NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Northeast Site Solutions
Victoria Masse
420 Main Street #2, Sturbridge, MA 01566
860-306-2326
victoria@northeastsitesolutions.com

November 17, 2020

Members of the Siting Council
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Notice of Exempt Modification
751 Higgins Road, Cheshire CT 06410
Latitude: 41.487600
Longitude: -72.92920
T-Mobile Site#: CT11220A_Anchor

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 212-foot level of the existing 250-foot self-support tower at 751 Higgins Road, Cheshire CT. The 250-foot tower and property are both owned by AT&T. T-Mobile now intends to replace six (6) of its existing antennas with two (2) new 2500 MHz antenna and two (2) new 600/700/1900/2100 MHz antenna, and two (2) new 1900/2100 antenna. The new antennas would be installed at the 212-foot level of the tower.

Planned Modifications:
Remove: (2) TMA
(2) RRUS11 B12

Remove and Replace: (2) 15' Antenna Mount Frame – (2) 12.5' Antenna Mount Frame (REPLACE)
(2)AIR21 Antenna (REMOVE) - (2) AIR6449 B41 Antenna 2500 MHz (REPLACE)
(2) APX16DWV Antenna (REMOVE) – (2) APXVAARR24_600/700/1900/2100 MHz (REPLACE)
(2)AIR21 Antenna (REMOVE) - (2) AIR32 B66A/B2A Antenna 1900/2100 MHz (REPLACE)

Install New:
(3) RRU 4415 B25
(3) RRU 4449 B12
(2) Diplexers
(2) Hybrid Lines
(2) Antenna Mount Frame

Existing to Remain:
(2) Fiber Hybrid Line
(2) RRUS11 B4

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This facility was approved by the Town of Cheshire –on July 10, 1967. The approval did not come with conditions. Please see attached original approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.SA. § 16-SOj-73, a copy of this letter is being sent to Sean Kimball, Town Manager, Elected and William Voelker, Town Planner for the Town of Cheshire, as well as the property owner and the tower owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S;A. § 16-50j-72(b)(2).

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

2. The proposed modifications will not require the extension of the site boundary.

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

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

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

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

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

Sincerely,

Victoria Masse
Mobile: 860-306-2326
Fax: 413-521-0558
Office: 420 Main Street, Unit 2, Sturbridge MA 01566
Email: victoria@northeastsitesolutions.com

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Attachments
cc: Sean Kimball – Cheshire Town Manager
William Voelker – Town Planner
AT&T - as property and tower owner

Exhibit A

American Telephone & Telegraph Corp.
Higgins Road
Cheshire, Connecticut

July 10, 1967

Granted permission to erect a 250 foot J type radio transmission tower in R-2 Zone on top of underground building on Higgins Road Extension at location 169 feet from the nearest property line, with limitations.

1. Construction must be completed within 18 months.
2. Tower to be operated so as not to constitute a public nuisance.
3. Tower shall be as described at the public hearing.

Reasons for granting Tower was mention at the time the original structur was approved following public hearing. Tower is necessary for purpose of building.

Voting in Favor Beck, Byrne, Denton, Fritz, Hearing recorded between 270 & 756 of tape 1967 -,2, Side 2. (Shaw did not participate in this discussion.)

Exhibit B

Town of Cheshire, CT

Property Listing Report

Map Block Lot	69 53	Building #	1	Unique Identifier	00712600

Property Information

Property Location	751 HIGGINS RD
Mailing Address	P O BOX 7207 BEDMINSTER NJ 07921
Land Use	Light Industrial
Zoning Code	R-40
Neighborhood	I-1C

Owner	AMER TEL & TEL CO
Co-Owner	AT&T PROPERTY TAX UNIT
Book / Page	0148/0566
Land Class	Industrial
Census Tract	3434
Acreage	19.8

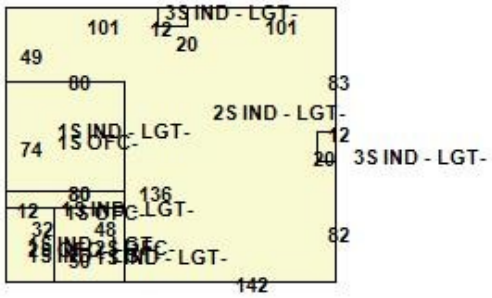
Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	2594709	1816300
Outbuildings	29640	20750
Land	429316	300520
Total	3053665	2137570

Utility Information

Electric	No
Gas	No
Sewer	No
Public Water	No
Well	No



Primary Construction Details

Year Built	1968
Building Desc.	Commercial
Building Style	
Stories	2.00
Exterior Walls	Pre-Cast Concrete
Exterior Walls 2	B. V. Solid
Interior Walls	
Interior Walls 2	
Interior Floors 1	Composite
Interior Floors 2	

Heating Fuel	
Heating Type	
AC Type	Central
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	0
Bath Style	NA
Kitchen Style	
Occupancy	0

Building Use	Light Industrial
Building Condition	Average
Frame Type	Average
Fireplaces	0
Bsmt Gar	0
Fin Bsmt Area	
Fin Bsmt Quality	
Building Grade	-50
Roof Style	HIP
Roof Cover	Asphalt

Report Created On 10/6/2020

Town of Cheshire, CT

Property Listing Report | Map Block Lot **69 53** | Building # **1** | Unique Identifier **00712600**

Detached Outbuildings

Type	Description	Area (sq ft)	Condition	Year Built
Fencing	Fencing	2400	Average	1968
Paving	Paving	43000	Average	1968
Fencing	Fencing	1560	Average	1968
Fencing	Fencing	600	Average	1968

Attached Extra Features

Type	Description	Area (sq ft)	Condition	Year Built

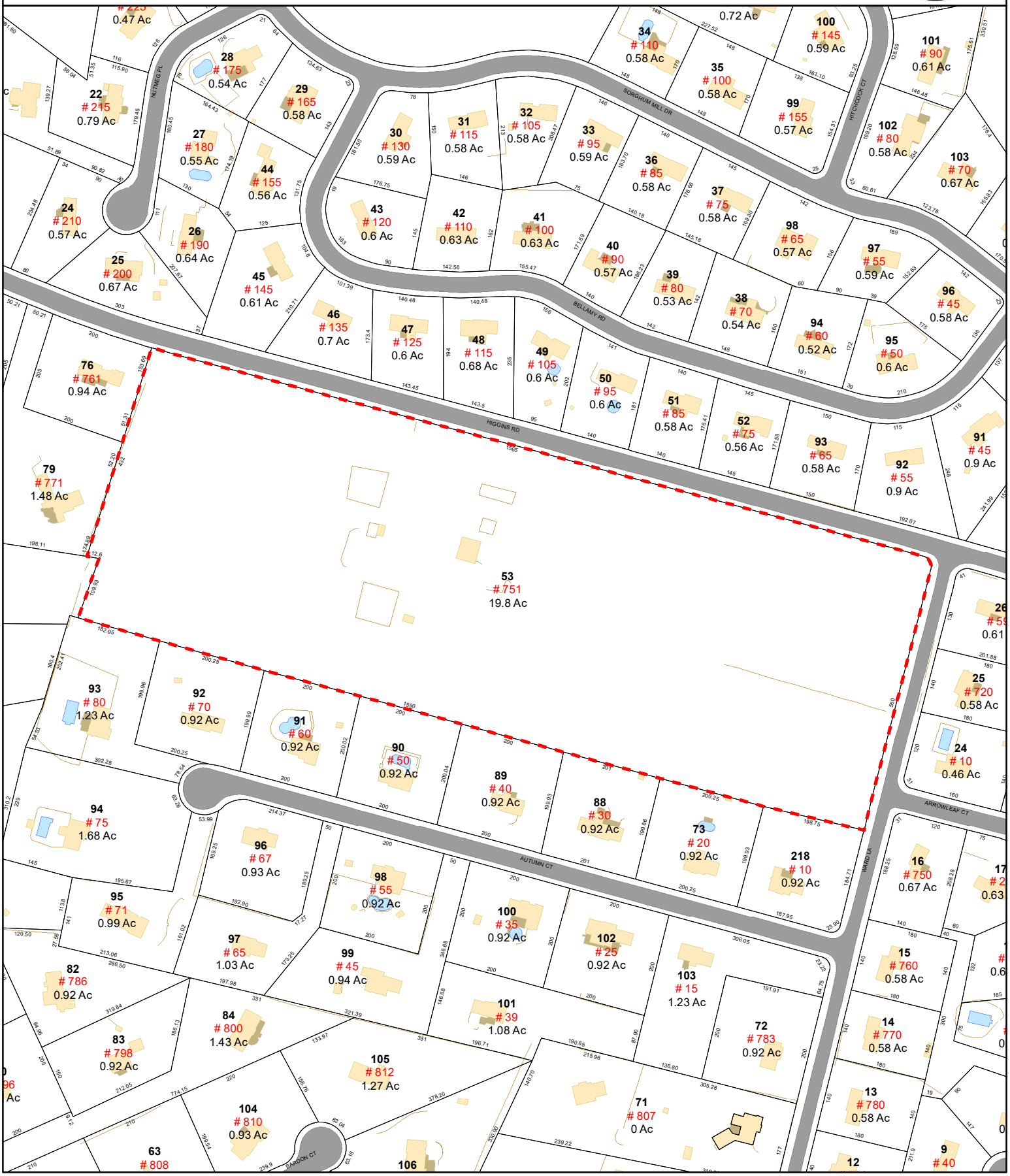
Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price

Report Created On **10/6/2020**

Town of Cheshire, Connecticut - Assessment Parcel Map

Parcel: 00712600 **Location: 751 HIGGINS RD**



Approximate Scale: 1 inch = 242 feet

0 130 260 390 520

Feet

Map Produced: September 2020

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

Exhibit C

T-Mobile
NORTHEAST, LLC.

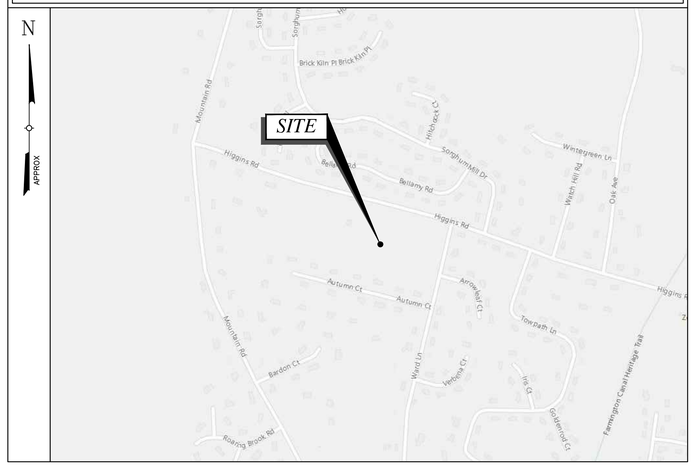
PROJECT: ANCHOR
SITE I.D. NUMBER:
CT11220A
SITE NAME:
CHESHIRE/ RT-10
SITE ADDRESS:
751 HIGGINS ROAD
CHESHIRE, CT 06410

PROJECT INDEX

SITE NUMBER:	CT11220A
SITE NAME:	CHESHIRE/ RT –10
SITE ADDRESS:	751 HIGGINS ROAD CHESHIRE, CT 06410
PROPERTY OWNER:	AMER TEL & TEL CO
APPLICANT:	T–MOBILE NORTHEAST LLC 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002
STRUCTURE TYPE:	SELF SUPPORT TOWER
LATTITUDE (NAD83):	N 41.487600"
LONGITUDE (NAD83):	W 72.929200"
GRADE ELEVATION:	280' AMSL (PER GOOGLE EARTH)
MUNICIPALITY:	CHESHIRE
ZONING:	R–40
PARCEL ID:	69–53

PROJECT CLIENT:	NORTHEAST SITE SOLUTIONS, LLC
CONTACT:	SHELDON FREINCLE
PHONE:	(201) 776–8521
ENGINEER/ STRUCTURAL ENG:	TECTONIC ENGINEERING & SURVEYING CONSULTANTS, PC.
CONTACT:	EDWARD IAMICELI
PHONE:	(845) 567–6656x2811

VICINITY MAP (NTS)



SHEET INDEX

SHEET NO	DESCRIPTION	REVISION	DATE
T–1	TITLE SHEET	1	11/16/20
A–1	SITE PLAN	1	11/16/20
A–2	TOWER ELEVATION	1	11/16/20
A–3	EQUIPMENT PLANS	1	11/16/20
A–4	ANTENNA PLANS & ANTENNA SCHEMATIC	1	11/16/20
A–5	DETAILS, ANTENNA SCHEMATIC & SPECIFICATIONS	1	11/16/20
A–6	NOTES	1	11/16/20
E–1	ELECTRICAL NOTES & ONE–LINE DIAGRAM	1	11/16/20
G–1	GROUNDING DETAILS & NOTES	1	11/16/20

CODE COMPLIANCE

CODE INFORMATION

- STATE OF CONNECTICUT BUILDING CODE, LATEST EDITION
- ANSI/TIA–222–G
- NATIONAL ELECTRIC CODE, LATEST EDITION

DESIGN NOTE

DESIGN BASED ON RFDS DATED 7/1/2020, VERSION 6.

RAN TEMPLATE: 67D5A997DB HYBRID
A&L TEMPLATE: 67D5997DB_2xAIR+10P (U21 MARKET)

STRUCTURAL NOTE

ANTENNA FRAME

REFER TO THE MOUNT ANALYSIS REPORT BY TECTONIC ENGINEERING & SURVEYING CONSULTANTS P.C. DATED NOVEMBER 10, 2020.

TOWER

REFER TO THE STRUCTURAL ANALYSIS REPORT BY TECTONIC ENGINEERING & SURVEYING CONSULTANTS P.C. DATED NOVEMBER 10, 2020.

Know what's below.
Call before you dig.

STATE OF CONNECTICUT
EDWARD N. IAMICELI
PEN.0028473
LICENSED
PROFESSIONAL ENGINEER

Tectonic
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Project Contact Info
1279 Route 300
Newburgh, NY 12550
Phone: (845) 567–6656

T-Mobile
NORTHEAST, LLC.
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

APPROVALS

LANDLORD _____
RF _____
CONSTRUCTION _____
OPERATIONS _____
SITE ACQ. _____

PROJECT NUMBER	DESIGNED BY
10473.CT11220A	EI

REV.	DATE	DESCRIPTION	DRAWN BY
0	10/01/20	ISSUED FOR CONSTRUCTION	BWY
1	11/16/20	PER COMMENTS	BWY

ISSUED BY _____ DATE _____

0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

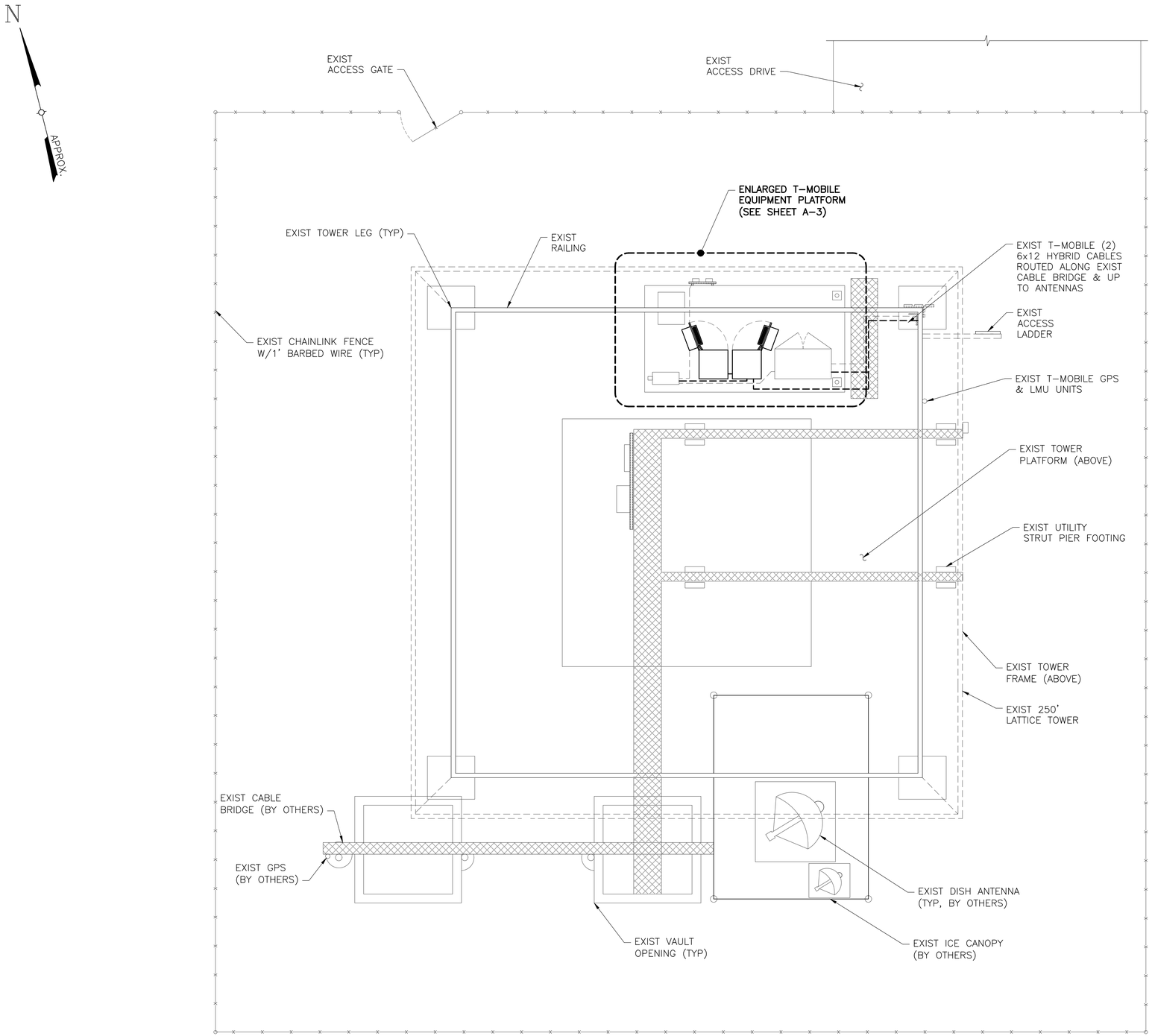
CHESHIRE/RT–10
CT11220A
751 HIGGINS ROAD
CHESHIRE, CT 06410

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T–1



1 / A-1 SITE PLAN

SCALE: 1/4" = 1'-0"

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ISSUED BY | DATE

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ORIGINAL SIZE IN INCHES

SITE INFORMATION

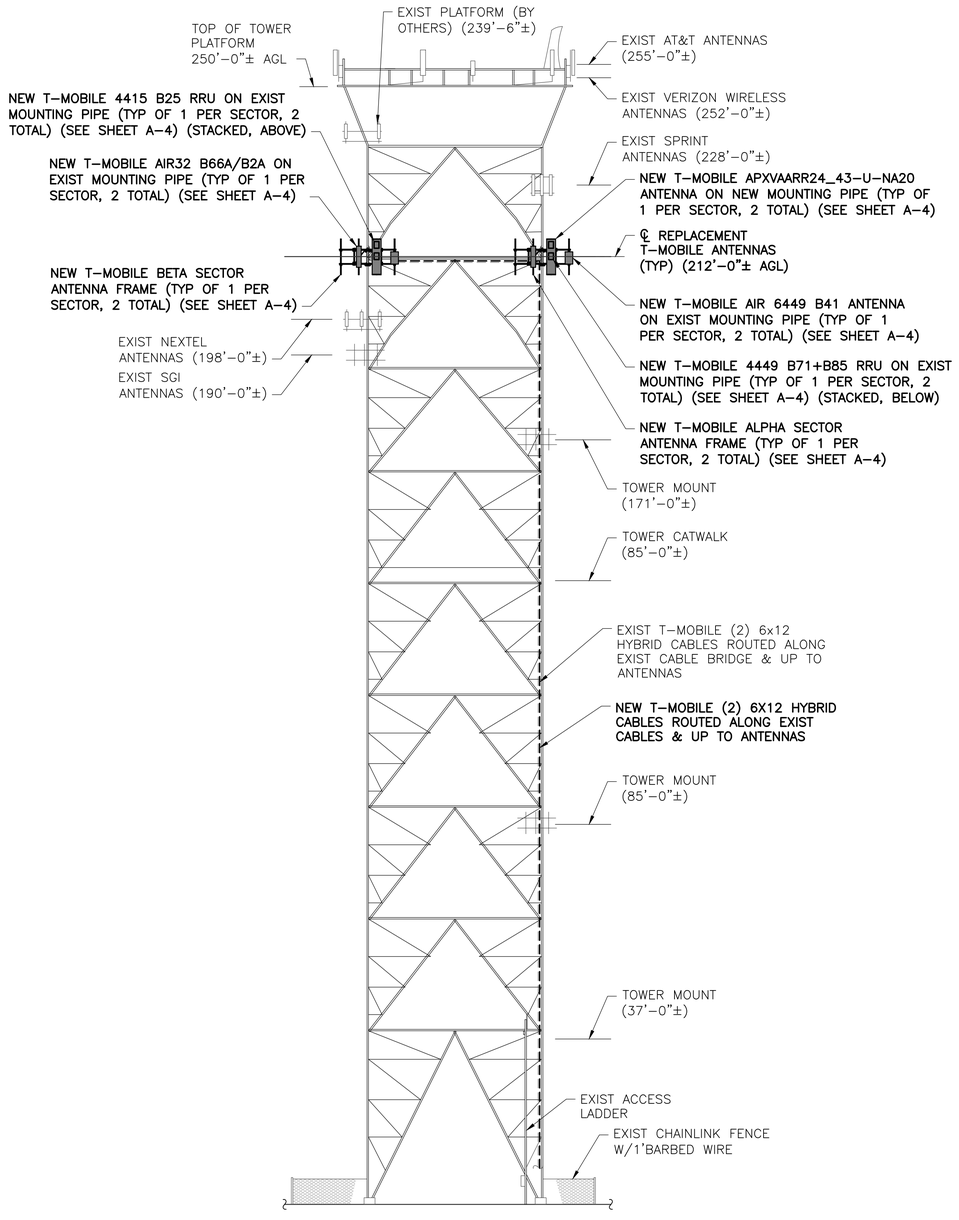
CHESHIRE/RT-10
CT11220A
751 HIGGINS ROAD
CHESHIRE, CT 06410

SHEET TITLE

SITE PLAN

SHEET NUMBER

A-1



NOTE: NOT ALL SITE FEATURES SHOWN FOR CLARITY.

1 / A–2 TOWER ELEVATION

SCALE: 1/16" = 1'–0"

STRUCTURAL NOTE

ANTENNA FRAME

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ISSUED BY	DATE

0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

CHESHIRE/RT–10
CT11220A
751 HIGGINS ROAD
CHESHIRE, CT 06410

SHEET TITLE

TOWER ELEVATION

SHEET NUMBER

A–2

N

APPROX

STRUCTURAL NOTE

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TOWER

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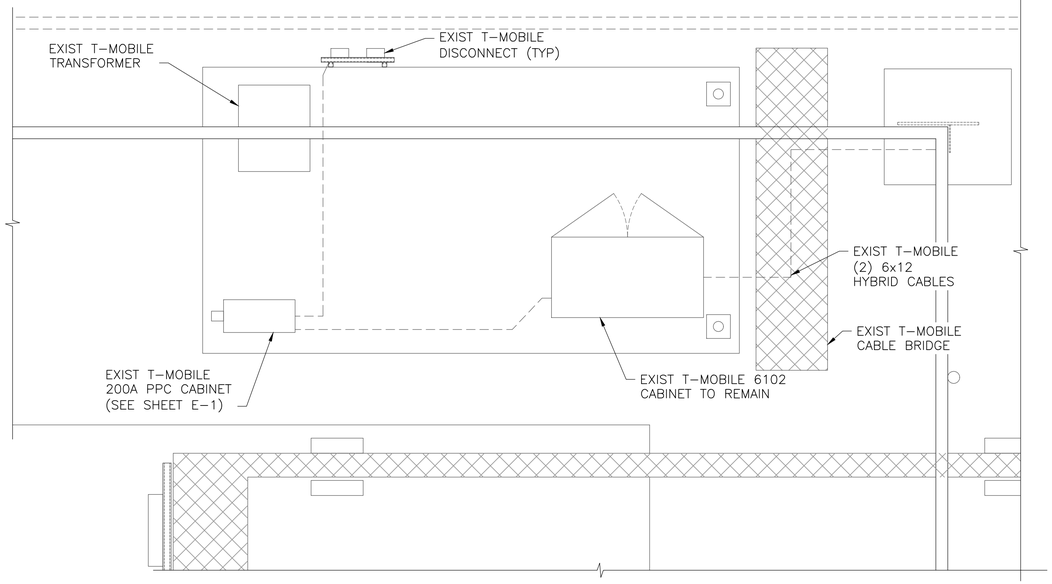
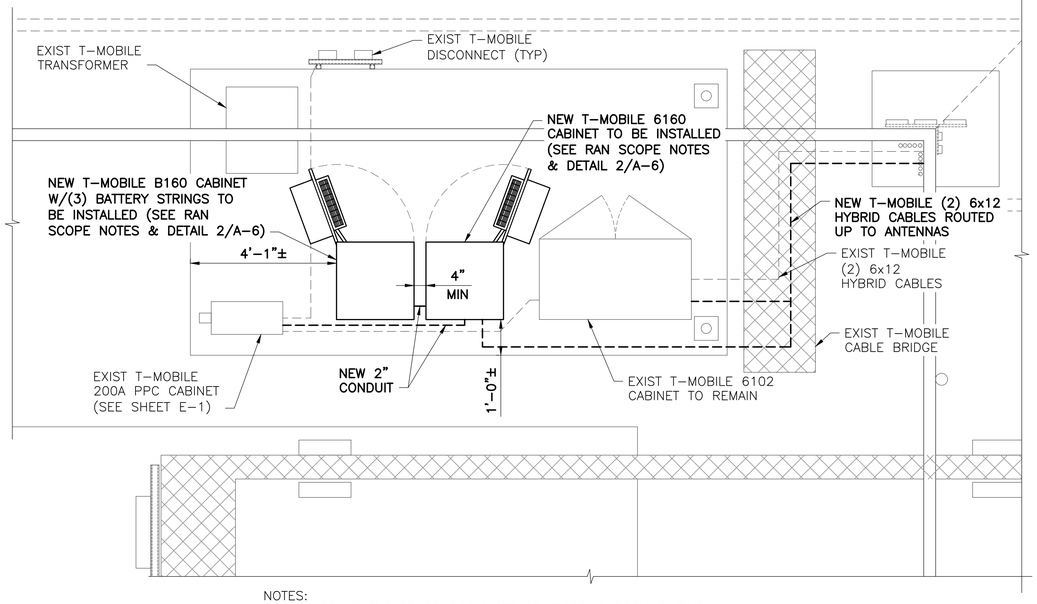
RAN SCOPE NOTES

1. ADD (1) ENCLOSURE 6160.
2. ADD (1) BATTERY CABINET B160.
3. ADD (1) IXRE ROUTER TO NEW ENCLOSURE 6160.
4. ADD (1) BB6630 FOR L2500 TO NEW ENCLOSURE 6160.
5. ADD (1) BB6648 FOR N2500 TO NEW ENCLOSURE 6160.
6. ADD (2) 6x12 HCS. LENGHT OF NEW HCS WILL MATCH THAT OF EXISTING HCS.
7. REMOVE (1) 9x18 HCS.
8. EXISTING (2) 6x12 HCS.



1 A–3 EXIST T–MOBILE EQUIPMENT PLAN

SCALE: 1/2" = 1'–0"



NOTES:
1. ALL EQUIPMENT TO BE GROUNDED TO EXISTING GROUND RING.

2 A–3 NEW T–MOBILE EQUIPMENT PLAN

SCALE: 1/2" = 1'–0"

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ISSUED BY | DATE

0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

CHESHIRE/RT–10
CT11220A
751 HIGGINS ROAD
CHESHIRE, CT 06410

SHEET TITLE

EXISTING AND PROPOSED EQUIPMENT PLANS

SHEET NUMBER

A–3

N

APPROX

STRUCTURAL NOTE

ANTENNA FRAME

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TOWER

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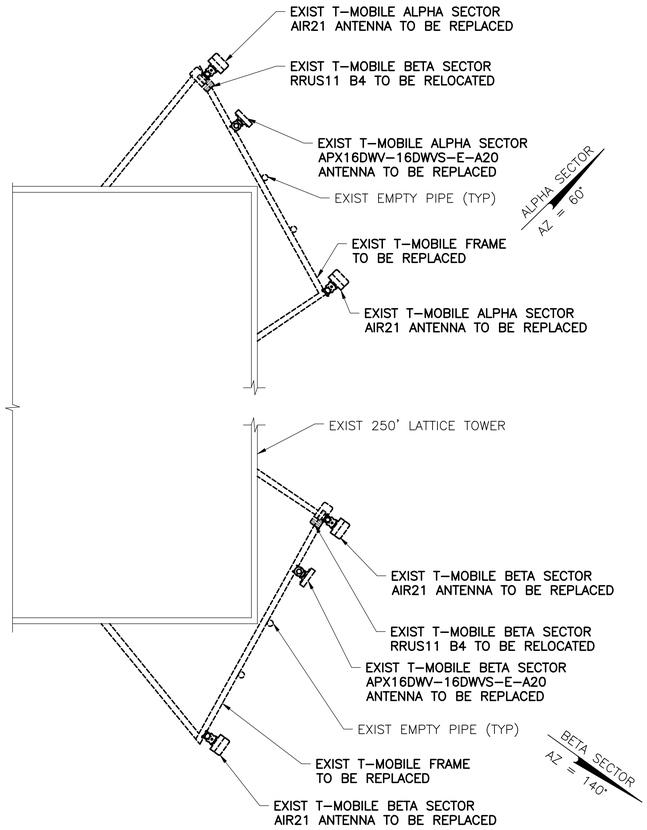
ANTENNA & CABLE SCHEDULE

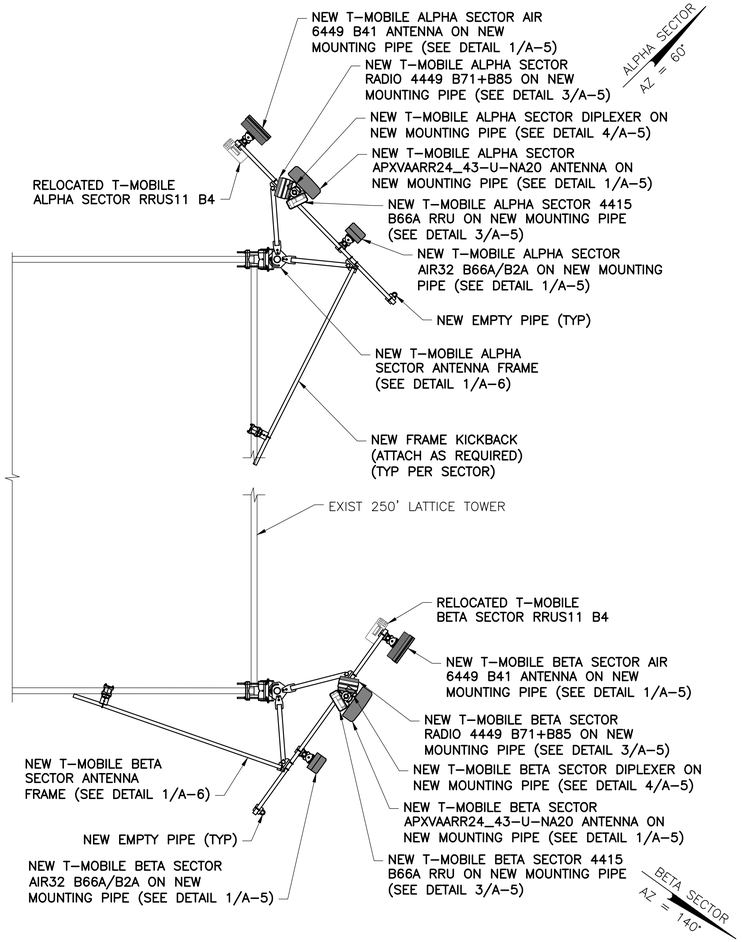
SECTOR MARK	ANTENNA MODEL	AZIMUTH	ELEC DOWNTILT	MECH DOWNTILT	ANTENNA CENTERLINE	SECTOR	STATUS	TMA/RRU	CABLE	JUMPER TYPE	CABLE LENGTH
A-1 LTE	ERICSSON AIR6449 B41	60°	2°	0°	212'-0"±	LEFT ALPHA	REPLACEMENT	0/0	NEW 6x12 HYBRID CABLE	FIBER	227'-0"
A-2 LTE/UMTS	RFS APXVAARR24-43-U-NA20	60°	2°	0°	212'-0"±	CENTER ALPHA	REPLACEMENT	0/3	EXIST 6x12 HYBRID CABLE	FIBER	227'-0"
A-3 LTE/GSM	ERICSSON AIR32 B66A/B2A	60°	2°	0°	212'-0"±	RIGHT ALPHA	REPLACEMENT	0/0	SHARED 6x12 HYBRID CABLE	FIBER	227'-0"
B-1 LTE	ERICSSON AIR6449 B41	140°	2°	0°	212'-0"±	LEFT BETA	REPLACEMENT	0/0	NEW 6x12 HYBRID CABLE	FIBER	227'-0"
A-2 LTE/UMTS	RFS APXVAARR24-43-U-NA20	140°	2°	0°	212'-0"±	CENTER BETA	REPLACEMENT	0/3	EXIST 6x12 HYBRID CABLE	FIBER	227'-0"
B-3 LTE/GSM	ERICSSON AIR32 B66A/B2A	140°	2°	0°	212'-0"±	RIGHT BETA	REPLACEMENT	0/0	SHARED 6x12 HYBRID CABLE	FIBER	227'-0"



ALL SECTORS, CENTERLINE ELEVATION 212'-0" AGL

1 / A-4 EXIST T-MOBILE ANTENNA PLAN

SCALE: 1/4" = 1'-0"



ALL SECTORS, CENTERLINE ELEVATION 212'-0" AGL

2 / A-4 NEW T-MOBILE ANTENNA PLAN

SCALE: 1/4" = 1'-0"

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0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

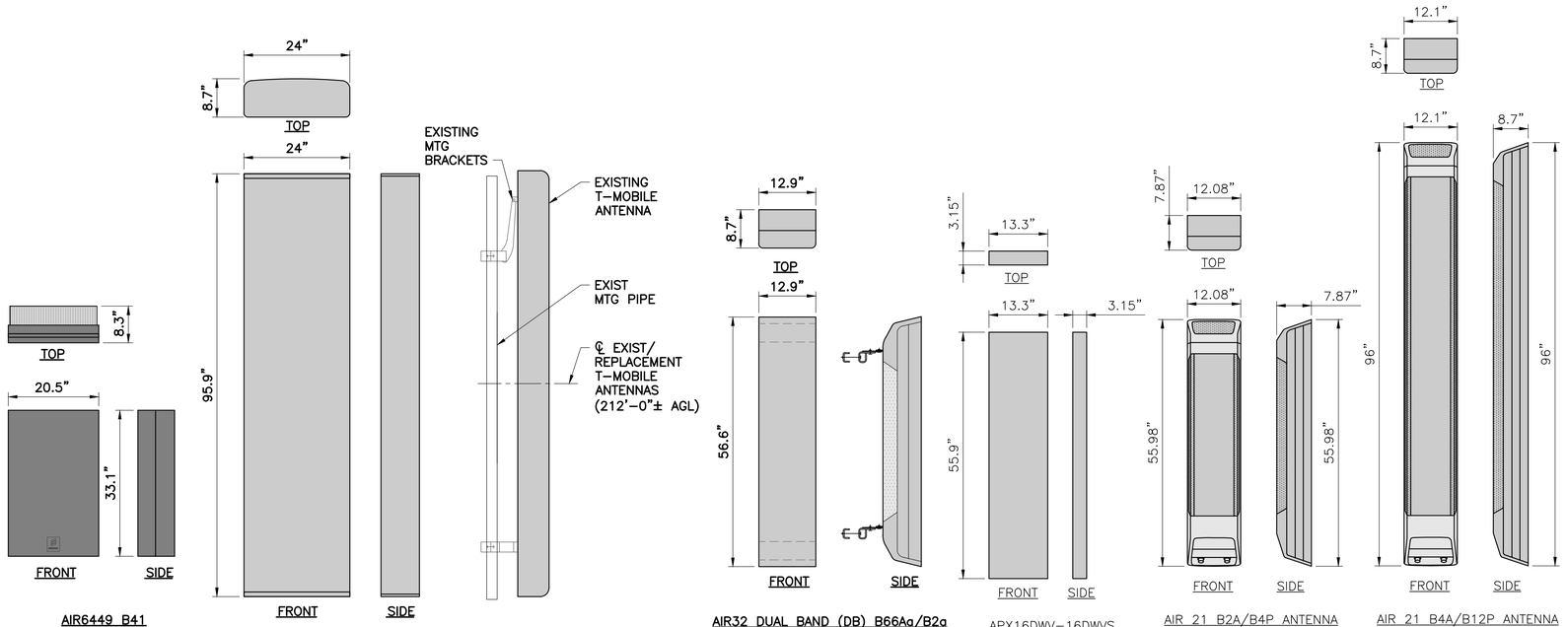
CHESHIRE/RT-10
CT11220A
751 HIGGINS ROAD
CHESHIRE, CT 06410

SHEET TITLE

EXIST/NEW T-MOBILE ANTENNA PLANS & ANTENNA SCHEDULE

SHEET NUMBER

A-4



AIR6449 B41
WEIGHT: 103 LBS

PROPOSED

RFS: APXVAARR24_43_U_NA20
WEIGHT: 128 LBS

PROPOSED

AIR32 DUAL BAND (DB) B66A/B2A
WEIGHT: 132.2 LBS

PROPOSED

APX16DWV-16DWVS
WEIGHT: 40.7 LBS

TO BE REMOVED

AIR 21 B2A/B4P ANTENNA
WEIGHT: 83 LBS

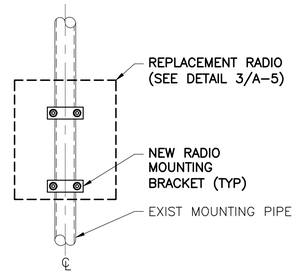
TO BE REMOVED

AIR 21 B4A/B12P ANTENNA
WEIGHT: 126 LBS

TO BE REMOVED

1 / A-5 ANTENNA DETAILS

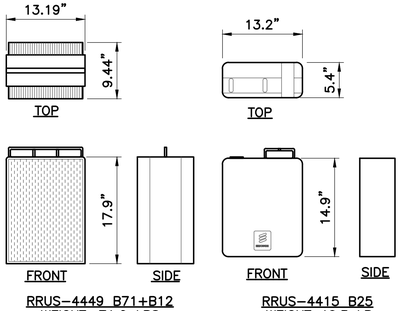
SCALE: 3/4" = 1'-0"



NOTE: MOUNTING OF RADIO TO MOUNTING PIPE, INCLUDING MOUNTING BRACKET ASSEMBLY SHALL BE PER MANUFACTURER DIRECTION.

2 / A-5 RADIO MOUNTING DETAIL

SCALE: 1" = 1'-0"

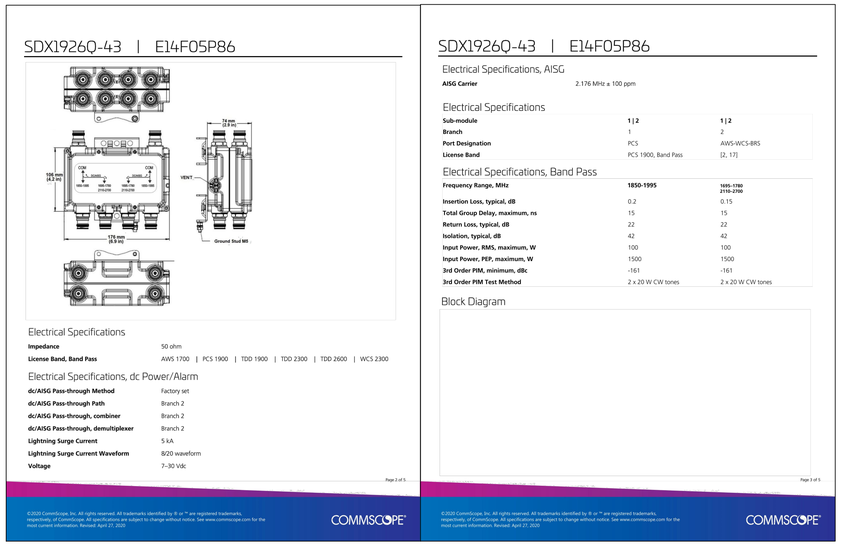


RRUS-4449 B71+B12
WEIGHT: 71.0 LBS

RRUS-4415 B25
WEIGHT 46.3 LB

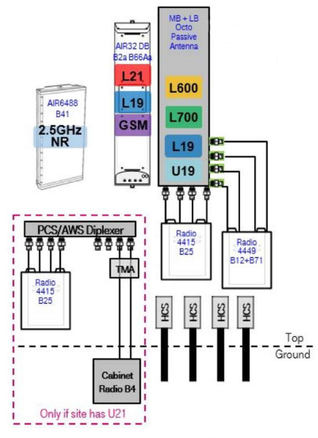
3 / A-5 RADIO DETAIL

SCALE: 1" = 1'-0"



4 / A-5 DIPLEXER SPECIFICATIONS

SCALE: NTS



TYP ALL SECTORS

5 / A-5 ANTENNA SCHEMATIC

SCALE: NTS

STATE OF CONNECTICUT
EDWARD N. IAMICELI
PEN.0028473
LICENSED
PROFESSIONAL ENGINEER

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T-Mobile
NORTHEAST, LLC.

35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

APPROVALS

LANDLORD _____
RF _____
CONSTRUCTION _____
OPERATIONS _____
SITE ACQ. _____

PROJECT NUMBER	DESIGNED BY
10473.CT11220A	EI

REV.	DATE	DESCRIPTION	DRAWN BY
0	10/01/20	ISSUED FOR CONSTRUCTION	BWY
1	11/16/20	PER COMMENTS	BWY

ISSUED BY	DATE

0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

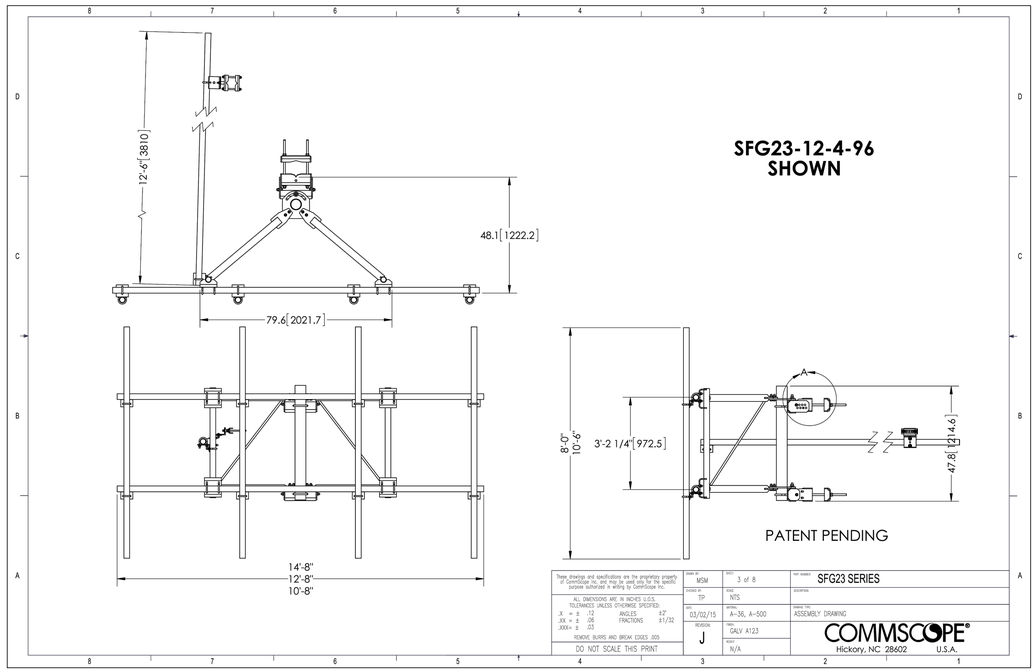
CHESHIRE/RT-10
CT11220A
751 HIGGINS ROAD
CHESHIRE, CT 06410

SHEET TITLE

DETAILS, ANTENNA SCHEMATIC & SPECIFICATIONS

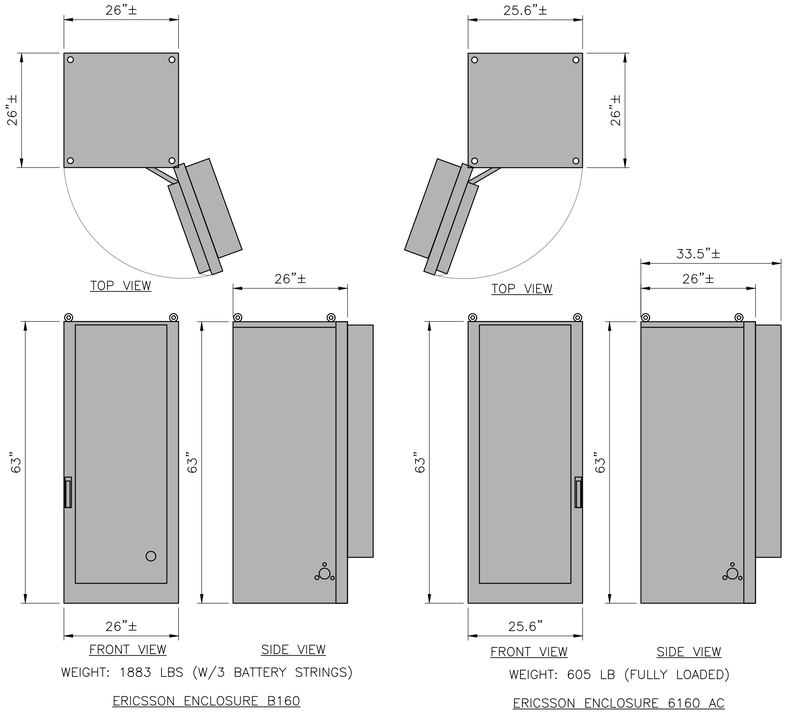
SHEET NUMBER

A-5



1 A–6 ANTENNA FRAME SPECIFICATIONS

SCALE: NTS



WEIGHT: 1883 LBS (W/3 BATTERY STRINGS)

ERICSSON ENCLOSURE B160

WEIGHT: 605 LB (FULLY LOADED)

ERICSSON ENCLOSURE 6160 AC

2 A–6 EQUIPMENT CABINET SPECIFICATIONS

SCALE: NTS

DRAWN BY: MSM
CHKD: 3 of 8
DESIGNED BY: TP
SCALE: NTS
DATE: 03/02/15
MATERIAL: A-36, A-500
REVISION: J
FINISH: GALV A123
N/A

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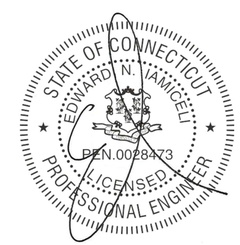

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ISSUED BY | DATE

0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

CHESHIRE/RT-10
CT11220A
751 HIGGINS ROAD
CHESHIRE, CT 06410

SHEET TITLE

SPECIFICATIONS

SHEET NUMBER

A–6

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE STATE OF CONNECTICUT BUILDING CODE, LATEST VERSION AND ALL OTHER APPLICABLE CODES AND ORDINANCES.
2. CONTRACTOR SHALL VISIT THE JOB SITE AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
3. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY, UNLESS OTHERWISE NOTED. THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO EFFECT ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
4. DIMENSIONS SHOWN ARE TO FINISH SURFACES, UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS. SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS AND/OR DESIGN INTENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE AUTHORIZED REPRESENTATIVE OR THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
5. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK.
6. CONTRACTOR SHALL RECEIVE CLARIFICATION IN WRITING, AND SHALL RECEIVE IN WRITING AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEMS NOT CLEARLY DEFINED OR IDENTIFIED BY THE CONTRACT DOCUMENTS.
7. ONCE THE CONTRACTOR HAS RECEIVED AND ACCEPTED THE "NOTICE TO PROCEED," CONTRACTOR WILL CONTACT THE CONSTRUCTION MANAGER OF RECORD A MINIMUM OF 48 HOURS PRIOR TO WORK START.
8. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND TO BE IN THE FIELD.
9. CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE BEST CONSTRUCTION SKILLS AND ATTENTION. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT, UNLESS OTHERWISE NOTED.
10. ERECTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMEN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST ACCEPTED PRACTICE. ALL MEMBERS SHALL BE LAID PLUMB AND TRUE AS INDICATED ON THE DRAWINGS.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE WORK AREA, ADJACENT AREAS, AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFORM TO ALL OSHA REQUIREMENTS.
12. CONTRACTOR SHALL COORDINATE HIS WORK AND SCHEDULE HIS ACTIVITIES AND WORKING HOURS IN ACCORDANCE WITH THE REQUIREMENTS OF THE OWNER.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH THE WORK OF OTHERS AS IT MAY RELATE TO RADIO EQUIPMENT, ANTENNAS AND ANY OTHER PORTIONS OF THE WORK.
14. CONTRACTOR SHALL MAINTAIN LIABILITY INSURANCE TO PROTECT THE OWNER.
15. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
16. MAKE NECESSARY PROVISIONS TO PROTECT EXISTING SURFACES, EQUIPMENT, IMPROVEMENTS, AND PIPING. REPAIR ANY DAMAGE THAT OCCURS DURING CONSTRUCTION.
17. REPAIR ALL EXISTING SURFACES DAMAGED DURING CONSTRUCTION SUCH THAT THEY MATCH AND BLEND WITH ADJACENT SURFACES.
18. KEEP CONTRACT AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DEBRIS AND RUBBISH. EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY OF THE OWNER SHALL BE REMOVED. LEAVE PREMISES IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL ITEMS UNTIL COMPLETION OF CONSTRUCTION.
19. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.
20. PROVIDE 48 HOURS WRITTEN NOTICE TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
21. ALL BROCHURES, OPERATING AND MAINTENANCE MANUALS, CATALOGS, SHOP DRAWINGS AND OTHER DOCUMENTATION SHALL BE TURNED OVER TO AT COMPLETION OF CONSTRUCTION.
22. COMPLETE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER DATE OF ACCEPTANCE BY. ANY WORK, MATERIALS OR EQUIPMENT FOUND TO BE DEFECTIVE DURING THAT PERIOD SHALL BE CORRECTED IMMEDIATELY UPON WRITTEN NOTIFICATION AT NO ADDITIONAL COST TO T–MOBILE.

STRUCTURAL NOTES

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.
2. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS", LATEST EDITION.
3. STRUCTURAL STEEL BEAMS SHALL CONFORM TO ASTM A992 (Fy=50ksi). STRUCTURAL STEEL PLATES AND ANGLES SHALL CONFORM TO ASTM A36.
4. ROUND AND SQUARE HOLLOW STRUCTURAL SECTIONS (HSS) CONFORM TO ASTM A500 "COLD–FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE C.
5. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD–FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 "PIPE, STEEL, BLACK AND HOT–DIPPED, ZINC–COATED WELDED AND SEAMLESS", TYPE E OR S, GRADE B.
6. CONNECTIONS: WELD OR BOLT CONNECTIONS, AS INDICATED:

   A) CONNECTIONS NOT DETAILED ON THE DRAWINGS SHALL CONFORM TO THE REQUIREMENTS OF THE CITED AISC SPECIFICATION.

   B) STRUCTURAL BOLTS SHALL CONFORM TO THE LATEST ASTM A325 "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS".

   C) WHERE THE REACTION VALUES OF BEAMS, BRACING, STRUTS, ETC., ARE NOT SHOWN ON THE DRAWINGS THE CONNECTIONS SHALL BE DESIGNED TO SUPPORT THE END REACTION DERIVED FROM THE TABLES AND FORMULA OF UNIFORM LOAD CONSTANTS IN PART 2, NINTH EDITION, OF THE AISC MANUAL OF STEEL CONSTRUCTION FOR THE GIVEN MEMBER SIZE, SPAN AND YIELD STRENGTH.

   D) MINIMUM 3/16" FILLET E70–XX WELD SHALL APPLY UNLESS NOTED.

   E) MINIMUM 1/2" DIA. A325 BOLTS SHALL APPLY UNLESS NOTED.

   F) MINIMUM SIZE OF CLIP ANGLES SHALL BE L3x3x3/8" UNLESS NOTED.

   G) ALL GUSSET PLATES SHALL BE 3/8" THICK UNLESS NOTED.

   H) ALL HOLES FOR BOLTS SHALL BE 1/16 INCH LARGER THAN THE BOLT DIAMETER WITH AN EDGE DISTANCE OF AT LEAST 1 1/2 TIMES THE BOLT DIAMETER AND A SPACING OF AT LEAST 3 TIMES THE BOLT DIAMETER. ALL BOLTS SHALL BE PROVIDED WITH PALNUTS OR LOCK NUTS.
7. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS AND CONFORM TO ASTM A325 "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS", LATEST EDITION. BOLTS SHALL BE 3/4 INCH DIA. UNLESS OTHERWISE NOTED.
8. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES".
9. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT–DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
10. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.
11. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC–COATING (HOT–DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
12. ALL STEEL SUPPORTS SHALL BE INSTALLED WITH DOUBLE NUTS AND SHALL BE INSTALLED SNUG TIGHT.
13. SLEEVE ANCHORS SHALL CONFORM TO FEDERAL SPECIFICATION FF–S–325, GROUP II, TYPE 3, CLASS 3, AS MANUFACTURED BY HILTI FASTENING SYSTEMS OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE THREE (3) INCHES.
14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF–S–325, GROUP II, TYPE 4, CLASS 1, HILTI KWIK BOLT II OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE FOUR (4) INCHES.
15. EPOXY ANCHORING SYSTEM SHALL BE THE HILTI HY–270 FOR MASONRY CONSTRUCTION WITH HOLLOW BRICK OR BLOCK & THE HILTI HIT HY200 INJECTION ADHESIVE ANCHOR FOR GROUT FILLED CONCRETE MASONRY UNITS AND CONCRETE. EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF 1/2"ø STAINLESS STEEL ANCHOR ROD W/NUTS & WASHERS, AN INTERNALLY THREADED INSERT, A SCREEN TUBE FOR THE HY–270 ONLY & AN EPOXY ADHESIVE (6" MIN EMBEDMENT). THE INSTALLATION PROCEDURE SHALL BE AS FOLLOWS

   A. DRILL THE HOLE USING MANUFACTURER RECOMMENDED DRILL BIT UP TO SPECIFIED DEPTH. HAMMERING IS NOT PERMITTED.

   B. CLEAN THE HOLE USING NYLON BRUSH AND/OR COMPRESSED AIR. THE HOLE SHOULD BE CLEAR OF ANY LOOSE MATERIAL. IF WET, THE MASONRY SHOULD BE ALLOWED TO DRY FULLY BEFORE ANCHOR INSTALLATION.

   C. INSERT SPECIFIED SCREEN TUBE INTO THE HOLE.

   D. FILL THE SCREEN TUBE COMPLETELY WITH ADHESIVE, BEGINNING AT THE BOTTOM END.

   E. INSERT ANCHOR ROD OR INTERNALLY THREADED INSERT INTO THE ADHESIVE–FILLED SCREEN TUBE, TWISTING SLIGHTLY.

   F. LOAD FASTENER ONLY AFTER MANUFACTURER SPECIFIED CURE TIME HAS ELAPSED.
16. GRATING SHALL BE GALVANIZED WELDED STEEL BAR GRATING TYPE W/BA WITH 1–1/4" BEARING BARS AT 1–3/16" OC. FASTEN TO SUPPORTING MEMBERS WITH SADDLE–TYPE CLIPS AT 2'–0" O.C. AND BAND ALL EXPOSED EDGES.
17. SUBMIT DRAWINGS OF ALL STRUCTURAL AND MISCELLANEOUS STEEL TO THE ENGINEER FOR APPROVAL AND INCORPORATE ALL COMMENTS PRIOR TO FABRICATION.
18. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE ENGINEER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER APPROVAL.
19. ALL WORK SHALL BE INSPECTED BY THE ENGINEER DURING AND AT THE COMPLETION OF CONSTRUCTION.
20. CONTRACTOR TO REMOVE MASTIC ON THE EXISTING WALL/PARAPET AT EVERY STEEL SUPPORT ATTACHMENT AND REPOINT MASONRY AS REQUIRED. A BED OF SILICONE SHALL BE APPLIED BEHIND AND ALL AROUND THE STEEL SUPPORT ATTACHMENT TO MAKE IT WEATHERPROOF.
21. HAMMER DRILLS ARE NOT TO BE USED WHEN DRILLING HOLES FOR SLEEVE OR EXPANSION BOLTS INSTALLED IN MASONRY BLOCKS/BRICKS.
22. ALL HOLES TO BE ADDED IN THE FIELD SHALL BE PUNCHED OR DRILLED. NO HOLE BURNING SHALL BE ALLOWED.
23. NOTES ARE NOT PROJECT SPECIFIC.

SITE NOTES

1. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWING.
2. RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
3. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
4. 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.
5. THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
6. 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 ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES.
7. 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, SUBJECT TO THE APPROVAL OF ENGINEER.
8. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED, AND COVERED WITH MULCH.
9. CONTRACTOR 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.
10. CARE SHALL BE TAKEN TO RETAIN NATURAL GROWTH AND PREVENT DAMAGE TO TREES WITHIN AND OUTSIDE THE LIMITS OF CONSTRUCTION AND SPECIFIED WORK AREAS CAUSED BY EQUIPMENT AND MATERIALS. ANY DAMAGE TO THIS NATURAL GROWTH SHALL BE RESTORED AT THE EXPENSE OF THE CONTRACTOR.
11. ALL AREAS DISTURBED BY THE CONTRACTOR WITHOUT AUTHORIZATION SHALL BE RESTORED BY THE CONTRACTOR.
12. IN THE EVENT THE CONTRACTOR DAMAGES AN EXISTING UTILITY SERVICE CAUSING AN INTERRUPTION IN SAID SERVICE, HE SHALL IMMEDIATELY COMMENCE WORK TO RESTORE SERVICE AND MAY NOT CEASE HIS WORK OPERATION UNTIL SERVICE IS RESTORED.

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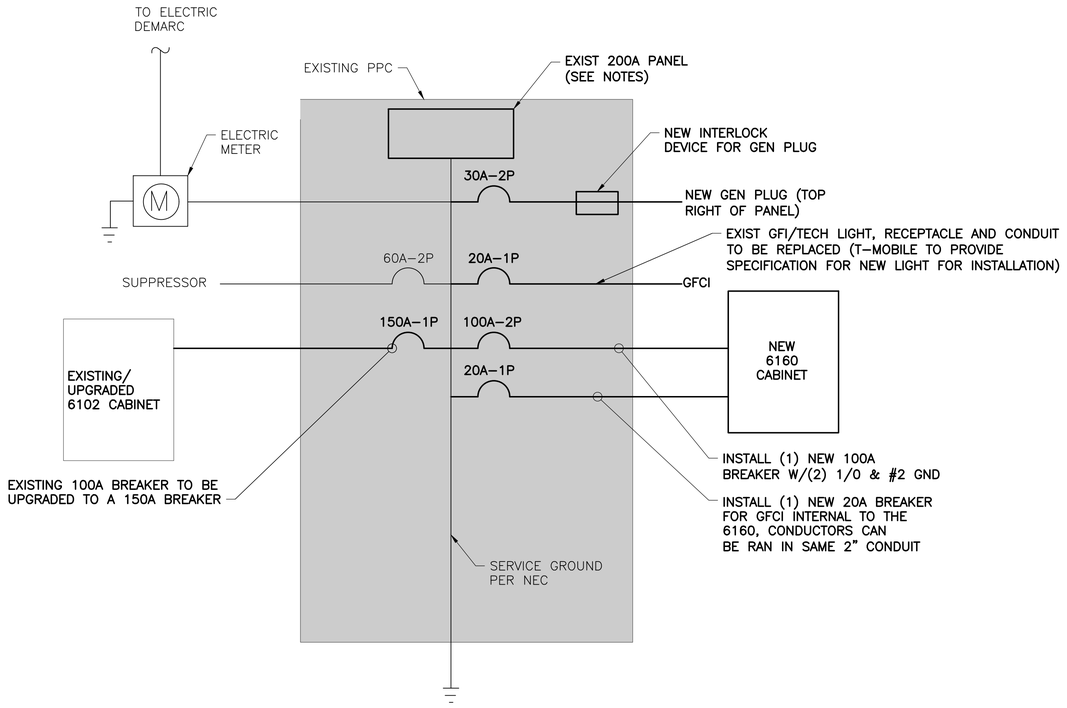
751 HIGGINS ROAD
CHESHIRE, CT 06410

SHEET TITLE

NOTES

SHEET NUMBER

A–7



NOTES:
1. THE ABOVE DIAGRAM IS GENERIC AND ANY ELECTRICAL WORK SHALL BE COMPLETED BY A LICENSED ELECTRICIAN IN ACCORDANCE WITH NEC STANDARDS.
2. ELECTRICAL CONSULT SHALL BE PERFORMED TO CONSTRUCTION TO CONFIRM THE POWER REQUIREMENTS AND FEASIBILITY.

1 / E–1 ONE–LINE DIAGRAM

SCALE: NTS

GENERAL ELECTRICAL NOTES

1. CONTRACTOR SHALL PERFORM ALL VERIFICATION OBSERVATION TESTS, AND EXAMINATION WORK PRIOR TO THE ORDERING OF THE ELECTRICAL EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE ENGINEER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
2. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR A COMPLETE AND PROPERLY OPERATIVE SYSTEM ENERGIZED THROUGHOUT AND AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
3. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED AND APPROVED BY UNDERWRITER'S LABORATORIES (U.L.) AND SHALL BEAR THE INSPECTION LABEL "J" WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH APPROVAL OF ALL GOVERNING BODIES HAVING JURISDICTION. AND SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA AND NBFU.
4. CONTRACTOR TO COORDINATE WITH SITE OWNER FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS TO BE PAID BY CONTRACTOR.
5. ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THAN THE MAXIMUM SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED, AND A MINIMUM OF 10,000 A.I.C.
6. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS.
7. METER SOCKETS AMPERES, VOLTAGE AND NUMBER OF PHASES SHALL BE NOTED AND SHALL BE MANUFACTURED BY SQUARE "D" COMPANY, SANGAMO OR APPROVED EQUAL. METER SOCKET SHALL BE APPROVED BY UTILITY COMPANY PRIOR TO INSTALLATION.
8. WIRE AND CABLE CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM WITH TYPE THHN INSULATION UNLESS SPECIFICALLY NOTED OTHERWISE.
9. ALL CONDUCTORS SHALL BE COPPER.
10. USE T–TAP CONNECTIONS ON ALL MULTI–CIRCUITS WITH COMMON NEUTRAL CONDUCTOR FOR LIGHTING FIXTURES.
11. EACH CONDUCTOR OF EVERY SYSTEM SHALL BE PERMANENTLY TAGGED IN EACH PANEL BOARD, PULLBOX, J–BOX, SWITCH BOX, ETC., IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT (O.S.H.A.)
12. CONDUIT:
    A. RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR.
    B. INTERMEDIATE METAL CONDUIT SHALL BE U.L. LABEL, FITTINGS SHALL BE THREADED ALUMINUM OR STEEL AND SHALL BE USED FOR ALL EXTERIOR RUNS. THREADLESS COUPLINGS AND CONNECTORS SHALL NOT BE USED.
    C. ELECTRICAL METALLIC TUBING (EMT) SHALL HAVE U.L. LABEL, FITTINGS SHALL BE NO SET SCREW OR CRIMP TYPE FITTINGS SHALL BE USED. GLAND RING COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.
    D. FLEXIBLE METALLIC CONDUIT SHALL HAVE U.L. LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE, SEAL TIGHT FLEXIBLE CONDUIT. ALL CONDUIT IN EXCESS OF SIX FEET IN LENGTH SHALL HAVE FULL SIZE GROUND WIRE.
    E. CONDUIT SHALL BE SIZED PER THE NEC AND AS SHOWN.
    F. CONDUIT RUNS MAY BE SURFACE MOUNTED IN CEILINGS OR WALLS UNLESS INDICATED OTHERWISE. CONDUIT INDICATED SHALL RUN PARALLEL OR AT RIGHT ANGLES TO CEILING, FLOOR OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH OWNER PRIOR TO INSTALLING.
    G. ALL CONDUIT ONLY (C.O.) RUNS SHALL HAVE A PULL WIRE OR ROPE.
13. COVERPLATES SHALL BE BRUSHED STAINLESS STEEL FOR ALL SWITCHES, RECEPTACLES, TELEPHONE AND BLANKED OUTLETS, AND SHALL HAVE ENGRAVED LETTERING WHERE INDICATED WEATHERPROOF RECEPTACLES SHALL HAVE SIERRA #WPD–8 LIFT COVERPLATES.
14. REFER TO MANUFACTURERS MANUAL FOR RECOMMENDED FUSE AND WIRE SIZES.
15. ALL FINAL CONNECTIONS TO THE EQUIPMENT ARE TO BE OF FLEXIBLE WEATHERPROOF CONDUIT TO MEET APPLICABLE CODES.
16. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY ALL APPLICABLE CODES.
17. GROUNDING CONDUCTORS SHALL BE SOLID TINNED COPPER AND ANNEALED #2, UNLESS OTHERWISE NOTED.
18. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL OF POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO THE CONSTRUCTION MANAGER. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION.
19. PROVIDE CONSTRUCTION MANAGER WITH ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS, AND CIRCUITS.
20. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH GAINING APPROVALS AND PAYING ALL FEES ASSESSED BY UTILITY COMPANY FOR ELECTRICAL SERVICE.

STATE OF CONNECTICUT
EDWARD N. VAMICELI
PEN.0028473
LICENSED
PROFESSIONAL ENGINEER

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T-Mobile NORTHEAST, LLC.

35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

APPROVALS

LANDLORD _____
RF _____
CONSTRUCTION _____
OPERATIONS _____
SITE ACQ. _____

PROJECT NUMBER	DESIGNED BY
10473.CT11220A	EI

REV.	DATE	DESCRIPTION	DRAWN BY
0	10/01/20	ISSUED FOR CONSTRUCTION	BWY
1	11/16/20	PER COMMENTS	BWY

ISSUED BY | DATE

0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

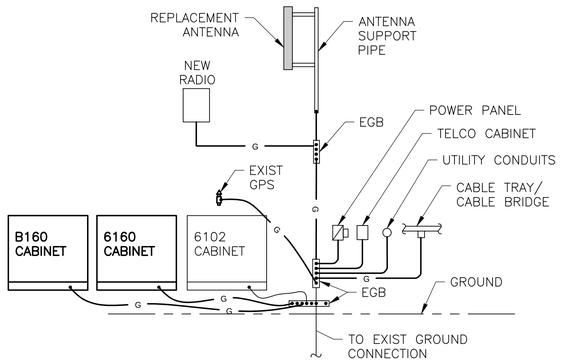
CHESHIRE/RT–10
CT11220A
751 HIGGINS ROAD
CHESHIRE, CT 06410

SHEET TITLE

ELECTRICAL NOTES & ONE–LINE DIAGRAM

SHEET NUMBER

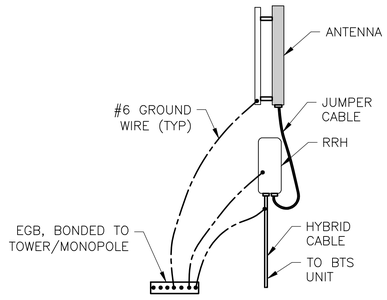
E–1



NOTE: CONTRACTOR SHALL CONFIRM ALL EQUIPMENT IS GROUNDED. IF NOT, CONTRACTOR SHALL GROUND EQUIPMENT AS SHOWN AND AS REQUIRED.

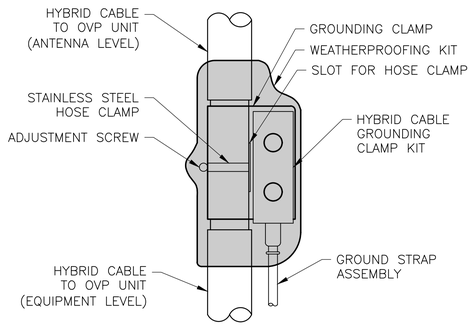
1 / G-1 GROUNDING RISER DIAGRAM

SCALE: NTS



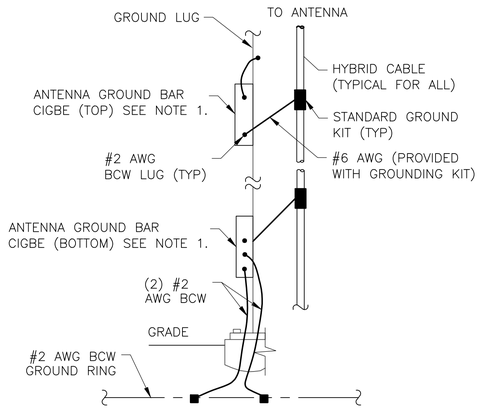
2 / G-1 HYBRID CABLE CONNECTION DETAIL

SCALE: NTS



3 / G-1 HYBRID CABLE GROUNDING DETAIL

SCALE: NTS

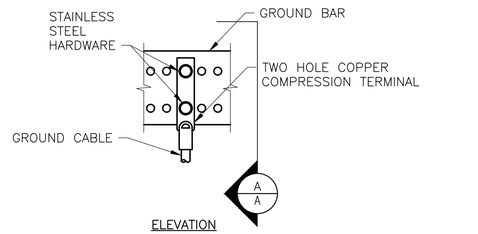


NOTES:

1. NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER. ANTENNA LOCATION AND CONNECTION ANTENNA LOCATION AND CONNECTION ORIENTATION. PROVIDE AS REQUIRED.
2. A SEPARATE GROUND BAR TO BE USED FOR GPS UNIT IF REQUIRED.

4 / G-1 ANTENNA CABLE GROUNDING

SCALE: NTS



NOTES:

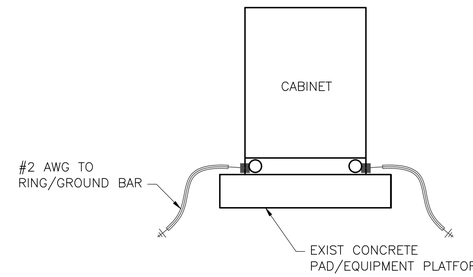
1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.
4. ALL GROUND LUGS MUST NE HEAT SHRUNK AT WIRE/LUG CONNECTION.

5 / G-1 GROUND BAR CONNECTION DETAIL

SCALE: NTS

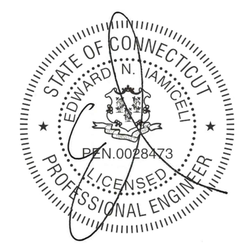
GROUNDING NOTES

1. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY ALL APPLICABLE CODES.
2. ALL GROUNDING WORK SHALL BE IN ACCORDANCE WITH T-MOBILE STANDARD PRACTICE.
3. ALL BUS CONNECTORS SHALL BE TWO-HOLE, LONG-BARREL TYPE COMPRESSION LUGS, T&B OR EQUAL, UNLESS OTHERWISE NOTED ON DRAWINGS. ALL LUGS SHALL BE ATTACHED TO BUSSES USING BOLTS, NUTS, AND LOCK WASHERS. NO WASHERS ARE ALLOWED BETWEEN THE ITEMS BEING GROUNDED.
4. ALL CONNECTORS SHALL BE CRIMPED USING HYDRAULIC CRIMPING TOOLS, T&B #TBM 8 OR EQUIVALENT.
5. ALL CONNECTIONS SHALL BE MADE TO BARE METAL. ALL PAINTED SURFACES SHALL BE FILED TO ENSURE PROPER CONTACT. NO WASHERS ARE ALLOWED BETWEEN THE ITEMS BEING GROUNDED. ALL CONNECTIONS ARE TO HAVE A NON-OXIDIZING AGENT APPLIED PRIOR TO INSTALLATION.
6. ALL COPPER BUSSES SHALL BE CLEANED, POLISHED, AND A NON-OXIDIZING AGENT APPLIED. NO FINGERPRINTS OR DISCOLORED COPPER WILL BE PERMITTED.
7. ALL BENDS SHALL BE AS SHALLOW AS POSSIBLE, WITH NO TURN SHORTER THAN AN 8-INCH NOMINAL RADIUS.
8. GROUNDING CONDUCTORS SHALL BE SOLID TINNED COPPER AND ANNEALED #2. ALL GROUNDING CONDUCTORS SHALL RUN THROUGH PVC SLEEVES WHEREVER CONDUCTORS RUN THROUGH WALLS, FLOORS, OR CEILINGS. IF CONDUCTORS MUST RUN THROUGH EMT, BOTH ENDS OF CONDUIT SHALL BE GROUNDED. SEAL BOTH ENDS OF CONDUIT WITH SILICONE CAULK.
9. GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED 10 OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE PROJECT MANAGER FOR FURTHER INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE VALUE.
10. ALL ROOF TOP ANTENNA MOUNTS SHALL BE GROUNDED WITH A #2 GROUND WIRE CONNECTED TO THE NEAREST GROUND BUS. ALL CONNECTIONS ARE TO BE CAD-WELDED IF POSSIBLE.
11. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL OF POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO THE PROJECT MANAGER.
12. GROUNDING CONNECTION TO TRAVEL IN A DOWNWARD DIRECTION.
13. ALL EXPOSED #2 WIRE MUST BE TINN NOT BTW.
14. TECTONIC TAKES NO RESPONSIBILITY OR LIABILITY FOR THE GROUNDING SYSTEM AS SHOWN ON THIS SITE. THIS IS A STANDARD GROUNDING SYSTEM.



6 / G-1 CABINET GROUNDING DETAIL

SCALE: NTS



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APPROVALS

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CHESHIRE, CT 06410

SHEET TITLE

GROUNDING DETAILS & NOTES

SHEET NUMBER

G-1

Exhibit D

Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Date: **November 10, 2020**

Structural Analysis Report – Rev1

Tower Owner: AT&T Mobility
Carrier: T-Mobile Northeast LLC

Site ID: CT11220A
Site Name: Cheshire/ Rt-10
Site Data: 751 Higgins Road, Cheshire, New Haven County, CT 06410
Latitude *41° 29' 15.36"*, Longitude *-72° 55' 45.12"*
250 ft Self-Support Tower

Tectonic Project Number: 10473.CT11220A – Rev1

Tectonic Engineering & Surveying Consultants P.C. is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure to be:

Structure: **Sufficient Capacity – 72%**
Foundation: **Not Evaluated**

This analysis has been performed in accordance with the 2018 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second gust wind speed of 97 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category B with a maximum topographic factor, Kzt, of 1.0 and Structure Class II were used in this analysis.

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

We at Tectonic appreciate the opportunity of providing our continuing professional services to you and T-Mobile. If you have any questions or need further assistance on this or any other projects please give us a call.

Structural analysis prepared by: John-Fritz Julien / Ian Marinaccio

Respectfully submitted by:
Tectonic Engineering & Surveying Consultants P.C.

Edward N. Iamiceli, P.E.
Managing Director - Structural

Project Contact Info

1279 Route 300 | Newburgh, NY 12550
845.567.6656 Tel | 845.567.8703 Fax

tectonicengineering.com
Equal Opportunity Employer

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 250 ft Self Support tower located in Cheshire, Connecticut.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-G
Risk Category:	II
Wind Speed:	97 mph
Exposure Category:	B
Topographic Factor:	1.0
Ice Thickness:	0.75 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Carrier Designation	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
212.0	T-Mobile	2	commscope	SDX1926Q-43	2	6x12 hybrid	-
		2	ericsson	AIR 32 B66A B2A			
		2	ericsson	AIR 6449 B41			
		2	ericsson	RADIO 4449 B71/B85			
		2	ericsson	RRUS 4415 B25			
		2	rfs celwave	APXVARR24_43-U-NA20			
		2	commscope	12.5' Sector Frame Mount (P/N: SFG-23-12-4-96)			

Table 2 - Existing Antenna and Cable Information

Mounting Level (ft)	Carrier Designation	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
255.0	AT&T	2	cci antennas	HPA-65R-BUU-H6	21 6	1-5/8 1-1/4	1
		1	cci antennas	HPA-65R-BUU-H8			
		1	commscope	SBNH-1D6565C			
		3	ericsson	RRUS 11			
		3	ericsson	RRUS 32			
		3	ericsson	RRUS 32 B2			
		3	ericsson	RRUS 4478 B14			
		2	kathrein	80010965			
		2	kathrein	80010966			
		2	kmw communications	AM-X-CD-16-65-00T-RET			
		3	raycap	DC6-48-60-18-8F			
		3	raycap	DC2-48-60-8-18F			

Mounting Level (ft)	Carrier Designation	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
252.0	Verizon Wireless	6	commscope	JAHH-65B-R3B	12	5/8	1
		2	amphenol	LPA-80063/6CF			
		2	amphenol	LPA-80080/6CF			
		1	gps	GPS_A			
		3	rfs celwave	FD9R6004/2C-3L			
		3	samsung telecommunications	B5/B13 RRH-BR04C			
		3	samsung telecommunications	DUAL BAND RRH 4T4R B2/B66			
		3	raycap	DB-TI-6Z8AB-0Z			
		4	tower mounts	4' Standoff			
239.5	-	1	-	Platform	-	-	1
228.0	Sprint	3	alcatel lucent	PCS 1900MHz 4x45W-65MHz	6	1-5/8	1
		6	alcatel lucent	RRH2X50-800			
		3	alcatel lucent	TD-RRH8x20-25			
		3	commscope	NNVV-65B-R4			
		3	rfs celwave	APXVTM14-ALU-I20			
212.0	T-Mobile	2	ericsson	AIR21 B2A B4P	-	-	2
		2	ericsson	AIR 21 B2a B5/12p			
		2	ericsson	KRY 112 144/1			
		2	ericsson	RRUS 11 B12			
		2	tower mounts	15.0’ Sector Frame Mount			
		2	ericsson	RRUS 11 B4	2	6x12 hybrid	1
210.0	Nextel	6	decibel	DB844H90E-XY	6	1-5/8	1
		2	tower mounts	14' Sector Mount			
198.0		3	decibel	DB844H90E-XY	3	1-5/8	1
		1	tower mounts	14' Sector Mount			
190.0	SGI	2	-	PGI-NOF-0091	2	7/8	1
		2	tower mounts	5' Standoff			
171.0		1	-	PGI-DOF-0093	1	7/8	1
		1	tower mounts	5' Standoff			
139.5	Unknown	1	-	Catwalk	-	-	1
85.0		1	telewave	WL7-13/S Yagi	7	5/8	1
		1	telewave	WL14-69/S			
		1	telewave	WL14-69/S			
		1	telewave	WL14-69/S			
		1	telewave	WL14-69/S			
		3	tower mounts	5’ Standoff			
37.0		1	-	Camera	1	1	1
		1	tower mounts	Box Mount			

Mounting Level (ft)	Carrier Designation	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
36.5	Unknown	1	Gps	GPS_A	1	1/2	1
		1	tower mounts	3' Side Arm			
21.0		1	-	Junction box	1	1	1
		1	-	RRU			

Notes:
1) Existing equipment.
2) Existing equipment to be removed; not considered in the analysis.

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Dated
STRUCTURAL ANALYSIS REPORT	GPD Group	05/16/19
STRUCTURAL ANALYSIS REPORT	Destek Engineering, LLC	07/19/19
MOUNT ANALYSIS REPORT	Dewberry Engineers, Inc.	04/28/20
RFDS	T-Mobile	07/06/20
FIELD NOTES	Tectonic	07/17/20
MOUNT MAPPING REPORT	HighTower Solutions, Inc.	08/26/20
APPURTENANCE UPDATE, VIA EMAIL	NNS	11/04/20

3.1) Analysis Method

tnxTower (version 8.0.5.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) Tower and structures were built and maintained in accordance with the manufacturer's specifications.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2.
3) The tower member sizes and grades are based solely on the structural analysis by Destek Engineering, LLC; referenced above.
4) Existing Verizon Wireless load configurations are based solely on the structural report by Destek Engineering, LLC, referenced above.
5) Existing AT&T load configurations are based solely on the structural report by Dewberry Engineers, Inc., referenced above.

This analysis is solely for the supporting tower structure and it may be affected if any assumptions are not valid or have been made in error. Tectonic should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T1	237.083 - 216	Leg	W6x25	2	-38.23	217.10	17.6 25.5 (b)	Pass
T2	216 - 190.917	Leg	W6x25	83	-56.58	209.03	27.1 37.8 (b)	Pass
T3	190.917 - 165.834	Leg	W6x25	164	-74.46	209.03	35.6 36.5 (b)	Pass
T4	165.834 - 140.751	Leg	W8x35	245	-102.00	310.43	32.9 51.7 (b)	Pass
T5	140.751 - 115.668	Leg	W8x40	326	-149.34	352.88	42.3 47.9 (b)	Pass
T6	115.668 - 90.585	Leg	W10x49	407	-206.93	445.49	46.5 70.0 (b)	Pass
T7	90.585 - 65.502	Leg	W10x60	488	-273.52	545.08	50.2 59.5 (b)	Pass
T8	65.502 - 40.419	Leg	W10x77	569	-350.07	700.57	50.0 59.7 (b)	Pass
T9	40.419 - 0	Leg	W12x87	650	-415.56	786.97	52.8	Pass
T1	237.083 - 216	Diagonal	2L2 1/2x3x3/8x3/8	30	-11.81	65.82	17.9	Pass
T2	216 - 190.917	Diagonal	2L2 1/2x3x3/8x3/8	104	-22.78	56.00	40.7	Pass
T3	190.917 - 165.834	Diagonal	*2L2-1/2x3x1/2x3/8	185	-31.37	65.12	48.2	Pass
T4	165.834 - 140.751	Diagonal	*2L2-1/2x3x1/2x3/8	266	-39.38	65.65	60.0	Pass
T5	140.751 - 115.668	Diagonal	2L3x4x3/8x3/8	347	-48.78	92.01	53.0	Pass
T6	115.668 - 90.585	Diagonal	2L3x4x3/8x3/8	428	-56.33	92.01	61.2	Pass
T7	90.585 - 65.502	Diagonal	*2L3x4x7/16x3/8	509	-64.03	116.85	54.8 71.6 (b)	Pass
T8	65.502 - 40.419	Diagonal	2L3x4x1/2x3/8	598	-58.63	115.60	50.7	Pass
T9	40.419 - 0	Diagonal	2L4x4x1/2x3/8	675	-108.43	163.37	66.4	Pass
T2	216 - 190.917	Horizontal	2L2 1/2x3x1/4x3/8	103	-10.99	33.02	33.3	Pass
T3	190.917 - 165.834	Horizontal	2L3x2 1/2x3/8x3/8	184	-15.88	66.68	23.8	Pass
T4	165.834 - 140.751	Horizontal	2L3x2 1/2x3/8x3/8	265	-20.13	66.68	30.2	Pass
T5	140.751 - 115.668	Horizontal	2L3x2 1/2x3/8x3/8	346	-25.10	66.68	37.6	Pass
T6	115.668 - 90.585	Horizontal	2L3x2 1/2x3/8x3/8	427	-29.09	66.68	43.6	Pass
T7	90.585 - 65.502	Horizontal	2L3x2 1/2x3/8x3/8	508	-33.13	66.68	49.7	Pass
T8	65.502 - 40.419	Horizontal	2L3x2 1/2x3/8x3/8	589	-31.88	66.68	47.8	Pass
T9	40.419 - 0	Horizontal	*2L4x3x7/16x3/8	674	-38.89	130.14	29.9 57.0 (b)	Pass
T1	237.083 - 216	Top Girt	2C10x15.3	6	-6.09	46.68	13.1	Pass
T1	237.083 - 216	Redund Horz 1 Bracing	*L3x3x3/16	31	0.89	35.43	2.5	Pass
T2	216 - 190.917	Redund Horz 1 Bracing	*L3x3x3/16	96	1.20	35.43	3.4	Pass
T3	190.917 - 165.834	Redund Horz 1 Bracing	*L3x3x3/16	186	1.76	35.43	5.0	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T4	165.834 - 140.751	Redund Horz 1 Bracing	*L3x3x3/16	267	2.51	35.43	7.1	Pass
T5	140.751 - 115.668	Redund Horz 1 Bracing	*L3x3x3/16	348	3.12	35.43	8.8	Pass
T6	115.668 - 90.585	Redund Horz 1 Bracing	*L3x3x3/16	420	4.23	35.43	11.9	Pass
T7	90.585 - 65.502	Redund Horz 1 Bracing	*L3x3x3/16	510	4.68	35.43	13.2	Pass
T8	65.502 - 40.419	Redund Horz 1 Bracing	*L3x3x3/16	582	6.92	35.43	19.5	Pass
T9	40.419 - 0	Redund Horz 1 Bracing	*L3x3x3/16	665	-6.28	32.70	19.2	Pass
T1	237.083 - 216	Redund Horz 2 Bracing	*L2-1/2x2-1/2x3/16	32	-1.27	12.51	10.2	Pass
T2	216 - 190.917	Redund Horz 2 Bracing	*L2-1/2x2-1/2x3/16	97	-0.89	12.51	7.1	Pass
T3	190.917 - 165.834	Redund Horz 2 Bracing	*L2-1/2x2-1/2x3/16	187	-1.12	12.51	8.9	Pass
T4	165.834 - 140.751	Redund Horz 2 Bracing	*L2-1/2x2-1/2x3/16	259	-1.54	12.70	12.1	Pass
T5	140.751 - 115.668	Redund Horz 2 Bracing	*L2-1/2x2-1/2x3/16	349	-2.25	12.71	17.7	Pass
T6	115.668 - 90.585	Redund Horz 2 Bracing	*L2-1/2x2-1/2x3/16	421	-3.11	12.90	24.1	Pass
T7	90.585 - 65.502	Redund Horz 2 Bracing	*L2-1/2x2-1/2x3/16	502	-4.11	12.93	31.8	Pass
T8	65.502 - 40.419	Redund Horz 2 Bracing	*L2-1/2x2-1/2x3/16	583	-5.26	12.97	40.6	Pass
T9	40.419 - 0	Redund Horz 2 Bracing	*L2-1/2x2-1/2x3/16	666	-6.28	16.84	37.3	Pass
T1	237.083 - 216	Redund Horz 3 Bracing	*2L2-1/2x2-1/2x3/8x3/8	34	-1.01	19.79	5.1	Pass
T2	216 - 190.917	Redund Horz 3 Bracing	*2L2-1/2x2-1/2x3/8x3/8	99	-1.09	19.79	5.5	Pass
T3	190.917 - 165.834	Redund Horz 3 Bracing	*2L2-1/2x2-1/2x3/8x3/8	180	-1.12	19.79	5.7	Pass
T4	165.834 - 140.751	Redund Horz 3 Bracing	*2L2-1/2x2-1/2x3/8x3/8	261	-1.54	20.02	7.7	Pass
T5	140.751 - 115.668	Redund Horz 3 Bracing	*2L2-1/2x2-1/2x3/8x3/8	351	-2.25	20.04	11.2	Pass
T6	115.668 - 90.585	Redund Horz 3 Bracing	*2L2-1/2x2-1/2x3/8x3/8	423	-3.11	20.28	15.4	Pass
T7	90.585 - 65.502	Redund Horz 3 Bracing	*2L2-1/2x2-1/2x3/8x3/8	504	-4.11	20.31	20.2	Pass
T8	65.502 - 40.419	Redund Horz 3 Bracing	*2L2-1/2x2-1/2x3/8x3/8	594	-5.26	20.36	25.8	Pass
T9	40.419 - 0	Redund Horz 3 Bracing	*2L2-1/2x2-1/2x3/8x3/8	668	-6.28	29.47	21.3	Pass
T9	40.419 - 0	Redund Horz 4 Bracing	*2L2-1/2x2-1/2x3/8x3/8	670	-6.28	16.16	38.9	Pass
T1	237.083 - 216	Redund Diag 1 Bracing	*L3x3x3/16	33	-0.56	24.99	2.2	Pass
T2	216 - 190.917	Redund Diag 1 Bracing	*L3x3x3/16	98	-0.91	22.87	4.0	Pass
T3	190.917 - 165.834	Redund Diag 1 Bracing	*L3x3x3/16	188	-1.44	22.87	6.3	Pass
T4	165.834 - 140.751	Redund Diag 1 Bracing	*L3x3x3/16	269	-2.09	23.24	9.0	Pass
T5	140.751 - 115.668	Redund Diag 1 Bracing	*L3x3x3/16	341	-2.62	23.27	11.3	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T6	115.668 - 90.585	Redund Diag 1 Bracing	*L3x3x3/16	422	-3.71	23.63	15.7	Pass
T7	90.585 - 65.502	Redund Diag 1 Bracing	*L3x3x3/16	512	-4.08	23.68	17.2	Pass
T8	65.502 - 40.419	Redund Diag 1 Bracing	*L3x3x3/16	584	-5.97	24.19	24.7	Pass
T9	40.419 - 0	Redund Diag 1 Bracing	*L3x3x3/16	667	-7.81	21.58	36.2	Pass
T1	237.083 - 216	Redund Diag 2 Bracing	*2L3x3x3/16x3/8	35	-0.95	31.74	3.0	Pass
T2	216 - 190.917	Redund Diag 2 Bracing	*2L3x3x3/16x3/8	100	-0.57	28.89	2.0	Pass
T3	190.917 - 165.834	Redund Diag 2 Bracing	*2L3x3x3/16x3/8	190	-0.70	28.89	2.4	Pass
T4	165.834 - 140.751	Redund Diag 2 Bracing	*2L3x3x3/16x3/8	262	-0.96	29.35	3.3	Pass
T5	140.751 - 115.668	Redund Diag 2 Bracing	*2L3x3x3/16x3/8	343	-1.40	29.39	4.8	Pass
T6	115.668 - 90.585	Redund Diag 2 Bracing	*2L3x3x3/16x3/8	433	-1.94	29.85	6.5	Pass
T7	90.585 - 65.502	Redund Diag 2 Bracing	*2L3x3x3/16x3/8	505	-2.56	29.91	8.6	Pass
T8	65.502 - 40.419	Redund Diag 2 Bracing	*2L3x3x3/16x3/8	586	-3.23	30.98	10.4	Pass
T9	40.419 - 0	Redund Diag 2 Bracing	*2L3x3x3/16x3/8	669	-4.76	29.90	15.9	Pass
T1	237.083 - 216	Redund Diag 3 Bracing	*2L2-1/2x2-1/2x3/16x3/8	52	-1.58	18.37	8.6	Pass
T2	216 - 190.917	Redund Diag 3 Bracing	*2L2-1/2x2-1/2x3/16x3/8	93	-1.23	16.45	7.5	Pass
T3	190.917 - 165.834	Redund Diag 3 Bracing	*2L2-1/2x2-1/2x3/16x3/8	216	-0.97	16.45	5.9	Pass
T4	165.834 - 140.751	Redund Diag 3 Bracing	*2L2-1/2x2-1/2x3/16x3/8	297	-1.01	16.74	6.0	Pass
T5	140.751 - 115.668	Redund Diag 3 Bracing	*2L2-1/2x2-1/2x3/16x3/8	344	-1.40	16.77	8.4	Pass
T6	115.668 - 90.585	Redund Diag 3 Bracing	*2L2-1/2x2-1/2x3/16x3/8	425	-1.94	17.07	11.4	Pass
T7	90.585 - 65.502	Redund Diag 3 Bracing	*2L2-1/2x2-1/2x3/16x3/8	506	-2.56	17.11	15.0	Pass
T8	65.502 - 40.419	Redund Diag 3 Bracing	*2L2-1/2x2-1/2x3/16x3/8	587	-3.34	16.54	20.2	Pass
T9	40.419 - 0	Redund Diag 3 Bracing	*2L2-1/2x2-1/2x3/16x3/8	671	-3.94	10.51	37.5	Pass
T9	40.419 - 0	Redund Diag 4 Bracing	*2L2-1/2x2-1/2x3/16x3/8	672	-4.25	13.31	31.9	Pass
T9	40.419 - 0	Redund Hip 1 Bracing	2L2 1/2x2 1/2x3/16x3/8	695	0.20	58.32	0.3	Pass
T9	40.419 - 0	Redund Hip 2 Bracing	2L2 1/2x2 1/2x3/16x3/8	723	-0.17	16.95	1.0	Pass
T9	40.419 - 0	Redund Hip 3 Bracing	2L3x3x3/16x3/8	724	-0.30	13.29	2.2	Pass
T9	40.419 - 0	Redund Hip 4 Bracing	2L3x3x3/16x3/8	699	-0.06	7.48	1.1	Pass
T9	40.419 - 0	Redund Hip Diagonal 2 Bracing	*2L3x3x3/16x3/8	725	-0.48	13.07	3.6	Pass
T9	40.419 - 0	Redund Hip Diagonal 3 Bracing	*2L3x3x3/16x3/8	760	-0.26	7.87	3.3	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T1	237.083 - 216	Inner Bracing	2L3x2 1/2x5/16x3/8	13	-0.09	3.94	2.2	Pass
T2	216 - 190.917	Inner Bracing	2L3x2 1/2x5/16x3/8	158	-0.00	3.94	1.5	Pass
T3	190.917 - 165.834	Inner Bracing	2L3x2 1/2x5/16x3/8	239	-0.00	3.94	1.5	Pass
T4	165.834 - 140.751	Inner Bracing	2L3x2 1/2x5/16x3/8	320	-0.00	3.94	1.4	Pass
T5	140.751 - 115.668	Inner Bracing	2L3x2 1/2x5/16x3/8	401	-0.00	3.94	1.4	Pass
T6	115.668 - 90.585	Inner Bracing	2L3x2 1/2x5/16x3/8	482	-0.00	3.94	1.4	Pass
T7	90.585 - 65.502	Inner Bracing	2L3x2 1/2x5/16x3/8	563	-0.00	3.94	1.4	Pass
T8	65.502 - 40.419	Inner Bracing	2L3x2 1/2x5/16x3/8	644	-0.02	3.94	1.3	Pass
T9	40.419 - 0	Inner Bracing	2C4x7.25	765	-0.00	2.20	2.5	Pass
							Summary	
						Leg (T6)	70.0	Pass
						Diagonal (T7)	71.6	Pass
						Horizontal (T9)	57.0	Pass
						Top Girt (T1)	13.1	Pass
						Redund Horz 1 Bracing (T8)	19.5	Pass
						Redund Horz 2 Bracing (T8)	40.6	Pass
						Redund Horz 3 Bracing (T8)	25.8	Pass
						Redund Horz 4 Bracing (T9)	38.9	Pass
						Redund Diag 1 Bracing (T9)	36.2	Pass
						Redund Diag 2 Bracing (T9)	15.9	Pass
						Redund Diag 3 Bracing (T9)	37.5	Pass
						Redund Diag 4 Bracing (T9)	31.9	Pass
						Redund Hip 1 Bracing (T9)	0.3	Pass
						Redund Hip 2 Bracing	1.0	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
						(T9)		
						Redund Hip 3 Bracing (T9)	2.2	Pass
						Redund Hip 4 Bracing (T9)	1.1	Pass
						Redund Hip Diagonal 2 Bracing (T9)	3.6	Pass
						Redund Hip Diagonal 3 Bracing (T9)	3.3	Pass
						Inner Bracing (T9)	2.5	Pass
						Bolt Checks	71.6	Pass
						Rating =	71.6	Pass

Table 5 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	28.7	Pass

Structure Rating (max from all components) =	71.6%

Note:
1) See additional documentation in “Appendix C – Additional Calculations” for calculations supporting the % capacity consumed.

4.1) Results / Conclusions

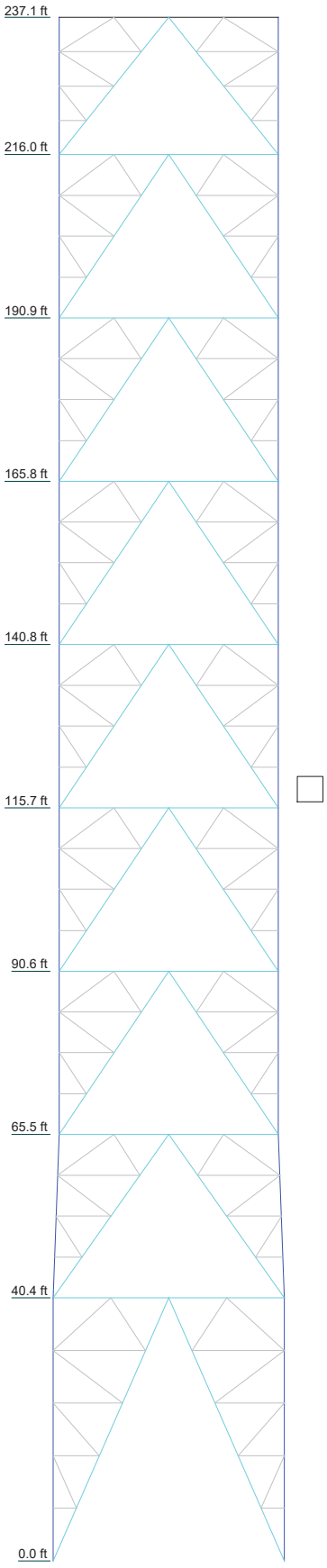
The tower have sufficient capacity to support the T-Mobile load configurations. No modification is required at this time.

Information on the existing base foundation and soil were not made available at the time of this report, as such it has not been evaluated.

APPENDIX A

TNXTOWER OUTPUT

Section		T1		T2		T3		T4		T5		T6		T7		T8		T9	
Legs				W6x25				W8x35		W8x40		W10x49		W10x60		W10x77		W12x87	
Leg Grade										A36									
Diagonals				2L2 1/2x3x3/8x3/8				*2L2-1/2x3x1/2x3/8		2L3x4x3/8x3/8				*2L3x4x7/16x3/8		2L3x4x1/2x3/8		2L4x4x1/2x3/8	
Diagonal Grade										A36									
Top Girts		2C10x15.3								N.A.									
Horizontals		N.A.		2L2 1/2x3x1/4x3/8						2L3x2 1/2x3/8x3/8								*2L4x3x7/16x3/8	
Red. Horizontals										*L3x3x3/16									
Red. Diagonals										*L3x3x3/16									
Red. Hips										N.A.								2L2 1/2x2 1/2x3/16x3/8	
Inner Bracing										2L3x2 1/2x5/16x3/8								2C4x7.25	
Face Width (ft)										33.67								35.5	
# Panels @ (ft)		1 @ 21.083								7 @ 25.083								1 @ 40.419	
Weight (K)	172.8	15.4		13.3		14.9		15.9		16.4		17.3		19.2		21.7		38.7	



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
4' Lightning Rod	265	CWMM	252
Flash Beacon Lighting	263	5' Horiz L2x2x1/4	252
13' I-Beam Mast Mount	256.5	Platform	239.5
2' Standoff	255	10' x 2.5" STD Pipe	228
2' Standoff	255	20' x 2.5" STD Pipe	228
2' Standoff	255	20' x 2.5" STD Pipe	228
SBNH-1D6565C_TIA w/ Mount Pipe	255	20' x 2.5" STD Pipe	228
AM-X-CD-16-65-00T-RET_TIA w/ Mount Pipe	255	20' x 2.5" STD Pipe	228
		20' x 2.5" STD Pipe	228
AM-X-CD-16-65-00T-RET_TIA w/ Mount Pipe	255	20' x 2.5" STD Pipe	228
HPA-65R-BUU-H8_TIA w/ Mount Pipe	255	APXVTM14-ALU-I20_TIA w/ Mount Pipe	228
HPA-65R-BUU-H6_TIA w/ Mount Pipe	255	APXVTM14-ALU-I20_TIA w/ Mount Pipe	228
HPA-65R-BUU-H6_TIA w/ Mount Pipe	255		
80010965_TIA w/ Mount Pipe	255	APXVTM14-ALU-I20_TIA w/ Mount Pipe	228
80010965_TIA w/ Mount Pipe	255	NNVV-65B-R4_TIA w/ Mount Pipe	228
80010966_TIA w/ Mount Pipe	255	NNVV-65B-R4_TIA w/ Mount Pipe	228
DC2-48-60-8-18F-03	255	NNVV-65B-R4_TIA w/ Mount Pipe	228
DC2-48-60-8-18F-03	255	PCS 1900MHz 4x45W-65MHz	228
DC2-48-60-8-18F-03	255	PCS 1900MHz 4x45W-65MHz	228
RRUS 11	255	PCS 1900MHz 4x45W-65MHz	228
RRUS 11	255	TD-RRH8x20-25	228
RRUS 11	255	TD-RRH8x20-25	228
RRUS 32 B2	255	TD-RRH8x20-25	228
RRUS 32 B2	255	(2) RRH2X50-800	228
RRUS 32 B2	255	(2) RRH2X50-800	228
RRUS 32	255	(2) RRH2X50-800	228
RRUS 32	255	APXVAARR24_43-U-NA20_TIA w/ Mount Pipe	212
RRUS 32	255	APXVAARR24_43-U-NA20_TIA w/ Mount Pipe	212
RRUS 4478 B14	255	AIR 6449 B41 w/ Mount Pipe	212
RRUS 4478 B14	255	AIR 6449 B41 w/ Mount Pipe	212
RRUS 4478 B14	255	AIR 32 B2a/B66Aa w/ Mount Pipe	212
DC6-48-60-18-8F	255	AIR 32 B2a/B66Aa w/ Mount Pipe	212
DC6-48-60-18-8F	255	RADIO 4449 B71/B85	212
DC6-48-60-18-8F	255	RADIO 4449 B71/B85	212
GPS_A	255	RRUS 4415 B25	212
Tower Top Platform	252	RRUS 4415 B25	212
4' Standoff	252	RRUS 11 B4	212
4' Standoff	252	RRUS 11 B4	212
4' Standoff	252	SDX1926Q-43	212
4' Standoff	252	SDX1926Q-43	212
JAHH-65B-R3B_TIA w/ Mount Pipe	252	12.5' Sector Mount	212
JAHH-65B-R3B_TIA w/ Mount Pipe	252	12.5' Sector Mount	212
JAHH-65B-R3B_TIA w/ Mount Pipe	252	(3) DB844H90E-XY_TIA w/ Mount Pipe	210
JAHH-65B-R3B_TIA w/ Mount Pipe	252	(3) DB844H90E-XY_TIA w/ Mount Pipe	210
JAHH-65B-R3B_TIA w/ Mount Pipe	252	14' Sector Mount	210
JAHH-65B-R3B_TIA w/ Mount Pipe	252	14' Sector Mount	210
LPA-80080/6CF w/ Mount Pipe	252	(3) DB844H90E-XY_TIA w/ Mount Pipe	198
LPA-80080/6CF w/ Mount Pipe	252	14' Sector Mount	198
LPA-80063-6CF-EDIN-X w/ Mount Pipe	252	5' Standoff	190
LPA-80063-6CF-EDIN-X w/ Mount Pipe	252	PGI-DOF-0093	190
LPA-80063-6CF-EDIN-X w/ Mount Pipe	252	5' Standoff	190
LPA-80063-6CF-EDIN-X w/ Mount Pipe	252	PGI-DOF-0093	190
FD9R6004/2C-3L	252	5' Standoff	171
FD9R6004/2C-3L	252	PGI-DOF-0093	171
FD9R6004/2C-3L	252	Catwalk	139.5
B5/B13 RRH-BR04C	252	WL14-69/S	85
B5/B13 RRH-BR04C	252	WL14-69/S	85
B5/B13 RRH-BR04C	252	WL14-69/S	85
DUAL BAND RRH 4T4R B2/B66	252	WL14-69/S	85
DUAL BAND RRH 4T4R B2/B66	252	WL7-13	85
DUAL BAND RRH 4T4R B2/B66	252	Box Mount	37
BSAMNT-SBS-2-2	252	Camera	37
BSAMNT-SBS-2-2	252	3' Side Arm	36.5
BSAMNT-SBS-2-2	252	GPS_A	36.5
DB-TI-6Z-8AB-0Z	252	Work Platform	21
DB-TI-6Z-8AB-0Z	252	Junction Box	21
DB-TI-6Z-8AB-0Z	252	RRU	21

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36	36 ksi	58 ksi			

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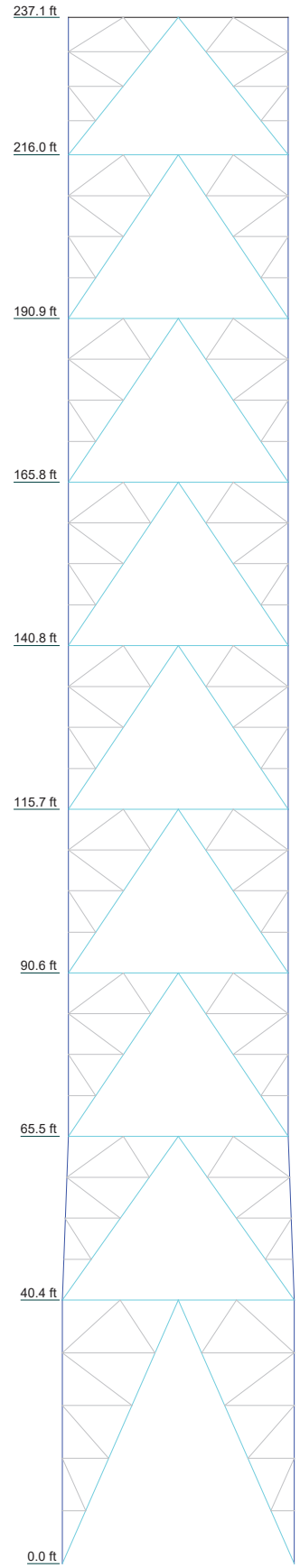
Tectonic
1279 Route 300
Newburgh, NY 12550
Phone: (845) 567-6656
FAX: (845) 567-8703

Job: ***10473.CT11220A - Rev1***		
Project: ***250' Self-Support Tower***		
Client: T-Mobile	Drawn by: John-Fritz Julien	App'd:
Code: TIA-222-G	Date: 11/05/20	Scale: NTS
Path: G:\Newburgh\Projects\10473-NSS\10473.CT11220A\Structural\Tower Analysis\Rev1\10473.CT11220A - TowerSA_Rev1.eri		Dwg No. E-1

Section	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	W12x87	W10x77	W10x60	W10x49	W8x40	W8x35		W6x25	
Leg Grade				A36					
Diagonals	2L4x4x1/2x3/8	2L3x4x1/2x3/8	*2L3x4x7/16x3/8	2L3x4x3/8x3/8		*2L2-1/2x3x1/2x3/8		2L2 1/2x3x3/8x3/8	
Diagonal Grade				A36					
Top Girts				N.A.					2C10x15.3
Horizontals	*2L4x3x7/16x3/8			2L3x2 1/2x3/8x3/8				2L2 1/2x3x1/4x3/8	N.A.
Red. Horizontals				*L3x3x3/16					
Red. Diagonals				*L3x3x3/16					
Red. Hips	2L2 1/2x2 1/2x3/16x3/8			N.A.					
Inner Bracing	2C4x7.25			2L3x2 1/2x5/16x3/8					
Face Width (ft)	35.5			33.67					
# Panels @ (ft)	1 @ 40.419			7 @ 25.083					1 @ 21.083
Weight (K) 172.8	38.7	21.7	19.2	17.3	16.4	15.9	14.9	13.3	15.4



MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36	36 ksi	58 ksi			

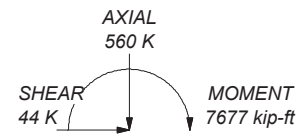
TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 97 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 71.6%

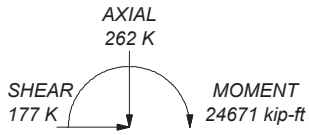
ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 557 K
SHEAR: 46 K

UPLIFT: -439 K
SHEAR: 44 K



TORQUE 135 kip-ft
50 mph WIND - 0.7500 in ICE



TORQUE 425 kip-ft
REACTIONS - 97 mph WIND

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1279 Route 300
Newburgh, NY 12550
Phone: (845) 567-6656
FAX: (845) 567-8703

Job: ***10473.CT11220A - Rev1***			
Project: ***250' Self-Support Tower***			
Client: T-Mobile	Drawn by: John-Fritz Julien		App'd:
Code: TIA-222-G	Date: 11/05/20		Scale: NTS
Path: G:\Newburgh\Projects\10473-NSS\10473.CT11220A\Structural\Tower Analysis\Rev1\10473.CT11220A - TowerSA_Rev1.eri			Dwg No. E-1

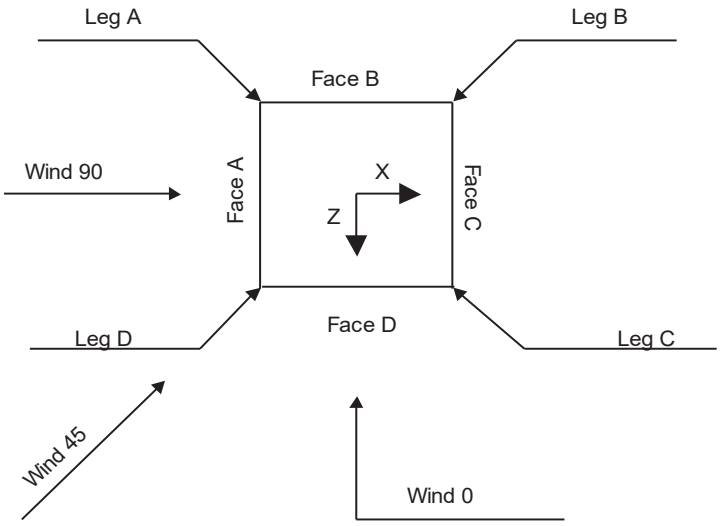
Tower Input Data

The main tower is a 4x free standing tower with an overall height of 237.08 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 33.67 ft at the top and 35.50 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

1) Tower is located in New Haven County, Connecticut.
2) Basic wind speed of 97 mph.
3) Structure Class II.
4) Exposure Category B.
5) Topographic Category 1.
6) Crest Height 0.00 ft.
7) Nominal ice thickness of 0.7500 in.
8) Ice thickness is considered to increase with height.
9) Ice density of 56 pcf.
10) A wind speed of 50 mph is used in combination with ice.
11) Temperature drop of 50 °F.
12) Deflections calculated using a wind speed of 60 mph.
13) Pressures are calculated at each section.
14) Stress ratio used in tower member design is 1.
15) 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		Ignore KL/ry For 60 Deg. Angle Legs		Pole Without Linear Attachments
					Pole With Shroud Or No Appurtenances
					Outside and Inside Corner Radii Are Known



Square Tower

Tower Section Geometry

Tower Section	*Tower Elevation*	*Assembly Database*	*Description*	*Section Width*	*Number of Sections*	*Section Length*
	ft			*ft*		*ft*
T1	237.08-216.00			33.67	1	21.08
T2	216.00-190.92			33.67	1	25.08
T3	190.92-165.83			33.67	1	25.08
T4	165.83-140.75			33.67	1	25.08
T5	140.75-115.67			33.67	1	25.08
T6	115.67-90.59			33.67	1	25.08
T7	90.59-65.50			33.67	1	25.08
T8	65.50-40.42			33.67	1	25.08
T9	40.42-0.00			35.50	1	40.42

Tower Section Geometry *(cont'd)*

Tower Section	*Tower Elevation*	*Diagonal Spacing*	*Bracing Type*	*Has K Brace End Panels*	*Has Horizontals*	*Top Girt Offset*	*Bottom Girt Offset*
	ft	*ft*				*in*	*in*
T1	237.08-216.00	21.08	K3A Down	No	Yes	0.0000	0.0000
T2	216.00-190.92	25.08	K3A Down	No	Yes	0.0000	0.0000
T3	190.92-165.83	25.08	K3A Down	No	Yes	0.0000	0.0000
T4	165.83-140.75	25.08	K3A Down	No	Yes	0.0000	0.0000
T5	140.75-115.67	25.08	K3A Down	No	Yes	0.0000	0.0000
T6	115.67-90.59	25.08	K3A Down	No	Yes	0.0000	0.0000
T7	90.59-65.50	25.08	K3A Down	No	Yes	0.0000	0.0000
T8	65.50-40.42	25.08	K3A Down	No	Yes	0.0000	0.0000
T9	40.42-0.00	40.42	K4A Down	No	Yes	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	*Leg Type*	*Leg Size*	*Leg Grade*	*Diagonal Type*	*Diagonal Size*	*Diagonal Grade*

Tower Elevation ft	*Leg Type*	*Leg Size*	*Leg Grade*	*Diagonal Type*	*Diagonal Size*	*Diagonal Grade*
T1 237.08-216.00	Wide Flange	W6x25	A36 (36 ksi)	Double Angle	2L2 1/2x3x3/8x3/8	A36 (36 ksi)
T2 216.00-190.92	Wide Flange	W6x25	A36 (36 ksi)	Double Angle	2L2 1/2x3x3/8x3/8	A36 (36 ksi)
T3 190.92-165.83	Wide Flange	W6x25	A36 (36 ksi)	Arbitrary Shape	*2L2-1/2x3x1/2x3/8	A36 (36 ksi)
T4 165.83-140.75	Wide Flange	W8x35	A36 (36 ksi)	Arbitrary Shape	*2L2-1/2x3x1/2x3/8	A36 (36 ksi)
T5 140.75-115.67	Wide Flange	W8x40	A36 (36 ksi)	Double Angle	2L3x4x3/8x3/8	A36 (36 ksi)
T6 115.67-90.59	Wide Flange	W10x49	A36 (36 ksi)	Double Angle	2L3x4x3/8x3/8	A36 (36 ksi)
T7 90.59-65.50	Wide Flange	W10x60	A36 (36 ksi)	Arbitrary Shape	*2L3x4x7/16x3/8	A36 (36 ksi)
T8 65.50-40.42	Wide Flange	W10x77	A36 (36 ksi)	Double Angle	2L3x4x1/2x3/8	A36 (36 ksi)
T9 40.42-0.00	Wide Flange	W12x87	A36 (36 ksi)	Double Angle	2L4x4x1/2x3/8	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 237.08-216.00	None	Flat Bar		A36 (36 ksi)	Double Channel	2C10x15.3	A36 (36 ksi)
T2 216.00-190.92	None	Flat Bar		A36 (36 ksi)	Double Angle	2L2 1/2x3x1/4x3/8	A36 (36 ksi)
T3 190.92-165.83	None	Flat Bar		A36 (36 ksi)	Double Angle	2L3x2 1/2x3/8x3/8	A36 (36 ksi)
T4 165.83-140.75	None	Flat Bar		A36 (36 ksi)	Double Angle	2L3x2 1/2x3/8x3/8	A36 (36 ksi)
T5 140.75-115.67	None	Flat Bar		A36 (36 ksi)	Double Angle	2L3x2 1/2x3/8x3/8	A36 (36 ksi)
T6 115.67-90.59	None	Flat Bar		A36 (36 ksi)	Double Angle	2L3x2 1/2x3/8x3/8	A36 (36 ksi)
T7 90.59-65.50	None	Flat Bar		A36 (36 ksi)	Double Angle	2L3x2 1/2x3/8x3/8	A36 (36 ksi)
T8 65.50-40.42	None	Flat Bar		A36 (36 ksi)	Double Angle	2L3x2 1/2x3/8x3/8	A36 (36 ksi)
T9 40.42-0.00	None	Flat Bar		A36 (36 ksi)	Arbitrary Shape	*2L4x3x7/16x3/8	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	*Secondary Horizontal Type*	*Secondary Horizontal Size*	*Secondary Horizontal Grade*	*Inner Bracing Type*	*Inner Bracing Size*	*Inner Bracing Grade*
T1 237.08-216.00	Solid Round		A572-50 (50 ksi)	Double Angle	2L3x2 1/2x5/16x3/8	A36 (36 ksi)
T2 216.00-190.92	Solid Round		A572-50 (50 ksi)	Double Angle	2L3x2 1/2x5/16x3/8	A36 (36 ksi)
T3 190.92-165.83	Solid Round		A572-50 (50 ksi)	Double Angle	2L3x2 1/2x5/16x3/8	A36 (36 ksi)
T4 165.83-140.75	Solid Round		A572-50 (50 ksi)	Double Angle	2L3x2 1/2x5/16x3/8	A36 (36 ksi)
T5 140.75-115.67	Solid Round		A572-50 (50 ksi)	Double Angle	2L3x2 1/2x5/16x3/8	A36 (36 ksi)

Tower Elevation *ft*	*Secondary Horizontal Type*	*Secondary Horizontal Size*	*Secondary Horizontal Grade*	*Inner Bracing Type*	*Inner Bracing Size*	*Inner Bracing Grade*
T6 115.67-90.59	Solid Round		A572-50 (50 ksi)	Double Angle	2L3x2 1/2x5/16x3/8	A36 (36 ksi)
T7 90.59-65.50	Solid Round		A572-50 (50 ksi)	Double Angle	2L3x2 1/2x5/16x3/8	A36 (36 ksi)
T8 65.50-40.42	Solid Round		A572-50 (50 ksi)	Double Angle	2L3x2 1/2x5/16x3/8	A36 (36 ksi)
T9 40.42-0.00	Solid Round		A572-50 (50 ksi)	Double Channel	2C4x7.25	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation *ft*	*Redundant Bracing Grade*		*Redundant Type*	*Redundant Size*	*K Factor*
T1 237.08-216.00	A36 (36 ksi)	Horizontal (1)	Arbitrary Shape	*L3x3x3/16	1
		Horizontal (2)		*L2-1/2x2-1/2x3/16	
		Horizontal (3)		*2L2-1/2x2-1/2x3/8x3/8	
		Diagonal (1)	Arbitrary Shape	*L3x3x3/16	1
		Diagonal (2)		*2L3x3x3/16x3/8	
		Diagonal (3)		*2L2-1/2x2-1/2x3/16x3/8	
T2 216.00-190.92	A36 (36 ksi)	Horizontal (1)	Arbitrary Shape	*L3x3x3/16	1
		Horizontal (2)		*L2-1/2x2-1/2x3/16	
		Horizontal (3)		*2L2-1/2x2-1/2x3/8x3/8	
		Diagonal (1)	Arbitrary Shape	*L3x3x3/16	1
		Diagonal (2)		*2L3x3x3/16x3/8	
		Diagonal (3)		*2L2-1/2x2-1/2x3/16x3/8	
T3 190.92-165.83	A36 (36 ksi)	Horizontal (1)	Arbitrary Shape	*L3x3x3/16	1
		Horizontal (2)		*L2-1/2x2-1/2x3/16	
		Horizontal (3)		*2L2-1/2x2-1/2x3/8x3/8	
		Diagonal (1)	Arbitrary Shape	*L3x3x3/16	1
		Diagonal (2)		*2L3x3x3/16x3/8	
		Diagonal (3)		*2L2-1/2x2-1/2x3/16x3/8	
T4 165.83-140.75	A36 (36 ksi)	Horizontal (1)	Arbitrary Shape	*L3x3x3/16	1
		Horizontal (2)		*L2-1/2x2-1/2x3/16	
		Horizontal (3)		*2L2-1/2x2-1/2x3/8x3/8	
		Diagonal (1)	Arbitrary Shape	*L3x3x3/16	1
		Diagonal (2)		*2L3x3x3/16x3/8	
		Diagonal (3)		*2L2-1/2x2-1/2x3/16x3/8	
T5 140.75-115.67	A36 (36 ksi)	Horizontal (1)	Arbitrary Shape	*L3x3x3/16	1
		Horizontal (2)		*L2-1/2x2-1/2x3/16	
		Horizontal (3)		*2L2-1/2x2-1/2x3/8x3/8	
		Diagonal (1)	Arbitrary Shape	*L3x3x3/16	1
		Diagonal (2)		*2L3x3x3/16x3/8	
		Diagonal (3)		*2L2-1/2x2-1/2x3/16x3/8	
T6 115.67-90.59	A36 (36 ksi)	Horizontal (1)	Arbitrary Shape	*L3x3x3/16	1
		Horizontal (2)		*L2-1/2x2-1/2x3/16	
		Horizontal (3)		*2L2-1/2x2-1/2x3/8x3/8	
		Diagonal (1)	Arbitrary Shape	*L3x3x3/16	1
		Diagonal (2)		*2L3x3x3/16x3/8	
		Diagonal (3)		*2L2-1/2x2-1/2x3/16x3/8	
T7 90.59-65.50	A36 (36 ksi)	Horizontal (1)	Arbitrary Shape	*L3x3x3/16	1
		Horizontal (2)		*L2-1/2x2-1/2x3/16	
		Horizontal (3)		*2L2-1/2x2-1/2x3/8x3/8	
		Diagonal (1)	Arbitrary Shape	*L3x3x3/16	1
		Diagonal (2)		*2L3x3x3/16x3/8	
		Diagonal (3)		*2L2-1/2x2-1/2x3/16x3/8	
T8 65.50-40.42	A36 (36 ksi)	Horizontal (1)	Arbitrary Shape	*L3x3x3/16	1
		Horizontal (2)		*L2-1/2x2-1/2x3/16	
		Horizontal (3)		*2L2-1/2x2-1/2x3/8x3/8	
		Diagonal (1)	Arbitrary Shape	*L3x3x3/16	1
		Diagonal (2)		*2L3x3x3/16x3/8	
		Diagonal (3)		*2L2-1/2x2-1/2x3/16x3/8	
T9 40.42-	A36	Horizontal (1)	Arbitrary Shape	*L3x3x3/16	1

Tower Elevation *ft*	*Redundant Bracing Grade*		*Redundant Type*	*Redundant Size*	*K Factor*
0.00	(36 ksi)	Horizontal (2)		*L2-1/2x2-1/2x3/16	
		Horizontal (3)		*2L2-1/2x2-1/2x3/8x3/8	
		Horizontal (4)		*2L2-1/2x2-1/2x3/8x3/8	
		Diagonal (1)	Arbitrary Shape	*L3x3x3/16	1
		Diagonal (2)		*2L3x3x3/16x3/8	
		Diagonal (3)		*2L2-1/2x2-1/2x3/16x3/8	
		Diagonal (4)		*2L2-1/2x2-1/2x3/16x3/8	
		Hip (1)	Double Angle	2L2 1/2x2 1/2x3/16x3/8	1
		Hip (2)		2L2 1/2x2 1/2x3/16x3/8	
		Hip (3)		2L3x3x3/16x3/8	
		Hip (4)		2L3x3x3/16x3/8	

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 237.08-216.00	9.17	0.3750	A36 (36 ksi)	1.03	1	1.05	24.0000	24.0000	24.0000
T2 216.00-190.92	9.17	0.3750	A36 (36 ksi)	1.03	1	1.05	24.0000	24.0000	24.0000
T3 190.92-165.83	9.17	0.3750	A36 (36 ksi)	1.03	1	1.05	24.0000	24.0000	24.0000
T4 165.83-140.75	9.17	0.3750	A36 (36 ksi)	1.03	1	1.05	24.0000	24.0000	24.0000
T5 140.75-115.67	9.17	0.3750	A36 (36 ksi)	1.03	1	1.05	24.0000	24.0000	24.0000
T6 115.67-90.59	9.17	0.3750	A36 (36 ksi)	1.03	1	1.05	24.0000	24.0000	24.0000
T7 90.59-65.50	9.17	0.3750	A36 (36 ksi)	1.03	1	1.05	24.0000	24.0000	24.0000
T8 65.50-40.42	9.17	0.3750	A36 (36 ksi)	1.03	1	1.05	24.0000	24.0000	24.0000
T9 40.42-0.00	9.17	0.3750	A36 (36 ksi)	1.03	1	1.05	24.0000	24.0000	24.0000

Tower Section Geometry *(cont'd)*

Tower Elevation *ft*	*Calc K Single Angles*	*Calc K Solid Rounds*	*K Factors*[1] *Legs*	*X Brace Diags* *X* *Y*	*K Brace Diags* *X* *Y*	*Single Diags* *X* *Y*	*Girts* *X* *Y*	*Horiz.* *X* *Y*	*Sec. Horiz.* *X* *Y*	*Inner Brace* *X* *Y*
T1 237.08-216.00	No	No	1	1 1	1 0.333	1 1	1 1	1 0.5	1 1	1 1
T2 216.00-190.92	No	No	1	1 1	1 0.333	1 1	1 1	1 0.5	1 1	1 1
T3 190.92-165.83	No	No	1	1 1	1 0.333	1 1	1 1	1 0.5	1 1	1 1
T4 165.83-140.75	No	No	1	1 1	1 0.333	1 1	1 1	1 0.5	1 1	1 1
T5 140.75-115.67	No	No	1	1 1	1 0.333	1 1	1 1	1 0.5	1 1	1 1
T6 115.67-90.59	No	No	1	1 1	1 0.333	1 1	1 1	1 0.5	1 1	1 1
T7 90.59-65.50	No	No	1	1 1	1 0.333	1 1	1 1	1 0.5	1 1	1 1
T8 65.50-	No	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
40.42				1	0.333	1	1	0.5	1	1
T9 40.42-0.00	No	No	1	1	1	1	1	1	1	1
				1	0.333	1	1	0.5	1	1

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

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 237.08-216.00	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 216.00-190.92	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
T3 190.92-165.83	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 165.83-140.75	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 140.75-115.67	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 115.67-90.59	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 90.59-65.50	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 65.50-40.42	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 40.42-0.00	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 237.08-216.00	Sleeve DS	0.7500 A325N	12	0.7500 A325N	4	0.5000 A325X	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	4	0.6250 A325N	0
T2 216.00-190.92	Sleeve DS	0.7500 A325N	12	0.7500 A325N	4	0.5000 A325X	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	4	0.6250 A325N	0
T3 190.92-165.83	Sleeve DS	0.7500 A325N	16	0.7500 A325N	5	0.5000 A325X	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	4	0.6250 A325N	0
T4 165.83-140.75	Sleeve DS	1.0000 A325N	12	0.7500 A325N	5	0.5000 A325X	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	4	0.6250 A325N	0
T5 140.75-115.67	Sleeve DS	1.0000 A325N	16	0.7500 A325N	4	0.5000 A325X	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	4	0.6250 A325N	0
T6 115.67-90.59	Sleeve DS	1.0000 A325N	16	0.7500 A325N	4	0.5000 A325X	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	4	0.6250 A325N	0
T7 90.59-65.50	Sleeve DS	1.0000 A325N	20	0.7500 A325N	5	0.5000 A325X	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	4	0.6250 A325N	0
T8 65.50-40.42	Sleeve DS	1.0000 A325N	20	0.7500 A325N	5	0.5000 A325X	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	4	0.6250 A325N	0
T9 40.42-0.00	Sleeve DS	1.0000 A325N	28	0.7500 A325N	8	0.5000 A325X	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	4	0.6250 A325N	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
***													
Climbing Ladder	C	No	No	Af (CaAa)	237.08 - 8.00	-12.0000	0.44	1	1	1.0000	1.0000		7.90
Safety Line 3/8	C	No	No	Ar (CaAa)	237.08 - 8.00	-12.0000	0.44	1	1	0.3750	0.3750		0.22
**													
5/8" Power Cable	C	No	No	Ar (CaAa)	237.08 - 8.00	0.0000	-0.45	1	1	0.5000 0.6250	0.6250		0.03
2-1/4" Conduit	C	No	No	Ar (CaAa)	237.08 - 8.00	0.0000	-0.45	1	1	0.5000 2.3500	2.3500		1.22
**													
Feedline Ladder (Af)	D	No	No	Af (CaAa)	237.08 - 8.00	0.0000	0.02	1	1	3.0000	3.0000		8.40
LDF7-50A(1-5/8)	D	No	No	Ar (CaAa)	237.08 - 8.00	0.0000	0.02	18	6	0.5000 1.9800	1.9800		0.82
1-1/4" Fiber Cable	D	No	No	Ar (CaAa)	237.08 - 8.00	0.0000	0.02	6	3	0.5000 1.2500	1.2500		0.70
5/8" DC Cable	D	No	No	Ar (CaAa)	237.08 - 8.00	0.0000	0.02	12	6	0.5000 0.6250	0.6250		0.03
LDF7-50A(1-5/8)	D	No	No	Ar (CaAa)	237.08 - 8.00	0.0000	0.02	3	3	0.5000 1.9800	1.9800		0.82
***													
LDF7-50A(1-5/8)	D	No	No	Ar (CaAa)	225.00 - 8.00	0.0000	0.05	3	1	0.5000 1.9800	1.9800		0.82
LDF7-50A(1-5/8)	D	No	No	Ar (CaAa)	225.00 - 8.00	0.0000	0.05	3	1	0.5000 1.9800	1.9800		0.82
**													
Feedline Ladder (Af)	C	No	No	Af (CaAa)	212.00 - 8.00	0.0000	-0.45	1	1	3.0000	3.0000		8.40
Feedline Ladder (Af)	B	No	No	Af (CaAa)	209.00 - 8.00	0.0000	0.45	1	1	3.0000	3.0000		8.40
Feedline Ladder (Af)	D	No	No	Af (CaAa)	209.00 - 8.00	0.0000	0.02	1	1	3.0000	3.0000		8.40
**													
LDF7-50A(1-5/8)	B	No	No	Ar (CaAa)	36.00 - 8.00	0.0000	0.45	4	4	0.5000 1.9800	1.9800		0.82
MLC Hybrid 6Power/12Fiber(1-1/2")	B	No	No	Ar (CaAa)	212.00 - 8.00	0.0000	0.45	1	1	1.9900	1.9900		2.65
MLC Hybrid 6Power/12Fiber(1-1/2")	B	No	No	Ar (CaAa)	212.00 - 8.00	0.0000	0.45	2	2	1.9900	1.9900		2.65
LDF7-50A(1-5/8)	B	No	No	Ar (CaAa)	210.00 - 8.00	0.0000	0.45	6	6	1.9800	1.9800		0.82
LDF7-50A(1-5/8)	B	No	No	Ar (CaAa)	198.00 - 8.00	0.0000	0.45	3	3	1.9800	1.9800		0.82
**													
LDF5-50A(7/8")	D	No	No	Ar (CaAa)	171.00 - 8.00	0.0000	0	3	3	0.5000 1.0900	1.0900		0.33
LDF5-50A(7/8")	D	No	No	Ar (CaAa)	190.00 - 171.00	0.0000	0	2	2	0.5000 1.0900	1.0900		0.33
LDF4.5-50(5/8)	D	No	No	Ar (CaAa)	85.00 - 8.00	0.0000	0	7	4	0.5000 0.8650	0.8650		0.15
1" Rigid Conduit	C	No	No	Ar (CaAa)	21.00 - 8.00	0.0000	-0.45	2	1	0.5000 1.0000	1.0000		0.50
1" Rigid Conduit	C	No	No	Ar (CaAa)	37.00 - 21.00	0.0000	-0.45	1	1	0.5000 1.0000	1.0000		0.50
LDF4-50A(1/2)	D	No	No	Ar (CaAa)	36.00 - 8.00	0.0000	0.055	1	1	0.5000 0.6250	0.6250		0.15

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
***													

Feed Line/Linear Appurtenances - Entered As Area

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

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	237.08-216.00	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	10.577	0.000	0.20
		D	0.000	0.000	140.521	0.000	0.68
T2	216.00-190.92	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	45.407	0.000	0.33
		C	0.000	0.000	23.125	0.000	0.41
		D	0.000	0.000	193.301	0.000	1.03
T3	190.92-165.83	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	68.527	0.000	0.47
		C	0.000	0.000	25.125	0.000	0.45
		D	0.000	0.000	202.632	0.000	1.11
T4	165.83-140.75	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	68.527	0.000	0.47
		C	0.000	0.000	25.125	0.000	0.45
		D	0.000	0.000	205.003	0.000	1.11
T5	140.75-115.67	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	68.527	0.000	0.47
		C	0.000	0.000	25.125	0.000	0.45
		D	0.000	0.000	205.003	0.000	1.11
T6	115.67-90.59	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	68.527	0.000	0.47
		C	0.000	0.000	25.125	0.000	0.45
		D	0.000	0.000	205.003	0.000	1.11
T7	90.59-65.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	68.527	0.000	0.47
		C	0.000	0.000	25.125	0.000	0.45
		D	0.000	0.000	216.809	0.000	1.13
T8	65.50-40.42	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	68.527	0.000	0.47
		C	0.000	0.000	25.125	0.000	0.45
		D	0.000	0.000	220.191	0.000	1.14
T9	40.42-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	110.745	0.000	0.70
		C	0.000	0.000	36.673	0.000	0.60
		D	0.000	0.000	286.340	0.000	1.48

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	237.08-216.00	A	1.819	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	41.251	0.000	0.79
		D		0.000	0.000	201.429	0.000	4.05
T2	216.00-190.92	A	1.799	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	126.431	0.000	2.01
		C		0.000	0.000	66.816	0.000	1.38
		D		0.000	0.000	306.778	0.000	5.96
T3	190.92-165.83	A	1.776	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	190.818	0.000	2.98
		C		0.000	0.000	69.665	0.000	1.45
		D		0.000	0.000	335.689	0.000	6.28
T4	165.83-140.75	A	1.749	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	189.902	0.000	2.94
		C		0.000	0.000	68.995	0.000	1.42
		D		0.000	0.000	338.019	0.000	6.27
T5	140.75-115.67	A	1.718	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	188.840	0.000	2.89
		C		0.000	0.000	68.218	0.000	1.40
		D		0.000	0.000	335.864	0.000	6.17
T6	115.67-90.59	A	1.681	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	187.571	0.000	2.84
		C		0.000	0.000	67.290	0.000	1.37
		D		0.000	0.000	333.291	0.000	6.06
T7	90.59-65.50	A	1.635	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	185.989	0.000	2.77
		C		0.000	0.000	66.131	0.000	1.33
		D		0.000	0.000	354.710	0.000	6.24
T8	65.50-40.42	A	1.573	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	183.863	0.000	2.68
		C		0.000	0.000	64.572	0.000	1.28
		D		0.000	0.000	356.905	0.000	6.13
T9	40.42-0.00	A	1.428	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	277.447	0.000	3.75
		C		0.000	0.000	96.340	0.000	1.71
		D		0.000	0.000	456.470	0.000	7.45

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	237.08-216.00	1.7150	19.6550	6.7997	30.7387
T2	216.00-190.92	13.9925	21.4947	27.5870	29.1524
T3	190.92-165.83	18.4304	19.0314	33.9951	25.4165
T4	165.83-140.75	17.6863	18.2831	33.1534	24.9590
T5	140.75-115.67	17.6377	18.2284	33.4457	25.2654
T6	115.67-90.59	17.0187	17.5352	32.7074	24.7329
T7	90.59-65.50	16.3244	18.3873	31.2229	26.0465
T8	65.50-40.42	16.9025	19.5252	32.2706	27.7654
T9	40.42-0.00	17.7043	14.9985	32.8821	21.5026

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	2	Climbing Ladder	216.00 - 237.08	0.6000	0.6000

Tower Section	*Feed Line Record No.*	*Description*	*Feed Line Segment Elev.*	*K_a No Ice*	*K_a Ice*
T1	3	Safety Line 3/8	216.00 - 237.08	0.6000	0.6000
T1	5	5/8" Power Cable	216.00 - 237.08	0.6000	0.6000
T1	6	2-1/4" Conduit	216.00 - 237.08	0.6000	0.6000
T1	8	Feedline Ladder (Af)	216.00 - 237.08	0.6000	0.6000
T1	9	LDF7-50A(1-5/8)	216.00 - 237.08	0.6000	0.6000
T1	10	1-1/4" Fiber Cable	216.00 - 237.08	0.6000	0.6000
T1	11	5/8" DC Cable	216.00 - 237.08	0.6000	0.6000
T1	12	LDF7-50A(1-5/8)	216.00 - 237.08	1.0000	1.0000
T1	14	LDF7-50A(1-5/8)	216.00 - 225.00	0.6000	0.6000
T1	15	LDF7-50A(1-5/8)	216.00 - 225.00	0.6000	0.6000
T2	2	Climbing Ladder	190.92 - 216.00	0.6000	0.6000
T2	3	Safety Line 3/8	190.92 - 216.00	0.6000	0.6000
T2	5	5/8" Power Cable	190.92 - 216.00	0.6000	0.6000
T2	6	2-1/4" Conduit	190.92 - 216.00	0.6000	0.6000
T2	8	Feedline Ladder (Af)	190.92 - 216.00	0.6000	0.6000
T2	9	LDF7-50A(1-5/8)	190.92 - 216.00	0.6000	0.6000
T2	10	1-1/4" Fiber Cable	190.92 - 216.00	0.6000	0.6000
T2	11	5/8" DC Cable	190.92 - 216.00	0.6000	0.6000
T2	12	LDF7-50A(1-5/8)	190.92 - 216.00	1.0000	1.0000
T2	14	LDF7-50A(1-5/8)	190.92 - 216.00	0.6000	0.6000
T2	15	LDF7-50A(1-5/8)	190.92 - 216.00	0.6000	0.6000
T2	17	Feedline Ladder (Af)	190.92 - 212.00	0.6000	0.6000
T2	18	Feedline Ladder (Af)	190.92 - 209.00	0.6000	0.6000
T2	19	Feedline Ladder (Af)	190.92 - 209.00	0.6000	0.6000
T2	22	MLC Hybrid 6Power/12Fiber(1-1/2")	190.92 - 212.00	0.6000	0.6000
T2	23	MLC Hybrid 6Power/12Fiber(1-1/2")	190.92 - 212.00	0.6000	0.6000
T2	24	LDF7-50A(1-5/8)	190.92 - 210.00	0.6000	0.6000
T2	25	LDF7-50A(1-5/8)	190.92 - 198.00	0.6000	0.6000
T3	2	Climbing Ladder	165.83 - 190.92	0.6000	0.6000
T3	3	Safety Line 3/8	165.83 - 190.92	0.6000	0.6000
T3	5	5/8" Power Cable	165.83 - 190.92	0.6000	0.6000
T3	6	2-1/4" Conduit	165.83 - 190.92	0.6000	0.6000
T3	8	Feedline Ladder (Af)	165.83 - 190.92	0.6000	0.6000
T3	9	LDF7-50A(1-5/8)	165.83 - 190.92	0.6000	0.6000
T3	10	1-1/4" Fiber Cable	165.83 -	0.6000	0.6000

Tower Section	*Feed Line Record No.*	*Description*	*Feed Line Segment Elev.*	*K_a No Ice*	*K_a Ice*
T3	11	5/8" DC Cable	190.92 165.83 -	0.6000	0.6000
T3	12	LDF7-50A(1-5/8)	190.92 165.83 -	1.0000	1.0000
T3	14	LDF7-50A(1-5/8)	190.92 165.83 -	0.6000	0.6000
T3	15	LDF7-50A(1-5/8)	190.92 165.83 -	0.6000	0.6000
T3	17	Feedline Ladder (Af)	190.92 165.83 -	0.6000	0.6000
T3	18	Feedline Ladder (Af)	190.92 165.83 -	0.6000	0.6000
T3	19	Feedline Ladder (Af)	190.92 165.83 -	0.6000	0.6000
T3	22	MLC Hybrid 6Power/12Fiber(1-1/2")	190.92 165.83 -	0.6000	0.6000
T3	23	MLC Hybrid 6Power/12Fiber(1-1/2")	190.92 165.83 -	0.6000	0.6000
T3	24	LDF7-50A(1-5/8)	190.92 165.83 -	0.6000	0.6000
T3	25	LDF7-50A(1-5/8)	190.92 165.83 -	0.6000	0.6000
T3	27	LDF5-50A(7/8")	190.92 165.83 -	0.6000	0.6000
T3	28	LDF5-50A(7/8")	171.00 171.00 -	0.6000	0.6000
T4	2	Climbing Ladder	190.00 140.75 -	0.6000	0.6000
T4	3	Safety Line 3/8	165.83 140.75 -	0.6000	0.6000
T4	5	5/8" Power Cable	165.83 140.75 -	0.6000	0.6000
T4	6	2-1/4" Conduit	165.83 140.75 -	0.6000	0.6000
T4	8	Feedline Ladder (Af)	165.83 140.75 -	0.6000	0.6000
T4	9	LDF7-50A(1-5/8)	165.83 140.75 -	0.6000	0.6000
T4	10	1-1/4" Fiber Cable	165.83 140.75 -	0.6000	0.6000
T4	11	5/8" DC Cable	165.83 140.75 -	0.6000	0.6000
T4	12	LDF7-50A(1-5/8)	165.83 140.75 -	1.0000	1.0000
T4	14	LDF7-50A(1-5/8)	165.83 140.75 -	0.6000	0.6000
T4	15	LDF7-50A(1-5/8)	165.83 140.75 -	0.6000	0.6000
T4	17	Feedline Ladder (Af)	165.83 140.75 -	0.6000	0.6000
T4	18	Feedline Ladder (Af)	165.83 140.75 -	0.6000	0.6000
T4	19	Feedline Ladder (Af)	165.83 140.75 -	0.6000	0.6000
T4	22	MLC Hybrid 6Power/12Fiber(1-1/2")	165.83 140.75 -	0.6000	0.6000
T4	23	MLC Hybrid 6Power/12Fiber(1-1/2")	165.83 140.75 -	0.6000	0.6000
T4	24	LDF7-50A(1-5/8)	165.83 140.75 -	0.6000	0.6000
T4	25	LDF7-50A(1-5/8)	165.83 140.75 -	0.6000	0.6000
T4	27	LDF5-50A(7/8")	165.83 140.75 -	0.6000	0.6000
T5	2	Climbing Ladder	165.83 115.67 -	0.6000	0.6000
T5	3	Safety Line 3/8	140.75 115.67 -	0.6000	0.6000
			140.75		

Tower Section	*Feed Line Record No.*	*Description*	*Feed Line Segment Elev.*	*K_a No Ice*	*K_a Ice*
T5	5	5/8" Power Cable	115.67 - 140.75	0.6000	0.6000
T5	6	2-1/4" Conduit	115.67 - 140.75	0.6000	0.6000
T5	8	Feedline Ladder (Af)	115.67 - 140.75	0.6000	0.6000
T5	9	LDF7-50A(1-5/8)	115.67 - 140.75	0.6000	0.6000
T5	10	1-1/4" Fiber Cable	115.67 - 140.75	0.6000	0.6000
T5	11	5/8" DC Cable	115.67 - 140.75	0.6000	0.6000
T5	12	LDF7-50A(1-5/8)	115.67 - 140.75	1.0000	1.0000
T5	14	LDF7-50A(1-5/8)	115.67 - 140.75	0.6000	0.6000
T5	15	LDF7-50A(1-5/8)	115.67 - 140.75	0.6000	0.6000
T5	17	Feedline Ladder (Af)	115.67 - 140.75	0.6000	0.6000
T5	18	Feedline Ladder (Af)	115.67 - 140.75	0.6000	0.6000
T5	19	Feedline Ladder (Af)	115.67 - 140.75	0.6000	0.6000
T5	22	MLC Hybrid 6Power/12Fiber(1-1/2")	115.67 - 140.75	0.6000	0.6000
T5	23	MLC Hybrid 6Power/12Fiber(1-1/2")	115.67 - 140.75	0.6000	0.6000
T5	24	LDF7-50A(1-5/8)	115.67 - 140.75	0.6000	0.6000
T5	25	LDF7-50A(1-5/8)	115.67 - 140.75	0.6000	0.6000
T5	27	LDF5-50A(7/8")	115.67 - 140.75	0.6000	0.6000
T6	2	Climbing Ladder	90.58 - 115.67	0.6000	0.6000
T6	3	Safety Line 3/8	90.58 - 115.67	0.6000	0.6000
T6	5	5/8" Power Cable	90.58 - 115.67	0.6000	0.6000
T6	6	2-1/4" Conduit	90.58 - 115.67	0.6000	0.6000
T6	8	Feedline Ladder (Af)	90.58 - 115.67	0.6000	0.6000
T6	9	LDF7-50A(1-5/8)	90.58 - 115.67	0.6000	0.6000
T6	10	1-1/4" Fiber Cable	90.58 - 115.67	0.6000	0.6000
T6	11	5/8" DC Cable	90.58 - 115.67	0.6000	0.6000
T6	12	LDF7-50A(1-5/8)	90.58 - 115.67	1.0000	1.0000
T6	14	LDF7-50A(1-5/8)	90.58 - 115.67	0.6000	0.6000
T6	15	LDF7-50A(1-5/8)	90.58 - 115.67	0.6000	0.6000
T6	17	Feedline Ladder (Af)	90.58 - 115.67	0.6000	0.6000
T6	18	Feedline Ladder (Af)	90.58 - 115.67	0.6000	0.6000
T6	19	Feedline Ladder (Af)	90.58 - 115.67	0.6000	0.6000
T6	22	MLC Hybrid 6Power/12Fiber(1-1/2")	90.58 - 115.67	0.6000	0.6000
T6	23	MLC Hybrid 6Power/12Fiber(1-1/2")	90.58 - 115.67	0.6000	0.6000
T6	24	LDF7-50A(1-5/8)	90.58 - 115.67	0.6000	0.6000
T6	25	LDF7-50A(1-5/8)	90.58 -	0.6000	0.6000

Tower Section	*Feed Line Record No.*	*Description*	*Feed Line Segment Elev.*	*K_a No Ice*	*K_a Ice*
T6	27	LDF5-50A(7/8")	115.67 90.58 -	0.6000	0.6000
T7	2	Climbing Ladder	115.67 65.50 -	0.6000	0.6000
T7	3	Safety Line 3/8	90.58 65.50 -	0.6000	0.6000
T7	5	5/8" Power Cable	90.58 65.50 -	0.6000	0.6000
T7	6	2-1/4" Conduit	90.58 65.50 -	0.6000	0.6000
T7	8	Feedline Ladder (Af)	90.58 65.50 -	0.6000	0.6000
T7	9	LDF7-50A(1-5/8)	90.58 65.50 -	0.6000	0.6000
T7	10	1-1/4" Fiber Cable	90.58 65.50 -	0.6000	0.6000
T7	11	5/8" DC Cable	90.58 65.50 -	0.6000	0.6000
T7	12	LDF7-50A(1-5/8)	90.58 65.50 -	1.0000	1.0000
T7	14	LDF7-50A(1-5/8)	90.58 65.50 -	0.6000	0.6000
T7	15	LDF7-50A(1-5/8)	90.58 65.50 -	0.6000	0.6000
T7	17	Feedline Ladder (Af)	90.58 65.50 -	0.6000	0.6000
T7	18	Feedline Ladder (Af)	90.58 65.50 -	0.6000	0.6000
T7	19	Feedline Ladder (Af)	90.58 65.50 -	0.6000	0.6000
T7	22	MLC Hybrid 6Power/12Fiber(1-1/2")	90.58 65.50 -	0.6000	0.6000
T7	23	MLC Hybrid 6Power/12Fiber(1-1/2")	90.58 65.50 -	0.6000	0.6000
T7	24	LDF7-50A(1-5/8)	90.58 65.50 -	0.6000	0.6000
T7	25	LDF7-50A(1-5/8)	90.58 65.50 -	0.6000	0.6000
T7	27	LDF5-50A(7/8")	90.58 65.50 -	0.6000	0.6000
T7	29	LDF4.5-50(5/8)	90.58 65.50 -	0.6000	0.6000
T8	2	Climbing Ladder	85.00 40.42 -	0.6000	0.6000
T8	3	Safety Line 3/8	65.50 40.42 -	0.6000	0.6000
T8	5	5/8" Power Cable	65.50 40.42 -	0.6000	0.6000
T8	6	2-1/4" Conduit	65.50 40.42 -	0.6000	0.6000
T8	8	Feedline Ladder (Af)	65.50 40.42 -	0.6000	0.6000
T8	9	LDF7-50A(1-5/8)	65.50 40.42 -	0.6000	0.6000
T8	10	1-1/4" Fiber Cable	65.50 40.42 -	0.6000	0.6000
T8	11	5/8" DC Cable	65.50 40.42 -	0.6000	0.6000
T8	12	LDF7-50A(1-5/8)	65.50 40.42 -	1.0000	1.0000
T8	14	LDF7-50A(1-5/8)	65.50 40.42 -	0.6000	0.6000
T8	15	LDF7-50A(1-5/8)	65.50 40.42 -	0.6000	0.6000
T8	17	Feedline Ladder (Af)	65.50 40.42 -	0.6000	0.6000
T8	18	Feedline Ladder (Af)	65.50 40.42 -	0.6000	0.6000
			65.50		

Tower Section	*Feed Line Record No.*	*Description*	*Feed Line Segment Elev.*	*K_a No Ice*	*K_a Ice*
T8	19	Feedline Ladder (Af)	40.42 - 65.50	0.6000	0.6000
T8	22	MLC Hybrid 6Power/12Fiber(1-1/2")	40.42 - 65.50	0.6000	0.6000
T8	23	MLC Hybrid 6Power/12Fiber(1-1/2")	40.42 - 65.50	0.6000	0.6000
T8	24	LDF7-50A(1-5/8)	40.42 - 65.50	0.6000	0.6000
T8	25	LDF7-50A(1-5/8)	40.42 - 65.50	0.6000	0.6000
T8	27	LDF5-50A(7/8")	40.42 - 65.50	0.6000	0.6000
T8	29	LDF4.5-50(5/8)	40.42 - 65.50	0.6000	0.6000
T9	2	Climbing Ladder	8.00 - 40.42	0.6000	0.6000
T9	3	Safety Line 3/8	8.00 - 40.42	0.6000	0.6000
T9	5	5/8" Power Cable	8.00 - 40.42	0.6000	0.6000
T9	6	2-1/4" Conduit	8.00 - 40.42	0.6000	0.6000
T9	8	Feedline Ladder (Af)	8.00 - 40.42	0.6000	0.6000
T9	9	LDF7-50A(1-5/8)	8.00 - 40.42	0.6000	0.6000
T9	10	1-1/4" Fiber Cable	8.00 - 40.42	0.6000	0.6000
T9	11	5/8" DC Cable	8.00 - 40.42	0.6000	0.6000
T9	12	LDF7-50A(1-5/8)	8.00 - 40.42	1.0000	1.0000
T9	14	LDF7-50A(1-5/8)	8.00 - 40.42	0.6000	0.6000
T9	15	LDF7-50A(1-5/8)	8.00 - 40.42	0.6000	0.6000
T9	17	Feedline Ladder (Af)	8.00 - 40.42	0.6000	0.6000
T9	18	Feedline Ladder (Af)	8.00 - 40.42	0.6000	0.6000
T9	19	Feedline Ladder (Af)	8.00 - 40.42	0.6000	0.6000
T9	21	LDF7-50A(1-5/8)	8.00 - 36.00	0.6000	0.6000
T9	22	MLC Hybrid 6Power/12Fiber(1-1/2")	8.00 - 40.42	0.6000	0.6000
T9	23	MLC Hybrid 6Power/12Fiber(1-1/2")	8.00 - 40.42	0.6000	0.6000
T9	24	LDF7-50A(1-5/8)	8.00 - 40.42	0.6000	0.6000
T9	25	LDF7-50A(1-5/8)	8.00 - 40.42	0.6000	0.6000
T9	27	LDF5-50A(7/8")	8.00 - 40.42	0.6000	0.6000
T9	29	LDF4.5-50(5/8)	8.00 - 40.42	0.6000	0.6000
T9	30	1" Rigid Conduit	8.00 - 21.00	0.6000	0.6000
T9	31	1" Rigid Conduit	21.00 - 37.00	0.6000	0.6000
T9	32	LDF4-50A(1/2)	8.00 - 36.00	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
***									
4' Lightning Rod	C	From Leg	0.00 0.00 2.00	0.0000	265.00	No Ice 1/2" Ice 1" Ice	0.25 0.66 0.97	0.25 0.66 0.97	0.01 0.01 0.02
Flash Beacon Lighting	C	From Leg	0.00 0.00 0.00	0.0000	263.00	No Ice 1/2" Ice 1" Ice	2.70 3.10 3.50	2.70 3.10 3.50	0.05 0.07 0.09
13' I-Beam Mast Mount	C	From Leg	0.00 0.00	0.0000	256.50	No Ice 1/2"	14.31 18.40	8.21 11.32	0.31 0.46

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*
			0.00			Ice	22.56	14.38	0.66
						1" Ice			
Tower Top Platform	C	From Leg	0.00	0.0000	252.00	No Ice	88.46	88.46	4.33
			0.00			1/2"	99.96	99.96	6.07
			0.00			Ice	112.18	112.18	8.08
						1" Ice			
**									
2' Standoff	A	From Face	4.00	0.0000	255.00	No Ice	1.04	5.32	0.16
			-21.00			1/2"	1.41	6.43	0.20
			0.00			Ice	1.78	7.67	0.24
						1" Ice			
2' Standoff	B	From Face	4.00	0.0000	255.00	No Ice	1.04	5.32	0.16
			-21.00			1/2"	1.41	6.43	0.20
			0.00			Ice	1.78	7.67	0.24
						1" Ice			
2' Standoff	C	From Face	4.00	0.0000	255.00	No Ice	1.04	5.32	0.16
			-21.00			1/2"	1.41	6.43	0.20
			0.00			Ice	1.78	7.67	0.24
						1" Ice			
SBNH-1D6565C_TIA w/ Mount Pipe	C	From Face	4.00	-15.0000	255.00	No Ice	11.68	9.84	0.08
			-22.00			1/2"	12.40	11.37	0.17
			0.00			Ice	13.14	12.91	0.27
						1" Ice			
AM-X-CD-16-65-00T-RET_TIA w/ Mount Pipe	A	From Face	4.00	0.0000	255.00	No Ice	8.26	6.36	0.07
			-22.00			1/2"	8.82	7.54	0.14
			0.00			Ice	9.35	8.43	0.21
						1" Ice			
AM-X-CD-16-65-00T-RET_TIA w/ Mount Pipe	B	From Face	4.00	49.0000	255.00	No Ice	8.26	6.36	0.07
			-22.00			1/2"	8.82	7.54	0.14
			0.00			Ice	9.35	8.43	0.21
						1" Ice			
HPA-65R-BUU-H8_TIA w/ Mount Pipe	A	From Face	4.00	-20.0000	255.00	No Ice	13.21	9.58	0.10
			-20.00			1/2"	13.90	11.05	0.20
			0.00			Ice	14.59	12.50	0.31
						1" Ice			
HPA-65R-BUU-H6_TIA w/ Mount Pipe	B	From Face	4.00	5.0000	255.00	No Ice	9.72	7.15	0.07
			-20.00			1/2"	10.30	8.34	0.15
			0.00			Ice	10.84	9.24	0.23
						1" Ice			
HPA-65R-BUU-H6_TIA w/ Mount Pipe	C	From Face	4.00	45.0000	255.00	No Ice	9.72	7.15	0.07
			-20.00			1/2"	10.30	8.34	0.15
			0.00			Ice	10.84	9.24	0.23
						1" Ice			
80010965_TIA w/ Mount Pipe	A	From Face	4.00	-15.0000	255.00	No Ice	14.05	7.63	0.14
			-20.00			1/2"	14.69	8.90	0.23
			0.00			Ice	15.30	9.96	0.34
						1" Ice			
80010965_TIA w/ Mount Pipe	B	From Face	4.00	0.0000	255.00	No Ice	14.05	7.63	0.14
			-20.00			1/2"	14.69	8.90	0.23
			0.00			Ice	15.30	9.96	0.34
						1" Ice			
80010966_TIA w/ Mount Pipe	C	From Face	4.00	49.0000	255.00	No Ice	17.60	9.64	0.16
			-20.00			1/2"	18.33	11.15	0.27
			0.00			Ice	19.07	12.70	0.40
						1" Ice			
DC2-48-60-8-18F-03	A	From Face	4.00	-15.0000	255.00	No Ice	3.18	0.98	0.01
			-20.00			1/2"	3.40	1.13	0.04
			0.00			Ice	3.62	1.27	0.06
						1" Ice			
DC2-48-60-8-18F-03	B	From Face	4.00	0.0000	255.00	No Ice	3.18	0.98	0.01
			-20.00			1/2"	3.40	1.13	0.04
			0.00			Ice	3.62	1.27	0.06
						1" Ice			
DC2-48-60-8-18F-03	C	From Face	4.00	49.0000	255.00	No Ice	3.18	0.98	0.01
			-20.00			1/2"	3.40	1.13	0.04

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*
			0.00			Ice	3.62	1.27	0.06
						1" Ice			
RRUS 11	A	From Face	4.00	-15.0000	255.00	No Ice	2.78	1.19	0.05
			-20.00			1/2"	2.99	1.33	0.07
			0.00			Ice	3.21	1.49	0.10
						1" Ice			
RRUS 11	B	From Face	4.00	0.0000	255.00	No Ice	2.78	1.19	0.05
			-20.00			1/2"	2.99	1.33	0.07
			0.00			Ice	3.21	1.49	0.10
						1" Ice			
RRUS 11	C	From Face	4.00	49.0000	255.00	No Ice	2.78	1.19	0.05
			-20.00			1/2"	2.99	1.33	0.07
			0.00			Ice	3.21	1.49	0.10
						1" Ice			
RRUS 32 B2	A	From Face	4.00	-15.0000	255.00	No Ice	2.71	1.66	0.05
			-20.00			1/2"	2.93	1.85	0.07
			0.00			Ice	3.16	2.04	0.10
						1" Ice			
RRUS 32 B2	B	From Face	4.00	0.0000	255.00	No Ice	2.71	1.66	0.05
			-20.00			1/2"	2.93	1.85	0.07
			0.00			Ice	3.16	2.04	0.10
						1" Ice			
RRUS 32 B2	C	From Face	4.00	49.0000	255.00	No Ice	2.71	1.66	0.05
			-20.00			1/2"	2.93	1.85	0.07
			0.00			Ice	3.16	2.04	0.10
						1" Ice			
RRUS 32	A	From Face	4.00	-15.0000	255.00	No Ice	2.73	1.67	0.05
			-20.00			1/2"	2.95	1.86	0.07
			0.00			Ice	3.18	2.05	0.10
						1" Ice			
RRUS 32	B	From Face	4.00	0.0000	255.00	No Ice	2.73	1.67	0.05
			-20.00			1/2"	2.95	1.86	0.07
			0.00			Ice	3.18	2.05	0.10
						1" Ice			
RRUS 32	C	From Face	4.00	49.0000	255.00	No Ice	2.73	1.67	0.05
			-20.00			1/2"	2.95	1.86	0.07
			0.00			Ice	3.18	2.05	0.10
						1" Ice			
RRUS 4478 B14	A	From Face	4.00	-15.0000	255.00	No Ice	1.84	1.06	0.06
			-20.00			1/2"	2.01	1.20	0.08
			0.00			Ice	2.19	1.34	0.09
						1" Ice			
RRUS 4478 B14	B	From Face	4.00	0.0000	255.00	No Ice	1.84	1.06	0.06
			-20.00			1/2"	2.01	1.20	0.08
			0.00			Ice	2.19	1.34	0.09
						1" Ice			
RRUS 4478 B14	C	From Face	4.00	49.0000	255.00	No Ice	1.84	1.06	0.06
			-20.00			1/2"	2.01	1.20	0.08
			0.00			Ice	2.19	1.34	0.09
						1" Ice			
DC6-48-60-18-8F	A	From Face	4.00	-15.0000	255.00	No Ice	0.92	0.92	0.02
			-20.00			1/2"	1.46	1.46	0.04
			0.00			Ice	1.64	1.64	0.06
						1" Ice			
DC6-48-60-18-8F	B	From Face	4.00	0.0000	255.00	No Ice	0.92	0.92	0.02
			-20.00			1/2"	1.46	1.46	0.04
			0.00			Ice	1.64	1.64	0.06
						1" Ice			
DC6-48-60-18-8F	C	From Face	4.00	49.0000	255.00	No Ice	0.92	0.92	0.02
			-20.00			1/2"	1.46	1.46	0.04
			0.00			Ice	1.64	1.64	0.06
						1" Ice			
GPS_A	A	From Face	2.00	0.0000	255.00	No Ice	0.26	0.26	0.00
			0.00			1/2"	0.32	0.32	0.00
			0.00			Ice	0.39	0.39	0.01

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*
**						1" Ice			
4' Standoff	C	From Face	2.00 2.00 2.00	0.0000	252.00	No Ice 1/2" Ice 1" Ice	1.67 2.43 3.21	5.15 7.24 9.38	0.06 0.10 0.16
4' Standoff	C	From Face	2.00 10.00 2.00	0.0000	252.00	No Ice 1/2" Ice 1" Ice	1.67 2.43 3.21	5.15 7.24 9.38	0.06 0.10 0.16
4' Standoff	D	From Face	2.00 -15.00 2.00	0.0000	252.00	No Ice 1/2" Ice 1" Ice	1.67 2.43 3.21	5.15 7.24 9.38	0.06 0.10 0.16
4' Standoff	D	From Face	2.00 8.00 2.00	0.0000	252.00	No Ice 1/2" Ice 1" Ice	1.67 2.43 3.21	5.15 7.24 9.38	0.06 0.10 0.16
JAHH-65B-R3B_TIA w/ Mount Pipe	A	From Face	2.00 -10.00 2.00	-25.0000	252.00	No Ice 1/2" Ice 1" Ice	9.35 9.92 10.46	7.65 8.83 9.73	0.09 0.17 0.25
JAHH-65B-R3B_TIA w/ Mount Pipe	A	From Face	2.00 0.00 2.00	-25.0000	252.00	No Ice 1/2" Ice 1" Ice	9.35 9.92 10.46	7.65 8.83 9.73	0.09 0.17 0.25
JAHH-65B-R3B_TIA w/ Mount Pipe	B	From Face	2.00 -2.00 2.00	15.0000	252.00	No Ice 1/2" Ice 1" Ice	9.35 9.92 10.46	7.65 8.83 9.73	0.09 0.17 0.25
JAHH-65B-R3B_TIA w/ Mount Pipe	B	From Face	2.00 -8.00 2.00	15.0000	252.00	No Ice 1/2" Ice 1" Ice	9.35 9.92 10.46	7.65 8.83 9.73	0.09 0.17 0.25
JAHH-65B-R3B_TIA w/ Mount Pipe	C	From Face	4.00 2.00 2.00	35.0000	252.00	No Ice 1/2" Ice 1" Ice	9.35 9.92 10.46	7.65 8.83 9.73	0.09 0.17 0.25
JAHH-65B-R3B_TIA w/ Mount Pipe	C	From Face	4.00 10.00 2.00	35.0000	252.00	No Ice 1/2" Ice 1" Ice	9.35 9.92 10.46	7.65 8.83 9.73	0.09 0.17 0.25
LPA-80080/6CF w/ Mount Pipe	A	From Face	2.00 8.00 2.00	-25.0000	252.00	No Ice 1/2" Ice 1" Ice	4.82 5.47 6.10	10.53 11.81 12.95	0.05 0.12 0.20
LPA-80080/6CF w/ Mount Pipe	A	From Face	2.00 10.00 2.00	-25.0000	252.00	No Ice 1/2" Ice 1" Ice	4.82 5.47 6.10	10.53 11.81 12.95	0.05 0.12 0.20
LPA-80063-6CF-EDIN-X w/ Mount Pipe	B	From Face	2.00 10.00 2.00	15.0000	252.00	No Ice 1/2" Ice 1" Ice	9.97 10.54 11.08	10.25 11.42 12.31	0.05 0.15 0.25
LPA-80063-6CF-EDIN-X w/ Mount Pipe	B	From Face	2.00 15.00 2.00	15.0000	252.00	No Ice 1/2" Ice 1" Ice	9.97 10.54 11.08	10.25 11.42 12.31	0.05 0.15 0.25
LPA-80063-6CF-EDIN-X w/ Mount Pipe	D	From Face	4.00 -15.00 2.00	-55.0000	252.00	No Ice 1/2" Ice 1" Ice	9.97 10.54 11.08	10.25 11.42 12.31	0.05 0.15 0.25
LPA-80063-6CF-EDIN-X w/ Mount Pipe	D	From Face	4.00 8.00 2.00	-55.0000	252.00	No Ice 1/2" Ice	9.97 10.54 11.08	10.25 11.42 12.31	0.05 0.15 0.25

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
						1" Ice			
FD9R6004/2C-3L	A	From Leg	2.00	-15.0000	252.00	No Ice	0.31	0.08	0.00
			0.00			1/2" Ice	0.39	0.12	0.01
			2.00			1" Ice	0.47	0.17	0.01
FD9R6004/2C-3L	B	From Leg	2.00	15.0000	252.00	No Ice	0.31	0.08	0.00
			0.00			1/2" Ice	0.39	0.12	0.01
			2.00			1" Ice	0.47	0.17	0.01
FD9R6004/2C-3L	C	From Leg	2.00	35.0000	252.00	No Ice	0.31	0.08	0.00
			0.00			1/2" Ice	0.39	0.12	0.01
			2.00			1" Ice	0.47	0.17	0.01
B5/B13 RRH-BR04C	A	From Face	2.00	-15.0000	252.00	No Ice	1.88	1.01	0.07
			0.00			1/2" Ice	2.05	1.14	0.09
			2.00			1" Ice	2.22	1.28	0.11
B5/B13 RRH-BR04C	B	From Face	2.00	15.0000	252.00	No Ice	1.88	1.01	0.07
			0.00			1/2" Ice	2.05	1.14	0.09
			2.00			1" Ice	2.22	1.28	0.11
B5/B13 RRH-BR04C	C	From Face	2.00	35.0000	252.00	No Ice	1.88	1.01	0.07
			0.00			1/2" Ice	2.05	1.14	0.09
			2.00			1" Ice	2.22	1.28	0.11
DUAL BAND RRH 4T4R B2/B66	A	From Face	2.00	-15.0000	252.00	No Ice	1.87	1.25	0.08
			0.00			1/2" Ice	2.03	1.39	0.10
			2.00			1" Ice	2.21	1.54	0.12
DUAL BAND RRH 4T4R B2/B66	B	From Face	2.00	15.0000	252.00	No Ice	1.87	1.25	0.08
			0.00			1/2" Ice	2.03	1.39	0.10
			2.00			1" Ice	2.21	1.54	0.12
DUAL BAND RRH 4T4R B2/B66	C	From Face	2.00	35.0000	252.00	No Ice	1.87	1.25	0.08
			0.00			1/2" Ice	2.03	1.39	0.10
			2.00			1" Ice	2.21	1.54	0.12
BSAMNT-SBS-2-2	A	From Face	2.00	-15.0000	252.00	No Ice	1.27	0.97	0.07
			0.00			1/2" Ice	1.47	1.13	0.10
			2.00			1" Ice	1.67	1.29	0.13
BSAMNT-SBS-2-2	B	From Face	2.00	15.0000	252.00	No Ice	1.27	0.97	0.07
			0.00			1/2" Ice	1.47	1.13	0.10
			2.00			1" Ice	1.67	1.29	0.13
BSAMNT-SBS-2-2	C	From Face	2.00	35.0000	252.00	No Ice	1.27	0.97	0.07
			0.00			1/2" Ice	1.47	1.13	0.10
			2.00			1" Ice	1.67	1.29	0.13
DB-TI-6Z-8AB-0Z	A	From Face	2.00	-15.0000	252.00	No Ice	4.80	2.00	0.04
			0.00			1/2" Ice	5.07	2.19	0.08
			2.00			1" Ice	5.35	2.39	0.12
DB-TI-6Z-8AB-0Z	B	From Face	2.00	15.0000	252.00	No Ice	4.80	2.00	0.04
			0.00			1/2" Ice	5.07	2.19	0.08
			2.00			1" Ice	5.35	2.39	0.12
DB-TI-6Z-8AB-0Z	C	From Face	2.00	35.0000	252.00	No Ice	4.80	2.00	0.04
			0.00			1/2" Ice	5.07	2.19	0.08
			2.00			1" Ice	5.35	2.39	0.12
CWMM	B	From Face	2.00	15.0000	252.00	No Ice	0.08	0.03	0.02
			0.00			1/2" Ice	1.05	0.06	0.02
			2.00			1" Ice	1.30	0.09	0.03

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
5' Horiz L2x2x1/4	B	From Face	2.00 0.00 2.00	15.0000	252.00	No Ice 1/2" Ice 1" Ice	1.00 1.35 1.70	0.03 0.06 0.09	0.02 0.03 0.04
**									
Platform	C	From Leg	0.00 0.00 0.00	0.0000	239.50	No Ice 1/2" Ice 1" Ice	75.38 94.22 113.06	75.38 94.22 113.06	10.50 13.00 15.50
**									
10' x 2.5" STD Pipe	B	From Face	0.50 -15.00 0.00	0.0000	228.00	No Ice 1/2" Ice 1" Ice	2.88 3.91 4.96	2.88 3.91 4.96	0.06 0.08 0.11
20' x 2.5" STD Pipe	B	From Face	0.50 -15.00 0.00	0.0000	228.00	No Ice 1/2" Ice 1" Ice	7.00 9.04 11.09	7.00 9.04 11.09	0.15 0.20 0.26
20' x 2.5" STD Pipe	B	From Face	0.50 15.00 0.00	0.0000	228.00	No Ice 1/2" Ice 1" Ice	7.00 9.04 11.09	7.00 9.04 11.09	0.15 0.20 0.26
20' x 2.5" STD Pipe	C	From Face	0.50 -15.00 0.00	0.0000	228.00	No Ice 1/2" Ice 1" Ice	7.00 9.04 11.09	7.00 9.04 11.09	0.15 0.20 0.26
20' x 2.5" STD Pipe	C	From Face	0.50 15.00 0.00	0.0000	228.00	No Ice 1/2" Ice 1" Ice	7.00 9.04 11.09	7.00 9.04 11.09	0.15 0.20 0.26
20' x 2.5" STD Pipe	D	From Face	0.50 -15.00 0.00	0.0000	228.00	No Ice 1/2" Ice 1" Ice	7.00 9.04 11.09	7.00 9.04 11.09	0.15 0.20 0.26
20' x 2.5" STD Pipe	D	From Face	0.50 15.00 0.00	0.0000	228.00	No Ice 1/2" Ice 1" Ice	7.00 9.04 11.09	7.00 9.04 11.09	0.15 0.20 0.26
APXVTM14-ALU-I20_TIA w/ Mount Pipe	B	From Face	0.50 15.00 -3.00	-5.0000	228.00	No Ice 1/2" Ice 1" Ice	6.58 7.03 7.47	4.96 5.75 6.47	0.08 0.13 0.19
APXVTM14-ALU-I20_TIA w/ Mount Pipe	C	From Face	0.50 15.00 -3.00	-15.0000	228.00	No Ice 1/2" Ice 1" Ice	6.58 7.03 7.47	4.96 5.75 6.47	0.08 0.13 0.19
APXVTM14-ALU-I20_TIA w/ Mount Pipe	D	From Face	0.50 15.00 -3.00	-5.0000	228.00	No Ice 1/2" Ice 1" Ice	6.58 7.03 7.47	4.96 5.75 6.47	0.08 0.13 0.19
NNVV-65B-R4_TIA w/ Mount Pipe	B	From Face	0.50 15.00 -3.00	-5.0000	228.00	No Ice 1/2" Ice 1" Ice	12.51 13.11 13.67	7.41 8.60 9.50	0.10 0.19 0.29
NNVV-65B-R4_TIA w/ Mount Pipe	C	From Face	0.50 15.00 -3.00	-15.0000	228.00	No Ice 1/2" Ice 1" Ice	12.51 13.11 13.67	7.41 8.60 9.50	0.10 0.19 0.29
NNVV-65B-R4_TIA w/ Mount Pipe	D	From Face	0.50 15.00 -3.00	-5.0000	228.00	No Ice 1/2" Ice 1" Ice	12.51 13.11 13.67	7.41 8.60 9.50	0.10 0.19 0.29
PCS 1900MHz 4x45W-65MHz	B	From Face	0.50 15.00 -3.00	-5.0000	228.00	No Ice 1/2" Ice	2.32 2.53 2.74	2.24 2.44 2.65	0.06 0.08 0.11

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* ft ft ft	*Azimuth Adjustment* °	*Placement* ft		*C_AA_A Front* ft^2	*C_AA_A Side* ft^2	*Weight* K
						1" Ice			
PCS 1900MHz 4x45W-65MHz	C	From Face	0.50 15.00 -3.00	-15.0000	228.00	No Ice 1/2" Ice 1" Ice	2.32 2.53 2.74	2.24 2.44 2.65	0.06 0.08 0.11
PCS 1900MHz 4x45W-65MHz	D	From Face	0.50 15.00 -3.00	-5.0000	228.00	No Ice 1/2" Ice 1" Ice	2.32 2.53 2.74	2.24 2.44 2.65	0.06 0.08 0.11
TD-RRH8x20-25	B	From Face	0.50 15.00 -3.00	-5.0000	228.00	No Ice 1/2" Ice 1" Ice	4.05 4.30 4.56	1.53 1.71 1.90	0.07 0.10 0.13
TD-RRH8x20-25	C	From Face	0.50 15.00 -3.00	-15.0000	228.00	No Ice 1/2" Ice 1" Ice	4.05 4.30 4.56	1.53 1.71 1.90	0.07 0.10 0.13
TD-RRH8x20-25	D	From Face	0.50 15.00 -3.00	-5.0000	228.00	No Ice 1/2" Ice 1" Ice	4.05 4.30 4.56	1.53 1.71 1.90	0.07 0.10 0.13
(2) RRH2X50-800	B	From Face	0.50 15.00 -3.00	-5.0000	228.00	No Ice 1/2" Ice 1" Ice	1.70 1.86 2.03	1.28 1.43 1.58	0.05 0.07 0.09
(2) RRH2X50-800	C	From Face	0.50 15.00 -3.00	-15.0000	228.00	No Ice 1/2" Ice 1" Ice	1.70 1.86 2.03	1.28 1.43 1.58	0.05 0.07 0.09
(2) RRH2X50-800	D	From Face	0.50 15.00 -3.00	-5.0000	228.00	No Ice 1/2" Ice 1" Ice	1.70 1.86 2.03	1.28 1.43 1.58	0.05 0.07 0.09
**									
APXVAARR24_43-U-NA20_TIA w/ Mount Pipe	B	From Leg	3.00 0.00 0.00	0.0000	212.00	No Ice 1/2" Ice 1" Ice	20.48 21.23 21.99	11.02 12.55 14.10	0.19 0.32 0.47
APXVAARR24_43-U-NA20_TIA w/ Mount Pipe	C	From Leg	3.00 0.00 0.00	0.0000	212.00	No Ice 1/2" Ice 1" Ice	20.48 21.23 21.99	11.02 12.55 14.10	0.19 0.32 0.47
AIR 6449 B41 w/ Mount Pipe	B	From Leg	3.00 0.00 0.00	0.0000	212.00	No Ice 1/2" Ice 1" Ice	6.90 7.74 8.49	4.32 5.37 6.28	0.13 0.19 0.26
AIR 6449 B41 w/ Mount Pipe	C	From Leg	3.00 0.00 0.00	0.0000	212.00	No Ice 1/2" Ice 1" Ice	6.90 7.74 8.49	4.32 5.37 6.28	0.13 0.19 0.26
AIR 32 B2a/B66Aa w/ Mount Pipe	B	From Leg	3.00 0.00 0.00	0.0000	212.00	No Ice 1/2" Ice 1" Ice	6.75 7.20 7.65	6.07 6.87 7.58	0.15 0.21 0.28
AIR 32 B2a/B66Aa w/ Mount Pipe	C	From Leg	3.00 0.00 0.00	0.0000	212.00	No Ice 1/2" Ice 1" Ice	6.75 7.20 7.65	6.07 6.87 7.58	0.15 0.21 0.28
RADIO 4449 B71/B85	B	From Leg	3.00 0.00 0.00	0.0000	212.00	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	1.31 1.46 1.61	0.07 0.09 0.11
RADIO 4449 B71/B85	C	From Leg	3.00 0.00 0.00	0.0000	212.00	No Ice 1/2" Ice	1.64 1.80 1.97	1.31 1.46 1.61	0.07 0.09 0.11

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* ft ft ft	*Azimuth Adjustment* °	*Placement* ft		C_AA_A *Front* ft^2	C_AA_A *Side* ft^2	*Weight* K
						1" Ice			
RRUS 4415 B25	B	From Leg	3.00	0.0000	212.00	No Ice	1.64	0.68	0.04
			0.00			1/2"	1.80	0.79	0.06
			0.00			Ice	1.97	0.91	0.07
						1" Ice			
RRUS 4415 B25	C	From Leg	3.00	0.0000	212.00	No Ice	1.64	0.68	0.04
			0.00			1/2"	1.80	0.79	0.06
			0.00			Ice	1.97	0.91	0.07
						1" Ice			
RRUS 11 B4	B	From Leg	3.00	0.0000	212.00	No Ice	2.83	1.18	0.05
			0.00			1/2"	3.04	1.33	0.07
			0.00			Ice	3.26	1.48	0.10
						1" Ice			
RRUS 11 B4	C	From Leg	3.00	0.0000	212.00	No Ice	2.83	1.18	0.05
			0.00			1/2"	3.04	1.33	0.07
			0.00			Ice	3.26	1.48	0.10
						1" Ice			
SDX1926Q-43	B	From Leg	3.00	0.0000	212.00	No Ice	0.24	0.10	0.01
			0.00			1/2"	0.31	0.14	0.01
			0.00			Ice	0.38	0.19	0.01
						1" Ice			
SDX1926Q-43	C	From Leg	3.00	0.0000	212.00	No Ice	0.24	0.10	0.01
			0.00			1/2"	0.31	0.14	0.01
			0.00			Ice	0.38	0.19	0.01
						1" Ice			
12.5' Sector Mount	B	None		0.0000	212.00	No Ice	15.94	11.11	0.56
						1/2"	21.89	16.35	0.77
						Ice	27.75	21.52	1.03
						1" Ice			
12.5' Sector Mount	C	None		0.0000	212.00	No Ice	15.94	11.11	0.56
						1/2"	21.89	16.35	0.77
						Ice	27.75	21.52	1.03
						1" Ice			
**									
(3) DB844H90E-XY_TIA w/ Mount Pipe	A	From Leg	1.00	60.0000	210.00	No Ice	3.30	4.80	0.04
			0.00			1/2"	3.67	5.42	0.08
			2.00			Ice	4.03	6.04	0.13
						1" Ice			
(3) DB844H90E-XY_TIA w/ Mount Pipe	D	From Leg	1.00	15.0000	210.00	No Ice	3.30	4.80	0.04
			0.00			1/2"	3.67	5.42	0.08
			2.00			Ice	4.03	6.04	0.13
						1" Ice			
14' Sector Mount	A	From Leg	0.50	60.0000	210.00	No Ice	17.06	4.95	0.36
			0.00			1/2"	22.64	7.48	0.51
			0.00			Ice	28.13	10.09	0.70
						1" Ice			
14' Sector Mount	D	From Leg	0.50	15.0000	210.00	No Ice	17.06	4.95	0.36
			0.00			1/2"	22.64	7.48	0.51
			0.00			Ice	28.13	10.09	0.70
						1" Ice			
**									
(3) DB844H90E-XY_TIA w/ Mount Pipe	C	From Leg	1.00	-15.0000	198.00	No Ice	3.30	4.80	0.04
			0.00			1/2"	3.67	5.42	0.08
			2.00			Ice	4.03	6.04	0.13
						1" Ice			
14' Sector Mount	C	From Leg	0.50	-15.0000	198.00	No Ice	17.06	4.95	0.36
			0.00			1/2"	22.64	7.48	0.51
			0.00			Ice	28.13	10.09	0.70
						1" Ice			
**									
5' Standoff	A	From Leg	1.75	-45.0000	190.00	No Ice	2.58	10.83	0.15
			-1.75			1/2"	3.39	13.16	0.22
			0.00			Ice	4.18	15.84	0.31
						1" Ice			
PGI-DOF-0093	A	From Leg	3.50	-45.0000	190.00	No Ice	1.40	1.40	0.01

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*
			-3.50			1/2"	2.23	2.23	0.02
			6.00			Ice	3.06	3.06	0.03
						1" Ice			
5' Standoff	B	From Leg	1.75	45.0000	190.00	No Ice	2.58	10.83	0.15
			1.75			1/2"	3.39	13.16	0.22
			0.00			Ice	4.18	15.84	0.31
						1" Ice			
PGI-DOF-0093	B	From Leg	3.50	45.0000	190.00	No Ice	1.40	1.40	0.01
			3.50			1/2"	2.23	2.23	0.02
			6.00			Ice	3.06	3.06	0.03
						1" Ice			
5' Standoff	B	From Leg	1.75	45.0000	171.00	No Ice	2.58	10.83	0.15
			1.75			1/2"	3.39	13.16	0.22
			0.00			Ice	4.18	15.84	0.31
						1" Ice			
PGI-DOF-0093	B	From Leg	3.50	45.0000	171.00	No Ice	1.40	1.40	0.01
			3.50			1/2"	2.23	2.23	0.02
			6.00			Ice	3.06	3.06	0.03
						1" Ice			
**									
Catwalk	B	From Leg	0.00	0.0000	139.50	No Ice	75.38	75.38	1.25
			0.00			1/2"	94.22	94.22	1.60
			0.00			Ice	113.06	113.06	1.95
						1" Ice			
**									
WL14-69/S	B	From Leg	1.00	-28.0000	85.00	No Ice	3.30	10.40	0.02
			0.00			1/2"	3.55	11.05	0.19
			-4.00			Ice	3.81	11.70	0.37
						1" Ice			
WL14-69/S	B	From Leg	1.00	-28.0000	85.00	No Ice	3.30	10.40	0.02
			0.00			1/2"	3.55	11.05	0.19
			0.00			Ice	3.81	11.70	0.37
						1" Ice			
WL14-69/S	C	From Leg	1.00	-39.0000	85.00	No Ice	3.30	10.40	0.02
			0.00			1/2"	3.55	11.05	0.19
			-2.00			Ice	3.81	11.70	0.37
						1" Ice			
WL14-69/S	D	From Leg	1.00	-32.0000	85.00	No Ice	3.30	10.40	0.02
			0.00			1/2"	3.55	11.05	0.19
			-1.00			Ice	3.81	11.70	0.37
						1" Ice			
WL7-13	D	From Leg	1.00	-32.0000	85.00	No Ice	3.30	10.40	0.02
			0.00			1/2"	3.55	11.05	0.19
			3.00			Ice	3.81	11.70	0.37
						1" Ice			
**									
Box Mount	B	From Leg	1.50	0.0000	37.00	No Ice	1.78	2.97	0.11
			0.00			1/2"	2.24	3.57	0.13
			0.00			Ice	2.75	4.19	0.16
						1" Ice			
Camera	B	From Leg	1.50	0.0000	37.00	No Ice	0.11	0.05	0.02
			0.00			1/2"	0.13	0.08	0.02
			0.00			Ice	0.21	0.11	0.02
						1" Ice			
3' Side Arm	D	From Leg	1.50	0.0000	36.50	No Ice	1.08	5.31	0.12
			0.00			1/2"	1.63	7.57	0.16
			0.00			Ice	2.21	9.93	0.22
						1" Ice			
GPS_A	D	From Leg	3.00	0.0000	36.50	No Ice	0.26	0.26	0.00
			0.00			1/2"	0.32	0.32	0.00
			0.00			Ice	0.39	0.39	0.01
						1" Ice			
Work Platform	B	From Face	0.00	0.0000	21.00	No Ice	5.61	5.61	0.10
			10.00			1/2"	7.01	7.01	0.13
			0.00			Ice	8.41	8.41	0.15

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Junction Box	B	From Face	0.00	0.00	0.0000	21.00	1" Ice No Ice	3.36	2.19	0.05
			10.00				1/2" Ice	3.60	2.39	0.08
			0.00				1" Ice	3.84	2.61	0.11
RRU	B	From Face	0.00	0.00	0.0000	21.00	No Ice	3.60	3.15	0.06
			10.00				1/2" Ice	3.84	3.38	0.10
			0.00				1" Ice	4.09	3.62	0.13
***										

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 45 deg - No Ice
5	0.9 Dead+1.6 Wind 45 deg - No Ice
6	1.2 Dead+1.6 Wind 90 deg - No Ice
7	0.9 Dead+1.6 Wind 90 deg - No Ice
8	1.2 Dead+1.6 Wind 135 deg - No Ice
9	0.9 Dead+1.6 Wind 135 deg - No Ice
10	1.2 Dead+1.6 Wind 180 deg - No Ice
11	0.9 Dead+1.6 Wind 180 deg - No Ice
12	1.2 Dead+1.6 Wind 225 deg - No Ice
13	0.9 Dead+1.6 Wind 225 deg - No Ice
14	1.2 Dead+1.6 Wind 270 deg - No Ice
15	0.9 Dead+1.6 Wind 270 deg - No Ice
16	1.2 Dead+1.6 Wind 315 deg - No Ice
17	0.9 Dead+1.6 Wind 315 deg - No Ice
18	1.2 Dead+1.0 Ice+1.0 Temp
19	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
20	1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp
21	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
22	1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp
23	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
24	1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp
25	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
26	1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 45 deg - Service
29	Dead+Wind 90 deg - Service
30	Dead+Wind 135 deg - Service
31	Dead+Wind 180 deg - Service
32	Dead+Wind 225 deg - Service
33	Dead+Wind 270 deg - Service
34	Dead+Wind 315 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	237.083 -	Leg	Max Tension	8	7.40	-0.48	-0.04

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
	216						
			Max. Compression	22	-38.23	-2.37	0.02
			Max. Mx	26	-36.25	-2.67	-0.02
			Max. My	4	-15.88	-0.02	1.01
			Max. Vy	16	4.14	-0.00	-0.00
			Max. Vx	4	-5.20	0.00	0.00
		Diagonal	Max Tension	11	9.46	-0.02	-0.00
			Max. Compression	10	-11.81	0.00	0.00
			Max. Mx	25	-4.74	-0.10	0.00
			Max. My	10	0.35	-0.05	-0.00
			Max. Vy	25	-0.08	-0.10	0.00
			Max. Vx	10	-0.00	0.00	0.00
		Top Girt	Max Tension	11	5.42	-0.53	0.00
			Max. Compression	10	-6.09	-0.71	0.00
			Max. Mx	21	-0.66	-1.61	-0.00
			Max. My	10	0.43	-0.24	0.01
			Max. Vy	23	0.55	-1.58	0.00
			Max. Vx	10	0.00	-0.22	0.00
		Redund Horz 1 Bracing	Max Tension	19	0.89	0.00	0.00
			Max. Compression	23	-0.61	0.00	0.00
			Max. Mx	18	0.48	0.03	0.00
			Max. Vy	18	-0.03	0.00	0.00
		Redund Horz 2 Bracing	Max Tension	10	1.27	0.00	0.00
			Max. Compression	2	-1.27	0.00	0.00
			Max. Mx	18	0.29	0.10	0.00
			Max. Vy	18	0.05	0.00	0.00
		Redund Horz 3 Bracing	Max Tension	10	1.16	0.00	0.00
			Max. Compression	2	-1.01	0.00	0.00
			Max. Mx	18	0.88	0.57	0.00
			Max. Vy	18	0.18	0.00	0.00
		Redund Diag 1 Bracing	Max Tension	23	0.49	0.00	0.00
			Max. Compression	19	-0.56	0.00	0.00
			Max. Mx	18	0.23	0.05	0.00
			Max. Vy	18	-0.03	0.00	0.00
		Redund Diag 2 Bracing	Max Tension	2	0.95	0.00	0.00
			Max. Compression	10	-0.95	0.00	0.00
			Max. Mx	18	0.32	0.27	0.00
			Max. Vy	18	-0.11	0.00	0.00
		Redund Diag 3 Bracing	Max Tension	10	0.80	0.00	0.00
			Max. Compression	25	-1.58	0.00	0.00
			Max. Mx	18	0.17	0.23	0.00
			Max. Vy	18	0.09	0.00	0.00
		Inner Bracing	Max Tension	2	0.13	0.00	0.00
			Max. Compression	2	-0.13	0.00	0.00
			Max. Mx	18	0.01	4.55	0.00
			Max. Vy	18	-0.54	0.00	0.00
T2	216 - 190.917	Leg	Max Tension	9	12.18	-0.69	0.06
			Max. Compression	22	-56.58	-3.52	0.01
			Max. Mx	26	-50.09	-3.96	-0.02
			Max. My	4	-23.44	-1.67	-1.04
			Max. Vy	8	-1.22	0.98	0.09
			Max. Vx	4	-1.04	0.09	0.42
		Diagonal	Max Tension	11	20.48	-0.03	0.00
			Max. Compression	10	-22.78	0.00	0.00
			Max. Mx	21	-7.08	-0.12	0.00
			Max. My	10	0.87	-0.05	0.00
			Max. Vy	21	0.08	-0.12	0.00
			Max. Vx	10	0.00	0.00	0.00
		Horizontal	Max Tension	10	11.75	-0.07	-0.00
			Max. Compression	11	-10.99	-0.05	-0.00
			Max. Mx	21	3.97	-0.21	-0.00
			Max. My	2	1.56	-0.07	-0.03

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	21	0.14	-0.21	-0.00
			Max. Vx	2	-0.00	-0.07	-0.03
		Redund Horz 1 Bracing	Max Tension	21	1.20	0.00	0.00
			Max. Compression	25	-0.88	0.00	0.00
			Max. Mx	18	0.73	0.03	0.00
			Max. Vy	18	-0.03	0.00	0.00
		Redund Horz 2 Bracing	Max Tension	21	0.89	0.00	0.00
			Max. Compression	25	-0.89	0.00	0.00
			Max. Mx	18	0.49	0.10	0.00
			Max. Vy	18	0.05	0.00	0.00
		Redund Horz 3 Bracing	Max Tension	6	1.09	0.00	0.00
			Max. Compression	14	-1.09	0.00	0.00
			Max. Mx	18	0.66	0.57	0.00
			Max. Vy	18	-0.18	0.00	0.00
		Redund Diag 1 Bracing	Max Tension	25	0.79	0.00	0.00
			Max. Compression	21	-0.91	0.00	0.00
			Max. Mx	18	0.44	0.05	0.00
			Max. Vy	18	0.03	0.00	0.00
		Redund Diag 2 Bracing	Max Tension	25	0.57	0.00	0.00
			Max. Compression	21	-0.57	0.00	0.00
			Max. Mx	18	0.35	0.29	0.00
			Max. Vy	18	-0.11	0.00	0.00
		Redund Diag 3 Bracing	Max Tension	6	1.12	0.00	0.00
			Max. Compression	6	-1.23	0.00	0.00
			Max. Mx	18	0.31	0.24	0.00
			Max. Vy	18	-0.09	0.00	0.00
		Inner Bracing	Max Tension	16	0.00	0.00	0.00
			Max. Compression	17	-0.00	0.00	0.00
			Max. Mx	18	-0.00	4.52	0.00
			Max. Vy	18	0.54	0.00	0.00
T3	190.917 - 165.834	Leg	Max Tension	9	31.02	-1.25	-0.03
			Max. Compression	22	-74.46	-0.26	-0.00
			Max. Mx	22	-74.15	-6.14	0.01
			Max. My	4	-28.06	-2.59	-1.38
			Max. Vy	22	1.70	4.27	0.01
			Max. Vx	4	0.46	-2.59	-1.38
		Diagonal	Max Tension	11	28.46	0.00	0.00
			Max. Compression	10	-31.37	0.00	0.00
			Max. Mx	20	2.07	0.20	-0.00
			Max. My	10	1.46	-0.07	0.00
			Max. Vy	20	-0.10	-0.06	-0.00
			Max. Vx	10	0.00	0.00	0.00
		Horizontal	Max Tension	10	16.11	-0.11	-0.00
			Max. Compression	11	-15.88	-0.08	-0.00
			Max. Mx	21	4.47	-0.28	-0.00
			Max. My	2	1.50	-0.13	-0.02
			Max. Vy	21	0.18	-0.28	-0.00
			Max. Vx	2	-0.00	-0.13	-0.01
		Redund Horz 1 Bracing	Max Tension	22	1.76	0.00	0.00
			Max. Compression	26	-1.14	0.00	0.00
			Max. Mx	18	1.11	0.03	0.00
			Max. Vy	18	-0.03	0.00	0.00
		Redund Horz 2 Bracing	Max Tension	22	1.12	0.00	0.00
			Max. Compression	22	-1.12	0.00	0.00
			Max. Mx	18	0.65	0.09	0.00
			Max. Vy	18	0.04	0.00	0.00
		Redund Horz 3 Bracing	Max Tension	22	1.12	0.00	0.00
			Max. Compression	22	-1.12	0.00	0.00
			Max. Mx	18	0.80	0.57	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	18	-0.18	0.00	0.00
		Redund Diag 1 Bracing	Max Tension	26	1.02	0.00	0.00
			Max. Compression	22	-1.44	0.00	0.00
			Max. Mx	18	0.59	0.05	0.00
			Max. Vy	18	-0.03	0.00	0.00
		Redund Diag 2 Bracing	Max Tension	19	0.70	0.00	0.00
			Max. Compression	23	-0.70	0.00	0.00
			Max. Mx	18	0.41	0.28	0.00
			Max. Vy	18	-0.11	0.00	0.00
		Redund Diag 3 Bracing	Max Tension	22	0.70	0.00	0.00
			Max. Compression	26	-0.97	0.00	0.00
			Max. Mx	18	0.41	0.24	0.00
			Max. Vy	18	0.09	0.00	0.00
		Inner Bracing	Max Tension	16	0.00	0.00	0.00
			Max. Compression	17	-0.00	0.00	0.00
			Max. Mx	18	-0.00	4.48	0.00
			Max. Vy	18	-0.53	0.00	0.00
T4	165.834 - 140.751	Leg	Max Tension	9	59.68	0.11	0.00
			Max. Compression	8	-102.00	-0.29	0.01
			Max. Mx	22	-94.65	-8.69	0.05
			Max. My	4	-32.91	-3.53	-3.13
			Max. Vy	22	2.47	6.63	-0.01
			Max. Vx	4	0.91	-3.53	-3.13
		Diagonal	Max Tension	11	36.20	0.00	0.00
			Max. Compression	10	-39.38	0.00	0.00
			Max. Mx	10	-37.60	-0.19	-0.00
			Max. My	10	1.86	-0.07	0.00
			Max. Vy	23	0.10	-0.15	-0.00
			Max. Vx	10	0.00	0.00	0.00
		Horizontal	Max Tension	10	20.49	-0.11	-0.00
			Max. Compression	11	-20.13	-0.08	-0.00
			Max. Mx	21	5.55	-0.28	-0.00
			Max. My	2	-1.18	-0.13	-0.03
			Max. Vy	21	0.18	-0.28	-0.00
			Max. Vx	2	-0.00	-0.13	-0.03
		Redund Horz 1 Bracing	Max Tension	22	2.51	0.00	0.00
			Max. Compression	8	-1.54	0.00	0.00
			Max. Mx	18	1.62	0.03	0.00
			Max. Vy	18	-0.03	0.00	0.00
		Redund Horz 2 Bracing	Max Tension	8	1.54	0.00	0.00
			Max. Compression	8	-1.54	0.00	0.00
			Max. Mx	18	0.82	0.09	0.00
			Max. Vy	18	-0.04	0.00	0.00
		Redund Horz 3 Bracing	Max Tension	8	1.54	0.00	0.00
			Max. Compression	8	-1.54	0.00	0.00
			Max. Mx	18	0.95	0.56	0.00
			Max. Vy	18	-0.18	0.00	0.00
		Redund Diag 1 Bracing	Max Tension	2	1.40	0.00	0.00
			Max. Compression	22	-2.09	0.00	0.00
			Max. Mx	18	0.74	0.05	0.00
			Max. Vy	18	-0.03	0.00	0.00
		Redund Diag 2 Bracing	Max Tension	8	0.96	0.00	0.00
			Max. Compression	8	-0.96	0.00	0.00
			Max. Mx	18	0.51	0.28	0.00
			Max. Vy	18	-0.11	0.00	0.00
		Redund Diag 3 Bracing	Max Tension	8	0.96	0.00	0.00
			Max. Compression	16	-1.01	0.00	0.00
			Max. Mx	18	0.51	0.23	0.00
			Max. Vy	18	-0.09	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
		Inner Bracing	Max Tension	16	0.00	0.00	0.00
			Max. Compression	17	-0.00	0.00	0.00
			Max. Mx	18	-0.00	4.43	0.00
			Max. Vy	18	-0.53	0.00	0.00
T5	140.751 - 115.668	Leg	Max Tension	9	97.40	0.60	0.18
			Max. Compression	8	-149.34	2.02	0.12
			Max. Mx	22	-118.48	-11.71	0.02
			Max. My	4	-38.41	-4.56	-4.88
			Max. Vy	22	3.16	7.97	-0.01
			Max. Vx	8	1.53	-2.66	3.09
		Diagonal	Max Tension	11	45.10	0.00	0.00
			Max. Compression	10	-48.78	0.00	0.00
			Max. Mx	10	-45.77	-0.15	-0.00
			Max. My	10	2.66	-0.07	0.00
			Max. Vy	23	0.10	-0.15	-0.00
			Max. Vx	10	0.00	0.00	0.00
		Horizontal	Max Tension	10	25.46	-0.11	-0.00
			Max. Compression	11	-25.10	-0.08	-0.00
			Max. Mx	23	7.07	-0.28	-0.00
			Max. My	2	-1.61	-0.15	-0.04
			Max. Vy	23	-0.17	-0.28	-0.00
			Max. Vx	2	-0.00	-0.13	-0.02
		Redund Horz 1 Bracing	Max Tension	22	3.12	0.00	0.00
			Max. Compression	2	-2.30	0.00	0.00
			Max. Mx	18	1.98	0.03	0.00
			Max. Vy	18	-0.03	0.00	0.00
		Redund Horz 2 Bracing	Max Tension	8	2.25	0.00	0.00
			Max. Compression	8	-2.25	0.00	0.00
			Max. Mx	18	0.98	0.09	0.00
			Max. Vy	18	0.04	0.00	0.00
		Redund Horz 3 Bracing	Max Tension	8	2.25	0.00	0.00
			Max. Compression	8	-2.25	0.00	0.00
			Max. Mx	18	1.12	0.56	0.00
			Max. Vy	18	-0.18	0.00	0.00
		Redund Diag 1 Bracing	Max Tension	2	2.08	0.00	0.00
			Max. Compression	23	-2.62	0.00	0.00
			Max. Mx	18	0.88	0.05	0.00
			Max. Vy	18	-0.03	0.00	0.00
		Redund Diag 2 Bracing	Max Tension	8	1.40	0.00	0.00
			Max. Compression	8	-1.40	0.00	0.00
			Max. Mx	18	0.61	0.28	0.00
			Max. Vy	18	-0.11	0.00	0.00
		Redund Diag 3 Bracing	Max Tension	8	1.40	0.00	0.00
			Max. Compression	8	-1.40	0.00	0.00
			Max. Mx	18	0.61	0.23	0.00
			Max. Vy	18	-0.09	0.00	0.00
		Inner Bracing	Max Tension	16	0.00	0.00	0.00
			Max. Compression	17	-0.00	0.00	0.00
			Max. Mx	18	-0.00	4.38	0.00
			Max. Vy	18	-0.52	0.00	0.00
T6	115.668 - 90.585	Leg	Max Tension	9	144.87	2.18	0.05
			Max. Compression	8	-206.93	2.78	-0.01
			Max. Mx	22	-144.00	-15.25	0.03
			Max. My	4	-43.61	-5.80	-8.61
			Max. Vy	22	4.13	10.48	-0.03
			Max. Vx	4	2.23	-5.80	-8.61
		Diagonal	Max Tension	11	52.27	0.00	0.00
			Max. Compression	10	-56.33	0.00	0.00
			Max. Mx	10	-53.87	-0.17	-0.00
			Max. My	10	-4.32	-0.07	0.00
			Max. Vy	23	0.10	-0.16	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	10	0.00	0.00	0.00
		Horizontal	Max Tension	10	29.45	-0.11	-0.00
			Max. Compression	11	-29.09	-0.08	-0.00
			Max. Mx	23	8.14	-0.28	-0.00
			Max. My	2	2.41	-0.16	-0.05
			Max. Vy	23	-0.17	-0.28	-0.00
			Max. Vx	2	-0.00	-0.16	-0.05
		Redund Horz 1 Bracing	Max Tension	10	4.23	0.00	0.00
			Max. Compression	2	-3.50	0.00	0.00
			Max. Mx	18	2.48	0.03	0.00
			Max. Vy	18	-0.03	0.00	0.00
		Redund Horz 2 Bracing	Max Tension	8	3.11	0.00	0.00
			Max. Compression	8	-3.11	0.00	0.00
			Max. Mx	18	1.16	0.09	0.00
			Max. Vy	18	0.04	0.00	0.00
		Redund Horz 3 Bracing	Max Tension	8	3.11	0.00	0.00
			Max. Compression	8	-3.11	0.00	0.00
			Max. Mx	18	1.29	0.55	0.00
			Max. Vy	18	-0.17	0.00	0.00
		Redund Diag 1 Bracing	Max Tension	2	3.16	0.00	0.00
			Max. Compression	10	-3.71	0.00	0.00
			Max. Mx	18	1.04	0.05	0.00
			Max. Vy	18	-0.03	0.00	0.00
		Redund Diag 2 Bracing	Max Tension	8	1.94	0.00	0.00
			Max. Compression	8	-1.94	0.00	0.00
			Max. Mx	18	0.72	0.27	0.00
			Max. Vy	18	-0.10	0.00	0.00
		Redund Diag 3 Bracing	Max Tension	8	1.94	0.00	0.00
			Max. Compression	8	-1.94	0.00	0.00
			Max. Mx	18	0.72	0.23	0.00
			Max. Vy	18	-0.09	0.00	0.00
		Inner Bracing	Max Tension	16	0.01	0.00	0.00
			Max. Compression	17	-0.01	0.00	0.00
			Max. Mx	18	-0.00	4.31	0.00
			Max. Vy	18	-0.51	0.00	0.00
T7	90.585 - 65.502	Leg	Max Tension	9	201.06	3.60	0.09
			Max. Compression	8	-273.52	3.80	-0.02
			Max. Mx	22	-174.91	-15.25	0.03
			Max. My	4	-49.11	-5.80	-8.61
			Max. Vy	22	4.00	11.83	-0.03
			Max. Vx	4	1.92	-5.04	-6.61
		Diagonal	Max Tension	3	59.44	0.00	0.00
			Max. Compression	10	-64.03	0.00	0.00
			Max. Mx	10	-61.18	-0.35	0.00
			Max. My	10	-4.61	-0.08	0.00
			Max. Vy	23	0.12	-0.22	0.00
			Max. Vx	10	0.00	0.00	0.00
		Horizontal	Max Tension	2	33.34	-0.22	0.00
			Max. Compression	3	-33.13	0.00	0.00
			Max. Mx	23	8.96	-0.27	-0.00
			Max. My	2	-2.28	-0.18	-0.05
			Max. Vy	23	-0.17	-0.27	-0.00
			Max. Vx	2	-0.00	-0.18	-0.05
		Redund Horz 1 Bracing	Max Tension	8	4.68	0.00	0.00
			Max. Compression	8	-4.11	0.00	0.00
			Max. Mx	18	2.39	0.03	0.00
			Max. Vy	18	-0.03	0.00	0.00
		Redund Horz 2 Bracing	Max Tension	8	4.11	0.00	0.00
			Max. Compression	8	-4.11	0.00	0.00
			Max. Mx	18	1.36	0.09	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	18	-0.04	0.00	0.00
		Redund Horz 3 Bracing	Max Tension	8	4.11	0.00	0.00
			Max. Compression	8	-4.11	0.00	0.00
			Max. Mx	18	1.43	0.54	0.00
			Max. Vy	18	-0.17	0.00	0.00
		Redund Diag 1 Bracing	Max Tension	8	3.69	0.00	0.00
			Max. Compression	8	-4.08	0.00	0.00
			Max. Mx	18	1.22	0.05	0.00
			Max. Vy	18	-0.03	0.00	0.00
		Redund Diag 2 Bracing	Max Tension	8	2.56	0.00	0.00
			Max. Compression	8	-2.56	0.00	0.00
			Max. Mx	18	0.85	0.27	0.00
			Max. Vy	18	-0.10	0.00	0.00
		Redund Diag 3 Bracing	Max Tension	8	2.56	0.00	0.00
			Max. Compression	8	-2.56	0.00	0.00
			Max. Mx	18	0.85	0.22	0.00
			Max. Vy	18	-0.09	0.00	0.00
		Inner Bracing	Max Tension	16	0.01	0.00	0.00
			Max. Compression	17	-0.01	0.00	0.00
			Max. Mx	18	-0.00	4.24	0.00
			Max. Vy	18	-0.50	0.00	0.00
T8	65.502 - 40.419	Leg	Max Tension	9	265.99	2.23	0.06
			Max. Compression	8	-350.06	3.47	0.01
			Max. Mx	8	-338.60	-30.76	0.12
			Max. My	4	-56.26	-9.32	-9.00
			Max. Vy	8	7.63	16.57	-0.09
			Max. Vx	4	2.32	-9.32	-9.00
		Diagonal	Max Tension	3	52.72	-0.07	-0.09
			Max. Compression	2	-58.63	0.00	0.00
			Max. Mx	2	-52.84	-0.21	0.13
			Max. My	23	-3.54	-0.10	-0.28
			Max. Vy	19	0.12	-0.18	0.22
			Max. Vx	23	0.03	0.00	0.00
		Horizontal	Max Tension	3	28.91	-0.18	-0.02
			Max. Compression	2	-31.88	-0.04	-0.02
			Max. Mx	23	3.44	-0.26	-0.05
			Max. My	19	-1.69	-0.18	0.10
			Max. Vy	23	-0.16	-0.26	-0.05
			Max. Vx	19	0.02	-0.18	0.10
		Redund Horz 1 Bracing	Max Tension	8	6.92	0.00	0.00
			Max. Compression	16	-6.07	0.00	0.00
			Max. Mx	18	3.08	0.03	0.00
			Max. My	18	3.08	0.00	-0.00
			Max. Vy	18	-0.03	0.00	0.00
			Max. Vx	18	0.00	0.00	0.00
		Redund Horz 2 Bracing	Max Tension	8	5.26	0.00	0.00
			Max. Compression	8	-5.26	0.00	0.00
			Max. Mx	18	1.56	0.09	0.00
			Max. My	18	1.56	0.00	-0.00
			Max. Vy	18	0.04	0.00	0.00
			Max. Vx	18	0.00	0.00	0.00
		Redund Horz 3 Bracing	Max Tension	8	5.26	0.00	0.00
			Max. Compression	8	-5.26	0.00	0.00
			Max. Mx	18	1.56	0.53	0.00
			Max. My	18	1.56	0.00	-0.02
			Max. Vy	18	-0.17	0.00	0.00
			Max. Vx	18	0.01	0.00	0.00
		Redund Diag 1 Bracing	Max Tension	16	5.37	0.00	0.00
			Max. Compression	8	-5.97	0.00	0.00
			Max. Mx	18	1.64	0.04	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. My	18	2.08	0.00	-0.00
			Max. Vy	18	-0.02	0.00	0.00
			Max. Vx	18	-0.00	0.00	0.00
		Redund Diag 2 Bracing	Max Tension	8	3.23	0.00	0.00
			Max. Compression	8	-3.23	0.00	0.00
			Max. Mx	18	1.39	0.25	0.00
			Max. My	18	1.13	0.00	-0.01
			Max. Vy	18	0.10	0.00	0.00
			Max. Vx	18	-0.00	0.00	0.00
		Redund Diag 3 Bracing	Max Tension	8	3.34	0.00	0.00
			Max. Compression	8	-3.34	0.00	0.00
			Max. Mx	18	0.99	0.23	0.00
			Max. My	18	0.99	0.00	-0.01
			Max. Vy	18	-0.09	0.00	0.00
			Max. Vx	18	0.00	0.00	0.00
		Inner Bracing	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-0.10	0.00	0.00
			Max. Mx	18	-0.02	4.13	0.00
			Max. Vy	18	-0.49	0.00	0.00
T9	40.419 - 0	Leg	Max Tension	9	318.77	16.42	0.07
			Max. Compression	8	-415.55	3.61	-0.00
			Max. Mx	8	-414.48	-30.76	0.12
			Max. My	4	-65.61	7.81	9.04
			Max. Vy	8	-4.42	3.61	-0.00
			Max. Vx	4	-1.53	-9.31	-9.00
		Diagonal	Max Tension	11	101.38	0.01	-0.58
			Max. Compression	10	-108.43	0.00	0.00
			Max. Mx	10	-4.41	-0.40	-0.16
			Max. My	2	-104.33	-0.06	0.85
			Max. Vy	19	0.11	-0.24	-0.10
			Max. Vx	8	0.12	-0.30	0.40
		Horizontal	Max Tension	10	42.10	-0.24	-0.00
			Max. Compression	3	-38.89	0.15	-0.00
			Max. Mx	10	7.45	-0.57	-0.07
			Max. My	2	11.96	-0.56	-0.07
			Max. Vy	23	-0.23	-0.44	-0.00
			Max. Vx	2	0.00	0.00	0.00
		Redund Horz 1 Bracing	Max Tension	8	6.36	0.00	0.00
			Max. Compression	8	-6.28	0.00	0.00
			Max. Mx	18	1.93	0.02	0.00
			Max. Vy	18	-0.02	0.00	0.00
		Redund Horz 2 Bracing	Max Tension	8	6.28	0.00	0.00
			Max. Compression	8	-6.28	0.00	0.00
			Max. Mx	18	1.82	0.06	0.00
			Max. Vy	18	-0.03	0.00	0.00
		Redund Horz 3 Bracing	Max Tension	8	6.28	0.00	0.00
			Max. Compression	8	-6.28	0.00	0.00
			Max. Mx	18	1.84	0.37	0.00
			Max. Vy	18	-0.14	0.00	0.00
		Redund Horz 4 Bracing	Max Tension	8	6.28	0.00	0.00
			Max. Compression	8	-6.28	0.00	0.00
			Max. Mx	18	1.82	0.65	0.00
			Max. Vy	18	-0.18	0.00	0.00
		Redund Diag 1 Bracing	Max Tension	8	7.81	0.00	0.00
			Max. Compression	8	-7.81	0.00	0.00
			Max. Mx	18	2.26	0.04	0.00
			Max. Vy	18	-0.02	0.00	0.00
		Redund Diag 2 Bracing	Max Tension	8	4.76	0.00	0.00
			Max. Compression	8	-4.76	0.00	0.00
			Max. Mx	18	1.38	0.22	0.00
			Max. Vy	18	0.08	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
		Redund Diag 3 Bracing	Max Tension	8	3.94	0.00	0.00
			Max. Compression	8	-3.94	0.00	0.00
			Max. Mx	18	1.14	0.33	0.00
			Max. Vy	18	-0.10	0.00	0.00
		Redund Diag 4 Bracing	Max Tension	8	4.25	0.00	0.00
			Max. Compression	8	-4.25	0.00	0.00
			Max. Mx	18	1.23	0.25	0.00
			Max. Vy	18	-0.08	0.00	0.00
		Redund Hip 1 Bracing	Max Tension	8	0.20	0.00	0.00
			Max. Compression	9	-0.13	0.00	0.00
			Max. Mx	18	0.11	0.06	0.00
			Max. Vy	18	-0.05	0.00	0.00
		Redund Hip 2 Bracing	Max Tension	3	0.16	0.00	0.00
			Max. Compression	10	-0.17	0.00	0.00
			Max. Mx	18	-0.02	0.25	0.00
			Max. Vy	18	0.10	0.00	0.00
		Redund Hip 3 Bracing	Max Tension	4	0.31	0.00	0.00
			Max. Compression	13	-0.30	0.00	0.00
			Max. Mx	18	0.02	0.65	0.00
			Max. Vy	18	-0.17	0.00	0.00
		Redund Hip 4 Bracing	Max Tension	9	0.05	0.00	0.00
			Max. Compression	8	-0.06	0.00	0.00
			Max. Mx	18	-0.02	1.16	0.00
			Max. Vy	18	-0.23	0.00	0.00
		Redund Hip Diagonal 2 Bracing	Max Tension	10	0.46	0.00	0.00
			Max. Compression	2	-0.48	0.00	0.00
			Max. Mx	18	0.08	0.55	0.00
			Max. Vy	18	-0.14	0.00	0.00
		Redund Hip Diagonal 3 Bracing	Max Tension	4	0.25	0.00	0.00
			Max. Compression	12	-0.26	0.00	0.00
			Max. Mx	18	0.08	0.97	0.00
			Max. Vy	18	-0.20	0.00	0.00
		Inner Bracing	Max Tension	8	0.07	0.00	0.00
			Max. Compression	9	-0.07	0.00	0.00
			Max. Mx	18	-0.00	5.52	0.00
			Max. Vy	18	-0.62	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg D	Max. Vert	12	539.79	35.23	-29.32
	Max. H_x	14	365.78	41.55	0.60
	Max. H_z	3	-273.49	-2.01	38.49
	Min. Vert	5	-428.12	-33.50	27.78
	Min. H_x	7	-254.11	-39.82	-2.15
	Min. H_z	10	385.16	3.73	-40.04
Leg C	Max. Vert	8	556.80	-31.89	-33.01
	Max. H_x	15	-245.77	39.83	-1.95
	Max. H_z	3	-265.15	-2.76	43.46
	Min. Vert	17	-420.67	30.17	31.41
	Min. H_x	6	381.90	-41.55	0.34
	Min. H_z	10	401.28	1.04	-45.06
Leg B	Max. Vert	4	542.95	-29.21	35.35
	Max. H_x	15	-251.74	36.42	-1.25
	Max. H_z	2	388.32	1.29	45.06

Location	*Condition*	*Gov. Load Comb.*	*Vertical K*	*Horizontal, X K*	*Horizontal, Z K*
Leg A	Min. Vert	13	-425.75	27.53	-33.74
	Min. H_x	6	368.94	-38.10	2.86
	Min. H_z	11	-271.12	-2.97	-43.46
	Max. Vert	16	532.01	32.86	31.98
	Max. H_x	14	357.10	38.10	3.05
	Max. H_z	2	376.49	3.93	40.04
	Min. Vert	9	-439.27	-31.19	-30.43
	Min. H_x	7	-264.36	-36.42	-1.50
	Min. H_z	11	-283.75	-2.25	-38.49

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	217.97	0.00	0.00	319.99	-413.57	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	261.57	-0.45	-166.59	-22507.75	-420.14	354.38
0.9 Dead+1.6 Wind 0 deg - No Ice	196.18	-0.45	-166.59	-22603.75	-296.07	354.38
1.2 Dead+1.6 Wind 45 deg - No Ice	261.57	123.93	-124.70	-16613.57	-17293.14	425.37
0.9 Dead+1.6 Wind 45 deg - No Ice	196.18	123.93	-124.70	-16709.56	-17169.07	425.37
1.2 Dead+1.6 Wind 90 deg - No Ice	261.57	155.40	0.45	460.14	-22011.98	243.09
0.9 Dead+1.6 Wind 90 deg - No Ice	196.18	155.40	0.45	364.14	-21887.91	243.09
1.2 Dead+1.6 Wind 135 deg - No Ice	261.57	124.56	125.33	17489.24	-17400.83	-70.68
0.9 Dead+1.6 Wind 135 deg - No Ice	196.18	124.56	125.33	17393.24	-17276.76	-70.68
1.2 Dead+1.6 Wind 180 deg - No Ice	261.57	0.45	166.59	23275.73	-572.43	-354.38
0.9 Dead+1.6 Wind 180 deg - No Ice	196.18	0.45	166.59	23179.74	-448.36	-354.38
1.2 Dead+1.6 Wind 225 deg - No Ice	261.57	-123.93	124.70	17381.55	16300.57	-425.37
0.9 Dead+1.6 Wind 225 deg - No Ice	196.18	-123.93	124.70	17285.55	16424.64	-425.37
1.2 Dead+1.6 Wind 270 deg - No Ice	261.57	-155.40	-0.45	307.84	21019.41	-243.09
0.9 Dead+1.6 Wind 270 deg - No Ice	196.18	-155.40	-0.45	211.85	21143.48	-243.09
1.2 Dead+1.6 Wind 315 deg - No Ice	261.57	-124.56	-125.33	-16721.26	16408.26	70.68
0.9 Dead+1.6 Wind 315 deg - No Ice	196.18	-124.56	-125.33	-16817.25	16532.33	70.68
1.2 Dead+1.0 Ice+1.0 Temp	559.89	0.00	0.00	1043.40	-1252.83	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	559.89	-0.10	-41.86	-4760.33	-1236.05	135.01
1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp	559.89	30.69	-30.93	-3241.74	-5480.45	131.64
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	559.89	38.89	0.10	1060.18	-6702.11	82.14
1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp	559.89	30.83	31.07	5352.27	-5504.17	-35.46
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	559.89	0.10	41.86	6847.13	-1269.61	-135.01
1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp	559.89	-30.69	30.93	5328.54	2974.78	-131.64
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	559.89	-38.89	-0.10	1026.62	4196.45	-82.14
1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp	559.89	-30.83	-31.07	-3265.47	2998.51	35.46

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead+Wind 0 deg - Service	217.97	-0.11	-39.84	-5154.17	-395.36	84.74
Dead+Wind 45 deg - Service	217.97	29.63	-29.82	-3744.68	-4430.25	101.72
Dead+Wind 90 deg - Service	217.97	37.16	0.11	338.20	-5558.68	58.13
Dead+Wind 135 deg - Service	217.97	29.79	29.97	4410.42	-4456.00	-16.90
Dead+Wind 180 deg - Service	217.97	0.11	39.84	5794.16	-431.78	-84.74
Dead+Wind 225 deg - Service	217.97	-29.63	29.82	4384.66	3603.11	-101.72
Dead+Wind 270 deg - Service	217.97	-37.16	-0.11	301.78	4731.54	-58.13
Dead+Wind 315 deg - Service	217.97	-29.79	-29.97	-3770.43	3628.86	16.90

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-217.97	0.00	-0.00	217.97	-0.00	0.000%
2	-0.45	-261.57	-166.59	0.45	261.57	166.59	0.000%
3	-0.45	-196.18	-166.59	0.45	196.18	166.59	0.000%
4	123.93	-261.57	-124.70	-123.93	261.57	124.70	0.000%
5	123.93	-196.18	-124.70	-123.93	196.18	124.70	0.000%
6	155.40	-261.57	0.45	-155.40	261.57	-0.45	0.000%
7	155.40	-196.18	0.45	-155.40	196.18	-0.45	0.000%
8	124.56	-261.57	125.33	-124.56	261.57	-125.33	0.000%
9	124.56	-196.18	125.33	-124.56	196.18	-125.33	0.000%
10	0.45	-261.57	166.59	-0.45	261.57	-166.59	0.000%
11	0.45	-196.18	166.59	-0.45	196.18	-166.59	0.000%
12	-123.93	-261.57	124.70	123.93	261.57	-124.70	0.000%
13	-123.93	-196.18	124.70	123.93	196.18	-124.70	0.000%
14	-155.40	-261.57	-0.45	155.40	261.57	0.45	0.000%
15	-155.40	-196.18	-0.45	155.40	196.18	0.45	0.000%
16	-124.56	-261.57	-125.33	124.56	261.57	125.33	0.000%
17	-124.56	-196.18	-125.33	124.56	196.18	125.33	0.000%
18	0.00	-559.89	0.00	-0.00	559.89	-0.00	0.000%
19	-0.10	-559.89	-41.86	0.10	559.89	41.86	0.000%
20	30.69	-559.89	-30.93	-30.69	559.89	30.93	0.000%
21	38.89	-559.89	0.10	-38.89	559.89	-0.10	0.000%
22	30.83	-559.89	31.07	-30.83	559.89	-31.07	0.000%
23	0.10	-559.89	41.86	-0.10	559.89	-41.86	0.000%
24	-30.69	-559.89	30.93	30.69	559.89	-30.93	0.000%
25	-38.89	-559.89	-0.10	38.89	559.89	0.10	0.000%
26	-30.83	-559.89	-31.07	30.83	559.89	31.07	0.000%
27	-0.11	-217.97	-39.84	0.11	217.97	39.84	0.000%
28	29.63	-217.97	-29.82	-29.63	217.97	29.82	0.000%
29	37.16	-217.97	0.11	-37.16	217.97	-0.11	0.000%
30	29.79	-217.97	29.97	-29.79	217.97	-29.97	0.000%
31	0.11	-217.97	39.84	-0.11	217.97	-39.84	0.000%
32	-29.63	-217.97	29.82	29.63	217.97	-29.82	0.000%
33	-37.16	-217.97	-0.11	37.16	217.97	0.11	0.000%
34	-29.79	-217.97	-29.97	29.79	217.97	29.97	0.000%

Maximum Tower Deflections - Service Wind

Section No.	Elevation	Horz. Deflection	Gov. Load	Tilt	Twist
	ft	in	Comb.	°	°
T1	237.083 - 216	1.905	30	0.0533	0.0135
T2	216 - 190.917	1.667	30	0.0513	0.0129
T3	190.917 -	1.380	30	0.0482	0.0116

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
	165.834				
T4	165.834 - 140.751	1.116	30	0.0434	0.0105
T5	140.751 - 115.668	0.867	30	0.0385	0.0092
T6	115.668 - 90.585	0.639	30	0.0323	0.0077
T7	90.585 - 65.502	0.437	30	0.0255	0.0061
T8	65.502 - 40.419	0.272	30	0.0181	0.0045
T9	40.419 - 0	0.159	30	0.0114	0.0031

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
265.00	4' Lightning Rod	30	1.905	0.0533	0.0135	642857
263.00	Flash Beacon Lighting	30	1.905	0.0533	0.0135	642857
256.50	13' I-Beam Mast Mount	30	1.905	0.0533	0.0135	642857
255.00	2' Standoff	30	1.905	0.0533	0.0135	642857
252.00	Tower Top Platform	30	1.905	0.0533	0.0135	642857
239.50	Platform	30	1.905	0.0533	0.0135	642857
228.00	10' x 2.5" STD Pipe	30	1.803	0.0524	0.0133	353880
212.00	APXVAARR24_43-U-NA20_TIA w/ Mount Pipe	30	1.621	0.0509	0.0127	190003
210.00	(3) DB844H90E-XY_TIA w/ Mount Pipe	30	1.598	0.0507	0.0126	216385
198.00	(3) DB844H90E-XY_TIA w/ Mount Pipe	30	1.460	0.0492	0.0120	360054
190.00	5' Standoff	30	1.370	0.0480	0.0116	222406
171.00	5' Standoff	30	1.169	0.0445	0.0107	504528
139.50	Catwalk	30	0.855	0.0382	0.0091	345302
85.00	WL14-69/S	30	0.396	0.0238	0.0058	185349
37.00	Box Mount	34	0.146	0.0105	0.0028	Inf
36.50	3' Side Arm	34	0.144	0.0104	0.0028	Inf
21.00	Work Platform	34	0.083	0.0060	0.0017	Inf

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	237.083 - 216	7.239	8	0.1804	0.0565
T2	216 - 190.917	6.413	8	0.1773	0.0540
T3	190.917 - 165.834	5.373	8	0.1709	0.0486
T4	165.834 - 140.751	4.392	8	0.1580	0.0439
T5	140.751 - 115.668	3.451	8	0.1423	0.0384
T6	115.668 - 90.585	2.570	8	0.1212	0.0323
T7	90.585 - 65.502	1.778	8	0.0966	0.0255
T8	65.502 - 40.419	1.124	8	0.0694	0.0190
T9	40.419 - 0	0.665	8	0.0441	0.0128

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
265.00	4' Lightning Rod	8	7.239	0.1804	0.0565	198276
263.00	Flash Beacon Lighting	8	7.239	0.1804	0.0565	198276
256.50	13' I-Beam Mast Mount	8	7.239	0.1804	0.0565	198276
255.00	2' Standoff	8	7.239	0.1804	0.0565	198276
252.00	Tower Top Platform	8	7.239	0.1804	0.0565	198276
239.50	Platform	8	7.239	0.1804	0.0565	198276
228.00	10' x 2.5" STD Pipe	8	6.888	0.1791	0.0556	109147
212.00	APXVAARR24_43-U-NA20_TIA w/ Mount Pipe	8	6.249	0.1766	0.0532	62298
210.00	(3) DB844H90E-XY_TIA w/ Mount Pipe	8	6.166	0.1762	0.0528	74251
198.00	(3) DB844H90E-XY_TIA w/ Mount Pipe	8	5.665	0.1733	0.0502	157294
190.00	5' Standoff	8	5.336	0.1705	0.0484	71571
171.00	5' Standoff	8	4.590	0.1609	0.0448	213963
139.50	Catwalk	8	3.405	0.1414	0.0381	114130
85.00	WL14-69/S	8	1.617	0.0906	0.0240	49488
37.00	Box Mount	16	0.608	0.0406	0.0119	633938
36.50	3' Side Arm	16	0.600	0.0401	0.0117	645196
21.00	Work Platform	16	0.346	0.0234	0.0070	Inf

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	237.083	Leg	A325N	0.7500	12	6.37	24.96	0.255	1	Bearing
		Diagonal	A325N	0.7500	4	2.95	31.32	0.094	1	Gusset Bearing
T2	216	Leg	A325N	0.7500	12	9.43	24.96	0.378	1	Bearing
		Diagonal	A325N	0.7500	4	5.69	31.32	0.182	1	Gusset Bearing
		Horizontal	A325N	0.7500	4	2.72	19.44	0.140	1	Member Block Shear
T3	190.917	Leg	A325N	0.7500	16	9.27	25.40	0.365	1	Bearing
		Diagonal	A325N	0.7500	5	6.27	17.89	0.351	1	Bolt Shear
		Horizontal	A325N	0.7500	4	4.01	28.22	0.142	1	Gusset Bearing
T4	165.834	Leg	A325N	1.0000	12	16.69	32.27	0.517	1	Bearing
		Diagonal	A325N	0.7500	5	7.88	17.89	0.440	1	Bolt Shear
		Horizontal	A325N	0.7500	4	5.05	28.22	0.179	1	Gusset Bearing
T5	140.751	Leg	A325N	1.0000	16	18.28	38.13	0.479	1	Bearing
		Diagonal	A325N	0.7500	4	11.28	28.22	0.400	1	Gusset Bearing
		Horizontal	A325N	0.7500	4	6.23	28.22	0.221	1	Gusset Bearing
T6	115.668	Leg	A325N	1.0000	16	25.21	36.01	0.700	1	Bearing
		Diagonal	A325N	0.7500	4	13.07	28.22	0.463	1	Gusset Bearing
		Horizontal	A325N	0.7500	4	7.21	28.22	0.256	1	Gusset Bearing
T7	90.585	Leg	A325N	1.0000	20	26.76	44.94	0.595	1	Bearing
		Diagonal	A325N	0.7500	5	12.81	17.89	0.716	1	Bolt Shear
		Horizontal	A325N	0.7500	4	8.16	28.22	0.289	1	Gusset Bearing
T8	65.502	Leg	A325N	1.0000	20	33.86	56.72	0.597	1	Bearing
		Diagonal	A325N	0.7500	5	11.73	31.32	0.374	1	Gusset Bearing
		Horizontal	A325N	0.7500	4	7.85	31.32	0.251	1	Gusset Bearing
T9	40.419	Leg	A325N	1.0000	28	28.97	55.75	0.520	1	Bearing
		Diagonal	A325N	0.7500	8	13.55	31.32	0.433	1	Gusset Bearing
		Horizontal	A325N	0.7500	4	10.19	17.89	0.570	1	Bolt 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	237.083 - 216	W6x25	21.08	5.27	41.6 K=1.00	7.3400	-38.23	217.10	0.176 [1]
T2	216 - 190.917	W6x25	25.08	6.27	49.5 K=1.00	7.3400	-56.58	209.03	0.271 [1]
T3	190.917 - 165.834	W6x25	25.08	6.27	49.5 K=1.00	7.3400	-74.46	209.03	0.356 [1]
T4	165.834 - 140.751	W8x35	25.08	6.27	37.1 K=1.00	10.300 0	-102.00	310.43	0.329 [1]
T5	140.751 - 115.668	W8x40	25.08	6.27	36.9 K=1.00	11.700 0	-149.34	352.88	0.423 [1]
T6	115.668 - 90.585	W10x49	25.08	6.27	29.6 K=1.00	14.400 0	-206.93	445.49	0.465 [1]
T7	90.585 - 65.502	W10x60	25.08	6.27	29.3 K=1.00	17.600 0	-273.52	545.08	0.502 [1]
T8	65.502 - 40.419	W10x77	25.12	6.28	29.0 K=1.00	22.600 0	-350.07	700.57	0.500 [1]
T9	40.419 - 0	W12x87	40.42	8.08	31.6 K=1.00	25.600 0	-415.56	786.97	0.528 [1]

[1] P_u / ϕP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	237.083 - 216	2L2 1/2x3x3/8x3/8	26.98	6.74	110.0 K=1.00	3.8400	-11.81	65.82	0.179 [1]
T2	216 - 190.917	2L2 1/2x3x3/8x3/8	30.21	7.55	123.1 K=1.00	3.8400	-22.78	56.00	0.407 [1]
T3	190.917 - 165.834	*2L2-1/2x3x1/2x3/8	30.21	29.73	132.3 K=0.33	5.0537	-31.37	65.12	0.482 [1]
T4	165.834 - 140.751	*2L2-1/2x3x1/2x3/8	30.21	29.60	131.8 K=0.33	5.0537	-39.38	65.65	0.600 [1]
T5	140.751 - 115.668	2L3x4x3/8x3/8	30.21	7.55	103.1 K=1.00	4.9688	-48.78	92.01	0.530 [1]
T6	115.668 - 90.585	2L3x4x3/8x3/8	30.21	7.55	103.1 K=1.00	4.9688	-56.33	92.01	0.612 [1]
T7	90.585 - 65.502	*2L3x4x7/16x3/8	30.21	29.44	94.7 K=0.33	5.7833	-64.03	116.85	0.548 [1]
T8	65.502 - 40.419	2L3x4x1/2x3/8	30.74	7.69	106.7 K=1.00	6.5000	-58.63	115.60	0.507 [1]
T9	40.419 - 0	2L4x4x1/2x3/8	44.14	8.83	86.8 K=1.00	7.5000	-108.43	163.37	0.664 [1]

[1] P_u / ϕP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	216 - 190.917	2L2 1/2x3x1/4x3/8	33.67	8.42	134.1 K=1.00	2.6300	-10.99	33.02	0.333 [1]
T3	190.917 - 165.834	2L3x2 1/2x3/8x3/8	33.67	8.42	108.8 K=1.00	3.8400	-15.88	66.68	0.238 [1]
T4	165.834 -	2L3x2 1/2x3/8x3/8	33.67	8.42	108.8	3.8400	-20.13	66.68	0.302 [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	140.751 - 115.668	2L3x2 1/2x3/8x3/8	33.67	8.42	K=1.00 108.8 K=1.00	3.8400	-25.10	66.68	0.376 [1]
T6	115.668 - 90.585	2L3x2 1/2x3/8x3/8	33.67	8.42	108.8 K=1.00	3.8400	-29.09	66.68	0.436 [1]
T7	90.585 - 65.502	2L3x2 1/2x3/8x3/8	33.67	8.42	108.8 K=1.00	3.8400	-33.13	66.68	0.497 [1]
T8	65.502 - 40.419	2L3x2 1/2x3/8x3/8	33.67	8.42	108.8 K=1.00	3.8400	-31.88	66.68	0.478 [1]
T9	40.419 - 0	*2L4x3x7/16x3/8	35.50	17.23	83.2 K=0.50	5.7833	-38.89	130.14	0.299 [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	237.083 - 216	2C10x15.3	33.67	16.57	208.5 K=1.00	8.9800	-6.09	46.68	0.131 [1]
		KL/R > 200 (C) - 6/2							

[1] P_u / ϕP_n controls

Redundant Horizontal (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	237.083 - 216	*L3x3x3/16	4.21	3.94	50.8 K=1.00	1.0936	-0.61	30.93	0.020 [1]
T2	216 - 190.917	*L3x3x3/16	4.21	3.94	50.8 K=1.00	1.0936	-0.88	30.93	0.029 [1]
T3	190.917 - 165.834	*L3x3x3/16	4.21	3.94	50.8 K=1.00	1.0936	-1.14	30.93	0.037 [1]
T4	165.834 - 140.751	*L3x3x3/16	4.21	3.87	49.9 K=1.00	1.0936	-1.54	31.08	0.050 [1]
T5	140.751 - 115.668	*L3x3x3/16	4.21	3.87	49.8 K=1.00	1.0936	-2.30	31.09	0.074 [1]
T6	115.668 - 90.585	*L3x3x3/16	4.21	3.79	48.9 K=1.00	1.0936	-3.50	31.24	0.112 [1]
T7	90.585 - 65.502	*L3x3x3/16	4.21	3.78	48.8 K=1.00	1.0936	-4.11	31.26	0.132 [1]
T8	65.502 - 40.419	*L3x3x3/16	4.21	3.77	48.6 K=1.00	1.0936	-6.07	31.30	0.194 [1]
T9	40.419 - 0	*L3x3x3/16	3.55	3.03	39.0 K=1.00	1.0936	-6.28	32.70	0.192 [1]

[1] P_u / ϕP_n controls

Redundant Horizontal (2) 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	237.083 - 216	*L2-1/2x2-1/2x3/16	8.42	8.15	127.3 K=1.00	0.9061	-1.27	12.51	0.102 [1]
T2	216 - 190.917	*L2-1/2x2-1/2x3/16	8.42	8.15	127.3 K=1.00	0.9061	-0.89	12.51	0.071 [1]
T3	190.917 - 165.834	*L2-1/2x2-1/2x3/16	8.42	8.15	127.3 K=1.00	0.9061	-1.12	12.51	0.089 [1]
T4	165.834 - 140.751	*L2-1/2x2-1/2x3/16	8.42	8.08	126.2 K=1.00	0.9061	-1.54	12.70	0.121 [1]
T5	140.751 - 115.668	*L2-1/2x2-1/2x3/16	8.42	8.07	126.1 K=1.00	0.9061	-2.25	12.71	0.177 [1]
T6	115.668 - 90.585	*L2-1/2x2-1/2x3/16	8.42	8.00	125.0 K=1.00	0.9061	-3.11	12.90	0.241 [1]
T7	90.585 - 65.502	*L2-1/2x2-1/2x3/16	8.42	7.99	124.8 K=1.00	0.9061	-4.11	12.93	0.318 [1]
T8	65.502 - 40.419	*L2-1/2x2-1/2x3/16	8.42	7.98	124.6 K=1.00	0.9061	-5.26	12.97	0.406 [1]
T9	40.419 - 0	*L2-1/2x2-1/2x3/16	7.10	6.58	102.7 K=1.00	0.9061	-6.28	16.84	0.373 [1]

[1] P_u / ϕP_n controls

Redundant Horizontal (3) 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	237.083 - 216	*2L2-1/2x2-1/2x3/8x3/8	12.63	12.36	199.9 K=1.00	3.4989	-1.01	19.79	0.051 [1]
T2	216 - 190.917	*2L2-1/2x2-1/2x3/8x3/8	12.63	12.36	199.9 K=1.00	3.4989	-1.09	19.79	0.055 [1]
T3	190.917 - 165.834	*2L2-1/2x2-1/2x3/8x3/8	12.63	12.36	199.9 K=1.00	3.4989	-1.12	19.79	0.057 [1]
T4	165.834 - 140.751	*2L2-1/2x2-1/2x3/8x3/8	12.63	12.29	198.7 K=1.00	3.4989	-1.54	20.02	0.077 [1]
T5	140.751 - 115.668	*2L2-1/2x2-1/2x3/8x3/8	12.63	12.28	198.6 K=1.00	3.4989	-2.25	20.04	0.112 [1]
T6	115.668 - 90.585	*2L2-1/2x2-1/2x3/8x3/8	12.63	12.21	197.4 K=1.00	3.4989	-3.11	20.28	0.154 [1]
T7	90.585 - 65.502	*2L2-1/2x2-1/2x3/8x3/8	12.63	12.20	197.3 K=1.00	3.4989	-4.11	20.31	0.202 [1]
T8	65.502 - 40.419	*2L2-1/2x2-1/2x3/8x3/8	12.63	12.18	197.0 K=1.00	3.4989	-5.26	20.36	0.258 [1]
T9	40.419 - 0	*2L2-1/2x2-1/2x3/8x3/8	10.65	10.13	163.8 K=1.00	3.4989	-6.28	29.47	0.213 [1]

[1] P_u / ϕP_n controls

Redundant Horizontal (4) 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 $\frac{P_u}{\phi P_n}$
T9	40.419 - 0	*2L2-1/2x2-1/2x3/8x3/8	14.20	13.68	221.2 K=1.00	3.4989	-6.28	16.16	0.389 [1]

[1] P_u / ϕP_n controls

Redundant Diagonal (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	237.083 - 216	*L3x3x3/16	6.74	6.32	81.4 K=1.00	1.0936	-0.56	24.99	0.022 [1]
T2	216 - 190.917	*L3x3x3/16	7.55	7.08	91.2 K=1.00	1.0936	-0.91	22.87	0.040 [1]
T3	190.917 - 165.834	*L3x3x3/16	7.55	7.08	91.2 K=1.00	1.0936	-1.44	22.87	0.063 [1]
T4	165.834 - 140.751	*L3x3x3/16	7.55	6.95	89.5 K=1.00	1.0936	-2.09	23.24	0.090 [1]
T5	140.751 - 115.668	*L3x3x3/16	7.55	6.94	89.4 K=1.00	1.0936	-2.62	23.27	0.113 [1]
T6	115.668 - 90.585	*L3x3x3/16	7.55	6.81	87.7 K=1.00	1.0936	-3.71	23.63	0.157 [1]
T7	90.585 - 65.502	*L3x3x3/16	7.55	6.79	87.5 K=1.00	1.0936	-4.08	23.68	0.172 [1]
T8	65.502 - 40.419	*L3x3x3/16	7.43	6.61	85.2 K=1.00	1.0936	-5.97	24.19	0.247 [1]
T9	40.419 - 0	*L3x3x3/16	8.83	7.53	97.1 K=1.00	1.0936	-7.81	21.58	0.362 [1]

[1] P_u / ϕP_n controls

Redundant Diagonal (2) 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	237.083 - 216	*2L3x3x3/16x3/8	9.93	9.62	123.5 K=1.00	2.1872	-0.95	31.74	0.030 [1]
T2	216 - 190.917	*2L3x3x3/16x3/8	10.50	10.17	130.6 K=1.00	2.1872	-0.57	28.89	0.020 [1]
T3	190.917 - 165.834	*2L3x3x3/16x3/8	10.50	10.17	130.6 K=1.00	2.1872	-0.70	28.89	0.024 [1]
T4	165.834 - 140.751	*2L3x3x3/16x3/8	10.50	10.07	129.4 K=1.00	2.1872	-0.96	29.35	0.033 [1]
T5	140.751 - 115.668	*2L3x3x3/16x3/8	10.50	10.07	129.3 K=1.00	2.1872	-1.40	29.39	0.048 [1]
T6	115.668 - 90.585	*2L3x3x3/16x3/8	10.50	9.98	128.2 K=1.00	2.1872	-1.94	29.85	0.065 [1]
T7	90.585 - 65.502	*2L3x3x3/16x3/8	10.50	9.97	128.0 K=1.00	2.1872	-2.56	29.91	0.086 [1]
T8	65.502 - 40.419	*2L3x3x3/16x3/8	10.32	9.76	125.4 K=1.00	2.1872	-3.23	30.98	0.104 [1]
T9	40.419 - 0	*2L3x3x3/16x3/8	10.76	9.97	128.0 K=1.00	2.1872	-4.76	29.90	0.159 [1]

[1] P_u / ϕP_n controls

Redundant Diagonal (3) 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	237.083 - 216	*2L2-1/2x2-1/2x3/16x3/8	9.93	9.62	149.3 K=1.00	1.8122	-1.58	18.37	0.086 [1]
T2	216 - 190.917	*2L2-1/2x2-1/2x3/16x3/8	10.50	10.17	157.8	1.8122	-1.23	16.45	0.075 [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	190.917 - 165.834	*2L2-1/2x2-1/2x3/16x3/8	10.50	10.17	K=1.00 157.8 K=1.00	1.8122	-0.97	16.45	0.059 [1]
T4	165.834 - 140.751	*2L2-1/2x2-1/2x3/16x3/8	10.50	10.07	156.4 K=1.00	1.8122	-1.01	16.74	0.060 [1]
T5	140.751 - 115.668	*2L2-1/2x2-1/2x3/16x3/8	10.50	10.07	156.3 K=1.00	1.8122	-1.40	16.77	0.084 [1]
T6	115.668 - 90.585	*2L2-1/2x2-1/2x3/16x3/8	10.50	9.98	154.9 K=1.00	1.8122	-1.94	17.07	0.114 [1]
T7	90.585 - 65.502	*2L2-1/2x2-1/2x3/16x3/8	10.50	9.97	154.7 K=1.00	1.8122	-2.56	17.11	0.150 [1]
T8	65.502 - 40.419	*2L2-1/2x2-1/2x3/16x3/8	10.68	10.14	157.4 K=1.00	1.8122	-3.34	16.54	0.202 [1]
T9	40.419 - 0	*2L2-1/2x2-1/2x3/16x3/8	13.37	12.72	197.4 K=1.00	1.8122	-3.94	10.51	0.375 [1]

[1] P_u / ϕP_n controls

Redundant Diagonal (4) 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 $\frac{P_u}{\phi P_n}$
T9	40.419 - 0	*2L2-1/2x2-1/2x3/16x3/8	12.00	11.30	175.4 K=1.00	1.8122	-4.25	13.31	0.319 [1]

[1] P_u / ϕP_n controls

Redundant Hip (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T9	40.419 - 0	2L2 1/2x2 1/2x3/16x3/8	5.02	5.02	77.4 K=1.00	1.8000	-0.13	42.53	0.003 [1]

[1] P_u / ϕP_n controls

Redundant Hip (2) 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 $\frac{P_u}{\phi P_n}$
T9	40.419 - 0	2L2 1/2x2 1/2x3/16x3/8	10.04	10.04	154.9 K=1.00	1.8000	-0.17	16.95	0.010 [1]

[1] P_u / ϕP_n controls

Redundant Hip (3) 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 $\frac{P_u}{\phi P_n}$
T9	40.419 - 0	2L3x3x3/16x3/8	15.06	15.06	192.5 K=1.00	2.1800	-0.30	13.29	0.022 [1]

[1] P_u / ϕP_n controls

Redundant Hip (4) 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 $\frac{P_u}{\phi P_n}$
T9	40.419 - 0	2L3x3x3/16x3/8 KL/R > 250 (C) - 699	20.08	20.08	256.6 K=1.00	2.1800	-0.06	7.48	0.009 [1]

[1] P_u / ϕP_n controls

Redundant Hip Diagonal (2) 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 $\frac{P_u}{\phi P_n}$
T9	40.419 - 0	*2L3x3x3/16x3/8	15.14	15.14	194.4 K=1.00	2.1872	-0.48	13.07	0.036 [1]

[1] P_u / ϕP_n controls

Redundant Hip Diagonal (3) 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 $\frac{P_u}{\phi P_n}$
T9	40.419 - 0	*2L3x3x3/16x3/8 KL/R > 250 (C) - 760	19.50	19.50	250.5 K=1.00	2.1872	-0.26	7.87	0.033 [1]

[1] P_u / ϕP_n controls

Inner Bracing 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	237.083 - 216	2L3x2 1/2x5/16x3/8 KL/R > 250 (C) - 13	33.67	33.67	431.3 K=1.00	3.2422	-0.09	3.94	0.022 [1]
T2	216 - 190.917	2L3x2 1/2x5/16x3/8 KL/R > 250 (C) - 154	23.81	23.81	305.0 K=1.00	3.2422	-0.00	7.87	0.000 [1]
T3	190.917 - 165.834	2L3x2 1/2x5/16x3/8	23.81	23.81	305.0 K=1.00	3.2422	-0.00	7.87	0.000 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T4	165.834 - 140.751	KL/R > 250 (C) - 235 2L3x2 1/2x5/16x3/8	23.81	23.81	305.0 K=1.00	3.2422	-0.00	7.87	0.000 [1]
T5	140.751 - 115.668	KL/R > 250 (C) - 316 2L3x2 1/2x5/16x3/8	23.81	23.81	305.0 K=1.00	3.2422	-0.00	7.87	0.001 [1]
T6	115.668 - 90.585	KL/R > 250 (C) - 397 2L3x2 1/2x5/16x3/8	23.81	23.81	305.0 K=1.00	3.2422	-0.01	7.87	0.001 [1]
T7	90.585 - 65.502	KL/R > 250 (C) - 478 2L3x2 1/2x5/16x3/8	23.81	23.81	305.0 K=1.00	3.2422	-0.01	7.87	0.001 [1]
T8	65.502 - 40.419	KL/R > 250 (C) - 559 2L3x2 1/2x5/16x3/8	23.81	23.81	305.0 K=1.00	3.2422	-0.10	7.87	0.013 [1]
T9	40.419 - 0	KL/R > 250 (C) - 640 2C4x7.25 KL/R > 250 (C) - 763	25.10	25.10	468.2 K=1.00	4.2600	-0.07	4.39	0.015 [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	237.083 - 216	W6x25	21.08	5.27	41.6	7.3400	7.40	237.82	0.031 [1]
T2	216 - 190.917	W6x25	25.08	6.27	49.5	7.3400	12.18	237.82	0.051 [1]
T3	190.917 - 165.834	W6x25	25.08	6.27	49.5	7.3400	31.02	237.82	0.130 [1]
T4	165.834 - 140.751	W8x35	25.08	6.27	37.1	10.3000	59.68	333.72	0.179 [1]
T5	140.751 - 115.668	W8x40	25.08	6.27	36.9	11.7000	97.40	379.08	0.257 [1]
T6	115.668 - 90.585	W10x49	25.08	6.27	29.6	14.4000	144.87	466.56	0.311 [1]
T7	90.585 - 65.502	W10x60	25.08	6.27	29.3	17.6000	201.06	570.24	0.353 [1]
T8	65.502 - 40.419	W10x77	25.12	6.28	29.0	22.6000	265.99	732.24	0.363 [1]
T9	40.419 - 0	W12x87	40.42	8.08	31.6	25.6000	318.77	829.44	0.384 [1]

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	237.083 - 216	2L2 1/2x3x3/8x3/8	26.98	6.74	216.8	2.3878	9.46	103.87	0.091 [1]
T2	216 - 190.917	2L2 1/2x3x3/8x3/8	30.21	7.55	242.7	2.3878	20.48	103.87	0.197 [1]
T3	190.917 - 165.834	*2L2-1/2x3x1/2x3/8	30.21	29.73	397.4	5.0537	28.46	163.74	0.174 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T4	165.834 - 140.751	*2L2-1/2x3x1/2x3/8	30.21	29.60	395.7	5.0537	36.20	163.74	0.221 [1]
T5	140.751 - 115.668	2L3x4x3/8x3/8	30.21	7.55	183.3	3.2344	45.10	140.69	0.321 [1]
T6	115.668 - 90.585	2L3x4x3/8x3/8	30.21	7.55	182.5	3.2344	52.27	140.69	0.372 [1]
T7	90.585 - 65.502	*2L3x4x7/16x3/8	30.21	29.44	284.4	5.7833	59.44	187.38	0.317 [1]
T8	65.502 - 40.419	2L3x4x1/2x3/8	30.74	7.69	183.5	4.2188	52.72	183.52	0.287 [1]
T9	40.419 - 0	2L4x4x1/2x3/8	44.14	8.83	115.8	4.9688	101.38	216.14	0.469 [1]

[1] P_u / ϕP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	216 - 190.917	2L2 1/2x3x1/4x3/8	33.67	8.42	137.1	1.6444	11.75	71.53	0.164 [1]
T3	190.917 - 165.834	2L3x2 1/2x3/8x3/8	33.67	8.42	171.4	2.3878	16.11	103.87	0.155 [1]
T4	165.834 - 140.751	2L3x2 1/2x3/8x3/8	33.67	8.42	170.7	2.3878	20.49	103.87	0.197 [1]
T5	140.751 - 115.668	2L3x2 1/2x3/8x3/8	33.67	8.42	170.6	2.3878	25.46	103.87	0.245 [1]
T6	115.668 - 90.585	2L3x2 1/2x3/8x3/8	33.67	8.42	169.9	2.3878	29.45	103.87	0.284 [1]
T7	90.585 - 65.502	2L3x2 1/2x3/8x3/8	33.67	8.42	169.8	2.3878	33.34	103.87	0.321 [1]
T8	65.502 - 40.419	2L3x2 1/2x3/8x3/8	33.67	8.42	169.6	2.3878	28.91	103.87	0.278 [1]
T9	40.419 - 0	*2L4x3x7/16x3/8	35.50	17.23	166.4	5.7833	42.10	187.38	0.225 [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	237.083 - 216	2C10x15.3	33.67	16.57	208.5	8.9800	5.42	290.95	0.019 [1]

[1] P_u / ϕP_n controls

Redundant Horizontal (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	237.083 - 216	*L3x3x3/16	4.21	3.94	50.8	1.0936	0.89	35.43	0.025 [1]
T2	216 - 190.917	*L3x3x3/16	4.21	3.94	50.8	1.0936	1.20	35.43	0.034 [1]
T3	190.917 - 165.834	*L3x3x3/16	4.21	3.94	50.8	1.0936	1.76	35.43	0.050 [1]
T4	165.834 -	*L3x3x3/16	4.21	3.87	49.9	1.0936	2.51	35.43	0.071 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	140.751								
T5	140.751 - 115.668	*L3x3x3/16	4.21	3.87	49.8	1.0936	3.12	35.43	0.088 [1]
T6	115.668 - 90.585	*L3x3x3/16	4.21	3.79	48.9	1.0936	4.23	35.43	0.119 [1]
T7	90.585 - 65.502	*L3x3x3/16	4.21	3.78	48.8	1.0936	4.68	35.43	0.132 [1]
T8	65.502 - 40.419	*L3x3x3/16	4.21	3.77	48.6	1.0936	6.92	35.43	0.195 [1]
T9	40.419 - 0	*L3x3x3/16	3.55	3.03	39.0	1.0936	6.36	35.43	0.180 [1]

[1] P_u / ϕP_n controls

Redundant Horizontal (2) 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	237.083 - 216	*L2-1/2x2-1/2x3/16	8.42	8.15	127.3	0.9061	1.27	29.36	0.043 [1]
T2	216 - 190.917	*L2-1/2x2-1/2x3/16	8.42	8.15	127.3	0.9061	0.89	29.36	0.030 [1]
T3	190.917 - 165.834	*L2-1/2x2-1/2x3/16	8.42	8.15	127.3	0.9061	1.12	29.36	0.038 [1]
T4	165.834 - 140.751	*L2-1/2x2-1/2x3/16	8.42	8.08	126.2	0.9061	1.54	29.36	0.052 [1]
T5	140.751 - 115.668	*L2-1/2x2-1/2x3/16	8.42	8.07	126.1	0.9061	2.25	29.36	0.077 [1]
T6	115.668 - 90.585	*L2-1/2x2-1/2x3/16	8.42	8.00	125.0	0.9061	3.11	29.36	0.106 [1]
T7	90.585 - 65.502	*L2-1/2x2-1/2x3/16	8.42	7.99	124.8	0.9061	4.11	29.36	0.140 [1]
T8	65.502 - 40.419	*L2-1/2x2-1/2x3/16	8.42	7.98	124.6	0.9061	5.26	29.36	0.179 [1]
T9	40.419 - 0	*L2-1/2x2-1/2x3/16	7.10	6.58	102.7	0.9061	6.28	29.36	0.214 [1]

[1] P_u / ϕP_n controls

Redundant Horizontal (3) 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	237.083 - 216	*2L2-1/2x2-1/2x3/8x3/8	12.63	12.36	199.9	3.4989	1.16	113.36	0.010 [1]
T2	216 - 190.917	*2L2-1/2x2-1/2x3/8x3/8	12.63	12.36	199.9	3.4989	1.09	113.36	0.010 [1]
T3	190.917 - 165.834	*2L2-1/2x2-1/2x3/8x3/8	12.63	12.36	199.9	3.4989	1.12	113.36	0.010 [1]
T4	165.834 - 140.751	*2L2-1/2x2-1/2x3/8x3/8	12.63	12.29	198.7	3.4989	1.54	113.36	0.014 [1]
T5	140.751 - 115.668	*2L2-1/2x2-1/2x3/8x3/8	12.63	12.28	198.6	3.4989	2.25	113.36	0.020 [1]
T6	115.668 - 90.585	*2L2-1/2x2-1/2x3/8x3/8	12.63	12.21	197.4	3.4989	3.11	113.36	0.027 [1]
T7	90.585 - 65.502	*2L2-1/2x2-1/2x3/8x3/8	12.63	12.20	197.3	3.4989	4.11	113.36	0.036 [1]
T8	65.502 - 40.419	*2L2-1/2x2-1/2x3/8x3/8	12.63	12.18	197.0	3.4989	5.26	113.36	0.046 [1]
T9	40.419 - 0	*2L2-1/2x2-1/2x3/8x3/8	10.65	10.13	163.8	3.4989	6.28	113.36	0.055 [1]

[1] P_u / ϕP_n controls

Redundant Horizontal (4) Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T9	40.419 - 0	*2L2-1/2x2-1/2x3/8x3/8	14.20	13.68	221.2	3.4989	6.28	113.36	0.055 [1]

[1] P_u / ϕP_n controls

Redundant Diagonal (1) Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T1	237.083 - 216	*L3x3x3/16	6.74	6.32	81.4	1.0936	0.49	35.43	0.014 [1]
T2	216 - 190.917	*L3x3x3/16	7.55	7.08	91.2	1.0936	0.79	35.43	0.022 [1]
T3	190.917 - 165.834	*L3x3x3/16	7.55	7.08	91.2	1.0936	1.02	35.43	0.029 [1]
T4	165.834 - 140.751	*L3x3x3/16	7.55	6.95	89.5	1.0936	1.40	35.43	0.039 [1]
T5	140.751 - 115.668	*L3x3x3/16	7.55	6.94	89.4	1.0936	2.08	35.43	0.059 [1]
T6	115.668 - 90.585	*L3x3x3/16	7.55	6.81	87.7	1.0936	3.16	35.43	0.089 [1]
T7	90.585 - 65.502	*L3x3x3/16	7.55	6.79	87.5	1.0936	3.69	35.43	0.104 [1]
T8	65.502 - 40.419	*L3x3x3/16	7.43	6.61	85.2	1.0936	5.37	35.43	0.152 [1]
T9	40.419 - 0	*L3x3x3/16	8.83	7.53	97.1	1.0936	7.81	35.43	0.220 [1]

[1] P_u / ϕP_n controls

Redundant Diagonal (2) Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T1	237.083 - 216	*2L3x3x3/16x3/8	9.93	9.62	123.5	2.1872	0.95	70.87	0.013 [1]
T2	216 - 190.917	*2L3x3x3/16x3/8	10.50	10.17	130.6	2.1872	0.57	70.87	0.008 [1]
T3	190.917 - 165.834	*2L3x3x3/16x3/8	10.50	10.17	130.6	2.1872	0.70	70.87	0.010 [1]
T4	165.834 - 140.751	*2L3x3x3/16x3/8	10.50	10.07	129.4	2.1872	0.96	70.87	0.014 [1]
T5	140.751 - 115.668	*2L3x3x3/16x3/8	10.50	10.07	129.3	2.1872	1.40	70.87	0.020 [1]
T6	115.668 - 90.585	*2L3x3x3/16x3/8	10.50	9.98	128.2	2.1872	1.94	70.87	0.027 [1]
T7	90.585 - 65.502	*2L3x3x3/16x3/8	10.50	9.97	128.0	2.1872	2.56	70.87	0.036 [1]
T8	65.502 - 40.419	*2L3x3x3/16x3/8	10.32	9.76	125.4	2.1872	3.23	70.87	0.046 [1]
T9	40.419 - 0	*2L3x3x3/16x3/8	10.76	9.97	128.0	2.1872	4.76	70.87	0.067 [1]

[1] P_u / ϕP_n controls

Redundant Diagonal (3) 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	237.083 - 216	*2L2-1/2x2-1/2x3/16x3/8	9.93	9.62	149.3	1.8122	0.80	58.72	0.014 [1]
T2	216 - 190.917	*2L2-1/2x2-1/2x3/16x3/8	10.50	10.17	157.8	1.8122	1.12	58.72	0.019 [1]
T3	190.917 - 165.834	*2L2-1/2x2-1/2x3/16x3/8	10.50	10.17	157.8	1.8122	0.70	58.72	0.012 [1]
T4	165.834 - 140.751	*2L2-1/2x2-1/2x3/16x3/8	10.50	10.07	156.4	1.8122	0.96	58.72	0.016 [1]
T5	140.751 - 115.668	*2L2-1/2x2-1/2x3/16x3/8	10.50	10.07	156.3	1.8122	1.40	58.72	0.024 [1]
T6	115.668 - 90.585	*2L2-1/2x2-1/2x3/16x3/8	10.50	9.98	154.9	1.8122	1.94	58.72	0.033 [1]
T7	90.585 - 65.502	*2L2-1/2x2-1/2x3/16x3/8	10.50	9.97	154.7	1.8122	2.56	58.72	0.044 [1]
T8	65.502 - 40.419	*2L2-1/2x2-1/2x3/16x3/8	10.68	10.14	157.4	1.8122	3.34	58.72	0.057 [1]
T9	40.419 - 0	*2L2-1/2x2-1/2x3/16x3/8	13.37	12.72	197.4	1.8122	3.94	58.72	0.067 [1]

[1] $P_u / \phi P_n$ controls

Redundant Diagonal (4) 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 $\frac{P_u}{\phi P_n}$
T9	40.419 - 0	*2L2-1/2x2-1/2x3/16x3/8	12.00	11.30	175.4	1.8122	4.25	58.72	0.072 [1]

[1] $P_u / \phi P_n$ controls

Redundant Hip (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T9	40.419 - 0	2L2 1/2x2 1/2x3/16x3/8	5.02	5.02	77.4	1.8000	0.20	58.32	0.003 [1]

[1] $P_u / \phi P_n$ controls

Redundant Hip (2) 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 $\frac{P_u}{\phi P_n}$
T9	40.419 - 0	2L2 1/2x2 1/2x3/16x3/8	10.04	10.04	154.9	1.8000	0.16	58.32	0.003 [1]

[1] $P_u / \phi P_n$ controls

Redundant Hip (3) 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 $\frac{P_u}{\phi P_n}$
T9	40.419 - 0	2L3x3x3/16x3/8	15.06	15.06	192.5	2.1800	0.31	70.63	0.004 [1]

[1] P_u / ϕP_n controls

Redundant Hip (4) 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 $\frac{P_u}{\phi P_n}$
T9	40.419 - 0	2L3x3x3/16x3/8	20.08	20.08	256.6	2.1800	0.05	70.63	0.001 [1]

[1] P_u / ϕP_n controls

Redundant Hip Diagonal (2) 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 $\frac{P_u}{\phi P_n}$
T9	40.419 - 0	*2L3x3x3/16x3/8	15.14	15.14	194.4	2.1872	0.46	70.87	0.007 [1]

[1] P_u / ϕP_n controls

Redundant Hip Diagonal (3) 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 $\frac{P_u}{\phi P_n}$
T9	40.419 - 0	*2L3x3x3/16x3/8	19.50	19.50	250.5	2.1872	0.25	70.87	0.003 [1]

[1] P_u / ϕP_n controls

Inner Bracing Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	237.083 - 216	2L3x2 1/2x5/16x3/8	23.81	23.81	305.0	3.2422	0.13	105.05	0.001 [1]
T2	216 - 190.917	2L3x2 1/2x5/16x3/8	23.81	23.81	305.0	3.2422	0.00	105.05	0.000 [1]
T3	190.917 - 165.834	2L3x2 1/2x5/16x3/8	23.81	23.81	305.0	3.2422	0.00	105.05	0.000 [1]
T4	165.834 - 140.751	2L3x2 1/2x5/16x3/8	23.81	23.81	305.0	3.2422	0.00	105.05	0.000 [1]
T5	140.751 - 115.668	2L3x2 1/2x5/16x3/8	23.81	23.81	305.0	3.2422	0.00	105.05	0.000 [1]
T6	115.668 - 90.585	2L3x2 1/2x5/16x3/8	23.81	23.81	305.0	3.2422	0.01	105.05	0.000 [1]
T7	90.585 - 65.502	2L3x2 1/2x5/16x3/8	23.81	23.81	305.0	3.2422	0.01	105.05	0.000 [1]
T9	40.419 - 0	2C4x7.25	25.10	25.10	468.2	4.2600	0.07	138.02	0.001 [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	237.083 - 216	Leg	W6x25	2	-38.23	217.10	17.6 25.5 (b)	Pass
T2	216 - 190.917	Leg	W6x25	83	-56.58	209.03	27.1 37.8 (b)	Pass
T3	190.917 - 165.834	Leg	W6x25	164	-74.46	209.03	35.6 36.5 (b)	Pass
T4	165.834 - 140.751	Leg	W8x35	245	-102.00	310.43	32.9 51.7 (b)	Pass
T5	140.751 - 115.668	Leg	W8x40	326	-149.34	352.88	42.3 47.9 (b)	Pass
T6	115.668 - 90.585	Leg	W10x49	407	-206.93	445.49	46.5 70.0 (b)	Pass
T7	90.585 - 65.502	Leg	W10x60	488	-273.52	545.08	50.2 59.5 (b)	Pass
T8	65.502 - 40.419	Leg	W10x77	569	-350.07	700.57	50.0 59.7 (b)	Pass
T9	40.419 - 0	Leg	W12x87	650	-415.56	786.97	52.8	Pass
T1	237.083 - 216	Diagonal	2L2 1/2x3x3/8x3/8	30	-11.81	65.82	17.9	Pass
T2	216 - 190.917	Diagonal	2L2 1/2x3x3/8x3/8	104	-22.78	56.00	40.7	Pass
T3	190.917 - 165.834	Diagonal	*2L2-1/2x3x1/2x3/8	185	-31.37	65.12	48.2	Pass
T4	165.834 - 140.751	Diagonal	*2L2-1/2x3x1/2x3/8	266	-39.38	65.65	60.0	Pass
T5	140.751 - 115.668	Diagonal	2L3x4x3/8x3/8	347	-48.78	92.01	53.0	Pass
T6	115.668 - 90.585	Diagonal	2L3x4x3/8x3/8	428	-56.33	92.01	61.2	Pass
T7	90.585 - 65.502	Diagonal	*2L3x4x7/16x3/8	509	-64.03	116.85	54.8 71.6 (b)	Pass
T8	65.502 - 40.419	Diagonal	2L3x4x1/2x3/8	598	-58.63	115.60	50.7	Pass
T9	40.419 - 0	Diagonal	2L4x4x1/2x3/8	675	-108.43	163.37	66.4	Pass
T2	216 - 190.917	Horizontal	2L2 1/2x3x1/4x3/8	103	-10.99	33.02	33.3	Pass
T3	190.917 - 165.834	Horizontal	2L3x2 1/2x3/8x3/8	184	-15.88	66.68	23.8	Pass
T4	165.834 - 140.751	Horizontal	2L3x2 1/2x3/8x3/8	265	-20.13	66.68	30.2	Pass
T5	140.751 - 115.668	Horizontal	2L3x2 1/2x3/8x3/8	346	-25.10	66.68	37.6	Pass
T6	115.668 - 90.585	Horizontal	2L3x2 1/2x3/8x3/8	427	-29.09	66.68	43.6	Pass
T7	90.585 - 65.502	Horizontal	2L3x2 1/2x3/8x3/8	508	-33.13	66.68	49.7	Pass
T8	65.502 - 40.419	Horizontal	2L3x2 1/2x3/8x3/8	589	-31.88	66.68	47.8	Pass
T9	40.419 - 0	Horizontal	*2L4x3x7/16x3/8	674	-38.89	130.14	29.9 57.0 (b)	Pass
T1	237.083 - 216	Top Girt	2C10x15.3	6	-6.09	46.68	13.1	Pass
T1	237.083 - 216	Redund Horz 1 Bracing	*L3x3x3/16	31	0.89	35.43	2.5	Pass
T2	216 - 190.917	Redund Horz 1 Bracing	*L3x3x3/16	96	1.20	35.43	3.4	Pass
T3	190.917 - 165.834	Redund Horz 1 Bracing	*L3x3x3/16	186	1.76	35.43	5.0	Pass
T4	165.834 - 140.751	Redund Horz 1 Bracing	*L3x3x3/16	267	2.51	35.43	7.1	Pass
T5	140.751 - 115.668	Redund Horz 1 Bracing	*L3x3x3/16	348	3.12	35.43	8.8	Pass
T6	115.668 - 90.585	Redund Horz 1 Bracing	*L3x3x3/16	420	4.23	35.43	11.9	Pass
T7	90.585 - 65.502	Redund Horz 1 Bracing	*L3x3x3/16	510	4.68	35.43	13.2	Pass
T8	65.502 - 40.419	Redund Horz 1 Bracing	*L3x3x3/16	582	6.92	35.43	19.5	Pass
T9	40.419 - 0	Redund Horz 1	*L3x3x3/16	665	-6.28	32.70	19.2	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	237.083 - 216	Bracing Redund Horz 2 Bracing	*L2-1/2x2-1/2x3/16	32	-1.27	12.51	10.2	Pass
T2	216 - 190.917	Redund Horz 2 Bracing	*L2-1/2x2-1/2x3/16	97	-0.89	12.51	7.1	Pass
T3	190.917 - 165.834	Redund Horz 2 Bracing	*L2-1/2x2-1/2x3/16	187	-1.12	12.51	8.9	Pass
T4	165.834 - 140.751	Redund Horz 2 Bracing	*L2-1/2x2-1/2x3/16	259	-1.54	12.70	12.1	Pass
T5	140.751 - 115.668	Redund Horz 2 Bracing	*L2-1/2x2-1/2x3/16	349	-2.25	12.71	17.7	Pass
T6	115.668 - 90.585	Redund Horz 2 Bracing	*L2-1/2x2-1/2x3/16	421	-3.11	12.90	24.1	Pass
T7	90.585 - 65.502	Redund Horz 2 Bracing	*L2-1/2x2-1/2x3/16	502	-4.11	12.93	31.8	Pass
T8	65.502 - 40.419	Redund Horz 2 Bracing	*L2-1/2x2-1/2x3/16	583	-5.26	12.97	40.6	Pass
T9	40.419 - 0	Redund Horz 2 Bracing	*L2-1/2x2-1/2x3/16	666	-6.28	16.84	37.3	Pass
T1	237.083 - 216	Redund Horz 3 Bracing	*2L2-1/2x2-1/2x3/8x3/8	34	-1.01	19.79	5.1	Pass
T2	216 - 190.917	Redund Horz 3 Bracing	*2L2-1/2x2-1/2x3/8x3/8	99	-1.09	19.79	5.5	Pass
T3	190.917 - 165.834	Redund Horz 3 Bracing	*2L2-1/2x2-1/2x3/8x3/8	180	-1.12	19.79	5.7	Pass
T4	165.834 - 140.751	Redund Horz 3 Bracing	*2L2-1/2x2-1/2x3/8x3/8	261	-1.54	20.02	7.7	Pass
T5	140.751 - 115.668	Redund Horz 3 Bracing	*2L2-1/2x2-1/2x3/8x3/8	351	-2.25	20.04	11.2	Pass
T6	115.668 - 90.585	Redund Horz 3 Bracing	*2L2-1/2x2-1/2x3/8x3/8	423	-3.11	20.28	15.4	Pass
T7	90.585 - 65.502	Redund Horz 3 Bracing	*2L2-1/2x2-1/2x3/8x3/8	504	-4.11	20.31	20.2	Pass
T8	65.502 - 40.419	Redund Horz 3 Bracing	*2L2-1/2x2-1/2x3/8x3/8	594	-5.26	20.36	25.8	Pass
T9	40.419 - 0	Redund Horz 3 Bracing	*2L2-1/2x2-1/2x3/8x3/8	668	-6.28	29.47	21.3	Pass
T9	40.419 - 0	Redund Horz 4 Bracing	*2L2-1/2x2-1/2x3/8x3/8	670	-6.28	16.16	38.9	Pass
T1	237.083 - 216	Redund Diag 1 Bracing	*L3x3x3/16	33	-0.56	24.99	2.2	Pass
T2	216 - 190.917	Redund Diag 1 Bracing	*L3x3x3/16	98	-0.91	22.87	4.0	Pass
T3	190.917 - 165.834	Redund Diag 1 Bracing	*L3x3x3/16	188	-1.44	22.87	6.3	Pass
T4	165.834 - 140.751	Redund Diag 1 Bracing	*L3x3x3/16	269	-2.09	23.24	9.0	Pass
T5	140.751 - 115.668	Redund Diag 1 Bracing	*L3x3x3/16	341	-2.62	23.27	11.3	Pass
T6	115.668 - 90.585	Redund Diag 1 Bracing	*L3x3x3/16	422	-3.71	23.63	15.7	Pass
T7	90.585 - 65.502	Redund Diag 1 Bracing	*L3x3x3/16	512	-4.08	23.68	17.2	Pass
T8	65.502 - 40.419	Redund Diag 1 Bracing	*L3x3x3/16	584	-5.97	24.19	24.7	Pass
T9	40.419 - 0	Redund Diag 1 Bracing	*L3x3x3/16	667	-7.81	21.58	36.2	Pass
T1	237.083 - 216	Redund Diag 2 Bracing	*2L3x3x3/16x3/8	35	-0.95	31.74	3.0	Pass
T2	216 - 190.917	Redund Diag 2 Bracing	*2L3x3x3/16x3/8	100	-0.57	28.89	2.0	Pass
T3	190.917 - 165.834	Redund Diag 2 Bracing	*2L3x3x3/16x3/8	190	-0.70	28.89	2.4	Pass
T4	165.834 - 140.751	Redund Diag 2 Bracing	*2L3x3x3/16x3/8	262	-0.96	29.35	3.3	Pass
T5	140.751 - 115.668	Redund Diag 2 Bracing	*2L3x3x3/16x3/8	343	-1.40	29.39	4.8	Pass
T6	115.668 - 90.585	Redund Diag 2 Bracing	*2L3x3x3/16x3/8	433	-1.94	29.85	6.5	Pass
T7	90.585 - 65.502	Redund Diag 2	*2L3x3x3/16x3/8	505	-2.56	29.91	8.6	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T8	65.502 - 40.419	Bracing Redund Diag 2 Bracing	*2L3x3x3/16x3/8	586	-3.23	30.98	10.4	Pass
T9	40.419 - 0	Redund Diag 2 Bracing	*2L3x3x3/16x3/8	669	-4.76	29.90	15.9	Pass
T1	237.083 - 216	Redund Diag 3 Bracing	*2L2-1/2x2-1/2x3/16x3/8	52	-1.58	18.37	8.6	Pass
T2	216 - 190.917	Redund Diag 3 Bracing	*2L2-1/2x2-1/2x3/16x3/8	93	-1.23	16.45	7.5	Pass
T3	190.917 - 165.834	Redund Diag 3 Bracing	*2L2-1/2x2-1/2x3/16x3/8	216	-0.97	16.45	5.9	Pass
T4	165.834 - 140.751	Redund Diag 3 Bracing	*2L2-1/2x2-1/2x3/16x3/8	297	-1.01	16.74	6.0	Pass
T5	140.751 - 115.668	Redund Diag 3 Bracing	*2L2-1/2x2-1/2x3/16x3/8	344	-1.40	16.77	8.4	Pass
T6	115.668 - 90.585	Redund Diag 3 Bracing	*2L2-1/2x2-1/2x3/16x3/8	425	-1.94	17.07	11.4	Pass
T7	90.585 - 65.502	Redund Diag 3 Bracing	*2L2-1/2x2-1/2x3/16x3/8	506	-2.56	17.11	15.0	Pass
T8	65.502 - 40.419	Redund Diag 3 Bracing	*2L2-1/2x2-1/2x3/16x3/8	587	-3.34	16.54	20.2	Pass
T9	40.419 - 0	Redund Diag 3 Bracing	*2L2-1/2x2-1/2x3/16x3/8	671	-3.94	10.51	37.5	Pass
T9	40.419 - 0	Redund Diag 4 Bracing	*2L2-1/2x2-1/2x3/16x3/8	672	-4.25	13.31	31.9	Pass
T9	40.419 - 0	Redund Hip 1 Bracing	2L2 1/2x2 1/2x3/16x3/8	695	0.20	58.32	0.3	Pass
T9	40.419 - 0	Redund Hip 2 Bracing	2L2 1/2x2 1/2x3/16x3/8	723	-0.17	16.95	1.0	Pass
T9	40.419 - 0	Redund Hip 3 Bracing	2L3x3x3/16x3/8	724	-0.30	13.29	2.2	Pass
T9	40.419 - 0	Redund Hip 4 Bracing	2L3x3x3/16x3/8	699	-0.06	7.48	1.1	Pass
T9	40.419 - 0	Redund Hip Diagonal 2 Bracing	*2L3x3x3/16x3/8	725	-0.48	13.07	3.6	Pass
T9	40.419 - 0	Redund Hip Diagonal 3 Bracing	*2L3x3x3/16x3/8	760	-0.26	7.87	3.3	Pass
T1	237.083 - 216	Inner Bracing	2L3x2 1/2x5/16x3/8	13	-0.09	3.94	2.2	Pass
T2	216 - 190.917	Inner Bracing	2L3x2 1/2x5/16x3/8	158	-0.00	3.94	1.5	Pass
T3	190.917 - 165.834	Inner Bracing	2L3x2 1/2x5/16x3/8	239	-0.00	3.94	1.5	Pass
T4	165.834 - 140.751	Inner Bracing	2L3x2 1/2x5/16x3/8	320	-0.00	3.94	1.4	Pass
T5	140.751 - 115.668	Inner Bracing	2L3x2 1/2x5/16x3/8	401	-0.00	3.94	1.4	Pass
T6	115.668 - 90.585	Inner Bracing	2L3x2 1/2x5/16x3/8	482	-0.00	3.94	1.4	Pass
T7	90.585 - 65.502	Inner Bracing	2L3x2 1/2x5/16x3/8	563	-0.00	3.94	1.4	Pass
T8	65.502 - 40.419	Inner Bracing	2L3x2 1/2x5/16x3/8	644	-0.02	3.94	1.3	Pass
T9	40.419 - 0	Inner Bracing	2C4x7.25	765	-0.00	2.20	2.5	Pass
							Summary	
						Leg (T6)	70.0	Pass
						Diagonal (T7)	71.6	Pass
						Horizontal (T9)	57.0	Pass
						Top Girt (T1)	13.1	Pass
						Redund Horz 1 Bracing (T8)	19.5	Pass
						Redund Horz 2 Bracing (T8)	40.6	Pass
						Redund Horz 3 Bracing (T8)	25.8	Pass

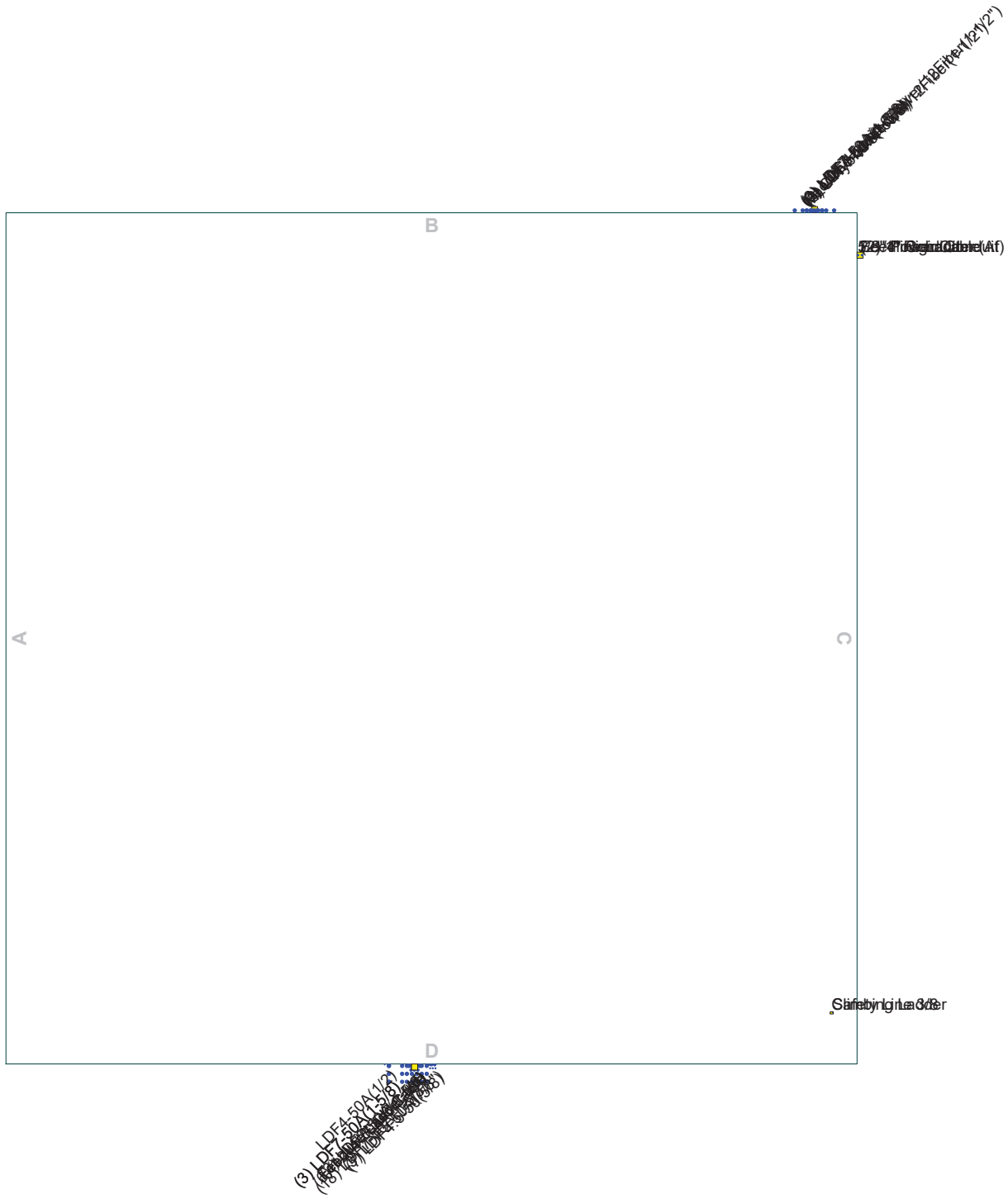
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
						Redund Horz 4 Bracing (T9)	38.9	Pass
						Redund Diag 1 Bracing (T9)	36.2	Pass
						Redund Diag 2 Bracing (T9)	15.9	Pass
						Redund Diag 3 Bracing (T9)	37.5	Pass
						Redund Diag 4 Bracing (T9)	31.9	Pass
						Redund Hip 1 Bracing (T9)	0.3	Pass
						Redund Hip 2 Bracing (T9)	1.0	Pass
						Redund Hip 3 Bracing (T9)	2.2	Pass
						Redund Hip 4 Bracing (T9)	1.1	Pass
						Redund Hip Diagonal 2 Bracing (T9)	3.6	Pass
						Redund Hip Diagonal 3 Bracing (T9)	3.3	Pass
						Inner Bracing (T9)	2.5	Pass
						Bolt Checks	71.6	Pass
						RATING =	**71.6**	**Pass**

APPENDIX B

BASE LEVEL DRAWING

Feed Line Plan

Round Flat App In Face App Out Face



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Tectonic
1279 Route 300
Newburgh, NY 12550
Phone: (845) 567-6656
FAX: (845) 567-8703

Job: ***10473.CT11220A - Rev1***			
Project: ***250' Self-Support Tower***			
Client: T-Mobile	Drawn by: John-Fritz Julien	App'd:	
Code: TIA-222-G	Date: 11/05/20	Scale: NTS	
Path: G:\Newburgh\Projects\10473-NSS\10473.CT11220A\Structural\Tower Analysis\Rev1\10473.CT11220A - TowerSA_Rev1.eri		Dwg No. E-7	

APPENDIX C

ADDITIONAL CALCULATIONS

Project Information

Work Order #:	10473.CT11220A - Rev1
Site Name	Cheshire/ Rt-10

Tower Information

Tower Type	Self Support
TIA-222 Rev	G

☐ Load Z Normalization

Applied Loads

	Comp.	Uplift
Axial (k)	557.00	439.00
Shear (k)	46.00	44.00

Anchor Rod Data

Quantity:	12	
Diameter (in):	2.25	
Material Grade:	A36	Fy=36 ksi Fu=58 ksi
Grout Considered:	Yes	Grout Considered
l_{ar} (in):	1	Bending Interaction Not Considered
Eta Factor, η:	0.55	
Thread Type:	N-Included	
Configuration:	Symmetrical	

Anchor Rod Results

Axial, Pu_t (kips)	36.58	
Shear, Vu (kips)	3.67	
Moment, Mu (kip-in)	-	
Axial Cap., φPn_t (kips)	150.80	
Shear Cap., ϕVn (kips)	-	
Moment Cap., ϕMn (kip-in)	-	
Stress Rating	28.7%	**Pass**

CONNECTICUT DESIGN CRITERIA - STATE

Revison:

CT is NOT a Home Rule State; Tab added only for Design Criteria

(APPENDIX N) MUNICIPALITY - SPECIFIC STRUCTURAL DESIGN PARAMETERS

Municipality	Ground Snow Load	*Wind Design Parameters*							
		MCE Spectral Accelerations (%g)		Ultimate Design Wind Speeds, V_{ult} (mph)			Nominal Design Wind Speeds, V_{asd} (mph)		
		S_s	S_1	Risk Cat.I	Risk Cat.II	Risk Cat III-IV	Risk Cat. I	Risk Cat. II	Risk Cat. III-IV
Andover	30	0.176	0.063	120	130	140	93	101	108
Ansonia	30	0.195	0.064	115	125	135	89	97	105
Ashford	35	0.173	0.063	120	130	140	93	101	108
Avon	35	0.181	0.064	110	120	130	85	93	101
Barkhamsted	40	0.177	0.065	110	120	125	85	93	97
Beacon Falls	30	0.192	0.064	115	125	135	89	97	105
Berlin	30	0.183	0.063	115	125	135	89	97	105
Bethany	30	0.189	0.063	115	125	135	89	97	105
Bethel	30	0.215	0.066	110	120	125	85	93	97
Bethlehem	35	0.190	0.065	110	120	125	85	93	97
Bloomfield	35	0.180	0.064	115	125	130	89	97	101
Bolton	30	0.177	0.063	115	125	135	89	97	105
Bozrah	30	0.170	0.061	120	135	145	93	105	112
Branford	30	0.180	0.061	120	130	140	93	101	108
Bridgeport	30	0.209	0.064	115	125	135	89	97	105
Bridgewater	35	0.201	0.066	110	120	125	85	93	97
Bristol	35	0.185	0.064	110	120	130	85	93	101
Brookfield	35	0.208	0.066	110	120	125	85	93	97
Brooklyn	35	0.171	0.062	120	130	140	93	101	108
Burlington	35	0.182	0.064	110	120	130	85	93	101
Canaan	40	0.173	0.065	105	115	120	81	89	93
Canterbury	35	0.171	0.061	120	130	140	93	101	108
Canton	35	0.180	0.064	110	120	130	85	93	101
Chaplin	35	0.173	0.062	120	130	140	93	101	108
Cheshire	30	0.186	0.063	115	125	135	89	97	105
Chester	30	0.172	0.060	120	130	140	93	101	108
Clinton	30	0.169	0.059	120	135	140	93	105	108
Colchester	30	0.174	0.061	120	130	140	93	101	108
Colebrook	40	0.174	0.065	105	115	125	81	89	97
Columbia	30	0.175	0.062	120	130	140	93	101	108
Cornwall	40	0.180	0.065	105	115	120	81	89	93
Coventry	30	0.176	0.063	120	130	140	93	101	108
Cromwell	30	0.181	0.063	115	125	135	89	97	105
Danbury	30	0.217	0.067	110	120	125	85	93	97
Darien	30	0.242	0.068	110	120	130	85	93	101
Deep River	30	0.170	0.060	120	130	140	93	101	108
Derby	30	0.195	0.064	115	125	135	89	97	105
Durham	30	0.179	0.062	115	130	140	89	101	108
Eastford	40	0.172	0.063	120	130	140	93	101	108
East Granby	35	0.177	0.065	110	120	130	85	93	101
East Haddam	30	0.172	0.061	120	130	140	93	101	108
East Hampton	30	0.177	0.062	120	130	140	93	101	108

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Sun Aug 23 2020

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Exhibit E

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Date: **November 10, 2020**

Mount Replacement Analysis Report – Rev 1

Tower Owner:	AT&T Mobility
Carrier:	T-Mobile Northeast LLC
Site ID:	CT11220A
Site Name:	Cheshire/ Rt-10
Site Data:	751 Higgins Road, Cheshire, New Haven County, CT 06410 Latitude *41° 29' 15.36"*, Longitude *-72° 55' 45.12"* Proposed 12.5 ft Sector Frame Mount
Tectonic Project Number:	10473.CT11220A – Rev 1

Tectonic Engineering & Surveying Consultants P.C. is pleased to submit this **"Mount Replacement Analysis Report"** to determine the structural integrity of the above mentioned mount.

The purpose of the analysis is to determine acceptability of the mount stress level. Based on our analysis we have determined the mount stress level to be:

Sector Frame: **Sufficient Capacity – 47%**

This analysis has been performed in accordance with the 2018 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second gust wind speed of 97 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category B with a maximum topographic factor, Kzt, of 1.0 and Structure Class II were used in this analysis.

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

We at Tectonic appreciate the opportunity of providing our continuing professional services to you and T-Mobile. If you have any questions or need further assistance on this or any other projects please give us a call.

Structural analysis prepared by: John-Fritz Julien / Ian Marinaccio

Respectfully submitted by:
Tectonic Engineering & Surveying Consultants P.C.

Edward N. Iamiceli, P.E.
Managing Director - Structural

STATE OF CONNECTICUT
EDWARD N. IAMICELI
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1) INTRODUCTION

The existing sector frame mounts cannot accommodate the proposed and existing T-Mobile load configurations, as such a new mount has been analyzed to replace the existing mount. The proposed replacement mounts are two (2) 12.5 ft sector frame mounts, manufactured by Commscope; P/N SFG-23-12-4-96.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-G
Structure Class:	II
Wind Speed:	97 mph
Exposure Category:	B
Topographic Factor:	1.0
Ice Thickness:	0.75 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Loading Information

Mounting Level (ft)	Carrier Designation	Number of Antennas	Antenna Manufacturer	Antenna Model	Proposed Mount Type	Note
212.0	T-Mobile	2	rfs	APXVARR24_43-U-NA20	(2) 12.5' Commscope Sector Mounts (P/N: SFG23-12-4-96)	1
		2	ericsson	AIR6449 B41		
		2	ericsson	AIR 32 B66A B2A		
		2	commscope	SDX1926Q-43		
		2	ericsson	RADIO 4449 B71/B85		
		2	ericsson	RRUS 4415 B25		

Note:
1) Proposed equipment to be installed on the proposed sector mount.

Table 2 - Existing Equipment Loading Information

Mounting Level (ft)	Carrier Designation	Number of Antennas	Antenna Manufacturer	Antenna Model	Existing Mount Type	Note
212.0	T-Mobile	2	ericsson	RRUS 11 B4	-	1
		2	ericsson	AIR 21 B2a B5/12p	(2) Sector Mounts	2
		2	ericsson	KRY 112 144/1		
		2	ericsson	RRUS 11 B12		
		2	ericsson	AIR21 B2A B4P		

Notes:
1) Existing equipment.
2) Existing equipment to be removed, not considered in analysis.

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Dated
MOUNT ASSEMBLY DRAWINGS	Commscope	03/02/15
MOUNT STRUCTURAL EVALUATION	Destek Engineering, LLC	07/19/19
RFDS	T-Mobile	07/06/20
FIELD NOTES	Tectonic	07/17/20
MOUNT MAPPING REPORT	HighTower Solutions, Inc.	08/26/20
APPURTENANCE UPDATE, VIA EMAIL	NNS	11/04/20

3.1) Analysis Method

A tool internally developed, using Microsoft Excel, was used to calculate wind loading on all appurtenances and mount members. This information was then used in conjunction with another program, RISA-3D, which is a commercially available analysis software package, used to check the supporting building framing and calculate member stresses for various loading cases. The selected output from the analysis is included in Appendices B and C.

3.2) Assumptions

1) The antenna mounting system was properly fabricated, installed, and maintained in good condition in accordance with its original design, TIA Standards, and/or manufacturer's specifications.
2) The configuration of antennas, mounts, and other appurtenances are as specified in Tables 1 and 2.
3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
4) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM 500 (GR B-46)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325

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

4) ANALYSIS RESULTS

Table 4 - Mount Component Stresses vs. Capacity (Sector Mount)

Notes	Component	Mount Centerline (ft)	% Capacity	Pass / Fail
1	Face Horizontal	212.0	47	Pass
	Standoff Horizontal		28	Pass
	Mount Pipe		40	Pass
	Standoff Brace		46	Pass
	Stiffarm Pipe		11	Pass

Structure Rating (max from all components) =	47%

Note:
1) See additional documentation in "Appendix C - Analysis Output" for calculations supporting the % capacity consumed.

4.1) Result / Conclusions

The proposed sector frame mount has sufficient capacity to carry the proposed T-Mobile load configurations. No modification is required at this time.

This structural analysis only includes evaluation of the antenna sector mounts and not the self-support tower. The self-support tower is to be analyzed under a separate structural analysis by Tectonic Engineering & Surveying Consultants, P.C.

Contractor shall field verify existing conditions and recommendations as noted on the construction drawings and notify the design engineer of any discrepancies prior to construction. Any further changes to the antenna and/or appurtenance configuration should be reviewed with respect to their effect on structural loads prior to implementation.

APPENDIX A

SOFTWARE INPUT CALCULATIONS

Tectonic	Job No.	10473.CT11220A - Rev1		
	Sheet No.	1	of	3
	Calculated By	JJ	Date :	11/5/2020
	Checked By	IM	Date :	11/5/2020

WIND AND ICE LOADS PER TIA-222-G

W.O.	10473.CT11220A - Rev1
Project Name	Cheshire/ Rt - 10
Location	751 Higgins Road, Cheshire, CT 06410
County	New Haven

Tower Type	SST	Self-Supporting (lattice)
Structure Class	2	Substantial hazard
Exposure Category	B	Suburban/wooded/obstructed
Topo Category	1	Flat or rolling terrain
Height of crest	0	ft

Basic Wind Speed (3-sec gust):		
Without ice	97	mph*
With ice	50	mph
Service	60	mph
Ice thickness	0.75	in

Importance Factor	
Wind only	1.00
Wind with ice	1.00
Ice thickness	1.00
Supporting Data:	
K_e	0.90
K_t	N/A
f	N/A
z_g	1200
α	7
$K_{z,min}$	0.7
K_d	0.95
G_h	1.00

Height	z (ft)	212
	Kh	N/A
	Kzt	1.00
	Kz	1.22
	Kiz	1.20
Wind Pressure, qz (psf)	No Ice	28.03
	With Ice	7.45
	Service	10.72
(tiz)	Ice Thk	1.81
Appurtenances (qzGh)	No Ice	28.03
	With Ice	7.45
	Service	10.72

*Ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second wind gust speed of 97 mph per Section 1609.3 and Appendix N, as required for use in the TIA-222-G Standard.

Tectonic

Job No.	10473.CT11220A - Rev1		
Sheet No.	2	of	3
Calculated By	JJ	Date :	11/05/20
Checked By	IM	Date :	11/05/20

Appurtenance Information

Effective Projected Area for Appurtenance $(EPA)_A=Max((EPA)_N,(EPA)_T)$

$(EPA)_T=\sum(C_aA_A)_T$ | $(EPA)_N=\sum(C_aA_A)_N$

Reduction Factor = 1

Wind Only Load Combinations

Antenna Configuration	(E) or (P)	Qty	z (ft)	Length or Diameter (ft)	Width (in)	Depth (in)	Flat or Cylindrical?	Antenna $(Ca)_T$	Antenna $(Ca)_N$	Side Face $(Aa)_T$ (ft^2)	Wind ward Side Face $(CaAa)_T$ (ft^2)	Face Normal $(A_a)_N$ (ft^2)	Windward face Normal $(C_aA_a)_N$ (ft^2)	Normal Antenna Wind Load Each (lb)	Transverse Antenna Wind Load Each (lb)	Antenna Weight (lb)	Total Weight (lb)
AIR 6449 B41	P	2	212	2.76	20.50	8.30	Flat	1.27	1.20	1.91	4.83	4.71	11.31	158	68	103.0	206.0
APXVAARR24_43-U-NA20	P	2	212	7.99	24.00	8.70	Flat	1.53	1.27	5.79	17.78	15.98	40.49	567	249	153.3	306.6
AIR-32 B2A/B66A	P	2	212	4.72	12.90	8.70	Flat	1.38	1.28	3.42	9.42	5.07	13.02	182	132	132.2	264.4
SDX1926Q-43	P	2	212	0.35	6.93	2.91	Flat	1.20	1.20	0.08	0.20	0.20	0.48	7	3	6.2	12.3
RRUS 4415 B25	P	2	212	1.24	13.20	5.40	Flat	1.21	1.20	0.56	1.35	1.37	3.28	46	19	46.3	92.6
RADIO 4449 B71/B85	P	2	212	1.25	13.19	10.51	Flat	1.20	1.20	1.09	2.62	1.37	3.29	46	37	75.0	149.9
RRUS 11 B4	E	2	212	1.67	17.00	7.00	Flat	1.22	1.20	0.97	2.36	2.36	5.67	79	33	50.7	101.4
										$\sum(CaA_A)_T$	38.57	$\sum(CaA_A)_N$	77.53				1133

Note: Appurtenances listed above are to be installed along three (3) sector mounts.

Wind with Ice Load Combinations Ice Thk= 1.81 in

Antenna Configuration	(E), (R) or (P)	Qty	z (ft)	Length or Diameter (ft)	Width (in)	Depth (in)	Flat or Cylindrical?	Antenna $(Ca)_T$	Antenna $(Ca)_N$	Side Face $(A_a)_T$ (ft^2)	Windward Side Face $(CaA_a)_T$ (ft^2)	Face Normal $(A_a)_N$ (ft^2)	Windward Face Normal $(C_aA_a)_N$ (ft^2)	Normal Antenna Wind Load Each (lb)	Transverse Antenna Wind Load Each (lb)	Ice Area for Weight (ft^2)	Ice Weight Alone (lbs)
AIR 6449 B41	P	2.00	212.00	3.06	24.11	11.91	Cylindrical	1.23	1.20	3.04	7.45	6.15	14.75	55	28	13.2	111.6
APXVAARR24_43-U-NA20	P	2.00	212.00	8.29	27.61	12.31	Cylindrical	1.44	1.25	8.51	24.44	19.08	47.67	178	91	43.6	367.2
AIR-32 B2A/B66A	P	2.00	212.00	5.02	16.51	12.31	Cylindrical	1.31	1.25	5.15	13.45	6.90	17.28	64	50	17.0	143.2
SDX1926Q-43	P	2.00	212.00	0.65	10.54	6.53	Cylindrical	1.20	1.20	0.35	0.85	0.57	1.37	5	3	0.6	4.8
RRUS 4415 B25	P	2.00	212.00	1.54	16.81	9.01	Cylindrical	1.20	1.20	1.16	2.78	2.16	5.19	19	10	3.8	32.5
RADIO 4449 B71/B85	P	2.00	212.00	1.55	16.80	14.12	Cylindrical	1.20	1.20	1.82	4.37	2.17	5.20	19	16	4.9	41.5
RRUS 11 B4	E	2.00	212.00	1.97	20.61	10.61	Cylindrical	1.20	1.20	1.74	4.18	3.38	8.11	30	16	6.7	56.2
										$\sum(CaA_A)_T$	57.51	$\sum(CaA_A)_N$	99.57				757

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PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Job No.	10473.CT11220A - Rev1		
Sheet No.	3	of	3
Calculated By	JJ	Date :	11/05/20
Checked By	IM	Date :	11/05/20

Proposed Sector Mount

Mount Center Line=	212 ft

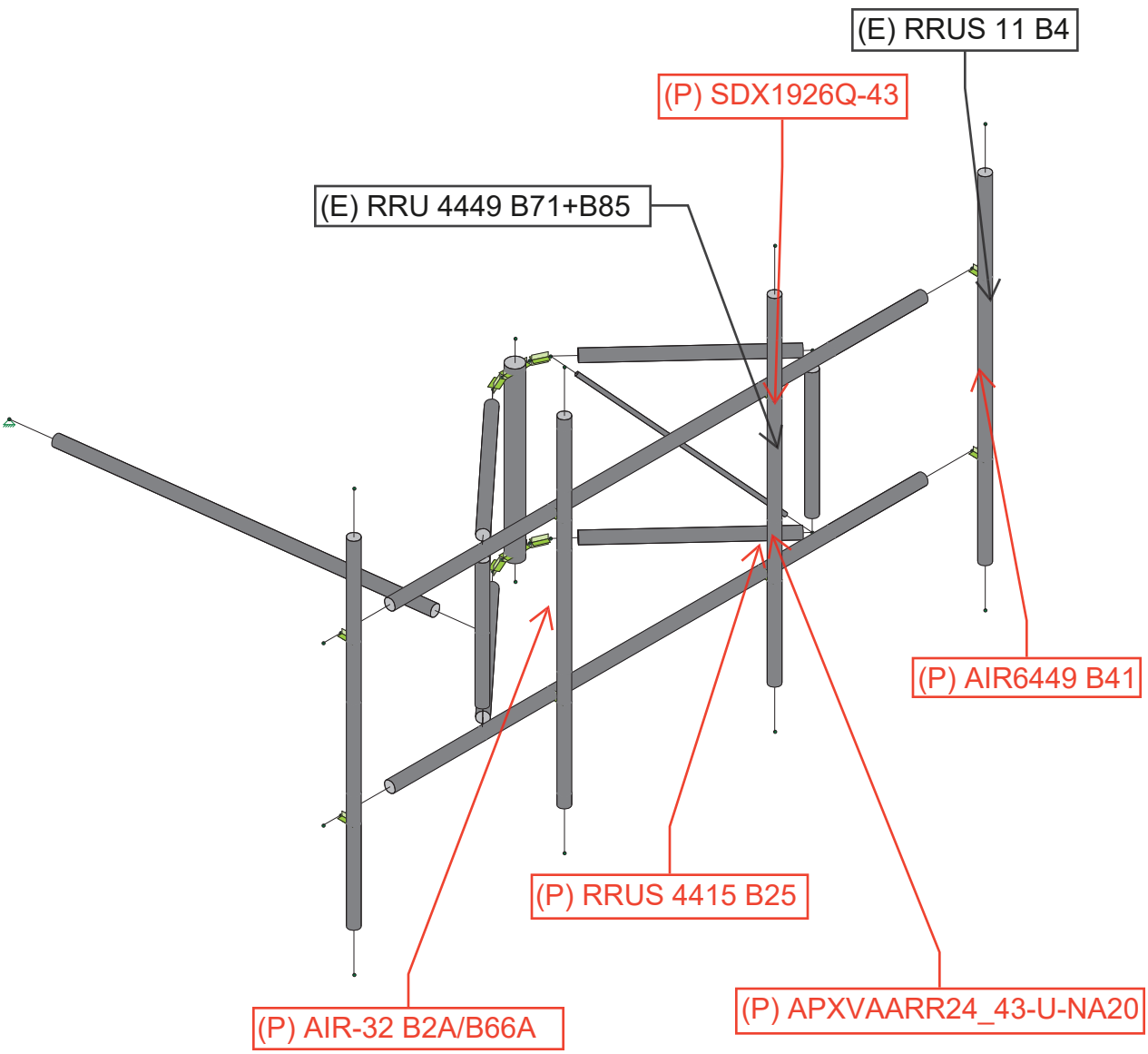
Member sizes are based on assembly drawings by Commscope (P/N: SFG23-12-4-96), dated 03/02/15.

Reduction Factor = 1

Mount Part	Quantity	Length (ft)	Projected Width (in)	Depth (in)	Flat or Cylindrical?	Drag Factor	Projected Area (ft^2)	Wind Force (lbs/ft)	Ice Weight Area (ft^2)	Ice Weight (lbs/ft)	Projected Area with Ice (ft^2)	Wind Force Ice (lbs/ft)	Service Wind Force (lbs/ft)
Face Horizontal_2.0" STD Pipe	2	12.50	2.38	2.38	Cylindrical	1.2	5.95	6.7	15.57	5.3	14.98	4.5	2.6
Standoff Horizontal_2.0" STD Pipe	4	3.77	2.38	2.38	Cylindrical	1.2	3.58	6.7	9.37	5.2	9.03	4.5	2.5
Standoff Vertical_2.0" STD Pipe	2	3.00	2.38	2.38	Cylindrical	1.2	1.43	6.7	3.74	5.3	3.60	4.5	2.6
Standoff Brace_.75" SR	2	4.62	0.75	0.75	Cylindrical	1.2	0.69	2.1	1.81	1.7	4.03	3.2	0.8
Mount Pipe_2.0" STD	4	8.00	2.38	2.38	Cylindrical	1.2	7.62	6.7	19.93	5.3	19.18	4.5	2.6
Main Support Pipe_3.0" STD	1	4.00	3.50	3.50	Cylindrical	1.2	1.40	9.8	3.66	7.7	2.85	5.3	3.8
Stiffarm Pipe_2.0" STD	1	8.00	2.38	2.38	Cylindrical	1.2	1.90	6.7	4.97	5.2	4.79	4.5	2.5

APPENDIX B

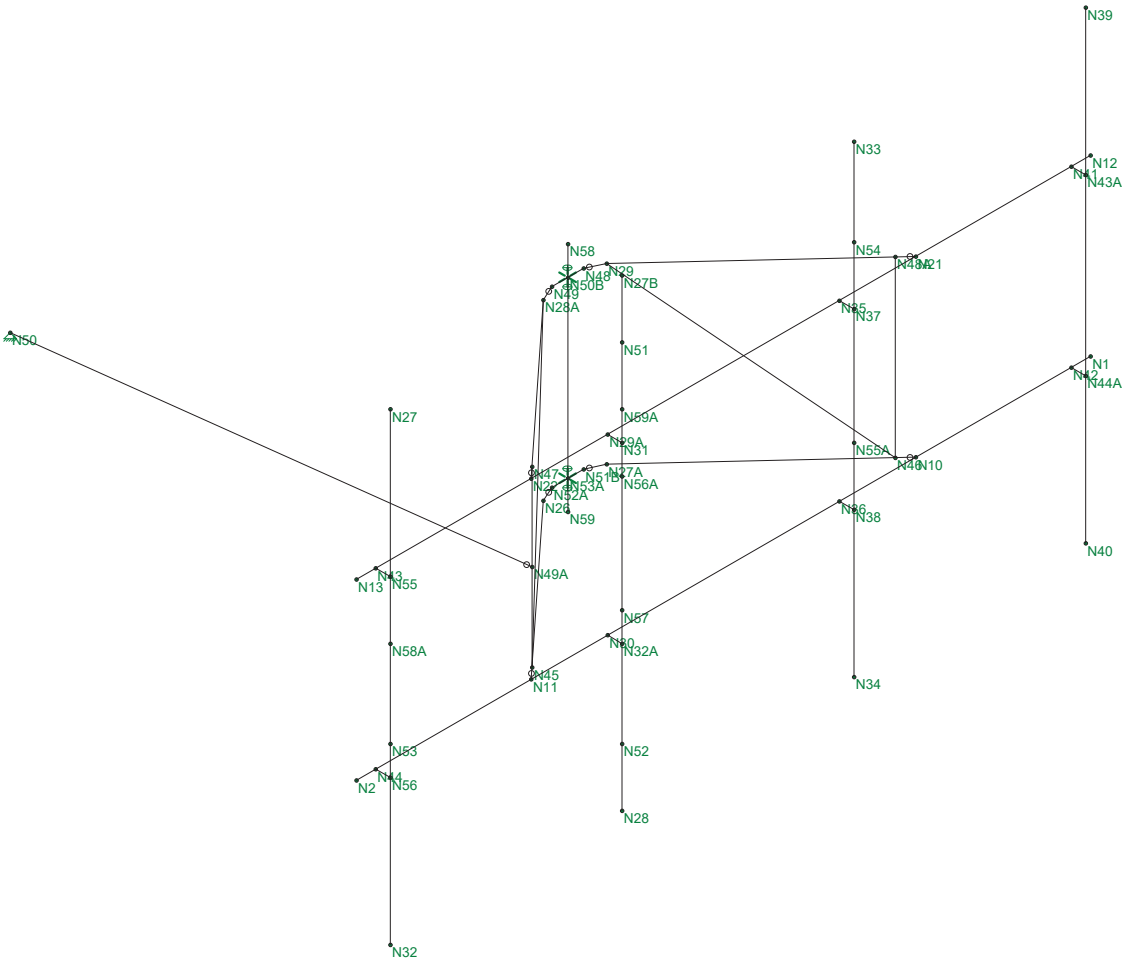
WIRE FRAME AND RENDERED MODELS



NOTES:
1)EXISTING AND PROPOSED ANTENNAS AND MOUNTING PIPES HAVE BEEN VERTICALLY OFFSET ALONG THE EXISTING MOUNT BY 1 FT.
2) LISTED APPURTENANCES ABOVE ARE TYPICAL FOR ALL SECTORS.
3) RADIOS ARE LOCATED BEHIND THE ANTENNAS.

(P) PROPOSED
(E) EXISTING

Envelope Only Solution



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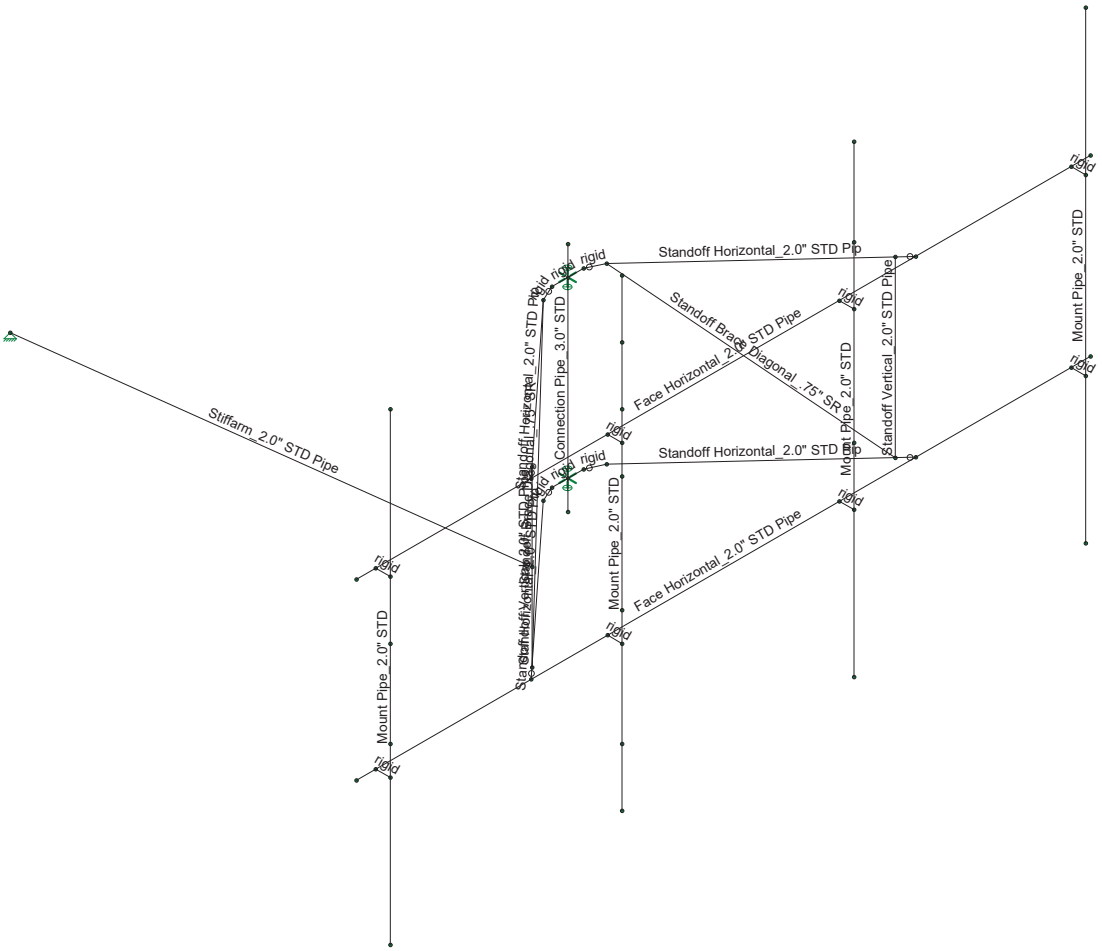

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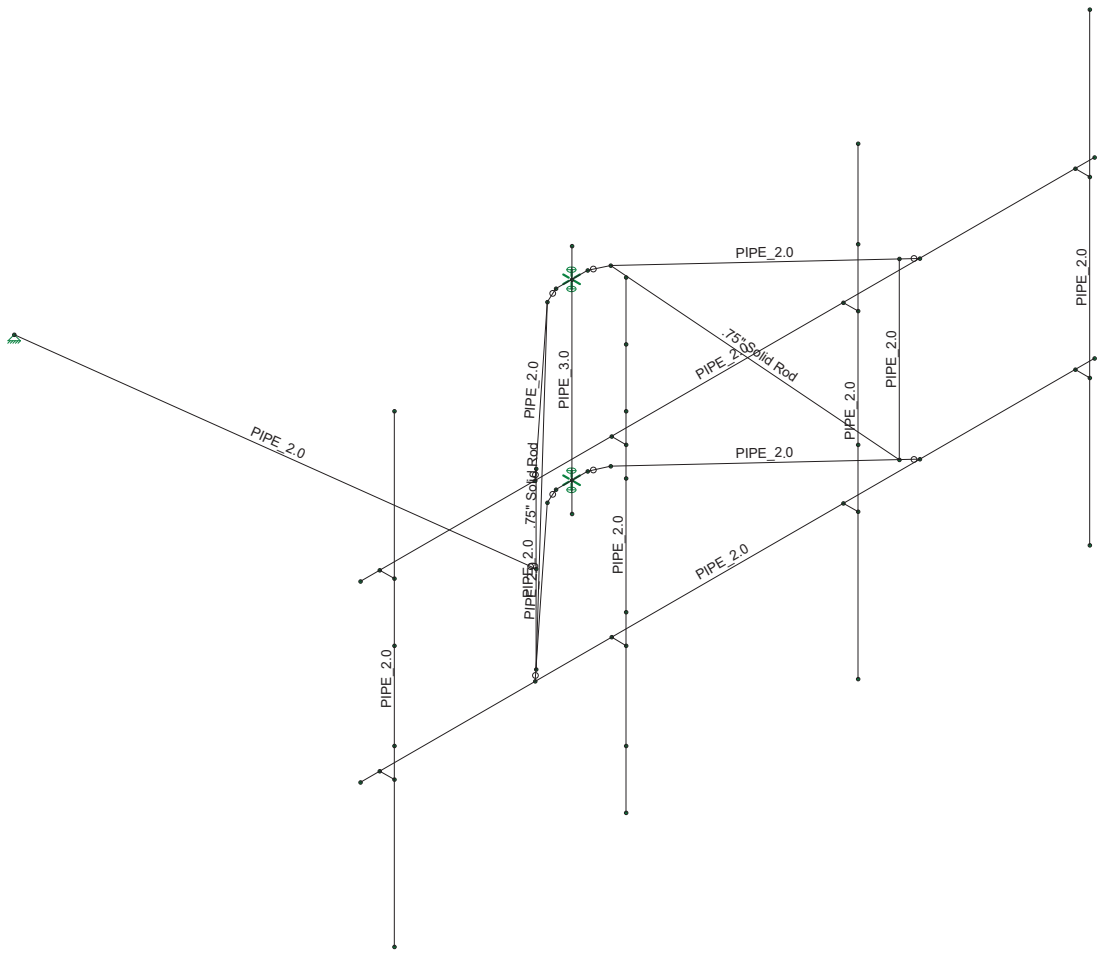

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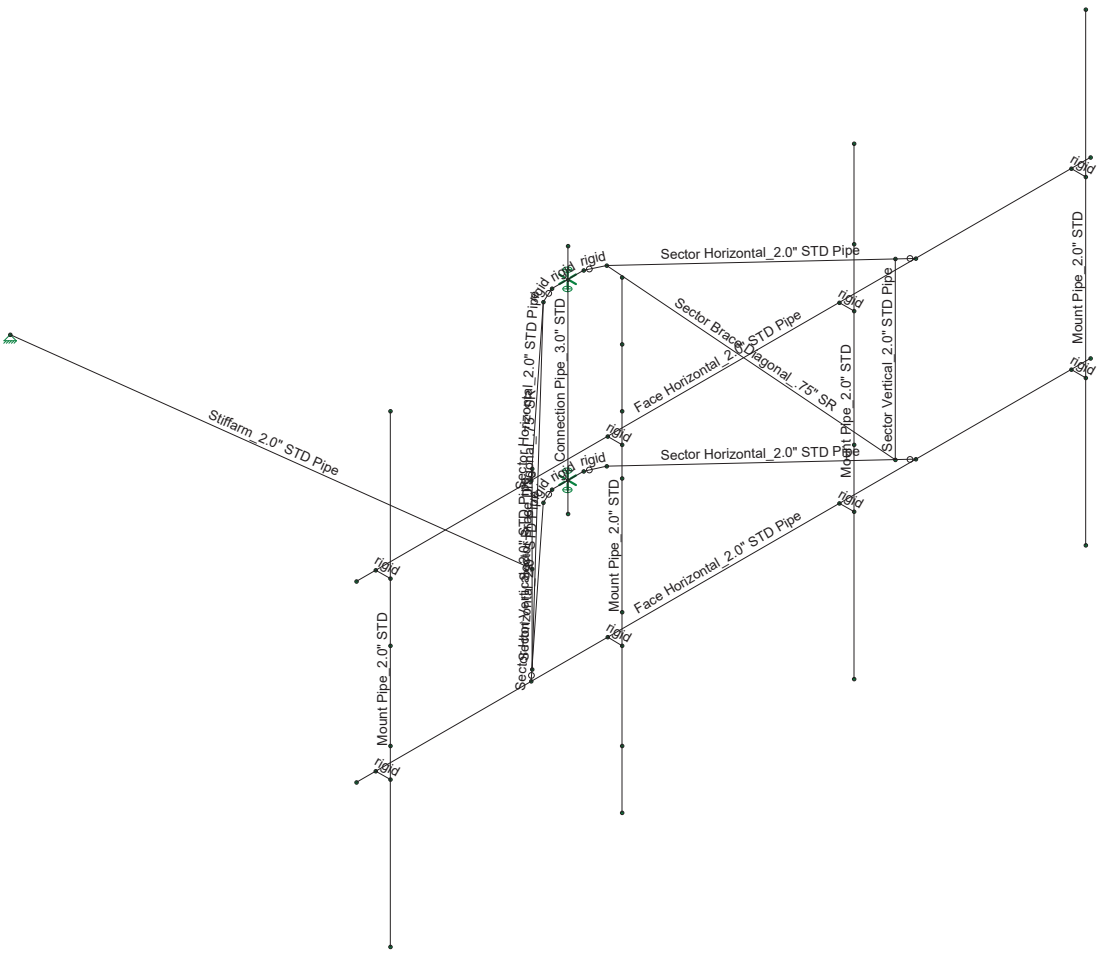

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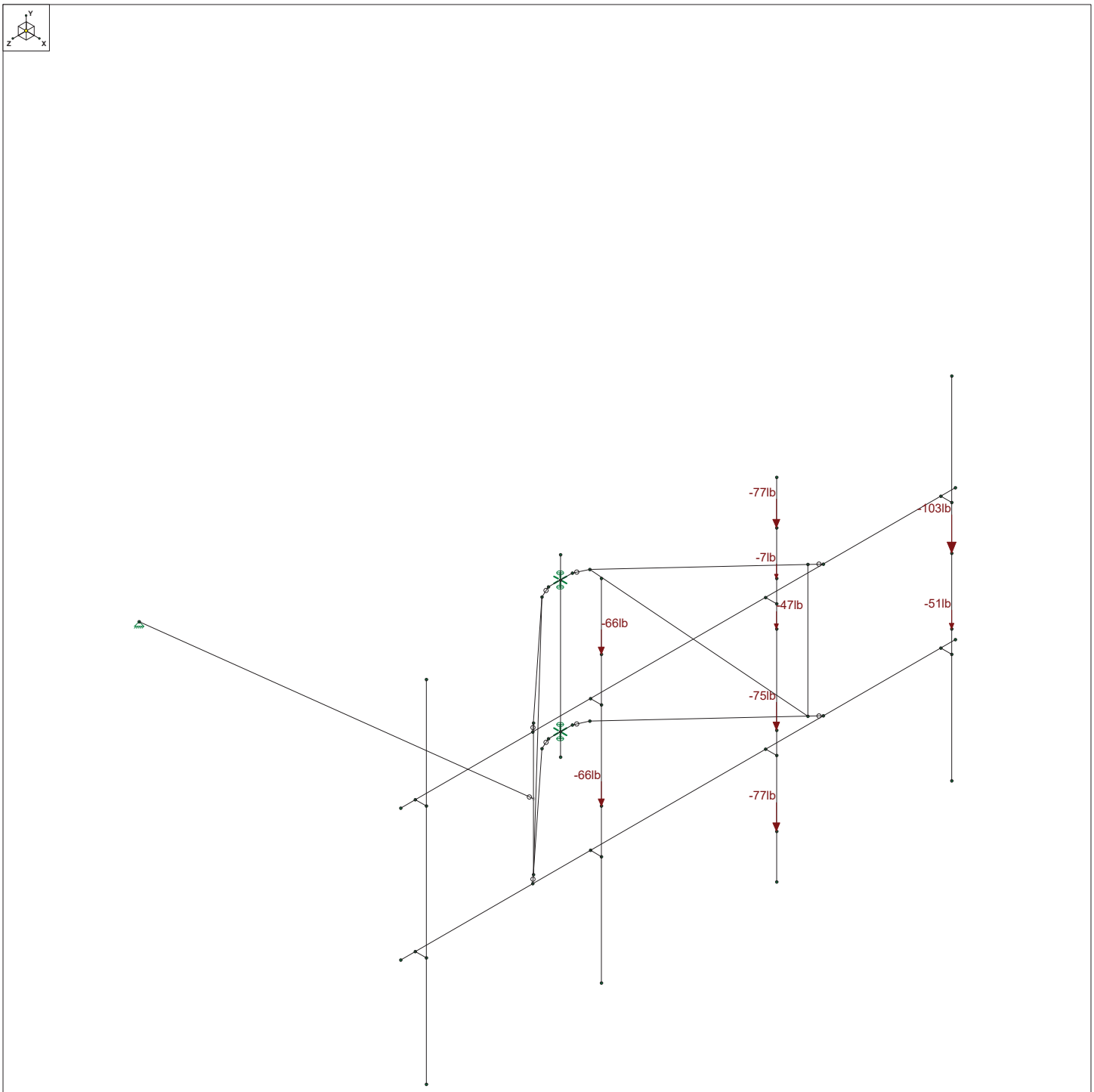
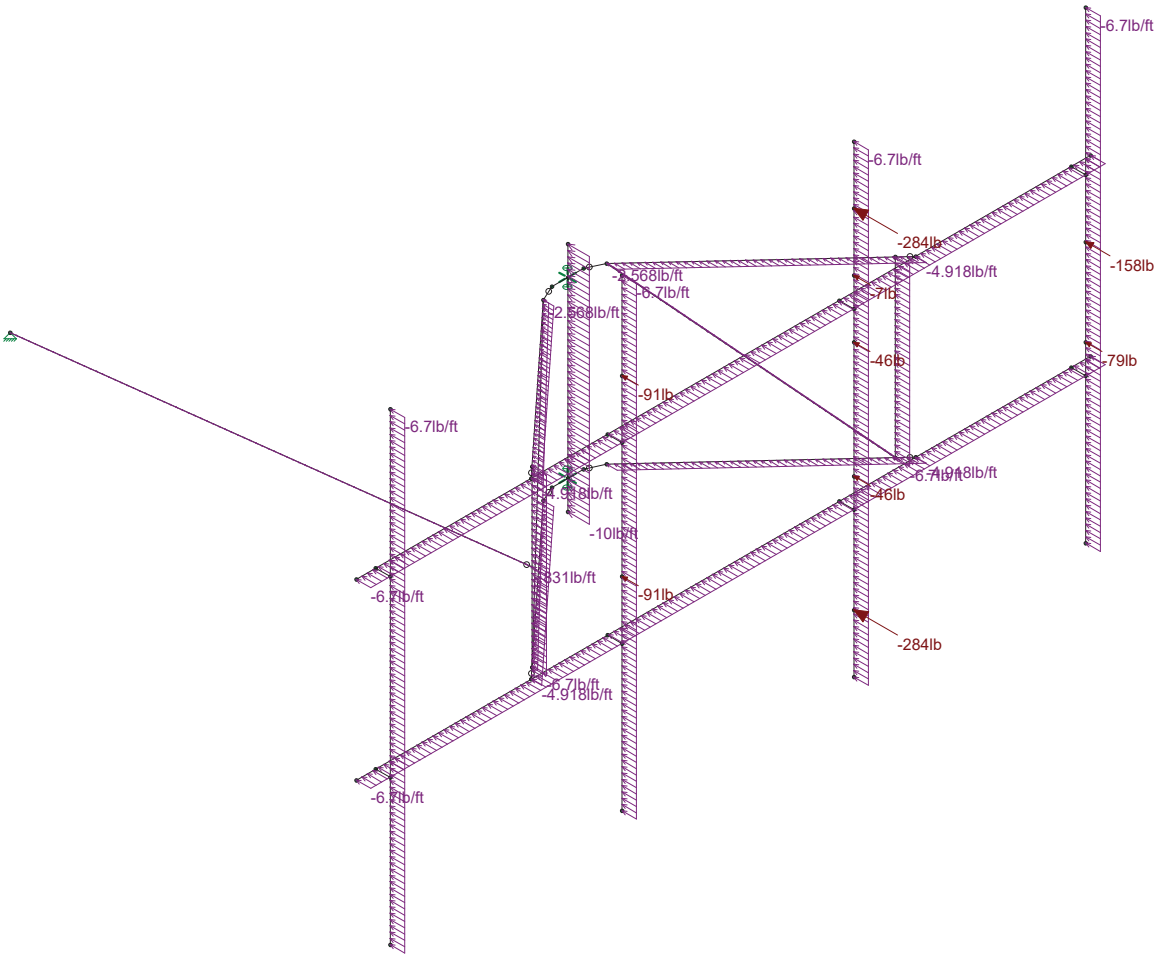
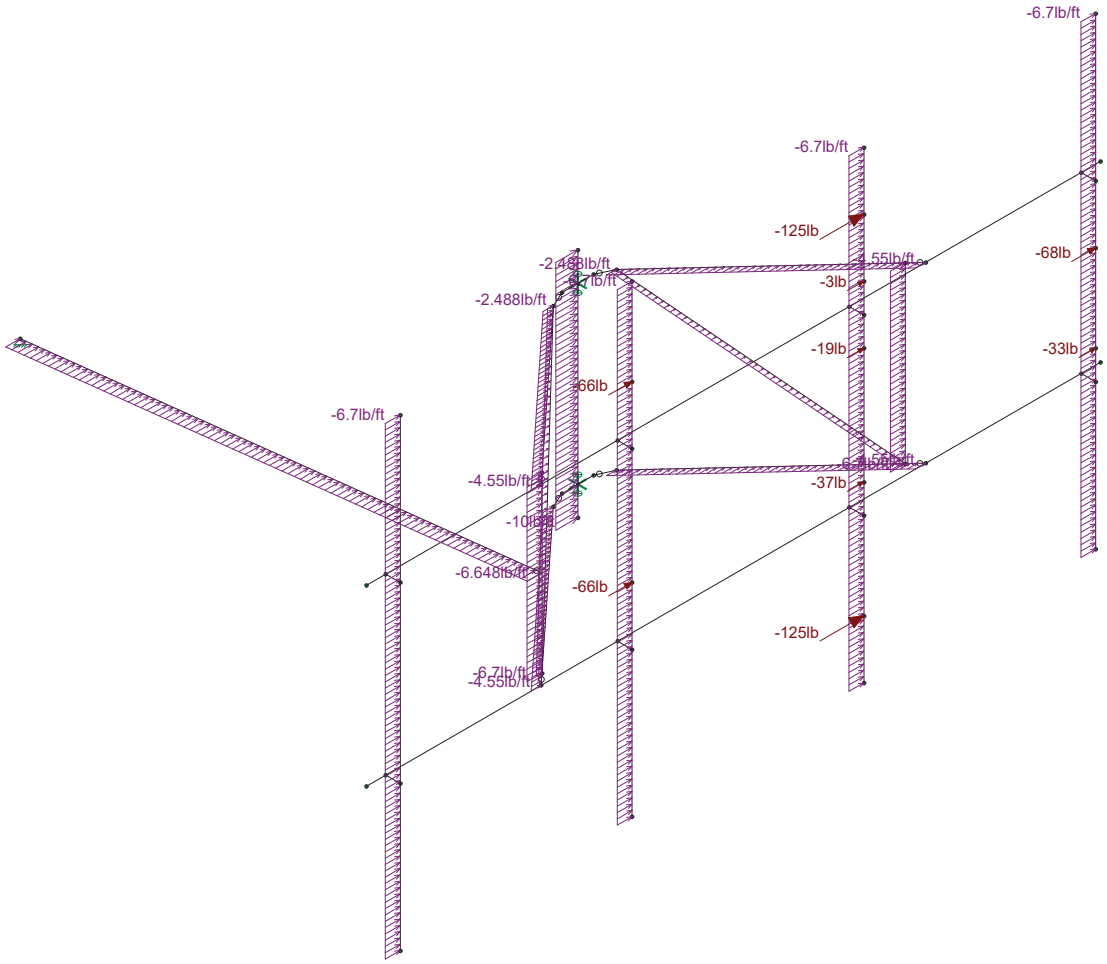


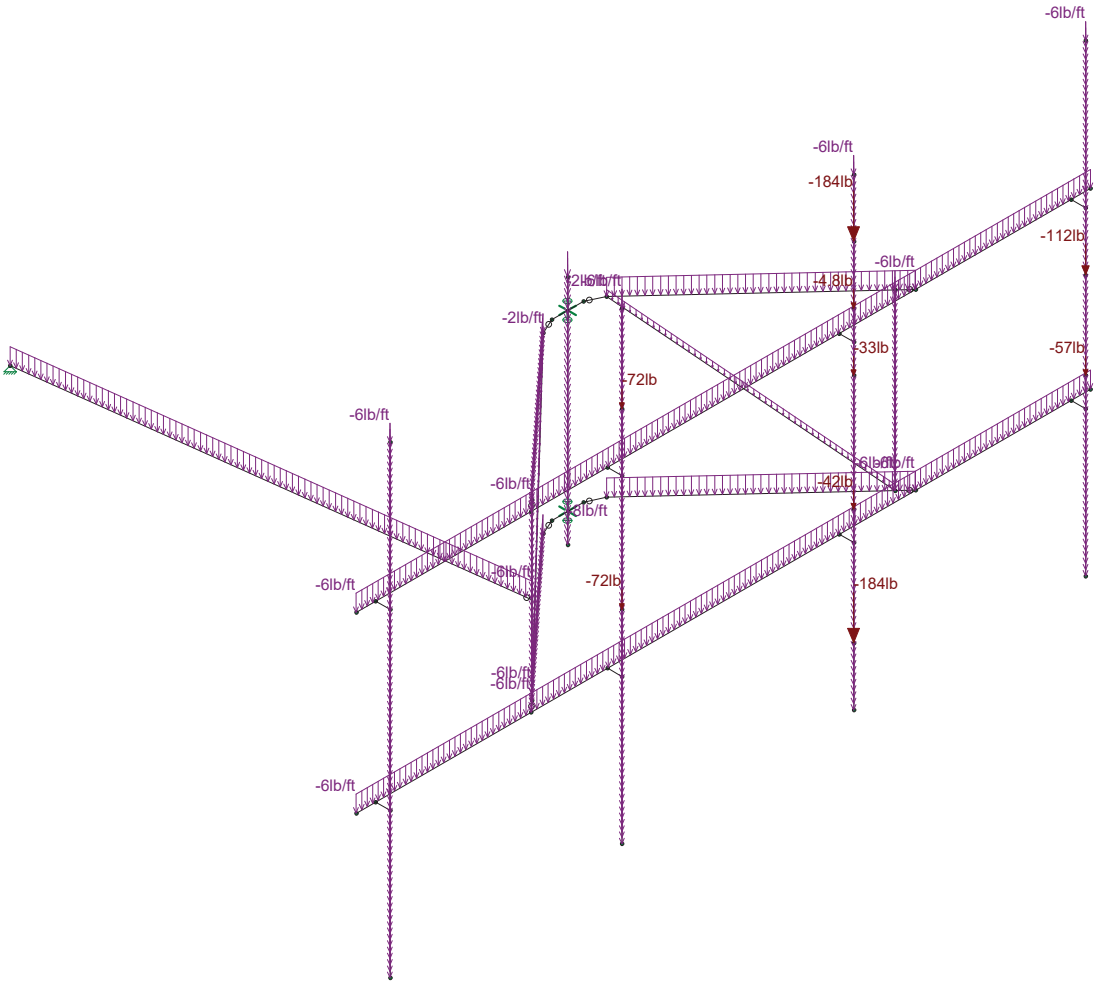
Loads: BLC 1, DL
Envelope Only Solution



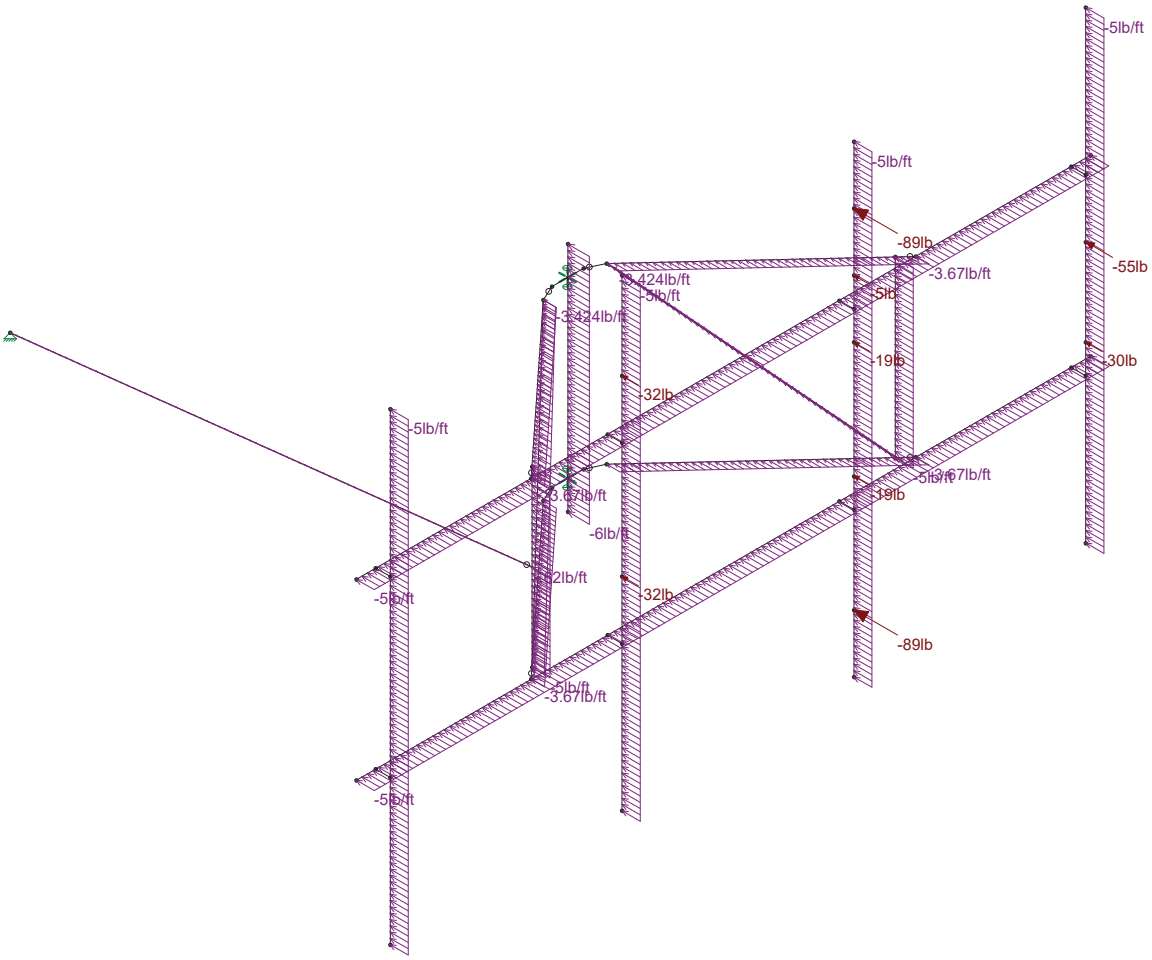
Loads: BLC 2, WLX
Envelope Only Solution



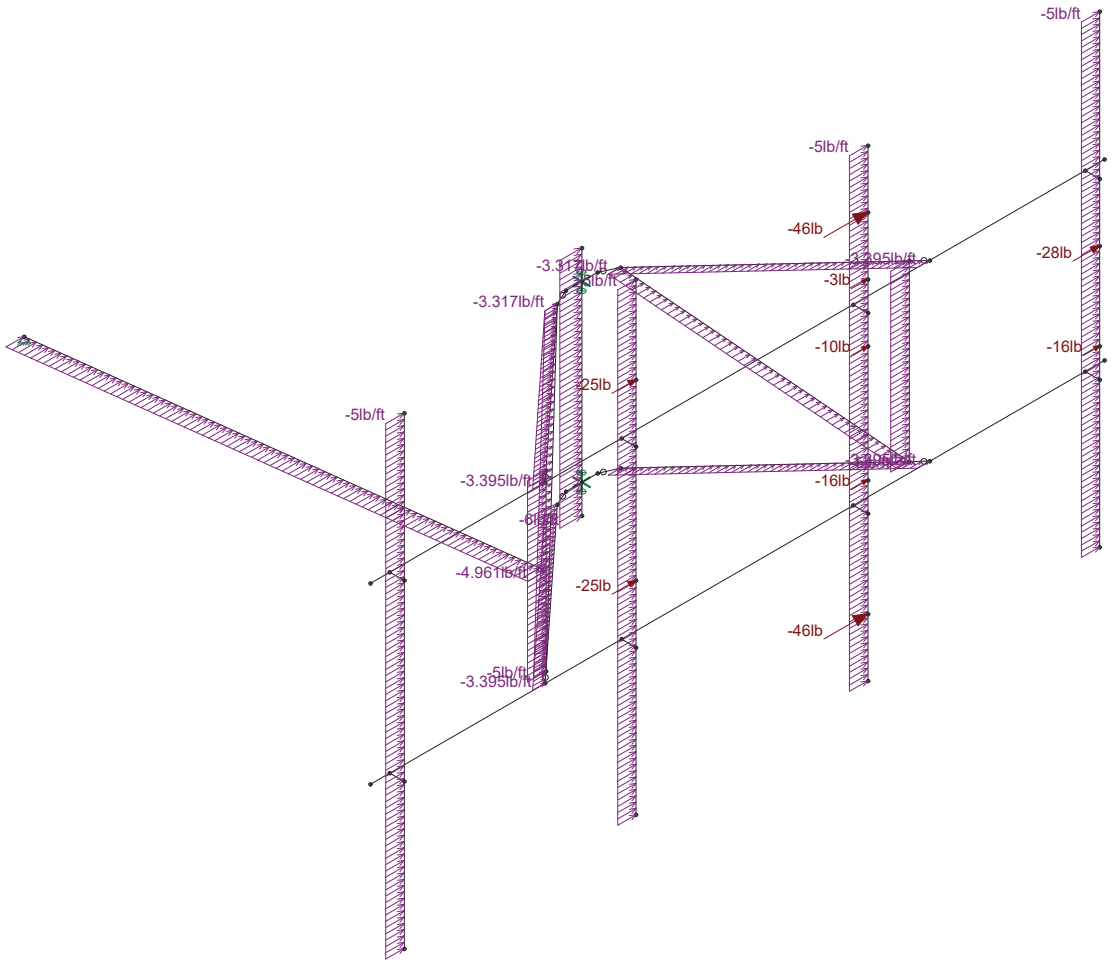
Loads: BLC 3, WLZ
Envelope Only Solution



Loads: BLC 4, DL (ICE)
Envelope Only Solution



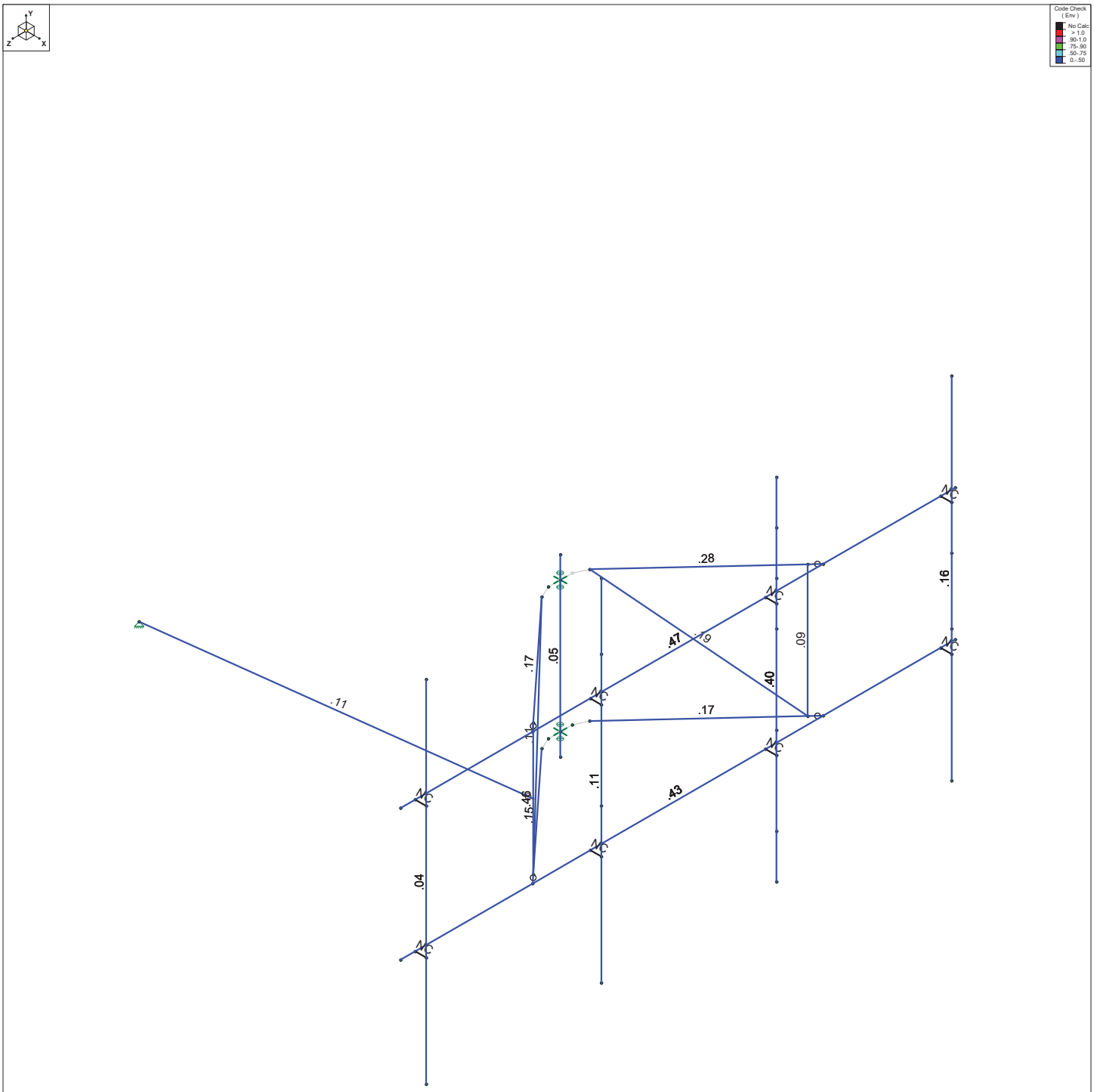
Loads: BLC 5, WLX (ICE)
Envelope Only Solution



Loads: BLC 6, WLZ (ICE)
Envelope Only Solution

APPENDIX C

SOFTWARE ANALYSIS OUTPUT



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E5 F)	Density[k/...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3

Basic Load Cases

	BLC Description	Category	X Grav...	Y Grav...	Z Gravity	Joint	Point	Distrib...	Area(Memb...	Surface(...
1	DL	DL		-1.05		9				
2	WLX	WL+X				9		16		
3	WLZ	WL+Z				9		16		
4	DL (ICE)	SL				9		16		
5	WLX (ICE)	WL+X				9		16		
6	WLZ (ICE)	WL+Z				9		16		

Load Combinations

	Description	So...	P...	SRSS	BLC	Fa...	B...	Factor	BLC	Factor	B...	Fact...	B...	Fa...	B...	Fa...
1	1.4D	Yes	Y		1	1.4										
2	1.2D+1.6(WLX+WLZ) - 0 Deg	Yes	Y		1	1.2	2	1.6								
3	1.2D+1.6(WLX+WLZ) - 30 Deg	Yes	Y		1	1.2	2	1.385	3	.8						
4	1.2D+1.6(WLX+WLZ) - 60 Deg	Yes	Y		1	1.2	2	.8	3	1.385						
5	1.2D+1.6(WLX+WLZ) - 90 Deg	Yes	Y		1	1.2	2		3	1.6						
6	1.2D+1.6(WLX+WLZ) - 120 Deg	Yes	Y		1	1.2	2	-.8	3	1.385						
7	1.2D+1.6(WLX+WLZ) - 150 Deg	Yes	Y		1	1.2	2	-1.385	3	.8						
8	1.2D+1.6(WLX+WLZ) - 180 Deg	Yes	Y		1	1.2	2	-1.6	3							
9	1.2D+1.6(WLX+WLZ) - 210 Deg	Yes	Y		1	1.2	2	-1.385	3	-.8						
10	1.2D+1.6(WLX+WLZ) - 240 Deg	Yes	Y		1	1.2	2	-.8	3	-1.385						
11	1.2D+1.6(WLX+WLZ) - 270 Deg	Yes	Y		1	1.2	2		3	-1.6						
12	1.2D+1.6(WLX+WLZ) - 300 Deg	Yes	Y		1	1.2	2	.8	3	-1.385						
13	1.2D+1.6(WLX+WLZ) - 330 Deg	Yes	Y		1	1.2	2	1.385	3	-.8						
14	**Wind Load with Ice**															
15	1.2D+1.0Di+1.0(WLXi+WLZi) - 0 Deg	Yes	Y		1	1.2	4	1	5	1	6					
16	1.2D+1.0Di+1.0(WLXi+WLZi) - 30 Deg	Yes	Y		1	1.2	4	1	5	.87	6	.5				
17	1.2D+1.0Di+1.0(WLXi+WLZi) - 60 Deg	Yes	Y		1	1.2	4	1	5	.5	6	.87				
18	1.2D+1.0Di+1.0(WLXi+WLZi) - 90 Deg	Yes	Y		1	1.2	4	1	5		6	1				
19	1.2D+1.0Di+1.0(WLXi+WLZi) - 120 Deg	Yes	Y		1	1.2	4	1	5	-.5	6	.87				
20	1.2D+1.0Di+1.0(WLXi+WLZi) - 150 Deg	Yes	Y		1	1.2	4	1	5	-.87	6	.5				
21	1.2D+1.0Di+1.0(WLXi+WLZi) - 180 Deg	Yes	Y		1	1.2	4	1	5	-1	6					
22	1.2D+1.0Di+1.0(WLXi+WLZi) - 210 Deg	Yes	Y		1	1.2	4	1	5	-.87	6	-.5				
23	1.2D+1.0Di+1.0(WLXi+WLZi) - 240 Deg	Yes	Y		1	1.2	4	1	5	-.5	6	-.87				
24	1.2D+1.0Di+1.0(WLXi+WLZi) - 270 Deg	Yes	Y		1	1.2	4	1	5		6	-1				
25	1.2D+1.0Di+1.0(WLXi+WLZi) - 300 Deg	Yes	Y		1	1.2	4	1	5	.5	6	-.87				
26	1.2D+1.0Di+1.0(WLXi+WLZi) - 330 Deg	Yes	Y		1	1.2	4	1	5	.87	6	-.5				

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Desig...	A [in2]	Iyy [i...	Izz [i...	J [in4]
1	Face Horizontal_2.0" STD ...	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
2	Standoff Brace Diagonal_....	.75" Solid Rod	None	None	A36 Gr.36	Typical	.442	.016	.016	.031
3	Mount Pipe_2.0" STD	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Desig..	A [in2]	Iyy [i...	Izz [i...	J [in4]
4	Standoff Horizontal_2.0" S...	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
5	Standoff Vertical_2.0" STD...	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
6	Stiffarm_2.0" STD Pipe	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
7	Connection Pipe_3.0" STD	PIPE_3.0	None	None	A53 Gr.B	Typical	2.07	2.85	2.85	5.69

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N50B	max	1048.824	3	2363.224	23	1243.011	18	0	26	274.64	5	0	26
2		min	-3003.538	9	1021.198	3	-278.907	11	0	1	-69.135	11	0	1
3	N53A	max	2827.305	3	75.08	3	147.791	5	0	26	46.005	5	0	26
4		min	-862.512	9	-22.229	9	-1209.967	24	0	1	-266.266	24	0	1
5	N50	max	1636.226	10	41.941	17	243.623	4	0	26	0	26	0	26
6		min	-1641.735	4	17.39	10	-240.991	10	0	1	0	1	0	1
7	Totals:	max	2648.04	2	2444.301	20	1571.032	5						
8		min	-2648.043	8	1114.063	13	-1571.032	11						

Envelope AISC 15th(360-16): LRFD Steel Code Checks

	Member	Shape	Code Ch..	Loc[ft]	LC	Shear C...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt ...	phi*Mn y-y [l...	phi*M.....	Eqn
1	M22	PIPE_2.0	.472	9.631	8	.193	9.631		8	6131.489	32130	1871.625	1871.....	H1-1b
2	M26	PIPE_2.0	.463	1.5	10	.093	3		10	28843.414	32130	1871.625	1871.... 1	H1-1b
3	M23	PIPE_2.0	.430	9.631	8	.168	9.631		8	6131.489	32130	1871.625	1871.....	H1-1b
4	M17	PIPE_2.0	.395	5.5	8	.065	2.5		8	14916.096	32130	1871.625	1871.....	H1-1b
5	M8	PIPE_2.0	.282	3.773	21	.117	.236		20	27087.424	32130	1871.625	1871.....	H1-1b
6	M29A	.75" Solid Rod	.189	4.628	24	.014	4.628		2	1137.877	14313.8...	178.929	178.9.....	H1-1b
7	M4	PIPE_2.0	.171	3.773	15	.116	.236		8	27087.424	32130	1871.625	1871.....	H1-1b
8	M7	PIPE_2.0	.171	.275	3	.272	0		9	27087.424	32130	1871.625	1871.....	H1-1b
9	M19A	PIPE_2.0	.159	5.5	24	.026	2.5		8	14916.096	32130	1871.625	1871.....	H1-1b
10	M3	PIPE_2.0	.154	.275	3	.258	0		3	27087.424	32130	1871.625	1871.....	H1-1b
11	M28	.75" Solid Rod	.112	4.628	18	.009	0		2	1137.877	14313.8...	178.929	178.9.....	H1-1b
12	M30	PIPE_2.0	.112	8.062	10	.005	0		24	14738.322	32130	1871.625	1871.....	H1-...
13	M20	PIPE_2.0	.110	2.5	2	.030	2.5		2	14916.096	32130	1871.625	1871.....	H1-1b
14	M27	PIPE_2.0	.085	0	23	.039	3		19	28843.414	32130	1871.625	1871.....	H1-1b
15	M29	PIPE_3.0	.046	3.5	17	.005	3.5		18	59852.693	65205	5748.75	5748.....	H1-1b
16	M23B	PIPE_2.0	.035	5.5	5	.006	2.5		23	14916.096	32130	1871.625	1871.....	H1-1b

THE MAXIMUM MEMBER STRESS IS AT 47% OF ITS CAPACITY AND IS ADEQUATE TO SUPPORT THE PROPOSED UPGRADE.

SERVICE DEFLECTION = 0.37" x [(60MPH)^2/(97MPH)^2] = 0.14" < 1.6"
HENCE, OK.

BASED ON THE CURRENT REACTIONS AND STRESS RATIO'S IN THE FRAME MEMBERS, WE EXPECT THE CONNECTIONS TO BE ADEQUATE TO SUPPORT THE PROPOSED UPGRADE.

CONNECTICUT DESIGN CRITERIA - STATE

Revison:

CT is NOT a Home Rule State; Tab added only for Design Criteria

(APPENDIX N) MUNICIPALITY - SPECIFIC STRUCTURAL DESIGN PARAMETERS

Municipality	Ground Snow Load	*Wind Design Parameters*							
		MCE Spectral Accelerations (%g)		Ultimate Design Wind Speeds, V_{ult} (mph)			Nominal Design Wind Speeds, V_{asd} (mph)		
		S_s	S_1	Risk Cat.I	Risk Cat.II	Risk Cat III-IV	Risk Cat. I	Risk Cat. II	Risk Cat. III-IV
Andover	30	0.176	0.063	120	130	140	93	101	108
Ansonia	30	0.195	0.064	115	125	135	89	97	105
Ashford	35	0.173	0.063	120	130	140	93	101	108
Avon	35	0.181	0.064	110	120	130	85	93	101
Barkhamsted	40	0.177	0.065	110	120	125	85	93	97
Beacon Falls	30	0.192	0.064	115	125	135	89	97	105
Berlin	30	0.183	0.063	115	125	135	89	97	105
Bethany	30	0.189	0.063	115	125	135	89	97	105
Bethel	30	0.215	0.066	110	120	125	85	93	97
Bethlehem	35	0.190	0.065	110	120	125	85	93	97
Bloomfield	35	0.180	0.064	115	125	130	89	97	101
Bolton	30	0.177	0.063	115	125	135	89	97	105
Bozrah	30	0.170	0.061	120	135	145	93	105	112
Branford	30	0.180	0.061	120	130	140	93	101	108
Bridgeport	30	0.209	0.064	115	125	135	89	97	105
Bridgewater	35	0.201	0.066	110	120	125	85	93	97
Bristol	35	0.185	0.064	110	120	130	85	93	101
Brookfield	35	0.208	0.066	110	120	125	85	93	97
Brooklyn	35	0.171	0.062	120	130	140	93	101	108
Burlington	35	0.182	0.064	110	120	130	85	93	101
Canaan	40	0.173	0.065	105	115	120	81	89	93
Canterbury	35	0.171	0.061	120	130	140	93	101	108
Canton	35	0.180	0.064	110	120	130	85	93	101
Chaplin	35	0.173	0.062	120	130	140	93	101	108
Cheshire	30	0.186	0.063	115	125	135	89	97	105
Chester	30	0.172	0.060	120	130	140	93	101	108
Clinton	30	0.169	0.059	120	135	140	93	105	108
Colchester	30	0.174	0.061	120	130	140	93	101	108
Colebrook	40	0.174	0.065	105	115	125	81	89	97
Columbia	30	0.175	0.062	120	130	140	93	101	108
Cornwall	40	0.180	0.065	105	115	120	81	89	93
Coventry	30	0.176	0.063	120	130	140	93	101	108
Cromwell	30	0.181	0.063	115	125	135	89	97	105
Danbury	30	0.217	0.067	110	120	125	85	93	97
Darien	30	0.242	0.068	110	120	130	85	93	101
Deep River	30	0.170	0.060	120	130	140	93	101	108
Derby	30	0.195	0.064	115	125	135	89	97	105
Durham	30	0.179	0.062	115	130	140	89	101	108
Eastford	40	0.172	0.063	120	130	140	93	101	108
East Granby	35	0.177	0.065	110	120	130	85	93	101
East Haddam	30	0.172	0.061	120	130	140	93	101	108
East Hampton	30	0.177	0.062	120	130	140	93	101	108

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Sun Aug 23 2020

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

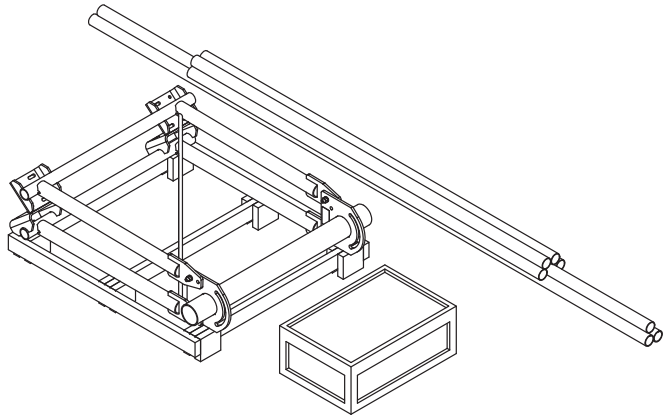
APPENDIX D

ASSEMBLY DRAWINGS

ITEM	PART NO.	DESCRIPTION	QTY.	WEIGHT	NOTE NO.
1	SFG23PK	SFG23 FRAME / HK	1	245.72 LBS	
2	SFG23xxSB	STEEL BUNDLE FOR SFG23 SERIES	1	-	
3	SFG234HK	HARDWARE KIT FOR SFG23 SERIES	1	203.20 LBS	

△J

REVISIONS				
REV.	ECN	DESCRIPTION	BY	DATE
A	8000007122	INITIAL RELEASE	MSM	03/19/15
B	8000007442	ADD 6 ANTENNA VERSIONS TO TABLE	MSM	03/20/15
C	8000007959	UPDATE HARDWARE PER FIRST ARTICAL BUILD	MSM	04/30/15
D	8000008268	UPDATE BALLOONS, ADD DETAILS D & E	MSM	05/20/15
E	8000011978	REDESIGN OF SECTOR FRAME ARM WELDMENT	DRR	01/11/16
F	8000015327	SH6 ADD TIEBACK INFO; SH7 & 8 UPDATED INSTALL INSTR	RJC	7/27/2016
G	8000016253	ADDED DIAGONALS TO SUPPORT ARMS	DRR	12/20/16
H	8000020628	CHANGED HARDWARE KIT	DRR	03/01/17
J	8000024655	ADJUSTED WEIGHT OF SFG23PK AND ALL TOTALS	DRR	07/07/17



SFG23 SERIES TABLE △J

PART NO.	DESCRIPTION	PIPE BUNDLE	TOTAL WEIGHT
SFG23-10-4-96	SECTOR FRAME 10'-8" FACE, (4) 96" ANTENNA PIPE	SFG2310496SB	615 LBS
SFG23-10-4-126	SECTOR FRAME 10'-8" FACE, (4) 126" ANTENNA PIPE	SFG23104126SB	646 LBS
SFG23-12-4-96	SECTOR FRAME 12'-8" FACE, (4) 96" ANTENNA PIPE	SFG2312496SB	630 LBS
SFG23-12-4-126	SECTOR FRAME 12'-8" FACE, (4) 126" ANTENNA PIPE	SFG23124126SB	660 LBS
SFG23-14-4-96	SECTOR FRAME 14'-8" FACE, (4) 96" ANTENNA PIPE	SFG2314496SB	645 LBS
SFG23-14-4-126	SECTOR FRAME 14'-8" FACE, (4) 126" ANTENNA PIPE	SFG23144126SB	675 LBS
SFG23-10-3-96	SECTOR FRAME 10'-8" FACE, (3) 96" ANTENNA PIPE	SFG2310396SB	584 LBS
SFG23-10-3-126	SECTOR FRAME 10'-8" FACE, (3) 126" ANTENNA PIPE	SFG23103126SB	606 LBS
SFG23-12-3-96	SECTOR FRAME 12'-8" FACE, (3) 96" ANTENNA PIPE	SFG2312396SB	599 LBS
SFG23-12-3-126	SECTOR FRAME 12'-8" FACE, (3) 126" ANTENNA PIPE	SFG23123126SB	621 LBS
SFG23-14-3-96	SECTOR FRAME 14'-8" FACE, (3) 96" ANTENNA PIPE	SFG2314396SB	614 LBS
SFG23-14-3-126	SECTOR FRAME 14'-8" FACE, (3) 126" ANTENNA PIPE	SFG23143126SB	636 LBS
SFG23-10-B	SECTOR FRAME 10'-8" FACE, NO ANTENNA PIPE	SFG2310SB	524 LBS
SFG23-12-B	SECTOR FRAME 12'-8" FACE, NO ANTENNA PIPE	SFG2312SB	538 LBS
SFG23-14-B	SECTOR FRAME 14'-8" FACE, NO ANTENNA PIPE	SFG2314SB	552 LBS

NOTES:
1. CUSTOMER ASSEMBLY SHEETS 2–8.
2. FITS TOWERS LEGS UP TO 8" OD, 8" ANGLE 60°, AND 6" ANGLE 90°.

PATENT PENDING

ALL DIMENSIONS ARE IN INCHES U.O.S.
TOLERANCES UNLESS OTHERWISE SPECIFIED:
.X = ± .12 ANGLES ±2°
.XX = ± .06 FRACTIONS ±1/32
.XXX= ± .03

REMOVE BURRS AND BREAK EDGES .005

DO NOT SCALE THIS PRINT

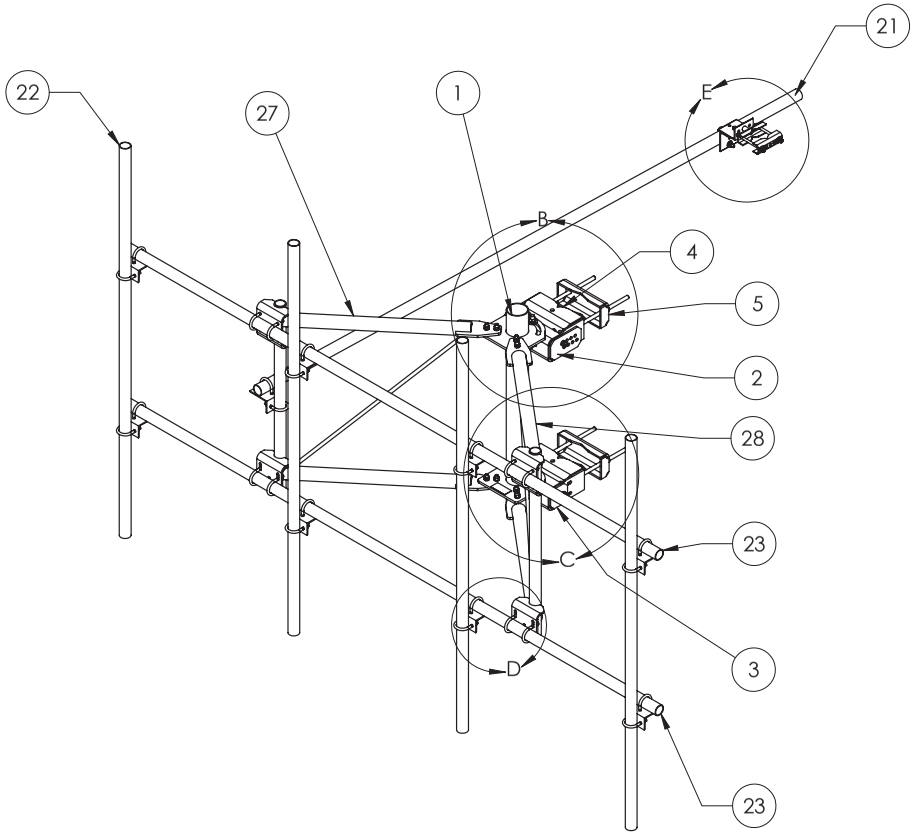
DRAWN BY: MSM	SHEET: 1 of 8	PART NUMBER: SFG23 SERIES	
CHECKED BY: TP	SCALE: NTS	DESCRIPTION: SEE TABLE	
DATE: 03/02/15	MATERIAL: SEE TABLE	DRAWING TYPE: ASSEMBLY DRAWING	
REVISION: J	FINISH: N/A	COMMSCOPE® Hickory, NC 28602 U.S.A.	
	WEIGHT: N/A		

ITEM	PART NO.	DESCRIPTION	QTY.	WEIGHT	NOTE NO.
1	SFG2302	ARM MOUNT WELDMENT	1	59.80 LBS	
2	SFG2303	TOP TAPER BRACKET	1	22.61 LBS	
3	SFG2304	LOWER TAPER BRACKET	1	19.17 LBS	
4	SFG2305	TOWER SADDLE FRONT CLAMP	2	22.85 LBS	
5	SFG2306	BACK TOWER CLAMP WELDMENT	2	12.70 LBS	
6	SAB01	FORMED CLAMP	2	1.35 LBS	
7	XA2020.01	CROSS OVER ANGLE	11	2.65 LBS	
8	OS15034	3/4" X 1-1/2" OFFSET COLLAR	1	0.14 LBS	
9	MT38420	3/4" X 20" GALV THREADED ROD	4	2.49 LBS	
10	GWF-06	3/4" GALV FLAT WASHER	10	0.10 LBS	
11	GWL-06	3/4" GALV LOCK WASHER	8	0.04 LBS	
12	GN-06	3/4" GALV HEX NUT	12	0.15 LBS	
13	GUB-4240	1/2" X 2-1/2" X 4" GALV U-BOLT	27	0.56 LBS	
14	GB-0414A	1/2" X 1-1/2" GALV BOLT KIT (A325)	1	0.13 LBS	
15	GB-0426A	1/2" X 2-3/4" GALV BOLT KIT (A325)	1	0.20 LBS	
16	MT-379-8	1/2" X 8" GALV THREADED ROD	2	0.44 LBS	
17	GWF-04	1/2" GALV FLAT WASHER	4	0.03 LBS	
18	GWL-04	1/2" GALV LOCK WASHER	4	0.01 LBS	
19	GN-04	1/2" GALV HEX NUT	4	0.04 LBS	
20	GUB-5456	5/8" X 4-5/8" X 6½" GALV U-BOLT	2	1.42 LBS	
21	MT-651-150	PIPE, 2-3/8"OD X 150" GALV	1	36.01 LBS	
22	MT-xxxx	∅2.375" OD PIPE	-	-	1
23	FACE PIPE	∅2.375"OD PIPE (SEE TABLE)	2	46.02 LBS	
24	GB-0624A	3/4" X 2-1/2" GALV BOLT KIT (A325)	2	0.47 LBS	
25	GB-0520A	5/8" X 2" GALV BOLT KIT (A325)	4	0.26 LBS	
26	GB-05225	5/8" X 2-1/4" GALV BOLT KIT	8	0.28 LBS	
27	SFG2367L	SECTOR FRAME ARM LEFT WELDMENT	1	81.38 LBS	
28	SFG2367R	SECTOR FRAME ARM RIGHT WELDMENT	1	81.38 LBS	

SFG23 SERIES PIPE CHART

PART NO.	DESCRIPTION	FACE PIPE	ANTENNA PIPE
SFG23-10-x-96	SECTOR FRAME 10'-8" FACE, 96" ANTENNA PIPE	SFG23126	MT-651-96
SFG23-10-x-126	SECTOR FRAME 10'-8" FACE, 126" ANTENNA PIPE	SFG23126	MT-537
SFG23-12-x-96	SECTOR FRAME 12'-8" FACE, 96" ANTENNA PIPE	SFG23150	MT-651-96
SFG23-12-x-126	SECTOR FRAME 12'-8" FACE, 126" ANTENNA PIPE	SFG23150	MT-537
SFG23-14-x-96	SECTOR FRAME 14'-8" FACE, 96" ANTENNA PIPE	SFG23174	MT-651-96
SFG23-14-x-126	SECTOR FRAME 14'-8" FACE, 126" ANTENNA PIPE	SFG23174	MT-537

SFG23-12-4-96 SHOWN



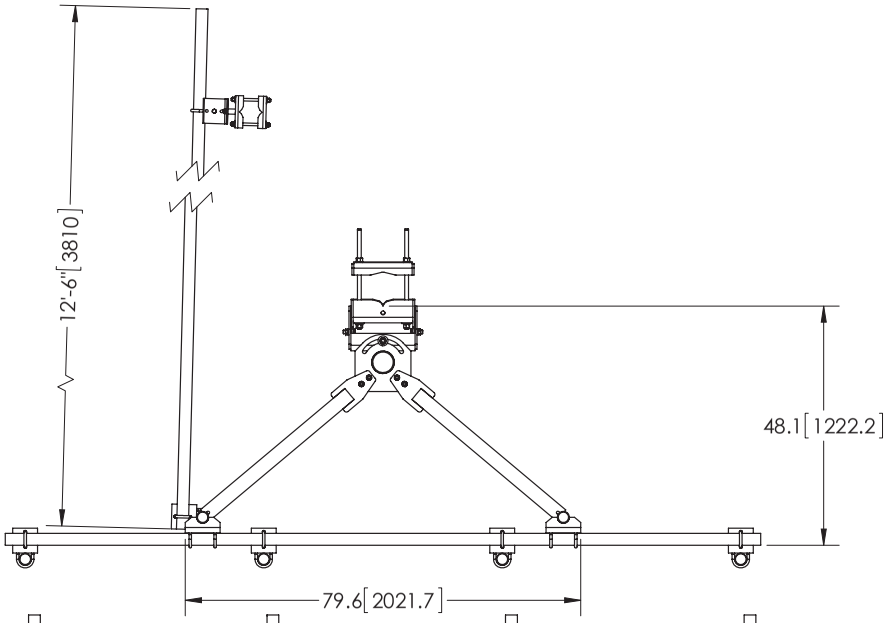
PATENT PENDING

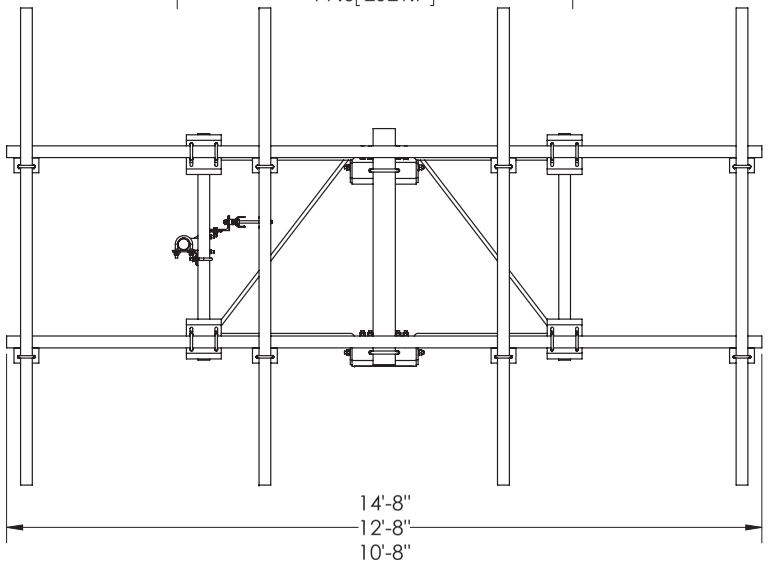
NOTES:
1. SEE PIPE CHART.

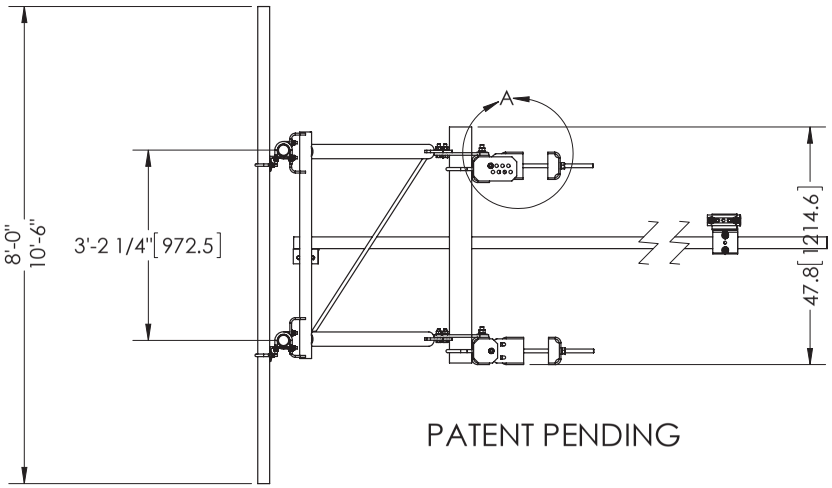
ALL DIMENSIONS ARE IN INCHES U.O.S.
TOLERANCES UNLESS OTHERWISE SPECIFIED:
.X = ± .12 ANGLES ±2°
.XX = ± .06 FRACTIONS ±1/32
.XXX = ± .03
REMOVE BURRS AND BREAK EDGES .005
DO NOT SCALE THIS PRINT

DRAWN BY: MSM	SHEET: 2 of 8	PART NUMBER: SFG23 SERIES	
CHECKED BY: TP	SCALE: NTS	DESCRIPTION:	
DATE: 03/02/15	MATERIAL: A-36, A-500	DRAWING TYPE: ASSEMBLY DRAWING	
REVISION: J	FINISH: GALV A123	COMMSCOPE® Hickory, NC 28602 U.S.A.	
	WEIGHT: N/A		

SFG23-12-4-96
SHOWN







PATENT PENDING

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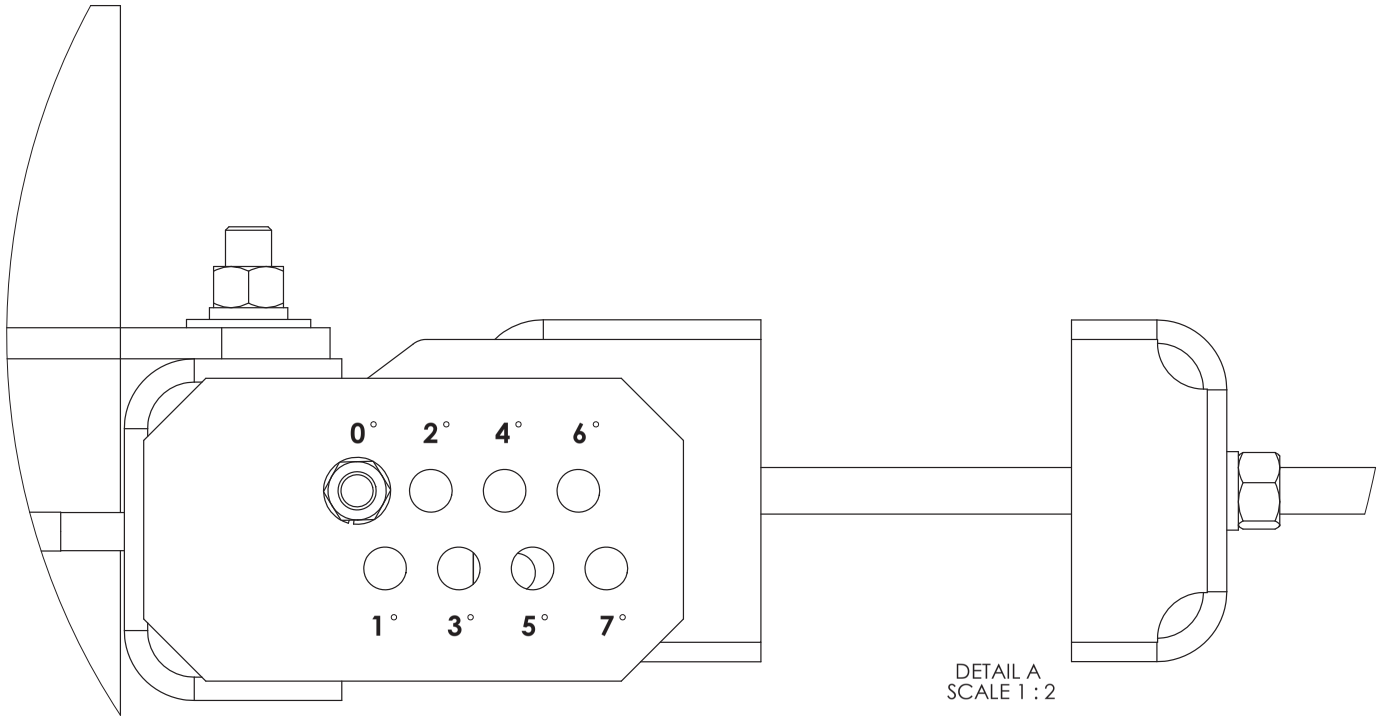
TOLERANCES UNLESS OTHERWISE SPECIFIED:
.X = ± .12 ANGLES ±2°
.XX = ± .06 FRACTIONS ±1/32
.XXX = ± .03

REMOVE BURRS AND BREAK EDGES .005

DO NOT SCALE THIS PRINT

DRAWN BY: MSM	SHEET: 3 of 8	PART NUMBER: SFG23 SERIES	
CHECKED BY: TP	SCALE: NTS	DESCRIPTION:	
DATE: 03/02/15	MATERIAL: A-36, A-500	DRAWING TYPE: ASSEMBLY DRAWING	
REVISION: J	FINISH: GALV A123	COMMSCOPE® Hickory, NC 28602 U.S.A.	
	WEIGHT: N/A		

TAPER GUIDE



DETAIL A
SCALE 1 : 2

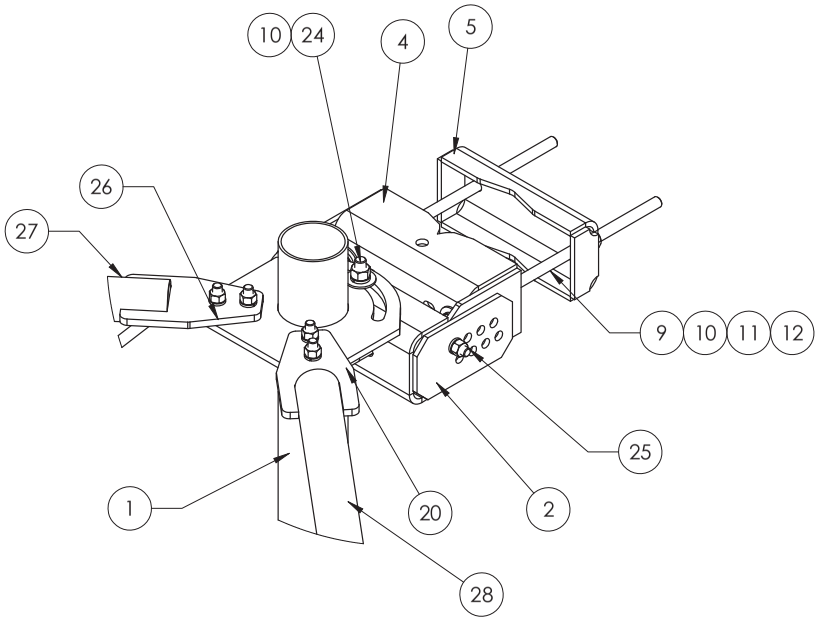
PATENT PENDING

ALL DIMENSIONS ARE IN INCHES U.O.S.
TOLERANCES UNLESS OTHERWISE SPECIFIED:
.X = ± .12 ANGLES ±2°
.XX = ± .06 FRACTIONS ±1/32
.XXX= ± .03

REMOVE BURRS AND BREAK EDGES .005

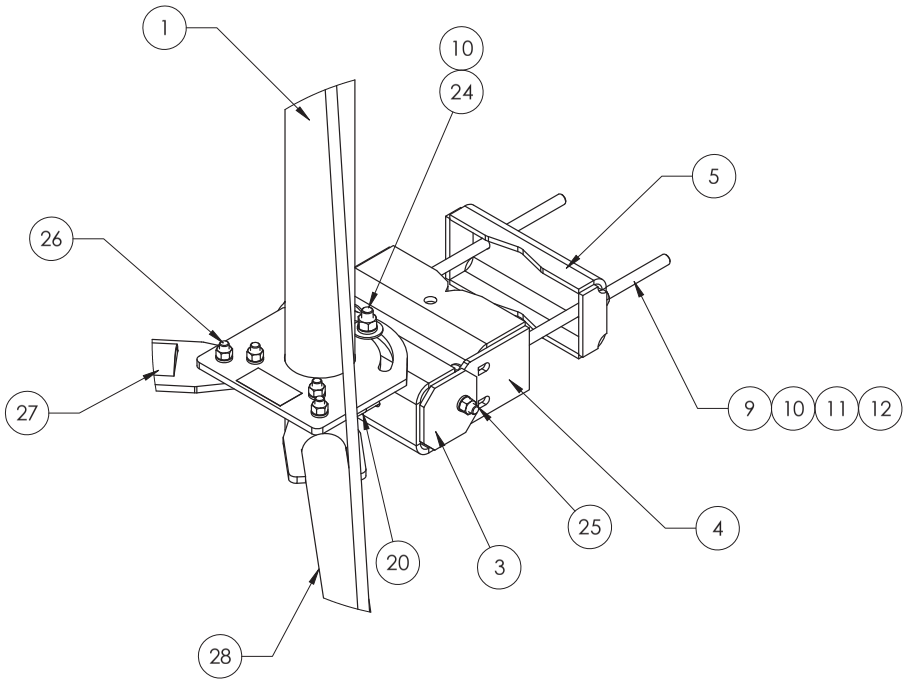
DO NOT SCALE THIS PRINT

DRAWN BY: MSM	SHEET: 4 of 8	PART NUMBER: SFG23 SERIES	
CHECKED BY: TP	SCALE: NTS	DESCRIPTION:	
DATE: 03/02/15	MATERIAL: A-36, A-500	DRAWING TYPE: ASSEMBLY DRAWING	
REVISION: J	FINISH: GALV A123	COMMSCOPE® Hickory, NC 28602 U.S.A.	
	WEIGHT: N/A		



DETAIL B
SCALE 1 : 8

SEE SHEETS 7 & 8 FOR ASSEMBLY INSTRUCTIONS



DETAIL C
SCALE 1 : 8

SEE SHEET 7 & 8 FOR ASSEMBLY INSTRUCTIONS

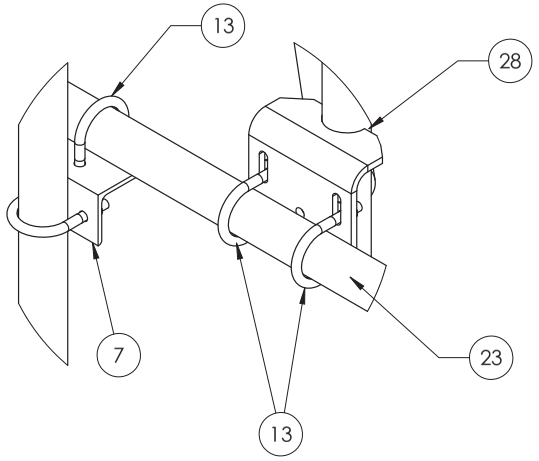
PATENT PENDING

ALL DIMENSIONS ARE IN INCHES U.O.S.
TOLERANCES UNLESS OTHERWISE SPECIFIED:
.X = ± .12 ANGLES ±2°
.XX = ± .06 FRACTIONS ±1/32
.XXX= ± .03

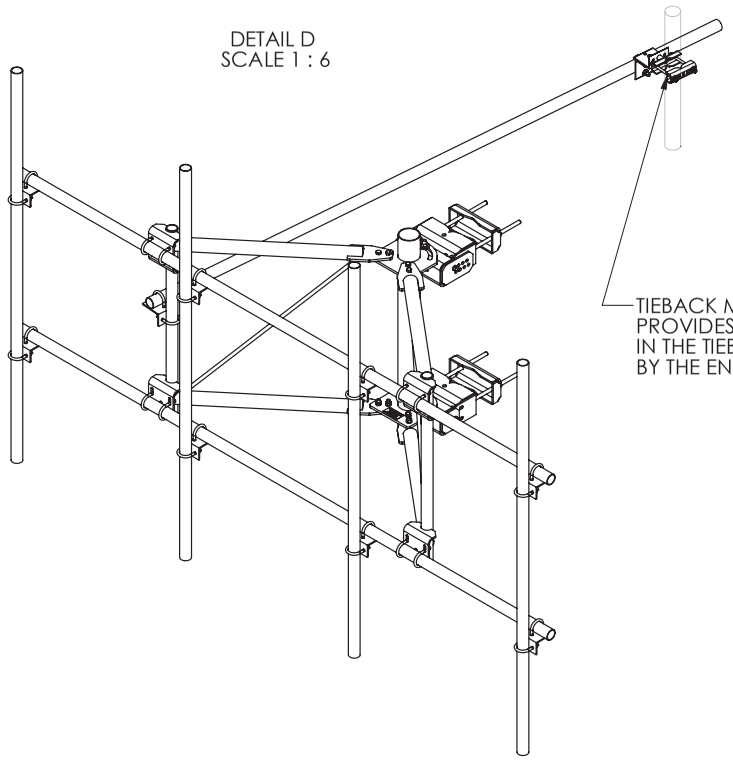
REMOVE BURRS AND BREAK EDGES .005

DO NOT SCALE THIS PRINT

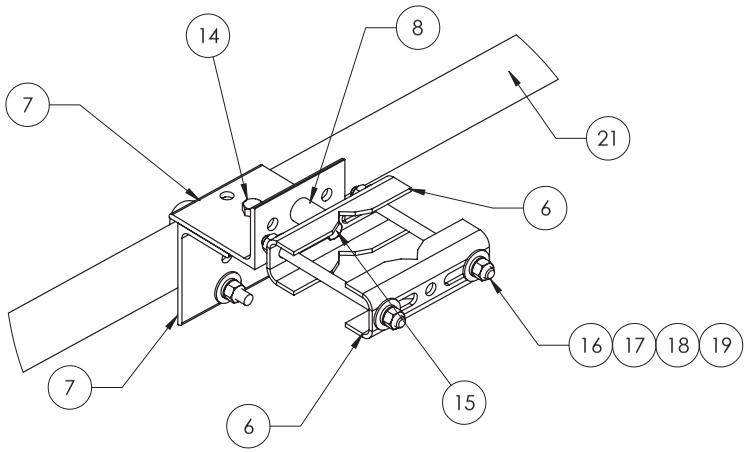
DRAWN BY: MSM	SHEET: 5 of 8	PART NUMBER: SFG23 SERIES	
CHECKED BY: TP	SCALE: NTS	DESCRIPTION:	
DATE: 03/02/15	MATERIAL: A-36, A-500	DRAWING TYPE: ASSEMBLY DRAWING	
REVISION: J	FINISH: GALV A123	COMMSCOPE® Hickory, NC 28602 U.S.A.	
	WEIGHT: N/A		



DETAIL D
SCALE 1 : 6



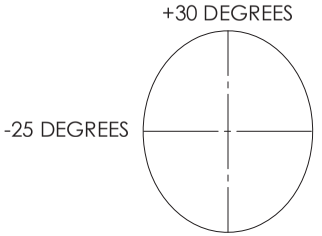
TIEBACK MUST BE CONNECTED TO A RIGID MEMBER THAT PROVIDES ADEQUATE SUPPORT WITHIN THE LIMITS NOTED IN THE TIEBACK ANGLE RANGE DETAIL. UNLESS APPROVED BY THE ENGINEER OF RECORD.



DETAIL E
SCALE 1 : 5

TIEBACK ANGLE RANGE DETAIL

±30 DEGREES VERTICAL
±25 DEGREES HORIZONTAL



PATENT PENDING

ALL DIMENSIONS ARE IN INCHES U.O.S.
TOLERANCES UNLESS OTHERWISE SPECIFIED:
.X = ± .12 ANGLES ±2°
.XX = ± .06 FRACTIONS ±1/32
.XXX = ± .03

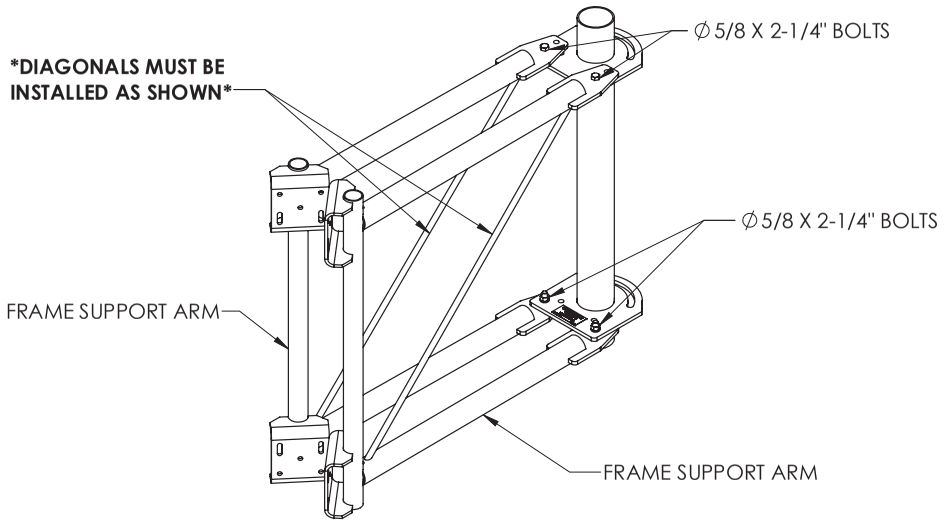
REMOVE BURRS AND BREAK EDGES .005

DO NOT SCALE THIS PRINT

DRAWN BY: MSM	SHEET: 6 of 8	PART NUMBER: SFG23 SERIES	
CHECKED BY: TP	SCALE: NTS	DESCRIPTION:	
DATE: 03/02/15	MATERIAL: A-36, A-500	DRAWING TYPE: ASSEMBLY DRAWING	
REVISION: J	FINISH: GALV A123	COMMSCOPE® Hickory, NC 28602 U.S.A.	
	WEIGHT: N/A		

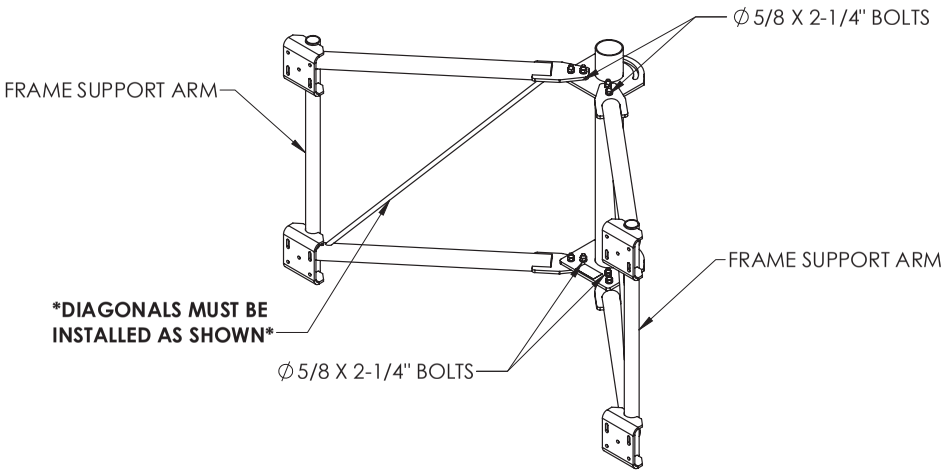
ASSEMBLY INSTRUCTION ORDER

STEP 1: LOOSEN ∅5/8 HARDWARE TO OPEN FRAME SUPPORT ARMS.



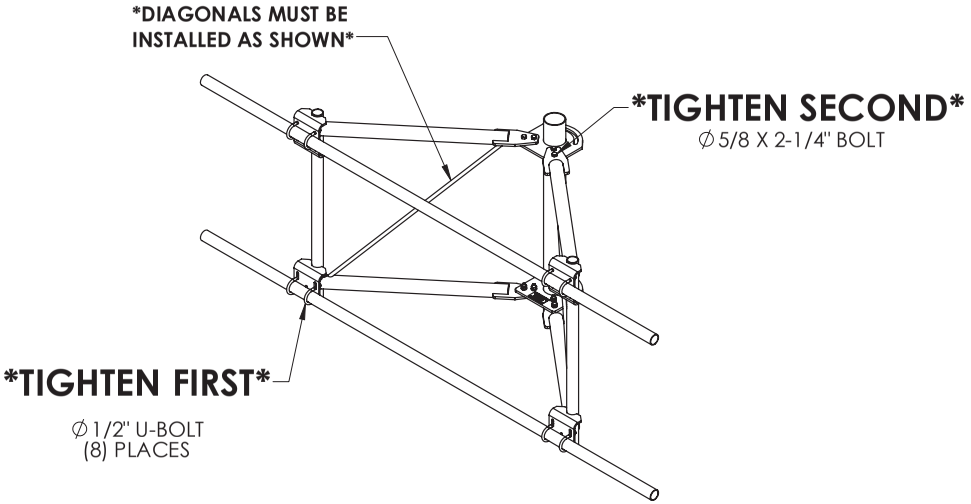
STEP 2: OPEN FRAME SUPPORT ARMS AND INSTALL (4) ∅5/8 X 2-1/4" BOLTS.

DO NOT TIGHTEN ∅5/8" BOLTS AT THIS TIME



STEP 3: INSTALL FACE PIPES AND ∅1/2" U-BOLTS

TIGHTEN U-BOLTS FIRST AND ∅5/8" BOLTS SECOND



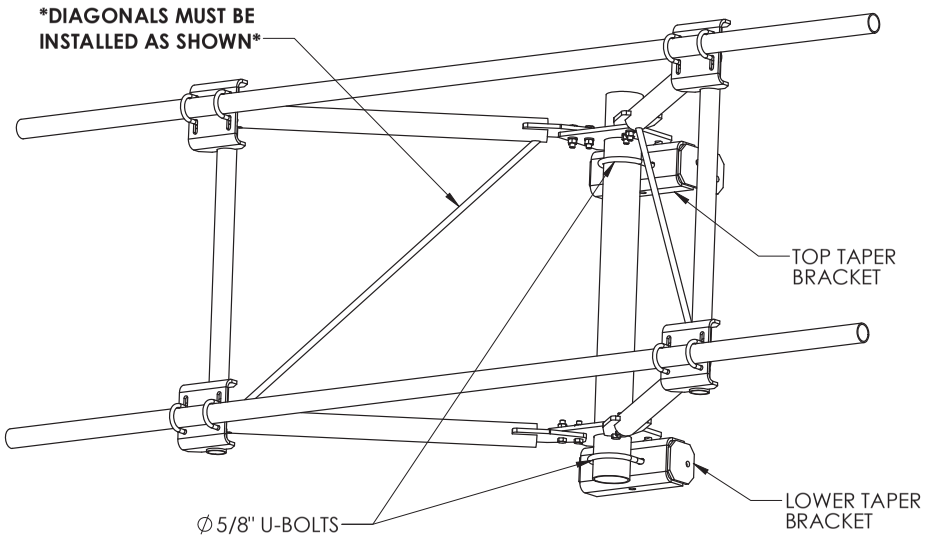
SECTOR FRAME MUST BE INSTALLED WITH DIAGONALS ORIENTED AS SHOWN

PATENT PENDING

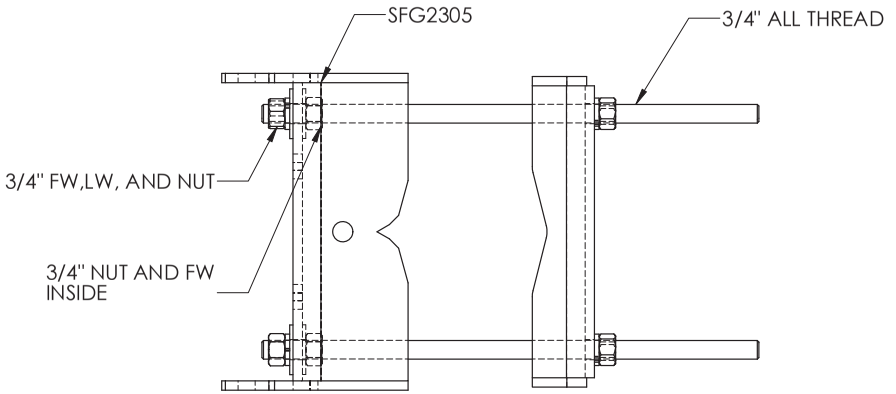
ALL DIMENSIONS ARE IN INCHES U.O.S.
TOLERANCES UNLESS OTHERWISE SPECIFIED:
.X = ± .12 ANGLES ±2°
.XX = ± .06 FRACTIONS ±1/32
.XXX = ± .03
REMOVE BURRS AND BREAK EDGES .005
DO NOT SCALE THIS PRINT

DRAWN BY: MSM	SHEET: 7 of 8	PART NUMBER: SFG23 SERIES	
CHECKED BY: TP	SCALE: NTS	DESCRIPTION:	
DATE: 03/02/15	MATERIAL: A-36, A-500	DRAWING TYPE: ASSEMBLY DRAWING	
REVISION: J	FINISH: GALV A123	COMMSCOPE® Hickory, NC 28602 U.S.A.	
	WEIGHT: N/A		

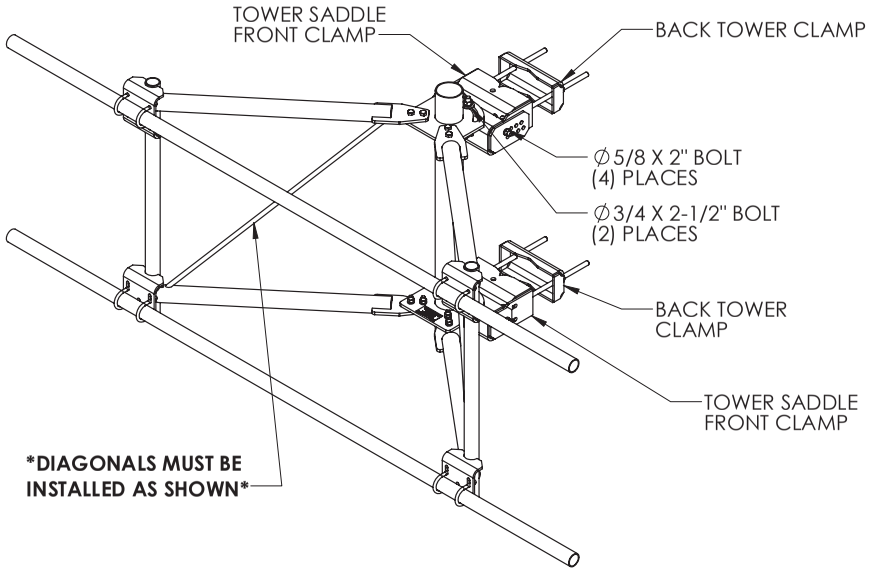
STEP 4: ASSEMBLE TO TOWER SADDLE FRONT CLAMP



STEP 5: ASSEMBLE TOWER SADDLE FRONT CLAMP



STEP 6: ATTACH TOWER CLAMPS



SECTOR FRAME MUST BE INSTALLED WITH DIAGONALS ORIENTED AS SHOWN

PATENT PENDING

ALL DIMENSIONS ARE IN INCHES U.O.S.
TOLERANCES UNLESS OTHERWISE SPECIFIED:
.X = ± .12 ANGLES ±2°
.XX = ± .06 FRACTIONS ±1/32
.XXX = ± .03

REMOVE BURRS AND BREAK EDGES .005

DO NOT SCALE THIS PRINT

DRAWN BY: MSM	SHEET: 8 of 8	PART NUMBER: SFG23 SERIES	
CHECKED BY: TP	SCALE: NTS	DESCRIPTION:	
DATE: 03/02/15	MATERIAL: A-36, A-500	DRAWING TYPE: ASSEMBLY DRAWING	
REVISION: J	FINISH: GALV A123	COMMSCOPE® Hickory, NC 28602 U.S.A.	
	WEIGHT: N/A		

Exhibit F

EBI Consulting

environmental | engineering | due diligence

RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

T-Mobile Existing Facility

Site ID: CT11220A

Cheshire/ Rt -10
751 Higgins Road
Cheshire, Connecticut 06410

September 22, 2020

EBI Project Number: 6220004941

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**8.45%**

21 B Street, Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

September 22, 2020

T-Mobile
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, Connecticut 06002

Emissions Analysis for Site: CT11220A - Cheshire/ Rt -10

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **751 Higgins Road** in **Cheshire, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile 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 ($\mu W/cm^2$). 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.

Public 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 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency 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 done for the proposed T-Mobile Wireless antenna facility located at 751 Higgins Road in Cheshire, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile 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 manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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.

For all calculations, all equipment was calculated using the following assumptions:

1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.

3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

5) 4 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

6) 2 UMTS channels (AWS Band - 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

7) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

8) 2 LTE channels (BRS Band - 2500 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

9) 2 NR channels (BRS Band - 2500 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

10) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. 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. This is rarely the case, and if so, is never continuous.

11) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

12) 12) The antennas used in this modeling are the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector A, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector B. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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.

13) The antenna mounting height centerline of the proposed antennas is 212 feet above ground level (AGL).

14) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B
Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz
Gain:	22.05 dBd / 22.05 dBd	Gain:	22.05 dBd / 22.05 dBd
Height (AGL):	212 feet	Height (AGL):	212 feet
Channel Count:	4	Channel Count:	4
Total TX Power (W):	160 Watts	Total TX Power (W):	160 Watts
ERP (W):	25,651.93	ERP (W):	25,651.93
Antenna A1 MPE %:	**2.05%**	Antenna B1 MPE %:	**2.05%**
Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 16.35 dBd
Height (AGL):	212 feet	Height (AGL):	212 feet
Channel Count:	9	Channel Count:	9
Total TX Power (W):	380 Watts	Total TX Power (W):	380 Watts
ERP (W):	11,055.53	ERP (W):	11,055.53
Antenna A2 MPE %:	**1.33%**	Antenna B2 MPE %:	**1.33%**
Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32
Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz
Gain:	15.35 dBd / 15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.35 dBd / 15.85 dBd
Height (AGL):	212 feet	Height (AGL):	212 feet
Channel Count:	8	Channel Count:	8
Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts
ERP (W):	12,841.53	ERP (W):	12,841.53
Antenna A3 MPE %:	**1.03%**	Antenna B3 MPE %:	**1.03%**

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	4.41%
AT&T	1.37%
Nextel	0.13%
Verizon	1.39%
VoiceStream	0.01%
Sprint	1.14%
Site Total MPE % :	8.45%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	4.41%
T-Mobile Sector B Total:	4.41%
Site Total MPE % :	8.45%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 2500 MHz LTE	2	6412.98	212.0	10.26	2500 MHz LTE	1000	1.03%
T-Mobile 2500 MHz NR	2	6412.98	212.0	10.26	2500 MHz NR	1000	1.03%
T-Mobile 600 MHz LTE	2	591.73	212.0	0.95	600 MHz LTE	400	0.24%
T-Mobile 600 MHz NR	1	1577.94	212.0	1.26	600 MHz NR	400	0.32%
T-Mobile 700 MHz LTE	2	648.82	212.0	1.04	700 MHz LTE	467	0.22%
T-Mobile 1900 MHz LTE	2	2203.69	212.0	3.53	1900 MHz LTE	1000	0.35%
T-Mobile 2100 MHz UMTS	2	1294.56	212.0	2.07	2100 MHz UMTS	1000	0.21%
T-Mobile 1900 MHz GSM	4	1028.30	212.0	3.29	1900 MHz GSM	1000	0.33%
T-Mobile 1900 MHz LTE	2	2056.61	212.0	3.29	1900 MHz LTE	1000	0.33%
T-Mobile 2100 MHz LTE	2	2307.55	212.0	3.69	2100 MHz LTE	1000	0.37%
						Total:	**4.41%**

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

Summary

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

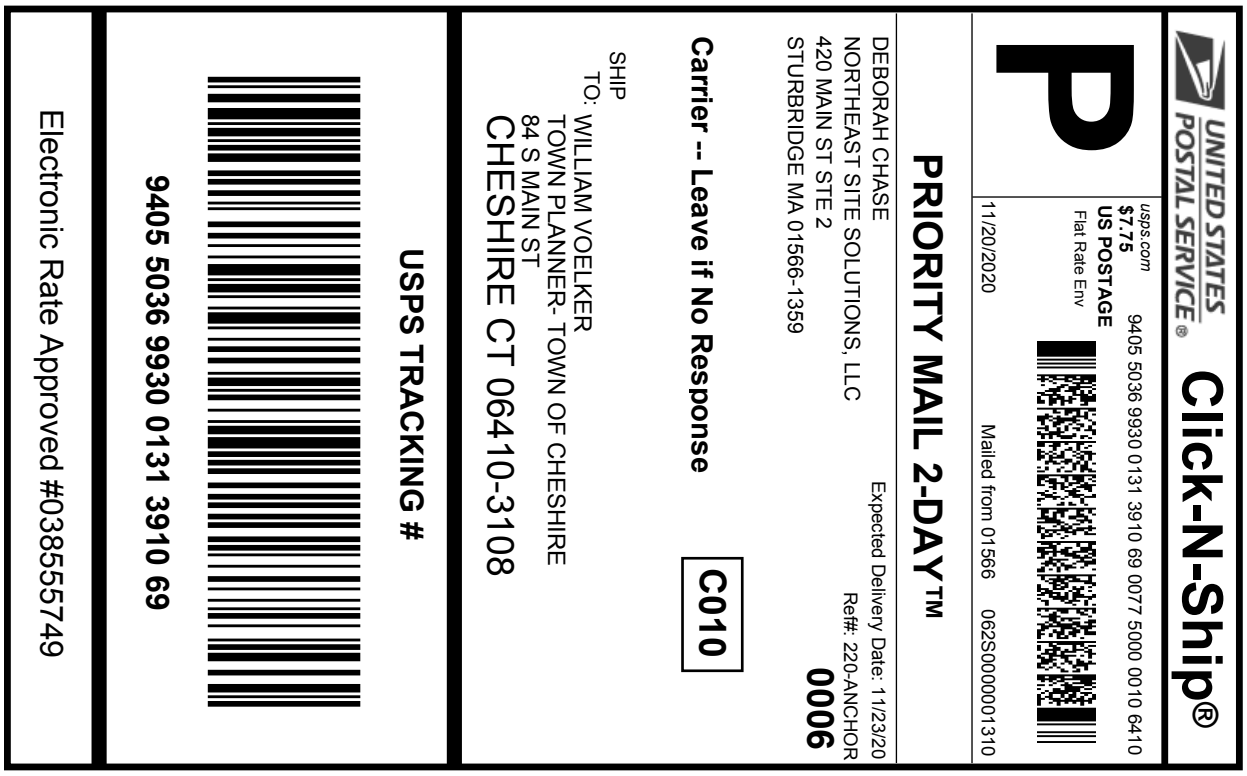
The anticipated maximum composite contributions from the T-Mobile facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

T-Mobile Sector	Power Density Value (%)
Sector A:	4.41%
Sector B:	4.41%
T-Mobile Maximum MPE % (Sector A):	4.41%
Site Total:	8.45%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **8.45%** 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.

Exhibit G



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Ship Date:	11/20/2020
Expected Delivery Date:	11/23/2020

Priority Mail® Postage:	**$7.75**
Total:	**$7.75**

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NORTHEAST SITE SOLUTIONS, LLC
420 MAIN ST STE 2
STURBRIDGE MA 01566-1359

To: WILLIAM VOELKER
TOWN PLANNER- TOWN OF CHESHIRE
84 S MAIN ST
CHESHIRE CT 06410-3108

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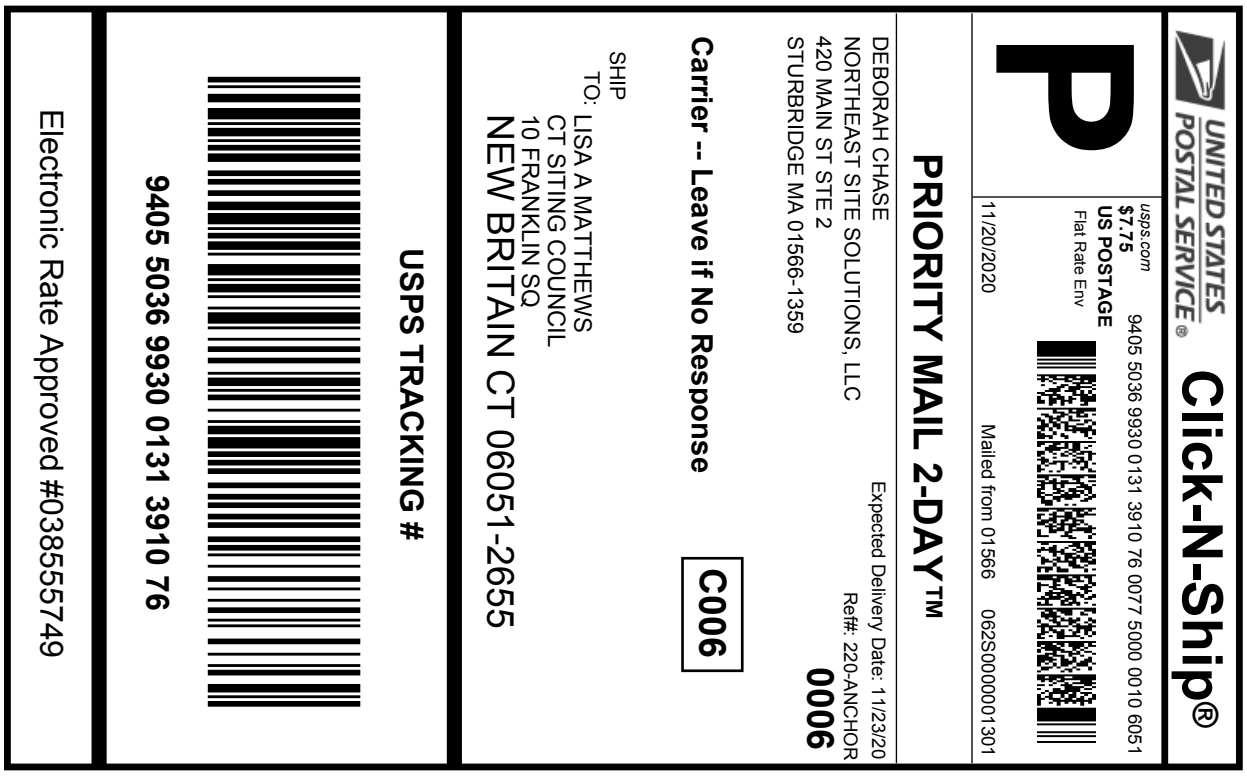

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Trans. #:	514235783
Print Date:	11/18/2020
Ship Date:	11/20/2020
Expected Delivery Date:	11/23/2020

Priority Mail® Postage:	**$7.75**
Total:	**$7.75**

From: DEBORAH CHASE Ref#: 220-ANCHOR
NORTHEAST SITE SOLUTIONS, LLC
420 MAIN ST STE 2
STURBRIDGE MA 01566-1359

To: LISA A MATTHEWS
CT SITING COUNCIL
10 FRANKLIN SQ
NEW BRITAIN CT 06051-2655

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PRIORITY MAIL 2-DAY™

DEBORAH CHASE
NORTHEAST SITE SOLUTIONS, LLC
420 MAIN ST STE 2
STURBRIDGE MA 01566-1359

Expected Delivery Date: 11/23/20
Ref#: 220-ANCHOR

0006

Carrier -- Leave if No Response

C010

SHIP TO: SEAN KIMBALL
TOWN MANAGER- TOWN OF CHESHIRE
84 S MAIN ST
CHESHIRE CT 06410-3108

USPS TRACKING #

9405 5036 9930 0131 3910 38

Electronic Rate Approved #038555749

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Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0131 3910 38

Trans. #:	514235783
Print Date:	11/18/2020
Ship Date:	11/20/2020
Expected Delivery Date:	11/23/2020

Priority Mail® Postage:	**$7.75**
Total:	**$7.75**

From: DEBORAH CHASE Ref#: 220-ANCHOR
NORTHEAST SITE SOLUTIONS, LLC
420 MAIN ST STE 2
STURBRIDGE MA 01566-1359

To: SEAN KIMBALL
TOWN MANAGER- TOWN OF CHESHIRE
84 S MAIN ST
CHESHIRE CT 06410-3108

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PRIORITY MAIL 2-DAY™

DEBORAH CHASE
NORTHEAST SITE SOLUTIONS, LLC
420 MAIN ST STE 2
STURBRIDGE MA 01566-1359

Expected Delivery Date: 11/23/20
Ref#: 220A-ANCH

0006

Carrier -- Leave if No Response

C036

SHIP TO: JEREMY COYLE
CBRE FOR AT&T TOWERS
2180 LAKE BLVD NE
FL 5B13)
BROOKHAVEN GA 30319-6004

USPS TRACKING #

9405 5036 9930 0132 6579 59

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4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0132 6579 59

Trans. #:	514338120
Print Date:	11/19/2020
Ship Date:	11/20/2020
Expected Delivery Date:	11/23/2020

Priority Mail® Postage:	**$7.75**
Total:	**$7.75**

From: DEBORAH CHASE Ref#: 220A-ANCH
NORTHEAST SITE SOLUTIONS, LLC
420 MAIN ST STE 2
STURBRIDGE MA 01566-1359

To: JEREMY COYLE
CBRE FOR AT&T TOWERS
2180 LAKE BLVD NE
FL 5B13)
BROOKHAVEN GA 30319-6004

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

UNITED STATES POSTAL SERVICE®

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

Exhibit H

Deborah Chase

From: Deborah Chase
Sent: Thursday, November 19, 2020 7:32 AM
To: 'townmanager@cheshirect.org'; 'wvoelker@cheshirect.org'
Cc: 'COYLE, JEREMY'
Subject: 751 HIGGINS ROAD CHESHIRE CT 06410 T-MOBILE EM APPLICATION (CT11220A-ANCHOR)
Attachments: 751 HIGGINS ROAD CHESHIRE CT 06410 T-MOBILE EM APPLICATION (CT11220A_Anchor).pdf

Good morning,
On behalf of our client, (T-Mobile), I am forwarding copies of T-Mobile Tower Share Application Request to collocate on a wireless telecommunications facility located at 751 Higgins Road in Cheshire CT.
Hard copies will be sent as well for your records.
Please do not hesitate to contact me with any questions.
Thank you very much

Deborah Chase
Senior Project Coordinator & Analyst
Mobile: 860-490-8839

Save a tree. Refuse.Reduce. Reuse. Recycle.