x1/4	10.00	8.60	129.9 K=1.00	1.9400	-4.43	25.75	0.172 [1]
T8	160 - 140	L3 1/2x3 1/2x5/16	12.00	10.60	184.4 K=1.00	2.0900	-3.11	13.88	0.224 [1]

[1] P_u / ϕP_n controls

Bottom Girt 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	280 - 270	1	5.00	4.85	163.1 K=0.70	0.7854	-0.57	6.67	0.086 [1] ✔
T2	270 - 250	1	5.00	4.83	162.4 K=0.70	0.7854	-0.73	6.73	0.109 [1] ✔
T3	250 - 230	1 1/4	5.00	4.79	128.8 K=0.70	1.2272	-1.17	16.60	0.070 [1] ✔

[1] P_u / ϕP_n controls

Mid Girt 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	280 - 270	1	5.00	4.85	163.1 K=0.70	0.7854	-0.00	6.67	0.000 [1] ✔
T2	270 - 250	1	5.00	4.83	162.4 K=0.70	0.7854	-0.07	6.73	0.010 [1] ✔
T6	200 - 180	L3x3x3/16	9.00	8.00	145.3 K=0.90	1.0900	-4.14	11.67	0.355 [1] ✔
T7	180 - 160	L4x4x1/4	11.00	10.00	139.0 K=0.92	1.9400	-3.85	22.67	0.170 [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	280 - 270	1 3/4	10.00	0.54	14.9	1.7942	5.57	87.47	0.064 [1 #] ✔
T2	270 - 250	2	20.00	0.54	13.0	3.1416	21.00	141.37	0.149 [1 #] ✔
T3	250 - 230	2 1/2	20.00	0.54	10.4	4.9087	55.76	220.89	0.252 [1] ✔
T4	230 - 220	Pirod 105245	10.02	10.02	37.8	5.3014	58.64	238.57	0.246 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T5	220 - 200	Pirod 105218	20.03	10.02	32.4	7.2158	82.61	324.71	0.254 [1]
T6	200 - 180	Pirod 105218	20.03	10.02	32.4	7.2158	106.31	324.71	0.327 [1]
T7	180 - 160	Pirod 105219	20.03	10.02	28.4	9.4248	140.36	424.12	0.331 [1]
T8	160 - 140	Pirod 105220	20.03	10.02	25.2	11.9282	183.94	536.77	0.343 [1]
T9	140 - 120	Pirod 105220	20.03	10.02	25.2	11.9282	230.84	536.77	0.430 [1]
T10	120 - 100	Pirod 112743	20.03	20.03	32.6	14.7262	262.27	662.68	0.396 [1]
T11	100 - 80	Pirod 112743	20.03	20.03	32.6	14.7262	308.97	662.68	0.466 [1]
T12	80 - 60	Pirod 112744	20.03	20.03	32.6	17.8187	351.99	801.84	0.439 [1]
T13	60 - 40	Pirod 112744	20.03	20.03	32.6	17.8187	392.46	801.84	0.489 [1]
T14	40 - 20	Pirod 112745	20.03	20.03	32.5	21.2057	434.15	954.26	0.455 [1]
T15	20 - 0	Pirod 112740	20.03	20.03	32.5	21.2057	468.31	954.26	0.491 [1]

[1] P_u / ϕP_n controls
[#] Based on net area of leg in section below

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n K	A in^2	V_u K	ϕV_n K	Stress Ratio
T4	230 - 220	0.5	1.47	120.0	238.57	0.1963	0.56	3.45	0.163
T5	220 - 200	0.5	1.46	119.0	324.71	0.1963	0.33	3.38	0.098
T6	200 - 180	0.5	1.46	119.0	324.71	0.1963	0.97	3.38	0.287
T7	180 - 160	0.625	1.45	94.4	424.12	0.3068	0.87	6.96	0.125
T8	160 - 140	0.625	1.43	93.6	536.77	0.3068	1.51	7.01	0.216
T9	140 - 120	0.625	1.43	93.6	536.77	0.3068	1.57	7.01	0.225
T10	120 - 100	0.75	1.73	93.9	662.68	0.4418	0.80	14.36	0.056
T11	100 - 80	0.75	1.73	93.9	662.68	0.4418	0.84	14.36	0.059
T12	80 - 60	0.75	1.71	93.1	801.84	0.4418	0.76	14.53	0.053

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n K	A in^2	V_u K	ϕV_n K	Stress Ratio
T13	60 - 40	0.75	1.71	93.1	801.84	0.4418	0.83	14.53	0.058 ✔
T14	40 - 20	0.875	1.70	79.1	954.26	0.6013	1.25	23.59	0.054 ✔
T15	20 - 0	0.875	1.70	79.1	954.26	0.6013	1.55	23.59	0.066 ✔

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	280 - 270	7/8	5.48	2.66	146.0	0.6013	1.40	27.06	0.052 [1] ✔
T2	270 - 250	7/8	5.54	2.68	146.8	0.6013	1.80	27.06	0.067 [1] ✔
T3	250 - 230	1	5.54	2.65	127.3	0.7854	4.23	35.34	0.120 [1] ✔
T4	230 - 220	L3x3x5/16	11.42	5.02	67.6	1.0713	5.11	46.60	0.110 [1] ✔
T5	220 - 200	L3x3x3/16	11.93	5.42	71.5	0.6593	4.75	28.68	0.165 [1] ✔
T6	200 - 180	L3x3x5/16	13.80	6.37	85.1	1.0713	7.63	46.60	0.164 [1] ✔
T7	180 - 160	L3x3x5/16	15.24	7.09	94.9	1.0127	9.53	44.05	0.216 [1] ✔
T8	160 - 140	L3 1/2x3 1/2x5/16	16.80	7.89	89.9	1.2452	11.44	54.17	0.211 [1] ✔
T9	140 - 120	L3 1/2x3 1/2x5/16	17.62	8.32	94.6	1.2452	12.95	54.17	0.239 [1] ✔
T10	120 - 100	2L3 1/2x3 1/2x5/16x3/8	26.26	12.45	141.6	2.6077	17.82	113.43	0.157 [1] ✔
T11	100 - 80	2L3 1/2x3 1/2x5/16x3/8	27.59	13.14	149.3	2.6077	19.03	113.43	0.168 [1] ✔
T12	80 - 60	2L3 1/2x3 1/2x5/16x3/8	29.01	13.87	157.3	2.6077	18.94	113.43	0.167 [1] ✔
T13	60 - 40	2L3 1/2x3 1/2x5/16x3/8	30.49	14.62	165.7	2.6077	19.44	113.43	0.171 [1] ✔
T14	40 - 20	2L3 1/2x3 1/2x5/16x3/8	32.02	15.40	174.3	2.6077	19.34	113.43	0.170 [1] ✔
T15	20 - 0	2L3 1/2x3 1/2x5/16x3/8	33.61	16.20	183.2	2.6077	20.33	113.43	0.179 [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	280 - 270	1	5.00	4.85	233.0	0.7854	0.58	35.34	0.016 [1] ✔
T2	270 - 250	1	5.00	4.83	232.0	0.7854	0.66	35.34	0.019 [1] ✔
T3	250 - 230	1 1/4	5.00	4.79	184.0	1.2272	1.23	55.22	0.022 [1] ✔
T6	200 - 180	L3x3x3/16	8.00	6.67	89.5	0.6593	3.69	28.68	0.129 [1] ✔
T7	180 - 160	L4x4x1/4	10.00	8.60	86.4	1.1972	5.78	52.08	0.111 [1] ✔
T8	160 - 140	L3 1/2x3 1/2x5/16	12.00	10.60	122.2	1.2452	4.11	54.17	0.076 [1] ✔

[1] P_u / ϕP_n controls

Bottom 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	280 - 270	1	5.00	4.85	233.0	0.7854	0.59	35.34	0.017 [1] ✔
T2	270 - 250	1	5.00	4.83	232.0	0.7854	0.73	35.34	0.021 [1] ✔
T3	250 - 230	1 1/4	5.00	4.79	184.0	1.2272	1.29	39.76	0.032 [1] ✔

[1] P_u / ϕP_n controls

Mid 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	280 - 270	1	5.00	4.85	233.0	0.7854	0.01	35.34	0.000 [1] ✔
T2	270 - 250	1	5.00	4.83	232.0	0.7854	0.09	35.34	0.002 [1] ✔
T6	200 - 180	L3x3x3/16	9.00	8.00	102.2	1.0900	5.42	35.32	0.153 [1] ✔
T7	180 - 160	L4x4x1/4	11.00	10.00	96.0	1.9400	5.16	62.86	0.082 [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	280 - 270	Leg	1 3/4	3	-7.33	81.93	9.0	Pass
		Diagonal	7/8	16	-1.40	7.87	17.8	Pass
		Top Girt	1	5	-0.60	6.67	9.0	Pass
		Bottom Girt	1	7	-0.57	6.67	8.6	Pass
		Mid Girt	1	10	0.01	35.34	0.1	Pass
T2	270 - 250	Leg	2	38	-23.33	111.48	20.9	Pass
		Diagonal	7/8	53	-1.80	7.79	23.1	Pass
		Top Girt	1	42	-0.66	6.73	9.7	Pass
		Bottom Girt	1	45	-0.73	6.73	10.9	Pass
		Mid Girt	1	46	-0.07	6.73	1.0	Pass
T3	250 - 230	Leg	2 1/2	99	-61.47	189.74	32.4	Pass
		Diagonal	1	109	-4.29	13.51	31.8	Pass
		Top Girt	1 1/4	102	-1.21	16.71	7.2	Pass
		Bottom Girt	1 1/4	103	-1.17	16.60	7.0	Pass
T4	230 - 220	Leg	Pirod 105245	156	-66.89	214.86	31.1	Pass
		Diagonal	L3x3x5/16	159	-5.89	31.65	18.6	Pass
T5	220 - 200	Leg	Pirod 105218	165	-94.15	300.68	31.3	Pass
		Diagonal	L3x3x3/16	171	-4.93	17.29	28.5	Pass
T6	200 - 180	Leg	Pirod 105218	180	-122.46	300.68	40.7	Pass
		Diagonal	L3x3x5/16	189	-9.03	23.77	38.0	Pass
		Top Girt	L3x3x3/16	181	-2.89	13.65	21.2	Pass
		Mid Girt	L3x3x3/16	184	-4.14	11.67	35.5	Pass
T7	180 - 160	Leg	Pirod 105219	201	-163.93	399.87	41.0	Pass
		Diagonal	L3x3x5/16	210	-10.99	19.26	57.0	Pass
		Top Girt	L4x4x1/4	202	-4.43	25.75	17.2	Pass
		Mid Girt	L4x4x1/4	205	-3.85	22.67	17.0	Pass
T8	160 - 140	Leg	Pirod 105220	222	-216.88	512.38	42.3	Pass
		Diagonal	L3 1/2x3 1/2x5/16	228	-11.40	25.06	45.5	Pass
		Top Girt	L3 1/2x3 1/2x5/16	223	-3.11	13.88	22.4	Pass
T9	140 - 120	Leg	Pirod 105220	240	-271.03	512.38	52.9	Pass
		Diagonal	L3 1/2x3 1/2x5/16	246	-12.63	20.49	61.6	Pass
T10	120 - 100	Leg	Pirod 112743	253	-306.11	613.14	49.9	Pass
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	261	-19.02	52.58	36.2	Pass
T11	100 - 80	Leg	Pirod 112743	262	-361.01	613.14	58.9	Pass
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	270	-19.69	48.27	40.8	Pass
T12	80 - 60	Leg	Pirod 112744	271	-411.88	741.99	55.5	Pass
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	279	-19.56	44.30	44.1	Pass
T13	60 - 40	Leg	Pirod 112744	280	-459.74	741.99	62.0	Pass
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	288	-20.59	40.67	50.6	Pass
T14	40 - 20	Leg	Pirod 112745	289	-511.07	883.14	57.9	Pass
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	297	-19.46	37.36	52.1	Pass
T15	20 - 0	Leg	Pirod 112740	298	-552.20	883.14	62.5	Pass
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	306	-22.33	34.37	65.0	Pass
							Summary	
						Leg (T15)	62.5	Pass
						Diagonal (T15)	65.0	Pass
						Top Girt (T8)	22.4	Pass
						Bottom Girt (T2)	10.9	Pass
						Mid Girt (T6)	35.5	Pass
						Bolt Checks	63.0	Pass
						RATING =	**65.0**	**Pass**

EXHIBIT 4

Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT5633

FA#: 10099965

Seymour East
6 Progress Avenue
Seymour, CT 06483

December 17, 2018

Centerline Communications Project Number: 950006-159

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**8.04 %**

December 17, 2018

AT&T Mobility – New England
Attn: John Benedetto, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **CT5633 – Seymour East**

Centerline Communications, LLC ("Centerline") was directed to analyze the proposed AT&T facility located at **6 Progress Avenue, Seymour, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

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

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed AT&T Wireless antenna facility located at **6 Progress Avenue, Seymour, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
UMTS	850 MHz	2	30
LTE	700 MHz (Band 14)	4	40
LTE	850 MHz	2	40
LTE	2300 MHz (WCS)	4	30
5G	850 MHz	2	25
LTE	1900 MHz (PCS)	4	40
LTE	700 MHz	2	40
LTE	2100 MHz (AWS)	2	30

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Kathrein 800-10121	160
A	2	Quintel QS66512-2	160
A	3	CCI HPA-65R-BUU-H6	160
B	1	Kathrein 800-10121	160
B	2	Quintel QS66512-2	160
B	3	CCI HPA-65R-BUU-H6	160
C	1	Kathrein 800-10121	160
C	2	Quintel QS66512-2	160
C	3	CCI HPA-65R-BUU-H6	160

Table 2: Antenna Data

All calculations were done with respect to uncontrolled / general population threshold limits.

RESULTS

Per the calculations completed for the proposed AT&T configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Kathrein 800-10121	850 MHz	11.45	2	60	837.82	0.22
Antenna A2	Quintel QS66512-2	700 MHz (Band 14) / 850 MHz / 2300 MHz (WCS) / 1900 MHz (PCS)	10.85 / 11.35 / 14.85 / 13.85	14	570	11,268.34	2.25
Antenna A3	CCI HPA-65R-BUU-H6	700 MHz / 2100 MHz (AWS)	11.95 / 15.05	6	200	5,092.07	0.99
						Sector A Composite MPE%	**3.46**
Antenna B1	Kathrein 800-10121	850 MHz	11.45	2	60	837.82	0.22
Antenna B2	Quintel QS66512-2	700 MHz (Band 14) / 850 MHz / 2300 MHz (WCS) / 1900 MHz (PCS)	10.85 / 11.35 / 14.85 / 13.85	14	570	11,268.34	2.25
Antenna B3	CCI HPA-65R-BUU-H6	700 MHz / 2100 MHz (AWS)	11.95 / 15.05	6	200	5,092.07	0.99
						Sector B Composite MPE%	**3.46**
Antenna C1	Kathrein 800-10121	850 MHz	11.45	2	60	837.82	0.22
Antenna C2	Quintel QS66512-2	700 MHz (Band 14) / 850 MHz / 2300 MHz (WCS) / 1900 MHz (PCS)	10.85 / 11.35 / 14.85 / 13.85	14	570	11,268.34	2.25
Antenna C3	CCI HPA-65R-BUU-H6	700 MHz / 2100 MHz (AWS)	11.95 / 15.05	6	200	5,092.07	0.99
						Sector C Composite MPE%	**3.46**

Table 3: AT&T Emissions Levels

The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum AT&T MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each AT&T Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max Per Sector Value	**3.46 %**
Verizon Wireless	2.41 %
T-Mobile	1.22 %
Sprint	0.56 %
Mike Gardella	0.06 %
Town	0.33 %
Site Total MPE %:	**8.04 %**

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	3.46 %
AT&T Sector B Total:	3.46 %
AT&T Sector C Total:	3.46 %
Site Total:	8.04 %

Table 5: Site MPE Summary

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

AT&T _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
AT&T 850 MHz UMTS – Antenna 1	2	418.91	160	1.27	850 MHz	567	0.22%
AT&T 700 MHz (Band 14) LTE – Antenna 2	4	486.47	160	2.95	700 MHz	467	0.63%
AT&T 850 MHz LTE – Antenna 2	2	545.83	160	1.65	850 MHz	567	0.29%
AT&T 2300 MHz (WCS) LTE – Antenna 2	4	916.48	160	5.56	2300 MHz (WCS)	1000	0.56%
AT&T 1900 MHz (PCS) LTE – Antenna 2	4	970.64	160	5.89	1900 MHz (PCS)	1000	0.59%
AT&T 850 MHz 5G – Antenna 2	2	341.15	160	1.03	850 MHz	567	0.18%
AT&T 700 MHz LTE – Antenna 3	2	626.70	160	1.90	700 MHz	467	0.41%
AT&T 2100 MHz (AWS) LTE – Antenna 3	4	959.67	160	5.82	2100 MHz (AWS)	1000	0.58%
						Total:	**3.46%**

Table 6: AT&T Maximum Sector MPE Power Values

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the AT&T facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector A:	3.46 %
Sector B:	3.46 %
Sector C:	3.46 %
AT&T Maximum Total (per sector):	3.46 %
Site Total:	8.04 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **8.04 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

Scott Heffernan
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First-Class Package International Service® is temporarily unavailable on Click-N-Ship®. Please select a different Service Type or visit a Post Office™ location to complete your shipment.

Create Label | Preferences | Shipping History | Address Book

Account # 161958927

Label Details

Label Number:
9405503699300451872781

SCAN® Form: 947570369930030780345O

Terms
Acceptance Cutoff: 03/19/2019 4:30 PM
Acceptance Time: 03/19/2019 3:46 PM
Scheduled Date: 03/21/2019 11:59 PM
Delivery Status: Delivered, Front Desk/Reception/Mail Room 2019-03-21 10:16:00.0

Label Actions
USPS Tracking®
Ship Again

Need help

File an insurance claim
Request A Service Refund

Return Address:
KRISTEN WHITE
EMPIRE TELECOM
16 ESQUIRE RD
N BILLERICA, MA 01862-2527
ne_sa_deliverable@empiretelecomm.com

Delivery Address:
W. K MILLER
SEYMOUR TOWN HALL
1 FIRST ST
SEYMOUR, CT 06483-2860

Package:
Ship Date: 03/19/19
Value: $50.00
From: 01862
Label Type: Batch

Service:
Priority Mail® 2-Day
Flat Rate Envelope
USPS Tracking®

Feedback

Transaction Number: 459514223
Transaction Type: Label
Payment Method: AMEX-1004
Payment Status: Account Charged

Postage Cost	$7.35
USPS Tracking®	Free
Label Total:	**$7.35**
Order Total:	**$7.35**

Timestamp	Message
03-19-2019 11:42:40	LABEL PRINTED
03-19-2019 11:42:19	Getting Payment
03-19-2019 11:41:47	Setting Payment

Back to Shipping History

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Create Label | Preferences | Shipping History | Address Book

Account # 161958927

Label Details

Label Number:
9405503699300451887761

SCAN® Form: 947570369930030780345O

Terms
Acceptance Cutoff: 03/19/2019 4:30 PM
Acceptance Time: 03/19/2019 3:46 PM
Scheduled Date: 03/21/2019 11:59 PM
Delivery Status: Delivered, Front Desk/Reception/Mail Room 2019-03-21 10:16:00.0
Label Actions

USPS Tracking®
Ship Again

Need help

File an insurance claim
Request A Service Refund

Return Address:
KRISTEN WHITE
EMPIRE TELECOM
16 ESQUIRE RD
N BILLERICA, MA 01862-2527
ne_sa_deliverable@empiretelecomm.com

Delivery Address:
BILL PAECHT
SEYMOUR TOWN HALL
1 FIRST ST
SEYMOUR, CT 06483-2860

Package:
Ship Date: 03/19/19
Value: $50.00
From: 01862

Service:
Priority Mail® 2-Day
Flat Rate Envelope
USPS Tracking®

Feedback

Transaction Number: 459515707
Transaction Type: Label
Payment Method: AMEX-1004
Payment Status: Account Charged

Postage Cost	$7.35
USPS Tracking®	Free
Label Total:	**$7.35**
Order Total:	**$7.35**

Timestamp	Message
03-19-2019 11:49:45	LABEL PRINTED
03-19-2019 11:49:33	Getting Payment
03-19-2019 11:49:09	Setting Payment

Back to Shipping History

First-Class Package International Service® is temporarily unavailable on Click-N-Ship®. Please select a different Service Type or visit a Post Office™ location to complete your shipment.

Account # 161958927

Label Details

Label Number:
9405503699300451893717

Terms
Acceptance Cutoff: 03/19/2019 4:30 PM
Acceptance Time: 03/19/2019 3:46 PM
Scheduled Date: 03/21/2019 11:59 PM
Delivery Status: Delivered, In/At Mailbox
Label Actions 2019-03-21 13:16:00.0

USPS Tracking®
Ship Again

Need help

File an insurance claim
Request A Service Refund

Return Address:
KRISTEN WHITE
EMPIRE TELECOM
16 ESQUIRE RD
N BILLERICA, MA 01862-2527
ne_sa_deliverable@empiretelecomm.com

Delivery Address:
EDWARD MACCONNIE
EMAC COMMUNICATIONS LLC
2702 FOREST VIEW LN
KISSIMMEE, FL 34744-4070

Package:
Ship Date: 03/19/19
Value: $50.00
From: 01862

Service:
Priority Mail® 2-Day
Flat Rate Envelope
USPS Tracking®

Transaction Number: 459515902
Transaction Type: Label
Payment Method: AMEX-1004
Payment Status: Account Charged

Postage Cost	$7.35
USPS Tracking®	Free
Label Total:	**$7.35**
Order Total:	**$7.35**

Timestamp	Message
03-19-2019 11:52:32	LABEL PRINTED
03-19-2019 11:52:26	Getting Payment
03-19-2019 11:52:05	Setting Payment

Back to Shipping History