



NORTHEAST
SITE SOLUTIONS

Turnkey Wireless Development

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

August 17, 2022

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

RE: Notice of Exempt Modification
889A Colonel Ledyard Hwy, Ledyard CT 06339
Latitude: 41.46194167
Longitude: -72.02361111
T-Mobile Site#: CTNL058A_L600_Anchor_L1900

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 185-foot level of the existing 345-foot guyed tower at 889A Colonel Ledyard Hwy, Ledyard CT 06339. The 345-foot tower and property are both owned by Red Wolf Broadcasting. T-Mobile now intends to replace nine (9) of its existing antennas with three (3) new 600/700MHz 5G antenna, three (3) 2500 MHz 5G antenna, and three (3) 1900/2100 MHz antenna. The new antennas would be installed at the 185-foot level of the tower. T-Mobile is also proposing tower mount reinforcements.

Planned Modifications:

Remove:

- (6) 1-5/8" Coax
- (1) Hybrid Line
- (3) Twin Style 1B

Remove and Replace:

- (3) LNX -6515DS-A1M Antenna (**Remove**) - (3) Commscope VV-65A-R1- 1900/2100 MHz Antenna (**Replace**)
- (3) Air21 B2P B4A (**Remove**) – (3) AIR6419 2500 MHz **5G** Antenna (**Replace**)
- (3) Air21 B2A B4P (**Remove**) – (3) RFS APXVAALL24_43-U-NA20- 600/700MHz **5G** Antenna (**Replace**)
- (3) RRUS11 B12 (**Remove**) – (3) Radio 4480 B71+B85 (**Replace**)

Install New:

- (3) Radio 4460 B25+B66
- (3) Hybrid Line

Existing to Remain:

- (3) Valmont/SitePro 1 VFA10-U Mounts



NSS

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This facility was approved by the Town of Ledyard P&Z. Please see attached.

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.S.A. § 16-SOj-73, a copy of this letter is being sent to Mayor Fred Allyn, III, Elected Official and Juliet Hodge, Planning Director for the Town of Ledyard, 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



NSS

NORTHEAST
SITE SOLUTIONS

Turnkey Wireless Development

Attachments

cc:

Mayor Fred Allyn, III –Ledyard elected official
Town of Ledyard
741 Colonel Ledyard Highway
Ledyard, CT 06339

Juliet Hodge –Planning Director
Town of Ledyard
741 Colonel Ledyard Highway
Ledyard, CT 06339
Planning and Zoning Dept.

Attn: John J. Fuller – President and GM
Red Wolf Broadcasting - as property and tower owner
PO Box 357
Ledyard, CT 06339

Exhibit A

Original Facility Approval

Antenna 889 CLH Ledyard

Kyle Faulise <zoning.official@ledyardct.org>

Thu, Jul 18, 2019 at 11:31 AM

To: "victoria@northeastsitesolutions.com" <victoria@northeastsitesolutions.com>

Victoria,

Per our telephone conversation I have attached a scanned document from 2007. The document is a letter from the previous mayor to the siting council with some of the specs on the tower. Also as previously discussed we are still in the process of researching documents to locate what you are looking for in terms of an original zoning/ building permit. We have a wealth of documents/ reports from over the years that we need to go through. The building department has also advised me that they have found documentation that may suggest that the original tower was demolished and replaced. I can not confirm this at this time however I would like to discuss this with the Building Official on Monday 7/22/19, as he has been here for quite some time and probably has further knowledge on the subject.

Sincerely,

Kyle J. Faulise



Zoning and Wetlands Official, [Town of Ledyard](#)

[741 Colonel Ledyard Hwy.](#)

[Ledyard, CT 06339](#)

[\(860\) 464-3216](tel:(860)464-3216)

zoning.official@ledyardct.org



Letter Previous Mayor-Siting Council re. tower specs 889A CLH.pdf
100K

889A Colonel
Ledyard
Hwy.



TOWN OF LEDYARD
CONNECTICUT
OFFICE OF THE MAYOR

741 Colonel Ledyard Highway
Ledyard, CT 06339-1551
(860) 464-3222
FAX (860) 464-8455

Susan B. Mendenhall
Mayor
Mark J. Bancroft
Mayoral Assistant

September 26, 2007

S. Derek Phelps
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Public Act 04-226 – 3rd Annual Report

Dear Mr. Phelps:

Pursuant to Public Act 04-226, please find attached the Town's third annual report to the Siting Council containing the location, type, and height of each existing telecommunications tower within our local jurisdiction. There are no changes from our first report. It is noted that there is a new tower proposed at 12 Orchard Lane.

If you have any questions regarding this report please contact the Town Zoning Official, Scott Duffus, at (860) 464-3216.

Sincerely,

Susan B. Mendenhall
Mayor

Enclosure: 1

Cc: Zoning Official
Town Clerk

Town of Ledyard
Connecticut Siting Council Database Worksheet
CT General Statute 7-163b

Address	Latitude	Longitude	Twr Type	Owner	Ant Height	Twr Height
136 Vinegar Hill Rd	41-25-32	72-03-25	ssl	DPS	110.00	180.00
136 Vinegar Hill Rd	41-25-32	72-03-25	ssl	DPS	170.00	180.00
136 Vinegar Hill Rd	41-25-32	72-03-25	ssl	DPS	176.00	180.00
136 Vinegar Hill Rd	41-25-32	72-03-25	ssl	DPS	66-180	180.00
136 Vinegar Hill Rd	41-25-32	72-03-25	ssl	DPS	196.00	180.00
136 Vinegar Hill Rd	41-25-32	72-03-25	ssl	DPS	187.00	180.00
889A Colonel Ledyard Hwy.	41-27-43.11	72-01-24.92	gl	Red Wolf Broadcasting	180.00	347.00
889A Colonel Ledyard Hwy.	41-27-43.11	72-01-24.92	gl	Red Wolf Broadcasting	295 & 270	347.00
889A Colonel Ledyard Hwy.	41-27-43.11	72-01-24.92	gl	Red Wolf Broadcasting	200.00	347.00
889A Colonel Ledyard Hwy.	41-27-43.11	72-01-24.92	gl	Red Wolf Broadcasting	190.00	347.00
889A Colonel Ledyard Hwy.	41-27-43.11	72-01-24.92	gl	Red Wolf Broadcasting	180.00	347.00
889A Colonel Ledyard Hwy.	41-27-43.11	72-01-24.92	gl	Red Wolf Broadcasting	190.00	347.00

737 9:30

0333

Bentman

Antenna present.
in Antenna

Exhibit B

Property Card

Town of Ledyard Property Summary Report

889A COLONEL LEDYARD HWY

PARCEL ID:	40-530-889-A
LOCATION:	889A COLONEL LEDYARD HWY
OWNER NAME:	RED WOLF BROADCASTING



OWNER OF RECORD
RED WOLF BROADCASTING
P O BOX 357
LEDYARD, CT 06339

LIVING AREA:	null	ZONING:	R60	ACREAGE:	0.00
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SALES HISTORY

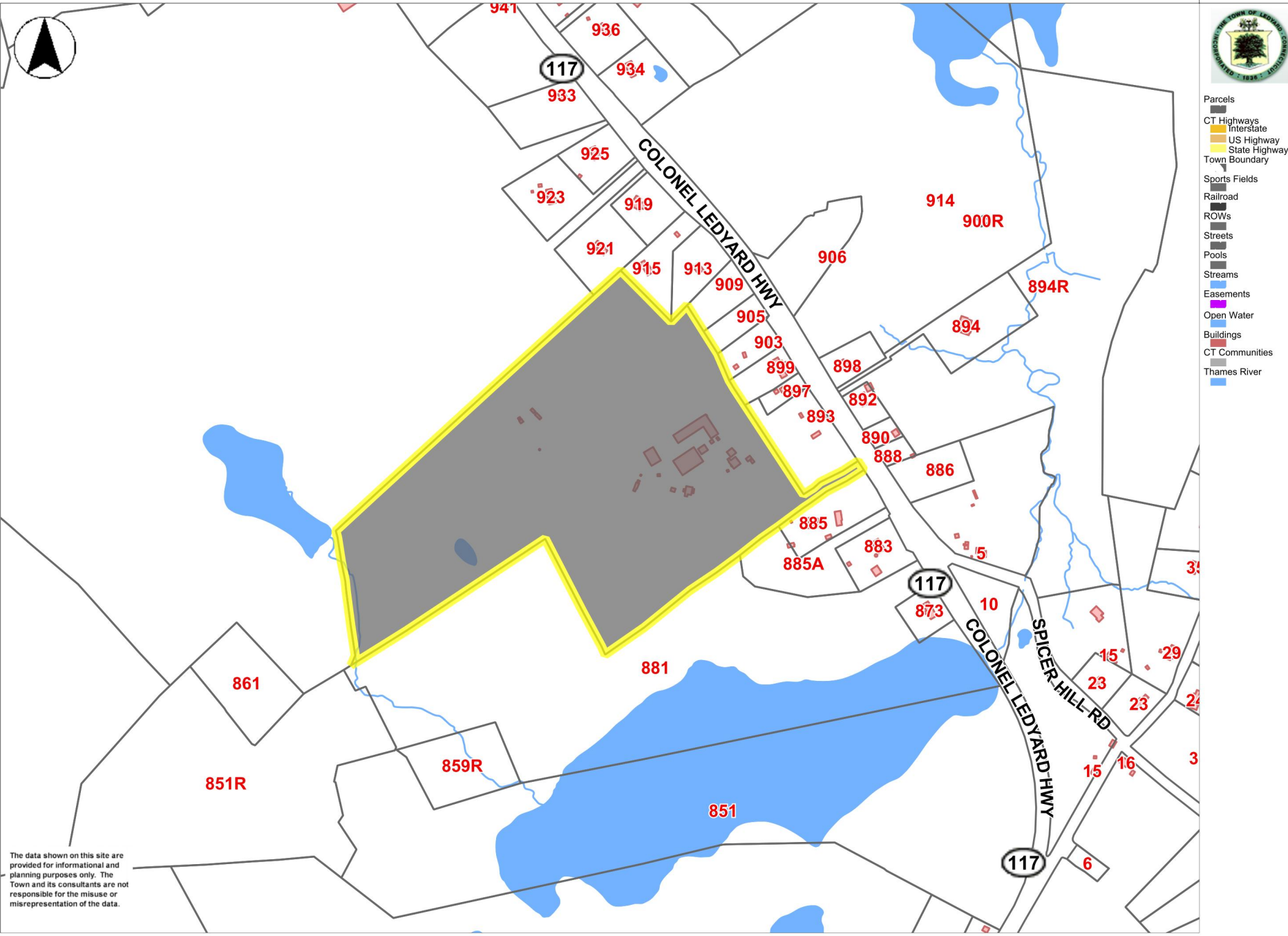
OWNER	BOOK / PAGE	SALE DATE	SALE PRICE
RED WOLF BROADCASTING			\$0.00

CURRENT ASSESSED VALUE

TOTAL:	\$113,820.00	IMPROVEMENTS:	\$113,820.00	LAND:	\$0.00
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ASSESSING HISTORY

FISCAL YEAR	TOTAL VALUE	IMPROVEMENT VALUE	LAND VALUE
2018	\$113,820.00	\$113,820.00	\$0.00
2017	\$113,820.00	\$113,820.00	\$0.00
2016	\$113,820.00	\$113,820.00	\$0.00
2015	\$113,820.00	\$113,820.00	\$0.00
2014	\$113,820.00	\$113,820.00	\$0.00



The data shown on this site are provided for informational and planning purposes only. The Town and its consultants are not responsible for the misuse or misrepresentation of the data.

Exhibit C

Construction Drawings

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MODIFICATION OF EXISTING WIRELESS FACILITY BY

T-Mobile

T-MOBILE NORTHEAST LLC

PROJECT TITLE: ANCHOR-L600-L1900

SITE NUMBER: CTNL058A

SITE NAME: SITE NAME: NL058/REDWOLF_ET

SITE ADDRESS: 889A COLONEL LEDYARD HIGHWAY
LEDYARD, CT 06339

(RF CONFIGURATION: (67E5998E_1XAIR+1OP+1QP)

PROJECT NOTES:

1. THIS IS AN UNMANNED TELECOMMUNICATION FACILITY AND NOT FOR HUMAN HABITATION:
HANDICAPPED ACCESS IS NOT REQUIRED.
POTABLE WATER OR SANITARY SERVICE IS NOT REQUIRED.
NO OUTDOOR STORAGE OR ANY
SOLID WASTE RECEPTACLES REQUIRED.
2. CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON THE JOB SITE. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. FAILURE TO NOTIFY THE ARCHITECT/ENGINEER PLACES THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.
3. DEVELOPMENT AND USE OF THE SITE WILL CONFORM TO ALL APPLICABLE CODES, ORDINANCES AND SPECIFICATIONS.

REFER TO STRUCTURAL ANALYSIS REPORT TITLED " STRUCTURAL ANALYSIS REPORT - GUYED TOWER " SITE ID: CTNL058A, DATED MAY 26, 2022 AND "MOUNT STRUCTURAL ANALYSIS REPORT" DATED MAY 26, 2022, PREPARED BY EFI GLOBAL, INC.

CODE COMPLIANCE:

ALL WORK SHALL COMPLY WITH THE CURRENT NATIONAL AND CONNECTICUT STATE BUILDING AND LIFE SAFETY CODES, SUPPLEMENTS AND AMENDMENTS INCLUDING BUT NOT LIMITED TO THE LATEST EDITION OF:

CONNECTICUT STATE BUILDING CODE (CSBC).
ANSI/TIA-222-G STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.
NATIONAL ELECTRICAL CODE (NEC) FOR POWER AND GROUNDING REQUIREMENTS.

OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA).

NFPA - NATIONAL FIRE PROTECTION ASSOCIATION.



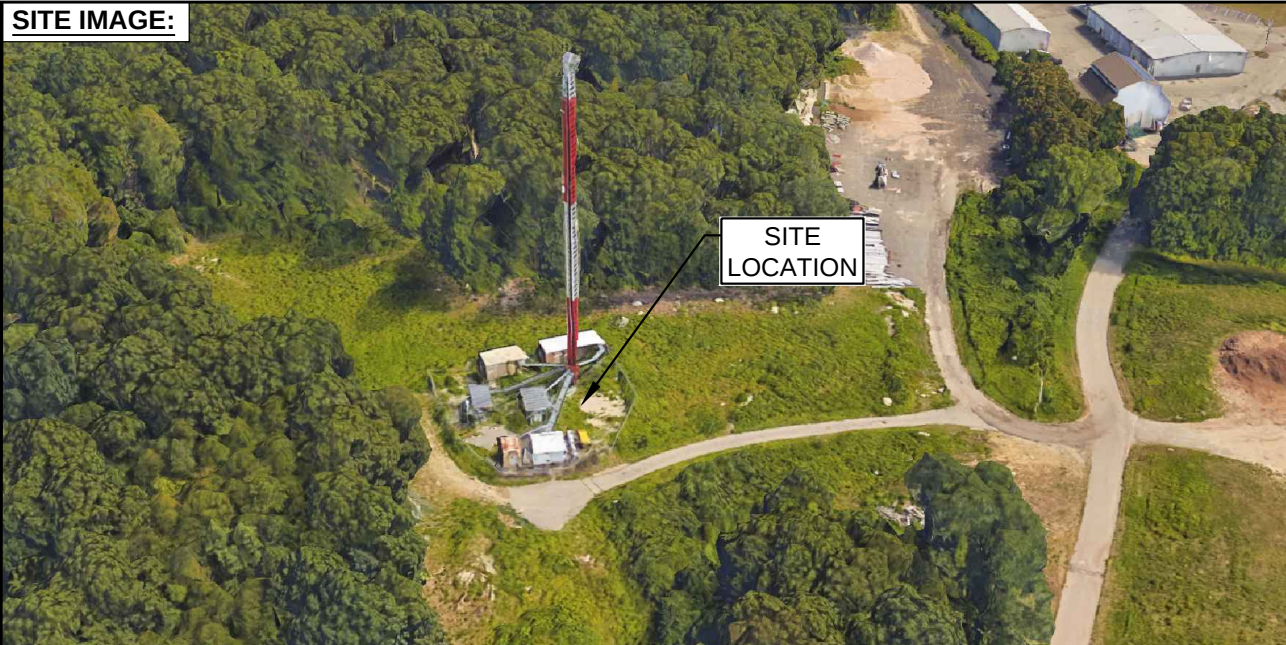
Connecticut - Call Before You Dig
811 or
1-800-922-4455

Advance Notice:
Minimum of 2 working days in advance, no
more than 30 days in advance

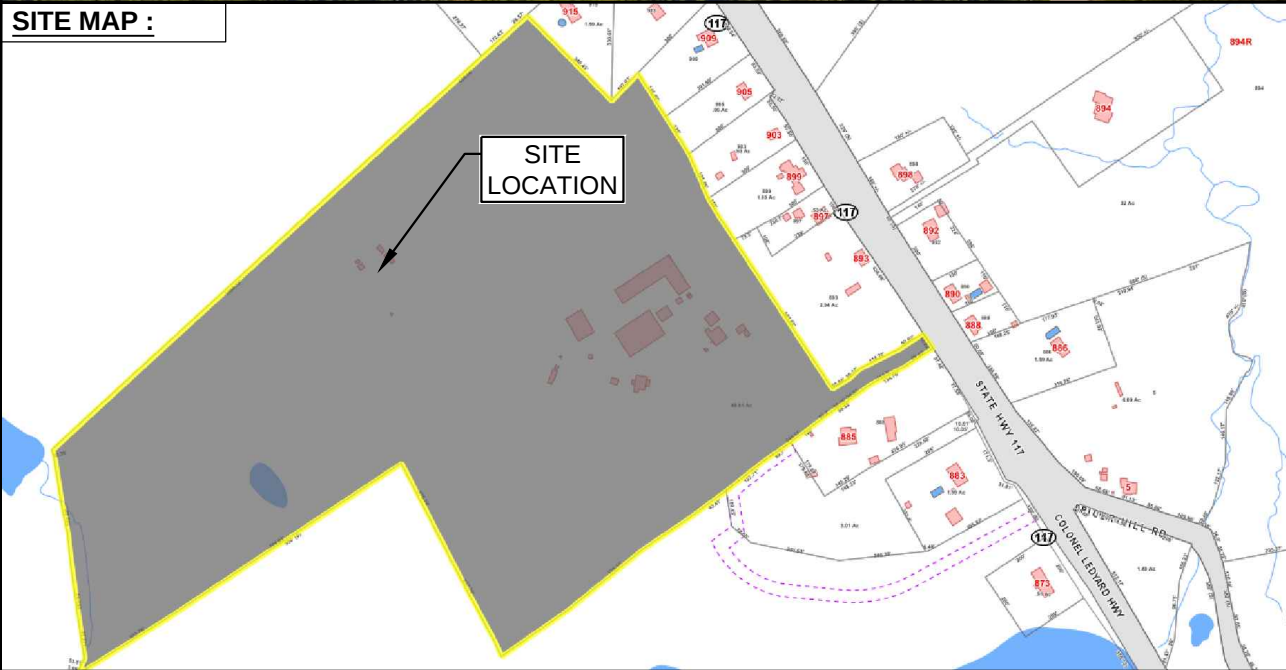
APPROVALS:

FSA CM	DATE
RF ENGINEER	DATE
FOPS	DATE
T-MOBILE ENGINEERING AND DEVELOPMENT	DATE
	DATE
	DATE

SITE IMAGE:



SITE MAP :



PROJECT SCOPE:

UPGRADE OF EXISTING WIRELESS FACILITY AS FOLLOWS:
UPGRADE EXISTING RBS 3106 CABINET INTERNALLY.
ADD (1) ENCLOSURE 6160 SITE SUPPORT CABINET.
ADD (1) BATTERY CABINET B160.
REPLACE (9) OF (9) EXISTING ANTENNAS ON TOWER.
ADD (6) RADIO REMOTE UNITS AND (3) DIPLEXERS AT ANTENNA.
REMOVE ALL (6) EXISTING 1-5/8" COAX, REMOVE (1) EXISTING 9X18 HCS, ADD (3) 6X12 HCS, FOR FINAL COUNT OF (3) 6X12 HCS CABLES.

PROJECT INFORMATION:

ADDRESS: 889A COLONEL LEDYARD HIGHWAY
LEDYARD, CT 06339

PARCEL ID: 40-530-889-A

ZONING DISTRICT: R-60

COORDINATES: 41° 27' 42.99" N, 72° 01' 24.99" W

AVERAGE GROUND ELEV.: 312± (AMSL)

PROJECT TEAM:

APPLICANT: T-MOBILE NORTHEAST, LLC.
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

PROPERTY OWNER: RED WOLF BROADCASTING
889A COLONEL LEDYARD HIGHWAY
LEDYARD, CT 06339

PROJECT MANAGER: NORTHEAST SITE SOLUTIONS
420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01566
SHELDON FREINCLE
SHELDON@NORTHEASTSITESOLUTIONS.COM
201-776-8521

ENGINEERING CONSULTANTS: FORESITE LLC
462 WALNUT ST
NEWTON, MA 02460
SAEED MOSSAVAT
SMOSSAVAT@FORESITELLC.COM
617-212-3123

SHEET INDEX:

T-1: TITLE SHEET
N-1: GENERAL NOTES
A-1: SITE PLAN AND EQUIPMENT LAYOUT
A-2: ELEVATION AND ANTENNA PLANS
A-3: MOUNT MODIFICATION DETAILS
A-4: ANTENNA AND EQUIPMENT SPECIFICATIONS
E-1: ELECTRICAL DETAILS

APPLICANT:
T-Mobile
T-MOBILE NORTHEAST LLC

35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

PROJECT MANAGER

NORTHEAST
SITE SOLUTIONS
Turning Wires into Development

420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01566
203-275-6669

CONSULTANT:
FORESITE LLC
Architects . Engineers . Surveyors

462 WALNUT STREET
NEWTON, MA 02460
617-212-3123

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REV	DESCRIPTION	DATE
A	PRELIMINARY	12/08/20
0	FINAL ISSUED	01/22/21
1	REVISED PER NEW RFDS	02/27/22

SITE NUMBER: CTNL058A
SITE NAME: SITE NAME: NL058/REDWOLF_ET
ADDRESS: 889A COLONEL LEDYARD HIGHWAY
LEDYARD, CT 06339

SHEET TITLE:
T-1: TITLE SHEET

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1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAS MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE CLIENT'S REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK.
5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS.
6. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S / VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
7. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS DURING CONSTRUCTION.
8. THE CONTRACTOR SHALL COMPLY WITH ALL PERTINENT SECTIONS OF THE BASIC STATE BUILDING CODE, LATEST EDITION, AND ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJEC
9. THE CONTRACTOR SHALL NOTIFY THE CLIENT'S REPRESENTATIVE IN WRITING WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE CLIENT'S REPRESENTATIVE.
10. THE WORK SHALL CONFORM TO THE CODES AND STANDARDS OF THE FOLLOWING AGENCIES AS FURTHER CITED HEREIN:

A. ASTM: AMERICAN SOCIETY FOR TESTING AND MATERIALS, AS PUBLISHED IN "COMPILATION OF ASTM STANDARDS BUILDING CODES" OR LATEST EDITION.

B. AWS: AMERICAN WELDING SOCIETY INC. AS PUBLISHED IN "STANDARD D1.1-08, STRUCTURAL WELDING CODE" OR LATEST EDITION.

C. AISC: AMERICAN INSTITUTE FOR STEEL CONSTRUCTION AS PUBLISHED IN "CODE FOR STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES"; "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" (LATEST EDITION).
11. BOLTING:

A. BOLTS SHALL BE CONFORMING TO ASTM A325 HIGH STRENGTH, HOT DIP GALVANIZED WITH ASTM A153 HEAVY HEX TYPE NUTS.

B. BOLTS SHALL BE 3/4"Ø MINIMUM (UNLESS OTHERWISE NOTED)

C. ALL CONNECTIONS SHALL BE 2 BOLTS MINIMUM.
12. FABRICATION:

A. FABRICATION OF STEEL SHALL CONFORM TO THE AISC AND AWS STANDARDS AND CODES (LATEST EDITION).

B. ALL STRUCTURAL STEEL SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 (LATEST EDITION), UNLESS OTHERWISE NOTED.
13. ERECTION OF STEEL:

A. PROVIDE ALL ERECTION EQUIPMENT, BRACING, PLANKING, FIELD BOLTS, NUTS, WASHERS, DRIFT PINS, AND SIMILAR MATERIALS WHICH DO NOT FORM A PART OF THE COMPLETED CONSTRUCTION BUT ARE NECESSARY FOR ITS PROPER ERECTION.

B. ERECT AND ANCHOR ALL STRUCTURAL STEEL IN ACCORDANCE WITH AISC REFERENCE STANDARDS. ALL WORK SHALL BE ACCURATELY SET TO ESTABLISHED LINES AND ELEVATIONS AND RIGIDLY FASTENED IN PLACE WITH SUITABLE ATTACHMENTS TO THE CONSTRUCTION OF THE BUILDING.

C. TEMPORARY BRACING, GUYING AND SUPPORT SHALL BE PROVIDED TO KEEP THE STRUCTURE SAFE AND ALIGNED AT ALL TIMES DURING CONSTRUCTION, AND TO PREVENT DANGER TO PERSONS AND PROPERTY. CHECK ALL TEMPORARY LOADS AND STAY WITHIN SAFE CAPACITY OF ALL BUILDING COMPONENTS.
14. ANTENNA INSTALLATION:

A. INSTALL ANTENNAS AS INDICATED ON DRAWINGS AND CLIENT'S REPRESENTATIVE SPECIFICATIONS.

B. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS.

- C. INSTALL COAXIAL / FIBER CABLES AND TERMINATIONS BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTORS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS.
15. ANTENNA AND COAXIAL / FIBER CABLE GROUNDING:

A. ALL EXTERIOR #6 GREEN GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH ANDREWS CONNECTOR/SPLICE WEATHERPROOFING KIT TYPE #221213 OR EQUAL.

B. ALL COAXIAL / FIBER CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL / FIBER CABLE (NOT WITHIN BENDS).
16. RELATED WORK, FURNISH THE FOLLOWING WORK AS SPECIFIED UNDER CONSTRUCTION DOCUMENTS, BUT COORDINATE WITH OTHER TRADES PRIOR TO BID:

A. FLASHING OF OPENING INTO OUTSIDE WALLS

B. SEALING AND CAULKING ALL OPENINGS

C. PAINTING

D. CUTTING AND PATCHING
17. REQUIREMENTS OF REGULATORY AGENCIES:

A. FURNISH U.L. LISTED EQUIPMENT WHERE SUCH LABEL IS AVAILABLE. INSTALL IN CONFORMANCE WITH U.L. STANDARDS WHERE APPLICABLE.

B. INSTALL ANTENNA, ANTENNA CABLES, GROUNDING SYSTEM IN ACCORDANCE WITH DRAWINGS AND SPECIFICATION IN EFFECT AT PROJECT LOCATION AND RECOMMENDATIONS OF STATE AND LOCAL BUILDING CODES, AND SPECIAL CODES HAVING JURISDICTION OVER SPECIFIC PORTIONS OF WORK. THIS WORK INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:

C. TIA-EIA - 222 (LATEST EDITION). STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES.

D. FAA - FEDERAL AVIATION ADMINISTRATION ADVISORY CIRCULAR AC 70/7460-IH, OBSTRUCTION MARKING AND LIGHTING.

E. FCC - FEDERAL COMMUNICATIONS COMMISSION RULES AND REGULATIONS FORM 715, OBSTRUCTION MARKING AND LIGHTING SPECIFICATION FOR ANTENNA STRUCTURES AND FORM 715A, HIGH INTENSITY OBSTRUCTION LIGHTING SPECIFICATIONS FOR ANTENNA STRUCTURES.

F. AISC - AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 BOLTS (LATEST EDITION).

G. NEC - NATIONAL ELECTRICAL CODE - ON TOWER LIGHTING KITS.

H. UL - UNDERWRITER'S LABORATORIES APPROVED ELECTRICAL PRODUCTS.

I. IN ALL CASES, PART 77 OF THE FAA RULES AND PARTS 17 AND 22 OF THE FCC RULES ARE APPLICABLE AND IN THE EVENT OF CONFLICT, SUPERSEDE ANY OTHER STANDARDS OR SPECIFICATIONS.

J. 2018 LIFE SAFETY CODE NFPA - 101.

APPLICANT:
T-Mobile
T-MOBILE NORTHEAST LLC

35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

PROJECT MANAGER

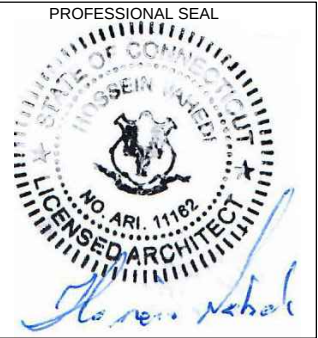


420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01566
203-275-6669

CONSULTANT:



462 WALNUT STREET
NEWTON, MA 02460
617-212-3123



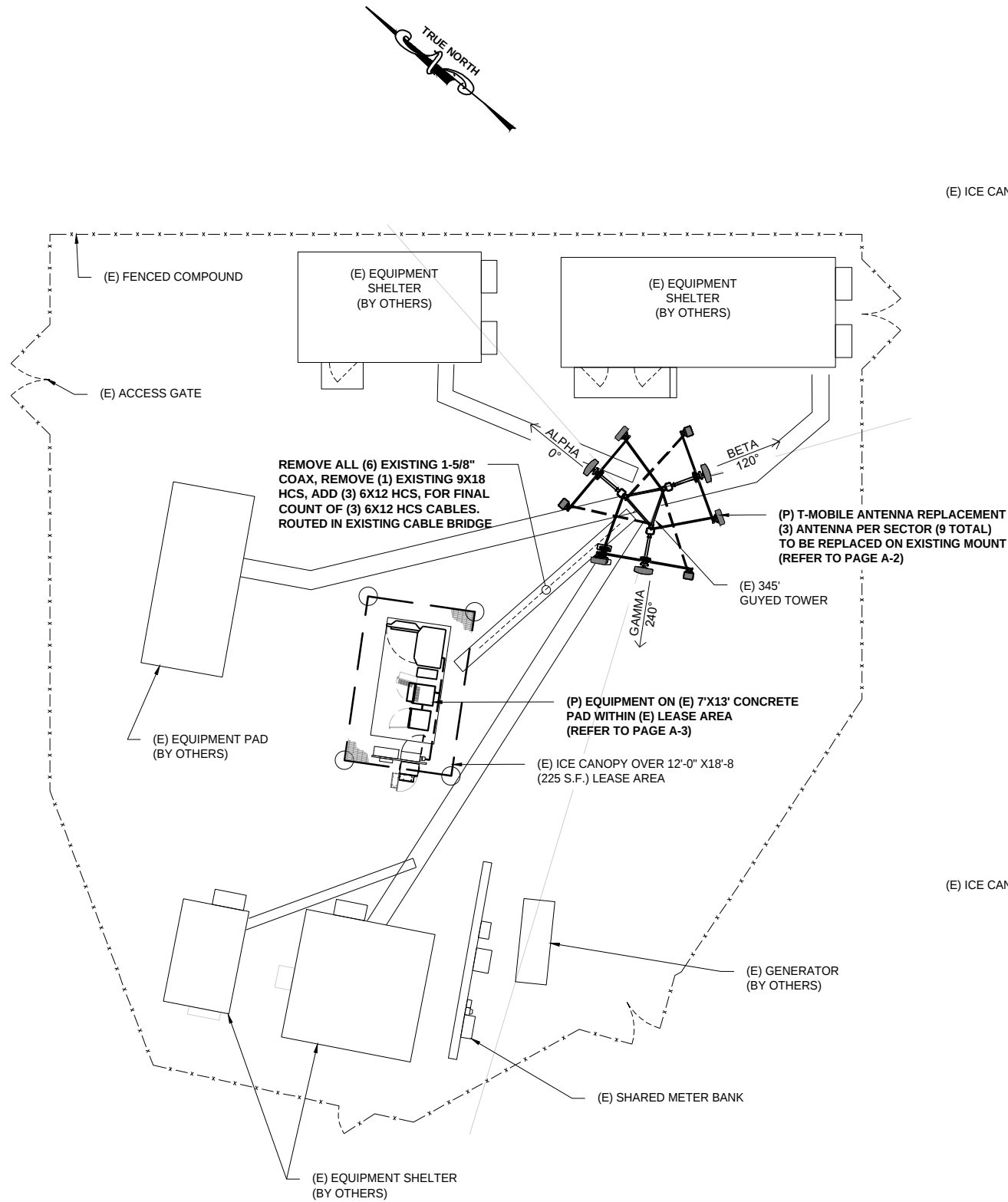
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REV	DESCRIPTION	DATE
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0	FINAL ISSUED	01/22/21
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SITE NUMBER: CTNL058A
SITE NAME: SITE NAME: NL058/REDWOLF_ET
ADDRESS: 889A COLONEL LEDYARD HIGHWAY
LEDYARD, CT 06339

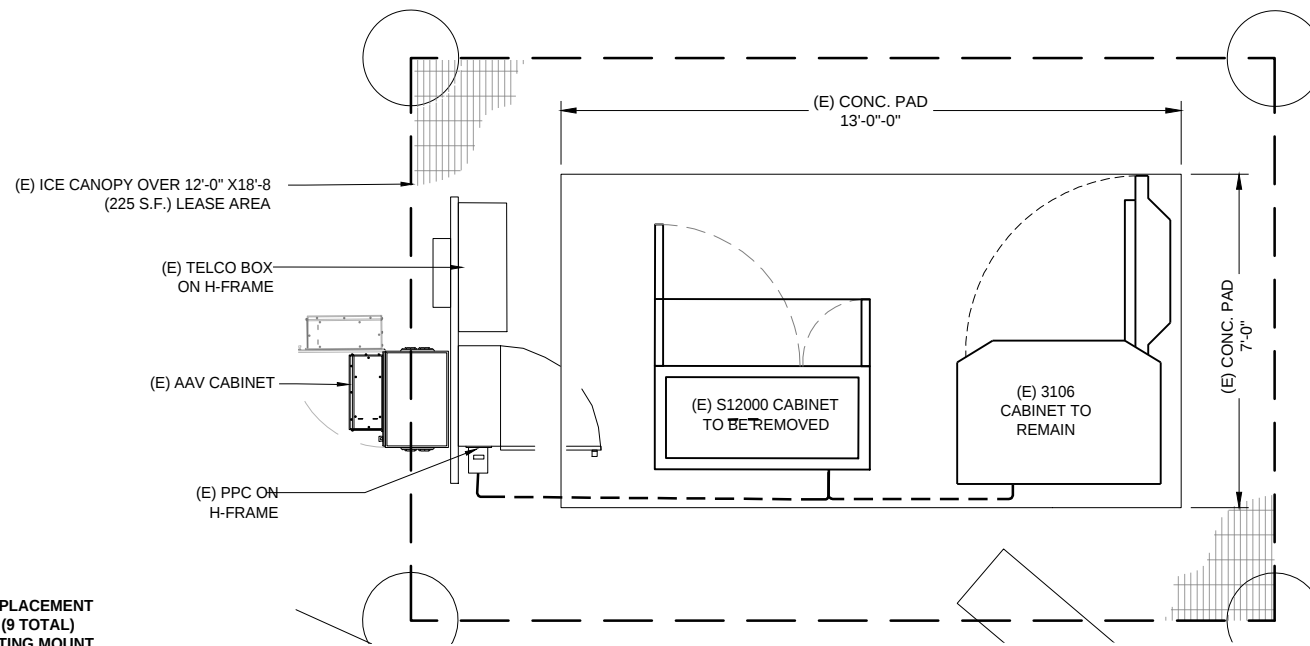
SHEET TITLE:
N-1: GENERAL NOTES

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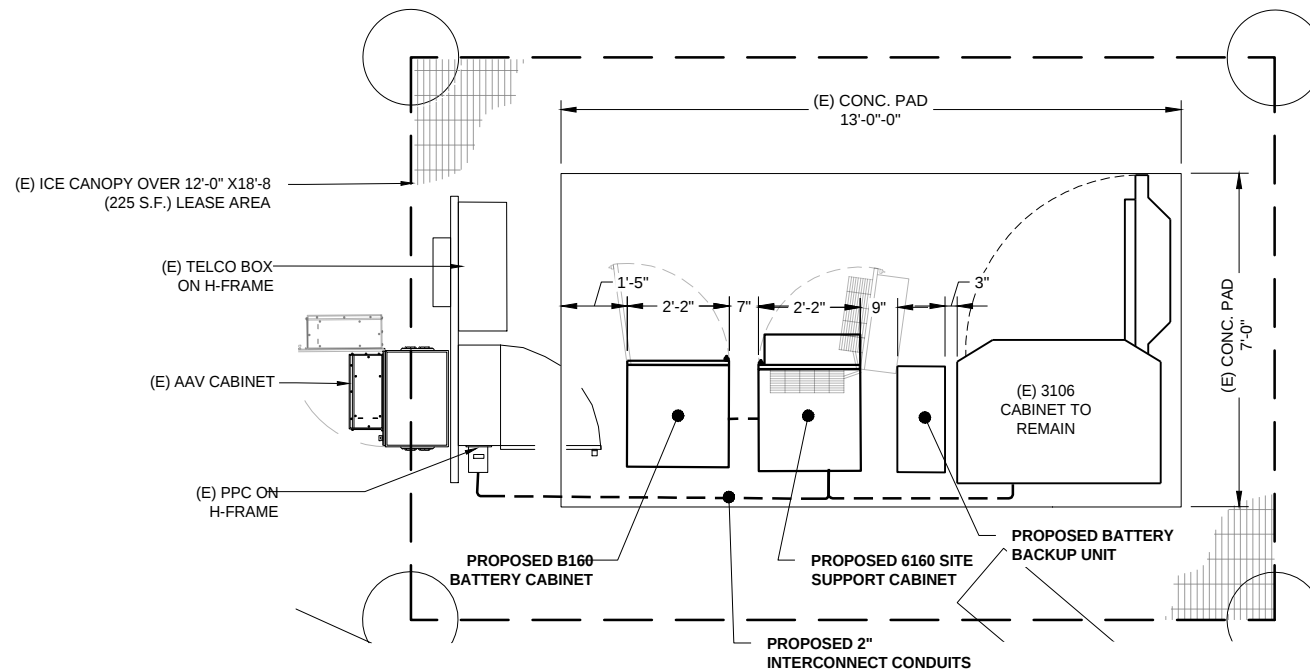
SITE PLAN
SCALE: 1/16" = 1'-0"

1
A-1



EXISTING EQUIPMENT
SCALE: 1/16" = 1'-0"

2
A-1



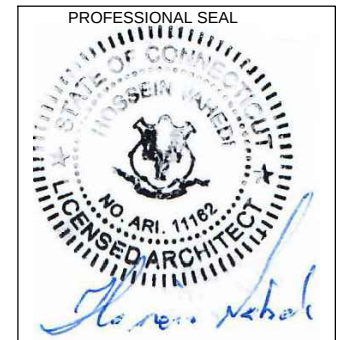
PROPOSED EQUIPMENT
SCALE: 1/16" = 1'-0"

3
A-1

APPLICANT:
T-Mobile
T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

PROJECT MANAGER
NORTHEAST SITE SOLUTIONS
Turning Wireless Development
420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01566
203-275-6669

CONSULTANT:
FORESITE LLC
Architects . Engineers . Surveyors
462 WALNUT STREET
NEWTON, MA 02460
617-212-3123



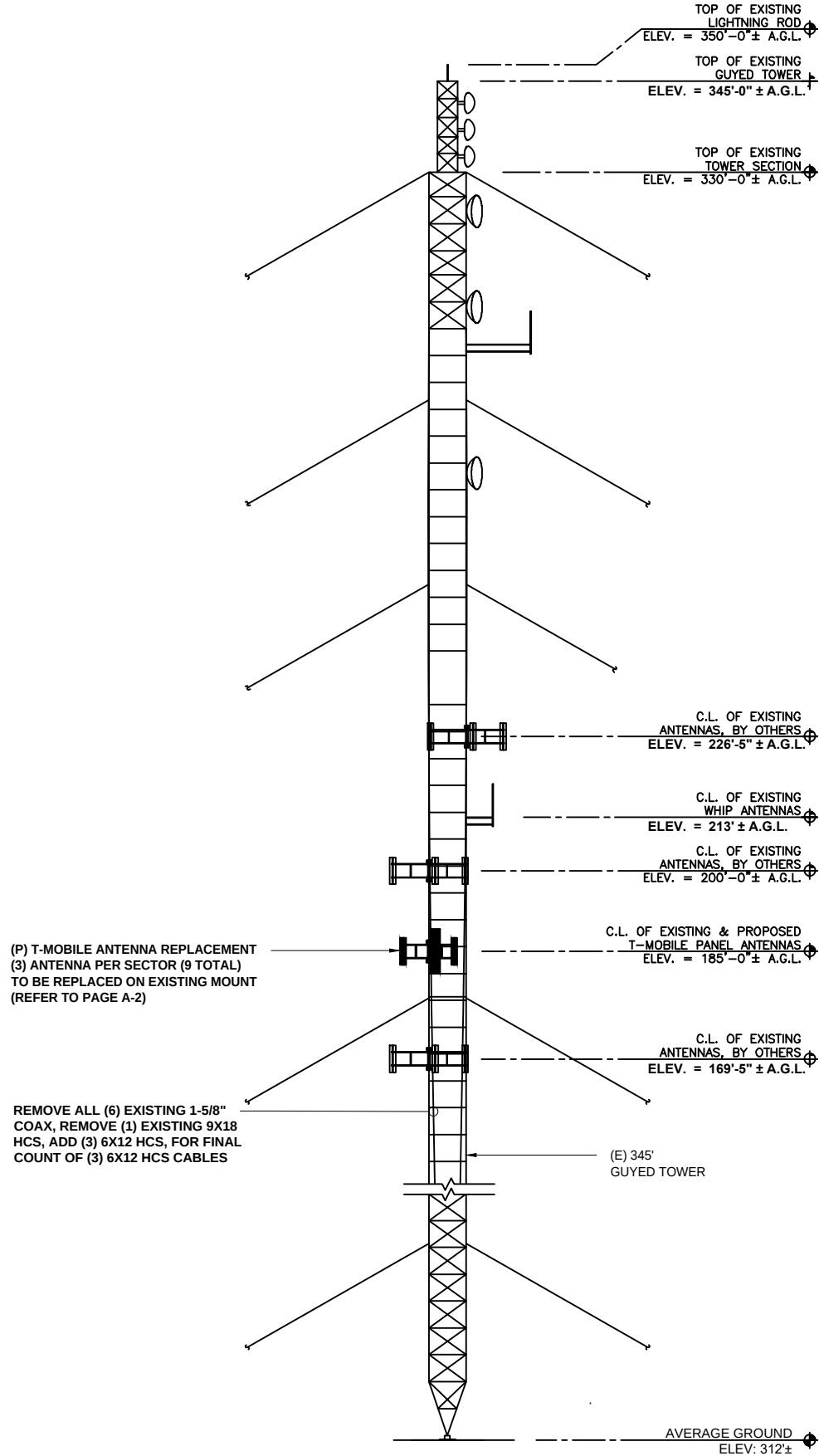
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0	FINAL ISSUED	01/22/21
1	REVISED PER NEW RFDS	02/27/22

SITE NUMBER: CTNL058A
SITE NAME: SITE NAME: NL058/REDWOLF_ET
ADDRESS: 889A COLONEL LEDYARD HIGHWAY
LEDYARD, CT 06339

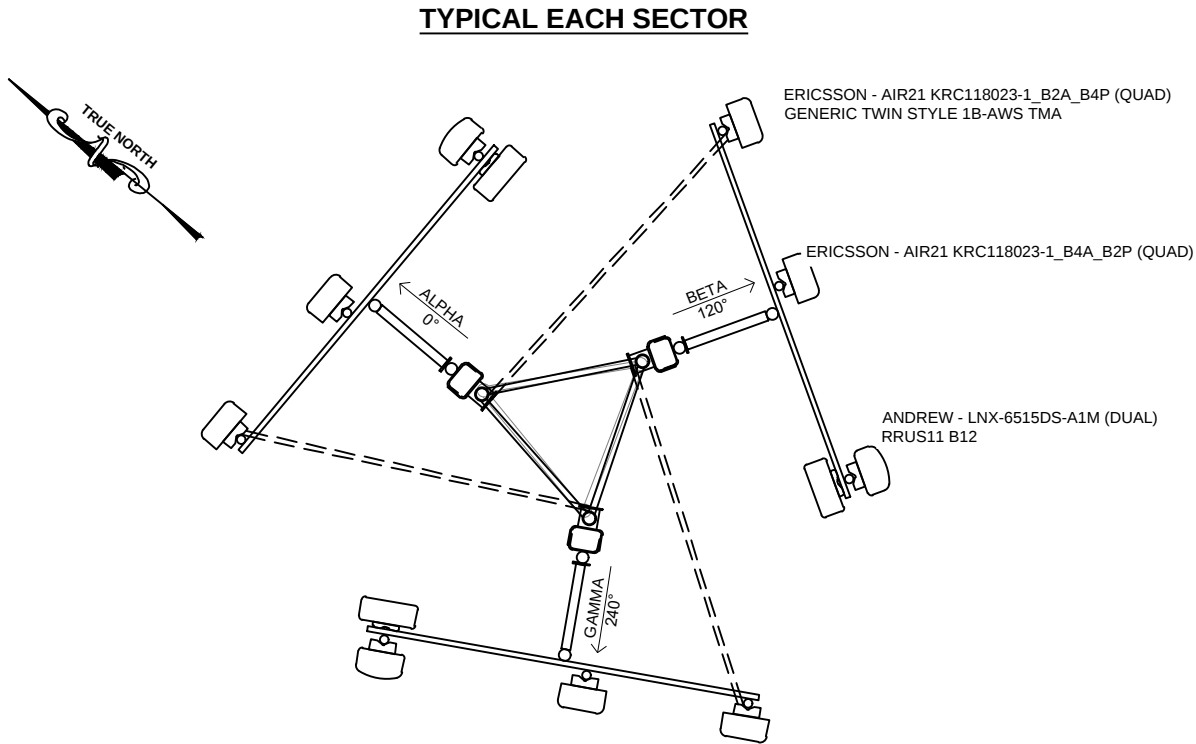
SHEET TITLE:
A-1: SITE PLAN AND EQUIPMENT LAYOUT

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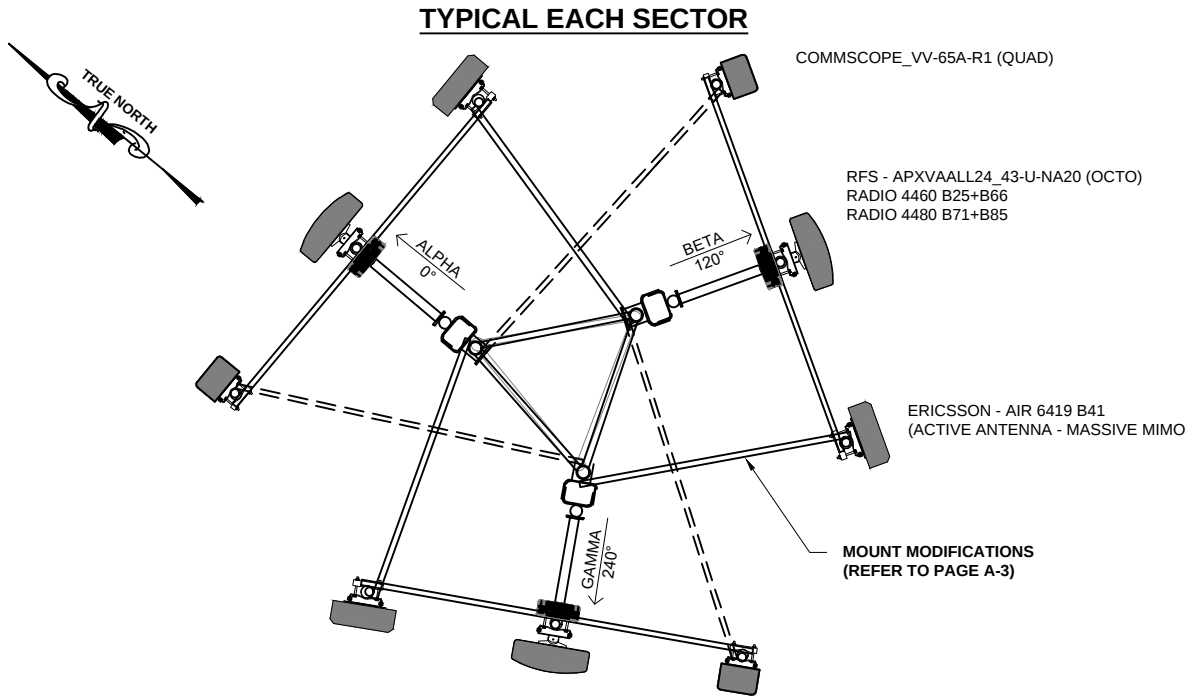
ELEVATION
SCALE: 1/16" = 1'-0"

1
A-2



EXISTING ANTENNA PLAN
N.T.S.

2
A-2



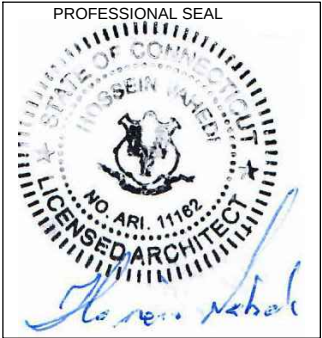
FINAL ANTENNA PLAN
N.T.S.

2
A-2

APPLICANT:
T-Mobile
T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

PROJECT MANAGER
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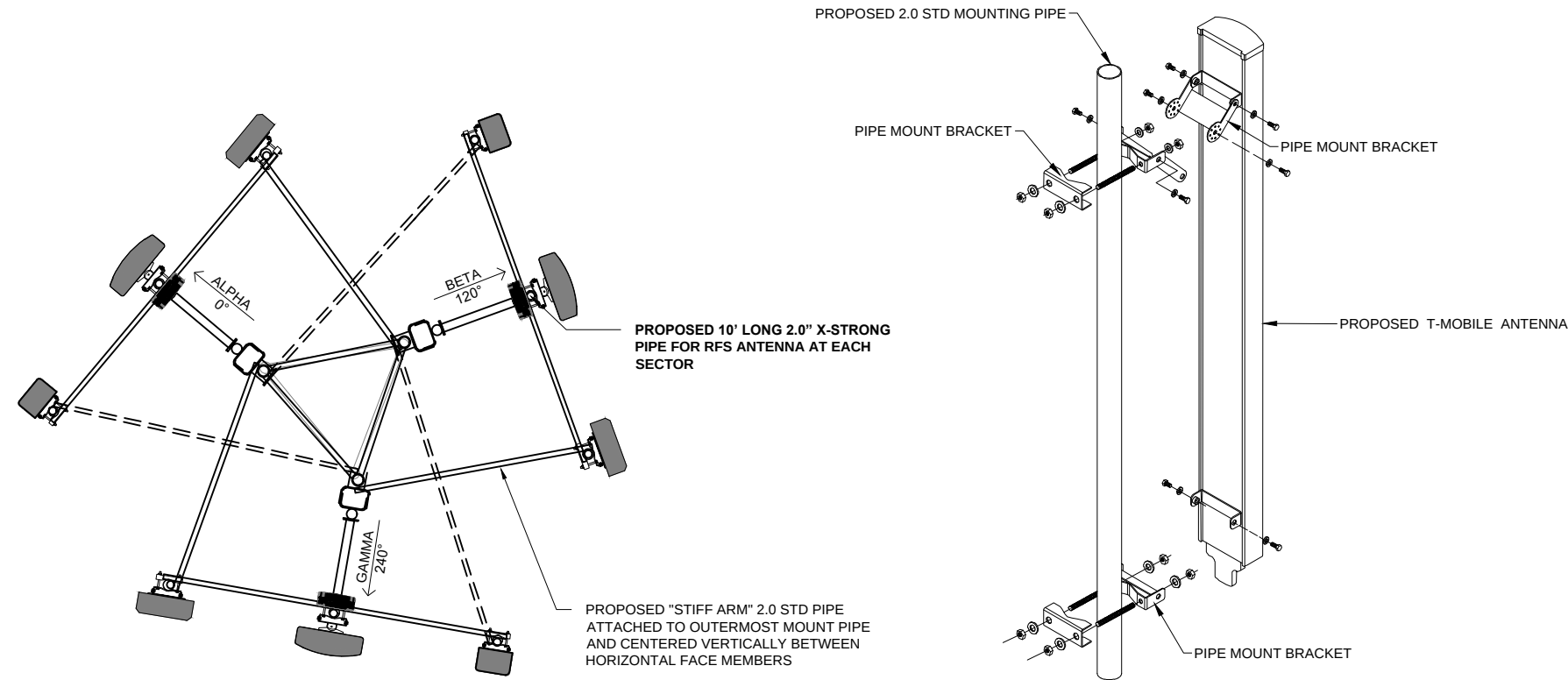
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LEDYARD, CT 06339

SHEET TITLE:
A-2: ELEVATION AND ANTENNA PLANS

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FINAL ANTENNA PLAN
N.T.S.

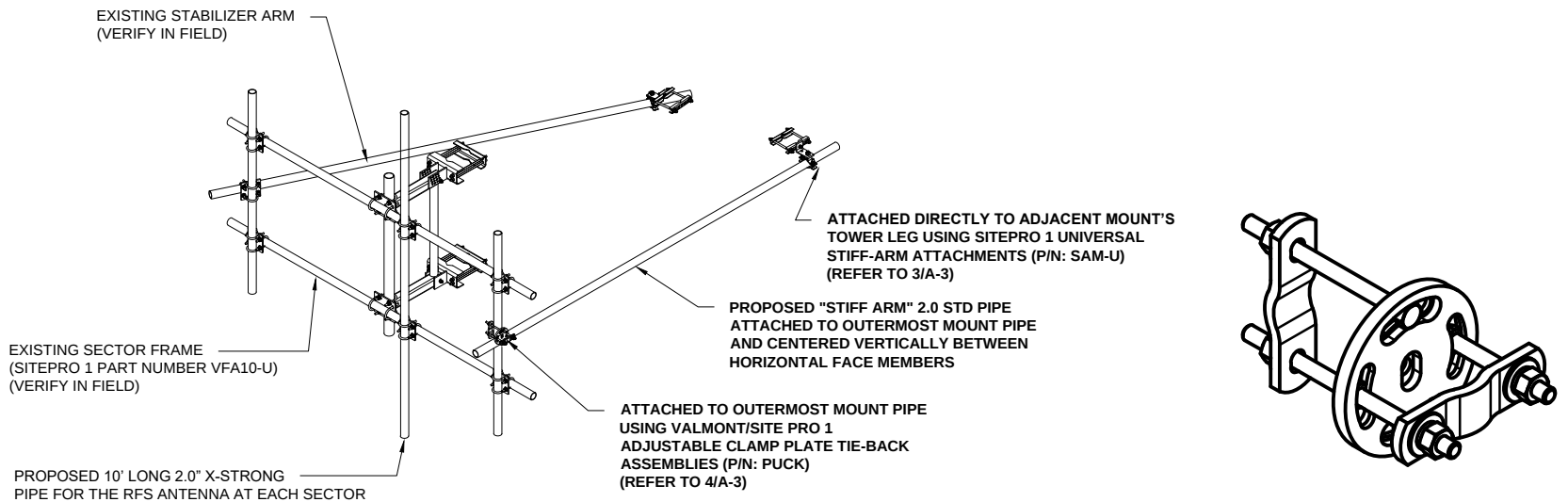
1
A-3

ANTENNA MOUNT DETAIL
N.T.S.

2
A-3

RRU MOUNT DETAIL
N.T.S.

3
A-3



MODIFICATION DETAILS
N.T.S.

4
A-3

ATTACHMENT DETAILS
N.T.S.

5
A-3

ATTACHMENT DETAILS
N.T.S.

6
A-3

APPLICANT:
T-Mobile
T-MOBILE NORTHEAST LLC
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PROJECT MANAGER
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PROFESSIONAL SEAL
STATE OF CONNECTICUT
JOSSEPH WARDEN
NO. ARI. 11182
LICENSED ARCHITECT
Joseph Warden

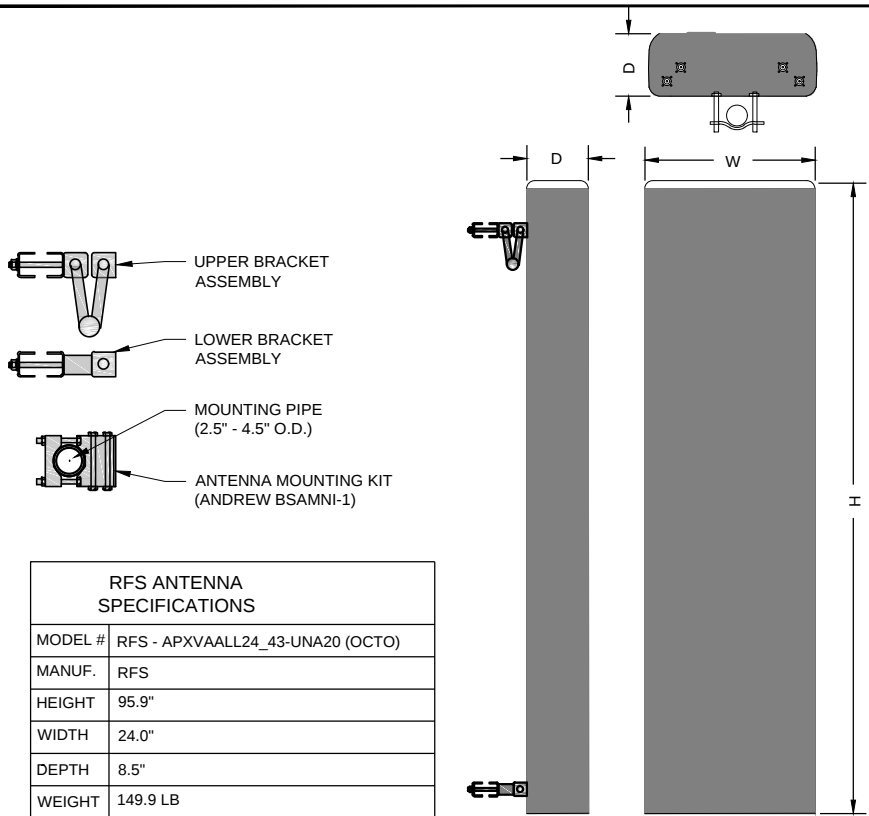
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SHEET TITLE:
A-3: MOUNT MODIFICATION DETAILS

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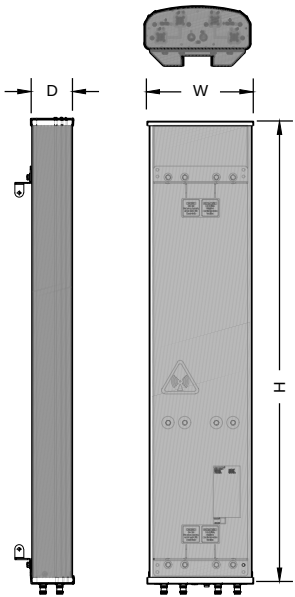


RFS ANTENNA SPECIFICATIONS	
MODEL #	RFS - APXVAALL24_43-UNA20 (OCTO)
MANUF.	RFS
HEIGHT	95.9"
WIDTH	24.0"
DEPTH	8.5"
WEIGHT	149.9 LB

RFS ANTENNA
N.T.S

1
A-4

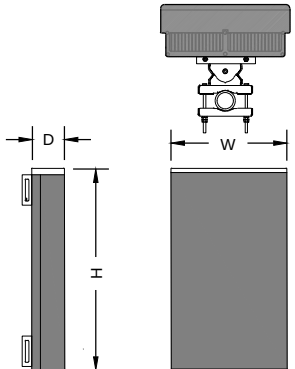
ERICSSON ANTENNA SPECIFICATIONS	
MODEL #	VV-65A-R1
MANUF.	COMMSCOPE
LENGTH	54.7"
WIDTH	12.1"
DEPTH	4.6"
WEIGHT	41.9 LB



COMMSCOPE ANTENNA
N.T.S

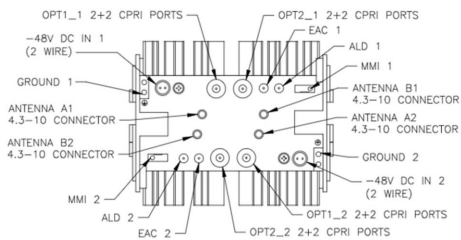
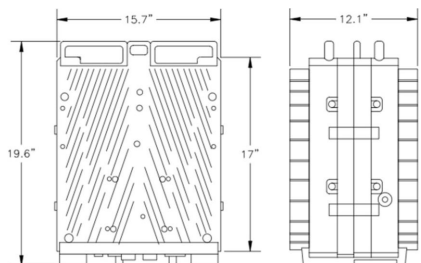
2
A-4

ANTENNA SPECIFICATIONS	
MODEL #	AIR6419 B41
MANUF.	ERICSSON
HEIGHT	33.3"
WIDTH	20.9"
DEPTH	9"
WEIGHT	83.3 LB



ERICSSON ANTENNA
N.T.S

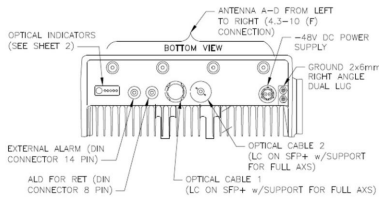
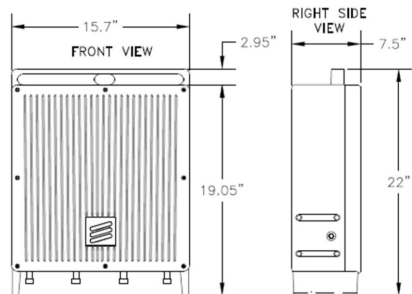
3
A-4



RRU SPECIFICATIONS	
MODEL #	4460 B2/25
MANUF.	ERICSSON
LENGTH	19.6"
WIDTH	15.7"
DEPTH	12.1"
WEIGHT	109 LB

REMOTE RADIO UNIT
N.T.S

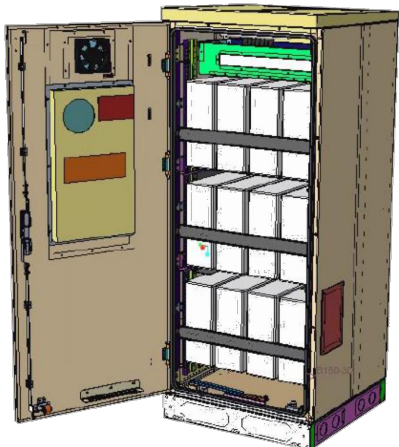
4
A-4



RRU SPECIFICATIONS	
MODEL #	4480 B71
MANUF.	ERICSSON
LENGTH	22.0"
WIDTH	15.7"
DEPTH	7.5"
WEIGHT	93.0 LB

REMOTE RADIO UNIT
N.T.S

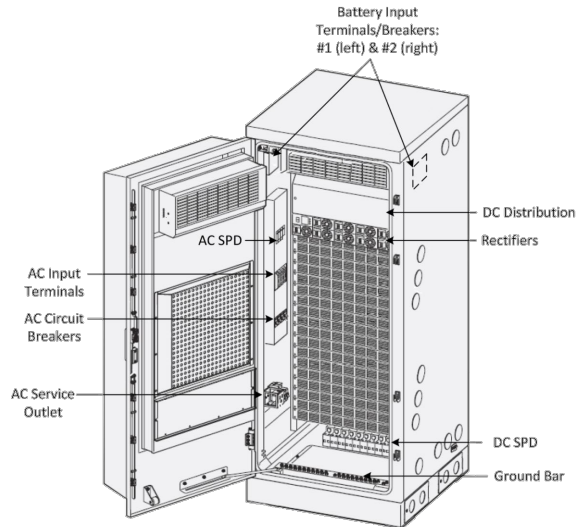
5
A-4



BATTERY CABINET SPECIFICATIONS	
MODEL #	B160
MANUF.	ERICSSON
HEIGHT	63"
WIDTH	26"
DEPTH	26"
WEIGHT	1883 lbs

BATTERY CABINET
N.T.S.

6
A-4



SITE SUPPORT CABINET SPECIFICATIONS	
MODEL #	6160
MANUF.	ERICSSON
HEIGHT	63"
WIDTH	25.6"
DEPTH	33.5"
WEIGHT	605 lbs

SITE SUPPORT CABINET
N.T.S.

7
A-4

APPLICANT:
T-Mobile
T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

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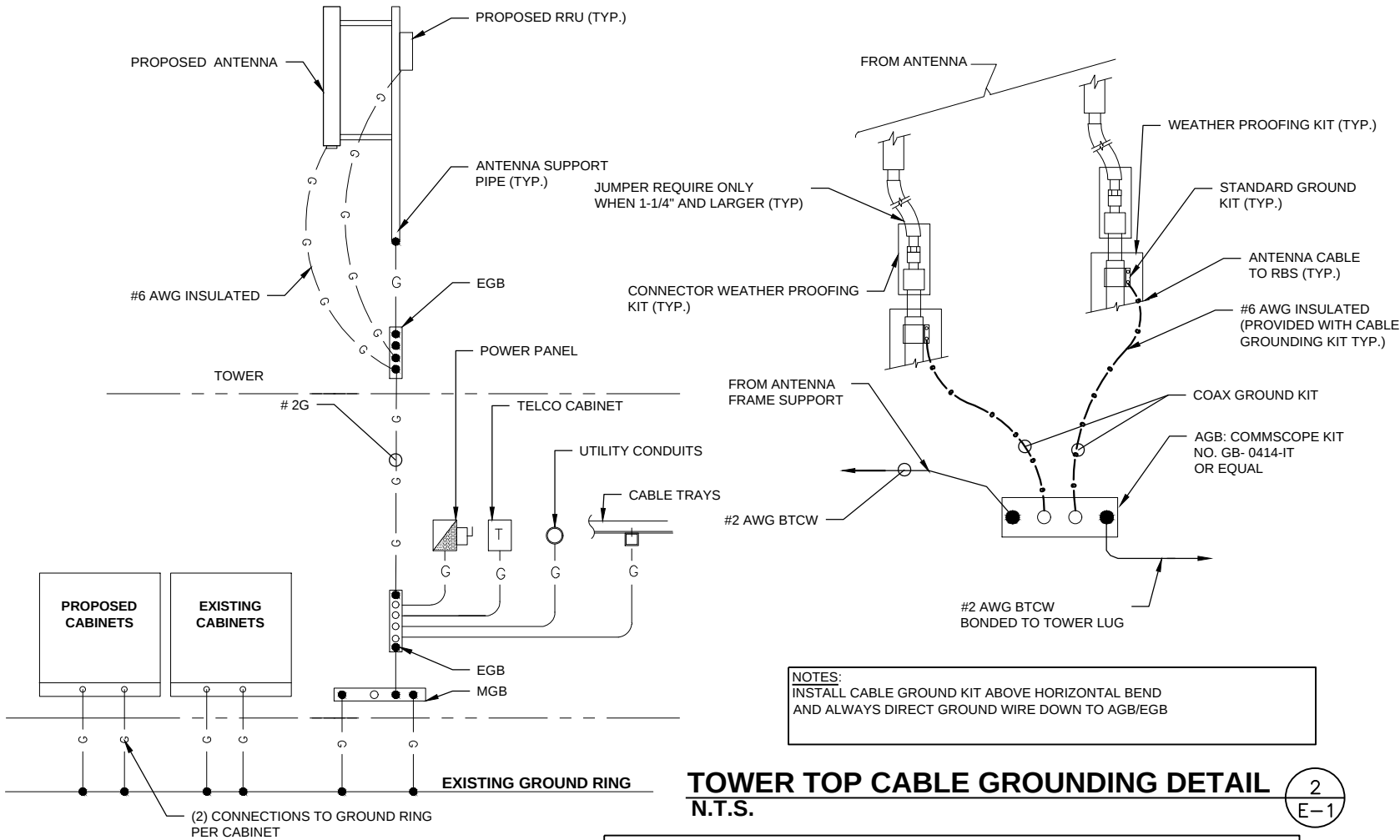
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SITE NAME: SITE NAME: NL058/REDWOLF_ET
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LEDYARD, CT 06339

SHEET TITLE:
A-4: ANTENNA AND EQUIPMENT SPECS

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ELECTRICAL & GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PRODUCED PER SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
5. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) ND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
6. RIGID STEEL CONDUITS SHALL BE GROUNDED AT BOTH ENDS.
7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THIN INSULATION.
8. RUN ELECTRICAL CONDUIT OR CABLING BETWEEN ELECTRICAL ROOM AND PROPOSED CELL SITE ARE PEDESTAL AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROPOSED CELL SITE TELECOM CABINET AND RBS CABINET AS INDICATED ON DRAWING A -1. PROVIDE FULL LENGTH PULL ROPE INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
10. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NAME 3R ENCLOSURE.
11. GROUNDING SHALL COMPLY WITH NEC ART. 250.
12. GROUNDING COAX CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURES COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
13. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSTALLATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE GROUND.
14. ALL GROUND CONNECTION TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
15. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AS RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY BOND ANY METER OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.
16. CONNECTIONS TO MGB SHALL BE ARRANGED IN THREE MAIN GROUPS: SURGE PROCEDURES (COAXIAL CABLE GROUND KITS, TELCO AND POWER PANEL GROUND); (GROUNDING ELECTRODE RING OR BUILDING STEEL); NON-SURGING OBJECTS (EGB GROUND IN RBS UNIT).
17. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
18. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTION.
19. BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, AND ALNA TO EGB PLACED NEAR THE ANTENNA LOCATION.
20. BOND ANTENNA EGB'S AND MGB TO WATER MAIN.
21. TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION.
22. BOND ANY METAL OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.
23. VERIFY PROPOSED SERVICE UPGRADE WITH LOCAL UTILITY COMPANY PRIOR TO CONSTRUCTION.



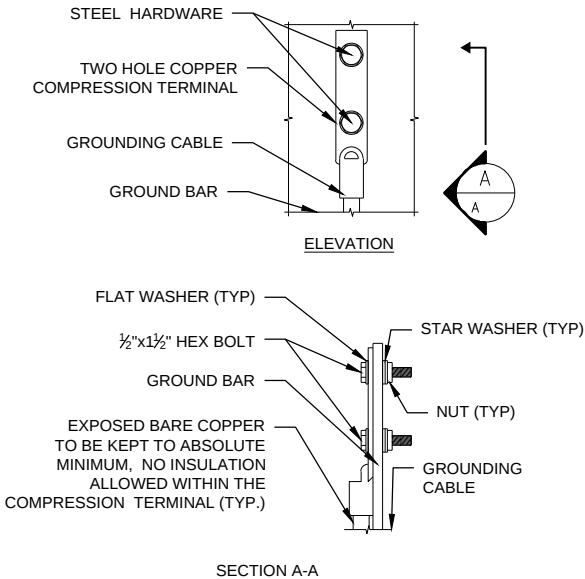
TOWER TOP CABLE GROUNDING DETAIL
N.T.S.

2
E-1

SPECIAL CONTRACTOR'S NOTES:
CONTRACTOR TO VERIFY THE POWER FEED & PHASE OF METER BANK AND THAT THE EXISTING AND PROPOSED CONDUITS AND WIRE SIZES ARE ADEQUATE FOR THE PROPOSED LOADING IN ACCORDANCE WITH NEC AND INCLUDE ELECTRICAL UPGRADES IN THE SCOPE OF WORK AS REQUIRED.

GROUNDING RISER DIAGRAM
N.T.S.

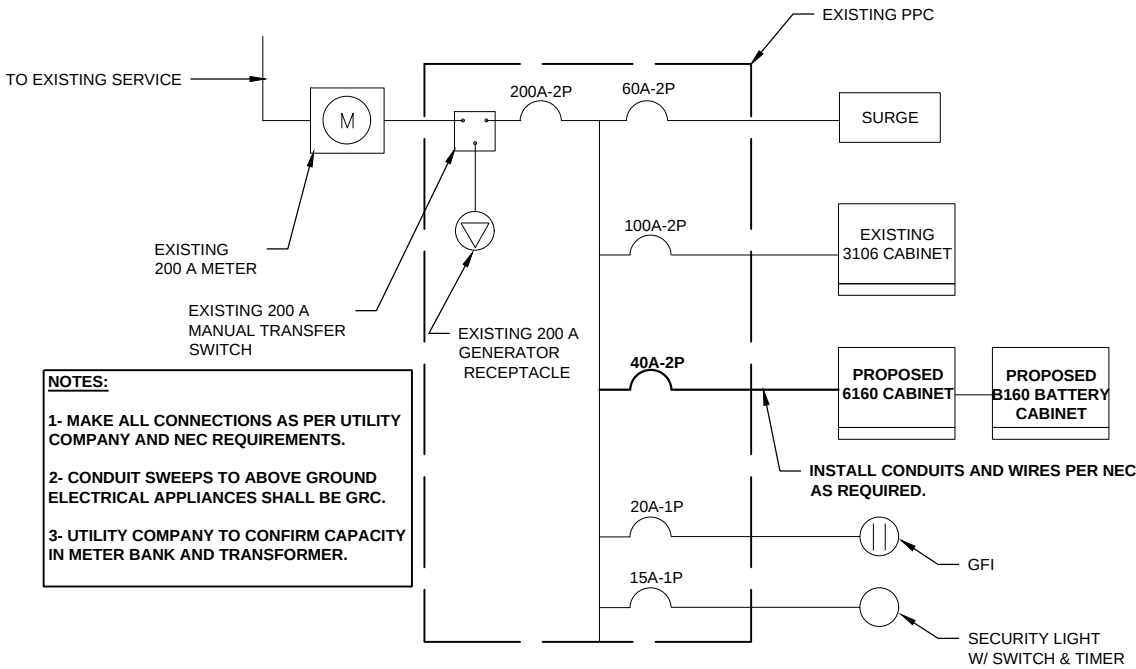
1
E-1



- NOTES:
1. "DOUBLING UP" OR "STACKING " OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

TYPICAL GROUND BAR CONNECTIONS DETAIL
N.T.S.

3
E-1



TYPICAL ONE LINE DIAGRAM
N.T.S.

4
E-1

APPLICANT:
T-Mobile
T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

PROJECT MANAGER
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CONSULTANT:
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STATE OF CONNECTICUT
JOSSEPH WARDEN
NO. ARI. 11182
LICENSED ARCHITECT
Joseph Warden

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LEDYARD, CT 06339

SHEET TITLE:
E-1: ELECTRICAL & GROUNDING DETAIL

Exhibit D

Structural Analysis Report

STRUCTURAL ANALYSIS REPORT GUYED TOWER



Prepared For:



T-Mobile Northeast, LLC
35 Griffin Road South
Bloomfield, CT 06002



Structure Rating

Guyed Tower:	(80.4%) Pass
Base Foundation:	(43.9%) Pass
Anchor Foundation:	(55.9%) Pass

Sincerely,
EFI Global, Inc.
License No: PEC0001245

5/26/2022



Ahmet Colakoglu, PE
Connecticut Professional Engineer
License No: 27057

Site ID: CTNL058A
Site Name: NL058/RedWolf_ET
889A Colonel Ledyard Highway
Ledyard, CT 06339

CONTENTS

1.0 - SUBJECT AND REFERENCES

1.1 - STRUCTURE

2.0 - EXISTING AND PROPOSED APPURTENANCES

3.0 - CODES AND LOADING

4.0 - STANDARD CONDITIONS FOR ENGINEERING SERVICES ON EXISTING
STRUCTURES

5.0 – ANALYSIS AND ASSUMPTIONS

6.0 – RESULTS AND CONCLUSION

APPENDICES

A – SOFTWARE OUTPUT

1.0 **SUBJECT AND REFERENCES**

The purpose of this analysis is to evaluate the structural capacity of the existing 345 ft. tall guyed tower located at 889A Colonel Ledyard Highway, Ledyard, CT 06339 for the additions and alterations proposed by T-Mobile.

The structural analysis is based on the following documentation provided to EFI Global, Inc. (EFI):

- RFDS provided by T-Mobile, dated 04/13/2022.
- Structural Modification Report prepared by Infinigy, dated 08/04/2020.
- Construction Drawings prepared by Foresite, LLC, dated 08/07/2018.
- Structural Analysis Report prepared by Maser Consulting Connecticut, dated 04/12/2018.
- Site Photos, dated 06/24/2015.
- Structural Analysis Report prepared by CENTEK Engineering, dated 05/14/2015.

1.1 **STRUCTURE**

The structure is a 345 feet tall, triangular based guyed tower. Solid round legs are X-braced along the entire height with solid round diagonals and girts. The tower is guyed at five (5) different elevations above the grade line; 330 feet, 297.5 feet, 270.1 feet, 177.2 feet and 99.9 feet. For each side of the tower all guy wires terminate at a common anchor that is 205 feet from the tower base. Please refer to the software output in Appendix A, for tower geometry, member sizes and other details.

2.0 **EXISTING AND PROPOSED APPURTENANCES**

Existing Configuration of T-Mobile Appurtenances:

Rad Center (ft.)	Antennas & Equipment	Coax	Mounts
185	(3) Andrew LNX-6515DS-A1M (3) Ericsson AIR21 B2P B4A (3) Ericsson AIR21 B2A B4P (3) RRUS11 B12 (3) Generic Twin Style 1B – AWS	(6) 1-5/8" (1) 9x18 Hybrid	(3) Valmont/Site Pro 1 (P/N: VFA10-U)

Proposed and Final Configuration of T-Mobile Appurtenances:

Rad Center (ft.)	Antennas & Equipment	Coax	Mounts
185	(3) Commscope VV-65A-R1 (3) Ericsson AIR6419 B41 (3) RFS APXVAALL24_43-U-NA20 (3) Radio 4480 B71+B85* (3) Radio 4460 B25+B66*	(3) 6x24 Hybrid	(3) Valmont/Site Pro 1 (P/N: VFA10-U)

* To be mounted behind antennas

Appurtenances by Others:

Rad Center (ft.)	Antennas & Equipment	Coax	Mounts
342	(1) FM Antenna	(1) 1"	Leg Mounted
338	(3) FM Antenna	(1) 1-5/8"	Leg Mounted
332.5	(1) FM Antenna	(1) 1/2"	Leg Mounted
317.5	(1) Mark P-9A120GN	(1) 1-5/8"	(1) 2' Standoff Mount
312	(1) FM Antenna	(1) 1/2"	Leg Mounted
308	(1) Gabflel P-9A120GN	(1) 1-5/8"	Leg Mounted
307.3	(1) 20' Omni	(1) 2-1/4"	(1) 3' Standoff Mount
305.5	(1) 20' Omni	(1) 1-1/4"	(1) 10' Standoff Mount
288	(1) FM Antenna	(1) 1/2"	Leg Mounted
284	(2) 20' Omni	(2) 1-1/4"	(1) 10' Standoff Mount
279	(1) FM Antenna	(1) 1/2"	Leg Mounted
274.25	(1) 20' Omni	(1) 7/8"	(1) 6' Standoff Mount
274	(1) Radiowaves SPD6-58	(1) 1/2" (1) 1-5/8"	(1) Pipe Mount
262	(1) 20' Omni	(1) 7/8"	(1) 6' Standoff Mount
251	(1) Mark P-9A72GN-S	(1) 1-5/8"	Leg Mounted
226.5	(6) 59.25" x 6.5" x 3" Panel Antenna	(6) 1-5/8"	(3) 12' Sector Frames
219.5	(1) FM Antenna	(1) 7/8"	Leg Mounted
213	(1) 15' Omni	(1) 1-1/4"	(1) 6' Standoff
209	(1) Kathrein MFF-950B	(1) 1-1/4"	(1) Pipe Mount
208	(1) 8' Omni	(1) 1-5/8"	(2) 9' Horizontal Pipes

Appurtenances by Others (Cont.):

Rad Center (ft.)	Antennas & Equipment	Coax	Mounts
200	(3) Powerwave 7770.0 (3) CCI OPA65R-BU8DA (3) CCI DMP65R-BU8DA (3) CCI DTMABP7819VG12A (3) Ericsson Radio 4478 B14 (3) Ericsson Radio 4449 B5/B12 (3) Ericsson Radio 8843 B2/B66A (1) Raycap DC9 (1) Raycap DC6-48-60-18-8F	(2) 3/8" Fiber (5) 3/4" DC (6) 1-5/8"	(3) 10' Sector Frames
169.5	(2) LPA-80080-4CF-EDIN (4) LPA-80063-4CF-EDN (3) BXA-70063-6CF-EDIN (3) BXA-171063-12BF-EDIN-2 (6) E15V95P0804	(12) 1-5/8"	(3) 12' Sector Frames
150.5	13' Dipole	(1) 5/8"	(3) 5' Horizontal Pipes
146	(1) 20' Omni	(1) 7/8"	(1) 4' Standoff Mount
130	(1) Mark P-9A72GN	(1) 1-5/8"	(1) Pipe Mount
123.5	(2) 18" Dish	(1) 3/16"	Leg Mounted
112	(1) Kathrein MTZ-940B	(1) 1-5/8"	(1) 3' Standoff Mount
106.5	(2) 18" Dish	(2) 1/4"	Leg Mounted
90	(1) Kathrein PR-950	(1) 1/2"	(1) Pipe Mount
36	(1) Radiowaves SPD3-2.4NS	(2) 1/2"	Leg Mounted

3.0 **CODES AND LOADING**

This analysis has been performed in accordance with the 2018 Connecticut State Building Code (2015 IBC) based upon an ultimate wind speed of 135 mph (Risk Category II) converted to a nominal 3-second gust wind speed of 105 mph per section 1609.3.1 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. The following loading criteria were used in the analysis:

- Basic wind speed 105 mph without ice (V)
- Basic wind speed 50 mph concurrent with design ice thickness of 0.75" (V_i and t_i)
- Exposure Category C, Topographic Category 1

The following load combinations were used with wind blowing at 0° , 30° , 60° , and 90° , measured from a line normal to the face of the tower:

- $1.2 D + 1.6 W_o$
- $0.9 D + 1.6 W_o$
- $1.2 D + 1.0 D_i + 1.0 W_i + 1.0 T_i$

D : Dead load of structures and appurtenances, except guy wires

D_i : Weight of ice due to factored ice thickness (based upon t_i)

T_i : Load effects due to temperature

W_o : Wind load without ice (based upon V)

W_i : Wind load with ice (based upon V_i)

4.0 STANDARD CONDITIONS FOR ENGINEERING SERVICES ON EXISTING STRUCTURES

The analysis is based on the information provided and is assumed to be current and correct. Unless otherwise noted, the structure is assumed to be in good condition, free of defects and can achieve theoretical strength.

It is assumed that the structure has been maintained and shall be maintained during its service. The superstructure and the foundation system are assumed to be designed with proper engineering practice and fabricated, constructed and erected in accordance with the design documents. EFI will accept no liability which may arise due to any existing deficiency in design, material, fabrication, erection, construction, etc. or lack of maintenance.

The analysis does not include a qualification of the mounts attached on the structure or their connections. The analysis is performed to verify the capacity of the main structural members, which is the current practice in the tower industry.

The analysis results presented in this report are only applicable for the previously mentioned existing and proposed appurtenances. Any deviation of the appurtenances and placement, etc., will require EFI to generate an additional structural analysis.

5.0 ANALYSIS AND ASSUMPTIONS

The tower was analyzed by utilizing tnxTower, a non-linear, three-dimensional, finite element-analysis software package, a product of Tower Numerics, Inc. Software output for this analysis is provided in Appendix A of this report.

EFI has assumed that the modifications specified in the referenced Structural Modification Report prepared by Infinigy, dated 8/4/2020, will be installed on the tower prior to the equipment upgrade proposed in this analysis. If this assumption is found to be incorrect, EFI should be contacted immediately.

6.0 **RESULTS AND CONCLUSION**

Based on a structural analysis per *ANSI/TIA-222-G*, the existing guyed tower has **adequate** structural capacity for the proposed changes by T-Mobile. For the code specified load combinations and as a maximum, the leg bolts at 40' are stressed to **80.4%** of their structural capacity. The tower diagonals, guy wires and horizontals are stressed to **78.7%**, **71.5%**, and **61.2%** of their structural capacity, respectively.

The tower foundation system has **adequate** structural capacity for the proposed changes by T-Mobile. The anchor block foundation and the tower base foundations are stressed to **55.9%** and **43.9%** of their structural capacity, respectively.

Please refer to Mount Structural Analysis Report prepared by EFI Global, Inc., dated 05/26/2022, for additional details.

Note: EFI has assumed that the modifications specified in the referenced Structural Modification Report prepared by Infinigy, dated 8/4/2020, will be installed on the tower prior to the equipment upgrade proposed in this analysis. If this assumption is found to be incorrect, EFI should be contacted immediately.

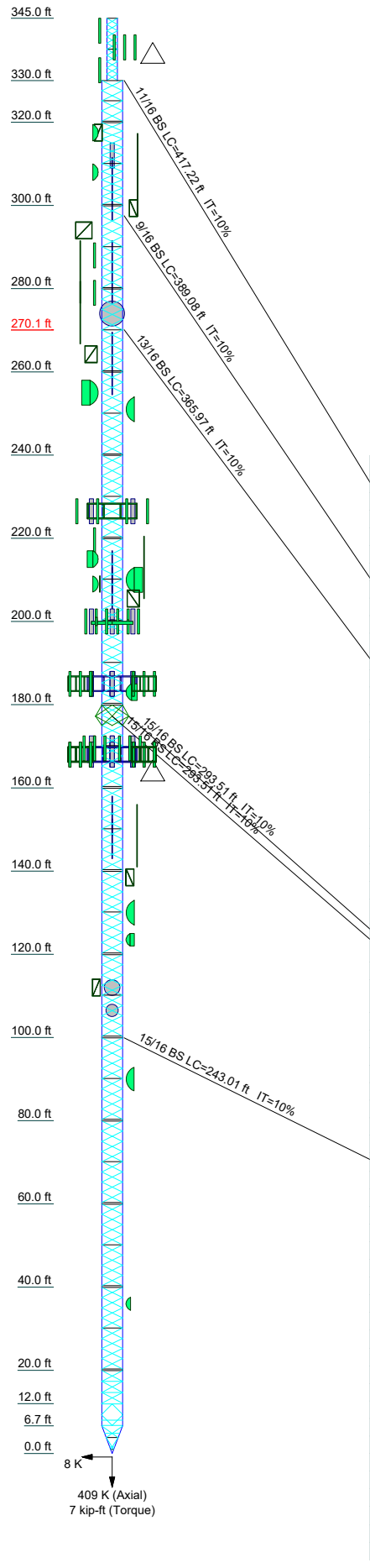
Therefore, the proposed changes by T-Mobile **can** be implemented with the conditions outlined in this report.

Should you have any questions about this report, please contact EFI at telecom@efiglobal.com.

APPENDIX A

SOFTWARE OUTPUT

Section	T22	T21	T17	T16	T15	T14	T13	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1	L1
Legs																				SR 1 1/4
Leg Grade																				SR 1/2
Diagonals																				SR 7/8
Diagonal Grade																				
Top Girts																				SR 3/4
Mid Girts																				SR 3/4
Bottom Girts																				N.A.
Horizontal																				
Horizontal																				
Sec. Horizontal																				
Face Width (ft)																				2.5
# Panels @ (ft)																				5
Weight (K)																				10 @ 1.96375
																				E
																				D
																				0.3



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
FM Antenna	342	OPA65R-BU8D_TIA w/ Mount Pipe	200
(3) FM Antennas	338	7770_TIA w/ Mount Pipe	200
FM Antenna	332.5	DTMABP7819VG12A	200
2' Standoff	317.5	OPA65R-BU8D_TIA w/ Mount Pipe	200
P-9A120GN	317.5	7770_TIA w/ Mount Pipe	200
FM Antenna	312	APXVAALL24_43-U-NA20_TIA w/ Mount Pipe	185
P-9A120GN	308		
20' Omni	295.5	RADIO 4480 B71+B85	185
3' Standoff	295.5	RADIO 4480 B71+B85	185
3' Dia 20' Omni	294	RADIO 4480 B71+B85	185
LeBlanc 10' Standoff (3)	294	RADIO 4460 B25+B66	185
LeBlanc 10' Standoff (3)	294	RADIO 4460 B25+B66	185
3' Dia 20' Omni	294	RADIO 4460 B25+B66	185
3' Dia 20' Omni	294	Sector Mount [SM 502-3]	185
FM Antenna	288	AIR 6419 B41_TMO_TIA w/ Mount Pipe	185
FM Antenna	279	AIR 6419 B41_TMO_TIA w/ Mount Pipe	185
5'3"x4" Pipe mount	274		
SPD6-58	274	AIR 6419 B41_TMO_TIA w/ Mount Pipe	185
Pirot 4' Side Mount Standoff	264.25		
3' Dia 20' Omni	264.25	VV-65A-R1_TMO_TIA w/ Mount Pipe	185
6' Dish	255	VV-65A-R1_TMO_TIA w/ Mount Pipe	185
Pirot 4' Side Mount Standoff	252	VV-65A-R1_TMO_TIA w/ Mount Pipe	185
3' Dia 20' Omni	252	APXVAALL24_43-U-NA20_TIA w/ Mount Pipe	185
P-9A72GN-S	251		
(2) 59.25" x 6.5" x 3" Panel w/ Mount Pipe	226.5	APXVAALL24_43-U-NA20_TIA w/ Mount Pipe	185
(2) 59.25" x 6.5" x 3" Panel w/ Mount Pipe	226.5	4' Dish	183
(3) 12' Sector Frames	226.5	(2) E15V95P08	169.5
(2) 59.25" x 6.5" x 3" Panel w/ Mount Pipe	226.5	(2) E15V95P08	169.5
FM Antenna	219.5	(2) E15V95P08	169.5
4' Dish	215	(2) LPA-80080-4CF-EDIN w/ Mount Pipe	169.5
6' Dish	210	(2) LPA-80063/4CFx5 w/ Mount Pipe	169.5
4'-P1.5x0.145	209	(2) LPA-80063/4CFx5 w/ Mount Pipe	169.5
MFF-950B	209	BXA-70063-6CF-EDIN w/ Mount Pipe	169.5
8' Omni	208	BXA-70063-6CF-EDIN w/ Mount Pipe	169.5
Horizontal Support Pipe	208	BXA-171063-12BF-EDIN-2 w/ Mount Pipe	169.5
Horizontal Support Pipe	208		
6' Standoff	205.5	BXA-171063-12BF-EDIN-2 w/ Mount Pipe	169.5
15' Omni	205.5	BXA-171063-12BF-EDIN-2 w/ Mount Pipe	169.5
OPA65R-BU8D_TIA w/ Mount Pipe	200	Pirot 12' T-Frame Sector	168
DMP65R-BU8D_TIA w/ Mount Pipe	200	Pirot 12' T-Frame Sector	168
DMP65R-BU8D_TIA w/ Mount Pipe	200	Pirot 12' T-Frame Sector	168
DMP65R-BU8D_TIA w/ Mount Pipe	200	(3) 4'-P1.5x0.145	150.5
Raycap DC9	200	3' dia x 20' Omni	138.5
RADIO 4478	200	Pirot 4' Side Mount Standoff	138.5
RADIO 4478	200	2.5'x4" Pipe Mount	138.5
RADIO 4478	200	P-9A72GN-S	130
RADIO 4449 B5/B12	200	Dish Pipe Mount	130
RADIO 4449 B5/B12	200	(2) 18" Dish	123.5
RADIO 8843 B2/B66A	200	3' Side Arm	112
RADIO 8843 B2/B66A	200	MTZ-940B	112
RADIO 8843 B2/B66A	200	(2) 18" Dish	106.5
DC6-48-60-18-8F	200	PR-950	90
Pirot 10' PCS Frame	200	Dish Pipe Mount	90
Pirot 10' PCS Frame	200	SPD3-2.4NS	36
Pirot 10' PCS Frame	200		
7770_TIA w/ Mount Pipe	200		
DTMABP7819VG12A	200		
DTMABP7819VG12A	200		

SYMBOL LIST

**EFI Global, Inc.**
1117 Perimeter Ctr West, Ste 500
Atlanta, GA 30338
Phone: (470) 990-6593
FAX:

Job: **CTNL058A**

Project: **049.03347 - 2275018**

Client: **T-Mobile**

Code: **TIA-222-G**

Path: C:\Users\joe\Desktop\ROOF\TOP\2022075_Fox\Site\049.03347_2275018_CTNL058A\TNY\WIP\TAC\TNL058A.dwg

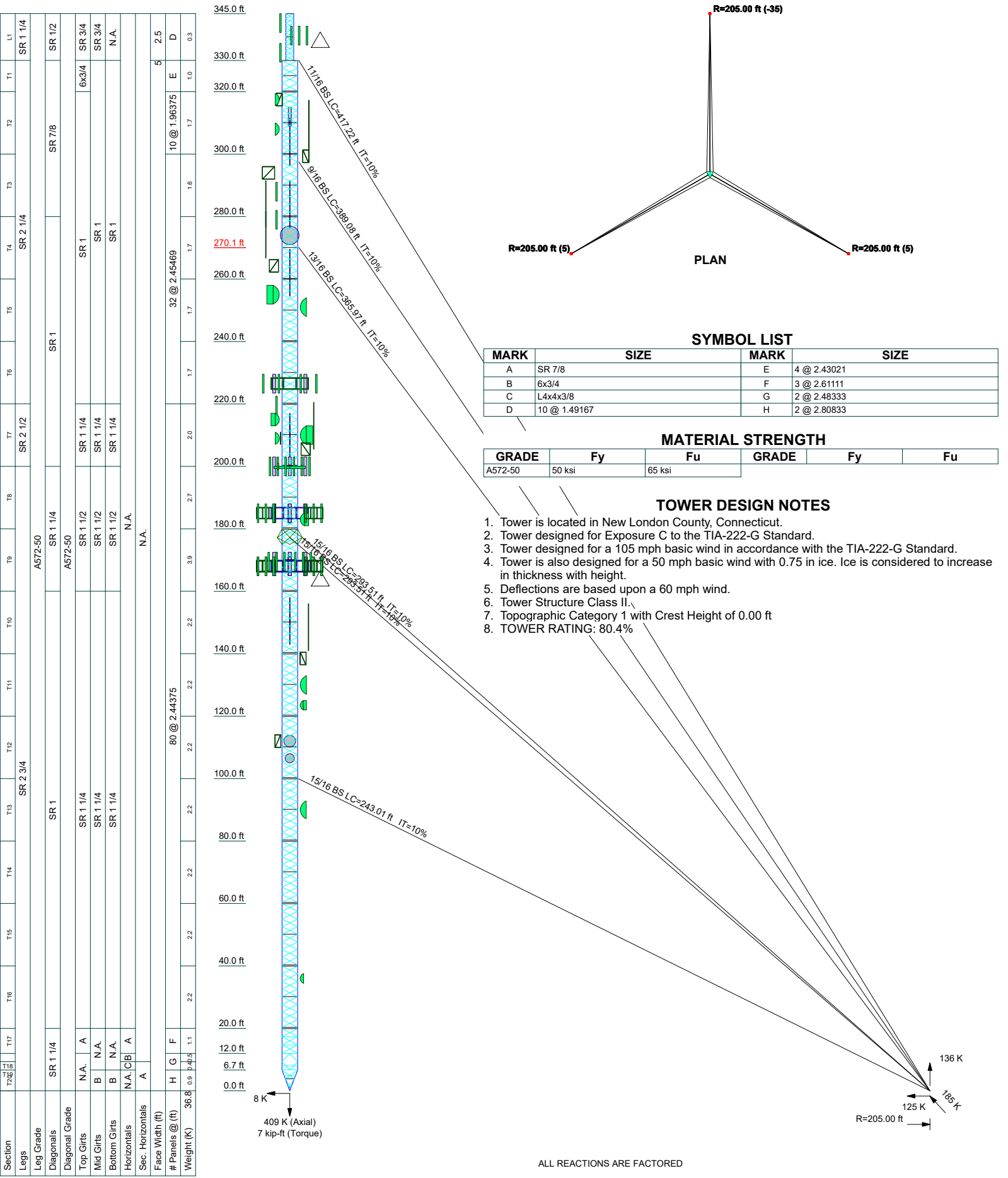
Drawn by: **Ahmet Colakoglu**

Date: **05/26/22**

App'd:

Scale: **NTS**

Dwg No. **E-1**



ALL REACTIONS ARE FACTORED



EFI Global, Inc.
1117 Perimeter Ctr West, Ste 500
Atlanta, GA 30338
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Client: T-Mobile

Drawn by: Ahmet Colakoglu

App'd:

Code: TIA-222-G

Date: 05/26/22

Scale: NTS

Path:

Dwg No. E-1

<i>tnxTower</i> <i>EFI Global, Inc.</i> 1117 Perimeter Ctr West, Ste 500 Atlanta, GA 30338 Phone: (470) 990-6593 FAX:	Job CTNL058A	Page 1 of 88
	Project 049.03347 - 2275018	Date 17:28:07 05/26/22
	Client T-Mobile	Designed by Ahmet Colakoglu

Tower Input Data

The main tower is a 3x guyed tower with an overall height of 345.00 ft above the ground line.

The base of the tower is set at an elevation of 0.00 ft above the ground line.

The face width of the tower is 5.00 ft at the top and tapered at the base.

An index plate is provided at the 3 sided -tower connection.

There is a 3 sided latticed pole with a face width of 2.50 ft.

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

The following design criteria apply:

Tower is located in New London County, Connecticut.

Basic wind speed of 105 mph.

Structure Class II.

Exposure Category C.

Topographic Category 1.

Crest Height 0.00 ft.

Nominal ice thickness of 0.7500 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

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

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

Pressures are calculated at each section.

Stress ratio used in latticed pole member design is 1.

Stress ratio used in tower member design is 1.

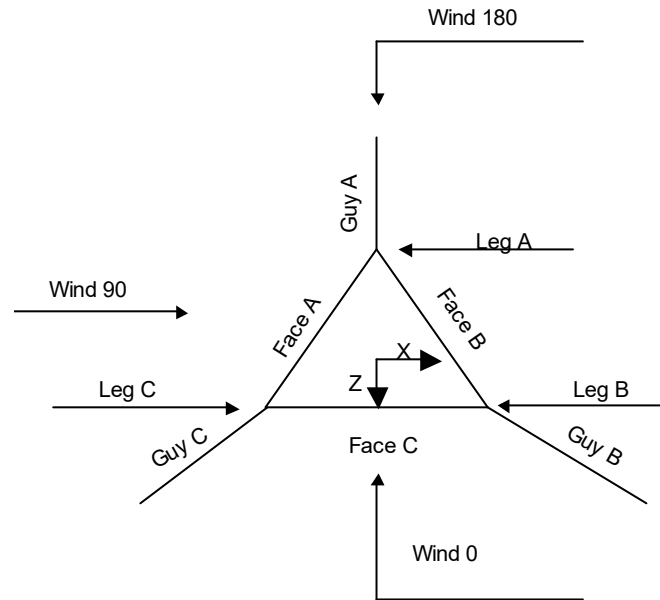
Safety factor used in guy design is 1.

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

Options

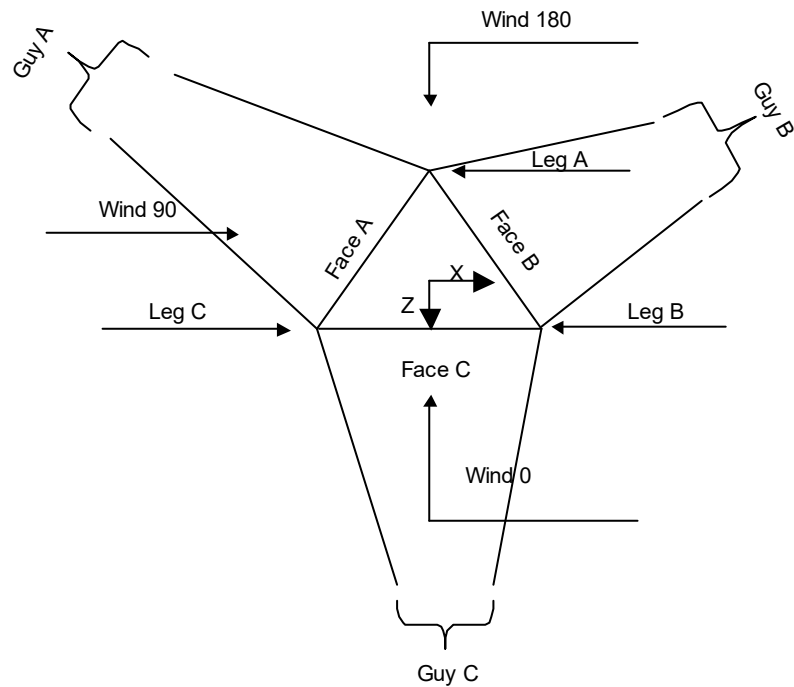
Consider Moments - Legs	Distribute Leg Loads As Uniform	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Horizontals	Assume Legs Pinned	√ Calculate Redundant Bracing Forces
Consider Moments - Diagonals	√ Assume Rigid Index Plate	Ignore Redundant Members in FEA
Use Moment Magnification	√ Use Clear Spans For Wind Area	√ SR Leg Bolts Resist Compression
√ Use Code Stress Ratios	√ Use Clear Spans For KL/r	All Leg Panels Have Same Allowable
√ Use Code Safety Factors - Guys	√ Retension Guys To Initial Tension	Offset Girt At Foundation
Escalate Ice	√ Bypass Mast Stability Checks	√ Consider Feed Line Torque
Always Use Max Kz	√ Use Azimuth Dish Coefficients	√ Include Angle Block Shear Check
Use Special Wind Profile	√ Project Wind Area of Appurt.	Use TIA-222-G Bracing Resist. Exemption
√ Include Bolts In Member Capacity	√ Autocalc Torque Arm Areas	Use TIA-222-G Tension Splice Exemption
√ Leg Bolts Are At Top Of Section	Add IBC .6D+W Combination	Poles
√ Secondary Horizontal Braces Leg	√ Sort Capacity Reports By Component	Include Shear-Torsion Interaction
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Always Use Sub-Critical Flow
√ SR Members Have Cut Ends	Treat Feed Line Bundles As Cylinder	Use Top Mounted Sockets
SR Members Are Concentric	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

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	Client T-Mobile	Designed by Ahmet Colakoglu



Corner & Starmount Guyed Tower

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	Client T-Mobile	Designed by Ahmet Colakoglu



Face Guyed

3 Sided Latticed Pole Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
L1	345.00-330.00			2.50	1	15.00

3 Sided Latticed Pole Section Geometry (cont'd)

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	Client	T-Mobile	Designed by	Ahmet Colakoglu

<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Diagonal Spacing</i>	<i>Bracing Type</i>	<i>Has K Brace End Panels</i>	<i>Has Horizontals</i>	<i>Top Girt Offset</i>	<i>Bottom Girt Offset</i>
	<i>ft</i>	<i>ft</i>				<i>in</i>	<i>in</i>
L1	345.00-330.00	1.49	X Brace	No	No	0.0000	1.0000

3 Sided Latticed Pole Section Geometry (cont'd)

<i>Tower Elevation</i>	<i>Leg Type</i>	<i>Leg Size</i>	<i>Leg Grade</i>	<i>Diagonal Type</i>	<i>Diagonal Size</i>	<i>Diagonal Grade</i>
<i>ft</i>						
L1 345.00-330.00	Solid Round	1 1/4	A572-50 (50 ksi)	Solid Round	1/2	A572-50 (50 ksi)

3 Sided Latticed Pole Section Geometry (cont'd)

<i>Tower Elevation</i>	<i>Top Girt Type</i>	<i>Top Girt Size</i>	<i>Top Girt Grade</i>	<i>Bottom Girt Type</i>	<i>Bottom Girt Size</i>	<i>Bottom Girt Grade</i>
<i>ft</i>						
L1 345.00-330.00	Solid Round	3/4	A572-50 (50 ksi)	Solid Round		A572-50 (50 ksi)

3 Sided Latticed Pole Section Geometry (cont'd)

<i>Tower Elevation</i>	<i>No. of Mid Girts</i>	<i>Mid Girt Type</i>	<i>Mid Girt Size</i>	<i>Mid Girt Grade</i>	<i>Horizontal Type</i>	<i>Horizontal Size</i>	<i>Horizontal Grade</i>
<i>ft</i>							
L1 345.00-330.00	1	Solid Round	3/4	A572-50 (50 ksi)	Solid Round		A570-50 (50 ksi)

3 Sided Latticed Pole Section Geometry (cont'd)

<i>Tower Elevation</i>	<i>Gusset Area (per face)</i>	<i>Gusset Thickness</i>	<i>Gusset Grade</i>	<i>Adjust. Factor A_f</i>	<i>Adjust. Factor A_r</i>	<i>Weight Mult.</i>	<i>Double Angle Stitch Bolt Spacing Diagonals</i>	<i>Double Angle Stitch Bolt Spacing Horizontals</i>	<i>Double Angle Stitch Bolt Spacing Redundants</i>
<i>ft</i>	<i>ft²</i>	<i>in</i>					<i>in</i>	<i>in</i>	<i>in</i>
L1 345.00-330.00	0.00	0.0000	A36 (36 ksi)	1.05	1.05	1.05	Mid-Pt	Mid-Pt	36.0000

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	Client	T-Mobile	Designed by	Ahmet Colakoglu

3 Sided Latticed Pole Section Geometry (cont'd)

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Legs	K Factors ¹						
				X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace
				X Y	X Y	X Y	X Y	X Y	X Y	X Y
L1 345.00- 330.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1

¹Note: 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.

3 Sided Latticed Pole 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
L1 345.00- 330.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub- Diagonal		Redundant Sub- Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
L1 345.00- 330.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	330.00-320.00			5.00	1	10.00
T2	320.00-300.00			5.00	1	20.00
T3	300.00-280.00			5.00	1	20.00
T4	280.00-260.00			5.00	1	20.00
T5	260.00-240.00			5.00	1	20.00
T6	240.00-220.00			5.00	1	20.00
T7	220.00-200.00			5.00	1	20.00
T8	200.00-180.00			5.00	1	20.00

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	Client	T-Mobile	Designed by	Ahmet Colakoglu

<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Assembly Database</i>	<i>Description</i>	<i>Section Width</i>	<i>Number of Sections</i>	<i>Section Length</i>
	<i>ft</i>			<i>ft</i>		<i>ft</i>
T9	180.00-160.00			5.00	1	20.00
T10	160.00-140.00			5.00	1	20.00
T11	140.00-120.00			5.00	1	20.00
T12	120.00-100.00			5.00	1	20.00
T13	100.00-80.00			5.00	1	20.00
T14	80.00-60.00			5.00	1	20.00
T15	60.00-40.00			5.00	1	20.00
T16	40.00-20.00			5.00	1	20.00
T17	20.00-12.00			5.00	1	8.00
T18	12.00-9.35			5.00	1	2.65
T19	9.35-6.70			5.00	1	2.65
T20	6.70-0.00			5.00	1	6.70

Tower Section Geometry (cont'd)

<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Diagonal Spacing</i>	<i>Bracing Type</i>	<i>Has K Brace End Panels</i>	<i>Has Horizontals</i>	<i>Top Girt Offset</i>	<i>Bottom Girt Offset</i>
	<i>ft</i>	<i>ft</i>				<i>in</i>	<i>in</i>
T1	330.00-320.00	2.43	X Brace	No	No	0.0000	3.3500
T2	320.00-300.00	1.96	X Brace	No	No	1.0000	3.3500
T3	300.00-280.00	2.45	X Brace	No	No	1.0000	3.3500
T4	280.00-260.00	2.45	X Brace	No	No	1.0000	3.3500
T5	260.00-240.00	2.45	X Brace	No	No	1.0000	3.3500
T6	240.00-220.00	2.45	X Brace	No	No	1.0000	3.3500
T7	220.00-200.00	2.44	X Brace	No	No	1.0000	4.4000
T8	200.00-180.00	2.44	X Brace	No	No	1.0000	4.4000
T9	180.00-160.00	2.44	X Brace	No	No	1.0000	4.4000
T10	160.00-140.00	2.44	X Brace	No	No	1.0000	4.4000
T11	140.00-120.00	2.44	X Brace	No	No	1.0000	4.4000
T12	120.00-100.00	2.44	X Brace	No	No	1.0000	4.4000
T13	100.00-80.00	2.44	X Brace	No	No	1.0000	4.4000
T14	80.00-60.00	2.44	X Brace	No	No	1.0000	4.4000
T15	60.00-40.00	2.44	X Brace	No	No	1.0000	4.4000
T16	40.00-20.00	2.44	X Brace	No	No	1.0000	4.4000
T17	20.00-12.00	2.61	X Brace	No	Yes	1.0000	1.0000
T18	12.00-9.35	2.48	K Brace Down	No	Yes	1.0000	1.0000
T19	9.35-6.70	2.48	K Brace Up	No	Yes	1.0000	1.0000
T20	6.70-0.00	2.81	X Brace	No	Yes	1.0000	12.0000

Tower Section Geometry (cont'd)

<i>Tower Elevation</i>	<i>Leg Type</i>	<i>Leg Size</i>	<i>Leg Grade</i>	<i>Diagonal Type</i>	<i>Diagonal Size</i>	<i>Diagonal Grade</i>
<i>ft</i>						
T1 330.00-320.00	Solid Round	2 1/4	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T2 320.00-300.00	Solid Round	2 1/4	A572-50	Solid Round	7/8	A572-50

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	Project	049.03347 - 2275018	Date	17:28:07 05/26/22
	Client	T-Mobile	Designed by	Ahmet Colakoglu

<i>Tower Elevation ft</i>	<i>Leg Type</i>	<i>Leg Size</i>	<i>Leg Grade</i>	<i>Diagonal Type</i>	<i>Diagonal Size</i>	<i>Diagonal Grade</i>
T3 300.00-280.00	Solid Round	2 1/4	(50 ksi) A572-50	Solid Round	7/8	(50 ksi) A572-50
T4 280.00-260.00	Solid Round	2 1/4	(50 ksi) A572-50	Solid Round	1	(50 ksi) A572-50
T5 260.00-240.00	Solid Round	2 1/4	(50 ksi) A572-50	Solid Round	1	(50 ksi) A572-50
T6 240.00-220.00	Solid Round	2 1/4	(50 ksi) A572-50	Solid Round	1	(50 ksi) A572-50
T7 220.00-200.00	Solid Round	2 1/2	(50 ksi) A572-50	Solid Round	1	(50 ksi) A572-50
T8 200.00-180.00	Solid Round	2 3/4	(50 ksi) A572-50	Solid Round	1 1/4	(50 ksi) A572-50
T9 180.00-160.00	Solid Round	2 3/4	(50 ksi) A572-50	Solid Round	1 1/4	(50 ksi) A572-50
T10 160.00-140.00	Solid Round	2 3/4	(50 ksi) A572-50	Solid Round	1	(50 ksi) A572-50
T11 140.00-120.00	Solid Round	2 3/4	(50 ksi) A572-50	Solid Round	1	(50 ksi) A572-50
T12 120.00-100.00	Solid Round	2 3/4	(50 ksi) A572-50	Solid Round	1	(50 ksi) A572-50
T13 100.00-80.00	Solid Round	2 3/4	(50 ksi) A572-50	Solid Round	1	(50 ksi) A572-50
T14 80.00-60.00	Solid Round	2 3/4	(50 ksi) A572-50	Solid Round	1	(50 ksi) A572-50
T15 60.00-40.00	Solid Round	2 3/4	(50 ksi) A572-50	Solid Round	1	(50 ksi) A572-50
T16 40.00-20.00	Solid Round	2 3/4	(50 ksi) A572-50	Solid Round	1	(50 ksi) A572-50
T17 20.00-12.00	Solid Round	2 3/4	(50 ksi) A572-50	Solid Round	1 1/4	(50 ksi) A572-50
T18 12.00-9.35	Solid Round	2 3/4	(50 ksi) A572-50	Solid Round	1 1/4	(50 ksi) A572-50
T19 9.35-6.70	Solid Round	2 3/4	(50 ksi) A572-50	Solid Round	1 1/4	(50 ksi) A572-50
T20 6.70-0.00	Solid Round	2 3/4	(50 ksi) A572-50	Solid Round	1 1/4	(50 ksi) A572-50

Tower Section Geometry (cont'd)

<i>Tower Elevation ft</i>	<i>Top Girt Type</i>	<i>Top Girt Size</i>	<i>Top Girt Grade</i>	<i>Bottom Girt Type</i>	<i>Bottom Girt Size</i>	<i>Bottom Girt Grade</i>
T1 330.00-320.00	Flat Bar	6x3/4	A36 (36 ksi)	Solid Round	1	A572-50 (50 ksi)
T2 320.00-300.00	Solid Round	1	A572-50 (50 ksi)	Solid Round	1	A572-50 (50 ksi)
T3 300.00-280.00	Solid Round	1	A572-50 (50 ksi)	Solid Round	1	A572-50 (50 ksi)
T4 280.00-260.00	Solid Round	1	A572-50 (50 ksi)	Solid Round	1	A572-50 (50 ksi)
T5 260.00-240.00	Solid Round	1	A572-50	Solid Round	1	A572-50

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<i>Tower Elevation ft</i>	<i>Top Girt Type</i>	<i>Top Girt Size</i>	<i>Top Girt Grade</i>	<i>Bottom Girt Type</i>	<i>Bottom Girt Size</i>	<i>Bottom Girt Grade</i>
T6 240.00-220.00	Solid Round	1	(50 ksi) A572-50	Solid Round	1	(50 ksi) A572-50
T7 220.00-200.00	Solid Round	1 1/4	(50 ksi) A572-50	Solid Round	1 1/4	(50 ksi) A572-50
T8 200.00-180.00	Solid Round	1 1/2	(50 ksi) A572-50	Solid Round	1 1/2	(50 ksi) A572-50
T9 180.00-160.00	Solid Round	1 1/2	(50 ksi) A572-50	Solid Round	1 1/2	(50 ksi) A572-50
T10 160.00-140.00	Solid Round	1 1/4	(50 ksi) A572-50	Solid Round	1 1/4	(50 ksi) A572-50
T11 140.00-120.00	Solid Round	1 1/4	(50 ksi) A572-50	Solid Round	1 1/4	(50 ksi) A572-50
T12 120.00-100.00	Solid Round	1 1/4	(50 ksi) A572-50	Solid Round	1 1/4	(50 ksi) A572-50
T13 100.00-80.00	Solid Round	1 1/4	(50 ksi) A572-50	Solid Round	1 1/4	(50 ksi) A572-50
T14 80.00-60.00	Solid Round	1 1/4	(50 ksi) A572-50	Solid Round	1 1/4	(50 ksi) A572-50
T15 60.00-40.00	Solid Round	1 1/4	(50 ksi) A572-50	Solid Round	1 1/4	(50 ksi) A572-50
T16 40.00-20.00	Solid Round	1 1/4	(50 ksi) A572-50	Solid Round	1 1/4	(50 ksi) A572-50
T17 20.00-12.00	Solid Round	7/8	(50 ksi) A572-50	Solid Round		(50 ksi) A572-50
T20 6.70-0.00	Flat Bar		A36 (36 ksi)	Flat Bar	6x3/4	A36 (36 ksi)

Tower Section Geometry (cont'd)

<i>Tower Elevation ft</i>	<i>No. of Mid Girts</i>	<i>Mid Girt Type</i>	<i>Mid Girt Size</i>	<i>Mid Girt Grade</i>	<i>Horizontal Type</i>	<i>Horizontal Size</i>	<i>Horizontal Grade</i>
T1 330.00-320.00	1	Solid Round	1	A572-50 (50 ksi)	Flat Bar		A572-50 (50 ksi)
T2 320.00-300.00	1	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T3 300.00-280.00	1	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T4 280.00-260.00	1	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T5 260.00-240.00	1	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T6 240.00-220.00	1	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T7 220.00-200.00	1	Solid Round	1 1/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T8 200.00-180.00	1	Solid Round	1 1/2	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T9 180.00-160.00	1	Solid Round	1 1/2	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)

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<i>Tower Elevation</i> <i>ft</i>	<i>No. of Mid Girts</i>	<i>Mid Girt Type</i>	<i>Mid Girt Size</i>	<i>Mid Girt Grade</i>	<i>Horizontal Type</i>	<i>Horizontal Size</i>	<i>Horizontal Grade</i>
T10 160.00-140.00	1	Solid Round	1 1/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T11 140.00-120.00	1	Solid Round	1 1/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T12 120.00-100.00	1	Solid Round	1 1/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T13 100.00-80.00	1	Solid Round	1 1/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T14 80.00-60.00	1	Solid Round	1 1/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T15 60.00-40.00	1	Solid Round	1 1/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T16 40.00-20.00	1	Solid Round	1 1/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T17 20.00-12.00	None	Solid Round		A36 (36 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T18 12.00-9.35	None	Flat Bar		A36 (36 ksi)	Flat Bar	6x3/4	A36 (36 ksi)
T19 9.35-6.70	1	Flat Bar	6x3/4	A36 (36 ksi)	Single Angle	L4x4x3/8	A572-50 (50 ksi)
T20 6.70-0.00	1	Flat Bar	6x3/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)

Tower Section Geometry (cont'd)

<i>Tower Elevation</i> <i>ft</i>	<i>Secondary Horizontal Type</i>	<i>Secondary Horizontal Size</i>	<i>Secondary Horizontal Grade</i>	<i>Inner Bracing Type</i>	<i>Inner Bracing Size</i>	<i>Inner Bracing Grade</i>
T19 9.35-6.70	Solid Round	7/8	A572-50 (50 ksi)	Solid Round		A572-50 (50 ksi)
T20 6.70-0.00	Solid Round	7/8	A572-50 (50 ksi)	Solid Round		A572-50 (50 ksi)

Tower Section Geometry (cont'd)

<i>Tower Elevation</i> <i>ft</i>	<i>Gusset Area (per face)</i> <i>ft²</i>	<i>Gusset Thickness</i> <i>in</i>	<i>Gusset Grade</i>	<i>Adjust. Factor A_f</i>	<i>Adjust. Factor A_r</i>	<i>Weight Mult.</i>	<i>Double Angle Stitch Bolt Spacing Diagonals</i> <i>in</i>	<i>Double Angle Stitch Bolt Spacing Horizontals</i> <i>in</i>	<i>Double Angle Stitch Bolt Spacing Redundants</i> <i>in</i>
T1 330.00-320.00	0.00	0.0000	A36 (36 ksi)	1.05	1.05	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T2 320.00-300.00	0.00	0.0000	A36 (36 ksi)	1.05	1.05	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T3 300.00-280.00	0.00	0.0000	A36 (36 ksi)	1.05	1.05	1.05	Mid-Pt	Mid-Pt	Mid-Pt

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<i>Tower Elevation</i>	<i>Gusset Area (per face)</i>	<i>Gusset Thickness</i>	<i>Gusset Grade</i>	<i>Adjust. Factor A_f</i>	<i>Adjust. Factor A_r</i>	<i>Weight Mult.</i>	<i>Double Angle Stitch Bolt Spacing Diagonals</i>	<i>Double Angle Stitch Bolt Spacing Horizontals</i>	<i>Double Angle Stitch Bolt Spacing Redundants</i>
<i>ft</i>	<i>ft²</i>	<i>in</i>					<i>in</i>	<i>in</i>	<i>in</i>
T4 280.00-260.00	0.00	0.0000	A36 (36 ksi)	1.05	1.05	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T5 260.00-240.00	0.00	0.0000	A36 (36 ksi)	1.05	1.05	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T6 240.00-220.00	0.00	0.0000	A36 (36 ksi)	1.05	1.05	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T7 220.00-200.00	0.00	0.0000	A36 (36 ksi)	1.05	1.05	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T8 200.00-180.00	0.00	0.0000	A36 (36 ksi)	1.05	1.05	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T9 180.00-160.00	0.00	0.0000	A36 (36 ksi)	1.05	1.05	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T10 160.00-140.00	0.00	0.0000	A36 (36 ksi)	1.05	1.05	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T11 140.00-120.00	0.00	0.0000	A36 (36 ksi)	1.05	1.05	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T12 120.00-100.00	0.00	0.0000	A36 (36 ksi)	1.05	1.05	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T13 100.00-80.00	0.00	0.0000	A36 (36 ksi)	1.05	1.05	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T14 80.00-60.00	0.00	0.0000	A36 (36 ksi)	1.05	1.05	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T15 60.00-40.00	0.00	0.0000	A36 (36 ksi)	1.05	1.05	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T16 40.00-20.00	0.00	0.0000	A36 (36 ksi)	1.05	1.05	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T17 20.00-12.00	0.00	0.0000	A36 (36 ksi)	1.05	1.05	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T18 12.00-9.35	0.00	0.0000	A36 (36 ksi)	1.05	1.05	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T19 9.35-6.70	0.00	0.0000	A36 (36 ksi)	1.05	1.05	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T20 6.70-0.00	0.00	0.0000	A36 (36 ksi)	1.05	1.05	1.05	Mid-Pt	Mid-Pt	Mid-Pt

Tower Section Geometry (cont'd)

<i>Tower Elevation</i>	<i>Calc K Single Angles</i>	<i>Calc K Solid Rounds</i>	<i>Legs</i>	<i>K Factors¹</i>						
				<i>X Brace Diags</i>	<i>K Brace Diags</i>	<i>Single Diags</i>	<i>Girts</i>	<i>Horiz.</i>	<i>Sec. Horiz.</i>	<i>Inner Brace</i>
				<i>X</i> <i>Y</i>	<i>X</i> <i>Y</i>	<i>X</i> <i>Y</i>	<i>X</i> <i>Y</i>	<i>X</i> <i>Y</i>	<i>X</i> <i>Y</i>	<i>X</i> <i>Y</i>
T1 330.00-320.00	Yes	Yes	1	1	1	1	1	1	1	1
T2 320.00-300.00	Yes	Yes	1	1	1	1	1	1	1	1
T3 300.00-280.00	Yes	Yes	1	1	1	1	1	1	1	1
T4 280.00-260.00	Yes	Yes	1	1	1	1	1	1	1	1

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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.
T9 180.00-160.00	Sleeve DS	0.8750 A325N	5	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T10 160.00-140.00	Sleeve DS	0.8750 A325N	5	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T11 140.00-120.00	Sleeve DS	0.8750 A325N	5	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T12 120.00-100.00	Sleeve DS	0.8750 A325N	5	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T13 100.00-80.00	Sleeve DS	0.8750 A325N	5	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T14 80.00-60.00	Sleeve DS	0.7500 A325N	5	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T15 60.00-40.00	Sleeve DS	0.7500 A325N	5	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T16 40.00-20.00	Sleeve DS	0.7500 A325N	5	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T17 20.00-12.00	Sleeve DS	0.7500 A325N	5	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T18 12.00-9.35	Sleeve DS	0.0000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T19 9.35-6.70	Sleeve DS	1.7500 A325N	3	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T20 6.70-0.00	Sleeve DS	1.7500 A325N	3	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

Guy Data

Guy Elevation ft	Guy Grade	Guy Size	Initial Tension K	%	Guy Modulus ksi	Guy Weight plf	L _u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
330	BS	A 11/16	6	10%	24000	0.990	416.88	205.00	0.0000	-35.00	100%
		B 11/16	6	10%	24000	0.990	382.40	205.00	0.0000	5.00	100%
		C 11/16	6	10%	24000	0.990	382.40	205.00	0.0000	5.00	100%
297.462	BS	A 9/16	4	10%	24000	0.660	388.76	205.00	0.0000	-35.00	100%
		B 9/16	4	10%	24000	0.660	355.22	205.00	0.0000	5.00	100%
		C 9/16	4	10%	24000	0.660	355.22	205.00	0.0000	5.00	100%
270.098	BS	A 13/16	8	10%	24000	1.390	365.67	205.00	0.0000	-35.00	100%
		B 13/16	8	10%	24000	1.390	333.09	205.00	0.0000	5.00	100%
		C 13/16	8	10%	24000	1.390	333.09	205.00	0.0000	5.00	100%
177.25	BS	A 15/16	11	10%	24000	1.850	293.27	205.00	0.0000	-35.00	100%
		B 15/16	11	10%	24000	1.850	265.81	205.00	0.0000	5.00	100%
		C 15/16	11	10%	24000	1.850	265.81	205.00	0.0000	5.00	100%
99.9167	BS	A 15/16	11	10%	24000	1.850	242.81	205.00	0.0000	-35.00	100%
		B 15/16	11	10%	24000	1.850	223.11	205.00	0.0000	5.00	100%
		C 15/16	11	10%	24000	1.850	223.11	205.00	0.0000	5.00	100%

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Guy Data(cont'd)

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
330	Corner						
297.462	Corner						
270.098	Corner						
177.25	Torque Arm	8.00	30.0000	Wing	A36 (36 ksi)	Double Equal Angle	2L4x4x3/8
99.9167	Corner						

Guy Data (cont'd)

Guy Elevation ft	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-Off Grade	Pull-Off Type	Pull-Off Size
330.00	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Flat Bar	
297.46	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Flat Bar	
270.10	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Flat Bar	
177.25	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Solid Round	
99.92	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Flat Bar	

Guy Data (cont'd)

Guy Elevation ft	Cable Weight A K	Cable Weight B K	Cable Weight C K	Cable Weight D K	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
330	0	0	0		14.40	12.16	12.16	
					6.6 sec/pulse	6.0 sec/pulse	6.0 sec/pulse	
297.462	0	0	0		12.77	10.70	10.70	
					6.2 sec/pulse	5.6 sec/pulse	5.6 sec/pulse	
270.098	1	0	0		11.33	9.43	9.43	
					5.8 sec/pulse	5.3 sec/pulse	5.3 sec/pulse	
177.25	1	0	0		7.24	5.97	5.97	
					4.6 sec/pulse	4.2 sec/pulse	4.2 sec/pulse	
99.9167	0	0	0		5.00	4.23	4.23	
					3.9 sec/pulse	3.6 sec/pulse	3.6 sec/pulse	

Guy Data (cont'd)

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Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm		Pull Off		Diagonal	
			K _x	K _y	K _x	K _y	K _x	K _y
330	No	No			1	1	1	1
297.462	No	No			1	1	1	1
270.098	No	No			1	1	1	1
177.25	Yes	Yes	1	1	1	1	1	1
99.9167	No	No			1	1	1	1

Guy Data (cont'd)

Guy Elevation ft	Torque-Arm				Pull Off				Diagonal			
	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U
330	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
297.462	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
270.098	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
177.25	1.0000 A325N	4	0.0000	1	1.0000 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
99.9167	0.6250 A325N	0	0.0000	0.75	1.0000 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q _z psf	q _z Ice psf	Ice Thickness in
330	A	147.50	33	7	1.7423
	B	167.50	34	8	1.7646
	C	167.50	34	8	1.7646
297.462	A	131.23	32	7	1.7220
	B	151.23	33	8	1.7466
	C	151.23	33	8	1.7466
270.098	A	117.55	31	7	1.7032
	B	137.55	32	7	1.7302
	C	137.55	32	7	1.7302
177.25	A	71.13	28	6	1.6197
	B	91.13	30	7	1.6604
	C	91.13	30	7	1.6604
99.9167	A	32.46	24	5	1.4975
	B	52.46	27	6	1.5712
	C	52.46	27	6	1.5712

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Guy-Mast Forces (Excluding Wind) - No Ice

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
330	A	61.0252	6	0	5	-3	-15.70	0.00	0.00
			6						
	B	58.1231	6	3	5	2	7.58	0.00	-13.13
			6						
	C	58.1231	6	-3	5	2	7.58	-0.00	13.13
			6						
			Sum:	0	16	0	-0.54	0.00	0.00
297.462	A	58.7034	4	0	3	-2	-10.01	0.00	0.00
			4						
	B	55.3526	4	2	3	1	4.80	0.00	-8.31
			4						
	C	55.3526	4	-2	3	1	4.80	-0.00	8.31
			4						
			Sum:	0	10	0	-0.42	0.00	0.00
270.098	A	56.4774	8	0	7	-5	-20.50	0.00	0.00
			8						
	B	52.6777	8	4	7	2	9.73	0.00	-16.85
			8						
	C	52.6777	8	-4	7	2	9.73	-0.00	16.85
			8						
			Sum:	0	21	0	-1.04	0.00	0.00
177.25	A	46.3142	11	0	8	-8	-18.99	30.71	-32.89
			11						
	A	46.3142	11	0	8	-8	-18.99	-30.71	32.89
			11						
	B	40.3530	11	7	7	4	33.91	33.77	0.00
			11						
	B	40.3530	11	7	7	4	-16.95	-33.77	-29.37
			11						
	C	40.3530	11	-7	7	4	-16.95	33.77	29.37
			11						
	C	40.3530	11	-7	7	4	33.91	-33.77	0.00
			11						
			Sum:	0	46	2	-4.07	0.00	0.00
99.9167	A	33.7243	11	0	6	-9	-18.16	0.00	0.00
			11						
	B	25.1557	11	9	5	5	6.98	0.00	-12.09
			11						
	C	25.1557	11	-9	5	5	6.98	-0.00	12.09
			11						
			Sum:	0	16	1	-4.20	0.00	0.00

Guy-Mast Forces (Excluding Wind) - Ice

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Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
330	A	61.0252	12	0	11	-5	-32.34	0.00	0.00
			10						
	B	58.1231	12	5	11	3	15.69	0.00	-27.18
			10						
	C	58.1231	12	-5	11	3	15.69	-0.00	27.18
			10						
			Sum:	0	33	1	-0.95	0.00	0.00
297.462	A	58.7034	9	0	8	-4	-23.92	0.00	0.00
			8						
	B	55.3526	9	4	8	2	11.55	0.00	-20.01
			8						
	C	55.3526	9	-4	8	2	11.55	-0.00	20.01
			8						
			Sum:	0	24	0	-0.82	0.00	0.00
270.098	A	56.4774	15	0	13	-8	-37.96	0.00	0.00
			13						
	B	52.6777	15	8	13	4	18.15	0.00	-31.44
			14						
	C	52.6777	15	-8	13	4	18.15	-0.00	31.44
			14						
			Sum:	0	38	1	-1.66	0.00	0.00
177.25	A	46.3142	19	0	14	-12	-32.04	49.63	-55.50
			17						
	A	46.3142	19	0	14	-12	-32.04	-49.63	55.50
			17						
	B	40.3530	19	12	13	7	57.88	55.10	0.00
			17						
	B	40.3530	19	12	13	7	-28.94	-55.10	-50.13
			17						
	C	40.3530	19	-12	13	7	-28.94	55.10	50.13
			17						
	C	40.3530	19	-12	13	7	57.88	-55.10	0.00
			17						
			Sum:	0	78	3	-6.20	0.00	0.00
99.9167	A	33.7243	18	0	10	-14	-29.92	0.00	0.00
			17						
	B	25.1557	18	14	8	8	11.81	0.00	-20.46
			17						
	C	25.1557	18	-14	8	8	11.81	-0.00	20.46
			17						
			Sum:	0	27	1	-6.29	0.00	0.00

Guy-Mast Forces (Excluding Wind) - Service

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
330	A	61.0252	6	0	5	-3	-15.70	0.00	0.00

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Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
297.462	B	58.1231	6						
			6	3	5	2	7.58	0.00	-13.13
	C	58.1231	6						
			6	-3	5	2	7.58	-0.00	13.13
	A	58.7034	Sum:	0	16	0	-0.54	0.00	0.00
			4	0	3	-2	-10.01	0.00	0.00
270.098	B	55.3526	4						
			4	2	3	1	4.80	0.00	-8.31
	C	55.3526	4						
			4	-2	3	1	4.80	-0.00	8.31
	A	56.4774	Sum:	0	10	0	-0.42	0.00	0.00
			8	0	7	-5	-20.50	0.00	0.00
177.25	B	52.6777	8						
			8	4	7	2	9.73	0.00	-16.85
	C	52.6777	8						
			8	-4	7	2	9.73	-0.00	16.85
	A	46.3142	Sum:	0	21	0	-1.04	0.00	0.00
			11	0	8	-8	-18.99	30.71	-32.89
99.9167	A	46.3142	11						
			11	0	8	-8	-18.99	-30.71	32.89
	B	40.3530	11						
			11	7	7	4	33.91	33.77	0.00
	B	40.3530	11						
			11	7	7	4	-16.95	-33.77	-29.37
	C	40.3530	11						
			11	-7	7	4	-16.95	33.77	29.37
	C	40.3530	11						
			11	-7	7	4	33.91	-33.77	0.00
99.9167	A	33.7243	Sum:	0	46	2	-4.07	0.00	0.00
			11	0	6	-9	-18.16	0.00	0.00
	B	25.1557	11						
			11	9	5	5	6.98	0.00	-12.09
	C	25.1557	11						
			11	-9	5	5	6.98	-0.00	12.09
			Sum:	0	16	1	-4.20	0.00	0.00

Guy-Tensioning Information

Temperature At Time Of Tensioning																
Guy Elevation ft	H ft	V ft	0 F		20 F		40 F		60 F		80 F		100 F		120 F	
			Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft
330	A	202.11	365.00	6.372	13.14	6.180	13.53	5.989	13.96	5.800	14.40	5.613	14.87	5.427	15.36	5.244
	B	202.11	325.00	6.480	10.91	6.251	11.30	6.025	11.71	5.800	12.16	5.578	12.63	5.359	13.13	5.143
	C	202.11	325.00	6.480	10.91	6.251	11.30	6.025	11.71	5.800	12.16	5.578	12.63	5.359	13.13	5.143
297.462	A	202.11	332.46	4.238	11.48	4.091	11.88	3.945	12.31	3.800	12.77	3.657	13.26	3.516	13.77	3.377

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Temperature At Time Of Tensioning																	
Guy Elevation ft	H	V	0 F		20 F		40 F		60 F		80 F		100 F		120 F		
			Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	
			K	ft	K	ft	K	ft	K	ft	K	ft	K	ft	K	ft	
270.098	B	202.11	292.46	4.326	9.42	4.149	9.82	3.973	10.24	3.800	10.70	3.629	11.19	3.461	11.72	3.296	12.29
	C	202.11	292.46	4.326	9.42	4.149	9.82	3.973	10.24	3.800	10.70	3.629	11.19	3.461	11.72	3.296	12.29
	A	202.11	305.10	9.034	10.06	8.686	10.45	8.341	10.87	8.000	11.33	7.663	11.81	7.332	12.34	7.005	12.89
	B	202.11	265.10	9.249	8.18	8.828	8.56	8.411	8.98	8.000	9.43	7.595	9.92	7.198	10.46	6.809	11.04
177.25	C	202.11	265.10	9.249	8.18	8.828	8.56	8.411	8.98	8.000	9.43	7.595	9.92	7.198	10.46	6.809	11.04
	A	202.73	212.25	12.975	6.04	12.240	6.40	11.514	6.80	10.800	7.24	10.099	7.74	9.415	8.29	8.752	8.90
	B	202.73	172.25	13.451	4.80	12.554	5.14	11.669	5.53	10.800	5.97	9.952	6.47	9.131	7.04	8.342	7.70
	C	202.73	172.25	13.451	4.80	12.554	5.14	11.669	5.53	10.800	5.97	9.952	6.47	9.131	7.04	8.342	7.70
99.9167	A	202.11	134.92	13.970	3.87	12.895	4.19	11.836	4.56	10.800	5.00	9.793	5.50	8.826	6.10	7.910	6.80
	B	202.11	94.92	14.568	3.14	13.288	3.44	12.029	3.80	10.800	4.23	9.613	4.75	8.484	5.38	7.436	6.13
	C	202.11	94.92	14.568	3.14	13.288	3.44	12.029	3.80	10.800	4.23	9.613	4.75	8.484	5.38	7.436	6.13

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
***** * ***** *													
LDF7-50A(1-5/8")	B	No	No	Ar (CaAa)	200.00 - 6.00	-3.0000	-0.35	6	6	0.5000	1.9800		0.82
WR-VG86ST-BRD(3/4)	B	No	No	Ar (CaAa)	200.00 - 6.00	1.0000	0.32	5	5	0.2500	0.7950		0.58
LDF2-50A(3/8")	B	No	No	Ar (CaAa)	200.00 - 6.00	-1.0000	0.32	2	2	0.4400	0.4400		0.08
***** * ***** *													
LDF5-50A(7/8)	B	No	No	Ar (CaAa)	219.50 - 6.00	0.0000	0.3	1	1	1.0300	1.0300		0.33
LDF4-50A(1/2)	B	No	No	Ar (CaAa)	90.00 - 6.00	0.0000	0.35	1	1	0.6250	0.6250		0.15
LDF5-50A(7/8)	B	No	No	Ar (CaAa)	136.00 - 6.00	0.0000	0.4	1	1	1.0300	1.0300		0.33
LDF12-50A(2-1/4)	B	No	No	Ar (CaAa)	297.00 - 6.00	0.0000	0.45	1	1	2.3500	2.3500		1.22
LDF7-50A(1-5/8")	B	No	No	Ar (CaAa)	169.50 - 6.00	-6.0000	0.37	12	4	0.1000 0.2500	1.9800		0.82
LDF4-50A(1/2)	C	No	No	Ar (CaAa)	36.00 - 6.00	0.0000	-0.45	2	2	0.6250	0.6250		0.15
1" Coax	C	No	No	Ar (CaAa)	345.00 - 6.00	0.0000	0	1	1	1.5500	1.0000		0.58
LDF5-50A(7/8)	C	No	No	Ar (CaAa)	264.25 - 6.00	0.0000	0.4	1	1	1.0300	1.0300		0.33
LDF6-50A(1-1/4)	C	No	No	Ar (CaAa)	205.50 - 6.00	0.0000	0.45	1	1	1.5500	1.5500		0.60
LDF7-50A(1-5/8)	C	No	No	Ar (CaAa)	251.00 - 6.00	-1.0000	0.18	1	1	1.9800	1.9800		0.82
LDF6-50A(1-1/4")	C	No	No	Ar (CaAa)	294.00 - 6.00	-1.0000	0.3	3	3	2.0000 0.2500	1.5500		0.66

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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
LDF4-50A(1/2)	C	No	No	Ar (CaAa)	332.50 - 6.00	-1.0000	0.38	1	1	0.6250	0.6250		0.15
LDF4-50A(1/2)	C	No	No	Ar (CaAa)	274.00 - 6.00	-1.0000	0.4	2	2	0.6250	0.6250		0.15
***** *													
***** *													
LDF7-50A(1-5/8)	A	No	No	Ar (CaAa)	274.00 - 6.00	0.0000	-0.4	1	1	1.9800	1.9800		0.82
LDF7-50A(1-5/8)	A	No	No	Ar (CaAa)	308.00 - 6.00	0.0000	-0.3	1	1	1.9800	1.9800		0.82
LDF7-50A(1-5/8)	A	No	No	Ar (CaAa)	317.50 - 6.00	0.0000	-0.28	1	1	1.9800	1.9800		0.82
LDF4-50A(1/2)	A	No	No	Ar (CaAa)	312.00 - 6.00	0.0000	-0.24	1	1	0.6250	0.6250		0.15
LDF4-50A(1/2)	A	No	No	Ar (CaAa)	279.00 - 6.00	0.0000	-0.2	1	1	0.6250	0.6250		0.15
LDF7-50A(1-5/8)	A	No	No	Ar (CaAa)	342.25 - 6.00	0.0000	-0.16	1	1	1.9800	1.9800		0.82
LDF7-50A(1-5/8)	A	No	No	Ar (CaAa)	130.00 - 6.00	-1.0000	-0.24	1	1	1.9800	1.9800		0.82
LDF7-50A(1-5/8)	A	No	No	Ar (CaAa)	112.00 - 6.00	-1.0000	-0.28	1	1	1.9800	1.9800		0.82
LDF7-50A(1-5/8)	A	No	No	Ar (CaAa)	204.00 - 6.00	-1.0000	-0.32	1	1	1.9800	1.9800		0.82
LDF5-50A(7/8)	A	No	No	Ar (CaAa)	252.00 - 6.00	0.0000	0.18	1	1	1.0300	1.0300		0.33
LDF4.5-50(5/8)	A	No	No	Ar (CaAa)	150.60 - 6.00	0.0000	0.21	1	1	0.8650	0.8650		0.15
LDF6-50A(1-1/4)	A	No	No	Ar (CaAa)	209.00 - 6.00	0.0000	0.24	1	1	1.5500	1.5500		0.60
LDF7-50A(1-5/8)	A	No	No	Ar (CaAa)	226.50 - 6.00	0.0000	0.4	6	6	0.5000 1.5000	1.9800		0.82
LDF1-50A(1/4")	A	No	No	Ar (CaAa)	106.50 - 6.00	-1.0000	0.45	2	2	0.3450	0.3450		0.06
FJ-2SM-001-75M(3/16")	A	No	No	Ar (CaAa)	123.50 - 6.00	-1.0000	0.49	1	1	0.2500	0.1890		0.02
***** *													
Climbing Ladder (Rail)	A	No	No	Ar (CaAa)	345.00 - 6.00	0.0000	-0.25	1	1	0.2500	0.2500		3.00
Climbing Ladder (Rungs)	A	No	No	Ar (CaAa)	345.00 - 6.00	0.0000	-0.25	1	1	0.6250	0.6250		2.09
185ft T-Mobile													
LDF7-50A(1-5/8)	A	No	No	Ar (CaAa)	185.00 - 6.00	-1.0000	0.43	3	3	1.0000 1.9800	1.9800		0.82

Feedline Ladder (Rail)	A	No	No	Af (CaAa)	330.00 - 0.00	0.0000	-0.25	1	1	1.7500	1.7500		3.00
Feedline Ladder (Rail)	A	No	No	Af (CaAa)	330.00 - 0.00	0.0000	0.25	1	1	1.7500	1.7500		3.00
Feedline Ladder (Rail)	B	No	No	Af (CaAa)	330.00 - 0.00	0.0000	-0.25	1	1	1.7500	1.7500		3.00

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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
Feedline Ladder (Rail) ** **	C	No	No	Af (CaAa)	330.00 - 0.00	0.0000	-0.25	1	1	1.7500	1.7500		3.00

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	$C_A A_A$ 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	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²	Weight K
L1	345.00-330.00	A	0.000	0.000	3.738	0.000	0
		B	0.000	0.000	0.000	0.000	0
		C	0.000	0.000	1.656	0.000	0
T1	330.00-320.00	A	0.000	0.000	8.688	0.000	0
		B	0.000	0.000	2.917	0.000	0
		C	0.000	0.000	4.542	0.000	0
T2	320.00-300.00	A	0.000	0.000	23.176	0.000	0
		B	0.000	0.000	5.833	0.000	0
		C	0.000	0.000	9.083	0.000	0
T3	300.00-280.00	A	0.000	0.000	26.547	0.000	0
		B	0.000	0.000	9.828	0.000	0
		C	0.000	0.000	15.593	0.000	0
T4	280.00-260.00	A	0.000	0.000	30.506	0.000	0
		B	0.000	0.000	10.533	0.000	0
		C	0.000	0.000	20.571	0.000	0
T5	260.00-240.00	A	0.000	0.000	32.993	0.000	0
		B	0.000	0.000	10.533	0.000	0
		C	0.000	0.000	25.121	0.000	0
T6	240.00-220.00	A	0.000	0.000	41.539	0.000	0
		B	0.000	0.000	10.533	0.000	0
		C	0.000	0.000	26.903	0.000	0
T7	220.00-200.00	A	0.000	0.000	59.764	0.000	0
		B	0.000	0.000	12.542	0.000	0
		C	0.000	0.000	27.756	0.000	0

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Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
T8	200.00-180.00	A	0.000	0.000	67.607	0.000	0
		B	0.000	0.000	46.063	0.000	0
		C	0.000	0.000	30.003	0.000	0
T9	180.00-160.00	A	0.000	0.000	76.517	0.000	0
		B	0.000	0.000	68.635	0.000	0
		C	0.000	0.000	30.003	0.000	0
T10	160.00-140.00	A	0.000	0.000	77.434	0.000	0
		B	0.000	0.000	93.583	0.000	0
		C	0.000	0.000	30.003	0.000	0
T11	140.00-120.00	A	0.000	0.000	80.293	0.000	0
		B	0.000	0.000	95.231	0.000	0
		C	0.000	0.000	30.003	0.000	0
T12	120.00-100.00	A	0.000	0.000	85.409	0.000	1
		B	0.000	0.000	95.643	0.000	0
		C	0.000	0.000	30.003	0.000	0
T13	100.00-80.00	A	0.000	0.000	87.925	0.000	1
		B	0.000	0.000	96.268	0.000	0
		C	0.000	0.000	30.003	0.000	0
T14	80.00-60.00	A	0.000	0.000	87.925	0.000	1
		B	0.000	0.000	96.893	0.000	0
		C	0.000	0.000	30.003	0.000	0
T15	60.00-40.00	A	0.000	0.000	87.925	0.000	1
		B	0.000	0.000	96.893	0.000	0
		C	0.000	0.000	30.003	0.000	0
T16	40.00-20.00	A	0.000	0.000	87.925	0.000	1
		B	0.000	0.000	96.893	0.000	0
		C	0.000	0.000	32.003	0.000	0
T17	20.00-12.00	A	0.000	0.000	35.170	0.000	0
		B	0.000	0.000	38.757	0.000	0
		C	0.000	0.000	13.001	0.000	0
T18	12.00-9.35	A	0.000	0.000	11.650	0.000	0
		B	0.000	0.000	12.838	0.000	0
		C	0.000	0.000	4.307	0.000	0
T19	9.35-6.70	A	0.000	0.000	11.650	0.000	0
		B	0.000	0.000	12.838	0.000	0
		C	0.000	0.000	4.307	0.000	0
T20	6.70-0.00	A	0.000	0.000	6.577	0.000	0
		B	0.000	0.000	5.141	0.000	0
		C	0.000	0.000	2.888	0.000	0

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} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L1	345.00-330.00	A	1.893	0.000	0.000	19.731	0.000	0
		B		0.000	0.000	0.000	0.000	0
		C		0.000	0.000	8.280	0.000	0
T1	330.00-320.00	A	1.886	0.000	0.000	27.543	0.000	1
		B		0.000	0.000	6.688	0.000	0
		C		0.000	0.000	15.855	0.000	0
T2	320.00-300.00	A	1.877	0.000	0.000	74.783	0.000	1
		B		0.000	0.000	13.340	0.000	0
		C		0.000	0.000	31.603	0.000	1

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<i>Tower Section</i>	<i>Tower Elevation ft</i>	<i>Face or Leg</i>	<i>Ice Thickness in</i>	<i>A_R ft²</i>	<i>A_F ft²</i>	<i>C_{AA} In Face ft²</i>	<i>C_{AA} Out Face ft²</i>	<i>Weight K</i>
T3	300.00-280.00	A	1.864	0.000	0.000	86.199	0.000	2
		B		0.000	0.000	23.623	0.000	0
		C		0.000	0.000	55.002	0.000	1
T4	280.00-260.00	A	1.851	0.000	0.000	101.950	0.000	2
		B		0.000	0.000	25.340	0.000	0
		C		0.000	0.000	79.212	0.000	1
T5	260.00-240.00	A	1.837	0.000	0.000	110.868	0.000	2
		B		0.000	0.000	25.227	0.000	0
		C		0.000	0.000	97.757	0.000	1
T6	240.00-220.00	A	1.821	0.000	0.000	129.299	0.000	2
		B		0.000	0.000	25.105	0.000	0
		C		0.000	0.000	102.333	0.000	1
T7	220.00-200.00	A	1.805	0.000	0.000	167.209	0.000	3
		B		0.000	0.000	34.021	0.000	1
		C		0.000	0.000	104.617	0.000	1
T8	200.00-180.00	A	1.787	0.000	0.000	188.772	0.000	3
		B		0.000	0.000	120.845	0.000	2
		C		0.000	0.000	111.424	0.000	2
T9	180.00-160.00	A	1.767	0.000	0.000	211.457	0.000	3
		B		0.000	0.000	138.519	0.000	2
		C		0.000	0.000	110.682	0.000	2
T10	160.00-140.00	A	1.745	0.000	0.000	214.647	0.000	3
		B		0.000	0.000	157.894	0.000	2
		C		0.000	0.000	109.856	0.000	2
T11	140.00-120.00	A	1.720	0.000	0.000	223.724	0.000	3
		B		0.000	0.000	164.080	0.000	2
		C		0.000	0.000	108.926	0.000	1
T12	120.00-100.00	A	1.692	0.000	0.000	244.077	0.000	4
		B		0.000	0.000	164.642	0.000	2
		C		0.000	0.000	107.856	0.000	1
T13	100.00-80.00	A	1.658	0.000	0.000	255.169	0.000	4
		B		0.000	0.000	167.137	0.000	2
		C		0.000	0.000	106.594	0.000	1
T14	80.00-60.00	A	1.617	0.000	0.000	251.551	0.000	4
		B		0.000	0.000	169.145	0.000	2
		C		0.000	0.000	105.050	0.000	1
T15	60.00-40.00	A	1.564	0.000	0.000	246.848	0.000	3
		B		0.000	0.000	166.632	0.000	2
		C		0.000	0.000	103.044	0.000	1
T16	40.00-20.00	A	1.486	0.000	0.000	240.007	0.000	3
		B		0.000	0.000	162.977	0.000	2
		C		0.000	0.000	112.196	0.000	1
T17	20.00-12.00	A	1.395	0.000	0.000	92.823	0.000	1
		B		0.000	0.000	63.493	0.000	1
		C		0.000	0.000	44.476	0.000	1
T18	12.00-9.35	A	1.340	0.000	0.000	30.104	0.000	0
		B		0.000	0.000	20.689	0.000	0
		C		0.000	0.000	14.407	0.000	0
T19	9.35-6.70	A	1.302	0.000	0.000	29.666	0.000	0
		B		0.000	0.000	20.455	0.000	0
		C		0.000	0.000	14.185	0.000	0
T20	6.70-0.00	A	1.193	0.000	0.000	13.866	0.000	0
		B		0.000	0.000	8.407	0.000	0
		C		0.000	0.000	6.760	0.000	0

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Feed Line Center of Pressure

Section	Elevation	CP _x	CP _z	CP _x Ice	CP _z Ice
	ft	in	in	in	in
L1	345.00-330.00	-2.0310	0.7541	-0.6389	0.2603
T1	330.00-320.00	-2.1133	-0.4357	-2.3446	0.1952
T2	320.00-300.00	-4.2815	-0.0701	-3.7831	0.4824
T3	300.00-280.00	-4.6770	1.3551	-5.0883	1.5907
T4	280.00-260.00	-5.9903	2.1605	-6.5386	2.3747
T5	260.00-240.00	-6.7940	2.6282	-7.3531	2.7731
T6	240.00-220.00	-6.7736	0.3891	-7.3863	1.7764
T7	220.00-200.00	-6.2150	-3.2339	-6.7824	0.0003
T8	200.00-180.00	-4.7572	-5.4878	-5.3325	-1.3831
T9	180.00-160.00	-3.3682	-5.7276	-4.6459	-1.9850
T10	160.00-140.00	-2.2291	-4.9952	-4.1927	-1.8361
T11	140.00-120.00	-2.1898	-4.8387	-3.9881	-1.8313
T12	120.00-100.00	-2.5449	-4.6877	-4.1846	-2.1468
T13	100.00-80.00	-2.5999	-4.6779	-4.0853	-2.3832
T14	80.00-60.00	-2.5099	-4.6383	-3.9063	-2.3560
T15	60.00-40.00	-2.5099	-4.6383	-3.9282	-2.4186
T16	40.00-20.00	-2.2136	-4.5135	-3.4174	-2.2630
T17	20.00-12.00	-2.0860	-4.3805	-3.0834	-2.1636
T18	12.00-9.35	-1.6640	-3.7088	-2.7789	-2.0513
T19	9.35-6.70	-1.7636	-3.8702	-2.6300	-1.9706
T20	6.70-0.00	-1.0843	-1.8612	-0.7813	-0.7650

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L1	14	1" Coax	330.00 - 345.00	0.6000	0.1770
L1	19	LDF4-50A(1/2)	330.00 - 332.50	0.6000	0.1770
L1	28	LDF7-50A(1-5/8)	330.00 - 342.25	0.6000	0.1770
L1	39	Climbing Ladder (Rail)	330.00 - 345.00	0.6000	0.1770
L1	40	Climbing Ladder (Rungs)	330.00 - 345.00	0.6000	0.1770
T1	14	1" Coax	320.00 - 330.00	0.6000	0.3444
T1	19	LDF4-50A(1/2)	320.00 - 330.00	0.6000	0.3444
T1	28	LDF7-50A(1-5/8)	320.00 - 330.00	0.6000	0.3444
T1	39	Climbing Ladder (Rail)	320.00 - 330.00	0.6000	0.3444
T1	40	Climbing Ladder (Rungs)	320.00 - 330.00	0.6000	0.3444

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T1	47	Feedline Ladder (Rail)	320.00 - 330.00	0.6000	0.3444
T1	48	Feedline Ladder (Rail)	320.00 - 330.00	0.6000	0.3444
T1	49	Feedline Ladder (Rail)	320.00 - 330.00	0.6000	0.3444
T1	50	Feedline Ladder (Rail)	320.00 - 330.00	0.6000	0.3444
T2	14	1" Coax	300.00 - 320.00	0.6000	0.3737
T2	19	LDF4-50A(1/2)	300.00 - 320.00	0.6000	0.3737
T2	24	LDF7-50A(1-5/8)	300.00 - 308.00	0.6000	0.3737
T2	25	LDF7-50A(1-5/8)	300.00 - 317.50	0.6000	0.3737
T2	26	LDF4-50A(1/2)	300.00 - 312.00	0.6000	0.3737
T2	28	LDF7-50A(1-5/8)	300.00 - 320.00	0.6000	0.3737
T2	39	Climbing Ladder (Rail)	300.00 - 320.00	0.6000	0.3737
T2	40	Climbing Ladder (Rungs)	300.00 - 320.00	0.6000	0.3737
T2	47	Feedline Ladder (Rail)	300.00 - 320.00	0.6000	0.3737
T2	48	Feedline Ladder (Rail)	300.00 - 320.00	0.6000	0.3737
T2	49	Feedline Ladder (Rail)	300.00 - 320.00	0.6000	0.3737
T2	50	Feedline Ladder (Rail)	300.00 - 320.00	0.6000	0.3737
T3	11	LDF12-50A(2-1/4)	280.00 - 297.00	0.6000	0.4412
T3	14	1" Coax	280.00 - 300.00	0.6000	0.4412
T3	18	LDF6-50A(1-1/4")	280.00 - 294.00	0.6000	0.4412
T3	19	LDF4-50A(1/2)	280.00 - 300.00	0.6000	0.4412
T3	24	LDF7-50A(1-5/8)	280.00 - 300.00	0.6000	0.4412
T3	25	LDF7-50A(1-5/8)	280.00 - 300.00	0.6000	0.4412
T3	26	LDF4-50A(1/2)	280.00 - 300.00	0.6000	0.4412
T3	28	LDF7-50A(1-5/8)	280.00 - 300.00	0.6000	0.4412
T3	39	Climbing Ladder (Rail)	280.00 - 300.00	0.6000	0.4412
T3	40	Climbing Ladder (Rungs)	280.00 - 300.00	0.6000	0.4412
T3	47	Feedline Ladder (Rail)	280.00 - 300.00	0.6000	0.4412
T3	48	Feedline Ladder (Rail)	280.00 - 300.00	0.6000	0.4412
T3	49	Feedline Ladder (Rail)	280.00 - 300.00	0.6000	0.4412

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T3	50	Feedline Ladder (Rail)	280.00 - 300.00	0.6000	0.4412
T4	11	LDF12-50A(2-1/4)	260.00 - 280.00	0.6000	0.4354
T4	14	1" Coax	260.00 - 280.00	0.6000	0.4354
T4	15	LDF5-50A(7/8)	260.00 - 264.25	0.6000	0.4354
T4	18	LDF6-50A(1-1/4")	260.00 - 280.00	0.6000	0.4354
T4	19	LDF4-50A(1/2)	260.00 - 280.00	0.6000	0.4354
T4	20	LDF4-50A(1/2)	260.00 - 274.00	0.6000	0.4354
T4	23	LDF7-50A(1-5/8)	260.00 - 274.00	0.6000	0.4354
T4	24	LDF7-50A(1-5/8)	260.00 - 280.00	0.6000	0.4354
T4	25	LDF7-50A(1-5/8)	260.00 - 280.00	0.6000	0.4354
T4	26	LDF4-50A(1/2)	260.00 - 280.00	0.6000	0.4354
T4	27	LDF4-50A(1/2)	260.00 - 279.00	0.6000	0.4354
T4	28	LDF7-50A(1-5/8)	260.00 - 280.00	0.6000	0.4354
T4	39	Climbing Ladder (Rail)	260.00 - 280.00	0.6000	0.4354
T4	40	Climbing Ladder (Rungs)	260.00 - 280.00	0.6000	0.4354
T4	47	Feedline Ladder (Rail)	260.00 - 280.00	0.6000	0.4354
T4	48	Feedline Ladder (Rail)	260.00 - 280.00	0.6000	0.4354
T4	49	Feedline Ladder (Rail)	260.00 - 280.00	0.6000	0.4354
T4	50	Feedline Ladder (Rail)	260.00 - 280.00	0.6000	0.4354
T5	11	LDF12-50A(2-1/4)	240.00 - 260.00	0.6000	0.4383
T5	14	1" Coax	240.00 - 260.00	0.6000	0.4383
T5	15	LDF5-50A(7/8)	240.00 - 260.00	0.6000	0.4383
T5	17	LDF7-50A(1-5/8)	240.00 - 251.00	0.6000	0.4383
T5	18	LDF6-50A(1-1/4")	240.00 - 260.00	0.6000	0.4383
T5	19	LDF4-50A(1/2)	240.00 - 260.00	0.6000	0.4383
T5	20	LDF4-50A(1/2)	240.00 - 260.00	0.6000	0.4383
T5	23	LDF7-50A(1-5/8)	240.00 - 260.00	0.6000	0.4383
T5	24	LDF7-50A(1-5/8)	240.00 - 260.00	0.6000	0.4383
T5	25	LDF7-50A(1-5/8)	240.00 - 260.00	0.6000	0.4383

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T5	26	LDF4-50A(1/2)	240.00 - 260.00	0.6000	0.4383
T5	27	LDF4-50A(1/2)	240.00 - 260.00	0.6000	0.4383
T5	28	LDF7-50A(1-5/8)	240.00 - 260.00	0.6000	0.4383
T5	32	LDF5-50A(7/8)	240.00 - 252.00	0.6000	0.4383
T5	39	Climbing Ladder (Rail)	240.00 - 260.00	0.6000	0.4383
T5	40	Climbing Ladder (Rungs)	240.00 - 260.00	0.6000	0.4383
T5	47	Feedline Ladder (Rail)	240.00 - 260.00	0.6000	0.4383
T5	48	Feedline Ladder (Rail)	240.00 - 260.00	0.6000	0.4383
T5	49	Feedline Ladder (Rail)	240.00 - 260.00	0.6000	0.4383
T5	50	Feedline Ladder (Rail)	240.00 - 260.00	0.6000	0.4383
T6	11	LDF12-50A(2-1/4)	220.00 - 240.00	0.6000	0.4415
T6	14	1" Coax	220.00 - 240.00	0.6000	0.4415
T6	15	LDF5-50A(7/8)	220.00 - 240.00	0.6000	0.4415
T6	17	LDF7-50A(1-5/8)	220.00 - 240.00	0.6000	0.4415
T6	18	LDF6-50A(1-1/4")	220.00 - 240.00	0.6000	0.4415
T6	19	LDF4-50A(1/2)	220.00 - 240.00	0.6000	0.4415
T6	20	LDF4-50A(1/2)	220.00 - 240.00	0.6000	0.4415
T6	23	LDF7-50A(1-5/8)	220.00 - 240.00	0.6000	0.4415
T6	24	LDF7-50A(1-5/8)	220.00 - 240.00	0.6000	0.4415
T6	25	LDF7-50A(1-5/8)	220.00 - 240.00	0.6000	0.4415
T6	26	LDF4-50A(1/2)	220.00 - 240.00	0.6000	0.4415
T6	27	LDF4-50A(1/2)	220.00 - 240.00	0.6000	0.4415
T6	28	LDF7-50A(1-5/8)	220.00 - 240.00	0.6000	0.4415
T6	32	LDF5-50A(7/8)	220.00 - 240.00	0.6000	0.4415
T6	35	LDF7-50A(1-5/8)	220.00 - 226.50	0.6000	0.4415
T6	39	Climbing Ladder (Rail)	220.00 - 240.00	0.6000	0.4415
T6	40	Climbing Ladder (Rungs)	220.00 - 240.00	0.6000	0.4415
T6	47	Feedline Ladder (Rail)	220.00 - 240.00	0.6000	0.4415
T6	48	Feedline Ladder (Rail)	220.00 - 240.00	0.6000	0.4415

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T6	49	Feedline Ladder (Rail)	220.00 - 240.00	0.6000	0.4415
T6	50	Feedline Ladder (Rail)	220.00 - 240.00	0.6000	0.4415
T7	8	LDF5-50A(7/8)	200.00 - 219.50	0.6000	0.4380
T7	11	LDF12-50A(2-1/4)	200.00 - 220.00	0.6000	0.4380
T7	14	1" Coax	200.00 - 220.00	0.6000	0.4380
T7	15	LDF5-50A(7/8)	200.00 - 220.00	0.6000	0.4380
T7	16	LDF6-50A(1-1/4)	200.00 - 205.50	0.6000	0.4380
T7	17	LDF7-50A(1-5/8)	200.00 - 220.00	0.6000	0.4380
T7	18	LDF6-50A(1-1/4")	200.00 - 220.00	0.6000	0.4380
T7	19	LDF4-50A(1/2)	200.00 - 220.00	0.6000	0.4380
T7	20	LDF4-50A(1/2)	200.00 - 220.00	0.6000	0.4380
T7	23	LDF7-50A(1-5/8)	200.00 - 220.00	0.6000	0.4380
T7	24	LDF7-50A(1-5/8)	200.00 - 220.00	0.6000	0.4380
T7	25	LDF7-50A(1-5/8)	200.00 - 220.00	0.6000	0.4380
T7	26	LDF4-50A(1/2)	200.00 - 220.00	0.6000	0.4380
T7	27	LDF4-50A(1/2)	200.00 - 220.00	0.6000	0.4380
T7	28	LDF7-50A(1-5/8)	200.00 - 220.00	0.6000	0.4380
T7	31	LDF7-50A(1-5/8)	200.00 - 204.00	0.6000	0.4380
T7	32	LDF5-50A(7/8)	200.00 - 220.00	0.6000	0.4380
T7	34	LDF6-50A(1-1/4)	200.00 - 209.00	0.6000	0.4380
T7	35	LDF7-50A(1-5/8)	200.00 - 220.00	0.6000	0.4380
T7	39	Climbing Ladder (Rail)	200.00 - 220.00	0.6000	0.4380
T7	40	Climbing Ladder (Rungs)	200.00 - 220.00	0.6000	0.4380
T7	47	Feedline Ladder (Rail)	200.00 - 220.00	0.6000	0.4380
T7	48	Feedline Ladder (Rail)	200.00 - 220.00	0.6000	0.4380
T7	49	Feedline Ladder (Rail)	200.00 - 220.00	0.6000	0.4380
T7	50	Feedline Ladder (Rail)	200.00 - 220.00	0.6000	0.4380
T8	3	LDF7-50A(1-5/8")	180.00 - 200.00	0.6000	0.4179
T8	4	WR-VG86ST-BRD(3/4)	180.00 - 200.00	0.6000	0.4179

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T8	5	LDF2-50A(3/8")	180.00 - 200.00	0.6000	0.4179
T8	8	LDF5-50A(7/8)	180.00 - 200.00	0.6000	0.4179
T8	11	LDF12-50A(2-1/4)	180.00 - 200.00	0.6000	0.4179
T8	14	1" Coax	180.00 - 200.00	0.6000	0.4179
T8	15	LDF5-50A(7/8)	180.00 - 200.00	0.6000	0.4179
T8	16	LDF6-50A(1-1/4)	180.00 - 200.00	0.6000	0.4179
T8	17	LDF7-50A(1-5/8)	180.00 - 200.00	0.6000	0.4179
T8	18	LDF6-50A(1-1/4")	180.00 - 200.00	0.6000	0.4179
T8	19	LDF4-50A(1/2)	180.00 - 200.00	0.6000	0.4179
T8	20	LDF4-50A(1/2)	180.00 - 200.00	0.6000	0.4179
T8	23	LDF7-50A(1-5/8)	180.00 - 200.00	0.6000	0.4179
T8	24	LDF7-50A(1-5/8)	180.00 - 200.00	0.6000	0.4179
T8	25	LDF7-50A(1-5/8)	180.00 - 200.00	0.6000	0.4179
T8	26	LDF4-50A(1/2)	180.00 - 200.00	0.6000	0.4179
T8	27	LDF4-50A(1/2)	180.00 - 200.00	0.6000	0.4179
T8	28	LDF7-50A(1-5/8)	180.00 - 200.00	0.6000	0.4179
T8	31	LDF7-50A(1-5/8)	180.00 - 200.00	0.6000	0.4179
T8	32	LDF5-50A(7/8)	180.00 - 200.00	0.6000	0.4179
T8	34	LDF6-50A(1-1/4)	180.00 - 200.00	0.6000	0.4179
T8	35	LDF7-50A(1-5/8)	180.00 - 200.00	0.6000	0.4179
T8	39	Climbing Ladder (Rail)	180.00 - 200.00	0.6000	0.4179
T8	40	Climbing Ladder (Rungs)	180.00 - 200.00	0.6000	0.4179
T8	45	LDF7-50A(1-5/8)	180.00 - 185.00	0.6000	0.4179
T8	47	Feedline Ladder (Rail)	180.00 - 200.00	0.6000	0.4179
T8	48	Feedline Ladder (Rail)	180.00 - 200.00	0.6000	0.4179
T8	49	Feedline Ladder (Rail)	180.00 - 200.00	0.6000	0.4179
T8	50	Feedline Ladder (Rail)	180.00 - 200.00	0.6000	0.4179
T9	3	LDF7-50A(1-5/8")	160.00 - 180.00	0.6000	0.4219
T9	4	WR-VG86ST-BRD(3/4)	160.00 - 180.00	0.6000	0.4219

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T9	5	LDF2-50A(3/8")	160.00 - 180.00	0.6000	0.4219
T9	8	LDF5-50A(7/8)	160.00 - 180.00	0.6000	0.4219
T9	11	LDF12-50A(2-1/4)	160.00 - 180.00	0.6000	0.4219
T9	12	LDF7-50A(1-5/8")	160.00 - 169.50	0.6000	0.4219
T9	14	1" Coax	160.00 - 180.00	0.6000	0.4219
T9	15	LDF5-50A(7/8)	160.00 - 180.00	0.6000	0.4219
T9	16	LDF6-50A(1-1/4)	160.00 - 180.00	0.6000	0.4219
T9	17	LDF7-50A(1-5/8)	160.00 - 180.00	0.6000	0.4219
T9	18	LDF6-50A(1-1/4")	160.00 - 180.00	0.6000	0.4219
T9	19	LDF4-50A(1/2)	160.00 - 180.00	0.6000	0.4219
T9	20	LDF4-50A(1/2)	160.00 - 180.00	0.6000	0.4219
T9	23	LDF7-50A(1-5/8)	160.00 - 180.00	0.6000	0.4219
T9	24	LDF7-50A(1-5/8)	160.00 - 180.00	0.6000	0.4219
T9	25	LDF7-50A(1-5/8)	160.00 - 180.00	0.6000	0.4219
T9	26	LDF4-50A(1/2)	160.00 - 180.00	0.6000	0.4219
T9	27	LDF4-50A(1/2)	160.00 - 180.00	0.6000	0.4219
T9	28	LDF7-50A(1-5/8)	160.00 - 180.00	0.6000	0.4219
T9	31	LDF7-50A(1-5/8)	160.00 - 180.00	0.6000	0.4219
T9	32	LDF5-50A(7/8)	160.00 - 180.00	0.6000	0.4219
T9	34	LDF6-50A(1-1/4)	160.00 - 180.00	0.6000	0.4219
T9	35	LDF7-50A(1-5/8)	160.00 - 180.00	0.6000	0.4219
T9	39	Climbing Ladder (Rail)	160.00 - 180.00	0.6000	0.4219
T9	40	Climbing Ladder (Rungs)	160.00 - 180.00	0.6000	0.4219
T9	45	LDF7-50A(1-5/8)	160.00 - 180.00	0.6000	0.4219
T9	47	Feedline Ladder (Rail)	160.00 - 180.00	0.6000	0.4219
T9	48	Feedline Ladder (Rail)	160.00 - 180.00	0.6000	0.4219
T9	49	Feedline Ladder (Rail)	160.00 - 180.00	0.6000	0.4219
T9	50	Feedline Ladder (Rail)	160.00 - 180.00	0.6000	0.4219
T10	3	LDF7-50A(1-5/8")	140.00 - 160.00	0.6000	0.4460

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T10	4	WR-VG86ST-BRD(3/4)	140.00 - 160.00	0.6000	0.4460
T10	5	LDF2-50A(3/8")	140.00 - 160.00	0.6000	0.4460
T10	8	LDF5-50A(7/8)	140.00 - 160.00	0.6000	0.4460
T10	11	LDF12-50A(2-1/4)	140.00 - 160.00	0.6000	0.4460
T10	12	LDF7-50A(1-5/8")	140.00 - 160.00	0.6000	0.4460
T10	14	1" Coax	140.00 - 160.00	0.6000	0.4460
T10	15	LDF5-50A(7/8)	140.00 - 160.00	0.6000	0.4460
T10	16	LDF6-50A(1-1/4)	140.00 - 160.00	0.6000	0.4460
T10	17	LDF7-50A(1-5/8)	140.00 - 160.00	0.6000	0.4460
T10	18	LDF6-50A(1-1/4")	140.00 - 160.00	0.6000	0.4460
T10	19	LDF4-50A(1/2)	140.00 - 160.00	0.6000	0.4460
T10	20	LDF4-50A(1/2)	140.00 - 160.00	0.6000	0.4460
T10	23	LDF7-50A(1-5/8)	140.00 - 160.00	0.6000	0.4460
T10	24	LDF7-50A(1-5/8)	140.00 - 160.00	0.6000	0.4460
T10	25	LDF7-50A(1-5/8)	140.00 - 160.00	0.6000	0.4460
T10	26	LDF4-50A(1/2)	140.00 - 160.00	0.6000	0.4460
T10	27	LDF4-50A(1/2)	140.00 - 160.00	0.6000	0.4460
T10	28	LDF7-50A(1-5/8)	140.00 - 160.00	0.6000	0.4460
T10	31	LDF7-50A(1-5/8)	140.00 - 160.00	0.6000	0.4460
T10	32	LDF5-50A(7/8)	140.00 - 160.00	0.6000	0.4460
T10	33	LDF4.5-50(5/8)	140.00 - 150.60	0.6000	0.4460
T10	34	LDF6-50A(1-1/4)	140.00 - 160.00	0.6000	0.4460
T10	35	LDF7-50A(1-5/8)	140.00 - 160.00	0.6000	0.4460
T10	39	Climbing Ladder (Rail)	140.00 - 160.00	0.6000	0.4460
T10	40	Climbing Ladder (Rungs)	140.00 - 160.00	0.6000	0.4460
T10	45	LDF7-50A(1-5/8)	140.00 - 160.00	0.6000	0.4460
T10	47	Feedline Ladder (Rail)	140.00 - 160.00	0.6000	0.4460
T10	48	Feedline Ladder (Rail)	140.00 - 160.00	0.6000	0.4460
T10	49	Feedline Ladder (Rail)	140.00 - 160.00	0.6000	0.4460

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T10	50	Feedline Ladder (Rail)	140.00 - 160.00	0.6000	0.4460
T11	3	LDF7-50A(1-5/8")	120.00 - 140.00	0.6000	0.4511
T11	4	WR-VG86ST-BRD(3/4)	120.00 - 140.00	0.6000	0.4511
T11	5	LDF2-50A(3/8")	120.00 - 140.00	0.6000	0.4511
T11	8	LDF5-50A(7/8)	120.00 - 140.00	0.6000	0.4511
T11	10	LDF5-50A(7/8)	120.00 - 136.00	0.6000	0.4511
T11	11	LDF12-50A(2-1/4)	120.00 - 140.00	0.6000	0.4511
T11	12	LDF7-50A(1-5/8")	120.00 - 140.00	0.6000	0.4511
T11	14	1" Coax	120.00 - 140.00	0.6000	0.4511
T11	15	LDF5-50A(7/8)	120.00 - 140.00	0.6000	0.4511
T11	16	LDF6-50A(1-1/4)	120.00 - 140.00	0.6000	0.4511
T11	17	LDF7-50A(1-5/8)	120.00 - 140.00	0.6000	0.4511
T11	18	LDF6-50A(1-1/4")	120.00 - 140.00	0.6000	0.4511
T11	19	LDF4-50A(1/2)	120.00 - 140.00	0.6000	0.4511
T11	20	LDF4-50A(1/2)	120.00 - 140.00	0.6000	0.4511
T11	23	LDF7-50A(1-5/8)	120.00 - 140.00	0.6000	0.4511
T11	24	LDF7-50A(1-5/8)	120.00 - 140.00	0.6000	0.4511
T11	25	LDF7-50A(1-5/8)	120.00 - 140.00	0.6000	0.4511
T11	26	LDF4-50A(1/2)	120.00 - 140.00	0.6000	0.4511
T11	27	LDF4-50A(1/2)	120.00 - 140.00	0.6000	0.4511
T11	28	LDF7-50A(1-5/8)	120.00 - 140.00	0.6000	0.4511
T11	29	LDF7-50A(1-5/8)	120.00 - 130.00	0.6000	0.4511
T11	31	LDF7-50A(1-5/8)	120.00 - 140.00	0.6000	0.4511
T11	32	LDF5-50A(7/8)	120.00 - 140.00	0.6000	0.4511
T11	33	LDF4.5-50(5/8)	120.00 - 140.00	0.6000	0.4511
T11	34	LDF6-50A(1-1/4)	120.00 - 140.00	0.6000	0.4511
T11	35	LDF7-50A(1-5/8)	120.00 - 140.00	0.6000	0.4511
T11	37	FJ-2SM-001-75M(3/16")	120.00 - 123.50	0.6000	0.4511
T11	39	Climbing Ladder (Rail)	120.00 - 140.00	0.6000	0.4511

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T11	40	Climbing Ladder (Rungs)	120.00 - 140.00	0.6000	0.4511
T11	45	LDF7-50A(1-5/8)	120.00 - 140.00	0.6000	0.4511
T11	47	Feedline Ladder (Rail)	120.00 - 140.00	0.6000	0.4511
T11	48	Feedline Ladder (Rail)	120.00 - 140.00	0.6000	0.4511
T11	49	Feedline Ladder (Rail)	120.00 - 140.00	0.6000	0.4511
T11	50	Feedline Ladder (Rail)	120.00 - 140.00	0.6000	0.4511
T12	3	LDF7-50A(1-5/8")	100.00 - 120.00	0.6000	0.4569
T12	4	WR-VG86ST-BRD(3/4)	100.00 - 120.00	0.6000	0.4569
T12	5	LDF2-50A(3/8")	100.00 - 120.00	0.6000	0.4569
T12	8	LDF5-50A(7/8)	100.00 - 120.00	0.6000	0.4569
T12	10	LDF5-50A(7/8)	100.00 - 120.00	0.6000	0.4569
T12	11	LDF12-50A(2-1/4)	100.00 - 120.00	0.6000	0.4569
T12	12	LDF7-50A(1-5/8")	100.00 - 120.00	0.6000	0.4569
T12	14	1" Coax	100.00 - 120.00	0.6000	0.4569
T12	15	LDF5-50A(7/8)	100.00 - 120.00	0.6000	0.4569
T12	16	LDF6-50A(1-1/4)	100.00 - 120.00	0.6000	0.4569
T12	17	LDF7-50A(1-5/8)	100.00 - 120.00	0.6000	0.4569
T12	18	LDF6-50A(1-1/4")	100.00 - 120.00	0.6000	0.4569
T12	19	LDF4-50A(1/2)	100.00 - 120.00	0.6000	0.4569
T12	20	LDF4-50A(1/2)	100.00 - 120.00	0.6000	0.4569
T12	23	LDF7-50A(1-5/8)	100.00 - 120.00	0.6000	0.4569
T12	24	LDF7-50A(1-5/8)	100.00 - 120.00	0.6000	0.4569
T12	25	LDF7-50A(1-5/8)	100.00 - 120.00	0.6000	0.4569
T12	26	LDF4-50A(1/2)	100.00 - 120.00	0.6000	0.4569
T12	27	LDF4-50A(1/2)	100.00 - 120.00	0.6000	0.4569
T12	28	LDF7-50A(1-5/8)	100.00 - 120.00	0.6000	0.4569
T12	29	LDF7-50A(1-5/8)	100.00 - 120.00	0.6000	0.4569
T12	30	LDF7-50A(1-5/8)	100.00 - 112.00	0.6000	0.4569
T12	31	LDF7-50A(1-5/8)	100.00 - 120.00	0.6000	0.4569

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T12	32	LDF5-50A(7/8)	100.00 - 120.00	0.6000	0.4569
T12	33	LDF4.5-50(5/8)	100.00 - 120.00	0.6000	0.4569
T12	34	LDF6-50A(1-1/4)	100.00 - 120.00	0.6000	0.4569
T12	35	LDF7-50A(1-5/8)	100.00 - 120.00	0.6000	0.4569
T12	36	LDF1-50A(1/4")	100.00 - 106.50	0.6000	0.4569
T12	37	FJ-2SM-001-75M(3/16")	100.00 - 120.00	0.6000	0.4569
T12	39	Climbing Ladder (Rail)	100.00 - 120.00	0.6000	0.4569
T12	40	Climbing Ladder (Rungs)	100.00 - 120.00	0.6000	0.4569
T12	45	LDF7-50A(1-5/8)	100.00 - 120.00	0.6000	0.4569
T12	47	Feedline Ladder (Rail)	100.00 - 120.00	0.6000	0.4569
T12	48	Feedline Ladder (Rail)	100.00 - 120.00	0.6000	0.4569
T12	49	Feedline Ladder (Rail)	100.00 - 120.00	0.6000	0.4569
T12	50	Feedline Ladder (Rail)	100.00 - 120.00	0.6000	0.4569
T13	3	LDF7-50A(1-5/8")	80.00 - 100.00	0.6000	0.4638
T13	4	WR-VG86ST-BRD(3/4)	80.00 - 100.00	0.6000	0.4638
T13	5	LDF2-50A(3/8")	80.00 - 100.00	0.6000	0.4638
T13	8	LDF5-50A(7/8)	80.00 - 100.00	0.6000	0.4638
T13	9	LDF4-50A(1/2)	80.00 - 90.00	0.6000	0.4638
T13	10	LDF5-50A(7/8)	80.00 - 100.00	0.6000	0.4638
T13	11	LDF12-50A(2-1/4)	80.00 - 100.00	0.6000	0.4638
T13	12	LDF7-50A(1-5/8")	80.00 - 100.00	0.6000	0.4638
T13	14	1" Coax	80.00 - 100.00	0.6000	0.4638
T13	15	LDF5-50A(7/8)	80.00 - 100.00	0.6000	0.4638
T13	16	LDF6-50A(1-1/4)	80.00 - 100.00	0.6000	0.4638
T13	17	LDF7-50A(1-5/8)	80.00 - 100.00	0.6000	0.4638
T13	18	LDF6-50A(1-1/4")	80.00 - 100.00	0.6000	0.4638
T13	19	LDF4-50A(1/2)	80.00 - 100.00	0.6000	0.4638
T13	20	LDF4-50A(1/2)	80.00 - 100.00	0.6000	0.4638
T13	23	LDF7-50A(1-5/8)	80.00 - 100.00	0.6000	0.4638
T13	24	LDF7-50A(1-5/8)	80.00 - 100.00	0.6000	0.4638
T13	25	LDF7-50A(1-5/8)	80.00 - 100.00	0.6000	0.4638
T13	26	LDF4-50A(1/2)	80.00 - 100.00	0.6000	0.4638
T13	27	LDF4-50A(1/2)	80.00 - 100.00	0.6000	0.4638
T13	28	LDF7-50A(1-5/8)	80.00 - 100.00	0.6000	0.4638
T13	29	LDF7-50A(1-5/8)	80.00 - 100.00	0.6000	0.4638
T13	30	LDF7-50A(1-5/8)	80.00 - 100.00	0.6000	0.4638
T13	31	LDF7-50A(1-5/8)	80.00 - 100.00	0.6000	0.4638
T13	32	LDF5-50A(7/8)	80.00 - 100.00	0.6000	0.4638
T13	33	LDF4.5-50(5/8)	80.00 - 100.00	0.6000	0.4638
T13	34	LDF6-50A(1-1/4)	80.00 - 100.00	0.6000	0.4638
T13	35	LDF7-50A(1-5/8)	80.00 - 100.00	0.6000	0.4638
T13	36	LDF1-50A(1/4")	80.00 - 100.00	0.6000	0.4638
T13	37	FJ-2SM-001-75M(3/16")	80.00 - 100.00	0.6000	0.4638
T13	39	Climbing Ladder (Rail)	80.00 - 100.00	0.6000	0.4638
T13	40	Climbing Ladder (Rungs)	80.00 - 100.00	0.6000	0.4638

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T13	45	LDF7-50A(1-5/8)	80.00 - 100.00	0.6000	0.4638
T13	47	Feedline Ladder (Rail)	80.00 - 100.00	0.6000	0.4638
T13	48	Feedline Ladder (Rail)	80.00 - 100.00	0.6000	0.4638
T13	49	Feedline Ladder (Rail)	80.00 - 100.00	0.6000	0.4638
T13	50	Feedline Ladder (Rail)	80.00 - 100.00	0.6000	0.4638
T14	3	LDF7-50A(1-5/8")	60.00 - 80.00	0.6000	0.4722
T14	4	WR-VG86ST-BRD(3/4)	60.00 - 80.00	0.6000	0.4722
T14	5	LDF2-50A(3/8")	60.00 - 80.00	0.6000	0.4722
T14	8	LDF5-50A(7/8)	60.00 - 80.00	0.6000	0.4722
T14	9	LDF4-50A(1/2)	60.00 - 80.00	0.6000	0.4722
T14	10	LDF5-50A(7/8)	60.00 - 80.00	0.6000	0.4722
T14	11	LDF12-50A(2-1/4)	60.00 - 80.00	0.6000	0.4722
T14	12	LDF7-50A(1-5/8")	60.00 - 80.00	0.6000	0.4722
T14	14	1" Coax	60.00 - 80.00	0.6000	0.4722
T14	15	LDF5-50A(7/8)	60.00 - 80.00	0.6000	0.4722
T14	16	LDF6-50A(1-1/4)	60.00 - 80.00	0.6000	0.4722
T14	17	LDF7-50A(1-5/8)	60.00 - 80.00	0.6000	0.4722
T14	18	LDF6-50A(1-1/4")	60.00 - 80.00	0.6000	0.4722
T14	19	LDF4-50A(1/2)	60.00 - 80.00	0.6000	0.4722
T14	20	LDF4-50A(1/2)	60.00 - 80.00	0.6000	0.4722
T14	23	LDF7-50A(1-5/8)	60.00 - 80.00	0.6000	0.4722
T14	24	LDF7-50A(1-5/8)	60.00 - 80.00	0.6000	0.4722
T14	25	LDF7-50A(1-5/8)	60.00 - 80.00	0.6000	0.4722
T14	26	LDF4-50A(1/2)	60.00 - 80.00	0.6000	0.4722
T14	27	LDF4-50A(1/2)	60.00 - 80.00	0.6000	0.4722
T14	28	LDF7-50A(1-5/8)	60.00 - 80.00	0.6000	0.4722
T14	29	LDF7-50A(1-5/8)	60.00 - 80.00	0.6000	0.4722
T14	30	LDF7-50A(1-5/8)	60.00 - 80.00	0.6000	0.4722
T14	31	LDF7-50A(1-5/8)	60.00 - 80.00	0.6000	0.4722
T14	32	LDF5-50A(7/8)	60.00 - 80.00	0.6000	0.4722
T14	33	LDF4.5-50(5/8)	60.00 - 80.00	0.6000	0.4722
T14	34	LDF6-50A(1-1/4)	60.00 - 80.00	0.6000	0.4722
T14	35	LDF7-50A(1-5/8)	60.00 - 80.00	0.6000	0.4722
T14	36	LDF1-50A(1/4")	60.00 - 80.00	0.6000	0.4722
T14	37	FJ-2SM-001-75M(3/16")	60.00 - 80.00	0.6000	0.4722
T14	39	Climbing Ladder (Rail)	60.00 - 80.00	0.6000	0.4722
T14	40	Climbing Ladder (Rungs)	60.00 - 80.00	0.6000	0.4722
T14	45	LDF7-50A(1-5/8)	60.00 - 80.00	0.6000	0.4722
T14	47	Feedline Ladder (Rail)	60.00 - 80.00	0.6000	0.4722
T14	48	Feedline Ladder (Rail)	60.00 - 80.00	0.6000	0.4722
T14	49	Feedline Ladder (Rail)	60.00 - 80.00	0.6000	0.4722
T14	50	Feedline Ladder (Rail)	60.00 - 80.00	0.6000	0.4722
T15	3	LDF7-50A(1-5/8")	40.00 - 60.00	0.6000	0.4833
T15	4	WR-VG86ST-BRD(3/4)	40.00 - 60.00	0.6000	0.4833
T15	5	LDF2-50A(3/8")	40.00 - 60.00	0.6000	0.4833
T15	8	LDF5-50A(7/8)	40.00 - 60.00	0.6000	0.4833
T15	9	LDF4-50A(1/2)	40.00 - 60.00	0.6000	0.4833
T15	10	LDF5-50A(7/8)	40.00 - 60.00	0.6000	0.4833
T15	11	LDF12-50A(2-1/4)	40.00 - 60.00	0.6000	0.4833
T15	12	LDF7-50A(1-5/8")	40.00 - 60.00	0.6000	0.4833
T15	14	1" Coax	40.00 - 60.00	0.6000	0.4833
T15	15	LDF5-50A(7/8)	40.00 - 60.00	0.6000	0.4833
T15	16	LDF6-50A(1-1/4)	40.00 - 60.00	0.6000	0.4833
T15	17	LDF7-50A(1-5/8)	40.00 - 60.00	0.6000	0.4833
T15	18	LDF6-50A(1-1/4")	40.00 - 60.00	0.6000	0.4833
T15	19	LDF4-50A(1/2)	40.00 - 60.00	0.6000	0.4833
T15	20	LDF4-50A(1/2)	40.00 - 60.00	0.6000	0.4833
T15	23	LDF7-50A(1-5/8)	40.00 - 60.00	0.6000	0.4833

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	Client	T-Mobile	Designed by	Ahmet Colakoglu

<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T15	24	LDF7-50A(1-5/8)	40.00 - 60.00	0.6000	0.4833
T15	25	LDF7-50A(1-5/8)	40.00 - 60.00	0.6000	0.4833
T15	26	LDF4-50A(1/2)	40.00 - 60.00	0.6000	0.4833
T15	27	LDF4-50A(1/2)	40.00 - 60.00	0.6000	0.4833
T15	28	LDF7-50A(1-5/8)	40.00 - 60.00	0.6000	0.4833
T15	29	LDF7-50A(1-5/8)	40.00 - 60.00	0.6000	0.4833
T15	30	LDF7-50A(1-5/8)	40.00 - 60.00	0.6000	0.4833
T15	31	LDF7-50A(1-5/8)	40.00 - 60.00	0.6000	0.4833
T15	32	LDF5-50A(7/8)	40.00 - 60.00	0.6000	0.4833
T15	33	LDF4.5-50(5/8)	40.00 - 60.00	0.6000	0.4833
T15	34	LDF6-50A(1-1/4)	40.00 - 60.00	0.6000	0.4833
T15	35	LDF7-50A(1-5/8)	40.00 - 60.00	0.6000	0.4833
T15	36	LDF1-50A(1/4")	40.00 - 60.00	0.6000	0.4833
T15	37	FJ-2SM-001-75M(3/16")	40.00 - 60.00	0.6000	0.4833
T15	39	Climbing Ladder (Rail)	40.00 - 60.00	0.6000	0.4833
T15	40	Climbing Ladder (Rungs)	40.00 - 60.00	0.6000	0.4833
T15	45	LDF7-50A(1-5/8)	40.00 - 60.00	0.6000	0.4833
T15	47	Feedline Ladder (Rail)	40.00 - 60.00	0.6000	0.4833
T15	48	Feedline Ladder (Rail)	40.00 - 60.00	0.6000	0.4833
T15	49	Feedline Ladder (Rail)	40.00 - 60.00	0.6000	0.4833
T15	50	Feedline Ladder (Rail)	40.00 - 60.00	0.6000	0.4833
T16	3	LDF7-50A(1-5/8")	20.00 - 40.00	0.6000	0.4994
T16	4	WR-VG86ST-BRD(3/4)	20.00 - 40.00	0.6000	0.4994
T16	5	LDF2-50A(3/8")	20.00 - 40.00	0.6000	0.4994
T16	8	LDF5-50A(7/8)	20.00 - 40.00	0.6000	0.4994
T16	9	LDF4-50A(1/2)	20.00 - 40.00	0.6000	0.4994
T16	10	LDF5-50A(7/8)	20.00 - 40.00	0.6000	0.4994
T16	11	LDF12-50A(2-1/4)	20.00 - 40.00	0.6000	0.4994
T16	12	LDF7-50A(1-5/8")	20.00 - 40.00	0.6000	0.4994
T16	13	LDF4-50A(1/2)	20.00 - 36.00	0.6000	0.4994
T16	14	1" Coax	20.00 - 40.00	0.6000	0.4994
T16	15	LDF5-50A(7/8)	20.00 - 40.00	0.6000	0.4994
T16	16	LDF6-50A(1-1/4)	20.00 - 40.00	0.6000	0.4994
T16	17	LDF7-50A(1-5/8)	20.00 - 40.00	0.6000	0.4994
T16	18	LDF6-50A(1-1/4")	20.00 - 40.00	0.6000	0.4994
T16	19	LDF4-50A(1/2)	20.00 - 40.00	0.6000	0.4994
T16	20	LDF4-50A(1/2)	20.00 - 40.00	0.6000	0.4994
T16	23	LDF7-50A(1-5/8)	20.00 - 40.00	0.6000	0.4994
T16	24	LDF7-50A(1-5/8)	20.00 - 40.00	0.6000	0.4994
T16	25	LDF7-50A(1-5/8)	20.00 - 40.00	0.6000	0.4994
T16	26	LDF4-50A(1/2)	20.00 - 40.00	0.6000	0.4994
T16	27	LDF4-50A(1/2)	20.00 - 40.00	0.6000	0.4994
T16	28	LDF7-50A(1-5/8)	20.00 - 40.00	0.6000	0.4994
T16	29	LDF7-50A(1-5/8)	20.00 - 40.00	0.6000	0.4994
T16	30	LDF7-50A(1-5/8)	20.00 - 40.00	0.6000	0.4994
T16	31	LDF7-50A(1-5/8)	20.00 - 40.00	0.6000	0.4994
T16	32	LDF5-50A(7/8)	20.00 - 40.00	0.6000	0.4994
T16	33	LDF4.5-50(5/8)	20.00 - 40.00	0.6000	0.4994
T16	34	LDF6-50A(1-1/4)	20.00 - 40.00	0.6000	0.4994
T16	35	LDF7-50A(1-5/8)	20.00 - 40.00	0.6000	0.4994
T16	36	LDF1-50A(1/4")	20.00 - 40.00	0.6000	0.4994
T16	37	FJ-2SM-001-75M(3/16")	20.00 - 40.00	0.6000	0.4994
T16	39	Climbing Ladder (Rail)	20.00 - 40.00	0.6000	0.4994
T16	40	Climbing Ladder (Rungs)	20.00 - 40.00	0.6000	0.4994
T16	45	LDF7-50A(1-5/8)	20.00 - 40.00	0.6000	0.4994
T16	47	Feedline Ladder (Rail)	20.00 - 40.00	0.6000	0.4994
T16	48	Feedline Ladder (Rail)	20.00 - 40.00	0.6000	0.4994
T16	49	Feedline Ladder (Rail)	20.00 - 40.00	0.6000	0.4994

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T16	50	Feedline Ladder (Rail)	20.00 - 40.00	0.6000	0.4994
T17	3	LDF7-50A(1-5/8")	12.00 - 20.00	0.6000	0.4561
T17	4	WR-VG86ST-BRD(3/4)	12.00 - 20.00	0.6000	0.4561
T17	5	LDF2-50A(3/8")	12.00 - 20.00	0.6000	0.4561
T17	8	LDF5-50A(7/8)	12.00 - 20.00	0.6000	0.4561
T17	9	LDF4-50A(1/2)	12.00 - 20.00	0.6000	0.4561
T17	10	LDF5-50A(7/8)	12.00 - 20.00	0.6000	0.4561
T17	11	LDF12-50A(2-1/4)	12.00 - 20.00	0.6000	0.4561
T17	12	LDF7-50A(1-5/8")	12.00 - 20.00	0.6000	0.4561
T17	13	LDF4-50A(1/2)	12.00 - 20.00	0.6000	0.4561
T17	14	1" Coax	12.00 - 20.00	0.6000	0.4561
T17	15	LDF5-50A(7/8)	12.00 - 20.00	0.6000	0.4561
T17	16	LDF6-50A(1-1/4)	12.00 - 20.00	0.6000	0.4561
T17	17	LDF7-50A(1-5/8)	12.00 - 20.00	0.6000	0.4561
T17	18	LDF6-50A(1-1/4")	12.00 - 20.00	0.6000	0.4561
T17	19	LDF4-50A(1/2)	12.00 - 20.00	0.6000	0.4561
T17	20	LDF4-50A(1/2)	12.00 - 20.00	0.6000	0.4561
T17	23	LDF7-50A(1-5/8)	12.00 - 20.00	0.6000	0.4561
T17	24	LDF7-50A(1-5/8)	12.00 - 20.00	0.6000	0.4561
T17	25	LDF7-50A(1-5/8)	12.00 - 20.00	0.6000	0.4561
T17	26	LDF4-50A(1/2)	12.00 - 20.00	0.6000	0.4561
T17	27	LDF4-50A(1/2)	12.00 - 20.00	0.6000	0.4561
T17	28	LDF7-50A(1-5/8)	12.00 - 20.00	0.6000	0.4561
T17	29	LDF7-50A(1-5/8)	12.00 - 20.00	0.6000	0.4561
T17	30	LDF7-50A(1-5/8)	12.00 - 20.00	0.6000	0.4561
T17	31	LDF7-50A(1-5/8)	12.00 - 20.00	0.6000	0.4561
T17	32	LDF5-50A(7/8)	12.00 - 20.00	0.6000	0.4561
T17	33	LDF4.5-50(5/8)	12.00 - 20.00	0.6000	0.4561
T17	34	LDF6-50A(1-1/4)	12.00 - 20.00	0.6000	0.4561
T17	35	LDF7-50A(1-5/8)	12.00 - 20.00	0.6000	0.4561
T17	36	LDF1-50A(1/4")	12.00 - 20.00	0.6000	0.4561
T17	37	FJ-2SM-001-75M(3/16")	12.00 - 20.00	0.6000	0.4561
T17	39	Climbing Ladder (Rail)	12.00 - 20.00	0.6000	0.4561
T17	40	Climbing Ladder (Rungs)	12.00 - 20.00	0.6000	0.4561
T17	45	LDF7-50A(1-5/8)	12.00 - 20.00	0.6000	0.4561
T17	47	Feedline Ladder (Rail)	12.00 - 20.00	0.6000	0.4561
T17	48	Feedline Ladder (Rail)	12.00 - 20.00	0.6000	0.4561
T17	49	Feedline Ladder (Rail)	12.00 - 20.00	0.6000	0.4561
T17	50	Feedline Ladder (Rail)	12.00 - 20.00	0.6000	0.4561
T18	3	LDF7-50A(1-5/8")	9.35 - 12.00	0.6000	0.4149
T18	4	WR-VG86ST-BRD(3/4)	9.35 - 12.00	0.6000	0.4149
T18	5	LDF2-50A(3/8")	9.35 - 12.00	0.6000	0.4149
T18	8	LDF5-50A(7/8)	9.35 - 12.00	0.6000	0.4149
T18	9	LDF4-50A(1/2)	9.35 - 12.00	0.6000	0.4149
T18	10	LDF5-50A(7/8)	9.35 - 12.00	0.6000	0.4149
T18	11	LDF12-50A(2-1/4)	9.35 - 12.00	0.6000	0.4149
T18	12	LDF7-50A(1-5/8")	9.35 - 12.00	0.6000	0.4149
T18	13	LDF4-50A(1/2)	9.35 - 12.00	0.6000	0.4149
T18	14	1" Coax	9.35 - 12.00	0.6000	0.4149
T18	15	LDF5-50A(7/8)	9.35 - 12.00	0.6000	0.4149
T18	16	LDF6-50A(1-1/4)	9.35 - 12.00	0.6000	0.4149
T18	17	LDF7-50A(1-5/8)	9.35 - 12.00	0.6000	0.4149
T18	18	LDF6-50A(1-1/4")	9.35 - 12.00	0.6000	0.4149
T18	19	LDF4-50A(1/2)	9.35 - 12.00	0.6000	0.4149
T18	20	LDF4-50A(1/2)	9.35 - 12.00	0.6000	0.4149
T18	23	LDF7-50A(1-5/8)	9.35 - 12.00	0.6000	0.4149
T18	24	LDF7-50A(1-5/8)	9.35 - 12.00	0.6000	0.4149
T18	25	LDF7-50A(1-5/8)	9.35 - 12.00	0.6000	0.4149

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T18	26	LDF4-50A(1/2)	9.35 - 12.00	0.6000	0.4149
T18	27	LDF4-50A(1/2)	9.35 - 12.00	0.6000	0.4149
T18	28	LDF7-50A(1-5/8)	9.35 - 12.00	0.6000	0.4149
T18	29	LDF7-50A(1-5/8)	9.35 - 12.00	0.6000	0.4149
T18	30	LDF7-50A(1-5/8)	9.35 - 12.00	0.6000	0.4149
T18	31	LDF7-50A(1-5/8)	9.35 - 12.00	0.6000	0.4149
T18	32	LDF5-50A(7/8)	9.35 - 12.00	0.6000	0.4149
T18	33	LDF4.5-50(5/8)	9.35 - 12.00	0.6000	0.4149
T18	34	LDF6-50A(1-1/4)	9.35 - 12.00	0.6000	0.4149
T18	35	LDF7-50A(1-5/8)	9.35 - 12.00	0.6000	0.4149
T18	36	LDF1-50A(1/4")	9.35 - 12.00	0.6000	0.4149
T18	37	FJ-2SM-001-75M(3/16")	9.35 - 12.00	0.6000	0.4149
T18	39	Climbing Ladder (Rail)	9.35 - 12.00	0.6000	0.4149
T18	40	Climbing Ladder (Rungs)	9.35 - 12.00	0.6000	0.4149
T18	45	LDF7-50A(1-5/8)	9.35 - 12.00	0.6000	0.4149
T18	47	Feedline Ladder (Rail)	9.35 - 12.00	0.6000	0.4149
T18	48	Feedline Ladder (Rail)	9.35 - 12.00	0.6000	0.4149
T18	49	Feedline Ladder (Rail)	9.35 - 12.00	0.6000	0.4149
T18	50	Feedline Ladder (Rail)	9.35 - 12.00	0.6000	0.4149
T19	3	LDF7-50A(1-5/8")	6.70 - 9.35	0.6000	0.3791
T19	4	WR-VG86ST-BRD(3/4)	6.70 - 9.35	0.6000	0.3791
T19	5	LDF2-50A(3/8")	6.70 - 9.35	0.6000	0.3791
T19	8	LDF5-50A(7/8)	6.70 - 9.35	0.6000	0.3791
T19	9	LDF4-50A(1/2)	6.70 - 9.35	0.6000	0.3791
T19	10	LDF5-50A(7/8)	6.70 - 9.35	0.6000	0.3791
T19	11	LDF12-50A(2-1/4)	6.70 - 9.35	0.6000	0.3791
T19	12	LDF7-50A(1-5/8")	6.70 - 9.35	0.6000	0.3791
T19	13	LDF4-50A(1/2)	6.70 - 9.35	0.6000	0.3791
T19	14	1" Coax	6.70 - 9.35	0.6000	0.3791
T19	15	LDF5-50A(7/8)	6.70 - 9.35	0.6000	0.3791
T19	16	LDF6-50A(1-1/4)	6.70 - 9.35	0.6000	0.3791
T19	17	LDF7-50A(1-5/8)	6.70 - 9.35	0.6000	0.3791
T19	18	LDF6-50A(1-1/4")	6.70 - 9.35	0.6000	0.3791
T19	19	LDF4-50A(1/2)	6.70 - 9.35	0.6000	0.3791
T19	20	LDF4-50A(1/2)	6.70 - 9.35	0.6000	0.3791
T19	23	LDF7-50A(1-5/8)	6.70 - 9.35	0.6000	0.3791
T19	24	LDF7-50A(1-5/8)	6.70 - 9.35	0.6000	0.3791
T19	25	LDF7-50A(1-5/8)	6.70 - 9.35	0.6000	0.3791
T19	26	LDF4-50A(1/2)	6.70 - 9.35	0.6000	0.3791
T19	27	LDF4-50A(1/2)	6.70 - 9.35	0.6000	0.3791
T19	28	LDF7-50A(1-5/8)	6.70 - 9.35	0.6000	0.3791
T19	29	LDF7-50A(1-5/8)	6.70 - 9.35	0.6000	0.3791
T19	30	LDF7-50A(1-5/8)	6.70 - 9.35	0.6000	0.3791
T19	31	LDF7-50A(1-5/8)	6.70 - 9.35	0.6000	0.3791
T19	32	LDF5-50A(7/8)	6.70 - 9.35	0.6000	0.3791
T19	33	LDF4.5-50(5/8)	6.70 - 9.35	0.6000	0.3791
T19	34	LDF6-50A(1-1/4)	6.70 - 9.35	0.6000	0.3791
T19	35	LDF7-50A(1-5/8)	6.70 - 9.35	0.6000	0.3791
T19	36	LDF1-50A(1/4")	6.70 - 9.35	0.6000	0.3791
T19	37	FJ-2SM-001-75M(3/16")	6.70 - 9.35	0.6000	0.3791
T19	39	Climbing Ladder (Rail)	6.70 - 9.35	0.6000	0.3791
T19	40	Climbing Ladder (Rungs)	6.70 - 9.35	0.6000	0.3791
T19	45	LDF7-50A(1-5/8)	6.70 - 9.35	0.6000	0.3791
T19	47	Feedline Ladder (Rail)	6.70 - 9.35	0.6000	0.3791
T19	48	Feedline Ladder (Rail)	6.70 - 9.35	0.6000	0.3791
T19	49	Feedline Ladder (Rail)	6.70 - 9.35	0.6000	0.3791
T19	50	Feedline Ladder (Rail)	6.70 - 9.35	0.6000	0.3791
T20	3	LDF7-50A(1-5/8")	6.00 - 6.70	0.6000	0.2487

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T20	4	WR-VG86ST-BRD(3/4)	6.00 - 6.70	0.6000	0.2487
T20	5	LDF2-50A(3/8")	6.00 - 6.70	0.6000	0.2487
T20	8	LDF5-50A(7/8)	6.00 - 6.70	0.6000	0.2487
T20	9	LDF4-50A(1/2)	6.00 - 6.70	0.6000	0.2487
T20	10	LDF5-50A(7/8)	6.00 - 6.70	0.6000	0.2487
T20	11	LDF12-50A(2-1/4)	6.00 - 6.70	0.6000	0.2487
T20	12	LDF7-50A(1-5/8")	6.00 - 6.70	0.6000	0.2487
T20	13	LDF4-50A(1/2)	6.00 - 6.70	0.6000	0.2487
T20	14	1" Coax	6.00 - 6.70	0.6000	0.2487
T20	15	LDF5-50A(7/8)	6.00 - 6.70	0.6000	0.2487
T20	16	LDF6-50A(1-1/4)	6.00 - 6.70	0.6000	0.2487
T20	17	LDF7-50A(1-5/8)	6.00 - 6.70	0.6000	0.2487
T20	18	LDF6-50A(1-1/4")	6.00 - 6.70	0.6000	0.2487
T20	19	LDF4-50A(1/2)	6.00 - 6.70	0.6000	0.2487
T20	20	LDF4-50A(1/2)	6.00 - 6.70	0.6000	0.2487
T20	23	LDF7-50A(1-5/8)	6.00 - 6.70	0.6000	0.2487
T20	24	LDF7-50A(1-5/8)	6.00 - 6.70	0.6000	0.2487
T20	25	LDF7-50A(1-5/8)	6.00 - 6.70	0.6000	0.2487
T20	26	LDF4-50A(1/2)	6.00 - 6.70	0.6000	0.2487
T20	27	LDF4-50A(1/2)	6.00 - 6.70	0.6000	0.2487
T20	28	LDF7-50A(1-5/8)	6.00 - 6.70	0.6000	0.2487
T20	29	LDF7-50A(1-5/8)	6.00 - 6.70	0.6000	0.2487
T20	30	LDF7-50A(1-5/8)	6.00 - 6.70	0.6000	0.2487
T20	31	LDF7-50A(1-5/8)	6.00 - 6.70	0.6000	0.2487
T20	32	LDF5-50A(7/8)	6.00 - 6.70	0.6000	0.2487
T20	33	LDF4.5-50(5/8)	6.00 - 6.70	0.6000	0.2487
T20	34	LDF6-50A(1-1/4)	6.00 - 6.70	0.6000	0.2487
T20	35	LDF7-50A(1-5/8)	6.00 - 6.70	0.6000	0.2487
T20	36	LDF1-50A(1/4")	6.00 - 6.70	0.6000	0.2487
T20	37	FJ-2SM-001-75M(3/16")	6.00 - 6.70	0.6000	0.2487
T20	39	Climbing Ladder (Rail)	6.00 - 6.70	0.6000	0.2487
T20	40	Climbing Ladder (Rungs)	6.00 - 6.70	0.6000	0.2487
T20	45	LDF7-50A(1-5/8)	6.00 - 6.70	0.6000	0.2487
T20	47	Feedline Ladder (Rail)	0.00 - 6.70	0.6000	0.2487
T20	48	Feedline Ladder (Rail)	0.00 - 6.70	0.6000	0.2487
T20	49	Feedline Ladder (Rail)	0.00 - 6.70	0.6000	0.2487
T20	50	Feedline Ladder (Rail)	0.00 - 6.70	0.6000	0.2487

Discrete Tower Loads

<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>	<i>C_AA_A Front ft²</i>	<i>C_AA_A Side ft²</i>	<i>Weight K</i>

**								
FM Antenna	C	From Leg	2.00 0.00	0.0000	342.00	No Ice 1/2" Ice	4.00 5.00	0 0

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
(3) FM Antennas	B	From Leg	0.00 2.00 0.00 0.00	0.0000	338.00	1" Ice No Ice 1/2" Ice 1" Ice	6.00 14.00 19.00 24.00	6.00 14.00 19.00 24.00	0 0 0 1
FM Antenna	C	From Leg	0.00 2.00 0.00 0.00	0.0000	332.50	No Ice 1/2" Ice 1" Ice	4.00 5.00 6.00	4.00 5.00 6.00	0 0 0
2' Standoff	C	From Leg	0.00 1.00 0.00 0.00	0.0000	317.50	No Ice 1/2" Ice 1" Ice	2.96 4.10 5.24	2.11 2.93 3.75	0 0 0
FM Antenna	A	From Leg	0.00 2.00 0.00 0.00	0.0000	312.00	No Ice 1/2" Ice 1" Ice	4.00 5.00 6.00	4.00 5.00 6.00	0 0 0
20' Omni	B	From Leg	0.00 3.00 0.00 11.83	0.0000	295.50	No Ice 1/2" Ice 1" Ice	6.00 8.03 10.06	6.00 8.03 10.06	0 0 0
3' Standoff	B	From Leg	0.00 1.50 0.00 0.00	0.0000	295.50	No Ice 1/2" Ice 1" Ice	0.94 1.48 2.02	1.41 2.17 2.93	0 0 0
***** ***** **305.5ft**									
3" Dia 20' Omni	A	From Leg	6.00 0.00 10.00	0.0000	294.00	No Ice 1/2" Ice 1" Ice	6.00 8.03 10.06	6.00 8.03 10.06	0 0 0
3" Dia 20' Omni	A	From Leg	6.00 0.00 -10.00	0.0000	294.00	No Ice 1/2" Ice 1" Ice	6.00 8.03 10.06	6.00 8.03 10.06	0 0 0
3" Dia 20' Omni	C	From Leg	6.00 0.00 -10.00	0.0000	294.00	No Ice 1/2" Ice 1" Ice	6.00 8.03 10.06	6.00 8.03 10.06	0 0 0
LeBlanc 10' Standoff (3)	A	From Leg	5.00 0.00 0.00	0.0000	294.00	No Ice 1/2" Ice 1" Ice	17.00 22.00 27.00	17.00 22.00 27.00	1 1 1
LeBlanc 10' Standoff (3)	C	From Leg	5.00 0.00 0.00	0.0000	294.00	No Ice 1/2" Ice 1" Ice	17.00 22.00 27.00	17.00 22.00 27.00	1 1 1
FM Antenna	C	From Leg	2.00 0.00 0.00	0.0000	288.00	No Ice 1/2" Ice 1" Ice	4.00 5.00 6.00	4.00 5.00 6.00	0 0 0
FM Antenna	C	From Leg	2.00 0.00 0.00	0.0000	279.00	No Ice 1/2" Ice 1" Ice	4.00 5.00 6.00	4.00 5.00 6.00	0 0 0
5'3"x4" Pipe mount	A	From Leg	0.00 0.00 0.00	0.0000	274.00	No Ice 1/2" Ice 1" Ice	1.41 2.21 3.01	1.41 2.21 3.01	0 0 0

3" Dia 20' Omni	C	From Leg	6.00 0.00 10.00	0.0000	264.25	No Ice 1/2" Ice 1" Ice	6.00 8.03 10.06	6.00 8.03 10.06	0 0 0
Pirot 4' Side Mount Standoff	C	From Leg	3.00 0.00 0.00	0.0000	264.25	No Ice 1/2" Ice 1" Ice	0.41 0.81 1.21	3.06 5.10 7.14	0 0 0

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<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>		<i>C_{AA} Front ft²</i>	<i>C_{AA} Side ft²</i>	<i>Weight K</i>
3" Dia 20' Omni	A	From Leg	6.00 0.00 10.00	0.0000	252.00	No Ice 1/2" Ice 1" Ice	6.00 8.03 10.06	6.00 8.03 10.06	0 0 0
Pirol 4' Side Mount Standoff	A	From Leg	3.00 0.00 0.00	0.0000	252.00	No Ice 1/2" Ice 1" Ice	0.41 0.81 1.21	3.06 5.10 7.14	0 0 0
226.5ft Sprint									
(2) 59.25" x 6.5" x 3" Panel w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	226.50	No Ice 1/2" Ice 1" Ice	4.19 4.65 5.11	3.68 4.54 5.40	0 0 0
(2) 59.25" x 6.5" x 3" Panel w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	226.50	No Ice 1/2" Ice 1" Ice	4.19 4.65 5.11	3.68 4.54 5.40	0 0 0
(2) 59.25" x 6.5" x 3" Panel w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	226.50	No Ice 1/2" Ice 1" Ice	4.19 4.65 5.11	3.68 4.54 5.40	0 0 0
(3) 12' Sector Frames	C	None		0.0000	226.50	No Ice 1/2" Ice 1" Ice	20.49 30.39 40.29	20.49 30.39 40.29	1 1 2

219.5ft									
FM Antenna	C	From Leg	2.00 0.00 0.00	0.0000	219.50	No Ice 1/2" Ice 1" Ice	4.00 5.00 6.00	4.00 5.00 6.00	0 0 0

4'-P1.5x0.145	C	From Leg	0.50 0.00 0.00	0.0000	209.00	No Ice 1/2" Ice 1" Ice	0.76 1.01 1.26	0.76 1.01 1.26	0 0 0
8' Omni	A	From Leg	5.00 0.00 4.00	0.0000	208.00	No Ice 1/2" Ice 1" Ice	2.40 3.19 3.98	2.40 3.19 3.98	0 0 0
Horizontal Support Pipe	A	From Leg	3.00 0.00 2.00	0.0000	208.00	No Ice 1/2" Ice 1" Ice	1.32 1.58 1.84	1.32 1.58 1.84	0 0 0
Horizontal Support Pipe	A	From Leg	3.00 0.00 0.00	0.0000	208.00	No Ice 1/2" Ice 1" Ice	1.32 1.58 1.84	1.32 1.58 1.84	0 0 0
6' Standoff	B	From Leg	3.00 0.00 0.00	0.0000	205.50	No Ice 1/2" Ice 1" Ice	0.41 0.81 1.21	3.06 5.10 7.14	0 0 0
15' Omni	B	From Leg	6.00 0.00 7.50	0.0000	205.50	No Ice 1/2" Ice 1" Ice	6.00 8.03 10.06	6.00 8.03 10.06	0 0 0

200ft AT&T									
7770_TIA w/ Mount Pipe	A	From Leg	1.50 0.00 0.00	0.0000	200.00	No Ice 1/2" Ice 1" Ice	5.75 6.18 6.61	4.25 5.01 5.71	0 0 0
7770_TIA w/ Mount Pipe	B	From Leg	1.50 0.00 0.00	0.0000	200.00	No Ice 1/2" Ice 1" Ice	5.75 6.18 6.61	4.25 5.01 5.71	0 0 0
7770_TIA w/ Mount Pipe	C	From Leg	1.50	0.0000	200.00	No Ice	5.75	4.25	0

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<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>	<i>C_{AA} Front ft²</i>	<i>C_{AA} Side ft²</i>	<i>Weight K</i>
			0.00			1/2" Ice	6.18	5.01
			0.00			1" Ice	6.61	5.71
DTMABP7819VG12A	A	From Leg	1.50	0.0000	200.00	No Ice	0.98	0.34
			0.00			1/2" Ice	1.10	0.42
			0.00			1" Ice	1.23	0.51
DTMABP7819VG12A	B	From Leg	1.50	0.0000	200.00	No Ice	0.98	0.34
			0.00			1/2" Ice	1.10	0.42
			0.00			1" Ice	1.23	0.51
DTMABP7819VG12A	C	From Leg	1.50	0.0000	200.00	No Ice	0.98	0.34
			0.00			1/2" Ice	1.10	0.42
			0.00			1" Ice	1.23	0.51
OPA65R-BU8D_TIA w/ Mount Pipe	A	From Leg	4.00	0.0000	200.00	No Ice	18.33	10.34
			0.00			1/2" Ice	19.06	11.86
			0.00			1" Ice	19.81	13.41
OPA65R-BU8D_TIA w/ Mount Pipe	B	From Leg	4.00	0.0000	200.00	No Ice	18.33	10.34
			0.00			1/2" Ice	19.06	11.86
			0.00			1" Ice	19.81	13.41
OPA65R-BU8D_TIA w/ Mount Pipe	C	From Leg	4.00	0.0000	200.00	No Ice	18.33	10.34
			0.00			1/2" Ice	19.06	11.86
			0.00			1" Ice	19.81	13.41
DMP65R-BU8D_TIA w/ Mount Pipe	A	From Leg	4.00	0.0000	200.00	No Ice	18.11	10.26
			0.00			1/2" Ice	18.84	11.78
			0.00			1" Ice	19.59	13.33
DMP65R-BU8D_TIA w/ Mount Pipe	B	From Leg	4.00	0.0000	200.00	No Ice	18.11	10.26
			0.00			1/2" Ice	18.84	11.78
			0.00			1" Ice	19.59	13.33
DMP65R-BU8D_TIA w/ Mount Pipe	C	From Leg	4.00	0.0000	200.00	No Ice	18.11	10.26
			0.00			1/2" Ice	18.84	11.78
			0.00			1" Ice	19.59	13.33
Raycap DC9	A	From Leg	4.00	0.0000	200.00	No Ice	0.79	0.79
			0.00			1/2" Ice	1.27	1.27
			0.00			1" Ice	1.75	1.75
RADIO 4478	A	From Leg	4.00	0.0000	200.00	No Ice	1.63	1.00
			0.00			1/2" Ice	1.78	1.13
			0.00			1" Ice	1.95	1.27
RADIO 4478	B	From Leg	4.00	0.0000	200.00	No Ice	1.63	1.00
			0.00			1/2" Ice	1.78	1.13
			0.00			1" Ice	1.95	1.27
RADIO 4478	C	From Leg	4.00	0.0000	200.00	No Ice	1.63	1.00
			0.00			1/2" Ice	1.78	1.13
			0.00			1" Ice	1.95	1.27
RADIO 4449 B5/B12	A	From Leg	4.00	0.0000	200.00	No Ice	1.64	1.30
			0.00			1/2" Ice	1.80	1.45
			0.00			1" Ice	1.97	1.60
RADIO 4449 B5/B12	B	From Leg	4.00	0.0000	200.00	No Ice	1.64	1.30
			0.00			1/2" Ice	1.80	1.45
			0.00			1" Ice	1.97	1.60
RADIO 4449 B5/B12	C	From Leg	4.00	0.0000	200.00	No Ice	1.64	1.30
			0.00			1/2" Ice	1.80	1.45
			0.00			1" Ice	1.97	1.60
RADIO 8843 B2/B66A	A	From Leg	4.00	0.0000	200.00	No Ice	1.64	1.38
			0.00			1/2" Ice	1.80	1.53
			0.00			1" Ice	1.97	1.69

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<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>		<i>C_{AA} Front ft²</i>	<i>C_{AA} Side ft²</i>	<i>Weight K</i>
RADIO 8843 B2/B66A	B	From Leg	4.00 0.00 0.00	0.0000	200.00	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	1.38 1.53 1.69	0 0 0
RADIO 8843 B2/B66A	C	From Leg	4.00 0.00 0.00	0.0000	200.00	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	1.38 1.53 1.69	0 0 0
DC6-48-60-18-8F	C	From Leg	1.50 0.00 0.00	0.0000	200.00	No Ice 1/2" Ice 1" Ice	0.79 1.27 1.45	0.79 1.27 1.45	0 0 0
Pirol 10' PCS Frame	A	From Leg	0.00 0.00 0.00	0.0000	200.00	No Ice 1/2" Ice 1" Ice	9.00 13.20 17.40	9.00 13.20 17.40	0 0 0
Pirol 10' PCS Frame	B	From Leg	0.00 0.00 0.00	0.0000	200.00	No Ice 1/2" Ice 1" Ice	9.00 13.20 17.40	9.00 13.20 17.40	0 0 0
Pirol 10' PCS Frame	C	From Leg	0.00 0.00 0.00	0.0000	200.00	No Ice 1/2" Ice 1" Ice	9.00 13.20 17.40	9.00 13.20 17.40	0 0 0

185ft T-Mobile									
AIR 6419 B41_TMO_TIA w/ Mount Pipe	A	From Leg	3.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	6.53 6.92 7.31	3.75 4.24 4.75	0 0 0
AIR 6419 B41_TMO_TIA w/ Mount Pipe	B	From Leg	3.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	6.53 6.92 7.31	3.75 4.24 4.75	0 0 0
AIR 6419 B41_TMO_TIA w/ Mount Pipe	C	From Leg	3.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	6.53 6.92 7.31	3.75 4.24 4.75	0 0 0
VV-65A-R1_TMO_TIA w/ Mount Pipe	A	From Leg	3.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	6.12 6.56 6.99	4.05 4.80 5.49	0 0 0
VV-65A-R1_TMO_TIA w/ Mount Pipe	B	From Leg	3.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	6.12 6.56 6.99	4.05 4.80 5.49	0 0 0
VV-65A-R1_TMO_TIA w/ Mount Pipe	C	From Leg	3.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	6.12 6.56 6.99	4.05 4.80 5.49	0 0 0
APXVAALL24_43-U- NA20_TIA w/ Mount Pipe	A	From Leg	3.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	20.48 21.23 21.99	10.87 12.39 13.94	0 0 0
APXVAALL24_43-U- NA20_TIA w/ Mount Pipe	B	From Leg	3.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	20.48 21.23 21.99	10.87 12.39 13.94	0 0 0
APXVAALL24_43-U- NA20_TIA w/ Mount Pipe	C	From Leg	3.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	20.48 21.23 21.99	10.87 12.39 13.94	0 0 0
RADIO 4480 B71+B85	A	From Leg	3.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	2.85 3.06 3.28	1.38 1.54 1.71	0 0 0
RADIO 4480 B71+B85	B	From Leg	3.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	2.85 3.06 3.28	1.38 1.54 1.71	0 0 0

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	Client	T-Mobile	Designed by	Ahmet Colakoglu

<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>		<i>C_{AA} Front ft²</i>	<i>C_{AA} Side ft²</i>	<i>Weight K</i>
RADIO 4480 B71+B85	C	From Leg	3.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	2.85 3.06 3.28	1.38 1.54 1.71	0 0 0
RADIO 4460 B25+B66	A	From Leg	3.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	2.14 2.32 2.51	1.69 1.85 2.02	0 0 0
RADIO 4460 B25+B66	B	From Leg	3.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	2.14 2.32 2.51	1.69 1.85 2.02	0 0 0
RADIO 4460 B25+B66	C	From Leg	3.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice 1" Ice	2.14 2.32 2.51	1.69 1.85 2.02	0 0 0
Sector Mount [SM 502-3]	A	None		0.0000	185.00	No Ice 1/2" Ice 1" Ice	29.82 42.21 54.43	29.82 42.21 54.43	2 2 3

169.5ft Verizon									
(2) LPA-80080-4CF-EDIN w/ Mount Pipe	A	From Leg	2.00 0.00 0.00	0.0000	169.50	No Ice 1/2" Ice 1" Ice	3.35 3.97 4.47	5.98 7.08 7.89	0 0 0
(2) LPA-80063/4CFx5 w/ Mount Pipe	B	From Leg	2.00 0.00 0.00	0.0000	169.50	No Ice 1/2" Ice 1" Ice	6.87 7.53 8.06	7.09 8.15 8.92	0 0 0
(2) LPA-80063/4CFx5 w/ Mount Pipe	C	From Leg	2.00 0.00 0.00	0.0000	169.50	No Ice 1/2" Ice 1" Ice	6.87 7.53 8.06	7.09 8.15 8.92	0 0 0
BXA-70063-6CF-EDIN w/ Mount Pipe	A	From Leg	2.00 0.00 0.00	0.0000	169.50	No Ice 1/2" Ice 1" Ice	7.81 8.36 8.87	5.80 6.95 7.82	0 0 0
BXA-70063-6CF-EDIN w/ Mount Pipe	B	From Leg	2.00 0.00 0.00	0.0000	169.50	No Ice 1/2" Ice 1" Ice	7.81 8.36 8.87	5.80 6.95 7.82	0 0 0
BXA-70063-6CF-EDIN w/ Mount Pipe	C	From Leg	2.00 0.00 0.00	0.0000	169.50	No Ice 1/2" Ice 1" Ice	7.81 8.36 8.87	5.80 6.95 7.82	0 0 0
BXA-171063-12BF-EDIN-2 w/ Mount Pipe	A	From Leg	2.00 0.00 0.00	0.0000	169.50	No Ice 1/2" Ice 1" Ice	3.72 4.34 4.85	3.53 4.57 5.32	0 0 0
BXA-171063-12BF-EDIN-2 w/ Mount Pipe	B	From Leg	2.00 0.00 0.00	0.0000	169.50	No Ice 1/2" Ice 1" Ice	3.72 4.34 4.85	3.53 4.57 5.32	0 0 0
BXA-171063-12BF-EDIN-2 w/ Mount Pipe	C	From Leg	2.00 0.00 0.00	0.0000	169.50	No Ice 1/2" Ice 1" Ice	3.72 4.34 4.85	3.53 4.57 5.32	0 0 0
(2) E15V95P08	A	From Leg	2.00 0.00 0.00	0.0000	169.50	No Ice 1/2" Ice 1" Ice	0.39 0.46 0.55	0.11 0.17 0.23	0 0 0
(2) E15V95P08	B	From Leg	2.00 0.00 0.00	0.0000	169.50	No Ice 1/2" Ice 1" Ice	0.39 0.46 0.55	0.11 0.17 0.23	0 0 0
(2) E15V95P08	C	From Leg	2.00 0.00 0.00	0.0000	169.50	No Ice 1/2" Ice 1" Ice	0.39 0.46 0.55	0.11 0.17 0.23	0 0 0

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<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>		<i>C_{AA} Front ft²</i>	<i>C_{AA} Side ft²</i>	<i>Weight K</i>
Pirot 12' T-Frame Sector	A	From Leg	0.00 0.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	13.60 18.40 23.20	13.60 18.40 23.20	0 1 1
Pirot 12' T-Frame Sector	B	From Leg	0.00 0.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	13.60 18.40 23.20	13.60 18.40 23.20	0 1 1
Pirot 12' T-Frame Sector	C	From Leg	0.00 0.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	13.60 18.40 23.20	13.60 18.40 23.20	0 1 1
***** *****									
13' Dipole	A	From Leg	4.00 0.00 0.00	0.0000	150.50	No Ice 1/2" Ice 1" Ice	4.00 6.00 8.00	4.00 6.00 8.00	0 0 0
(3) 4'-P1.5x0.145	A	From Leg	2.00 0.00 0.00	0.0000	150.50	No Ice 1/2" Ice 1" Ice	0.76 1.01 1.26	0.76 1.01 1.26	0 0 0

3" dia x 20' Omni	B	From Leg	4.00 0.00 10.00	0.0000	138.50	No Ice 1/2" Ice 1" Ice	6.00 8.03 10.08	6.00 8.03 10.08	0 0 0
Pirot 4' Side Mount Standoff	B	From Leg	2.00 0.00 0.00	0.0000	138.50	No Ice 1/2" Ice 1" Ice	2.72 4.91 7.10	2.72 4.91 7.10	0 0 0
2.5'x4" Pipe Mount	B	From Leg	2.00 0.00 0.00	0.0000	138.50	No Ice 1/2" Ice 1" Ice	0.64 0.91 1.18	0.64 0.91 1.18	0 0 0
Dish Pipe Mount	B	From Leg	0.50 0.00 0.00	0.0000	130.00	No Ice 1/2" Ice 1" Ice	1.32 1.58 1.84	1.32 1.58 1.84	0 0 0

3' Side Arm	C	From Leg	1.50 0.00 0.00	0.0000	112.00	No Ice 1/2" Ice 1" Ice	5.30 7.20 9.10	5.30 7.20 9.10	0 0 0

Dish Pipe Mount	B	From Leg	0.50 0.00 0.00	0.0000	90.00	No Ice 1/2" Ice 1" Ice	1.32 1.58 1.84	1.32 1.58 1.84	0 0 0
** **									

Dishes

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Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft ²	Weight K
P-9A120GN	C	Paraboloid w/o Radome	From Leg	1.00 0.00 0.00	-80.0000		317.50	4.00	No Ice 10.10 1/2" Ice 13.09 1" Ice 16.08	0 0 0
P-9A120GN	C	Paraboloid w/o Radome	From Leg	1.00 0.00 0.00	45.0000		308.00	4.00	No Ice 10.10 1/2" Ice 13.09 1" Ice 16.08	0 0 0
SPD6-58	A	Paraboloid w/Radome	From Leg	1.00 0.00 0.00	-45.0000		274.00	6.00	No Ice 28.27 1/2" Ice 29.07 1" Ice 29.87	0 0 0
P-9A72GN-S	B	Paraboloid w/o Radome	From Leg	1.00 0.00 0.00	45.0000		251.00	6.00	No Ice 22.60 1/2" Ice 29.05 1" Ice 35.50	0 0 0
MFF-950B	C	Grid	From Leg	1.00 0.00 0.00	-90.0000		209.00	3.88	No Ice 11.79 1/2" Ice 12.31 1" Ice 12.83	0 0 0
P-9A72GN-S	B	Grid	From Leg	1.00 0.00 0.00	-35.0000		130.00	6.00	No Ice 22.60 1/2" Ice 29.05 1" Ice 35.50	0 0 0
(2) 18" Dish	B	Paraboloid w/Shroud (HP)	From Leg	1.00 0.00 0.00	-35.0000		123.50	3.00	No Ice 3.14 1/2" Ice 3.41 1" Ice 3.68	0 0 0
MTZ-940B	A	Grid	From Leg	1.00 0.00 0.00	-60.0000		112.00	3.88	No Ice 11.79 1/2" Ice 12.31 1" Ice 12.83	0 0 0
(2) 18" Dish	A	Paraboloid w/Shroud (HP)	From Leg	1.00 0.00 0.00	-60.0000		106.50	3.00	No Ice 3.14 1/2" Ice 3.41 1" Ice 3.68	0 0 0
PR-950	B	Grid	From Leg	1.00 0.00 0.00	45.0000		90.00	5.67	No Ice 25.22 1/2" Ice 25.97 1" Ice 26.72	0 0 0
SPD3-2.4NS	B	Paraboloid w/o Radome	From Leg	1.00 0.00 0.00	45.0000		36.00	3.17	No Ice 7.88 1/2" Ice 8.30 1" Ice 8.72	0 0 0

6' Dish	C	Paraboloid w/Shroud (HP)	From Leg	1.00 0.00 0.00	0.0000		255.00	6.00	No Ice 28.30 1/2" Ice 28.30 1" Ice 28.30	0 1 1
4' Dish	C	Paraboloid w/Shroud (HP)	From Leg	1.00 0.00 0.00	0.0000		215.00	4.00	No Ice 12.57 1/2" Ice 12.57 1" Ice 12.57	0 0 0
6' Dish	B	Paraboloid w/Shroud (HP)	From Leg	1.00 0.00 0.00	0.0000		210.00	6.00	No Ice 28.30 1/2" Ice 28.30 1" Ice 28.30	0 1 1
4' Dish	B	Paraboloid w/Shroud (HP)	From Leg	1.00 0.00 0.00	0.0000		183.00	4.00	No Ice 12.57 1/2" Ice 12.57 1" Ice 12.57	0 0 0

Load Combinations

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<i>Comb.</i>	<i>Description</i>
<i>No.</i>	
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice+1.0 Guy
3	1.2D+1.6W (pattern 1) 0 deg - No Ice+1.0 Guy
4	1.2D+1.6W (pattern 2) 0 deg - No Ice+1.0 Guy
5	1.2D+1.6W (pattern 3) 0 deg - No Ice+1.0 Guy
6	1.2D+1.6W (pattern 4) 0 deg - No Ice+1.0 Guy
7	1.2D+1.6W (pattern 5) 0 deg - No Ice+1.0 Guy
8	1.2D+1.6W (pattern 6) 0 deg - No Ice+1.0 Guy
9	1.2 Dead+1.6 Wind 30 deg - No Ice+1.0 Guy
10	1.2D+1.6W (pattern 1) 30 deg - No Ice+1.0 Guy
11	1.2D+1.6W (pattern 2) 30 deg - No Ice+1.0 Guy
12	1.2D+1.6W (pattern 3) 30 deg - No Ice+1.0 Guy
13	1.2D+1.6W (pattern 4) 30 deg - No Ice+1.0 Guy
14	1.2D+1.6W (pattern 5) 30 deg - No Ice+1.0 Guy
15	1.2D+1.6W (pattern 6) 30 deg - No Ice+1.0 Guy
16	1.2 Dead+1.6 Wind 60 deg - No Ice+1.0 Guy
17	1.2D+1.6W (pattern 1) 60 deg - No Ice+1.0 Guy
18	1.2D+1.6W (pattern 2) 60 deg - No Ice+1.0 Guy
19	1.2D+1.6W (pattern 3) 60 deg - No Ice+1.0 Guy
20	1.2D+1.6W (pattern 4) 60 deg - No Ice+1.0 Guy
21	1.2D+1.6W (pattern 5) 60 deg - No Ice+1.0 Guy
22	1.2D+1.6W (pattern 6) 60 deg - No Ice+1.0 Guy
23	1.2 Dead+1.6 Wind 90 deg - No Ice+1.0 Guy
24	1.2D+1.6W (pattern 1) 90 deg - No Ice+1.0 Guy
25	1.2D+1.6W (pattern 2) 90 deg - No Ice+1.0 Guy
26	1.2D+1.6W (pattern 3) 90 deg - No Ice+1.0 Guy
27	1.2D+1.6W (pattern 4) 90 deg - No Ice+1.0 Guy
28	1.2D+1.6W (pattern 5) 90 deg - No Ice+1.0 Guy
29	1.2D+1.6W (pattern 6) 90 deg - No Ice+1.0 Guy
30	1.2 Dead+1.6 Wind 120 deg - No Ice+1.0 Guy
31	1.2D+1.6W (pattern 1) 120 deg - No Ice+1.0 Guy
32	1.2D+1.6W (pattern 2) 120 deg - No Ice+1.0 Guy
33	1.2D+1.6W (pattern 3) 120 deg - No Ice+1.0 Guy
34	1.2D+1.6W (pattern 4) 120 deg - No Ice+1.0 Guy
35	1.2D+1.6W (pattern 5) 120 deg - No Ice+1.0 Guy
36	1.2D+1.6W (pattern 6) 120 deg - No Ice+1.0 Guy
37	1.2 Dead+1.6 Wind 150 deg - No Ice+1.0 Guy
38	1.2D+1.6W (pattern 1) 150 deg - No Ice+1.0 Guy
39	1.2D+1.6W (pattern 2) 150 deg - No Ice+1.0 Guy
40	1.2D+1.6W (pattern 3) 150 deg - No Ice+1.0 Guy
41	1.2D+1.6W (pattern 4) 150 deg - No Ice+1.0 Guy
42	1.2D+1.6W (pattern 5) 150 deg - No Ice+1.0 Guy
43	1.2D+1.6W (pattern 6) 150 deg - No Ice+1.0 Guy
44	1.2 Dead+1.6 Wind 180 deg - No Ice+1.0 Guy
45	1.2D+1.6W (pattern 1) 180 deg - No Ice+1.0 Guy
46	1.2D+1.6W (pattern 2) 180 deg - No Ice+1.0 Guy
47	1.2D+1.6W (pattern 3) 180 deg - No Ice+1.0 Guy
48	1.2D+1.6W (pattern 4) 180 deg - No Ice+1.0 Guy
49	1.2D+1.6W (pattern 5) 180 deg - No Ice+1.0 Guy
50	1.2D+1.6W (pattern 6) 180 deg - No Ice+1.0 Guy
51	1.2 Dead+1.6 Wind 210 deg - No Ice+1.0 Guy
52	1.2D+1.6W (pattern 1) 210 deg - No Ice+1.0 Guy
53	1.2D+1.6W (pattern 2) 210 deg - No Ice+1.0 Guy
54	1.2D+1.6W (pattern 3) 210 deg - No Ice+1.0 Guy
55	1.2D+1.6W (pattern 4) 210 deg - No Ice+1.0 Guy
56	1.2D+1.6W (pattern 5) 210 deg - No Ice+1.0 Guy
57	1.2D+1.6W (pattern 6) 210 deg - No Ice+1.0 Guy
58	1.2 Dead+1.6 Wind 240 deg - No Ice+1.0 Guy

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<i>Comb. No.</i>	<i>Description</i>
59	1.2D+1.6W (pattern 1) 240 deg - No Ice+1.0 Guy
60	1.2D+1.6W (pattern 2) 240 deg - No Ice+1.0 Guy
61	1.2D+1.6W (pattern 3) 240 deg - No Ice+1.0 Guy
62	1.2D+1.6W (pattern 4) 240 deg - No Ice+1.0 Guy
63	1.2D+1.6W (pattern 5) 240 deg - No Ice+1.0 Guy
64	1.2D+1.6W (pattern 6) 240 deg - No Ice+1.0 Guy
65	1.2 Dead+1.6 Wind 270 deg - No Ice+1.0 Guy
66	1.2D+1.6W (pattern 1) 270 deg - No Ice+1.0 Guy
67	1.2D+1.6W (pattern 2) 270 deg - No Ice+1.0 Guy
68	1.2D+1.6W (pattern 3) 270 deg - No Ice+1.0 Guy
69	1.2D+1.6W (pattern 4) 270 deg - No Ice+1.0 Guy
70	1.2D+1.6W (pattern 5) 270 deg - No Ice+1.0 Guy
71	1.2D+1.6W (pattern 6) 270 deg - No Ice+1.0 Guy
72	1.2 Dead+1.6 Wind 300 deg - No Ice+1.0 Guy
73	1.2D+1.6W (pattern 1) 300 deg - No Ice+1.0 Guy
74	1.2D+1.6W (pattern 2) 300 deg - No Ice+1.0 Guy
75	1.2D+1.6W (pattern 3) 300 deg - No Ice+1.0 Guy
76	1.2D+1.6W (pattern 4) 300 deg - No Ice+1.0 Guy
77	1.2D+1.6W (pattern 5) 300 deg - No Ice+1.0 Guy
78	1.2D+1.6W (pattern 6) 300 deg - No Ice+1.0 Guy
79	1.2 Dead+1.6 Wind 330 deg - No Ice+1.0 Guy
80	1.2D+1.6W (pattern 1) 330 deg - No Ice+1.0 Guy
81	1.2D+1.6W (pattern 2) 330 deg - No Ice+1.0 Guy
82	1.2D+1.6W (pattern 3) 330 deg - No Ice+1.0 Guy
83	1.2D+1.6W (pattern 4) 330 deg - No Ice+1.0 Guy
84	1.2D+1.6W (pattern 5) 330 deg - No Ice+1.0 Guy
85	1.2D+1.6W (pattern 6) 330 deg - No Ice+1.0 Guy
86	1.2 Dead+1.0 Ice+1.0 Temp+Guy
87	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy
88	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy
89	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy
90	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy
91	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy
92	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy
93	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy
94	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy
95	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy
96	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy
97	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy
98	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy
99	Dead+Wind 0 deg - Service+Guy
100	Dead+Wind 30 deg - Service+Guy
101	Dead+Wind 60 deg - Service+Guy
102	Dead+Wind 90 deg - Service+Guy
103	Dead+Wind 120 deg - Service+Guy
104	Dead+Wind 150 deg - Service+Guy
105	Dead+Wind 180 deg - Service+Guy
106	Dead+Wind 210 deg - Service+Guy
107	Dead+Wind 240 deg - Service+Guy
108	Dead+Wind 270 deg - Service+Guy
109	Dead+Wind 300 deg - Service+Guy
110	Dead+Wind 330 deg - Service+Guy

Maximum Member Forces

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	Client	T-Mobile	Designed by	Ahmet Colakoglu

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	345 - 330	Latticed Pole Leg	Max Tension	47	9	0.02	0.10
			Max. Compression	32	-9	0.00	0.00
			Max. Mx	5	-1	-0.15	0.04
			Max. My	12	-1	-0.06	-0.21
			Max. Vy	60	-1	0.00	0.00
			Max. Vx	5	-1	0.00	0.00
		Latticed Pole Diagonal	Max Tension	68	2	0.00	0.00
			Max. Compression	68	-2	0.00	0.00
			Max. Mx	92	0	-0.00	0.00
			Max. My	61	-2	0.00	-0.00
			Max. Vy	92	0	-0.00	0.00
			Max. Vx	61	0	0.00	0.00
		Latticed Pole Top Girt	Max Tension	5	0	0.00	0.00
			Max. Compression	19	0	0.00	0.00
			Max. Mx	89	0	0.01	0.00
			Max. My	5	0	0.00	-0.00
			Max. Vy	89	0	0.00	0.00
			Max. Vx	5	0	0.00	0.00
		Latticed Pole Mid Girt	Max Tension	62	0	0.00	0.00
			Max. Compression	47	0	0.00	0.00
			Max. Mx	89	0	0.01	0.00
			Max. My	5	0	0.00	-0.00
			Max. Vy	89	0	0.00	0.00
			Max. Vx	5	0	0.00	0.00
T1	330 - 320	Leg	Max Tension	36	3	-0.21	-0.13
			Max. Compression	50	-24	-0.02	0.17
			Max. Mx	36	3	-0.21	-0.13
			Max. My	8	2	-0.02	0.24
			Max. Vy	36	-1	-0.21	-0.13
			Max. Vx	8	1	-0.02	0.24
		Diagonal	Max Tension	15	2	0.00	0.00
			Max. Compression	15	-2	0.00	0.00
			Max. Mx	93	0	-0.01	-0.00
			Max. My	59	-2	-0.00	-0.00
			Max. Vy	93	0	-0.01	-0.00
			Max. Vx	10	0	0.00	0.00
		Top Girt	Max Tension	5	0	0.00	0.00
			Max. Compression	5	0	0.00	0.00
			Max. Mx	86	0	0.12	0.00
			Max. My	5	0	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	5	0	0.00	0.00
		Bottom Girt	Max Tension	36	0	0.00	0.00
			Max. Compression	50	0	0.00	0.00
			Max. Mx	86	0	0.03	0.00
			Max. My	5	0	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	5	0	0.00	0.00
		Mid Girt	Max Tension	95	0	0.00	0.00
			Max. Compression	50	0	0.00	0.00
			Max. Mx	86	0	0.03	0.00
			Max. My	5	0	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	5	0	0.00	0.00

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T2	320 - 300	Guy A	Bottom Tension	39	22		
			Top Tension	39	22		
			Top Cable Vert	39	20		
			Top Cable Norm	39	10		
			Top Cable Tan	39	0		
			Bot Cable Vert	39	-19		
			Bot Cable Norm	39	11		
			Bot Cable Tan	39	0		
		Guy B	Bottom Tension	81	21		
			Top Tension	81	21		
			Top Cable Vert	81	18		
			Top Cable Norm	81	11		
			Top Cable Tan	81	0		
			Bot Cable Vert	81	-17		
			Bot Cable Norm	81	11		
			Bot Cable Tan	81	0		
		Guy C	Bottom Tension	11	20		
			Top Tension	11	21		
			Top Cable Vert	11	18		
			Top Cable Norm	11	10		
			Top Cable Tan	11	0		
			Bot Cable Vert	11	-17		
			Bot Cable Norm	11	11		
			Bot Cable Tan	11	0		
		Leg	Max Tension	36	9	0.01	-0.00
			Max. Compression	50	-29	-0.00	0.00
			Max. Mx	3	-20	0.34	-0.00
			Max. My	8	4	0.04	-0.28
			Max. Vy	26	2	-0.27	-0.03
			Max. Vx	5	-2	-0.05	0.27
		Diagonal	Max Tension	26	2	0.00	0.00
			Max. Compression	26	-2	0.00	0.00
			Max. Mx	87	0	-0.01	-0.00
			Max. My	76	-2	-0.00	-0.00
			Max. Vy	87	0	-0.01	-0.00
			Max. Vx	76	0	-0.00	-0.00
		Top Girt	Max Tension	78	0	0.00	0.00
			Max. Compression	8	0	0.00	0.00
			Max. Mx	86	0	0.03	0.00
			Max. My	5	0	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	5	0	0.00	0.00
		Bottom Girt	Max Tension	1	0	0.00	0.00
			Max. Compression	34	-1	0.00	0.00
			Max. Mx	86	0	0.03	0.00
			Max. My	5	0	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	5	0	0.00	0.00
		Mid Girt	Max Tension	8	0	0.00	0.00
			Max. Compression	1	0	0.00	0.00
			Max. Mx	86	0	0.03	0.00
			Max. My	5	0	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	5	0	0.00	0.00
T3	300 - 280	Leg	Max Tension	36	9	0.05	-0.02
			Max. Compression	43	-45	-0.02	0.17
			Max. Mx	64	-33	-0.87	0.22

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	15	-39	-0.16	-0.87
			Max. Vy	75	-2	0.22	0.04
			Max. Vx	12	-2	-0.06	0.26
		Diagonal	Max Tension	3	5	0.00	0.00
			Max. Compression	12	-3	0.00	0.00
			Max. Mx	98	1	-0.01	-0.00
			Max. My	3	4	0.00	-0.05
			Max. Vy	87	0	-0.01	-0.00
			Max. Vx	3	0	0.00	-0.05
		Top Girt	Max Tension	1	0	0.00	0.00
			Max. Compression	35	-1	0.00	0.00
			Max. Mx	86	-1	0.03	0.00
			Max. My	5	-1	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	5	0	0.00	0.00
		Bottom Girt	Max Tension	19	0	0.00	0.00
			Max. Compression	61	0	0.00	0.00
			Max. Mx	86	0	0.03	0.00
			Max. My	5	0	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	5	0	0.00	0.00
		Mid Girt	Max Tension	1	0	0.00	0.00
			Max. Compression	2	0	0.00	0.00
			Max. Mx	86	0	0.03	0.00
			Max. My	5	0	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	5	0	0.00	0.00
		Guy A	Bottom Tension	38	16		
			Top Tension	38	16		
			Top Cable Vert	38	14		
			Top Cable Norm	38	8		
			Top Cable Tan	38	0		
			Bot Cable Vert	38	-13		
			Bot Cable Norm	38	8		
			Bot Cable Tan	38	0		
		Guy B	Bottom Tension	80	15		
			Top Tension	80	15		
			Top Cable Vert	80	13		
			Top Cable Norm	80	8		
			Top Cable Tan	80	0		
			Bot Cable Vert	80	-12		
			Bot Cable Norm	80	9		
			Bot Cable Tan	80	0		
		Guy C	Bottom Tension	10	15		
			Top Tension	10	15		
			Top Cable Vert	10	12		
			Top Cable Norm	10	8		
			Top Cable Tan	10	0		
			Bot Cable Vert	10	-12		
			Bot Cable Norm	10	9		
			Bot Cable Tan	10	0		
T4	280 - 260	Leg	Max Tension	35	14	-0.38	-0.31
			Max. Compression	43	-77	0.16	0.35
			Max. Mx	59	5	0.56	-0.08
			Max. My	3	-56	-0.07	0.64
			Max. Vy	17	-3	-0.56	0.13
			Max. Vx	3	4	-0.07	0.64

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T5	260 - 240	Diagonal	Max Tension	80	5	0.00	0.00
			Max. Compression	80	-5	0.00	0.00
		Top Girt	Max. Mx	87	1	-0.01	-0.00
			Max. My	8	-5	-0.00	-0.00
			Max. Vy	87	0	-0.01	-0.00
			Max. Vx	8	0	-0.00	-0.00
			Max Tension	33	1	0.00	0.00
			Max. Compression	47	0	0.00	0.00
		Bottom Girt	Max. Mx	86	0	0.03	0.00
			Max. My	5	0	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	5	0	0.00	0.00
			Max Tension	3	1	0.00	0.00
			Max. Compression	20	0	0.00	0.00
		Mid Girt	Max. Mx	89	0	0.03	0.00
			Max. My	39	0	0.00	-0.00
			Max. Vy	89	0	0.00	0.00
			Max. Vx	39	0	0.00	0.00
			Max Tension	3	8	0.00	0.00
			Max. Compression	1	0	0.00	0.00
		Guy A	Max. Mx	89	3	0.03	0.00
			Max. My	5	3	0.00	-0.00
			Max. Vy	89	0	0.00	0.00
			Max. Vx	5	0	0.00	0.00
			Bottom Tension	38	34		
			Top Tension	38	34		
			Top Cable Vert	38	29		
			Top Cable Norm	38	19		
			Top Cable Tan	38	0		
			Bot Cable Vert	38	-28		
		Guy B	Bot Cable Norm	38	19		
			Bot Cable Tan	38	0		
			Bottom Tension	73	32		
			Top Tension	73	33		
			Top Cable Vert	73	26		
			Top Cable Norm	73	20		
			Top Cable Tan	73	0		
			Bot Cable Vert	73	-25		
			Bot Cable Norm	73	20		
			Bot Cable Tan	73	0		
		Guy C	Bottom Tension	17	32		
			Top Tension	17	32		
			Top Cable Vert	17	26		
			Top Cable Norm	17	19		
			Top Cable Tan	17	0		
			Bot Cable Vert	17	-25		
			Bot Cable Norm	17	20		
			Bot Cable Tan	17	0		
		Leg	Max Tension	35	27	0.03	-0.12
			Max. Compression	38	-89	0.14	0.15
			Max. Mx	17	-70	0.70	-0.21
			Max. My	3	-59	-0.06	-0.70
			Max. Vy	17	-3	0.41	-0.13
			Max. Vx	3	4	-0.06	-0.39
		Diagonal	Max Tension	3	5	0.00	0.00
			Max. Compression	80	-5	0.00	0.00
			Max. Mx	92	-1	-0.01	0.00

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T6	240 - 220	Top Girt	Max. My	8	-5	-0.00	-0.01
			Max. Vy	92	0	-0.01	0.00
			Max. Vx	8	0	-0.00	-0.01
			Max Tension	76	1	0.00	0.00
			Max. Compression	6	0	0.00	0.00
			Max. Mx	89	0	0.03	0.00
			Max. My	39	0	0.00	-0.00
			Max. Vy	89	0	0.00	0.00
			Max. Vx	39	0	0.00	0.00
			Max Tension	34	0	0.00	0.00
		Bottom Girt	Max. Compression	76	0	0.00	0.00
			Max. Mx	89	0	0.03	0.00
			Max. My	39	0	0.00	-0.00
			Max. Vy	89	0	0.00	0.00
			Max. Vx	39	0	0.00	0.00
			Max Tension	7	1	0.00	0.00
			Max. Compression	49	0	0.00	0.00
			Max. Mx	89	0	0.03	0.00
			Max. My	39	0	0.00	-0.00
			Max. Vy	89	0	0.00	0.00
		Mid Girt	Max. Vx	39	0	0.00	0.00
			Max Tension	7	1	0.00	0.00
			Max. Compression	49	0	0.00	0.00
			Max. Mx	89	0	0.03	0.00
			Max. My	39	0	0.00	-0.00
			Max. Vy	89	0	0.00	0.00
			Max. Vx	39	0	0.00	0.00
			Max Tension	35	27	-0.03	0.13
			Max. Compression	38	-90	0.00	0.15
			Max. Mx	85	-80	-0.41	-0.09
		Leg	Max. My	15	-77	0.16	-0.53
			Max. Vy	32	3	-0.39	-0.09
			Max. Vx	8	-3	0.16	0.42
			Max Tension	8	4	0.00	0.00
			Max. Compression	15	-4	0.00	0.00
			Max. Mx	87	0	-0.01	-0.00
			Max. My	50	-4	-0.01	0.01
			Max. Vy	91	0	-0.01	0.00
			Max. Vx	50	0	-0.01	0.01
			Max Tension	8	0	0.00	0.00
		Top Girt	Max. Compression	50	0	0.00	0.00
			Max. Mx	88	0	0.03	0.00
			Max. My	39	0	0.00	-0.00
			Max. Vy	88	0	0.00	0.00
			Max. Vx	39	0	0.00	0.00
			Max Tension	47	0	0.00	0.00
			Max. Compression	5	0	0.00	0.00
			Max. Mx	97	0	0.03	0.00
			Max. My	39	0	0.00	-0.00
			Max. Vy	97	0	0.00	0.00
		Bottom Girt	Max. Vx	39	0	0.00	0.00
			Max Tension	47	0	0.00	0.00
			Max. Compression	5	0	0.00	0.00
			Max. Mx	97	0	0.03	0.00
			Max. My	39	0	0.00	-0.00
			Max. Vy	97	0	0.00	0.00
			Max. Vx	39	0	0.00	0.00
			Max Tension	35	1	0.00	0.00
			Max. Compression	49	0	0.00	0.00
			Max. Mx	89	0	0.03	0.00
		Mid Girt	Max. My	39	0	0.00	-0.00
			Max. Vy	89	0	0.00	0.00
			Max. Vx	39	0	0.00	0.00
			Max Tension	35	1	0.00	0.00
			Max. Compression	49	0	0.00	0.00
			Max. Mx	89	0	0.03	0.00
			Max. My	39	0	0.00	-0.00
			Max. Vy	89	0	0.00	0.00
			Max. Vx	39	0	0.00	0.00
			Max Tension	35	16	-0.35	-0.07
T7	220 - 200	Leg	Max. Compression	38	-83	0.22	-0.31
			Max. Mx	78	-44	-1.08	-0.50
			Max. My	50	-38	-0.31	1.15
			Max. Vy	32	6	-1.07	-0.36
			Max. Vx	4	-6	-0.36	1.07

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft	
T8	200 - 180	Diagonal	Max Tension	8	6	0.00	0.00	
			Max. Compression	8	-7	0.00	0.00	
		Top Girt	Max. Mx	92	1	-0.01	0.00	
			Max. My	8	-7	-0.00	-0.01	
			Max. Vy	92	0	-0.01	0.00	
			Max. Vx	8	0	-0.01	-0.01	
			Max Tension	36	1	0.00	0.00	
			Max. Compression	50	0	0.00	0.00	
			Max. Mx	97	0	0.04	0.00	
			Max. My	39	0	0.00	-0.00	
			Max. Vy	97	0	0.00	0.00	
			Max. Vx	39	0	0.00	0.00	
		Bottom Girt	Max Tension	78	1	0.00	0.00	
			Max. Compression	32	-1	0.00	0.00	
			Max. Mx	97	1	0.04	0.00	
			Max. My	39	0	0.00	-0.00	
			Max. Vy	86	0	0.00	0.00	
			Max. Vx	39	0	0.00	0.00	
		Mid Girt	Max Tension	31	1	0.00	0.00	
			Max. Compression	77	0	0.00	0.00	
			Max. Mx	97	0	0.04	0.00	
			Max. My	39	0	0.00	-0.00	
			Max. Vy	97	0	0.00	0.00	
			Max. Vx	39	0	0.00	0.00	
		Leg	Max Tension	46	57	-0.31	1.64	
			Max. Compression	32	-150	-1.64	-0.70	
			Max. Mx	71	-47	2.31	0.26	
			Max. My	50	-88	-0.33	-2.35	
			Max. Vy	71	-11	2.31	0.26	
			Max. Vx	50	12	-0.33	-2.35	
			Diagonal	Max Tension	15	13	0.00	0.00
				Max. Compression	15	-13	0.00	0.00
				Max. Mx	93	3	-0.02	0.00
				Max. My	8	-12	0.00	-0.01
		Max. Vy		93	0	-0.02	0.00	
		Max. Vx		8	0	0.00	-0.01	
		Top Girt	Max Tension	36	2	0.00	0.00	
			Max. Compression	77	-2	0.00	0.00	
			Max. Mx	97	0	0.05	0.00	
			Max. My	39	0	0.00	-0.00	
			Max. Vy	86	0	0.00	0.00	
			Max. Vx	39	0	0.00	0.00	
Bottom Girt	Max Tension	78	7	0.00	0.00			
	Max. Compression	36	-7	0.00	0.00			
	Max. Mx	86	0	0.05	0.00			
	Max. My	39	0	0.00	-0.00			
	Max. Vy	86	0	0.00	0.00			
	Max. Vx	39	0	0.00	0.00			
Mid Girt	Max Tension	47	1	0.00	0.00			
	Max. Compression	33	0	0.00	0.00			
	Max. Mx	86	1	0.05	0.00			
	Max. My	39	0	0.00	-0.00			
	Max. Vy	86	0	0.00	0.00			
	Max. Vx	39	0	0.00	0.00			
Leg	Max Tension	46	57	0.34	-1.24			
	Max. Compression	32	-175	-0.36	-0.13			
	Max. Mx	71	-47	3.25	0.33			

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	50	-88	-0.47	-3.33
			Max. Vy	71	-11	3.25	0.33
			Max. Vx	50	12	-0.47	-3.33
		Diagonal	Max Tension	33	8	0.00	0.00
			Max. Compression	33	-8	0.00	0.00
			Max. Mx	93	-1	-0.02	0.00
			Max. My	75	-6	-0.01	-0.01
			Max. Vy	93	0	-0.02	0.00
			Max. Vx	75	0	0.00	0.00
		Top Girt	Max Tension	50	9	0.00	0.00
			Max. Compression	30	-11	0.00	0.00
			Max. Mx	86	-1	0.05	0.00
			Max. My	39	-1	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	39	0	0.00	0.00
		Bottom Girt	Max Tension	61	1	0.00	0.00
			Max. Compression	19	0	0.00	0.00
			Max. Mx	97	0	0.05	0.00
			Max. My	39	0	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	39	0	0.00	0.00
		Mid Girt	Max Tension	23	2	0.00	0.00
			Max. Compression	1	0	0.00	0.00
			Max. Mx	86	1	0.05	0.00
			Max. My	39	1	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	39	0	0.00	0.00
		Guy A	Bottom Tension	43	42		
			Top Tension	43	43		
			Top Cable Vert	43	31		
			Top Cable Norm	43	29		
			Top Cable Tan	43	0		
			Bot Cable Vert	43	-30		
			Bot Cable Norm	43	30		
			Bot Cable Tan	43	0		
		Guy B	Bottom Tension	71	40		
			Top Tension	71	40		
			Top Cable Vert	71	26		
			Top Cable Norm	71	30		
			Top Cable Tan	71	0		
			Bot Cable Vert	71	-26		
			Bot Cable Norm	71	31		
			Bot Cable Tan	71	0		
		Guy C	Bottom Tension	29	40		
			Top Tension	29	40		
			Top Cable Vert	29	26		
			Top Cable Norm	29	31		
			Top Cable Tan	29	0		
			Bot Cable Vert	29	-26		
			Bot Cable Norm	29	31		
			Bot Cable Tan	29	0		
		Torque Arm Top	Max Tension	29	35	0.00	0.00
			Max. Compression	1	0	0.00	0.00
			Max. Mx	93	19	0.11	0.00
			Max. My	46	15	0.00	0.00
			Max. Vy	93	0	0.00	0.00
			Max. Vx	46	0	0.00	0.00

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	Client	T-Mobile	Designed by	Ahmet Colakoglu

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T10	160 - 140	Torque Arm Bottom	Max Tension	23	7	0.00	0.00
			Max. Compression	37	-24	0.00	0.00
			Max. Mx	92	-7	0.11	0.00
			Max. My	46	-20	0.00	-0.00
			Max. Vy	92	0	0.00	0.00
		Leg	Max. Vx	46	0	0.00	0.00
			Max Tension	1	0	0.00	0.00
			Max. Compression	32	-146	0.16	0.22
			Max. Mx	26	-48	0.81	-0.38
			Max. My	47	-37	0.11	0.85
		Diagonal	Max. Vy	61	4	-0.32	0.17
			Max. Vx	5	4	-0.06	-0.30
			Max Tension	33	4	0.00	0.00
			Max. Compression	33	-5	0.00	0.00
			Max. Mx	97	0	-0.01	-0.00
		Top Girt	Max. My	24	-3	-0.00	0.00
			Max. Vy	97	0	-0.01	-0.00
			Max. Vx	24	0	0.00	0.00
			Max Tension	72	1	0.00	0.00
			Max. Compression	33	-1	0.00	0.00
		Bottom Girt	Max. Mx	97	1	0.04	0.00
			Max. My	39	0	0.00	-0.00
			Max. Vy	97	0	0.00	0.00
			Max. Vx	39	0	0.00	0.00
			Max Tension	61	1	0.00	0.00
		Mid Girt	Max. Compression	1	0	0.00	0.00
			Max. Mx	97	0	0.04	0.00
			Max. My	66	0	0.00	-0.00
			Max. Vy	97	0	0.00	0.00
			Max. Vx	66	0	0.00	0.00
T11	140 - 120	Leg	Max Tension	39	1	0.00	0.00
			Max. Compression	1	0	0.00	0.00
			Max. Mx	97	1	0.04	0.00
			Max. My	66	1	0.00	-0.00
			Max. Vy	97	0	0.00	0.00
		Diagonal	Max. Vx	66	0	0.00	0.00
			Max Tension	1	0	0.00	0.00
			Max. Compression	4	-128	-0.08	0.00
			Max. Mx	66	-62	-0.62	-0.02
			Max. My	52	-57	-0.13	0.55
		Top Girt	Max. Vy	66	-2	0.50	-0.15
			Max. Vx	3	-2	-0.01	0.50
			Max Tension	66	2	0.00	0.00
			Max. Compression	24	-3	0.00	0.00
			Max. Mx	93	0	-0.01	0.00
		Bottom Girt	Max. My	27	-3	-0.00	0.00
			Max. Vy	93	0	-0.01	0.00
			Max. Vx	24	0	0.00	0.00
			Max Tension	74	1	0.00	0.00
			Max. Compression	4	0	0.00	0.00
		Mid Girt	Max. Mx	97	1	0.04	0.00
			Max. My	66	0	0.00	-0.00
			Max. Vy	97	0	0.00	0.00
			Max. Vx	66	0	0.00	0.00
			Max Tension	38	1	0.00	0.00
		Bottom Girt	Max. Compression	59	0	0.00	0.00
			Max. Mx	86	0	0.04	0.00

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T12	120 - 100	Mid Girt	Max. My	66	0	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	66	0	0.00	0.00
			Max Tension	95	1	0.00	0.00
			Max. Compression	1	0	0.00	0.00
			Max. Mx	86	1	0.04	0.00
		Leg	Max. My	66	1	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	66	0	0.00	0.00
			Max Tension	1	0	0.00	0.00
			Max. Compression	31	-149	-0.72	-0.41
			Max. Mx	69	-38	1.39	0.60
		Diagonal	Max. My	48	-21	0.06	-1.39
			Max. Vy	69	-7	1.39	0.60
			Max. Vx	55	7	0.19	-1.38
			Max Tension	66	4	0.00	0.00
			Max. Compression	24	-5	0.00	0.00
			Max. Mx	92	0	-0.01	0.00
		Top Girt	Max. My	43	-4	-0.00	0.00
			Max. Vy	92	0	-0.01	0.00
			Max. Vx	24	0	0.00	0.00
			Max Tension	59	1	0.00	0.00
			Max. Compression	1	0	0.00	0.00
			Max. Mx	86	0	0.04	0.00
		Bottom Girt	Max. My	66	0	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	66	0	0.00	0.00
			Max Tension	63	3	0.00	0.00
			Max. Compression	1	0	0.00	0.00
			Max. Mx	86	2	0.04	0.00
		Mid Girt	Max. My	66	2	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	66	0	0.00	0.00
			Max Tension	93	1	0.00	0.00
			Max. Compression	1	0	0.00	0.00
			Max. Mx	86	1	0.04	0.00
T13	100 - 80	Leg	Max. My	66	1	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	66	0	0.00	0.00
			Max Tension	1	0	0.00	0.00
			Max. Compression	31	-149	-0.93	-0.52
			Max. Mx	69	-38	2.00	0.88
		Diagonal	Max. My	55	-60	0.25	-2.00
			Max. Vy	69	-7	2.00	0.88
			Max. Vx	55	7	0.25	-2.00
			Max Tension	81	6	0.00	0.00
			Max. Compression	79	-6	0.00	0.00
			Max. Mx	91	0	-0.01	0.00
		Top Girt	Max. My	27	-4	-0.00	0.00
			Max. Vy	91	0	-0.01	0.00
			Max. Vx	27	0	0.00	0.00
			Max Tension	63	11	0.00	0.00
			Max. Compression	1	0	0.00	0.00
			Max. Mx	86	6	0.03	0.00
		Leg	Max. My	66	6	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	66	0	0.00	0.00
			Max Tension	66	0	0.00	0.00
			Max. Compression	31	-149	-0.93	-0.52
			Max. Mx	69	-38	2.00	0.88

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T14	80 - 60	Bottom Girt	Max Tension	58	1	0.00	0.00
			Max. Compression	19	0	0.00	0.00
			Max. Mx	90	1	0.03	0.00
			Max. My	66	0	0.00	-0.00
			Max. Vy	90	0	0.00	0.00
			Max. Vx	66	0	0.00	0.00
		Mid Girt	Max Tension	95	1	0.00	0.00
			Max. Compression	1	0	0.00	0.00
			Max. Mx	96	1	0.03	0.00
			Max. My	66	1	0.00	-0.00
			Max. Vy	96	0	0.00	0.00
			Max. Vx	66	0	0.00	0.00
		Guy A	Bottom Tension	56	35		
			Top Tension	56	35		
			Top Cable Vert	56	20		
			Top Cable Norm	56	29		
			Top Cable Tan	56	0		
			Bot Cable Vert	56	-19		
		Guy B	Bot Cable Norm	56	29		
			Bot Cable Tan	56	0		
			Bottom Tension	69	35		
			Top Tension	69	35		
			Top Cable Vert	69	15		
			Top Cable Norm	69	31		
		Guy C	Top Cable Tan	69	0		
			Bot Cable Vert	69	-14		
			Bot Cable Norm	69	31		
			Bot Cable Tan	69	0		
			Bottom Tension	27	35		
			Top Tension	27	35		
		Leg	Top Cable Vert	27	15		
			Top Cable Norm	27	31		
			Top Cable Tan	27	0		
			Bot Cable Vert	27	-14		
			Bot Cable Norm	27	31		
			Bot Cable Tan	27	0		
		Leg	Max Tension	1	0	0.00	0.00
			Max. Compression	93	-138	0.01	0.39
			Max. Mx	23	-105	1.08	-0.33
			Max. My	44	-95	0.04	1.11
			Max. Vy	25	-4	0.39	0.05
			Max. Vx	4	4	-0.02	-0.40
		Diagonal	Max Tension	81	4	0.00	0.00
			Max. Compression	39	-4	0.00	0.00
			Max. Mx	93	0	-0.01	0.00
			Max. My	82	-4	-0.00	-0.00
			Max. Vy	93	0	-0.01	0.00
			Max. Vx	82	0	-0.00	-0.00
		Top Girt	Max Tension	16	1	0.00	0.00
			Max. Compression	4	0	0.00	0.00
			Max. Mx	90	0	0.03	0.00
			Max. My	66	0	0.00	-0.00
			Max. Vy	90	0	0.00	0.00
			Max. Vx	66	0	0.00	0.00
		Bottom Girt	Max Tension	30	1	0.00	0.00
			Max. Compression	19	0	0.00	0.00
			Max. Mx	86	1	0.03	0.00

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T15	60 - 40	Mid Girt	Max. My	71	0	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	71	0	0.00	0.00
			Max Tension	61	1	0.00	0.00
			Max. Compression	1	0	0.00	0.00
			Max. Mx	90	1	0.03	0.00
		Leg	Max. My	71	1	0.00	-0.00
			Max. Vy	90	0	0.00	0.00
			Max. Vx	71	0	0.00	0.00
			Max Tension	1	0	0.00	0.00
			Max. Compression	93	-144	0.02	0.31
			Max. Mx	23	-134	0.65	-0.19
		Diagonal	Max. My	44	-123	0.07	0.66
			Max. Vy	25	-2	0.14	-0.02
			Max. Vx	4	2	-0.04	-0.14
			Max Tension	81	2	0.00	0.00
			Max. Compression	39	-2	0.00	0.00
			Max. Mx	92	-1	-0.01	0.00
		Top Girt	Max. My	47	-1	-0.01	0.00
			Max. Vy	92	0	-0.01	0.00
			Max. Vx	26	0	-0.01	-0.00
			Max Tension	38	1	0.00	0.00
			Max. Compression	1	0	0.00	0.00
			Max. Mx	86	1	0.03	0.00
		Bottom Girt	Max. My	71	0	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	71	0	0.00	0.00
			Max Tension	87	1	0.00	0.00
			Max. Compression	1	0	0.00	0.00
			Max. Mx	86	1	0.03	0.00
		Mid Girt	Max. My	71	0	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	71	0	0.00	0.00
			Max Tension	61	1	0.00	0.00
			Max. Compression	1	0	0.00	0.00
			Max. Mx	86	1	0.03	0.00
T16	40 - 20	Leg	Max. My	71	1	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	71	0	0.00	0.00
			Max Tension	1	0	0.00	0.00
			Max. Compression	93	-144	0.00	-0.34
			Max. Mx	68	-124	-0.90	-0.46
		Diagonal	Max. My	47	-120	-0.08	0.99
			Max. Vy	68	-3	0.35	0.19
			Max. Vx	47	4	0.07	-0.40
			Max Tension	61	3	0.00	0.00
			Max. Compression	61	-3	0.00	0.00
			Max. Mx	93	-1	-0.01	0.00
		Top Girt	Max. My	71	-3	-0.01	0.00
			Max. Vy	93	0	-0.01	0.00
			Max. Vx	71	0	-0.01	0.00
			Max Tension	61	1	0.00	0.00
			Max. Compression	19	0	0.00	0.00
			Max. Mx	86	1	0.03	0.00
		Leg	Max. My	71	0	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	71	0	0.00	0.00
			Max. Vx	71	0	0.00	0.00

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T17	20 - 12	Bottom Girt	Max Tension	93	1	0.00	0.00
			Max. Compression	1	0	0.00	0.00
			Max. Mx	86	1	0.03	0.00
			Max. My	71	1	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	71	0	0.00	0.00
		Mid Girt	Max Tension	95	1	0.00	0.00
			Max. Compression	1	0	0.00	0.00
			Max. Mx	86	1	0.03	0.00
			Max. My	71	1	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	71	0	0.00	0.00
		Leg	Max Tension	1	0	0.00	0.00
			Max. Compression	93	-143	0.03	-0.29
			Max. Mx	68	-118	0.64	0.34
			Max. My	47	-115	0.10	-0.71
			Max. Vy	33	6	-0.15	-0.08
			Max. Vx	5	-6	0.01	0.17
		Diagonal	Max Tension	61	3	0.00	0.00
			Max. Compression	61	-5	0.00	0.00
			Max. Mx	93	-4	-0.02	0.00
			Max. My	71	-5	-0.02	0.00
			Max. Vy	93	0	-0.02	0.00
			Max. Vx	71	0	-0.02	0.00
		Horizontal	Max Tension	91	3	0.00	0.00
			Max. Compression	1	0	0.00	0.00
			Max. Mx	86	3	0.02	0.00
			Max. My	71	2	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	71	0	0.00	0.00
		Top Girt	Max Tension	58	1	0.00	0.00
			Max. Compression	1	0	0.00	0.00
			Max. Mx	86	1	0.02	0.00
			Max. My	71	1	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
			Max. Vx	71	0	0.00	0.00
T18	12 - 9.35	Leg	Max Tension	1	0	0.00	0.00
			Max. Compression	93	-141	0.01	0.58
			Max. Mx	26	-60	0.77	0.19
			Max. My	5	-59	-0.04	-0.76
			Max. Vy	33	6	-0.65	-0.39
			Max. Vx	5	-6	-0.02	0.70
		Diagonal	Max Tension	61	4	0.00	0.00
			Max. Compression	61	-5	0.00	0.00
			Max. Mx	94	0	0.01	0.00
			Max. My	71	2	0.00	-0.00
			Max. Vy	94	0	0.00	0.00
			Max. Vx	71	0	0.00	0.00
		Horizontal	Max Tension	54	5	-0.98	-0.00
			Max. Compression	61	-2	-0.96	0.01
			Max. Mx	91	3	-1.54	-0.00
			Max. My	62	2	-1.19	-0.02
			Max. Vy	91	1	-1.54	-0.00
			Max. Vx	62	0	0.00	0.00
T19	9.35 - 6.7	Leg	Max Tension	1	0	0.00	0.00
			Max. Compression	93	-140	0.04	-0.66
			Max. Mx	96	-138	2.89	1.58

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T20	6.7 - 0	Diagonal	Max. My	93	-139	-0.13	-3.33
			Max. Vy	97	-54	2.86	1.65
			Max. Vx	93	63	-0.13	-3.33
			Max Tension	61	5	0.00	0.00
			Max. Compression	61	-5	0.00	0.00
			Max. Mx	94	1	0.01	0.00
			Max. My	71	4	0.00	-0.00
			Max. Vy	94	0	0.00	0.00
			Max. Vx	71	0	0.00	0.00
			Max Tension	93	37	0.00	0.00
		Horizontal	Max. Compression	1	0	0.00	0.00
			Max. Mx	93	37	-0.53	-0.00
			Max. My	71	25	-0.37	0.00
			Max. Vy	93	0	0.00	0.00
			Max. Vx	71	0	-0.37	0.00
			Max Tension	61	0	0.00	0.00
			Max. Compression	19	0	0.00	0.00
			Max. Mx	86	0	0.02	0.00
			Max. My	71	0	0.00	-0.00
			Max. Vy	86	0	0.00	0.00
		Leg	Max. Vx	71	0	0.00	0.00
			Max Tension	1	0	0.00	0.00
			Max. Compression	93	-153	3.55	-0.10
			Max. Mx	93	-153	3.55	-0.10
			Max. My	71	-100	-0.51	5.02
			Max. Vy	93	3	-1.50	0.02
			Max. Vx	71	-5	-0.51	5.02
			Max Tension	1	0	0.00	0.00
			Max. Compression	71	-22	0.00	0.00
			Max. Mx	71	-6	0.04	0.03
		Diagonal	Max. My	29	-20	0.02	-0.06
			Max. Vy	93	0	0.00	0.00
			Max. Vx	29	0	0.02	-0.06
			Max Tension	92	3	0.00	0.00
		Secondary Horizontal	Max. Compression	68	-1	0.00	0.00
			Max. Mx	26	2	0.01	0.01
			Max. My	71	-1	-0.01	-0.02
			Max. Vy	26	0	0.00	0.00
			Max. Vx	71	0	-0.01	-0.02
			Max Tension	92	14	0.00	0.00
			Max. Compression	1	0	0.00	0.00
			Max. Mx	86	14	0.00	0.00
			Max. My	93	14	0.00	0.00
			Max. Vy	86	0	0.00	0.00
		Bottom Girt	Max. Vx	93	0	0.00	0.00
			Max Tension	91	8	0.00	0.00
			Max. Compression	1	0	0.00	0.00
			Max. Mx	86	8	0.03	0.00
			Max. My	93	8	0.00	0.01
			Max. Vy	86	0	0.00	0.00
			Max. Vx	93	0	0.00	0.00
		Mid Girt	Max Tension	91	8	0.00	0.00
			Max. Compression	1	0	0.00	0.00
			Max. Mx	86	8	0.03	0.00
			Max. My	93	8	0.00	0.01
			Max. Vy	86	0	0.00	0.00
			Max. Vx	93	0	0.00	0.00

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Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Mast	Max. Vert	93	409	0	-1
	Max. H _x	68	257	8	0
	Max. H _z	5	258	0	7
	Max. M _x	1	0.00	0	0
	Max. M _z	1	0.00	0	0
	Max. Torsion	24	6.29	-3	1
	Min. Vert	1	173	0	0
	Min. H _x	26	260	-8	0
	Min. H _z	47	245	0	-7
	Min. M _x	1	0.00	0	0
	Min. M _z	1	0.00	0	0
	Min. Torsion	71	-6.71	7	1
	Guy C @ 205 ft Elev 5 ft Azimuth 240 deg	Max. Vert	58	-5	2
		Max. H _x	58	-5	2
Guy B @ 205 ft Elev 5 ft Azimuth 120 deg		Max. H _z	9	-114	64
		Min. Vert	23	-115	63
		Min. H _x	23	-115	63
		Min. H _z	58	-5	2
		Max. Vert	30	-5	1
		Max. H _x	65	-115	63
		Max. H _z	79	-116	65
		Min. Vert	72	-116	64
		Min. H _x	30	-5	1
		Min. H _z	30	-5	1
Guy A @ 205 ft Elev -35 ft Azimuth 0 deg		Max. Vert	2	-8	-4
		Max. H _x	65	-72	-66
		Max. H _z	2	-8	-4
		Min. Vert	37	-136	-125
		Min. H _x	23	-76	-69
		Min. H _z	37	-136	-125

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	173	0	0	0.00	0.00	-0.00
1.2 Dead+1.6 Wind 0 deg - No Ice+1.0 Guy	286	0	-6	0.00	0.00	-2.61
1.2D+1.6W (pattern 1) 0 deg - No Ice+1.0 Guy	282	0	-2	0.00	0.00	-3.13
1.2D+1.6W (pattern 2) 0 deg - No Ice+1.0 Guy	273	0	-6	0.00	0.00	-3.03

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<i>Load Combination</i>	<i>Vertical K</i>	<i>Shear_x K</i>	<i>Shear_z K</i>	<i>Overturning Moment, M_x kip-ft</i>	<i>Overturning Moment, M_z kip-ft</i>	<i>Torque kip-ft</i>
1.2D+1.6W (pattern 3) 0 deg - No Ice+1.0 Guy	258	0	-7	0.00	0.00	-2.97
1.2D+1.6W (pattern 4) 0 deg - No Ice+1.0 Guy	280	0	-6	0.00	0.00	-2.13
1.2D+1.6W (pattern 5) 0 deg - No Ice+1.0 Guy	280	0	-6	0.00	0.00	-2.50
1.2D+1.6W (pattern 6) 0 deg - No Ice+1.0 Guy	283	0	-6	0.00	0.00	-2.67
1.2 Dead+1.6 Wind 30 deg - No Ice+1.0 Guy	273	3	-5	0.00	0.00	-0.82
1.2D+1.6W (pattern 1) 30 deg - No Ice+1.0 Guy	270	2	-2	0.00	0.00	-1.36
1.2D+1.6W (pattern 2) 30 deg - No Ice+1.0 Guy	263	4	-6	0.00	0.00	-1.16
1.2D+1.6W (pattern 3) 30 deg - No Ice+1.0 Guy	251	4	-6	0.00	0.00	-1.36
1.2D+1.6W (pattern 4) 30 deg - No Ice+1.0 Guy	268	3	-5	0.00	0.00	-0.23
1.2D+1.6W (pattern 5) 30 deg - No Ice+1.0 Guy	269	3	-5	0.00	0.00	-0.70
1.2D+1.6W (pattern 6) 30 deg - No Ice+1.0 Guy	271	3	-5	0.00	0.00	-0.91
1.2 Dead+1.6 Wind 60 deg - No Ice+1.0 Guy	249	6	-4	0.00	0.00	-2.66
1.2D+1.6W (pattern 1) 60 deg - No Ice+1.0 Guy	248	3	-2	0.00	0.00	-3.10
1.2D+1.6W (pattern 2) 60 deg - No Ice+1.0 Guy	245	6	-4	0.00	0.00	-2.81
1.2D+1.6W (pattern 3) 60 deg - No Ice+1.0 Guy	240	7	-4	0.00	0.00	-2.99
1.2D+1.6W (pattern 4) 60 deg - No Ice+1.0 Guy	247	6	-4	0.00	0.00	-2.05
1.2D+1.6W (pattern 5) 60 deg - No Ice+1.0 Guy	247	6	-4	0.00	0.00	-2.64
1.2D+1.6W (pattern 6) 60 deg - No Ice+1.0 Guy	248	6	-4	0.00	0.00	-2.80
1.2 Dead+1.6 Wind 90 deg - No Ice+1.0 Guy	285	7	-1	0.00	0.00	-6.12
1.2D+1.6W (pattern 1) 90 deg - No Ice+1.0 Guy	280	3	-1	0.00	0.00	-6.29
1.2D+1.6W (pattern 2) 90 deg - No Ice+1.0 Guy	271	7	-1	0.00	0.00	-6.19
1.2D+1.6W (pattern 3) 90 deg - No Ice+1.0 Guy	260	8	0	0.00	0.00	-6.25
1.2D+1.6W (pattern 4) 90 deg - No Ice+1.0 Guy	279	7	0	0.00	0.00	-5.86
1.2D+1.6W (pattern 5) 90 deg - No Ice+1.0 Guy	280	7	-1	0.00	0.00	-6.19
1.2D+1.6W (pattern 6) 90 deg - No Ice+1.0 Guy	283	7	-1	0.00	0.00	-6.25
1.2 Dead+1.6 Wind 120 deg - No Ice+1.0 Guy	305	5	3	0.00	0.00	-1.57
1.2D+1.6W (pattern 1) 120 deg - No Ice+1.0 Guy	300	2	1	0.00	0.00	-1.57
1.2D+1.6W (pattern 2) 120 deg - No Ice+1.0 Guy	288	5	3	0.00	0.00	-1.33

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<i>Load Combination</i>	<i>Vertical K</i>	<i>Shear_x K</i>	<i>Shear_z K</i>	<i>Overturning Moment, M_x kip-ft</i>	<i>Overturning Moment, M_z kip-ft</i>	<i>Torque kip-ft</i>
1.2D+1.6W (pattern 3) 120 deg	273	6	4	0.00	0.00	-1.59
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 4) 120 deg	298	5	3	0.00	0.00	-1.60
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 5) 120 deg	299	5	3	0.00	0.00	-1.60
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 6) 120 deg	302	5	3	0.00	0.00	-1.64
- No Ice+1.0 Guy						
1.2 Dead+1.6 Wind 150 deg -	291	2	5	0.00	0.00	2.59
No Ice+1.0 Guy						
1.2D+1.6W (pattern 1) 150 deg	287	0	2	0.00	0.00	2.91
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 2) 150 deg	278	3	5	0.00	0.00	3.07
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 3) 150 deg	265	3	6	0.00	0.00	2.67
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 4) 150 deg	285	2	5	0.00	0.00	2.34
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 5) 150 deg	286	2	5	0.00	0.00	2.54
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 6) 150 deg	289	2	5	0.00	0.00	2.60
- No Ice+1.0 Guy						
1.2 Dead+1.6 Wind 180 deg -	257	0	6	0.00	0.00	3.76
No Ice+1.0 Guy						
1.2D+1.6W (pattern 1) 180 deg	255	0	3	0.00	0.00	4.28
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 2) 180 deg	251	0	7	0.00	0.00	4.10
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 3) 180 deg	245	0	7	0.00	0.00	3.84
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 4) 180 deg	254	0	6	0.00	0.00	3.04
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 5) 180 deg	255	0	6	0.00	0.00	3.63
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 6) 180 deg	256	0	6	0.00	0.00	3.84
- No Ice+1.0 Guy						
1.2 Dead+1.6 Wind 210 deg -	287	-2	5	0.00	0.00	1.18
No Ice+1.0 Guy						
1.2D+1.6W (pattern 1) 210 deg	282	0	2	0.00	0.00	1.64
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 2) 210 deg	273	-3	6	0.00	0.00	1.48
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 3) 210 deg	261	-3	6	0.00	0.00	1.69
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 4) 210 deg	281	-3	5	0.00	0.00	0.59
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 5) 210 deg	282	-3	5	0.00	0.00	1.14
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 6) 210 deg	285	-2	5	0.00	0.00	1.28
- No Ice+1.0 Guy						
1.2 Dead+1.6 Wind 240 deg -	301	-5	3	0.00	0.00	3.08
No Ice+1.0 Guy						
1.2D+1.6W (pattern 1) 240 deg	296	-2	1	0.00	0.00	3.45
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 2) 240 deg	284	-6	3	0.00	0.00	3.28
- No Ice+1.0 Guy						

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<i>Load Combination</i>	<i>Vertical K</i>	<i>Shear_x K</i>	<i>Shear_z K</i>	<i>Overturning Moment, M_x kip-ft</i>	<i>Overturning Moment, M_z kip-ft</i>	<i>Torque kip-ft</i>
1.2D+1.6W (pattern 3) 240 deg	270	-7	4	0.00	0.00	3.39
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 4) 240 deg	294	-5	3	0.00	0.00	2.62
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 5) 240 deg	295	-5	3	0.00	0.00	3.00
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 6) 240 deg	298	-5	3	0.00	0.00	3.21
- No Ice+1.0 Guy						
1.2 Dead+1.6 Wind 270 deg -	281	-7	-1	0.00	0.00	6.59
No Ice+1.0 Guy						
1.2D+1.6W (pattern 1) 270 deg	277	-3	-1	0.00	0.00	6.68
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 2) 270 deg	267	-7	-1	0.00	0.00	6.69
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 3) 270 deg	257	-8	0	0.00	0.00	6.60
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 4) 270 deg	276	-7	-1	0.00	0.00	6.33
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 5) 270 deg	276	-7	-1	0.00	0.00	6.65
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 6) 270 deg	279	-7	-1	0.00	0.00	6.71
- No Ice+1.0 Guy						
1.2 Dead+1.6 Wind 300 deg -	250	-6	-4	0.00	0.00	2.45
No Ice+1.0 Guy						
1.2D+1.6W (pattern 1) 300 deg	249	-3	-2	0.00	0.00	2.22
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 2) 300 deg	246	-6	-4	0.00	0.00	2.27
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 3) 300 deg	240	-7	-4	0.00	0.00	2.27
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 4) 300 deg	248	-6	-4	0.00	0.00	2.47
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 5) 300 deg	248	-6	-4	0.00	0.00	2.52
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 6) 300 deg	249	-6	-4	0.00	0.00	2.52
- No Ice+1.0 Guy						
1.2 Dead+1.6 Wind 330 deg -	275	-3	-5	0.00	0.00	-2.17
No Ice+1.0 Guy						
1.2D+1.6W (pattern 1) 330 deg	272	-2	-2	0.00	0.00	-2.56
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 2) 330 deg	264	-4	-5	0.00	0.00	-2.50
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 3) 330 deg	253	-4	-6	0.00	0.00	-2.29
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 4) 330 deg	270	-3	-5	0.00	0.00	-1.88
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 5) 330 deg	270	-3	-5	0.00	0.00	-2.10
- No Ice+1.0 Guy						
1.2D+1.6W (pattern 6) 330 deg	273	-3	-5	0.00	0.00	-2.17
- No Ice+1.0 Guy						
1.2 Dead+1.0 Ice+1.0	399	0	0	0.00	0.00	0.00
Temp+Guy						
1.2 Dead+1.0 Wind 0 deg+1.0	403	0	-2	0.00	0.00	-1.37
Ice+1.0 Temp+1.0 Guy						
1.2 Dead+1.0 Wind 30 deg+1.0	405	1	-1	0.00	0.00	-0.64
Ice+1.0 Temp+1.0 Guy						

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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
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy	406	1	-1	0.00	0.00	-0.42
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy	407	2	0	0.00	0.00	-0.73
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy	408	1	1	0.00	0.00	0.25
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy	409	1	1	0.00	0.00	1.44
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy	409	0	1	0.00	0.00	1.28
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy	408	-1	1	0.00	0.00	0.63
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy	407	-1	1	0.00	0.00	0.62
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy	407	-1	0	0.00	0.00	0.77
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy	407	-1	-1	0.00	0.00	-0.06
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy	405	-1	-1	0.00	0.00	-1.41
Dead+Wind 0 deg - Service+Guy	175	0	-2	0.00	0.00	-0.54
Dead+Wind 30 deg - Service+Guy	175	1	-1	0.00	0.00	-0.19
Dead+Wind 60 deg - Service+Guy	175	1	-1	0.00	0.00	-0.47
Dead+Wind 90 deg - Service+Guy	174	2	0	0.00	0.00	-1.17
Dead+Wind 120 deg - Service+Guy	174	1	1	0.00	0.00	-0.29
Dead+Wind 150 deg - Service+Guy	174	1	1	0.00	0.00	0.49
Dead+Wind 180 deg - Service+Guy	174	0	1	0.00	0.00	0.53
Dead+Wind 210 deg - Service+Guy	174	-1	1	0.00	0.00	0.23
Dead+Wind 240 deg - Service+Guy	174	-1	1	0.00	0.00	0.60
Dead+Wind 270 deg - Service+Guy	174	-2	0	0.00	0.00	1.25
Dead+Wind 300 deg - Service+Guy	175	-1	-1	0.00	0.00	0.47
Dead+Wind 330 deg - Service+Guy	175	-1	-1	0.00	0.00	-0.41

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0	-72	0	0	72	0	0.003%
2	-1	-85	-112	1	85	112	0.000%
3	-1	-85	-104	1	85	104	0.000%
4	-1	-85	-102	1	85	102	0.000%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
5	-1	-85	-97	1	85	97	0.003%
6	-1	-85	-110	1	85	110	0.000%
7	-1	-85	-110	1	85	110	0.000%
8	-1	-85	-111	1	85	111	0.000%
9	56	-85	-98	-56	85	98	0.002%
10	52	-85	-90	-52	85	90	0.000%
11	51	-85	-89	-51	85	89	0.000%
12	49	-85	-85	-49	85	85	0.003%
13	55	-85	-96	-55	85	96	0.004%
14	55	-85	-96	-55	85	96	0.004%
15	56	-85	-97	-56	85	97	0.004%
16	100	-84	-58	-100	84	58	0.003%
17	92	-84	-53	-92	84	53	0.003%
18	90	-84	-52	-90	84	52	0.003%
19	87	-84	-50	-87	84	50	0.003%
20	98	-84	-56	-98	84	56	0.003%
21	98	-84	-56	-98	84	56	0.002%
22	99	-84	-57	-99	84	57	0.003%
23	118	-85	1	-118	85	-1	0.004%
24	108	-85	1	-108	85	-1	0.003%
25	106	-85	1	-106	85	-1	0.003%
26	103	-85	1	-103	85	-1	0.004%
27	115	-85	1	-115	85	-1	0.003%
28	115	-85	1	-115	85	-1	0.003%
29	117	-85	1	-117	85	-1	0.004%
30	101	-86	57	-101	86	-57	0.000%
31	93	-86	52	-93	86	-52	0.000%
32	92	-86	51	-92	86	-51	0.000%
33	88	-86	50	-88	86	-50	0.004%
34	99	-86	55	-99	86	-55	0.004%
35	99	-86	56	-99	86	-56	0.004%
36	100	-86	56	-100	86	-56	0.005%
37	58	-85	98	-58	85	-98	0.005%
38	53	-85	90	-53	85	-90	0.005%
39	52	-85	89	-52	85	-89	0.005%
40	50	-85	85	-50	85	-85	0.005%
41	56	-85	95	-56	85	-95	0.005%
42	56	-85	96	-56	85	-96	0.005%
43	57	-85	97	-57	85	-97	0.004%
44	1	-85	112	-1	85	-112	0.004%
45	1	-85	103	-1	85	-103	0.004%
46	1	-85	101	-1	85	-101	0.004%
47	1	-85	97	-1	85	-97	0.004%
48	1	-85	109	-1	85	-109	0.004%
49	1	-85	109	-1	85	-109	0.005%
50	1	-85	111	-1	85	-111	0.004%
51	-56	-85	96	56	85	-96	0.004%
52	-52	-85	89	52	85	-89	0.005%
53	-51	-85	87	51	85	-87	0.005%
54	-49	-85	84	49	85	-84	0.004%
55	-55	-85	94	55	85	-94	0.005%
56	-55	-85	95	55	85	-95	0.005%
57	-56	-85	96	56	85	-96	0.004%
58	-99	-86	57	99	86	-57	0.000%
59	-92	-86	52	92	86	-52	0.000%
60	-90	-86	51	90	86	-51	0.000%
61	-86	-86	50	86	86	-50	0.005%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
62	-97	-86	55	97	86	-55	0.004%
63	-98	-86	56	98	86	-56	0.004%
64	-99	-86	56	99	86	-56	0.004%
65	-117	-85	-2	117	85	2	0.004%
66	-108	-85	-2	108	85	2	0.004%
67	-106	-85	-2	106	85	2	0.004%
68	-102	-85	-2	102	85	2	0.004%
69	-115	-85	-2	115	85	2	0.003%
70	-115	-85	-2	115	85	2	0.003%
71	-116	-85	-2	116	85	2	0.003%
72	-100	-84	-59	100	84	59	0.003%
73	-93	-84	-55	93	84	55	0.003%
74	-91	-84	-54	91	84	54	0.003%
75	-87	-84	-51	87	84	51	0.004%
76	-98	-84	-58	98	84	58	0.003%
77	-98	-84	-58	98	84	58	0.003%
78	-100	-84	-59	100	84	59	0.003%
79	-58	-85	-99	58	85	99	0.000%
80	-53	-85	-91	53	85	91	0.000%
81	-52	-85	-90	52	85	90	0.000%
82	-50	-85	-85	50	85	85	0.003%
83	-56	-85	-96	56	85	96	0.003%
84	-56	-85	-97	56	85	97	0.004%
85	-57	-85	-98	57	85	98	0.003%
86	0	-263	0	0	263	0	0.001%
87	0	-263	-40	0	263	40	0.000%
88	20	-263	-35	-20	263	35	0.000%
89	34	-262	-20	-34	262	20	0.000%
90	40	-263	0	-40	263	0	0.000%
91	35	-263	20	-35	263	-20	0.001%
92	20	-263	35	-20	263	-35	0.001%
93	0	-262	40	0	262	-40	0.001%
94	-20	-263	34	20	263	-34	0.001%
95	-34	-263	20	34	263	-20	0.001%
96	-40	-263	-1	40	263	1	0.001%
97	-35	-262	-21	35	262	21	0.001%
98	-20	-263	-35	20	263	35	0.001%
99	0	-72	-23	0	72	23	0.003%
100	11	-72	-20	-11	72	20	0.003%
101	20	-72	-12	-20	72	12	0.002%
102	24	-72	0	-24	72	0	0.002%
103	21	-72	12	-21	72	-12	0.003%
104	12	-72	20	-12	72	-20	0.002%
105	0	-72	23	0	72	-23	0.001%
106	-11	-72	20	11	72	-20	0.002%
107	-20	-72	12	20	72	-12	0.003%
108	-24	-72	0	24	72	0	0.002%
109	-20	-72	-12	20	72	12	0.002%
110	-12	-72	-20	12	72	20	0.003%

Non-Linear Convergence Results

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<i>Load Combination</i>	<i>Converged?</i>	<i>Number of Cycles</i>	<i>Displacement Tolerance</i>	<i>Force Tolerance</i>
1	Yes	15	0.00000001	0.00002433
2	No	200	0.00081114	0.00000000
3	No	200	0.00083410	0.00000000
4	No	200	0.00085404	0.00000000
5	Yes	29	0.00008235	0.00004566
6	No	200	0.00076072	0.00000000
7	No	200	0.00069048	0.00000000
8	No	200	0.00074492	0.00000000
9	Yes	30	0.00009297	0.00003281
10	No	200	0.00069357	0.00000000
11	No	200	0.00070250	0.00000000
12	Yes	28	0.00008163	0.00004964
13	Yes	28	0.00009198	0.00005434
14	Yes	28	0.00008697	0.00005438
15	Yes	28	0.00009534	0.00006190
16	Yes	24	0.00008180	0.00003280
17	Yes	24	0.00008421	0.00003409
18	Yes	24	0.00008102	0.00003227
19	Yes	23	0.00009442	0.00003752
20	Yes	23	0.00008332	0.00003163
21	Yes	23	0.00007698	0.00002945
22	Yes	23	0.00009873	0.00003881
23	Yes	32	0.00009451	0.00005259
24	Yes	33	0.00008714	0.00004270
25	Yes	33	0.00008624	0.00004125
26	Yes	31	0.00009757	0.00005112
27	Yes	32	0.00007597	0.00004294
28	Yes	32	0.00007349	0.00004204
29	Yes	32	0.00008057	0.00004751
30	No	200	0.00063368	0.00000000
31	No	200	0.00065945	0.00000000
32	No	200	0.00067633	0.00000000
33	Yes	32	0.00007648	0.00004776
34	Yes	32	0.00008935	0.00005257
35	Yes	32	0.00007847	0.00005143
36	Yes	32	0.00009546	0.00005629
37	Yes	32	0.00008810	0.00006345
38	Yes	32	0.00009595	0.00006794
39	Yes	32	0.00009603	0.00006668
40	Yes	31	0.00009505	0.00006415
41	Yes	31	0.00009980	0.00007154
42	Yes	31	0.00009813	0.00007049
43	Yes	32	0.00007698	0.00005730
44	Yes	23	0.00009273	0.00004413
45	Yes	23	0.00009715	0.00004720
46	Yes	23	0.00009211	0.00004499
47	Yes	22	0.00009569	0.00004809
48	Yes	22	0.00009057	0.00004014
49	Yes	18	0.00008166	0.00004860
50	Yes	23	0.00008151	0.00003818
51	Yes	32	0.00007898	0.00005690
52	Yes	32	0.00008380	0.00006119
53	Yes	32	0.00008514	0.00005959
54	Yes	31	0.00008894	0.00005571
55	Yes	31	0.00009525	0.00006275
56	Yes	31	0.00009401	0.00006323
57	Yes	32	0.00007289	0.00005133
58	No	200	0.00058736	0.00000000

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59	No	200	0.00061719	0.00000000
60	No	200	0.00063153	0.00000000
61	Yes	31	0.00009869	0.00006280
62	Yes	32	0.00007707	0.00004998
63	Yes	32	0.00007316	0.00004995
64	Yes	32	0.00007972	0.00005550
65	Yes	32	0.00009122	0.00005246
66	Yes	32	0.00009773	0.00005648
67	Yes	32	0.00009904	0.00005438
68	Yes	31	0.00009614	0.00004779
69	Yes	32	0.00007715	0.00004220
70	Yes	32	0.00007384	0.00004106
71	Yes	32	0.00008152	0.00004675
72	Yes	20	0.00007775	0.00003300
73	Yes	20	0.00007928	0.00003330
74	Yes	20	0.00007968	0.00003250
75	Yes	17	0.00009482	0.00006051
76	Yes	19	0.00009004	0.00003922
77	Yes	18	0.00006304	0.00003360
78	Yes	19	0.00009060	0.00003966
79	No	200	0.00073928	0.00000000
80	No	200	0.00076433	0.00000000
81	No	200	0.00077830	0.00000000
82	Yes	28	0.00008666	0.00005377
83	Yes	29	0.00008387	0.00004250
84	Yes	28	0.00009375	0.00005885
85	Yes	29	0.00009575	0.00004694
86	Yes	19	0.00010000	0.00003364
87	Yes	24	0.00000001	0.00000685
88	Yes	24	0.00000001	0.00000925
89	Yes	23	0.00000001	0.00000973
90	Yes	26	0.00007875	0.00000943
91	Yes	26	0.00008011	0.00000979
92	Yes	25	0.00009654	0.00001625
93	Yes	24	0.00007414	0.00001566
94	Yes	26	0.00008534	0.00001377
95	Yes	26	0.00009850	0.00001211
96	Yes	26	0.00008537	0.00001064
97	Yes	23	0.00007902	0.00001166
98	Yes	23	0.00008958	0.00001175
99	Yes	12	0.00000001	0.00003274
100	Yes	13	0.00000001	0.00002336
101	Yes	14	0.00000001	0.00001888
102	Yes	14	0.00000001	0.00002018
103	Yes	13	0.00000001	0.00002779
104	Yes	15	0.00000001	0.00001785
105	Yes	16	0.00000001	0.00001543
106	Yes	15	0.00000001	0.00001654
107	Yes	13	0.00000001	0.00002492
108	Yes	14	0.00000001	0.00001738
109	Yes	14	0.00000001	0.00001893
110	Yes	13	0.00000001	0.00002450

Maximum Tower Deflections - Service Wind

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	345 - 330	3.181	105	0.0459	0.3072
T1	330 - 320	3.222	105	0.0571	0.3250
T2	320 - 300	3.273	105	0.0547	0.3279
T3	300 - 280	3.342	105	0.0470	0.3191
T4	280 - 260	3.364	105	0.0343	0.2903
T5	260 - 240	3.339	105	0.0181	0.2544
T6	240 - 220	3.204	105	0.0520	0.2115
T7	220 - 200	2.904	105	0.0878	0.1681
T8	200 - 180	2.478	105	0.1028	0.1196
T9	180 - 160	2.041	105	0.0840	0.0889
T10	160 - 140	1.768	105	0.0569	0.0966
T11	140 - 120	1.562	105	0.0481	0.1119
T12	120 - 100	1.368	105	0.0429	0.1242
T13	100 - 80	1.198	105	0.0294	0.1324
T14	80 - 60	1.108	105	0.0279	0.1357
T15	60 - 40	0.976	106	0.0442	0.1350
T16	40 - 20	0.748	107	0.0678	0.1296
T17	20 - 12	0.410	107	0.0892	0.1191
T18	12 - 9.35	0.251	107	0.0951	0.1157
T19	9.35 - 6.7	0.196	107	0.0966	0.1145
T20	6.7 - 0	0.141	107	0.0975	0.1122

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
342.00	FM Antenna	105	3.187	0.0490	0.3115	107690
338.00	(3) FM Antennas	105	3.196	0.0527	0.3169	76922
332.50	FM Antenna	105	3.212	0.0564	0.3230	44270
330.00	Guy	105	3.222	0.0571	0.3250	43765
317.50	P-9A120GN	105	3.285	0.0537	0.3278	71280
312.00	FM Antenna	105	3.308	0.0517	0.3267	78049
308.00	P-9A120GN	105	3.322	0.0502	0.3251	86296
297.46	Guy	105	3.347	0.0457	0.3164	113015
295.50	20' Omni	105	3.351	0.0447	0.3140	116399
294.00	3" Dia 20' Omni	105	3.353	0.0439	0.3121	118932
288.00	FM Antenna	105	3.360	0.0402	0.3034	130259
279.00	FM Antenna	105	3.365	0.0335	0.2886	119105
274.00	SPD6-58	105	3.364	0.0292	0.2801	82358
270.10	Guy	105	3.361	0.0257	0.2733	65130
264.25	3" Dia 20' Omni	105	3.351	0.0210	0.2627	49586
255.00	6' Dish	105	3.319	0.0246	0.2441	35912
252.00	3" Dia 20' Omni	105	3.303	0.0296	0.2377	32944
251.00	P-9A72GN-S	105	3.297	0.0313	0.2356	32003
226.50	(2) 59.25" x 6.5" x 3" Panel w/ Mount Pipe	105	3.019	0.0773	0.1828	28604
219.50	FM Antenna	105	2.895	0.0885	0.1669	32047
215.00	4' Dish	105	2.807	0.0943	0.1559	36669
210.00	6' Dish	105	2.702	0.0993	0.1434	44290
209.00	MFF-950B	105	2.681	0.1001	0.1410	45994
208.00	8' Omni	105	2.659	0.1007	0.1385	47759
205.50	6' Standoff	105	2.603	0.1020	0.1324	52830

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<i>Elevation</i>	<i>Appurtenance</i>	<i>Gov. Load Comb.</i>	<i>Deflection in</i>	<i>Tilt °</i>	<i>Twist °</i>	<i>Radius of Curvature ft</i>
<i>ft</i>						
200.00	7770_TIA w/ Mount Pipe	105	2.478	0.1028	0.1196	79793
185.00	AIR 6419 B41_TMO_TIA w/ Mount Pipe	105	2.138	0.0909	0.0936	27313
183.00	4' Dish	105	2.098	0.0883	0.0914	23426
177.25	Guy	105	1.993	0.0800	0.0874	21549
169.50	(2) LPA-80080-4CF-EDIN w/ Mount Pipe	105	1.880	0.0685	0.0897	33208
168.00	Piroad 12' T-Frame Sector	105	1.861	0.0664	0.0907	37203
150.50	13' Dipole	105	1.667	0.0507	0.1040	150407
138.50	3" dia x 20' Omni	105	1.547	0.0478	0.1129	391906
130.00	P-9A72GN-S	105	1.465	0.0464	0.1185	251686
123.50	(2) 18" Dish	105	1.402	0.0444	0.1223	187650
112.00	MTZ-940B	105	1.293	0.0376	0.1280	87636
106.50	(2) 18" Dish	105	1.245	0.0336	0.1303	51076
99.92	Guy	105	1.198	0.0294	0.1324	37035
90.00	PR-950	105	1.149	0.0263	0.1346	126897
36.00	SPD3-2.4NS	107	0.689	0.0725	0.1275	40179

Maximum Tower Deflections - Design Wind

<i>Section No.</i>	<i>Elevation ft</i>	<i>Horz. Deflection in</i>	<i>Gov. Load Comb.</i>	<i>Tilt °</i>	<i>Twist °</i>
L1	345 - 330	34.521	32	0.4507	1.5804
T1	330 - 320	33.563	32	0.4100	1.6291
T2	320 - 300	33.235	31	0.4212	1.6437
T3	300 - 280	32.452	31	0.4527	1.6229
T4	280 - 260	31.370	31	0.4745	1.5040
T5	260 - 240	29.970	31	0.5030	1.3661
T6	240 - 220	27.947	31	0.6789	1.1897
T7	220 - 200	25.016	31	0.8540	1.0063
T8	200 - 180	21.622	30	0.9190	0.8040
T9	180 - 160	18.228	30	0.8043	0.6812
T10	160 - 140	15.795	36	0.6546	0.6611
T11	140 - 120	13.797	35	0.5903	0.6682
T12	120 - 100	11.952	63	0.5371	0.7117
T13	100 - 80	10.283	63	0.4326	0.7357
T14	80 - 60	9.033	63	0.3464	0.7449
T15	60 - 40	7.566	62	0.4193	0.7335
T16	40 - 20	5.560	62	0.5482	0.6998
T17	20 - 12	2.964	62	0.6637	0.6411
T18	12 - 9.35	1.806	62	0.6935	0.6225
T19	9.35 - 6.7	1.410	62	0.7012	0.6160
T20	6.7 - 0	1.011	62	0.7059	0.6035

Critical Deflections and Radius of Curvature - Design Wind

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<i>Elevation</i>	<i>Appurtenance</i>	<i>Gov. Load Comb.</i>	<i>Deflection in</i>	<i>Tilt °</i>	<i>Twist °</i>	<i>Radius of Curvature ft</i>
<i>ft</i>			<i>in</i>			<i>ft</i>
342.00	FM Antenna	32	34.319	0.4392	1.5915	23890
338.00	(3) FM Antennas	32	34.054	0.4253	1.6058	17065
332.50	FM Antenna	32	33.709	0.4123	1.6228	9839
330.00	Guy	32	33.563	0.4100	1.6291	9854
317.50	P-9A120GN	31	33.156	0.4256	1.6454	13002
312.00	FM Antenna	31	32.962	0.4345	1.6459	12933
308.00	P-9A120GN	31	32.805	0.4406	1.6426	13066
297.46	Guy	31	32.330	0.4566	1.6122	13561
295.50	20' Omni	31	32.232	0.4596	1.6026	13728
294.00	3" Dia 20' Omni	31	32.156	0.4618	1.5946	13863
288.00	FM Antenna	31	31.835	0.4695	1.5580	14430
279.00	FM Antenna	31	31.309	0.4745	1.4973	13956
274.00	SPD6-58	31	30.993	0.4729	1.4643	11195
270.10	Guy	31	30.731	0.4707	1.4385	9594
264.25	3" Dia 20' Omni	31	30.307	0.4773	1.3980	7901
255.00	6' Dish	31	29.538	0.5401	1.3249	6157
252.00	3" Dia 20' Omni	31	29.257	0.5654	1.2987	5741
251.00	P-9A72GN-S	31	29.160	0.5742	1.2898	5614
226.50	(2) 59.25" x 6.5" x 3" Panel w/ Mount Pipe	31	26.065	0.8041	1.0689	5425
219.50	FM Antenna	31	24.932	0.8574	1.0013	6149
215.00	4' Dish	30	24.187	0.8847	0.9550	7076
210.00	6' Dish	30	23.358	0.9068	0.9028	8616
209.00	MFF-950B	30	23.188	0.9101	0.8924	9008
208.00	8' Omni	30	23.017	0.9129	0.8821	9437
205.50	6' Standoff	30	22.587	0.9181	0.8566	10713
200.00	7770_TIA w/ Mount Pipe	30	21.622	0.9190	0.8040	17728
185.00	AIR 6419 B41_TMO_TIA w/ Mount Pipe	30	19.011	0.8471	0.6998	4912
183.00	4' Dish	30	18.689	0.8308	0.6912	4278
177.25	Guy	30	17.830	0.7814	0.6748	3878
169.50	(2) LPA-80080-4CF-EDIN w/ Mount Pipe	36	16.846	0.7202	0.6670	5036
168.00	Pirot 12' T-Frame Sector	36	16.672	0.7086	0.6664	5343
150.50	13' Dipole	36	14.816	0.6149	0.6412	8642
138.50	3" dia x 20' Omni	35	13.657	0.5873	0.6721	9827
130.00	P-9A72GN-S	35	12.869	0.5688	0.6924	11216
123.50	(2) 18" Dish	35	12.268	0.5500	0.7056	12569
112.00	MTZ-940B	63	11.248	0.4992	0.7231	8995
106.50	(2) 18" Dish	63	10.784	0.4690	0.7292	7304
99.92	Guy	63	10.277	0.4321	0.7358	5814
90.00	PR-950	63	9.636	0.3822	0.7429	9854
36.00	SPD3-2.4NS	62	5.084	0.5731	0.6877	6955

Bolt Design Data

<i>Section No.</i>	<i>Elevation ft</i>	<i>Component Type</i>	<i>Bolt Grade</i>	<i>Bolt Size in</i>	<i>Number Of Bolts</i>	<i>Maximum Load per Bolt K</i>	<i>Allowable Load per Bolt K</i>	<i>Ratio Load Allowable</i>	<i>Allowable Ratio</i>	<i>Criteria</i>
T1	330	Leg	A325N	1.1250	9	2	81	0.024	1	Bolt DS
T2	320	Leg	A325N	0.7500	5	5	36	0.134	1	Bolt DS
T3	300	Leg	A325N	0.7500	5	6	36	0.156	1	Bolt DS

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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
T4	280	Leg	A325N	0.7500	5	8	36	0.232	1	Bolt DS
T5	260	Leg	A325N	0.7500	5	15	36	0.431	1	Bolt DS
T6	240	Leg	A325N	0.7500	5	18	36	0.499	1	Bolt DS
T7	220	Leg	A325N	0.7500	5	17	36	0.462	1	Bolt DS
T8	200	Leg	A325N	0.8750	5	14	49	0.280	1	Bolt DS
T9	180	Leg	A325N	0.8750	5	30	49	0.618	1	Bolt DS
		Torque Arm Top@177.25	A325N	1.0000	4	9	40	0.220	1	Member Block Shear
		Torque Arm Bottom@177.25	A325N	1.0000	4	6	64	0.095	1	Bolt Shear
T10	160	Leg	A325N	0.8750	5	29	49	0.599	1	Bolt DS
T11	140	Leg	A325N	0.8750	5	26	49	0.526	1	Bolt DS
T12	120	Leg	A325N	0.8750	5	25	49	0.517	1	Bolt DS
T13	100	Leg	A325N	0.8750	5	30	49	0.613	1	Bolt DS
T14	80	Leg	A325N	0.7500	5	25	36	0.700	1	Bolt DS
T15	60	Leg	A325N	0.7500	5	28	36	0.771	1	Bolt DS
T16	40	Leg	A325N	0.7500	5	29	36	0.804	1	Bolt DS
T17	20	Leg	A325N	0.7500	5	29	36	0.800	1	Bolt DS
T19	9.35	Leg	A325N	1.7500	3	47	195	0.240	1	Bolt DS
T20	6.7	Leg	A325N	1.7500	3	51	195	0.262	1	Bolt DS

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T_u K	Allowable ϕT_n K	Required S.F.	Actual S.F.
T1	330.00 (A) (1104)	11/16 BS	6	58	22	35	1.000	1.575
	330.00 (B) (1103)	11/16 BS	6	58	21	35	1.000	1.666
	330.00 (C) (1102)	11/16 BS	6	58	21	35	1.000	1.696
T3	297.46 (A) (1107)	9/16 BS	4	38	16	23	1.000	1.441
	297.46 (B) (1106)	9/16 BS	4	38	15	23	1.000	1.517
	297.46 (C) (1105)	9/16 BS	4	38	15	23	1.000	1.544
T4	270.10 (A) (1110)	13/16 BS	8	80	34	48	1.000	1.398
	270.10 (B) (1109)	13/16 BS	8	80	33	48	1.000	1.462
	270.10 (C) (1108)	13/16 BS	8	80	32	48	1.000	1.485
T9	177.25 (A) (1123)	15/16 BS	11	108	40	65	1.000	1.601
	177.25 (A) (1124)	15/16 BS	11	108	43	65	1.000	1.515
	177.25 (B) (1117)	15/16 BS	11	108	40	65	1.000	1.628

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Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T_u K	Allowable ϕT_n K	Required S.F.	Actual S.F.
T13	177.25 (B) (1118)	15/16 BS	11	108	40	65	1.000	1.609
	177.25 (C) (1111)	15/16 BS	11	108	40	65	1.000	1.606
	177.25 (C) (1112)	15/16 BS	11	108	38	65	1.000	1.724
	99.92 (A) (1131)	15/16 BS	11	108	35	65	1.000	1.837
	99.92 (B) (1130)	15/16 BS	11	108	35	65	1.000	1.865
	99.92 (C) (1129)	15/16 BS	11	108	35	65	1.000	1.868

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 $\frac{P_u}{\phi P_n}$
L1	345 - 330	1 1/4	15.00	1.49	57.3 K=1.00	1.2272	-8	43	0.190 ¹
T1	330 - 320	2 1/4	10.00	2.43	51.8 K=1.00	3.9761	-23	147	0.157 ¹
T2	320 - 300	2 1/4	20.00	1.96	41.9 K=1.00	3.9761	-29	157	0.181 ¹
T3	300 - 280	2 1/4	20.00	2.45	52.4 K=1.00	3.9761	-45	146	0.304 ¹
T4	280 - 260	2 1/4	20.00	2.45	52.4 K=1.00	3.9761	-75	146	0.512 ¹
T5	260 - 240	2 1/4	20.00	2.45	52.4 K=1.00	3.9761	-89	146	0.607 ¹
T6	240 - 220	2 1/4	20.00	2.45	52.4 K=1.00	3.9761	-90	146	0.613 ¹
T7	220 - 200	2 1/2	20.00	2.44	46.9 K=1.00	4.9087	-81	188	0.431 ¹
T8	200 - 180	2 3/4	20.00	2.44	42.7 K=1.00	5.9396	-141	234	0.604 ¹
T9	180 - 160	2 3/4	20.00	2.44	42.7 K=1.00	5.9396	-175	234	0.750 ¹
T10	160 - 140	2 3/4	20.00	2.44	42.7 K=1.00	5.9396	-144	234	0.615 ¹
T11	140 - 120	2 3/4	20.00	2.44	42.7 K=1.00	5.9396	-127	234	0.545 ¹
T12	120 - 100	2 3/4	20.00	2.44	42.7 K=1.00	5.9396	-146	234	0.623 ¹
T13	100 - 80	2 3/4	20.00	2.44	42.7 K=1.00	5.9396	-148	234	0.632 ¹
T14	80 - 60	2 3/4	20.00	2.44	42.7 K=1.00	5.9396	-137	234	0.585 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T15	60 - 40	2 3/4	20.00	2.44	K=1.00 42.7	5.9396	-144	234	0.613 ¹
T16	40 - 20	2 3/4	20.00	2.44	K=1.00 42.7	5.9396	-144	234	0.617 ¹
T17	20 - 12	2 3/4	8.00	2.61	K=1.00 45.6	5.9396	-141	230	0.616 ¹
T18	12 - 9.35	2 3/4	2.65	2.48	K=1.00 43.3	5.9396	-140	233	0.601 ¹
T19	9.35 - 6.7	2 3/4	2.65	1.24	K=1.00 21.7	5.9396	-139	258	0.539 ¹
T20	6.7 - 0	2 3/4	7.30	1.94	K=1.00 33.9	5.9396	-145	246	0.590 ¹
					K=1.00				

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 $\frac{P_u}{\phi P_n}$
L1	345 - 330	1/2	2.91	1.39	120.5	0.1963	-2	3	0.579 ¹
T1	330 - 320	7/8	5.56	2.68	K=0.90 132.1	0.6013	-2	8	0.231 ¹
T2	320 - 300	7/8	5.37	2.59	K=0.90 127.6	0.6013	-2	8	0.209 ¹
T3	300 - 280	7/8	5.57	2.68	K=0.90 132.3	0.6013	-3	8	0.404 ¹
T4	280 - 260	1	5.57	2.68	K=0.90 115.8	0.7854	-5	13	0.385 ¹
T5	260 - 240	1	5.57	2.68	K=0.90 115.8	0.7854	-5	13	0.355 ¹
T6	240 - 220	1	5.57	2.68	K=0.90 115.8	0.7854	-4	13	0.336 ¹
T7	220 - 200	1	5.57	2.67	K=0.90 115.2	0.7854	-7	13	0.509 ¹
T8	200 - 180	1 1/4	5.57	2.66	K=0.90 101.0	1.2272	-13	26	0.494 ¹
T9	180 - 160	1 1/4	5.57	2.66	K=0.99 101.0	1.2272	-8	26	0.293 ¹
T10	160 - 140	1	5.57	2.66	K=0.99 114.7	0.7854	-5	13	0.334 ¹
T11	140 - 120	1	5.57	2.66	K=0.90 114.7	0.7854	-3	13	0.217 ¹
T12	120 - 100	1	5.57	2.66	K=0.90 114.7	0.7854	-5	13	0.354 ¹
T13	100 - 80	1	5.57	2.66	K=0.90 114.7	0.7854	-6	13	0.421 ¹
T14	80 - 60	1	5.57	2.66	K=0.90 114.7	0.7854	-4	13	0.324 ¹
T15	60 - 40	1	5.57	2.66	K=0.90 114.7	0.7854	-2	13	0.179 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	KL/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T16	40 - 20	1	5.57	2.66	K=0.90 114.7	0.7854	-3	13	0.247 ¹
T17	20 - 12	1 1/4	5.64	2.69	K=0.90 101.6	1.2272	-5	26	0.199 ¹
T18	12 - 9.35	1 1/4	3.52	3.36	K=0.98 90.4	1.2272	-5	30	0.172 ¹
T19	9.35 - 6.7	1 1/4	3.52	3.36	K=0.70 90.4	1.2272	-5	30	0.179 ¹
T20	6.7 - 0	1 1/4	3.39	2.48	K=0.70 97.5 K=1.02	1.2272	-22	28	0.787 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 $\frac{P_u}{\phi P_n}$
T17	20 - 12	7/8	5.00	4.77	183.2	0.6013	-2	4	0.612 ¹
T18	12 - 9.35	6x3/4	5.00	4.77	K=0.70 264.4 K=1.00	4.5000	-2	15	0.168 ¹
T19	9.35 - 6.7	KL/R > 200 (C) - 1054 L4x4x3/8	5.00	4.77	83.3 K=2.15	2.8600	-2	78	0.031 ¹

¹ P_u / φP_n controls

Secondary Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	KL/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T19	9.35 - 6.7	7/8	5.00	4.77	183.2 K=0.70	0.6013	-2	4	0.601 ¹
T20	6.7 - 0	7/8	3.61	3.38	129.7 K=0.70	0.6013	-3	8	0.349 ¹

¹ P_u / φP_n controls

Top Girt Design Data (Compression)

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
L1	345 - 330	3/4	2.50	2.40	107.3 K=0.70	0.4418	0	9	0.003 ¹
T1	330 - 320	6x3/4	5.00	4.81	266.7 K=1.00	4.5000	0	14	0.029 ¹
KL/R > 200 (C) - 74									
T2	320 - 300	1	5.00	4.81	161.7 K=0.70	0.7854	0	7	0.073 ¹
T3	300 - 280	1	5.00	4.81	161.7 K=0.70	0.7854	-1	7	0.170 ¹
T4	280 - 260	1	5.00	4.81	161.7 K=0.70	0.7854	-1	7	0.197 ¹
T5	260 - 240	1	5.00	4.81	161.7 K=0.70	0.7854	-2	7	0.228 ¹
T6	240 - 220	1	5.00	4.81	161.7 K=0.70	0.7854	-2	7	0.229 ¹
T7	220 - 200	1 1/4	5.00	4.79	128.8 K=0.70	1.2272	-1	17	0.086 ¹
T8	200 - 180	1 1/2	5.00	4.77	106.9 K=0.70	1.7672	-3	35	0.076 ¹
T9	180 - 160	1 1/2	5.00	4.77	106.9 K=0.70	1.7672	-11	35	0.324 ¹
T10	160 - 140	1 1/4	5.00	4.77	128.2 K=0.70	1.2272	-3	17	0.150 ¹
T11	140 - 120	1 1/4	5.00	4.77	128.2 K=0.70	1.2272	-2	17	0.132 ¹
T12	120 - 100	1 1/4	5.00	4.77	128.2 K=0.70	1.2272	-3	17	0.153 ¹
T13	100 - 80	1 1/4	5.00	4.77	128.2 K=0.70	1.2272	-3	17	0.153 ¹
T14	80 - 60	1 1/4	5.00	4.77	128.2 K=0.70	1.2272	-2	17	0.142 ¹
T15	60 - 40	1 1/4	5.00	4.77	128.2 K=0.70	1.2272	-2	17	0.148 ¹
T16	40 - 20	1 1/4	5.00	4.77	128.2 K=0.70	1.2272	-3	17	0.148 ¹
T17	20 - 12	7/8	5.00	4.77	183.2 K=0.70	0.6013	-2	4	0.612 ¹

¹ P_u / φP_n controls

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	330 - 320	1	5.00	4.81	161.7 K=0.70	0.7854	0	7	0.061 ¹
T2	320 - 300	1	5.00	4.81	161.7 K=0.70	0.7854	-1	7	0.117 ¹
T3	300 - 280	1	5.00	4.81	161.7 K=0.70	0.7854	-1	7	0.114 ¹
T4	280 - 260	1	5.00	4.81	161.7 K=0.70	0.7854	-1	7	0.197 ¹

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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	260 - 240	1	5.00	4.81	K=0.70 161.7	0.7854	-2	7	0.228 ¹
T6	240 - 220	1	5.00	4.81	K=0.70 161.7	0.7854	-2	7	0.229 ¹
T7	220 - 200	1 1/4	5.00	4.79	K=0.70 128.8	1.2272	-1	17	0.086 ¹
T8	200 - 180	1 1/2	5.00	4.77	K=0.70 106.9	1.7672	-7	35	0.216 ¹
T9	180 - 160	1 1/2	5.00	4.77	K=0.70 106.9	1.7672	-3	35	0.088 ¹
T10	160 - 140	1 1/4	5.00	4.77	K=0.70 128.2	1.2272	-3	17	0.150 ¹
T11	140 - 120	1 1/4	5.00	4.77	K=0.70 128.2	1.2272	-2	17	0.132 ¹
T12	120 - 100	1 1/4	5.00	4.77	K=0.70 128.2	1.2272	-3	17	0.153 ¹
T13	100 - 80	1 1/4	5.00	4.77	K=0.70 128.2	1.2272	-3	17	0.153 ¹
T14	80 - 60	1 1/4	5.00	4.77	K=0.70 128.2	1.2272	-2	17	0.142 ¹
T15	60 - 40	1 1/4	5.00	4.77	K=0.70 128.2	1.2272	-2	17	0.148 ¹
T16	40 - 20	1 1/4	5.00	4.77	K=0.70 128.2	1.2272	-3	17	0.148 ¹

¹ P_u / φP_n controls

Mid Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
L1	345 - 330	3/4	2.50	2.40	107.3	0.4418	0	9	0.011 ¹
T1	330 - 320	1	5.00	4.81	K=0.70 161.7	0.7854	0	7	0.007 ¹
T3	300 - 280	1	5.00	4.81	K=0.70 161.7	0.7854	0	7	0.040 ¹
T5	260 - 240	1	5.00	4.81	K=0.70 161.7	0.7854	0	7	0.031 ¹
T6	240 - 220	1	5.00	4.81	K=0.70 161.7	0.7854	0	7	0.004 ¹
T7	220 - 200	1 1/4	5.00	4.79	K=0.70 128.8	1.2272	0	17	0.012 ¹
T8	200 - 180	1 1/2	5.00	4.77	K=0.70 106.9	1.7672	0	31	0.002 ¹

¹ P_u / φP_n controls

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Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T9	180 - 160 (1115)	2L4x4x3/8	4.61	3.40	33.1 K=1.00	5.7200	-20	175	0.114 ¹
T9	180 - 160 (1116)	2L4x4x3/8	4.61	3.40	33.1 K=1.00	5.7200	-24	175	0.137 ¹
T9	180 - 160 (1121)	2L4x4x3/8	4.61	3.40	33.1 K=1.00	5.7200	-20	175	0.113 ¹
T9	180 - 160 (1122)	2L4x4x3/8	4.61	3.40	33.1 K=1.00	5.7200	-20	175	0.114 ¹
T9	180 - 160 (1127)	2L4x4x3/8	4.61	3.40	33.1 K=1.00	5.7200	-20	175	0.115 ¹
T9	180 - 160 (1128)	2L4x4x3/8	4.61	3.40	33.1 K=1.00	5.7200	-24	175	0.138 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 $\frac{P_u}{\phi P_n}$
L1	345 - 330	1 1/4	15.00	0.08	3.2	1.2272	9	55	0.155 ¹
T1	330 - 320	2 1/4	10.00	0.28	6.0	3.9761	3	179	0.019 ¹
T2	320 - 300	2 1/4	20.00	1.96	41.9	3.9761	9	179	0.048 ¹
T3	300 - 280	2 1/4	20.00	0.08	1.8	2.1885	8	107	0.073 ¹
T4	280 - 260	2 1/4	20.00	0.28	6.0	3.9761	14	179	0.079 ¹
T5	260 - 240	2 1/4	20.00	0.28	6.0	3.9761	27	179	0.150 ¹
T6	240 - 220	2 1/4	20.00	0.08	1.8	2.1885	27	107	0.251 ¹
T7	220 - 200	2 1/2	20.00	0.08	1.6	2.9138	16	142	0.112 ¹
T8	200 - 180	2 3/4	20.00	0.37	6.4	5.9396	57	267	0.214 ¹
T9	180 - 160	2 3/4	20.00	0.08	1.5	3.4123	57	166	0.343 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 $\frac{P_u}{\phi P_n}$
L1	345 - 330	1/2	2.91	1.39	133.9	0.1963	2	9	0.200 ¹

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Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φP _n	Ratio
	ft		ft	ft		in ²	K	K	$\frac{P_u}{\phi P_n}$
T1	330 - 320	7/8	5.56	2.68	146.8	0.6013	2	27	0.065 ¹
T2	320 - 300	7/8	5.37	2.59	141.8	0.6013	2	27	0.058 ¹
T3	300 - 280	7/8	5.57	2.68	147.0	0.6013	5	27	0.179 ¹
T4	280 - 260	1	5.57	2.68	128.7	0.7854	5	35	0.139 ¹
T5	260 - 240	1	5.57	2.68	128.7	0.7854	5	35	0.130 ¹
T6	240 - 220	1	5.57	2.68	128.7	0.7854	4	35	0.120 ¹
T7	220 - 200	1	5.57	2.67	128.0	0.7854	6	35	0.183 ¹
T8	200 - 180	1 1/4	5.57	2.66	102.0	1.2272	13	55	0.228 ¹
T9	180 - 160	1 1/4	5.57	2.66	102.0	1.2272	8	55	0.139 ¹
T10	160 - 140	1	5.57	2.66	127.4	0.7854	4	35	0.108 ¹
T11	140 - 120	1	5.57	2.66	127.4	0.7854	2	35	0.064 ¹
T12	120 - 100	1	5.57	2.66	127.4	0.7854	4	35	0.116 ¹
T13	100 - 80	1	5.57	2.66	127.4	0.7854	6	35	0.163 ¹
T14	80 - 60	1	5.57	2.66	127.4	0.7854	4	35	0.103 ¹
T15	60 - 40	1	5.57	2.66	127.4	0.7854	2	35	0.049 ¹
T16	40 - 20	1	5.57	2.66	127.4	0.7854	3	35	0.077 ¹
T17	20 - 12	1 1/4	5.64	2.69	103.3	1.2272	3	55	0.045 ¹
T18	12 - 9.35	1 1/4	3.52	3.36	129.1	1.2272	4	55	0.073 ¹
T19	9.35 - 6.7	1 1/4	3.52	3.36	129.1	1.2272	5	55	0.092 ¹

¹ P_u / φP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φP _n	Ratio
	ft		ft	ft		in ²	K	K	$\frac{P_u}{\phi P_n}$
T17	20 - 12	7/8	5.00	4.77	261.7	0.6013	3	27	0.124 ¹
T18	12 - 9.35	6x3/4	5.00	4.77	198.3	4.5000	5	146	0.034 ¹
T19	9.35 - 6.7	L4x4x3/8	5.00	4.77	34.9	2.1450	37	105	0.352 ¹

¹ P_u / φP_n controls

Secondary Horizontal Design Data (Tension)

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φP _n	Ratio
	ft		ft	ft		in ²	K	K	$\frac{P_u}{\phi P_n}$
T19	9.35 - 6.7	7/8	5.00	4.77	261.7	0.6013	2	27	0.090 ¹
T20	6.7 - 0	7/8	1.18	0.95	52.3	0.6013	3	27	0.104 ¹

¹ P_u / φP_n controls

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Top Girt 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	
L1	345 - 330	3/4	2.50	2.40	153.3	0.4418	0	20	0.001 ¹
T1	330 - 320	6x3/4	5.00	4.81	266.7	4.5000	0	146	0.003 ¹
T2	320 - 300	1	5.00	4.81	231.0	0.7854	0	35	0.014 ¹
T3	300 - 280	1	5.00	4.81	231.0	0.7854	1	35	0.022 ¹
T4	280 - 260	1	5.00	4.81	231.0	0.7854	1	35	0.038 ¹
T5	260 - 240	1	5.00	4.81	231.0	0.7854	2	35	0.044 ¹
T6	240 - 220	1	5.00	4.81	231.0	0.7854	2	35	0.044 ¹
T7	220 - 200	1 1/4	5.00	4.79	184.0	1.2272	1	55	0.026 ¹
T8	200 - 180	1 1/2	5.00	4.77	152.7	1.7672	3	80	0.033 ¹
T9	180 - 160	1 1/2	5.00	4.77	152.7	1.7672	9	80	0.107 ¹
T10	160 - 140	1 1/4	5.00	4.77	183.2	1.2272	3	55	0.046 ¹
T11	140 - 120	1 1/4	5.00	4.77	183.2	1.2272	2	55	0.040 ¹
T12	120 - 100	1 1/4	5.00	4.77	183.2	1.2272	3	55	0.047 ¹
T13	100 - 80	1 1/4	5.00	4.77	183.2	1.2272	11	55	0.204 ¹
T14	80 - 60	1 1/4	5.00	4.77	183.2	1.2272	2	55	0.043 ¹
T15	60 - 40	1 1/4	5.00	4.77	183.2	1.2272	2	55	0.045 ¹
T16	40 - 20	1 1/4	5.00	4.77	183.2	1.2272	3	55	0.045 ¹
T17	20 - 12	7/8	5.00	4.77	261.7	0.6013	2	27	0.092 ¹

¹ P_u / φP_n controls

Bottom Girt 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	330 - 320	1	5.00	4.81	231.0	0.7854	0	35	0.012 ¹
T2	320 - 300	1	5.00	4.81	231.0	0.7854	0	35	0.014 ¹
T3	300 - 280	1	5.00	4.81	231.0	0.7854	1	35	0.022 ¹
T4	280 - 260	1	5.00	4.81	231.0	0.7854	1	35	0.038 ¹
T5	260 - 240	1	5.00	4.81	231.0	0.7854	2	35	0.044 ¹
T6	240 - 220	1	5.00	4.81	231.0	0.7854	2	35	0.044 ¹
T7	220 - 200	1 1/4	5.00	4.79	184.0	1.2272	1	55	0.026 ¹
T8	200 - 180	1 1/2	5.00	4.77	152.7	1.7672	7	80	0.091 ¹
T9	180 - 160	1 1/2	5.00	4.77	152.7	1.7672	3	80	0.038 ¹
T10	160 - 140	1 1/4	5.00	4.77	183.2	1.2272	3	55	0.046 ¹
T11	140 - 120	1 1/4	5.00	4.77	183.2	1.2272	2	55	0.040 ¹
T12	120 - 100	1 1/4	5.00	4.77	183.2	1.2272	3	55	0.053 ¹
T13	100 - 80	1 1/4	5.00	4.77	183.2	1.2272	3	55	0.047 ¹
T14	80 - 60	1 1/4	5.00	4.77	183.2	1.2272	2	55	0.043 ¹
T15	60 - 40	1 1/4	5.00	4.77	183.2	1.2272	2	55	0.045 ¹
T16	40 - 20	1 1/4	5.00	4.77	183.2	1.2272	3	55	0.045 ¹
T20	6.7 - 0	6x3/4	0.75	0.52	28.7	4.5000	14	146	0.099 ¹

¹ P_u / φP_n controls

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Mid Girt Design Data (Tension)

Section No.	Elevation <i>ft</i>	Size	<i>L</i> <i>ft</i>	<i>L_u</i> <i>ft</i>	<i>Kl/r</i>	<i>A</i> <i>in²</i>	<i>P_u</i> <i>K</i>	ϕP_n <i>K</i>	Ratio $\frac{P_u}{\phi P_n}$
L1	345 - 330	3/4	2.50	2.40	153.3	0.4418	0	20	0.005 ¹
T1	330 - 320	1	5.00	4.81	231.0	0.7854	0	35	0.005 ¹
T2	320 - 300	1	5.00	4.81	231.0	0.7854	0	25	0.008 ¹
T4	280 - 260	1	5.00	4.81	231.0	0.7854	8	25	0.304 ¹
T5	260 - 240	1	5.00	4.81	231.0	0.7854	1	25	0.030 ¹
T6	240 - 220	1	5.00	4.81	231.0	0.7854	1	25	0.022 ¹
T7	220 - 200	1 1/4	5.00	4.79	184.0	1.2272	1	40	0.021 ¹
T8	200 - 180	1 1/2	5.00	4.77	152.7	1.7672	1	57	0.014 ¹
T9	180 - 160	1 1/2	5.00	4.77	152.7	1.7672	2	57	0.031 ¹
T10	160 - 140	1 1/4	5.00	4.77	183.2	1.2272	1	40	0.024 ¹
T11	140 - 120	1 1/4	5.00	4.77	183.2	1.2272	1	40	0.024 ¹
T12	120 - 100	1 1/4	5.00	4.77	183.2	1.2272	1	40	0.026 ¹
T13	100 - 80	1 1/4	5.00	4.77	183.2	1.2272	1	40	0.027 ¹
T14	80 - 60	1 1/4	5.00	4.77	183.2	1.2272	1	40	0.030 ¹
T15	60 - 40	1 1/4	5.00	4.77	183.2	1.2272	1	40	0.032 ¹
T16	40 - 20	1 1/4	5.00	4.77	183.2	1.2272	1	40	0.031 ¹
T20	6.7 - 0	6x3/4	2.84	2.61	144.8	4.5000	8	146	0.056 ¹

¹ $P_u / \phi P_n$ controls

Torque-Arm Top Design Data

Section No.	Elevation <i>ft</i>	Size	<i>L</i> <i>ft</i>	<i>L_u</i> <i>ft</i>	<i>Kl/r</i>	<i>A</i> <i>in²</i>	<i>P_u</i> <i>K</i>	ϕP_n <i>K</i>	Ratio $\frac{P_u}{\phi P_n}$
T9	180 - 160 (1113)	2L4x4x3/8	4.84	3.62	45.9	5.7200	33	185	0.179 ¹
T9	180 - 160 (1114)	2L4x4x3/8	4.84	3.62	45.9	5.7200	35	185	0.188 ¹
T9	180 - 160 (1119)	2L4x4x3/8	4.84	3.62	45.9	5.7200	33	185	0.177 ¹
T9	180 - 160 (1120)	2L4x4x3/8	4.84	3.62	45.9	5.7200	29	185	0.159 ¹
T9	180 - 160 (1125)	2L4x4x3/8	4.84	3.62	45.9	5.7200	30	185	0.160 ¹
T9	180 - 160 (1126)	2L4x4x3/8	4.84	3.62	45.9	5.7200	35	185	0.187 ¹

¹ $P_u / \phi P_n$ controls

Torque-Arm Bottom Design Data

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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	180 - 160 (1115)	2L4x4x3/8	4.61	3.40	43.7	5.7200	6	185	0.031 ¹
T9	180 - 160 (1116)	2L4x4x3/8	4.61	3.40	43.7	5.7200	6	185	0.033 ¹
T9	180 - 160 (1121)	2L4x4x3/8	4.61	3.40	43.7	5.7200	7	185	0.037 ¹
T9	180 - 160 (1122)	2L4x4x3/8	4.61	3.40	43.7	5.7200	7	185	0.037 ¹
T9	180 - 160 (1127)	2L4x4x3/8	4.61	3.40	43.7	5.7200	6	185	0.034 ¹
T9	180 - 160 (1128)	2L4x4x3/8	4.61	3.40	43.7	5.7200	7	185	0.037 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
L1	345 - 330	Latticed Pole Leg	1 1/4	2	-8	43	19.0	Pass
L1	345 - 330	Latticed Pole Diagonal	1/2	10	-2	3	57.9	Pass
L1	345 - 330	Latticed Pole Top Girt	3/4	5	0	9	0.3	Pass
L1	345 - 330	Latticed Pole Mid Girt	3/4	7	0	9	1.1	Pass
T1	330 - 320	Leg	2 1/4	72	-23	147	15.7	Pass
T2	320 - 300	Leg	2 1/4	108	-29	157	18.1	Pass
T3	300 - 280	Leg	2 1/4	180	-45	146	30.4	Pass
T4	280 - 260	Leg	2 1/4	240	-75	146	51.2	Pass
T5	260 - 240	Leg	2 1/4	300	-89	146	60.7	Pass
T6	240 - 220	Leg	2 1/4	360	-90	146	61.3	Pass
T7	220 - 200	Leg	2 1/2	420	-81	188	43.1	Pass
							46.2 (b)	
T8	200 - 180	Leg	2 3/4	479	-141	234	60.4	Pass
T9	180 - 160	Leg	2 3/4	539	-175	234	75.0	Pass
T10	160 - 140	Leg	2 3/4	599	-144	234	61.5	Pass
T11	140 - 120	Leg	2 3/4	660	-127	234	54.5	Pass
T12	120 - 100	Leg	2 3/4	719	-146	234	62.3	Pass
T13	100 - 80	Leg	2 3/4	779	-148	234	63.2	Pass
T14	80 - 60	Leg	2 3/4	840	-137	234	58.5	Pass
							70.0 (b)	
T15	60 - 40	Leg	2 3/4	900	-144	234	61.3	Pass
							77.1 (b)	
T16	40 - 20	Leg	2 3/4	960	-144	234	61.7	Pass
							80.4 (b)	
T17	20 - 12	Leg	2 3/4	1020	-141	230	61.6	Pass
							80.0 (b)	
T18	12 - 9.35	Leg	2 3/4	1050	-140	233	60.1	Pass
T19	9.35 - 6.7	Leg	2 3/4	1062	-139	258	53.9	Pass
T20	6.7 - 0	Leg	2 3/4	1077	-145	246	59.0	Pass
T1	330 - 320	Diagonal	7/8	105	-2	8	23.1	Pass

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Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T2	320 - 300	Diagonal	7/8	119	-2	8	20.9	Pass
T3	300 - 280	Diagonal	7/8	194	-3	8	40.4	Pass
T4	280 - 260	Diagonal	1	252	-5	13	38.5	Pass
T5	260 - 240	Diagonal	1	354	-5	13	35.5	Pass
T6	240 - 220	Diagonal	1	374	-4	13	33.6	Pass
T7	220 - 200	Diagonal	1	434	-7	13	50.9	Pass
T8	200 - 180	Diagonal	1 1/4	494	-13	26	49.4	Pass
T9	180 - 160	Diagonal	1 1/4	577	-8	26	29.3	Pass
T10	160 - 140	Diagonal	1	655	-5	13	33.4	Pass
T11	140 - 120	Diagonal	1	671	-3	13	21.7	Pass
T12	120 - 100	Diagonal	1	731	-5	13	35.4	Pass
T13	100 - 80	Diagonal	1	828	-6	13	42.1	Pass
T14	80 - 60	Diagonal	1	895	-4	13	32.4	Pass
T15	60 - 40	Diagonal	1	955	-2	13	17.9	Pass
T16	40 - 20	Diagonal	1	975	-3	13	24.7	Pass
T17	20 - 12	Diagonal	1 1/4	1029	-5	26	19.9	Pass
T18	12 - 9.35	Diagonal	1 1/4	1059	-5	30	17.2	Pass
T19	9.35 - 6.7	Diagonal	1 1/4	1070	-5	30	17.9	Pass
T20	6.7 - 0	Diagonal	1 1/4	1087	-22	28	78.7	Pass
T17	20 - 12	Horizontal	7/8	1031	-2	4	61.2	Pass
T18	12 - 9.35	Horizontal	6x3/4	1054	-2	15	16.8	Pass
T19	9.35 - 6.7	Horizontal	L4x4x3/8	1069	37	105	35.2	Pass
T19	9.35 - 6.7	Secondary Horizontal	7/8	1073	-2	4	60.1	Pass
T20	6.7 - 0	Secondary Horizontal	7/8	1100	-3	8	34.9	Pass
T1	330 - 320	Top Girt	6x3/4	74	0	14	2.9	Pass
T2	320 - 300	Top Girt	1	110	0	7	7.3	Pass
T3	300 - 280	Top Girt	1	183	-1	7	17.0	Pass
T4	280 - 260	Top Girt	1	242	-1	7	19.7	Pass
T5	260 - 240	Top Girt	1	302	-2	7	22.8	Pass
T6	240 - 220	Top Girt	1	362	-2	7	22.9	Pass
T7	220 - 200	Top Girt	1 1/4	422	-1	17	8.6	Pass
T8	200 - 180	Top Girt	1 1/2	481	-3	35	7.6	Pass
T9	180 - 160	Top Girt	1 1/2	543	-11	35	32.4	Pass
T10	160 - 140	Top Girt	1 1/4	601	-3	17	15.0	Pass
T11	140 - 120	Top Girt	1 1/4	662	-2	17	13.2	Pass
T12	120 - 100	Top Girt	1 1/4	721	-3	17	15.3	Pass
T13	100 - 80	Top Girt	1 1/4	782	11	55	20.4	Pass
T14	80 - 60	Top Girt	1 1/4	842	-2	17	14.2	Pass
T15	60 - 40	Top Girt	1 1/4	902	-2	17	14.8	Pass
T16	40 - 20	Top Girt	1 1/4	962	-3	17	14.8	Pass
T17	20 - 12	Top Girt	7/8	1022	-2	4	61.2	Pass
T1	330 - 320	Bottom Girt	1	77	0	7	6.1	Pass
T2	320 - 300	Bottom Girt	1	114	-1	7	11.7	Pass
T3	300 - 280	Bottom Girt	1	185	-1	7	11.4	Pass
T4	280 - 260	Bottom Girt	1	245	-1	7	19.7	Pass
T5	260 - 240	Bottom Girt	1	305	-2	7	22.8	Pass
T6	240 - 220	Bottom Girt	1	365	-2	7	22.9	Pass
T7	220 - 200	Bottom Girt	1 1/4	425	-1	17	8.6	Pass
T8	200 - 180	Bottom Girt	1 1/2	486	-7	35	21.6	Pass
T9	180 - 160	Bottom Girt	1 1/2	544	-3	35	8.8	Pass
T10	160 - 140	Bottom Girt	1 1/4	604	-3	17	15.0	Pass
T11	140 - 120	Bottom Girt	1 1/4	665	-2	17	13.2	Pass
T12	120 - 100	Bottom Girt	1 1/4	724	-3	17	15.3	Pass
T13	100 - 80	Bottom Girt	1 1/4	784	-3	17	15.3	Pass
T14	80 - 60	Bottom Girt	1 1/4	845	-2	17	14.2	Pass
T15	60 - 40	Bottom Girt	1 1/4	905	-2	17	14.8	Pass
T16	40 - 20	Bottom Girt	1 1/4	965	-3	17	14.8	Pass
T20	6.7 - 0	Bottom Girt	6x3/4	1080	14	146	9.9	Pass

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Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	330 - 320	Mid Girt	1	79	0	7	0.7	Pass
T2	320 - 300	Mid Girt	1	115	0	25	0.8	Pass
T3	300 - 280	Mid Girt	1	187	0	7	4.0	Pass
T4	280 - 260	Mid Girt	1	247	8	25	30.4	Pass
T5	260 - 240	Mid Girt	1	307	0	7	3.1	Pass
T6	240 - 220	Mid Girt	1	369	1	25	2.2	Pass
T7	220 - 200	Mid Girt	1 1/4	429	1	40	2.1	Pass
T8	200 - 180	Mid Girt	1 1/2	487	1	57	1.4	Pass
T9	180 - 160	Mid Girt	1 1/2	548	2	57	3.1	Pass
T10	160 - 140	Mid Girt	1 1/4	607	1	40	2.4	Pass
T11	140 - 120	Mid Girt	1 1/4	668	1	40	2.4	Pass
T12	120 - 100	Mid Girt	1 1/4	727	1	40	2.6	Pass
T13	100 - 80	Mid Girt	1 1/4	788	1	40	2.7	Pass
T14	80 - 60	Mid Girt	1 1/4	848	1	40	3.0	Pass
T15	60 - 40	Mid Girt	1 1/4	908	1	40	3.2	Pass
T16	40 - 20	Mid Girt	1 1/4	968	1	40	3.1	Pass
T20	6.7 - 0	Mid Girt	6x3/4	1083	8	146	5.6	Pass
T1	330 - 320	Guy A@330	11/16	1104	22	35	63.5	Pass
T3	300 - 280	Guy A@297.462	9/16	1107	16	23	69.4	Pass
T4	280 - 260	Guy A@270.098	13/16	1110	34	48	71.5	Pass
T9	180 - 160	Guy A@177.25	15/16	1124	43	65	66.0	Pass
T13	100 - 80	Guy A@99.9167	15/16	1131	35	65	54.4	Pass
T1	330 - 320	Guy B@330	11/16	1103	21	35	60.0	Pass
T3	300 - 280	Guy B@297.462	9/16	1106	15	23	65.9	Pass
T4	280 - 260	Guy B@270.098	13/16	1109	33	48	68.4	Pass
T9	180 - 160	Guy B@177.25	15/16	1118	40	65	62.2	Pass
T13	100 - 80	Guy B@99.9167	15/16	1130	35	65	53.6	Pass
T1	330 - 320	Guy C@330	11/16	1102	21	35	58.9	Pass
T3	300 - 280	Guy C@297.462	9/16	1105	15	23	64.8	Pass
T4	280 - 260	Guy C@270.098	13/16	1108	32	48	67.4	Pass
T9	180 - 160	Guy C@177.25	15/16	1111	40	65	62.3	Pass
T13	100 - 80	Guy C@99.9167	15/16	1129	35	65	53.5	Pass
T9	180 - 160	Torque Arm Top@177.25	2L4x4x3/8	1114	35	185	18.8	Pass
T9	180 - 160	Torque Arm Bottom@177.25	2L4x4x3/8	1128	-24	175	13.8	Pass
							Summary	
							Latticed Pole Leg (L1)	19.0 Pass
							Latticed Pole Diagonal (L1)	57.9 Pass
							Latticed Pole Top Girt (L1)	0.3 Pass
							Latticed Pole Mid Girt (L1)	1.1 Pass
							Leg (T16)	80.4 Pass
							Diagonal (T20)	78.7 Pass
							Horizontal (T17)	61.2 Pass
							Secondary Horizontal (T19)	60.1 Pass

<i>tnxTower</i> <i>EFI Global, Inc.</i> 1117 Perimeter Ctr West, Ste 500 Atlanta, GA 30338 Phone: (470) 990-6593 FAX:	Job	CTNL058A	Page	88 of 88
	Project	049.03347 - 2275018	Date	17:28:07 05/26/22
	Client	T-Mobile	Designed by	Ahmet Colakoglu

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
						Top Girt (T17)	61.2	Pass
						Bottom Girt (T6)	22.9	Pass
						Mid Girt (T4)	30.4	Pass
						Guy A (T4)	71.5	Pass
						Guy B (T4)	68.4	Pass
						Guy C (T4)	67.4	Pass
						Torque Arm Top (T9)	22.0	Pass
						Torque Arm Bottom (T9)	13.8	Pass
						Bolt Checks	80.4	Pass
						RATING =	80.4	Pass

Pier and Pad Foundation

Site Name: CTNL058A

TIA-222 Revision: G

Tower Type: Guyed

Top & Bot. Pad Rein. Different?: ☐

Block Foundation?: ☐

Rectangular Pad?: ☐

Superstructure Analysis Reactions

Compression, P_{comp} :	409	kips
Base Shear, Vu_{comp} :	8	kips
Moment, M_u :	0	ft-kips
Tower Height, H :	345	ft
BP Dist. Above Fdn, bp_{dist} :	3	in
Bolt Circle / Bearing Plate Width, BC :	6	in

Pier Properties

Pier Shape:	Circular	
Pier Diameter, $dpier$:	3.5	ft
Ext. Above Grade, E :	0.5	ft
Pier Rebar Size, Sc :	9	
Pier Rebar Quantity, mc :	7	
Pier Tie/Spiral Size, St :	3	
Pier Tie/Spiral Quantity, mt :	3	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	3	in

Pad Properties

Depth, D :	4	ft
Pad Width, W_1 :	9.5	ft
Pad Thickness, T :	2.5	ft
Pad Rebar Size (Bottom dir. 2), Sp_2 :	9	
Pad Rebar Quantity (Bottom dir. 2), mp_2 :	7	
Pad Clear Cover, cc_{pad} :	3	in

Material Properties

Rebar Grade, F_y :	60	ksi
Concrete Compressive Strength, F'_c :	3	ksi
Dry Concrete Density, δc :	150	pcf

Soil Properties

Total Soil Unit Weight, γ :	120	pcf
Ultimate Net Bearing, Q_{net} :	20.000	ksf
Cohesion, C_u :	0.000	ksf
Friction Angle, ϕ :	30	degrees
SPT Blow Count, N_{blows} :		
Base Friction, μ :	0.45	
Neglected Depth, N :	3.33	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw :	N/A	ft

Foundation Analysis Checks

	Capacity	Demand	Rating	Check
Lateral (Sliding) (kips)	125.39	8.00	6.4%	Pass
Bearing Pressure (ksf)	12.29	5.39	43.9%	Pass
Overturning (kip*ft)	1041.83	38.00	3.6%	Pass
Pier Flexure (Comp.) (kip*ft)	928.43	16.00	1.7%	Pass
Pier Compression (kip)	4592.74	412.46	9.0%	Pass
Pad Flexure (kip*ft)	774.45	203.37	26.3%	Pass
Pad Shear - 1-way (kips)	237.04	40.53	17.1%	Pass
Pad Shear - 2-way (Comp) (ksi)	0.164	0.033	20.1%	Pass

Structural Rating: 26.3%

Soil Rating: 43.9%

<--Toggle between Gross and Net

Guyed Anchor Block Foundation

Checks capacity of anchor blocks for a guyed tower.

Site Name:

CTNL058A

Location:

TIA-222 Revision:

G

Design Reactions		
Shear, S:	125.00	kips
Uplift, Ua:	136.00	kips
Resultant Force, Rf:	184.72	kips
Tower Height, H:	345.00	ft
Guy Anchor Radius, R:	205.00	ft
Resultant Angle to Horizontal, θ:	47.4	deg

Guy Anchor Properties		
Depth to Bottom of Deadman, Da:	12.5	ft
Anchor Width, Wa:	4.5	ft
Anchor Thickness, Ta:	4.5	ft
Anchor Length, La:	20.5	ft
Concrete Volume, Vc:	15.4	yd ³
Toe Width, toe:	0	ft

Material Properties

Wt. Avg. Concrete Density, δx:	0.150	kcf
---------------------------------------	-------	-----

Design Checks				
	Capacity	Demand	Rating	Check
<i>Lateral Capacity (kips):</i>	234.03	125.00	53.4%	Pass
<i>Uplift Capacity (kips):</i>	243.08	136.00	55.9%	Pass

Anchor Shaft Rating:	N/A
Structural Rating:	N/A
Soil Rating:	55.9%

Neglect Depth, Neg:	3.33	ft
Groundwater Level, gw:	N/A	ft

Soil Properties:			No. of Soil Layers:	1		
Layer	φ, deg	cu, ksf	δ, pcf		Ultimate fs (ksf)	N (blows/ft)
1	30	0.000	110	12.50		

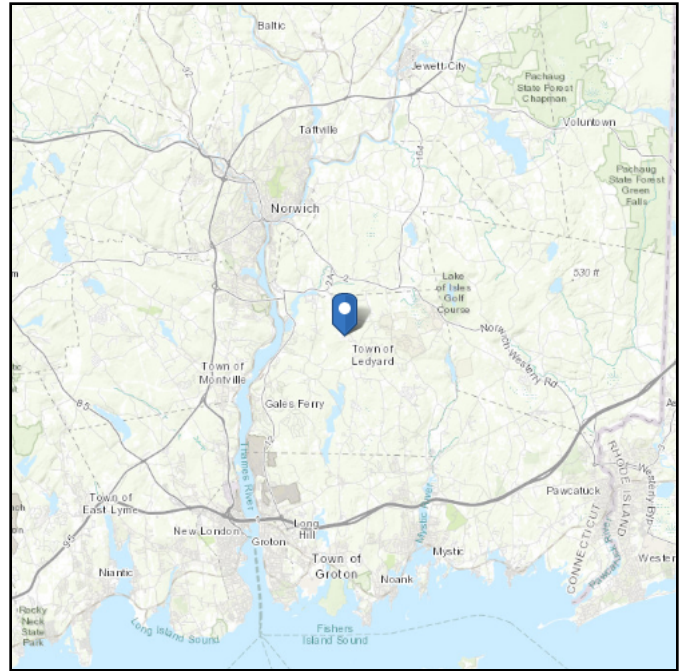
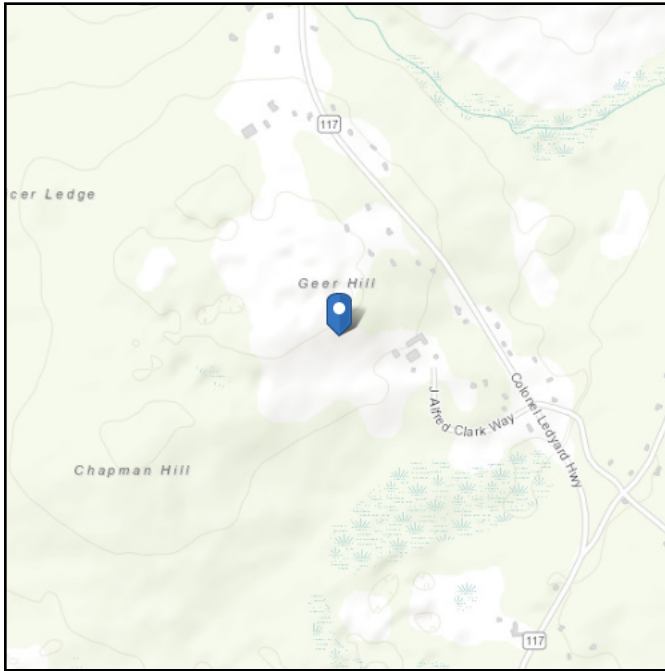
*key: φ = Internal Angle of Friction
cu = Cohesion / Undrained Shear Strength
δ = Buoyant Soil Unit Weight
d = Depth to Bottom of Layer
Ultimate fs = Geotechnical Report-provided skin friction / adhesion
N = SPT Blow Count

ASCE 7 Hazards Report

Address:
No Address at This
Location

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 307.02 ft (NAVD 88)
Latitude: 41.461944
Longitude: -72.023611

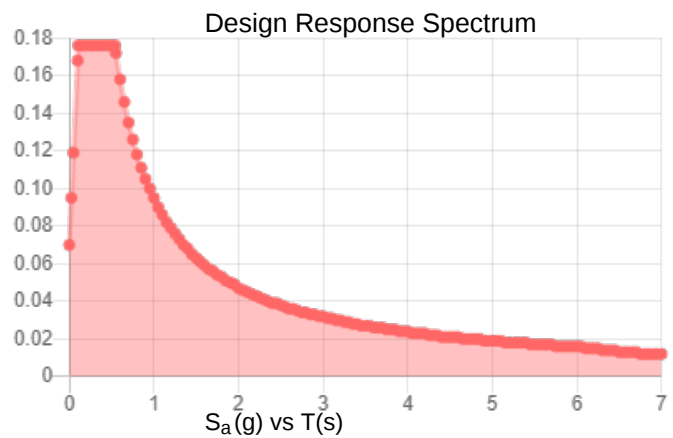
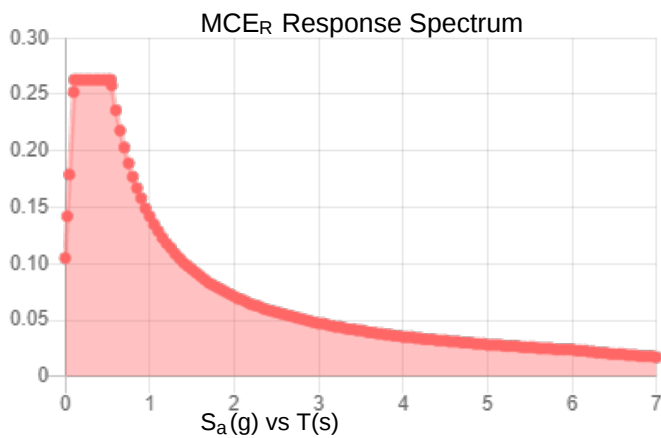


Site Soil Class: D - Stiff Soil

Results:

S_S :	0.165	S_{DS} :	0.176
S_1 :	0.059	S_{D1} :	0.095
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.082
S_{MS} :	0.263	PGA_M :	0.132
S_{M1} :	0.142	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B



Data Accessed: Thu May 26 2022

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

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: Thu May 26 2022

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.

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided "as is" and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.

Exhibit E

Mount Analysis

Date: 5/26/2022

To: T-Mobile Northeast, LLC
35 Griffin Road South
Bloomfield, CT 06002

Subject: Mount Structural Analysis Report

T-Mobile Designation: Site ID: CTNL058A
Site Name: NL058/RedWolf_ET

EFI Designation: Project Number: 049.03347 - 2275018

Site Data: 889A Colonel Ledyard Highway, Ledyard, CT 06339
Latitude 41° 27' 42.99", Longitude -72° 01' 24.99"

EFI Global, Inc. is pleased to submit this "Mount Structural Analysis Report" to determine the structural capacity of the antenna mounts utilized by T-Mobile at the above referenced site.

The purpose of the analysis is to determine acceptability of the mount stress level for the changes proposed by T-Mobile. Under the following load case we have determined the mounts to have:

Existing + Proposed Equipment

Adequate Capacity w/Mods (77.6%)

Note: See Analysis Criteria for loading configuration

The analysis has been performed in accordance with the TIA-222-G Standard and 2018 Connecticut State Building Code (2015 IBC).

We at *EFI Global, Inc.* appreciate the opportunity of providing our continuing professional services to you. If you have any questions or need further assistance on this or any other projects, please give us a call.

Sincerely,
EFI Global, Inc.
License No: PEC0001245

5/26/2022



Ahmet Colakoglu, PE
Connecticut Professional Engineer
License No: 27057

1) ANALYSIS CRITERIA

The analysis was performed for the existing and proposed appurtenances as specified in the loading information referenced below, and per the following loading criteria of Table 1.

Table 1 – Loading and Analysis Criteria

Rad Center	185'
Structure Type	Guyed Tower
Exposure Category	C
Basic Wind Speed	135 * $\sqrt{0.6}$ = 105 mph (ASD)
Ice Loading	0.75" with 50 mph Wind
Risk Category	II
Topographic Factor	Kzt = 1.0

Table 1.1 – Existing Appurtenance Configuration

Qty	Model
3	Andrew LNX-6515DS-A1M – Antennas
3	Ericsson AIR21 B2P B4A – Antennas
3	Ericsson AIR21 B2A B4P – Antennas
3	RRUS11 B12 – RRUs
3	Generic Twin Style 1B – AWS – TMAs

Table 1.2 – Proposed and Final Appurtenance Configuration

Qty	Model
3	Commscope VV-65A-R1 – Antennas
3	RFS APXVAALL24_43-U-NA20 – Antennas
3	Ericsson AIR6419 B41 – Antennas
3	Radio 4480 B71 + B85 – RRUs*
3	Radio 4460 B25 + B66 – RRUs*

*** To be mounted behind antennas**

Table 1.3 – Assumed Material Properties

Member Type	ASTM Material Designation	Fy (ksi)	Fu (ksi)
Pipes	A53 Gr. B	35	60
Angles/Channels	A36	36	58
Rectangular HSS	A500 Gr. B - 46	46	58
Round HSS	A500 Gr. B - 42	42	58
Others (UNO)	A572 Gr. 50	50	65

2) ANALYSIS PROCEDURE

The analysis is based on the following information:

Table 2 – Documents

Document	Provided By	Date
RFDS	T-Mobile	04/13/2022
Structural Analysis Report	Maser Consulting Connecticut	04/12/2018
Site Photos	-	06/24/2015
As-Built Drawings	-	06/11/2015
Construction Drawings	EBI Consulting	03/11/2015

2.1) Analysis Method

Risa-3D, a commercially available analysis software package, was used to create a three-dimensional model of the mount and calculate member stresses for various loading cases. Selected output from the analysis is included in the Appendix.

2.2) Analysis Conditions and Assumptions

- 1) The mount was built and installed in accordance with the manufacturer's specifications.
- 2) The mount has been maintained and will be maintained in accordance with the manufacturer's specifications. All structural members and connections of the mount are in good condition and can achieve theoretical strength.
- 3) The configuration of antennas is as specified in "1) Analysis Criteria".
- 4) The analysis was performed for the subject mount only. It does not include an evaluation of the other mounts or the tower, which should be analyzed by others.
- 5) The evaluation does not include any antenna rigging loads. The equipment should not be rigged using the subject antenna mount as the support.
- 6) The analysis includes a minimum 250 lbf maintenance point load at the worst-case location on the mount, as well as a minimum 500 lbf maintenance point load at each antenna location in conjunction with a 30 mph wind load.
- 7) Any steel grating represented in this model is for loading purposes only and it is not considered to provide any structural restraint or support.
- 8) Member sizes per the available construction drawings, site photos and assumed based on our experience with similar structures. Please refer to calculation output in the appendix of this report for sizes and lengths assumed.
- 9) 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.

EFI Global, Inc. (EFI), must be notified immediately if any of these assumptions are discovered to be incorrect. The results of this analysis may be affected if any of the assumptions are not valid or have been made in error.

3) ANALYSIS RESULTS AND CONCLUSION

The analysis results are shown on the table below.

Table 3.1 – Mount Component Stresses vs. Capacity

Component	% Capacity	Pass / Fail
Horizontal Face Pipe	77.6	Pass
Horizontal Standoff Pipe	27.5	Pass
Vertical Standoff Solid Rod	24.3	Pass
Diagonal Standoff Solid Rod	70.4	Pass
Antenna Mount Pipe	61.6	Pass
Stiff Arm Pipe	<20.0	Pass

Sector Mounts: The existing sector mounts **will have adequate** capacity for the proposed changes by T-Mobile, **once the proposed modifications are installed as listed below**. For the code specified load combinations and as a maximum, the mount members are stressed to **77.6%** of their structural capacity.

Note: The sector mount qualification is valid once the modifications are completed as listed below-

1. One (1) new stiff should be installed at the outermost mount pipe, position-3 at each sector. The new stiff arm should be a 2.0 STD pipe and will need to be sized to fit in between the face of sector mount and the adjacent mount's tower leg. The stiff arm should be attached to outermost mount pipe and centered vertically between horizontal face members using Valmont/Site Pro 1 Adjustable Clamp Plate Tie-Back Assemblies (P/N: PUCK). The opposite end of the stiff arm should be attached directly to adjacent mount's tower leg using Valmont/Site Pro 1 Universal Stiff-Arm Attachments (P/N: SAM-U).
2. The proposed RFS antennas should be installed at position-2 (middle of face) on a new 10' long, 2.5 STD pipe at each sector. The new pipe mounts should be attached to the existing horizontal face pipes using Valmont/Site Pro 1 Crossover Plate Kit (P/N: SCX2-K), (2) at each pipe, a total of (6).

APPENDIX
INPUT LOADS
ANALYSIS OUTPUT

CLIENT:ForeSite LLC/T-Mobile

PROJECT:CTNL058A

SUBJECT:Antenna Loads - G Code with Sections 16 Revisions

Tower Height

345.00

ft

Type of Mount

Sector

Basic Wind Speed, V

105

mph (=Ultimate Speed* $\sqrt{0.6}$)

Basic Wind Speed with Ice, V_i

50

mph

Maintenance Load Factor, L_{FM}

0.0816

Load Factor for Maint. Load Cases
(Basic Wind Speed=30 mph)

Design Ice Thickness, t_i

0.75

inches

Table 2-3 Importance Factors

Structure Classification	Wind Load Without Ice	Wind Load With Ice	Ice Thickness	Earthquake
II	1	1	1	1

1

Table 2-4 Exposure Category Coefficients

Exposure Category	Zg	α	Kzmin	Ke	m
C	900	9.5	0.85	1	0.6

Table 2-5 Topographic Categories

Kzt1.000

Table 2-2 Wind Directionality Factor, Kd

Structure Type	Kd
1Guyed Mast	0.95

DOES NOT CHANGE

Gust Effect Factor Gh

Structure Type	Gh
3Guyed Mast	1.00

DOES NOT CHANGE

Shielding Factor, Ka

Structure Type	Ka
Guyed Mast	0.90

DOES NOT CHANGE

CLIENT:ForeSite LLC/T-Mobile

PROJECT:CTNL058A

SUBJECT:Antenna Loads - G Code with Sections 16 Revisions

Rad Center185.00ft

Antenna AND Mount Without Ice																Pounds						
Mounting Pole	Height (ft)	Model Number	#	Weight (lbs)	H (in)	*W (in)	D (in)	Ka	**A _N (ft2)	***A _T (ft2)	Aspect (FRONT)	Aspect (SIDE)	Ca (FRONT)	Ca (SIDE)	K _z	q _z (psf)	Wind Load (Front)	Wind Load (Side)	Dead Load	Total Wind Load (Front)	Total Wind Load (Side)	Total Dead Load
Pos. 1	185.00	Commscope VV-65A-R1	1	23.8	54.7	12.1	4.6	0.90	4.60	1.75	4.52	11.89	1.29	1.56	1.441	38.6	206.1	94.9	23.8	206	95	24
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
Pos. 2	185.00	RFS APXVAALL24_43-U-NA20	1	149.9	95.9	24.0	8.5	0.90	15.98	5.66	4.00	11.28	1.27	1.54	1.441	38.6	703.7	303.6	149.9	704	420	343
	185.00	Radio 4480 B71+B85	1	84.0	21.8	N/A	7.5	0.90	-	1.14	-	2.91	-	1.22	1.441	38.6	0.0	48.1	84			
	185.00	Radio 4460 B25+B66	1	109.0	19.6	N/A	12.1	0.90	-	1.65	-	1.62	-	1.20	1.441	38.6	0.0	68.7	109			
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
Pos. 3	185.00	Ericsson AIR 6419 B41	1	83.3	36.3	20.9	9.0	0.90	5.27	2.27	1.74	4.03	1.20	1.27	1.441	38.6	219.8	100.0	83.3	220	100	83
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
																				110	51	42

* Enter N/A in the W column for front sheilded apurtanances.

** A_N is the product of H and W

*** A_T is the product of H and D

DL#REF!

Mount	Height (ft)	Member	*L (in)	**W (in)	D (in)	*** Ca	K _z	q _z (psf)	Wind Load (PLF)
	185.00	2.5 STD Pipe	12.00	2.88	0.00	1.20	1.441	34.8	10
	185.00	2.0 STD Pipe	12.00	2.38	0.00	1.20	1.441	34.8	8
	185.00	1.25 STD Pipe	12.00	1.66	0.00	1.20	1.441	34.8	6
	185.00	SR 5/8"	12.00	0.63	0.00	1.20	1.441	34.8	2
	185.00	L2.5x2.5x3	0.00	2.50	2.50	-	-	-	-
	185.00	L3x1.75x3	0.00	3.00	1.75	-	-	-	-
	185.00	Angle Diagonal	0.00	0.00	0.00	-	-	-	-
	185.00	Plate Horizontal (PL2-1/8x3/16)	0.00	2.13	0.19	-	-	-	-
	185.00	Plate Horizontal (PL4x3/8\)	0.00	0.38	4.00	-	-	-	-
	185.00	Tube Radial (3x3)	0.00	3.00	3.00	-	-	-	-
	185.00	Double Angle (LL2x2x3x0)	0.00	2.00	2.00	-	-	-	-
	185.00	Double Angle (LL3x3x4x0)	0.00	3.00	3.00	-	-	-	-
	185.00	Channel (Slider Bracket)	0.00	3.00	12.00	-	-	-	-
	185.00	Invert U 5.375x3.625x.375	0.00	3.63	5.38	-	-	-	-

* The dimension L is the longest dimension of the member

** The dimension W is the height or width of the member that resists wind load

*** Ca will equal 1.2 for round members and 2.0 for flat

CLIENT:ForeSite LLC/T-Mobile

PROJECT:CTNL058A

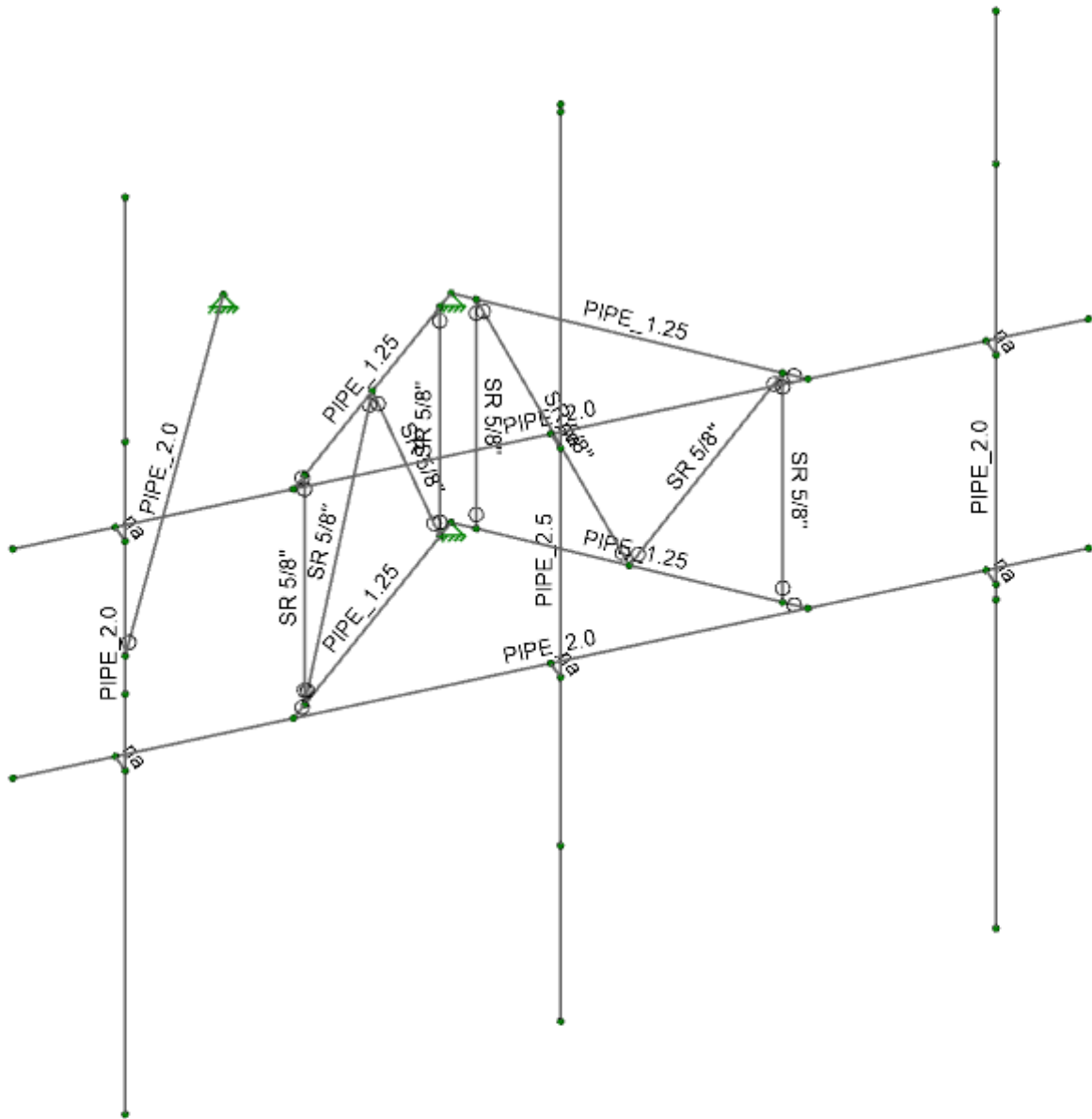
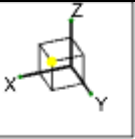
SUBJECT:Antenna Loads - G Code with Sections 16 Revisions

ti (in)1.782202Kiz1.188135reduction0.22676																Pounds								
Mounting Pole	Height (ft)	Model Number	#	H (in)	W (in)	D (in)	Ka	*A _N (ft2)	*A _T (ft2)	*Volume Ice (ft3)	*Weight Ice (lbs)	**Ca (FRONT)	**Ca (SIDE)	Kz	q _z (psf)	Ice Wind Load (Front)	Ice Wind Load (Side)	Combined Wind Load (Front)	Combined Wind Load (Side)	Ice Dead Load	**Total Wind Load (Front)	**Total Wind Load (Side)	Total Ice Load	
Pos. 1	185.00	Commscope VV-65A-R1	1	54.7	12.1	4.6	0.90	1.74	1.56	2.55	142.82	0.73	0.80	1.441	8.8	10.0	9.9	56.7	31.4	143	57	31	143	
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0				
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0				
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0				
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0				
Pos. 2	185.00	RFS APXVAALL24_43-U-NA20	1	95.9	24.0	8.5	0.90	3.06	2.67	7.82	437.92	0.72	0.83	1.441	8.8	17.5	17.4	177.0	86.3	438	177	122	636	
		Radio 4480 B71+B85	1	21.8	15.7	7.5	0.90	-	0.81	1.64	92.02	0.70	0.70	1.441	8.8	0.0	4.5	0.0	15.4	92				
		Radio 4460 B25+B66	1	19.6	15.7	12.1	0.90	-	0.87	1.89	105.87	0.70	0.70	1.441	8.8	0.0	4.8	0.0	20.4	106				
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0				
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0				
Pos. 3	185.00	Ericsson AIR 6419 B41	1	36.3	20.9	9.0	0.90	1.50	1.21	3.14	175.83	0.70	0.71	1.441	8.8	8.3	6.8	58.1	29.5	176	58	29	176	
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0				
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0				
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0				
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0				
																					29	16	72	
																					89	62	318	
																					30	15	88	

* A_N, A_T, Volume Ice and Weight Ice are calculated per unit

** Ca will equal 1.2 for all ice load calculations

PLF																Ice Wind Load (Front)	Combined Wind Load (Front)	Ice Dead Load
Mount	Height (ft)	Member	*L (in)	**W (in)	D (in)	***A _N (ft2)	Volume Ice (ft3)	Weight Ice (lbs)	****Ca (FRONT)	Kz	q _z (psf)							
	185.00	2.5 STD Pipe	12.00	2.88	0.00	0.46	0.18	10.14	1.20	1.441	7.9	4.3		6.6		10		
	185.00	2.0 STD Pipe	12.00	2.38	0.00	0.44	0.16	9.05	1.20	1.441	7.9	4.2		6.1		9		
	185.00	1.25 STD Pipe	12.00	1.66	0.00	0.43	0.13	7.49	1.20	1.441	7.9	4.0		5.3		7		
	185.00	SR 5/8"	12.00															



Envelope Only Solution

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AJ

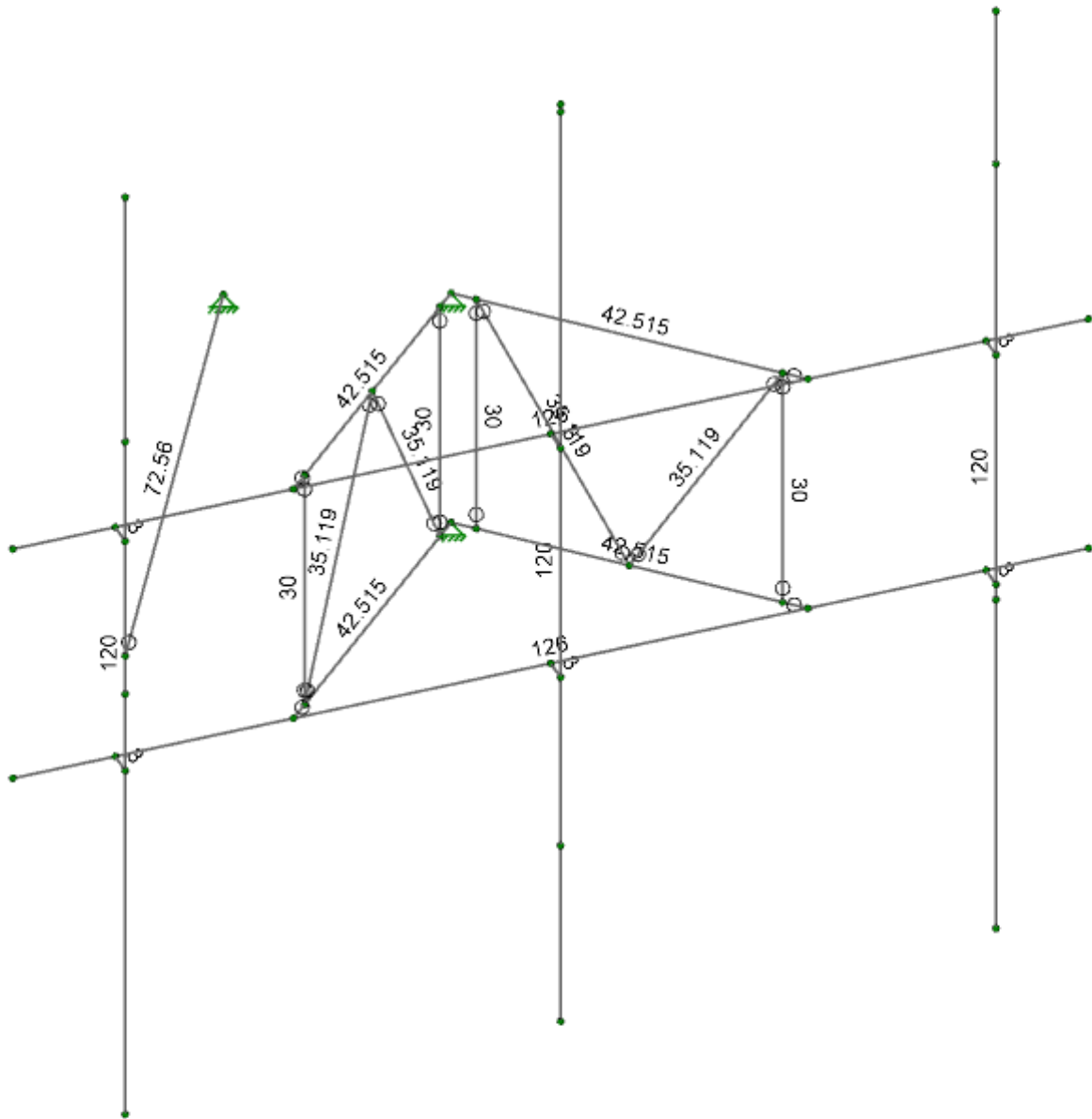
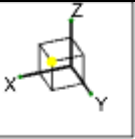
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CTNL058A

SK-1

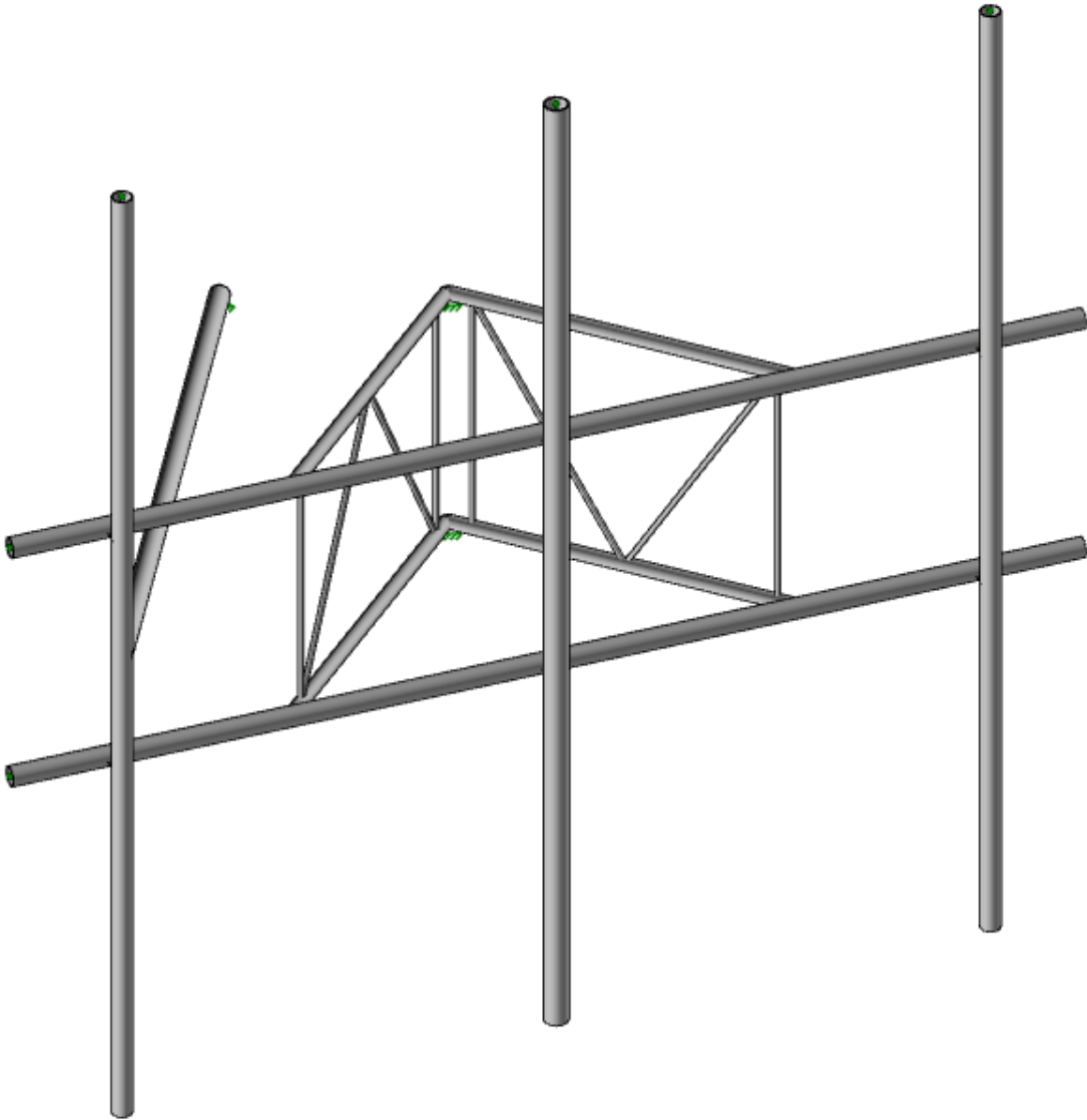
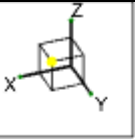
May 26, 2022

CTNL058A.r3d



Member Length (in) Displayed
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AJ		May 26, 2022
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AJ

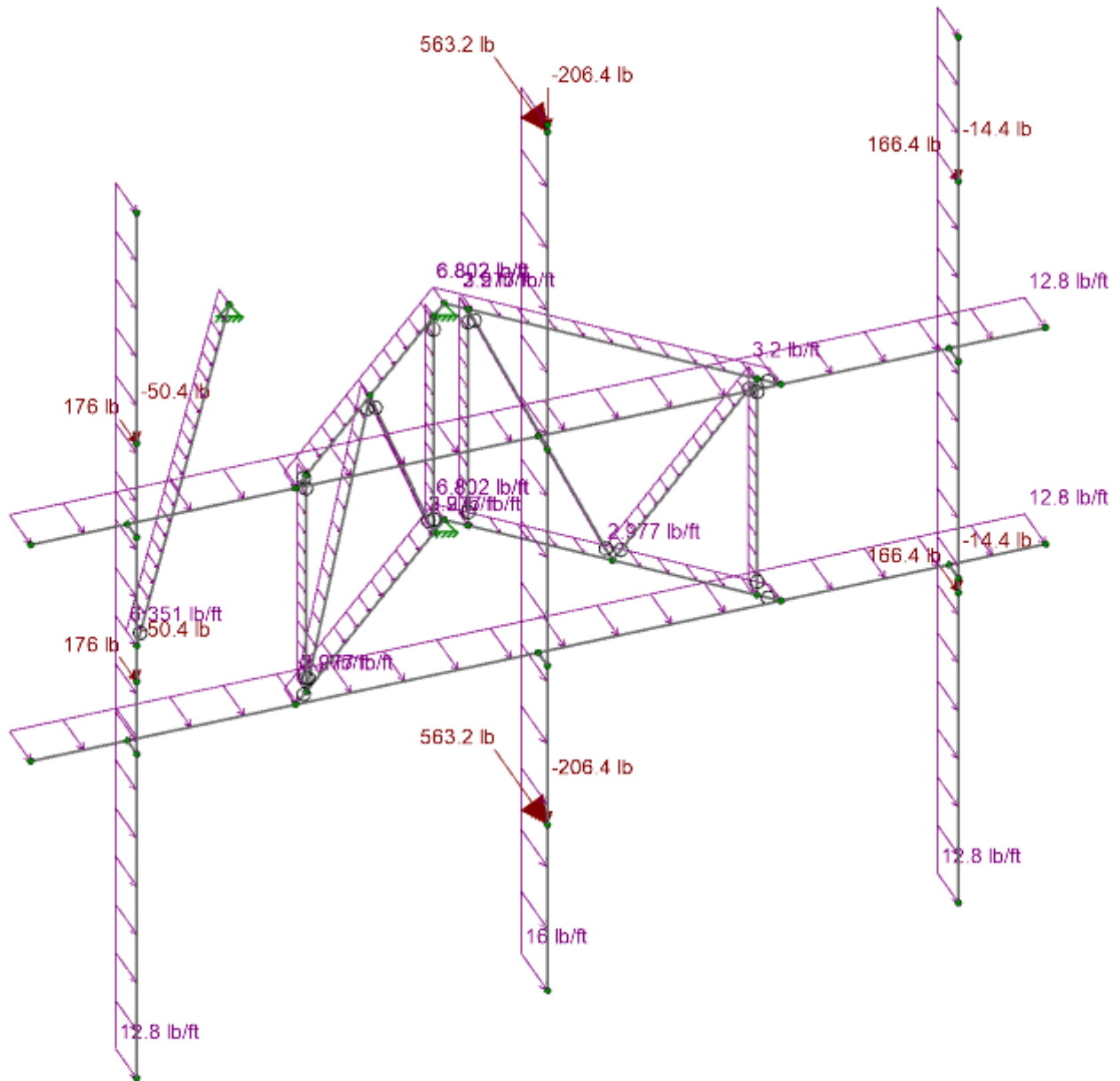
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CTNL058A

SK-3

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Loads: LC 1, DL + WL (NO ICE) 0 Degree
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AJ

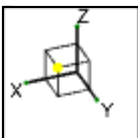
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CTNL058A

SK-4

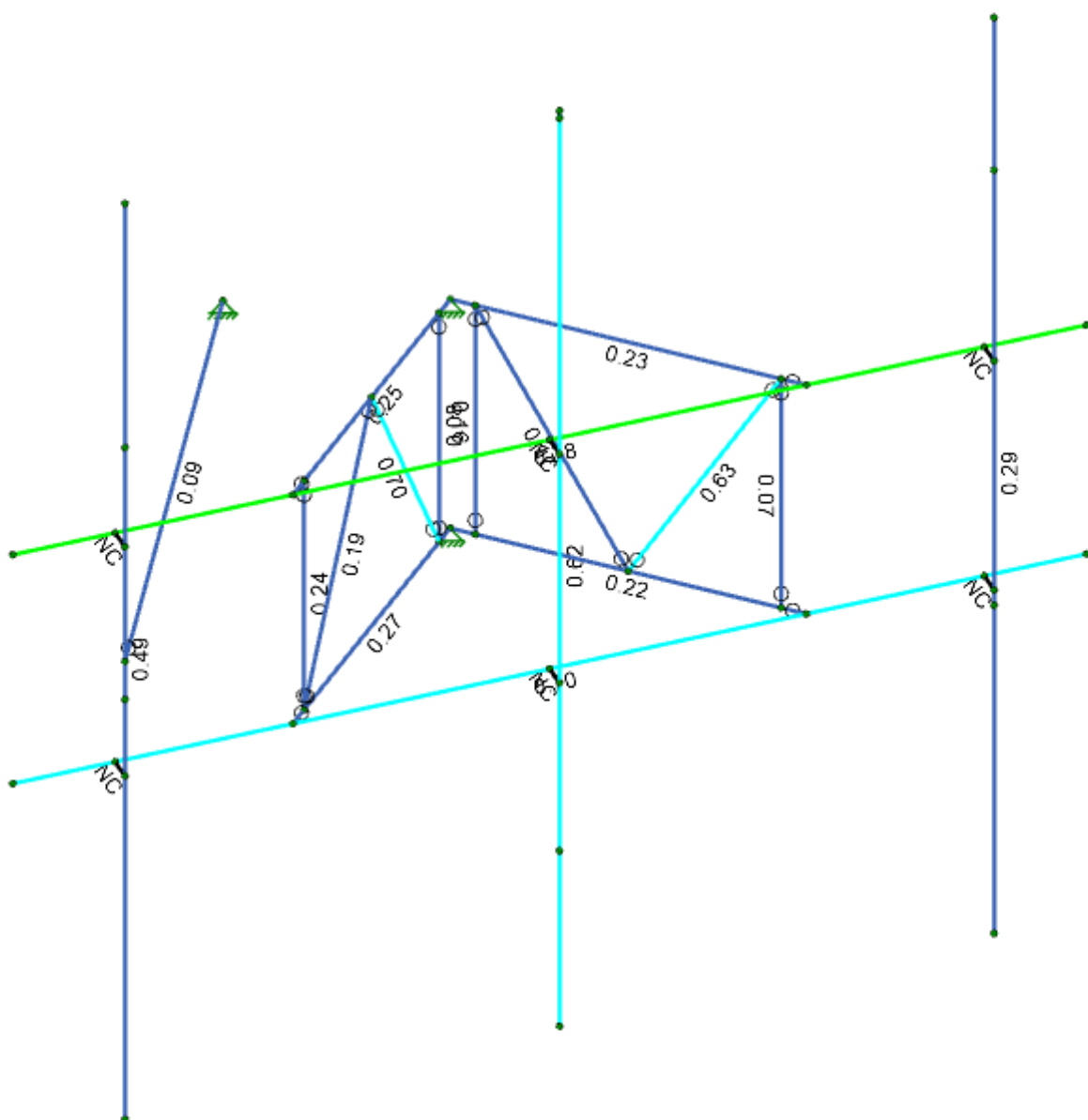
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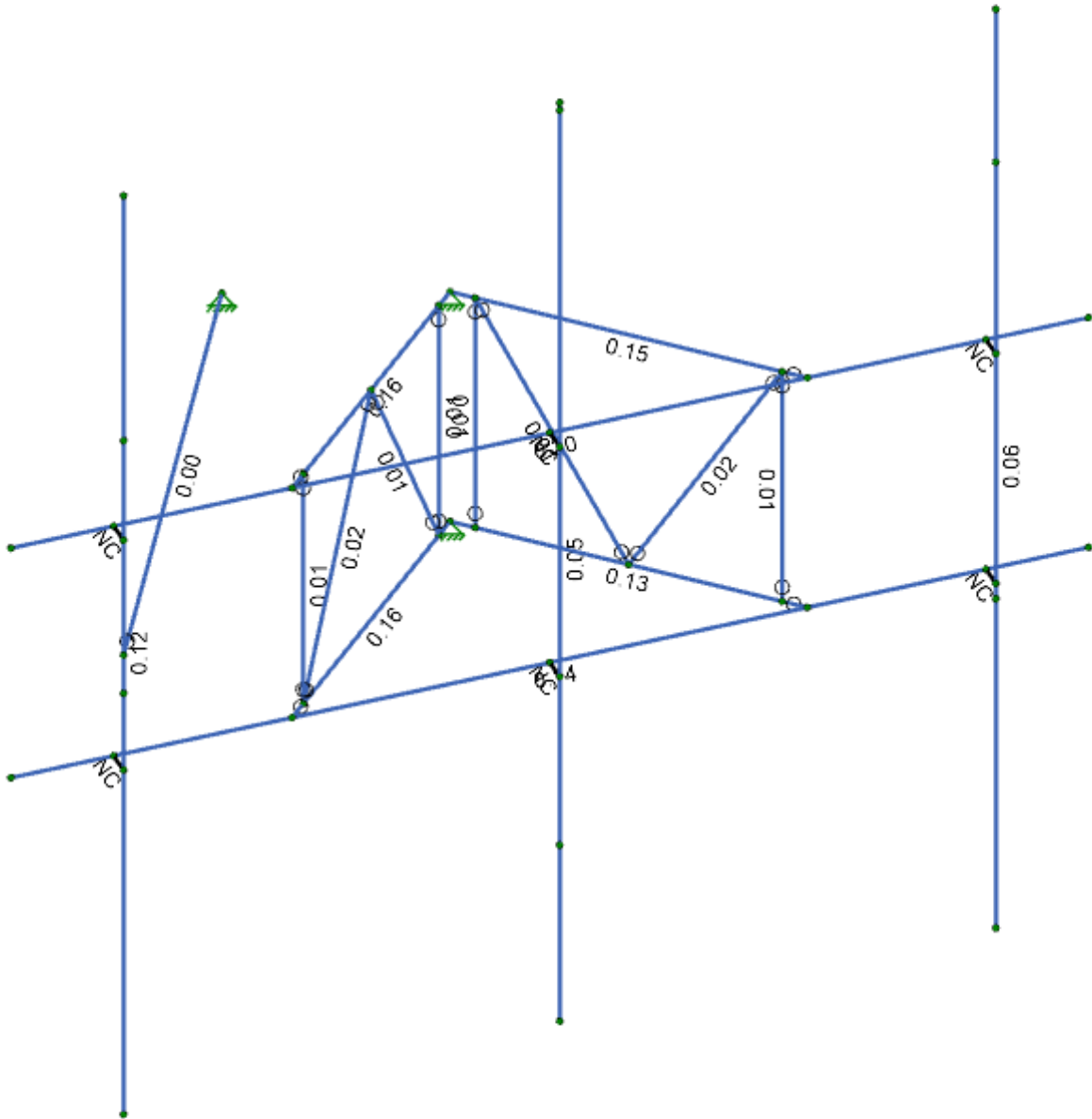
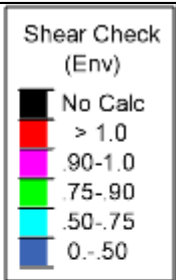
Code Check
(Env)

- No Calc
- > 1.0
- 90-1.0
- 75-90
- .50-.75
- 0-.50



Member Code Checks Displayed (Enveloped)
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Member Shear Checks Displayed (Enveloped)
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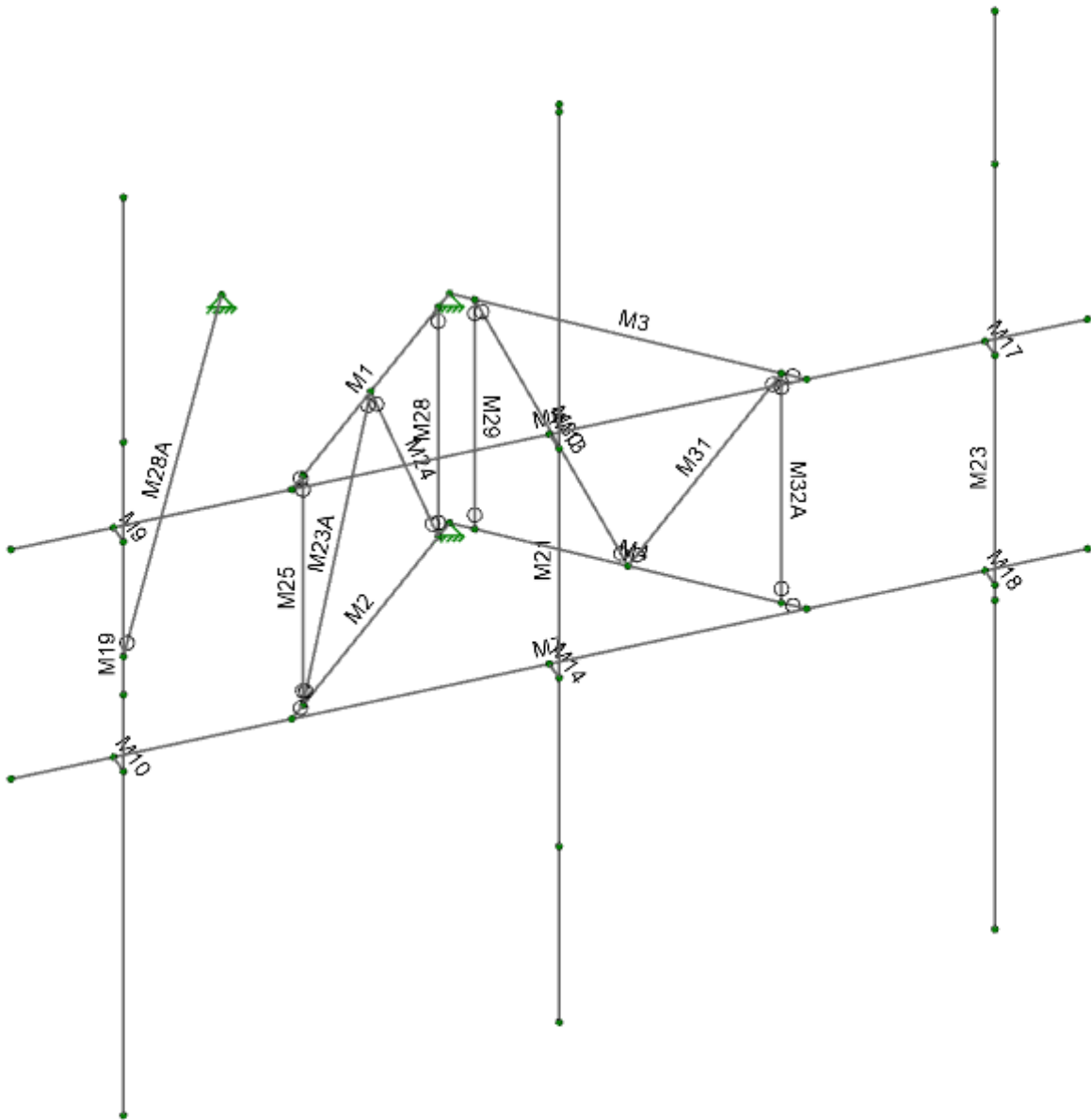
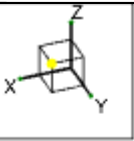
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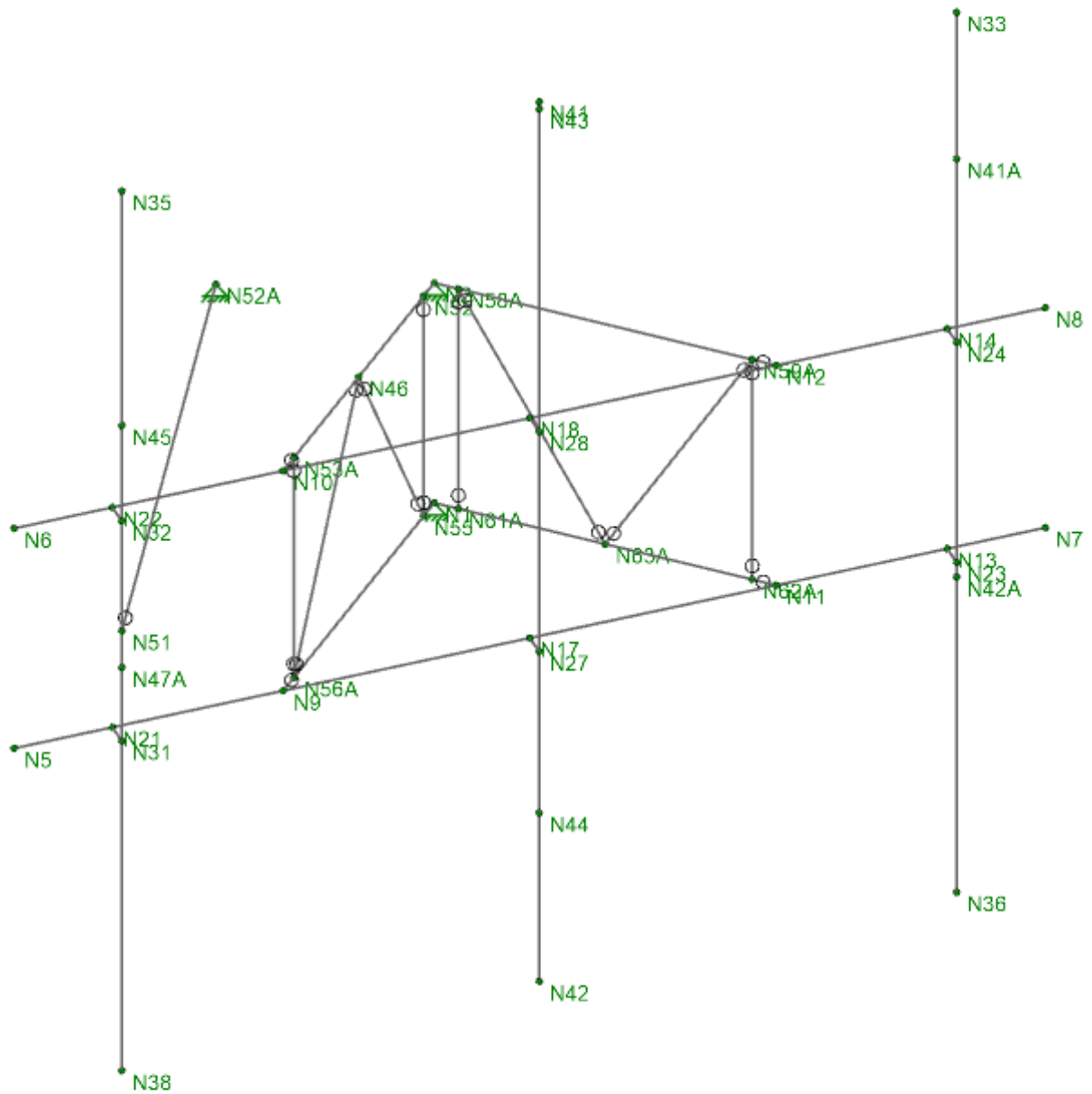
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SK-7

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CTNL058A

SK-8
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Model Settings

Solution

Members

Number of Reported Sections	5
Number of Internal Sections	100
Member Area Load Mesh Size (in ²)	144
Consider Shear Deformation	Yes
Consider Torsional Warping	Yes

Wall Panels

Approximate Mesh Size (in)	12
Transfer Forces Between Intersecting Wood Walls	Yes
Increase Wood Wall Nailing Capacity for Wind Loads	Yes
Include P-Delta for Walls	Yes
Optimize Masonry and Wood Walls	No
Maximum Number of Iterations	3

Processor Core Utilization

Single	No
Multiple (Optimum)	Yes
Maximum	No

Axis

Vertical Global Axis

Global Axis corresponding to vertical direction	Z
Convert Existing Data	Yes

Default Member Orientation

Default Global Plane for z-axis	XZ
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Plate Axis

Plate Local Axis Orientation	Nodal
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Codes

Hot Rolled Steel	AISC 14th (360-10): LRFD
Stiffness Adjustment	Yes (Iterative)
Notional Annex	None
Connections	AISC 14th (360-10): LRFD
Cold Formed Steel	AISI NAS-01: ASD
Stiffness Adjustment	Yes (Iterative)
Wood	AF&PA NDS-05/08: ASD
Temperature	< 100F
Concrete	ACI 318-05
Masonry	ACI 530-05: ASD
Aluminum	AA ADM1-05: ASD
Structure Type	Building
Stiffness Adjustment	Yes (Iterative)
Stainless	AISC 14th (360-10): ASD
Stiffness Adjustment	Yes (Iterative)

Concrete

Column Design

Analysis Methodology	Exact Integration Method
Parame Beta Factor	0.65

Compression Stress Block	Rectangular Stress Block
Analyze using Cracked Sections	Yes
Leave room for horizontal rebar splices (2*d bar spacing)	No
List forces which were ignored for design in the Detail Report	Yes

Rebar

Column Min Steel	1
Column Max Steel	8
Rebar Material Spec	ASTM A615
Warn if beam-column framing arrangement is not understood	No

Model Settings (Continued)

Shear Reinforcement

Number of Shear Regions	4
Region 2 & 3 Spacing Increase Increment (in)	4

Seismic

RISA-3D Seismic Load Options

Code	ASCE 7-05
Occupancy Cat	I or II
Drift Cat	Other
Base Elevation (ft)	
Include the weight of the structure in base shear calcs	Yes

Site Parameters

S_1 (g)	1
SD_1 (g)	1
SD_s (g)	1
T_L (sec)	-1

Structure Characteristics

T Z (sec)	
T X (sec)	
C_x	0.035
$C_{Exp. Z}$	0.75
$C_{Exp. X}$	0.75
R Z	8.5
R X	8.5
$\Omega_0 Z$	1
$\Omega_0 X$	1
$C_d Z$	4
$C_d X$	4
ρZ	1
ρX	1

Project Grid Lines

No Data to Print...

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [$10^{-6} F^{-1}$]	Density [k/ft ³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.2
3	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.2
4	A500 Gr.42	29000	11154	0.3	0.65	0.49	42	1.3	58	1.1
5	A500 Gr.46	29000	11154	0.3	0.65	0.49	46	1.2	58	1.1
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.5	60	1.2
7	A529 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.2

Member Primary Data

	Label	I Node	J Node	Section/Shape	Type	Design List	Material	Design Rule
1	M32A	N59A	N62A	SR 5/8"	Beam	Wide Flange	A36 Gr.36	Typical
2	M31	N63A	N59A	SR 5/8"	Beam	Wide Flange	A36 Gr.36	Typical
3	M30	N58A	N63A	SR 5/8"	Beam	Wide Flange	A36 Gr.36	Typical
4	M29	N58A	N61A	SR 5/8"	Beam	Wide Flange	A36 Gr.36	Typical
5	M28	N55	N52	SR 5/8"	Beam	Wide Flange	A36 Gr.36	Typical
6	M25	N56A	N53A	SR 5/8"	Beam	Wide Flange	A36 Gr.36	Typical
7	M24	N55	N46	SR 5/8"	Beam	Wide Flange	A36 Gr.36	Typical
8	M23A	N56A	N46	SR 5/8"	Beam	Wide Flange	A36 Gr.36	Typical
9	M18	N13	N23	RIGID	None	None	LINK	Typical
10	M17	N14	N24	RIGID	None	None	LINK	Typical
11	M14	N17	N27	RIGID	None	None	LINK	Typical
12	M13	N18	N28	RIGID	None	None	LINK	Typical
13	M10	N21	N31	RIGID	None	None	LINK	Typical
14	M9	N22	N32	RIGID	None	None	LINK	Typical
15	M23	N36	N33	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical
16	M21	N42	N41	PIPE 2.5	Beam	HSS Pipe	A53 Gr.B	Typical
17	M19	N38	N35	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical
18	M7	N7	N5	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical
19	M5	N8	N6	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical
20	M4	N1	N11	PIPE 1.25	Beam	Pipe	A53 Gr.B	Typical
21	M3	N2	N12	PIPE 1.25	Beam	Pipe	A53 Gr.B	Typical
22	M2	N1	N9	PIPE 1.25	Beam	Pipe	A53 Gr.B	Typical
23	M1	N2	N10	PIPE 1.25	Beam	Pipe	A53 Gr.B	Typical
24	M28A	N51	N52A	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical

Member Advanced Data

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
1	M32A	BenPIN	BenPIN	Yes		None
2	M31	BenPIN	BenPIN	Yes		None
3	M30	BenPIN	BenPIN	Yes		None
4	M29	BenPIN	BenPIN	Yes		None
5	M28	BenPIN	BenPIN	Yes		None
6	M25	BenPIN	BenPIN	Yes		None
7	M24	BenPIN	BenPIN	Yes		None
8	M23A	BenPIN	BenPIN	Yes		None
9	M18			Yes	** NA **	None
10	M17			Yes	** NA **	None
11	M14			Yes	** NA **	None
12	M13			Yes	** NA **	None
13	M10			Yes	** NA **	None
14	M9			Yes	** NA **	None
15	M23			Yes		None
16	M21			Yes	Default	None
17	M19			Yes		None
18	M7			Yes		None
19	M5			Yes		None
20	M4		BenPIN	Yes		None
21	M3		BenPIN	Yes		None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
22	M2		BenPIN	Yes		None
23	M1		BenPIN	Yes		None
24	M28A	BenPIN		Yes		None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lcomp top [in]	K y-y	K z-z	Function
1	M32A	SR 5/8"	30		0.7	0.7	Lateral
2	M31	SR 5/8"	35.119		0.7	0.7	Lateral
3	M30	SR 5/8"	35.119		0.7	0.7	Lateral
4	M29	SR 5/8"	30		0.7	0.7	Lateral
5	M28	SR 5/8"	30		0.7	0.7	Lateral
6	M25	SR 5/8"	30		0.7	0.7	Lateral
7	M24	SR 5/8"	35.119		0.7	0.7	Lateral
8	M23A	SR 5/8"	35.119		0.7	0.7	Lateral
9	M23	PIPE 2.0	120	Lbyy			Lateral
10	M21	PIPE 2.5	120	Lbyy			Lateral
11	M19	PIPE 2.0	120	Lbyy			Lateral
12	M7	PIPE 2.0	126	Lbyy			Lateral
13	M5	PIPE 2.0	126	Lbyy			Lateral
14	M4	PIPE 1.25	42.515	Lbyy			Lateral
15	M3	PIPE 1.25	42.515	Lbyy			Lateral
16	M2	PIPE 1.25	42.515	Lbyy			Lateral
17	M1	PIPE 1.25	42.515	Lbyy			Lateral
18	M28A	PIPE 2.0	72.56	Lbyy			Lateral

Node Coordinates

	Label	X [in]	Y [in]	Z [in]	Detach From Diaphragm
1	N1	0	0	0	
2	N2	0	0	30	
3	N5	63	30	0	
4	N6	63	30	30	
5	N7	-63	30	0	
6	N8	-63	30	30	
7	N9	30.125	30	0	
8	N10	30.125	30	30	
9	N11	-30.125	30	0	
10	N12	-30.125	30	30	
11	N13	-51	30	0	
12	N14	-51	30	30	
13	N17	0	30	0	
14	N18	0	30	30	
15	N21	51	30	0	
16	N22	51	30	30	
17	N23	-51	33	0	
18	N24	-51	33	30	
19	N27	0	33	0	
20	N28	0	33	30	
21	N31	51	33	0	
22	N32	51	33	30	
23	N33	-51	33	75	
24	N35	51	33	75	
25	N36	-51	33	-45	
26	N38	51	33	-45	
27	N41	0	33	75	
28	N42	0	33	-45	
29	N52	2.125726	2.116906	30	
30	N53A	27.999354	27.883174	30	
31	N55	2.125726	2.116906	0	
32	N56A	27.999354	27.883174	0	
33	N58A	-2.125726	2.116906	30	
34	N59A	-27.999354	27.883174	30	
35	N61A	-2.125726	2.116906	0	
36	N62A	-27.999354	27.883174	0	

Node Coordinates (Continued)

	Label	X [in]	Y [in]	Z [in]	Detach From Diaphragm
37	N63A	-15.0625	15	0	
38	N46	15.0625	15	30	
39	N41A	-51	33	55	
40	N42A	-51	33	-2	
41	N43	0	33	74	
42	N44	0	33	-22	
43	N45	51	33	43	
44	N47A	51	33	10	
45	N51	51	33	15	
46	N52A	15	-30	15	

Node Boundary Conditions

	Y [k/in]	X [k/in]	Z [k/in]	Node Label
1	Reaction	Reaction	Reaction	N2
2	Reaction	Reaction	Reaction	N1
3	Reaction	Reaction	Reaction	N52A

Basic Load Cases

	BLC Description	Category	Z Gravity	Nodal	Distributed
1	DEAD LOAD	None	-1	6	
2	DEAD LOAD ICE	None		6	18
3	WIND LOAD (NO ICE) FRONT	None		6	18
4	WIND LOAD (NO ICE) SIDE	None		6	18
5	WIND LOAD (ICE) FRONT	None		6	18
6	WIND LOAD (ICE) SIDE	None		6	18
7	LIVE LOAD1	None		1	
8	LIVE LOAD2	None		1	
9	LIVE LOAD3	None			
10	MAINTENANCE LOAD 1	None		1	
11	MAINTENANCE LOAD 2	None		1	
12	MAINTENANCE LOAD 3	None		1	
13	MAINTENANCE LOAD 4	None			

Node Loads and Enforced Displacements (BLC 1 : DEAD LOAD)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s ² /in, lb*s ² *in)]
1	N41A	L	Z	-12
2	N42A	L	Z	-12
3	N43	L	Z	-172
4	N44	L	Z	-172
5	N45	L	Z	-42
6	N47A	L	Z	-42

Node Loads and Enforced Displacements (BLC 2 : DEAD LOAD ICE)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s ² /in, lb*s ² *in)]
1	N41A	L	Z	-72
2	N42A	L	Z	-72
3	N43	L	Z	-318
4	N44	L	Z	-318
5	N45	L	Z	-88
6	N47A	L	Z	-88

Node Loads and Enforced Displacements (BLC 3 : WIND LOAD (NO ICE) FRONT)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s ² /in, lb*s ² *in)]
1	N41A	L	Y	104
2	N42A	L	Y	104
3	N43	L	Y	352
4	N44	L	Y	352
5	N45	L	Y	110

Node Loads and Enforced Displacements (BLC 3 : WIND LOAD (NO ICE) FRONT) (Continued)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s ² /in, lb*s ² *in)]
6	N47A	L	Y	110

Node Loads and Enforced Displacements (BLC 4 : WIND LOAD (NO ICE) SIDE)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s ² /in, lb*s ² *in)]
1	N41A	L	X	48
2	N42A	L	X	48
3	N43	L	X	211
4	N44	L	X	211
5	N45	L	X	51
6	N47A	L	X	51

Node Loads and Enforced Displacements (BLC 5 : WIND LOAD (ICE) FRONT)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s ² /in, lb*s ² *in)]
1	N41A	L	Y	29
2	N42A	L	Y	29
3	N43	L	Y	89
4	N44	L	Y	89
5	N45	L	Y	30
6	N47A	L	Y	30

Node Loads and Enforced Displacements (BLC 6 : WIND LOAD (ICE) SIDE)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s ² /in, lb*s ² *in)]
1	N41A	L	X	16
2	N42A	L	X	16
3	N43	L	X	62
4	N44	L	X	62
5	N45	L	X	15
6	N47A	L	X	15

Node Loads and Enforced Displacements (BLC 7 : LIVE LOAD1)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s ² /in, lb*s ² *in)]
1	N7	L	Z	-250

Node Loads and Enforced Displacements (BLC 8 : LIVE LOAD2)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s ² /in, lb*s ² *in)]
1	N5	L	Z	-250

Node Loads and Enforced Displacements (BLC 10 : MAINTENANCE LOAD 1)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s ² /in, lb*s ² *in)]
1	N36	L	Z	-500

Node Loads and Enforced Displacements (BLC 11 : MAINTENANCE LOAD 2)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s ² /in, lb*s ² *in)]
1	N42	L	Z	-500

Node Loads and Enforced Displacements (BLC 12 : MAINTENANCE LOAD 3)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s ² /in, lb*s ² *in)]
1	N38	L	Z	-500

Member Point Loads

No Data to Print...

Member Distributed Loads (BLC 2 : DEAD LOAD ICE)

	Member Label	Direction	Start Magnitude [lb/ft, F, ksf, k-ft/in]	End Magnitude [lb/ft, F, ksf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M32A	Z	-5	-5	0	%100
2	M31	Z	-5	-5	0	%100
3	M30	Z	-5	-5	0	%100
4	M29	Z	-5	-5	0	%100
5	M28	Z	-5	-5	0	%100
6	M25	Z	-5	-5	0	%100
7	M24	Z	-5	-5	0	%100
8	M23A	Z	-5	-5	0	%100
9	M23	Z	-9	-9	0	%100
10	M21	Z	-10	-10	0	%100
11	M19	Z	-9	-9	0	%100
12	M7	Z	-9	-9	0	%100
13	M5	Z	-9	-9	0	%100
14	M4	Z	-7	-7	0	%100
15	M3	Z	-7	-7	0	%100
16	M2	Z	-7	-7	0	%100
17	M1	Z	-7	-7	0	%100
18	M28A	Z	-9	-9	0	%100

Member Distributed Loads (BLC 3 : WIND LOAD (NO ICE) FRONT)

	Member Label	Direction	Start Magnitude [lb/ft, F, ksf, k-ft/in]	End Magnitude [lb/ft, F, ksf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M32A	PY	2	2	0	%100
2	M31	PY	2	2	0	%100
3	M30	PY	2	2	0	%100
4	M29	PY	2	2	0	%100
5	M28	PY	2	2	0	%100
6	M25	PY	2	2	0	%100
7	M24	PY	2	2	0	%100
8	M23A	PY	2	2	0	%100
9	M23	PY	8	8	0	%100
10	M21	PY	10	10	0	%100
11	M19	PY	8	8	0	%100
12	M7	PY	8	8	0	%100
13	M5	PY	8	8	0	%100
14	M4	PY	6	6	0	%100
15	M3	PY	6	6	0	%100
16	M2	PY	6	6	0	%100
17	M1	PY	6	6	0	%100
18	M28A	PY	8	8	0	%100

Member Distributed Loads (BLC 4 : WIND LOAD (NO ICE) SIDE)

	Member Label	Direction	Start Magnitude [lb/ft, F, ksf, k-ft/in]	End Magnitude [lb/ft, F, ksf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M32A	PX	2	2	0	%100
2	M31	PX	2	2	0	%100
3	M30	PX	2	2	0	%100
4	M29	PX	2	2	0	%100
5	M28	PX	2	2	0	%100
6	M25	PX	2	2	0	%100
7	M24	PX	2	2	0	%100
8	M23A	PX	2	2	0	%100
9	M23	PX	8	8	0	%100
10	M21	PX	10	10	0	%100
11	M19	PX	8	8	0	%100
12	M7	PX	8	8	0	%100
13	M5	PX	8	8	0	%100
14	M4	PX	6	6	0	%100
15	M3	PX	6	6	0	%100
16	M2	PX	6	6	0	%100

Member Distributed Loads (BLC 4 : WIND LOAD (NO ICE) SIDE) (Continued)

Member Label	Direction	Start Magnitude [lb/ft, F, ksf, k-ft/in]	End Magnitude [lb/ft, F, ksf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
17	M1	PX	6	6	0 %100
18	M28A	PX	8	8	0 %100

Member Distributed Loads (BLC 5 : WIND LOAD (ICE) FRONT)

Member Label	Direction	Start Magnitude [lb/ft, F, ksf, k-ft/in]	End Magnitude [lb/ft, F, ksf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M32A	PY	4.3	4.3	0 %100
2	M31	PY	4.3	4.3	0 %100
3	M30	PY	4.3	4.3	0 %100
4	M29	PY	4.3	4.3	0 %100
5	M28	PY	4.3	4.3	0 %100
6	M25	PY	4.3	4.3	0 %100
7	M24	PY	4.3	4.3	0 %100
8	M23A	PY	4.3	4.3	0 %100
9	M23	PY	6.1	6.1	0 %100
10	M21	PY	6.6	6.6	0 %100
11	M19	PY	6.1	6.1	0 %100
12	M7	PY	6.1	6.1	0 %100
13	M5	PY	6.1	6.1	0 %100
14	M4	PY	5.3	5.3	0 %100
15	M3	PY	5.3	5.3	0 %100
16	M2	PY	5.3	5.3	0 %100
17	M1	PY	5.3	5.3	0 %100
18	M28A	PY	6.1	6.1	0 %100

Member Distributed Loads (BLC 6 : WIND LOAD (ICE) SIDE)

Member Label	Direction	Start Magnitude [lb/ft, F, ksf, k-ft/in]	End Magnitude [lb/ft, F, ksf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M32A	PX	4.3	4.3	0 %100
2	M31	PX	4.3	4.3	0 %100
3	M30	PX	4.3	4.3	0 %100
4	M29	PX	4.3	4.3	0 %100
5	M28	PX	4.3	4.3	0 %100
6	M25	PX	4.3	4.3	0 %100
7	M24	PX	4.3	4.3	0 %100
8	M23A	PX	4.3	4.3	0 %100
9	M23	PX	6.1	6.1	0 %100
10	M21	PX	6.6	6.6	0 %100
11	M19	PX	6.1	6.1	0 %100
12	M7	PX	6.1	6.1	0 %100
13	M5	PX	6.1	6.1	0 %100
14	M4	PX	5.3	5.3	0 %100
15	M3	PX	5.3	5.3	0 %100
16	M2	PX	5.3	5.3	0 %100
17	M1	PX	5.3	5.3	0 %100
18	M28A	PX	6.1	6.1	0 %100

Member Area Loads

No Data to Print...

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	DL + WL (NO ICE) 0 Degree	Yes	Y	1	1.2			3	1.6		
2	DL + WL (NO ICE) 30 Degree	Yes	Y	1	1.2			3	1.386	4	0.8
3	DL + WL (NO ICE) 60 Degree	Yes	Y	1	1.2			3	0.8	4	1.386
4	DL + WL (NO ICE) 90 Degree	Yes	Y	1	1.2					4	1.6
5	DL + WL (NO ICE) 120 Degree	Yes	Y	1	1.2			3	-0.8	4	1.386
6	DL + WL (NO ICE) 150 Degree	Yes	Y	1	1.2			3	-1.386	4	0.8
7	DL + WL (NO ICE) 180 Degree	Yes	Y	1	1.2			3	-1.6		
8	DL + WL (NO ICE) 210 Degree	Yes	Y	1	1.2			3	-1.386	4	-0.8
9	DL + WL (NO ICE) 240 Degree	Yes	Y	1	1.2			3	-0.8	4	-1.386
10	DL + WL (NO ICE) 270 Degree	Yes	Y	1	1.2					4	-1.6
11	DL + WL (NO ICE) 300 Degree	Yes	Y	1	1.2			3	0.8	4	-1.386

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
12	DL + WL (NO ICE) 330 Degree	Yes	Y	1	1.2			3	1.386	4	-0.8
13	DL + DL ICE + WL (ICE) 0 Degree	Yes	Y	1	1.2	2	1	5	1		
14	DL + DL ICE + WL (ICE) 30 Degree	Yes	Y	1	1.2	2	1	5	0.866	6	0.5
15	DL + DL ICE + WL (ICE) 60 Degree	Yes	Y	1	1.2	2	1	5	0.5	6	0.866
16	DL + DL ICE + WL (ICE) 90 Degree	Yes	Y	1	1.2	2	1			6	1
17	DL + DL ICE + WL (ICE) 120 Degree	Yes	Y	1	1.2	2	1	5	-0.5	6	0.866
18	DL + DL ICE + WL (ICE) 150 Degree	Yes	Y	1	1.2	2	1	5	-0.866	6	0.5
19	DL + DL ICE + WL (ICE) 180 Degree	Yes	Y	1	1.2	2	1	5	-1		
20	DL + DL ICE + WL (ICE) 210 Degree	Yes	Y	1	1.2	2	1	5	-0.866	6	-0.5
21	DL + DL ICE + WL (ICE) 240 Degree	Yes	Y	1	1.2	2	1	5	-0.5	6	-0.866
22	DL + DL ICE + WL (ICE) 270 Degree	Yes	Y	1	1.2	2	1			6	-1
23	DL + DL ICE + WL (ICE) 300 Degree	Yes	Y	1	1.2	2	1	5	0.5	6	-0.866
24	DL + DL ICE + WL (ICE) 330 Degree	Yes	Y	1	1.2	2	1	5	0.866	6	-0.5
25	DEAD LOAD + LIVE LOAD1	Yes	Y	1	1.2					7	1.5
26	DEAD LOAD + LIVE LOAD2	Yes	Y	1	1.2					8	1.5
27	DEAD LOAD + LIVE LOAD3	Yes	Y	1	1.2					9	1.5
28	DL + MAIN L1+30MPH WL FRONT	Yes	Y	1	1.2	10	1.5	3	0.082		
29	DL + MAIN L2+30MPH WL FRONT	Yes	Y	1	1.2	11	1.5	3	0.082		
30	DL + MAIN L3+30MPH WL FRONT	Yes	Y	1	1.2	12	1.5	3	0.082		
31	DL + MAIN L4+30MPH WL FRONT	Yes	Y	1	1.2	13	1.5	3	0.082		
32	DL + MAIN L1+30MPH WL SIDE	Yes	Y	1	1.2	10	1.5	4	0.082		
33	DL + MAIN L2+30MPH WL SIDE	Yes	Y	1	1.2	11	1.5	4	0.082		
34	DL + MAIN L3+30MPH WL SIDE	Yes	Y	1	1.2	12	1.5	4	0.082		
35	DL + MAIN L4+30MPH WL SIDE	Yes	Y	1	1.2	13	1.5	4	0.082		
36	DL + MAIN L1+30MPH WL FRONT (REVERSED)	Yes	Y	1	1.2	10	1.5	3	-0.082		
37	DL + MAIN L2+30MPH WL FRONT (REVERSED)	Yes	Y	1	1.2	11	1.5	3	-0.082		
38	DL + MAIN L3+30MPH WL FRONT (REVERSED)	Yes	Y	1	1.2	12	1.5	3	-0.082		
39	DL + MAIN L4+30MPH WL FRONT (REVERSED)	Yes	Y	1	1.2	13	1.5	3	-0.082		
40	DL + MAIN L1+30MPH WL SIDE (REVERSED)	Yes	Y	1	1.2	10	1.5	4	-0.082		
41	DL + MAIN L2+30MPH WL SIDE (REVERSED)	Yes	Y	1	1.2	11	1.5	4	-0.082		
42	DL + MAIN L3+30MPH WL SIDE (REVERSED)	Yes	Y	1	1.2	12	1.5	4	-0.082		
43	DL + MAIN L4+30MPH WL SIDE (REVERSED)	Yes	Y	1	1.2	12	1.5	4	-0.082		

Envelope Node Reactions

Node Label	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1 N2 max	1485.78	10	1234.607	8	1318.173	18	0	43	0	43	0	43
2 min	-1780.689	4	-3112.685	14	146.766	12	0	1	0	1	0	1
3 N1 max	1459.059	43	2920.33	20	1322.177	24	0	43	0	43	0	43
4 min	-1171.982	32	-84.771	3	158.926	6	0	1	0	1	0	1
5 N52A max	863.278	4	1539.967	4	40.187							

Envelope Node Displacements (Continued)

Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC	
18		min	-0.546	10	-0.549	10	-0.054	28	-3.352e-3	7	-2.681e-3	40	-2.758e-2	4
19	N12	max	0.551	4	0.553	4	-0.005	34	7.1e-3	7	3.975e-3	41	2.934e-2	10
20		min	-0.571	10	-0.57	10	-0.051	40	-7.888e-3	1	-2.684e-3	32	-2.81e-2	4
21	N13	max	0.52	4	1.105	4	0.023	5	2.107e-3	12	9.667e-4	26	2.955e-2	10
22		min	-0.546	10	-1.158	10	-0.13	40	-2.753e-3	6	-3.14e-3	25	-2.836e-2	4
23	N14	max	0.551	4	1.145	4	0.019	3	5.345e-3	7	1.975e-3	3	2.95e-2	10
24		min	-0.571	10	-1.183	10	-0.129	40	-5.948e-3	1	-2.596e-3	40	-2.866e-2	4
25	N17	max	0.52	4	0.229	10	-0.028	7	3.704e-3	1	1.281e-3	10	2.107e-2	10
26		min	-0.546	10	-0.23	4	-0.142	29	-4.708e-3	7	-1.175e-3	4	-2.01e-2	4
27	N18	max	0.551	4	0.253	11	-0.034	1	1.04e-2	7	3.536e-3	4	2.17e-2	10
28		min	-0.571	10	-0.236	5	-0.141	37	-1.138e-2	1	-3.329e-3	10	-2.085e-2	4
29	N21	max	0.52	4	0.346	10	0.001	37	3.199e-3	10	3.637e-3	26	1.103e-2	4
30		min	-0.546	10	-0.335	4	-0.145	30	-3.583e-3	5	-1.078e-3	10	-1.188e-2	10
31	N22	max	0.551	4	0.38	10	0.014	11	6.676e-3	5	2.762e-3	34	1.135e-2	3
32		min	-0.571	10	-0.365	4	-0.146	34	-7.034e-3	11	-6.984e-4	11	-1.204e-2	9
33	N23	max	0.605	4	1.105	4	0.016	33	2.107e-3	12	9.667e-4	26	2.955e-2	10
34		min	-0.635	10	-1.158	10	-0.13	40	-2.753e-3	6	-3.14e-3	25	-2.836e-2	4
35	N24	max	0.637	4	1.145	4	0.016	33	5.345e-3	7	1.975e-3	3	2.95e-2	10
36		min	-0.66	10	-1.183	10	-0.13	40	-5.948e-3	1	-2.596e-3	40	-2.866e-2	4
37	N27	max	0.58	4	0.229	10	-0.037	36	3.704e-3	1	1.281e-3	10	2.107e-2	10
38		min	-0.609	10	-0.23	4	-0.145	29	-4.708e-3	7	-1.175e-3	4	-2.01e-2	4
39	N28	max	0.614	4	0.253	11	-0.037	36	1.04e-2	7	3.536e-3	4	2.17e-2	10
40		min	-0.636	10	-0.236	5	-0.145	29	-1.138e-2	1	-3.329e-3	10	-2.085e-2	4
41	N31	max	0.487	4	0.346	10	0.001	41	3.199e-3	10	3.637e-3	26	1.103e-2	4
42		min	-0.511	10	-0.335	4	-0.146	34	-3.583e-3	5	-1.078e-3	10	-1.188e-2	10
43	N32	max	0.518	4	0.38	10	0.001	41	6.676e-3	5	2.762e-3	34	1.135e-2	3
44		min	-0.537	10	-0.365	4	-0.145	34	-7.034e-3	11	-6.984e-4	11	-1.204e-2	9
45	N33	max	0.823	4	1.315	3	0.016	33	1.004e-2	7	4.709e-3	4	2.95e-2	10
46		min	-0.828	10	-1.343	9								

Envelope Node Displacements (Continued)

Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC	
83	N44	max	0.65	4	0.279	11	-0.037	36	8.265e-3	1	4.226e-3	10	2.107e-2	10
84		min	-0.681	10	-0.309	5	-0.145	29	-9.268e-3	7	-4.12e-3	4	-2.01e-2	4
85	N45	max	0.537	4	0.453	10	0.001	41	7.933e-3	6	2.824e-3	34	1.135e-2	3
86		min	-0.553	10	-0.43	4	-0.145	34	-8.222e-3	12	-1.728e-3	11	-1.204e-2	9
87	N47A	max	0.508	4	0.315	10	0.001	41	1.655e-3	10	1.984e-3	4	1.104e-2	4
88		min	-0.529	10	-0.304	4	-0.146	34	-1.702e-3	4	-1.813e-3	10	-1.179e-2	10
89	N51	max	0.516	4	0.313	10	0.001	41	1.485e-3	26	1.006e-3	5	1.105e-2	4
90		min	-0.537	10	-0.301	4	-0.146	34	-1.402e-3	11	-1.008e-3	25	-1.174e-2	10
91	N52A	max	0	10	0	10	0	4	9.967e-5	5	1.887e-3	26	9.441e-3	10
92		min	0	4	0	4	0	22	-1.871e-3	23	-1.02e-3	11	-9.12e-3	4

Envelope AISC 14TH (360-10): LRFD Member Steel Code Checks

Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn	
1	M32A	SR 5/8"	0.074	0	28	0.008	30	4	3836.923	9940.19	0.104	0.104	1.136	H1-1b*
2	M31	SR 5/8"	0.631	16.828	40	0.018	35.119	6	2799.905	9940.19	0.104	0.104	1.136	H1-1a
3	M30	SR 5/8"	0.174	0	40	0.007	35.119	3	2799.915	9940.19	0.104	0.104	1.136	H1-1b*
4	M29	SR 5/8"	0.164	30	24	0.007	30	4	3836.923	9940.19	0.104	0.104	1.136	H1-1b*
5	M28	SR 5/8"	0.075	30	17	0.007	30	5	3836.923	9940.19	0.104	0.104	1.136	H1-1b*
6	M25	SR 5/8"	0.243	14.375	17	0.006	30	4	3836.923	9940.19	0.104	0.104	1.136	H1-1a
7	M24	SR 5/8"	0.704	17.194	15	0.007	35.119	1	2799.915	9940.19	0.104	0.104	1.136	H1-1a
8	M23A	SR 5/8"	0.193	35.119	34	0.018	35.119	11	2799.905	9940.19	0.104	0.104	1.136	H1-1b*
9	M23	PIPE 2.0	0.29	75	1	0.062	75	1	9836.597	32130	1.872	1.872	2.047	H1-1b
10	M21	PIPE 2.5	0.616	75	1	0.05	75	6	22373.407	50715	3.596	3.596	1.662	H1-1b
11	M19	PIPE 2.0	0.493	60	10	0.116	60	11	9836.597	32130	1.872	1.872	1.923	H1-1b
12	M7	PIPE 2.0	0.697	93.188	10	0.144	93.188	9	8922.084	32130	1.872	1.872	1.626	H1-1b
13	M5	PIPE 2.0	0.776	93.188	9	0.2	93.188	3	8922.084	32130	1.872	1.872	1.858	H1-1b
14	M4	PIPE 1.25	0.218	3.1	28	0.132	39.858	28	14378.634	19687.5	0.801	0.801	1.293	H1-1b
15	M3	PIPE 1.25	0.233	39.415	40	0.153	0	36	14378.634	19687.5	0.801	0.801	1.284	H1-1b
16	M2													

Exhibit F

Power Density/RF Emissions Report



Radio Frequency Emissions Analysis Report



Site ID: CTNL058A

NL058/RedWolf_ET
889A Colonel Ledyard Highway
Ledyard, CT 06339

August 15, 2022

Fox Hill Telecom Project Number: 221584

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	10.45 %

August 15, 2022

T-MOBILE
Attn: RF Manager
35 Griffin Road South
Bloomfield, CT 06009

Emissions Analysis for Site: **CTNL058A – NL058/RedWolf_ET**

Fox Hill Telecom, Inc (“Fox Hill”) was directed to analyze the proposed upgrades to the T-MOBILE facility located at **889A Colonel Ledyard Highway, Ledyard, CT**, 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ 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.

General population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 600 MHz & 700 MHz bands are approximately $400 \mu\text{W}/\text{cm}^2$ and $467 \mu\text{W}/\text{cm}^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2500 MHz (BRS) bands is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed upgrades to the T-MOBILE antenna facility located at **889A Colonel Ledyard Highway, Ledyard, CT**, 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 manufactures supplied specifications, minus 10 dB for directional panel antennas, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

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

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

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
LTE / 5G NR	600 MHz	2	40
LTE	700 MHz	2	20
LTE	1900 MHz (PCS)	4	40
GSM	1900 MHz (PCS)	1	15
LTE	2100 MHz (AWS)	4	40
LTE / 5G NR	2500 MHz (BRS)	8	20

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz, 700 MHz, 1900 MHz (PCS), 2100 MHz (AWS) and 2500 MHz (BRS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	RFS APXVAALL24_43-U-NA20	185
A	2	Commscope VV-65A-R1	185
A	3	Ericsson AIR6419 B41	185
B	1	RFS APXVAALL24_43-U-NA20	185
B	2	Commscope VV-65A-R1	185
B	3	Ericsson AIR6419 B41	185
C	1	RFS APXVAALL24_43-U-NA20	185
C	2	Commscope VV-65A-R1	185
C	3	Ericsson AIR6419 B41	185

Table 2: Antenna Data

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



RESULTS

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

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz	13.65 / 13.85	4	120	2,824.56	0.75
Antenna A2	Commscope VV-65A-R1	1900 MHz (PCS) / 2100 MHz (AWS)	15.55 / 16.05	9	335	12,724.61	1.42
Antenna A3	Ericsson AIR6419 B41	2500 MHz (BRS)	21.5	8	160	22,600.60	2.54
Sector A Composite MPE%							4.71
Antenna B1	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz	13.65 / 13.85	4	120	2,824.56	0.75
Antenna B2	Commscope VV-65A-R1	1900 MHz (PCS) / 2100 MHz (AWS)	15.55 / 16.05	9	335	12,724.61	1.42
Antenna B3	Ericsson AIR6419 B41	2500 MHz (BRS)	21.5	8	160	22,600.60	2.54
Sector B Composite MPE%							4.71
Antenna C1	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz	13.65 / 13.85	4	120	2,824.56	0.75
Antenna C2	Commscope VV-65A-R1	1900 MHz (PCS) / 2100 MHz (AWS)	15.55 / 16.05	9	335	12,724.61	1.42
Antenna C3	Ericsson AIR6419 B41	2500 MHz (BRS)	21.5	8	160	22,600.60	2.54
Sector C Composite MPE%							4.71

Table 3: T-MOBILE Emissions Levels

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

Site Composite MPE%	
Carrier	MPE%
T-MOBILE – Max Per Sector Value	4.71 %
Red Wolf, WERI	0.57 %
Marcus	0.14 %
Arch	0.09 %
Nextel	0.11 %
Sprint	1.13 %
AT&T	2.00 %
Verizon Wireless	1.70 %
Site Total MPE %:	10.45 %

Table 4: All Carrier MPE Contributions

T-MOBILE Sector A Total:	4.71 %
T-MOBILE Sector B Total:	4.71 %
T-MOBILE Sector C Total:	4.71 %
Site Total:	10.45 %

Table 5: Site MPE Summary



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

T-MOBILE _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile 600 MHz LTE / 5G NR	2	926.96	185	2.08	600 MHz	400	0.52%
T-Mobile 700 MHz LTE	2	485.32	185	1.09	700 MHz	467	0.23%
T-Mobile 1900 MHz (PCS) LTE	4	1,435.69	185	6.44	1900 MHz (PCS)	1000	0.64%
T-Mobile 1900 MHz (PCS) GSM	1	538.38	185	0.60	1900 MHz (PCS)	1000	0.06%
T-Mobile 2100 MHz (AWS) LTE	4	1,610.87	185	7.23	2100 MHz (AWS)	1000	0.72%
T-Mobile 2500 MHz (BRS) LTE / 5G NR	8	2,825.08	185	25.36	2500 MHz (BRS)	1000	2.54%
						Total:	4.71%

Table 6: T-MOBILE Maximum Sector MPE Power Values

Summary

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

The anticipated maximum composite contributions from the 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:	4.71 %
Sector B:	4.71 %
Sector C:	4.71 %
T-MOBILE Maximum Total (per sector):	4.71 %
Site Total:	10.45 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **10.45 %** 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.

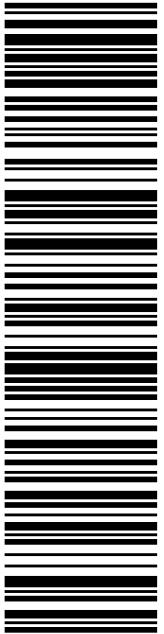
FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100%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



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Exhibit G

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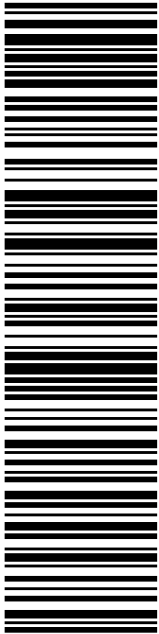
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To: FRED ALLYN, III MAYOR TOWN OF LEDYARD 741 COLONEL LEDYARD HWY LEDYARD CT 06339-1511	
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PRIORITY MAIL®		Expected Delivery Date: 08/20/22 Ref#: CTNL058A 0000	
DEBORAH CHASE NORTHEAST SITE SOLUTIONS STE 1 420 MAIN ST STURBRIDGE MA 01566-1359			
JULIET HODGE, PLANNING DIRECTOR TOWN OF LEDYARD 741 COLONEL LEDYARD HWY LEDYARD CT 06339-1511			
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Total: **\$8.95**

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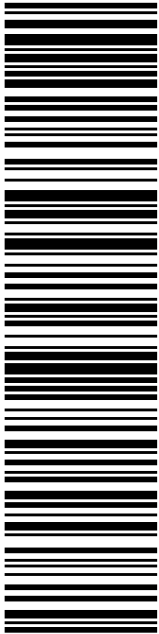
Ref#: CTNL058A

To: JULIET HODGE, PLANNING DIRECTOR
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From: DEBORAH CHASE NORTHEAST SITE SOLUTIONS STE 1 420 MAIN ST STURBRIDGE MA 01566-1359	
To: JOHN J. FULLER RED WOLF BROADCASTING PO BOX 357 LEDYARD CT 06339-0357	
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