1 NDUSTRIAL AVE,
S E 3
M IWAH NJ 07430

P NE: 201.684.0055
F 201.684.0066

Transcend Wireless

June 10th, 2022

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

RE: Notice of Exempt Modification
Andrews Road, Wolcott, CT 06617
Latitude: 41.611770000
Longitude: -73.0045000
T-Mobile Site#: CT11403A - Anchor

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 77-foot level of the existing 80-foot lattice tower on Andrews Road, Wolcott, CT. The 80-foot lattice tower is owned and operated by Everest Infrastructure Partners. The property is owned by Frontier Communications. T-Mobile now intends to remove and replace (6) antennas at the 77-foot level of the tower. These antennas will support 5G services.

Planned Modifications:
Tower:
Install New:
(3) Ericsson AIR 6419 B41 Antennas
(3) Commscope VV-65A-R1 Antennas
(3) Radio 4460 B25 B66
(1) 6x24 Hybrid Cables

To Be Removed:
(6) AIR21 Antennas
All Existing TMAs and Diplexers
Remove Existing Coax Cables
(1) 9x18 Hybrid Cable

Ground:
Install (1) 6230 Power Enclosure, (1) 6230 Battery Rack, and (1) 200A Electrical Panel. Remove existing PBC 6200 Cabinet.

This facility was originally approved by the Council in Petition No. 67 on March 26, 1981. This modification will not break any of the conditions set forth in this approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.SA. § 16-SOj-73, a copy of this letter is being sent to Mayor Thomas Dunn, Elected Official, and David Kalinowski, Zoning Inspector, as well as the tower and property 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,

Eric Breun
Transcend Wireless
Cell: 201-658-7728
Email: ebreun@transcendwireless.com

Attachments
cc: Thomas Dunn - Mayor of Wolcott
David Kalinowski - Zoning Inspector
Everest Infrastructure Partners - Tower Owner
Frontier Communications - Property Owner

ERIC BREUN
2016587728
1 INTERNATIONAL BLVD.
MAHWAH NJ 07495

1 LBS

1 OF 1

SHIP TO:
MAYOR THOMAS DUNN
10 KENEA AVENUE
WOLCOTT CT 06716

CT 067 9-05

UPS GROUND
TRACKING #: 1Z V25 742 03 9806 8489

BILLING: P/P

Reference #1: CT11403A

XOL 22.05.57 NV45 24.0A 06/2022*

ERIC BREUN
2016587728
1 INTERNATIONAL BLVD.
MAHWAH NJ 07495

1 LBS

1 OF 1

SHIP TO:
ZONING INSPECTOR
DAVID KALINOWSKI
10 KENEA AVENUE
WOLCOTT CT 06716

CT 067 9-05

UPS GROUND
TRACKING #: 1Z V25 742 03 9505 8496

BILLING: P/P

Reference #1: CT11403A

XOL 22.05.57 NV45 24.0A 06/2022*

ERIC BREUN
2016587728
1 INTERNATIONAL BLVD.
MAHWAH NJ 07495

1 LBS

1 OF 1

SHIP TO:
FRONTIER COMMUNICATIONS
SOUTHERN NEW END TEL CO
401 MERRITT 7
NORWALK CT 06851

CT 069 9-04

UPS GROUND
TRACKING #: 1Z V25 742 03 9249 1022

BILLING: P/P

Reference #1: CT11403A

XOL 22.05.57 NV45 24.0A 06/2022*

ERIC BREUN
2016587728
1 INTERNATIONAL BLVD.
MAHWAH NJ 07495

1 LBS

1 OF 1

SHIP TO:
EVEREST INFRASTRUCTURE PARTNERS
SUITE 703
NOVA TOWER 2
2 ALLEGHENY CENTER
ALLEGHENY PA 15212

PA 152 9-42

UPS GROUND
TRACKING #: 1Z V25 742 03 9609 8478

BILLING: P/P

Reference #1: CT11403A

XOL 22.05.57 NV45 24.0A 06/2022*

Hello, your package has been delivered.

Delivery Date: Wednesday, 06/08/2022

Delivery Time: 11:31 AM

Signed by: FRONT DOOR

TRANSCEND WIRELESS

Tracking Number:	1ZV257420392491022
Ship To:	SOUTHERN NEW END TEL CO 401 MERRITT 7 NORWALK, CT 06851 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CT11403A

Hello, your package has been delivered.

Delivery Date: Wednesday, 06/08/2022

Delivery Time: 2:44 PM

Signed by: KALINOWKI

TRANSCEND WIRELESS

Tracking Number:	1ZV257420395058496
Ship To:	DAVID KALINOWSKI 10 KENEA AVENUE WOLCOTT, CT 06716 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CT11403A

Hello, your package has been delivered.

Delivery Date: Wednesday, 06/08/2022

Delivery Time: 2:46 PM

Signed by: DESAULINERS

TRANSCEND WIRELESS

Tracking Number:	1ZV257420398068489
Ship To:	MAYOR THOMAS DUNN 10 KENEA AVENUE WOLCOTT, CT 06716 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CT11403A

Hello, your package has been delivered.

Delivery Date: Thursday, 06/09/2022

Delivery Time: 10:16 AM

Signed by: DOYLE

TRANSCEND WIRELESS

Tracking Number:	1ZV257420396098478
Ship To:	EVEREST INFRASTRUCTURE PARTNERS 2 ALLEGHENY CENTER NOVA TOWER 2 SUITE 703 ALLEGHENY, PA 15212 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CT11403A

ANDREWS RD

Sales | Print | Map It

Location	ANDREWS RD	**Mblu**	106/ 1/ 42B/ /
Acct#	S0522200	**Owner**	SOUTHERN NEW ENG TEL CO
Assessment	$210,410	**Appraisal**	$300,590
PID	5792	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$70,090	$230,500	$300,590
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$49,060	$161,350	$210,410

Owner of Record

Owner	SOUTHERN NEW ENG TEL CO	**Sale Price**	$0
Co-Owner	C/O FRONTIER COMMUNICATIONS	**Certificate**	
Address	401 MERRITT 7 TAX DEPT NORWALK , CT 06851	**Book & Page**	0059/0443
		Sale Date	10/17/1957
		Instrument	25

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
SOUTHERN NEW ENG TEL CO	$0		0059/0443	25	10/17/1957

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0
Replacement Cost: $0
Building Percent Good:
Replacement Cost Less Depreciation: $0

Building Attributes	
Field	**Description**
Style	Outbuildings
Model	
Grade:	
Stories	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Percent	
Total Bedrooms:	
Full Bthrms:	
Half Baths:	

Building Photo

Building Layout

Building Layout

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code 202
Description Comm w/OB
Zone R-30
Neighborhood CGEN
Alt Land Appr No
Category

Land Line Valuation

Size (Acres) 0.92
Frontage
Depth
Assessed Value $161,350
Appraised Value $230,500

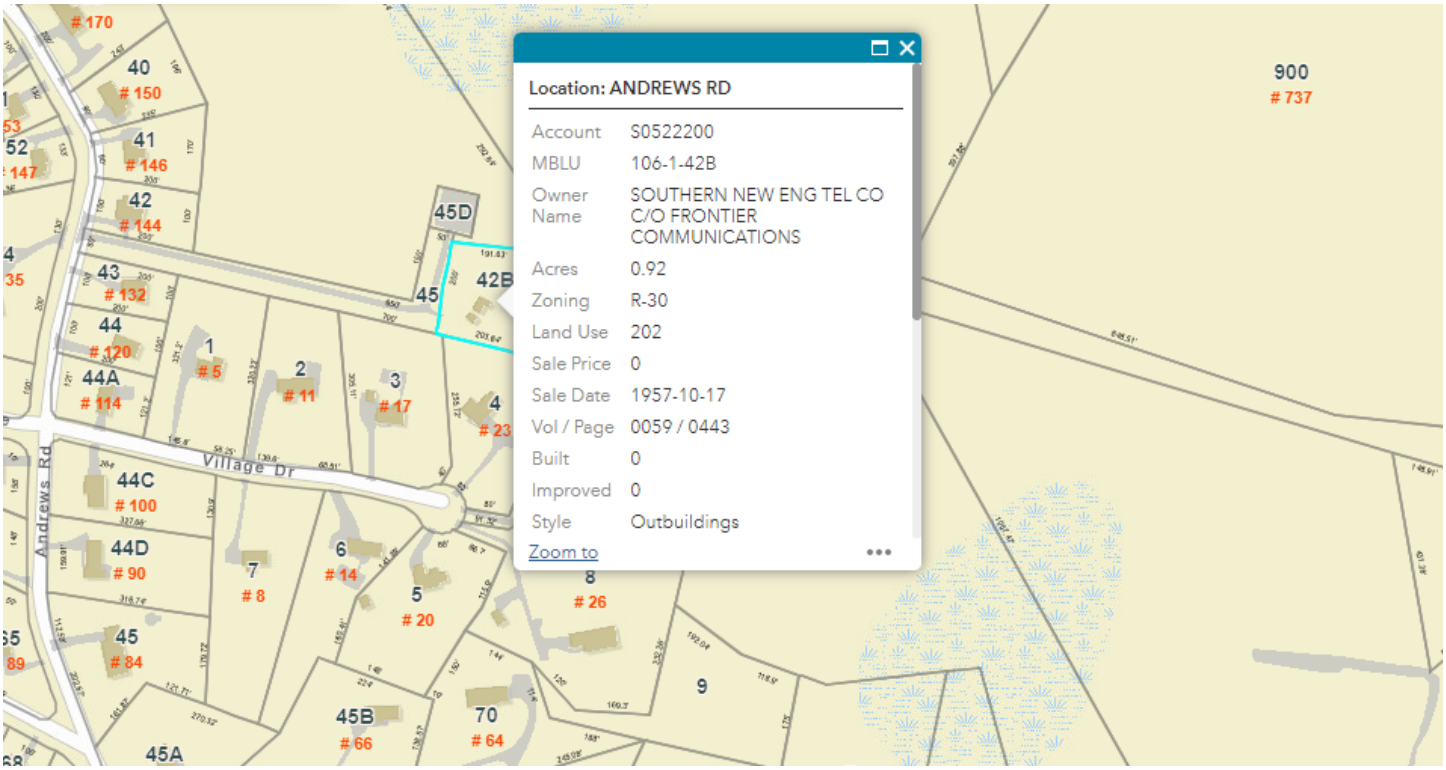
Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
FN5	FENCE-10'CHAIN			365.00 L.F.	$3,830	1
CELL	Cell	SH	Cell Shed	221.00 S.F.	$24,860	1
CELL	Cell	SH	Cell Shed	368.00 S.F.	$41,400	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2020	$70,090	$97,000	$167,090
2019	$70,090	$97,000	$167,090
2018	$70,090	$97,000	$167,090

Assessment			
Valuation Year	Improvements	Land	Total
2020	$49,060	$67,900	$116,960
2019	$49,060	$67,900	$116,960
2018	$49,060	$67,900	$116,960


Location: ANDREWS RD
Account S0522200
MBLU 106-1-42B
Owner Name SOUTHERN NEW ENG TEL CO C/O FRONTIER COMMUNICATIONS
Acres 0.92
Zoning R-30
Land Use 202
Sale Price 0
Sale Date 1957-10-17
Vol / Page 0059 / 0443
Built 0
Improved 0
Style Outbuildings
Zoom to
Village Dr
Andrews Rd
900
737
45D
42B
45
170
40
150
41
146
42
144
43
132
44
120
44A
114
1
5
2
11
3
17
4
23
44C
100
44D
90
45
84
45A
7
8
6
14
5
20
8
26
9
45B
66
70
64

STATE OF CONNECTICUT

DEPARTMENT OF BUSINESS REGULATION

POWER FACILITY EVALUATION COUNCIL

Petition No. 67
Wolcott, Connecticut
March 26, 1981

Mr. Doocy, Mr. Clapp, Mr. Wood, and Mr. Reid met Mr. Kischell and Mr. Bailey of the Southern New England Telephone Company to review the first half of Petition No. 67. Telecommunication facilities were viewed in Wolcott, Waterbury, and Meriden. The second half of Petition No. 67 involves facilities in Shelton, Norwalk, and Bridgeport. These were reviewed on March 31, 1981.

The first half of this petition involves the following changes at the Barry Avenue site in Wolcott: (a) replacing an existing 90 foot tall triangular lattice steel tower with an 80 foot tall square lattice steel tower; (b) replacing two microwave dishes and two reflectors with four new microwave dishes; (c) adding a 12' x 16' concrete radio building and a new fuel storage tank at the base of the tower and extending the fence to encompass the new facilities. Additional changes include: (d) adding two microwave antennae to the Waterbury East Tower in Waterbury and another concrete radio building; and (e) adding one microwave antenna to the West Peak tower in Meriden.

The Wolcott site is in a single family dwelling residential area near the top of Clinton Hill. The tower is visible from several locations within the area. The tower base and radio building are partially screened by vegetation from the nearest residence and are not visible from other residences. The new tower will be located several feet northeast of the existing tower at approximately the same ground elevation. The proposed tower will be 80 feet tall and more narrow than the existing tower; it will be square instead of triangular. The new microwave antennae are to be mounted on a platform at the top of the tower.

The soil appears shallow but stable, and a few bedrock outcrops appear on the site. The proposed tower will require new foundations which will be set in soil or bedrock. If the soil is too shallow or the bedrock unsuitable, some blasting may be necessary.

A new concrete building will be constructed at the base of the tower and will accomodate the generator used for emergency power. The existing fence will be extended to enclose this facility.

The existing tower will remain in place for approximately six months or until the new facility is operating properly. Then the existing tower will be dismantled and removed.

According to the SNETCO representatives, this proposal has been approved by the Wolcott Planning and Zoning Commission.

The Waterbury East tower is located adjacent to a water tower and several other cable TV or telecommunication towers on top of Long Hill in Waterbury. The site is surrounded by single and multiple family dwellings, commercial, and industrial properties. Both the telecommunication tower and the water tower are visible

from many viewpoints in the Waterbury area. Two microwave antennae are to be mounted at the 80 foot level to the existing 90 foot tower. Once the new facilities are operating, two narrow 80 foot tall towers presently on the site can be removed. These two towers now support reflectors which relay signals from the Waterbury central office to Wolcott. A new radio building will be constructed at the base of the tower and the existing fence will be extended to surround this new building. The radio building will house an emergency generator, the new radio equipment, and future radio equipment when existing facilities are replaced. An existing building presently storing a temporary generator may be removed after the new building is constructed. According to SNETCO representatives, this proposal has received planning and zoning approval.

The Meriden tower is adjacent to West Peak State Park and several telecommunication towers on the top of West Peak. The existing telecommunication facilities on West Peak are relatively well screened from most locations within the state park, but they are a prominent feature on the ridge top as seen from viewpoints in the Meriden area and can be seen up to many miles away on clear days.

The telephone company's tower presently supports seven microwave antennae. SNETCO proposes to add one microwave dish to the existing tower at the 90 foot level to complete a route from Meriden to the Wolcott Tower. The existing North Branform to Wolcott route will be eliminated, and an antenna at the North Branford tower may be removed when the Meriden to Wolcott route is in service. No additional buildings are proposed at this site.

Duncan C. Reid
Environmentalist
March 30, 1981

STATE OF CONNECTICUT

DEPARTMENT OF BUSINESS REGULATION

POWER FACILITY EVALUATION COUNCIL

Petition No. 67
Norwalk, Connecticut
March 31, 1981

Commissioner Boucher, Mr. Clapp, Christopher Wood and Duncan Reid met Mr. Bailey and Mr. Kischell of the Southern New England Telephone Company to review the second part of Petition No. 67 which involved facilities in Norwalk, Bridgeport, and Shelton. The first part of this petition involves facilities located in Wolcott, Waterbury, and Meriden which were visited on Thursday, March 26th.

In Norwalk one dish is to be mounted on an existing 350 foot tower located at a telephone company service center immediately north of Route 1. The dish will be directed toward the existing tower in Bridgeport. The general area around the Norwalk site appears to be commercial, residential, and industrial. The tower is visible from many locations in the area.

The Bridgeport tower (40 feet tall) is located on top of the Central Office Building in downtown Bridgeport. One dish will be mounted at approximately the 30 foot level and directed tower the new dish in Norwalk. The location of the tower on top of the office building diminishes its visual impact.

The 181 foot tower in Shelton is located in a rural residential area. One 5 foot dish will be removed and a 12 foot dish mounted in the same location and directed toward an existing facility in Derby. A new and large dish is required in Shelton to prevent interference with transmissions from Shelton to New Haven. This tower is visible from selected locations within the immediate area and from some distant viewpoints.

No additional radio buildings, generators, or fuel tanks, are planned for the facilities in Norwalk, Bridgeport, and Shelton.

Duncan C. Reid
Environmentalist
March 31, 1981

Phone 566-5612
State Office Building — Hartford, Connecticut 06115

SITE NAME: WOLCOTT/ ANDREWS RD._1

SITE ID: CT11403A

ANDREWS RD

WOLCOTT, CT 06716

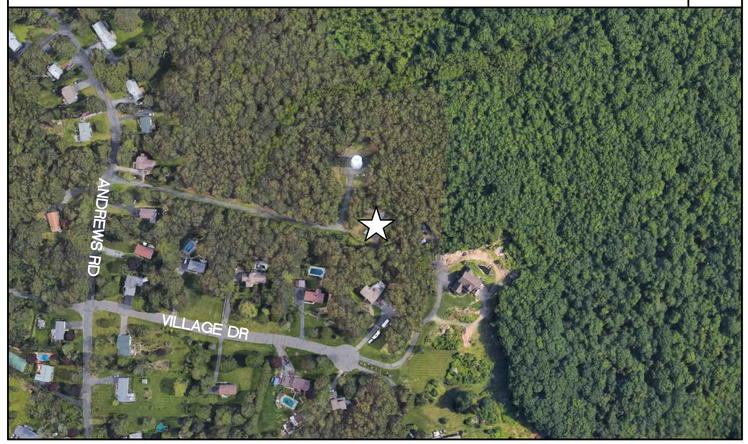
T-MOBILE A/L TEMPLATE (PROVIDED BY RFDS)
67D5998E_1xAIR+1OP+1QP

T-MOBILE RAN TEMPLATE (PROVIDED BY RFDS)
67D5D998E INDOOR

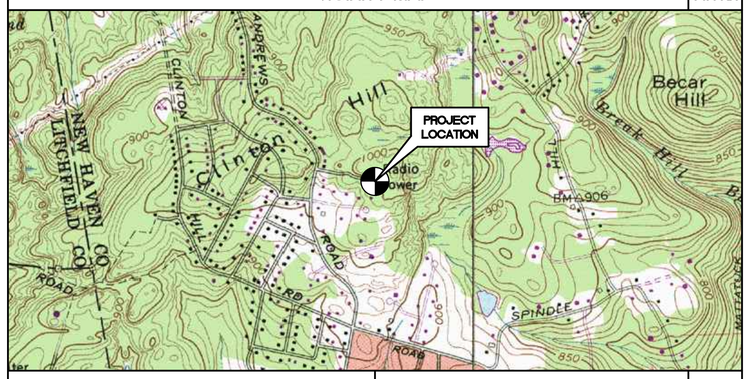
GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2015 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2018 CONNECTICUT SUPPLEMENT, INCLUDING THE TIA/EIA-222 REVISION "G" "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES." 2017 CONNECTICUT FIRE SAFETY CODE, NATIONAL ELECTRICAL CODE AND LOCAL CODES.
2. SHOULD ANY FIELD CONDITIONS PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH ANY AFFECTED WORK.
3. CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
4. BEFORE BEGINNING THE WORK, THE CONTRACTOR IS RESPONSIBLE FOR MAKING SUCH INVESTIGATIONS CONCERNING PHYSICAL CONDITIONS (SURFACE AND SUBSURFACE) AT OR CONTIGUOUS TO THE SITE, WHICH MAY AFFECT PERFORMANCE AND COST OF THE WORK.
5. ALL DIMENSIONS, ELEVATIONS, AND OTHER REFERENCES TO EXISTING STRUCTURES, SURFACE, AND SUBSURFACE CONDITIONS ARE APPROXIMATE. NO GUARANTEE IS MADE FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS, ELEVATIONS AND ANGLES WITH EXISTING CONDITIONS AND WITH ARCHITECTURAL AND SITE DRAWINGS BEFORE PROCEEDING WITH ANY WORK.
6. AS THE WORK PROGRESSES, THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY CONDITIONS WHICH ARE IN CONFLICT OR OTHERWISE NOT CONSISTENT WITH THE CONSTRUCTION DOCUMENTS, AND SHALL NOT PROCEED WITH SUCH WORK UNTIL THE CONFLICT IS SATISFACTORILY RESOLVED.
7. CONTRACTOR SHALL PROVIDE A COMPLETE BUILD-OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS AND PROVIDE ALL ITEMS AS SHOWN OR INDICATED ON THE DRAWINGS OR IN THE WRITTEN SPECIFICATIONS.
8. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH LOCAL AND STATE GOVERNING AUTHORITIES AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.
9. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND ALL INSPECTIONS REQUIRED AND SHALL ALSO PAY FEES REQUIRED FOR THE GENERAL CONSTRUCTION, PLUMBING, ELECTRICAL, AND HVAC. PERMITS SHALL BE PAID FOR BY THE RESPECTIVE SUBCONTRACTORS.
10. CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON SITE AT ALL TIMES AND INSURE DISTRIBUTION OF NEW DRAWINGS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. THE CONTRACTOR SHALL FURNISH AN 'AS-BUILT' SET OF DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.
11. LOCATION OF EQUIPMENT AND WORK SUPPLIED BY OTHERS THAT IS DIAGRAMMATICALLY INDICATED ON THE DRAWINGS, SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE LOCATIONS AND DIMENSIONS SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF THE SUBCONTRACTORS.
12. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY.
13. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUB-CONTRACTORS FOR ANY CONDITION PER THE MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
14. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
15. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
16. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY CONDITION PER MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
17. ANY AND ALL ERRORS, DISCREPANCIES, AND 'MISSED' ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF THE T-MOBILE CONSTRUCTION MANAGER DURING THE BIDDING PROCESS BY THE CONTRACTOR. ALL THESE ITEMS ARE TO BE INCLUDED IN THE BID. NO 'EXTRA' WILL BE ALLOWED FOR MISSED ITEMS.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.
19. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE CONSTRUCTION MANAGER FOR REVIEW.
20. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES AND EXISTING CONDITIONS AT THE SITE, PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.
21. COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUITS AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND CONFIRMED WITH THE PROJECT MANAGER AND OWNER PRIOR TO THE COMMENCEMENT OF ANY WORK
22. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
23. THE CONTRACTOR SHALL CONTACT 'CALL BEFORE YOU DIG' AT LEAST 48 HOURS PRIOR TO ANY EXCAVATIONS AT 1-800-922-4455. ALL UTILITIES SHALL BE IDENTIFIED AND CLEARLY MARKED. CONTRACTOR SHALL MAINTAIN AND PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.
24. CONTRACTOR SHALL COMPLY WITH THE OWNER'S ENVIRONMENTAL ENGINEER ON ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES INCLUDING SOIL DISPOSAL. ALL BACKFILL MATERIALS TO BE PROVIDED BY THE CONTRACTOR.
25. THE COUNTY/CITY/TOWN MAY MAKE PERIODIC FIELD INSPECTIONS TO ENSURE COMPLIANCE WITH THE DESIGN PLANS, SPECIFICATIONS, AND CONTRACT DOCUMENTS.
26. THE COUNTY/CITY/TOWN MUST BE NOTIFIED (2) WORKING DAYS PRIOR TO CONCEALMENT/BURIAL OF ANY SYSTEM OR MATERIAL THAT WILL PREVENT THE DIRECT INSPECTION OF MATERIALS, METHODS OR WORKMANSHIP. EXAMPLES OF THESE PROCESSES ARE BACKFILLING A GROUND RING OR TOWER FOUNDATION, POURING TOWER FOUNDATIONS, BURYING GROUND RODS, PLATES OR GRIDS, ETC. THE CONTRACTOR MAY PROCEED WITH THE SCHEDULED PROCESS (2) WORKING DAYS AFTER PROVIDING NOTICE UNLESS NOTIFIED OTHERWISE BY THE COUNTY/CITY/TOWN.
27. PRIOR TO THE SUBMISSION OF BIDS, THE CONTRACTOR SHALL VISIT THE SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF ENGINEER ON RECORD, PRIOR TO THE COMMENCEMENT OF ANY WORK.

SITE LOCATION MAP — N.T.S.



VICINITY MAP — N.T.S.



COORDINATES AND GROUND ELEVATION ARE REFERENCED FROM GOOGLE EARTH.

SITE COORDINATES: LATITUDE: 41°-37'-03" N
LONGITUDE: 73°-00'-16" W
GROUND ELEVATION: ±1000' AMSL

NORTH

PROJECT SUMMARY

THE PROPOSED SCOPE OF WORK CONSISTS OF A MODIFICATION TO THE EXISTING UNMANNED TELECOMMUNICATIONS FACILITY INCLUDING THE FOLLOWING:

1. REMOVE EXISTING COAX CABLES, (1) 9x18
2. REMOVE EXISTING PBC 6200 CABINET
3. REMOVE EXISTING AIR21 KRC118023-1_B2A_B4P ANTENNA, TYP. (2) PER SECTOR, TOTAL OF (6)
4. REMOVE EXISTING TMAs AND DIPLEXERS
5. INSTALL (1) 6x24 HYBRID CABLES
6. INSTALL ERICSSON: AIR6419 B41 ANTENNA, TYP. (1) PER SECTOR, TOTAL OF (3)
7. INSTALL COMMSCOPE: VV-65A-R1 ANTENNA, TYP. (1) PER SECTOR, TOTAL OF (3)
8. INSTALL ERICSSON: RADIO 4460 B25+B66, TYP. (1) PER SECTOR, TOTAL OF (3)
9. INSTALL 19 INCH EQUIPMENT RACK
10. INSTALL (1) 6230 POWER ENCLOSURE
11. INSTALL (1) 6230 BATTERY RACK
12. INSTALL NEW 200A ELECTRICAL PANEL

PROJECT INFORMATION

SITE NAME:	WOLCOTT/ ANDREWS RD._1
SITE ID:	CT11403A
SITE ADDRESS:	ANDREWS RD WOLCOTT, CT 06716
APPLICANT:	T-MOBILE NORTHEAST, LLC 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT. 06002
CONTACT PERSON:	DAN REID (PROJECT MANAGER) TRANSCEND WIRELESS, LLC (203) 592-8291
ENGINEER OF RECORD:	CENTEK ENGINEERING, INC. 63-2 NORTH BRANFORD ROAD BRANFORD, CT. 06405 CARLO F. CENTORE, PE (203) 488-0580 EXT. 122
SITE COORDINATES:	LATITUDE: 41°-37'-03" N LONGITUDE: 73°-00'-16" W GROUND ELEVATION: ±1000' AMSL SITE COORDINATES AND GROUND ELEVATION REFERENCED FROM GOOGLE EARTH.

SHEET INDEX

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REV.	DATE	DRAWN BY	CHECKED BY	DESCRIPTION
0	04/14/22	JLD	TJR	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION

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Branford, CT 06405
www.CentekEng.com

T-MOBILE NORTHEAST LLC

SITE NAME: WOLCOTT/ ANDREWS RD._1
SITE ID: CT11403A
ANDREWS RD
WOLCOTT, CT 06716

DATE: 03/07/22
SCALE: AS NOTED
JOB NO. 22022.02

TITLE SHEET

T-1

SHEET NO. 1 OF 9

NOTES AND SPECIFICATIONS:

DESIGN BASIS:

GOVERNING CODE: 2015 INTERNATIONAL BUILDING (IBC) AS MODIFIED BY THE 2018 CONNECTICUT STATE BUILDING CODE.

1. DESIGN CRITERIA:

- RISK CATEGORY II (BASED ON IBC TABLE 1604.5)
- NOMINAL DESIGN SPEED: 97 MPH (Vult)
  (EXPOSURE B/ IMPORTANCE FACTOR 1.0 BASED ON ASCE 7-10).

SITE NOTES

1. THE CONTRACTOR SHALL CALL UTILITIES PRIOR TO THE START OF CONSTRUCTION.
2. ACTIVE EXISTING UTILITIES, WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY, PRIOR TO PROCEEDING, SHOULD ANY UNCOVERED EXISTING UTILITY PRECLUDE COMPLETION OF THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
3. THE AREAS OF THE COMPOUND DISTURBED BY THE WORK SHALL BE RETURNED TO THEIR ORIGINAL CONDITION.
4. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
5. IF ANY FIELD CONDITIONS EXIST WHICH PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL PROCEED WITH AFFECTED WORK AFTER CONFLICT IS SATISFACTORILY RESOLVED.

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2015 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2018 CONNECTICUT SUPPLEMENT, INCLUDING THE TIA/EIA-222 REVISION "G" "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES." 2017 CONNECTICUT FIRE SAFETY CODE, NATIONAL ELECTRICAL CODE AND LOCAL CODES.
2. SHOULD ANY FIELD CONDITIONS PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH ANY AFFECTED WORK.
3. CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
4. BEFORE BEGINNING THE WORK, THE CONTRACTOR IS RESPONSIBLE FOR MAKING SUCH INVESTIGATIONS CONCERNING PHYSICAL CONDITIONS (SURFACE AND SUBSURFACE) AT OR CONTIGUOUS TO THE SITE, WHICH MAY AFFECT PERFORMANCE AND COST OF THE WORK.
5. ALL DIMENSIONS, ELEVATIONS, AND OTHER REFERENCES TO EXISTING STRUCTURES, SURFACE, AND SUBSURFACE CONDITIONS ARE APPROXIMATE. NO GUARANTEE IS MADE FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS, ELEVATIONS AND ANGLES WITH EXISTING CONDITIONS AND WITH ARCHITECTURAL AND SITE DRAWINGS BEFORE PROCEEDING WITH ANY WORK.
6. AS THE WORK PROGRESSES, THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY CONDITIONS WHICH ARE IN CONFLICT OR OTHERWISE NOT CONSISTENT WITH THE CONSTRUCTION DOCUMENTS, AND SHALL NOT PROCEED WITH SUCH WORK UNTIL THE CONFLICT IS SATISFACTORILY RESOLVED.
7. CONTRACTOR SHALL PROVIDE A COMPLETE BUILD-OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS AND PROVIDE ALL ITEMS AS SHOWN OR INDICATED ON THE DRAWINGS OR IN THE WRITTEN SPECIFICATIONS.
8. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH LOCAL AND STATE GOVERNING AUTHORITIES AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.
9. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND ALL INSPECTIONS REQUIRED AND SHALL ALSO PAY FEES REQUIRED FOR THE GENERAL CONSTRUCTION, PLUMBING, ELECTRICAL, AND HVAC. PERMITS SHALL BE PAID FOR BY THE RESPECTIVE SUBCONTRACTORS.
10. CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON SITE AT ALL TIMES AND INSURE DISTRIBUTION OF NEW DRAWINGS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. THE CONTRACTOR SHALL FURNISH AN 'AS-BUILT' SET OF DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.
11. LOCATION OF EQUIPMENT AND WORK SUPPLIED BY OTHERS THAT IS DIAGRAMMATICALLY INDICATED ON THE DRAWINGS, SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE LOCATIONS AND DIMENSIONS SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF THE SUBCONTRACTORS.
12. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY.
13. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUB-CONTRACTORS FOR ANY CONDITION PER THE MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
14. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
15. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
16. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY CONDITION PER MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
17. ANY AND ALL ERRORS, DISCREPANCIES, AND 'MISSED' ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF THE T-MOBILE CONSTRUCTION MANAGER DURING THE BIDDING PROCESS BY THE CONTRACTOR. ALL THESE ITEMS ARE TO BE INCLUDED IN THE BID. NO 'EXTRA' WILL BE ALLOWED FOR MISSED ITEMS.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.
19. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE CONSTRUCTION MANAGER FOR REVIEW.
20. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES AND EXISTING CONDITIONS AT THE SITE, PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.
21. COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUITS AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND CONFIRMED WITH THE PROJECT MANAGER AND OWNER PRIOR TO THE COMMENCEMENT OF ANY WORK
22. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
23. THE CONTRACTOR SHALL CONTACT 'CALL BEFORE YOU DIG' AT LEAST 48 HOURS PRIOR TO ANY EXCAVATIONS AT 1-800-922-4455. ALL UTILITIES SHALL BE IDENTIFIED AND CLEARLY MARKED. CONTRACTOR SHALL MAINTAIN AND PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.
24. CONTRACTOR SHALL COMPLY WITH THE OWNER'S ENVIRONMENTAL ENGINEER ON ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES INCLUDING SOIL DISPOSAL. ALL BACKFILL MATERIALS TO BE PROVIDED BY THE CONTRACTOR.
25. THE COUNTY/CITY/TOWN MAY MAKE PERIODIC FIELD INSPECTIONS TO ENSURE COMPLIANCE WITH THE DESIGN PLANS, SPECIFICATIONS, AND CONTRACT DOCUMENTS.
26. THE COUNTY/CITY/TOWN MUST BE NOTIFIED (2) WORKING DAYS PRIOR TO CONCEALMENT/BURIAL OF ANY SYSTEM OR MATERIAL THAT WILL PREVENT THE DIRECT INSPECTION OF MATERIALS, METHODS OR WORKMANSHIP. EXAMPLES OF THESE PROCESSES ARE BACKFILLING A GROUND RING OR TOWER FOUNDATION, POURING TOWER FOUNDATIONS, BURYING GROUND RODS, PLATES OR GRIDS, ETC. THE CONTRACTOR MAY PROCEED WITH THE SCHEDULED PROCESS (2) WORKING DAYS AFTER PROVIDING NOTICE UNLESS NOTIFIED OTHERWISE BY THE COUNTY/CITY/TOWN.
27. PRIOR TO THE SUBMISSION OF BIDS, THE CONTRACTOR SHALL VISIT THE SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF ENGINEER ON RECORD, PRIOR TO THE COMMENCEMENT OF ANY WORK.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL IS DESIGNED BY ALLOWABLE STRESS DESIGN (ASD)

   A. STRUCTURAL STEEL (W SHAPES)---ASTM A992 (FY = 50 KSI)
   B. STRUCTURAL STEEL (OTHER SHAPES)---ASTM A36 (FY = 36 KSI)
   C. STRUCTURAL HSS (RECTANGULAR SHAPES)---ASTM A500 GRADE B, (FY = 46 KSI)
   D. STRUCTURAL HSS (ROUND SHAPES)---ASTM A500 GRADE B, (FY = 42 KSI)
   E. PIPE---ASTM A53 (FY = 35 KSI)
   F. CONNECTION BOLTS---ASTM A325-N
   G. U-BOLTS---ASTM A36
   H. ANCHOR RODS---ASTM F 1554
   I. WELDING ELECTRODE---ASTM E 70XX

2. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING: SECTION PROFILES, SIZES, CONNECTION ATTACHMENTS, REINFORCING, ANCHORAGE, SIZE AND TYPE OF FASTENERS AND ACCESSORIES. INCLUDE ERECTION DRAWINGS, ELEVATIONS AND DETAILS.
3. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST PROVISIONS OF AISC MANUAL OF STEEL CONSTRUCTION.
4. PROVIDE ALL PLATES, CLIP ANGLES, CLOSURE PIECES, STRAP ANCHORS, MISCELLANEOUS PIECES AND HOLES REQUIRED TO COMPLETE THE STRUCTURE.
5. FIT AND SHOP ASSEMBLE FABRICATIONS IN THE LARGEST PRACTICAL SECTIONS FOR DELIVERY TO SITE.
6. INSTALL FABRICATIONS PLUMB AND LEVEL, ACCURATELY FITTED, AND FREE FROM DISTORTIONS OR DEFECTS.
7. AFTER ERECTION OF STRUCTURES, TOUCHUP ALL WELDS, ABRASIONS AND NON-GALVANIZED SURFACES WITH A 95% ORGANIC ZINC RICH PAINT IN ACCORDANCE WITH ASTM 780.
8. ALL STEEL MATERIAL (EXPOSED TO WEATHER) SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT DIPPED GALVANIZED) COATINGS" ON IRONS AND STEEL PRODUCTS.
9. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE".
10. THE ENGINEER SHALL BE NOTIFIED OF ANY INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON CONFORMING MATERIALS OR CONDITIONS TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER REVIEW.
11. CONNECTION ANGLES SHALL HAVE A MINIMUM THICKNESS OF 1/4 INCHES.
12. STRUCTURAL CONNECTION BOLTS SHALL CONFORM TO ASTM A325. ALL BOLTS SHALL BE 3/4" DIAMETER MINIMUM AND SHALL HAVE A MINIMUM OF TWO BOLTS, UNLESS OTHERWISE ON THE DRAWINGS.
13. LOCK WASHER ARE NOT PERMITTED FOR A325 STEEL ASSEMBLIES.
14. SHOP CONNECTIONS SHALL BE WELDED OR HIGH STRENGTH BOLTED.
15. MILL BEARING ENDS OF COLUMNS, STIFFENERS, AND OTHER BEARING SURFACES TO TRANSFER LOAD OVER ENTIRE CROSS SECTION.
16. FABRICATE BEAMS WITH MILL CAMBER UP.
17. LEVEL AND PLUMB INDIVIDUAL MEMBERS OF THE STRUCTURE TO AN ACCURACY OF 1:500, BUT NOT TO EXCEED 1/4" IN THE FULL HEIGHT OF THE COLUMN.
18. COMMENCEMENT OF STRUCTURAL STEEL WORK WITHOUT NOTIFYING THE ENGINEER OF ANY DISCREPANCIES WILL BE CONSIDERED ACCEPTANCE OF PRECEDING WORK.
19. INSPECTION AND TESTING OF ALL WELDING AND HIGH STRENGTH BOLTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY.
20. FOUR COPIES OF ALL INSPECTION TEST REPORTS SHALL BE SUBMITTED TO THE ENGINEER WITHIN TEN (10) WORKING DAYS OF THE DATE OF INSPECTION.

ANTENNA/APPURTENANCE SCHEDULE

SECTOR	EXISTING/PROPOSED	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	AZIMUTH	(E/P) RRU (QTY)	(E/P) TMA (QTY)	(QTY) PROPOSED HYBRID/COAX
A1	PROPOSED	ERICSSON (AIR 6419 B41)	33 x 16 x 9	77'	50°			(1) 6x24 HYBRID CABLE
A2	EXISTING	RFS (APXVAARR24_43-U_NA20)	95.9 x 24 x 8.7	77'	50°	(E) RADIO 4449 B71+B12 (1)		
A3	PROPOSED	COMMSCOPE (VV-65A-R1)	54.7 x 12.1 x 4.6	77'	50°	(P) RADIO 4460 B25+B66 (1)		
B1	PROPOSED	ERICSSON (AIR 6419 B41)	33 x 16 x 9	77'	180°			
B2	EXISTING	RFS (APXVAARR24_43-U_NA20)	95.9 x 24 x 8.7	77'	180°	(E) RADIO 4449 B71+B12 (1)		
B3	PROPOSED	COMMSCOPE (VV-65A-R1)	54.7 x 12.1 x 4.6	77'	180°	(P) RADIO 4460 B25+B66 (1)		
C1	PROPOSED	ERICSSON (AIR 6419 B41)	33 x 16 x 9	77'	310°			
C2	EXISTING	RFS (APXVAARR24_43-U_NA20)	95.9 x 24 x 8.7	77'	310°	(E) RADIO 4449 B71+B12 (1)		
C3	PROPOSED	COMMSCOPE (VV-65A-R1)	54.7 x 12.1 x 4.6	77'	310°	(P) RADIO 4460 B25+B66 (1)		

NOTE:
ALL HYBRID/COAX LENGTHS TO BE MEASURED AND VERIFIED IN FIELD BEFORE ORDERING

REV.	DATE	DRAWN BY	CHECKED BY	DESCRIPTION
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T-MOBILE NORTHEAST LLC

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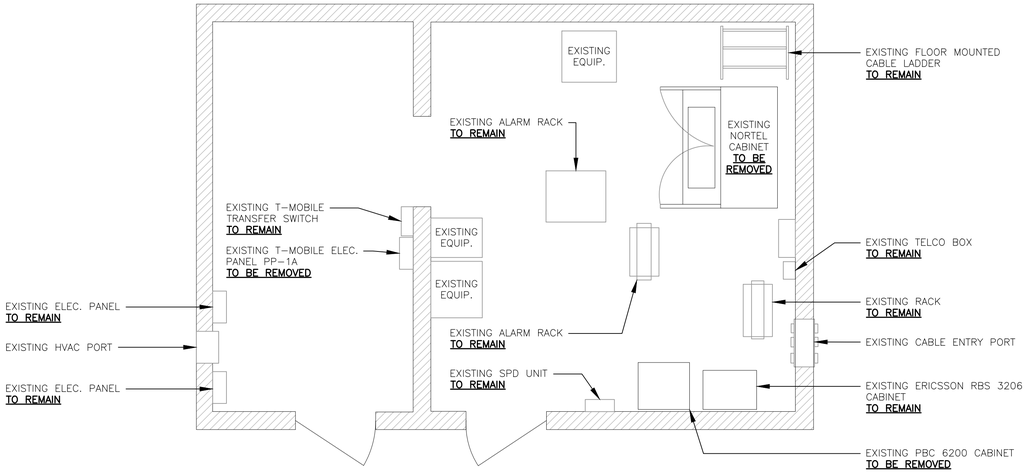
SITE ID: CT11403A
ANDREWS RD
WOLCOTT, CT 06716

DATE: 03/07/22
SCALE: AS NOTED
JOB NO. 22022.02

NOTES AND SPECIFICATIONS, ANT. SCHEDULE

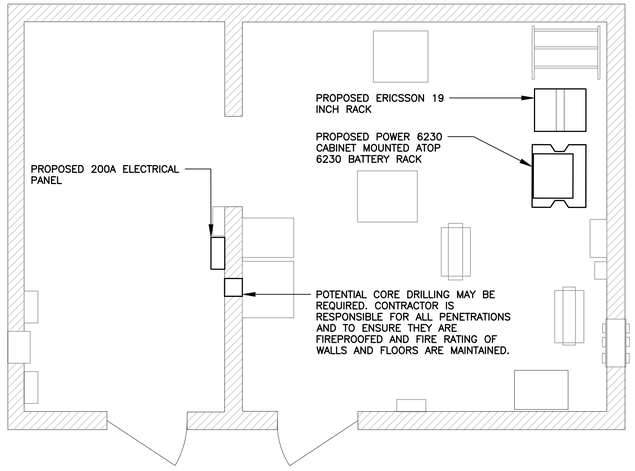
N-1

SHEET NO. 2 OF 9



2 C-1 **EQUIPMENT PLAN - EXISTING** TRUE NORTH

SCALE: 3/8" = 1'



3 C-1 **EQUIPMENT PLAN - PROPOSED** TRUE NORTH

SCALE: 3/8" = 1'

STRUCTURAL COMPLIANCE

ANTENNA MOUNTS

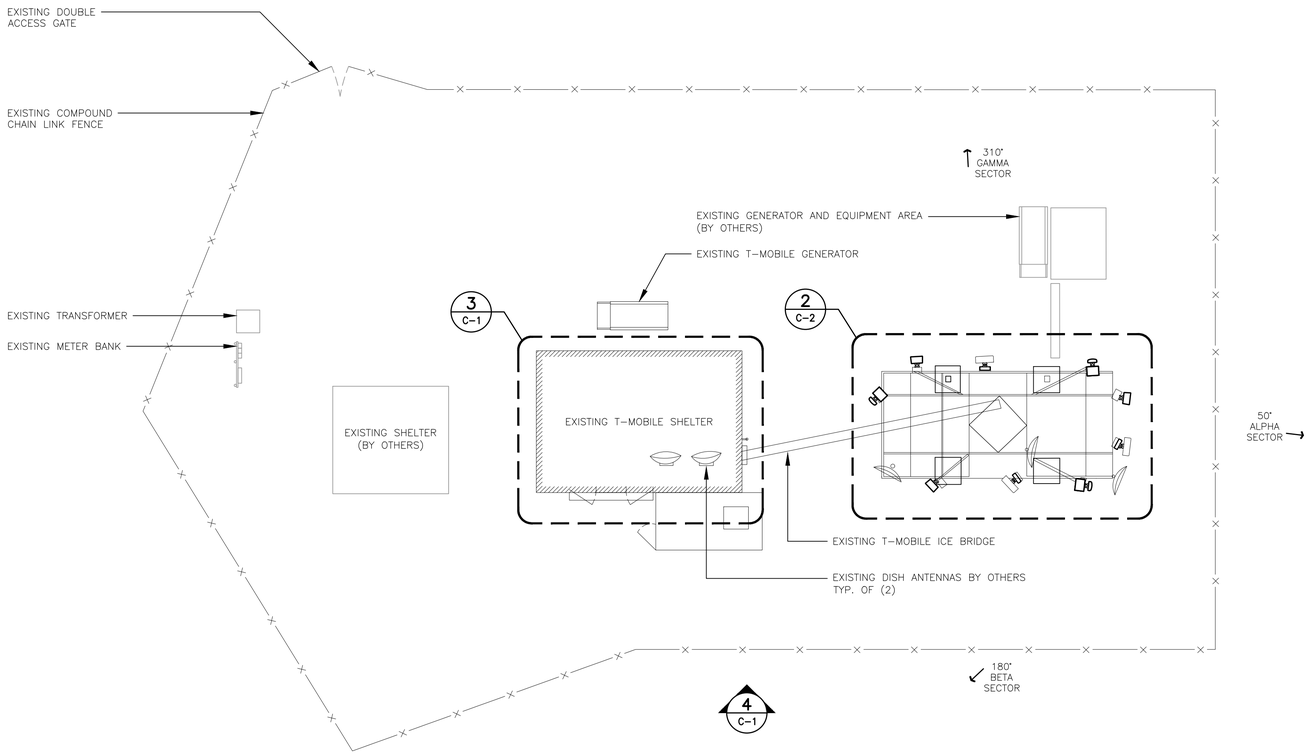
A STRUCTURAL ANALYSIS OF THE ANTENNA MOUNTS WAS PERFORMED FOR THE PROPOSED EQUIPMENT INSTALLATION AND THEY WERE FOUND TO BE STRUCTURALLY SUFFICIENT TO ACCOMMODATE THE PROPOSED LOADING..

REFER TO THE ANTENNA MOUNT ANALYSIS REPORT PREPARED BY CENTEK ENGINEERING (PROJECT # 22022.02) DATED 03/22/22 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

TOWER AND TOWER FOUNDATION

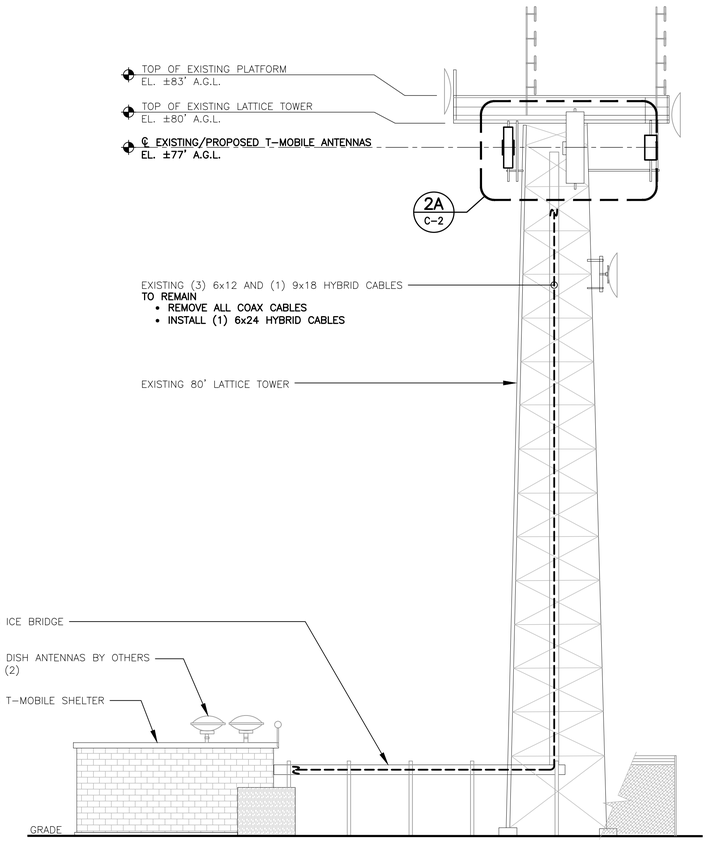
A STRUCTURAL ANALYSIS IS TO BE COMPLETED "BY OTHERS" OF THE TOWER AND TOWER FOUNDATION. NO EQUIPMENT SHALL BE INSTALLED ON THE HOSTING STRUCTURE WITHOUT A PASSING STRUCTURAL ANALYSIS REPORT AND CONTRACTOR PRIOR CONFIRMATION THAT ANY AND ALL REQUISITE MODIFICATIONS HAVE BEEN COMPLETED.

NOTE: NO EQUIPMENT SHALL BE INSTALLED ON THE HOSTING STRUCTURE WITHOUT A PASSING STRUCTURAL ANALYSIS REPORT AND CONTRACTOR PRIOR CONFIRMATION THAT ANY AND ALL REQUISITE MODIFICATIONS HAVE BEEN COMPLETED.



1 C-1 **COMPOUND PLAN - PROPOSED** TRUE NORTH

SCALE: 1/8" = 1'



4 C-1 **SOUTH EAST ELEVATION - PROPOSED**

SCALE: 1/8" = 1'

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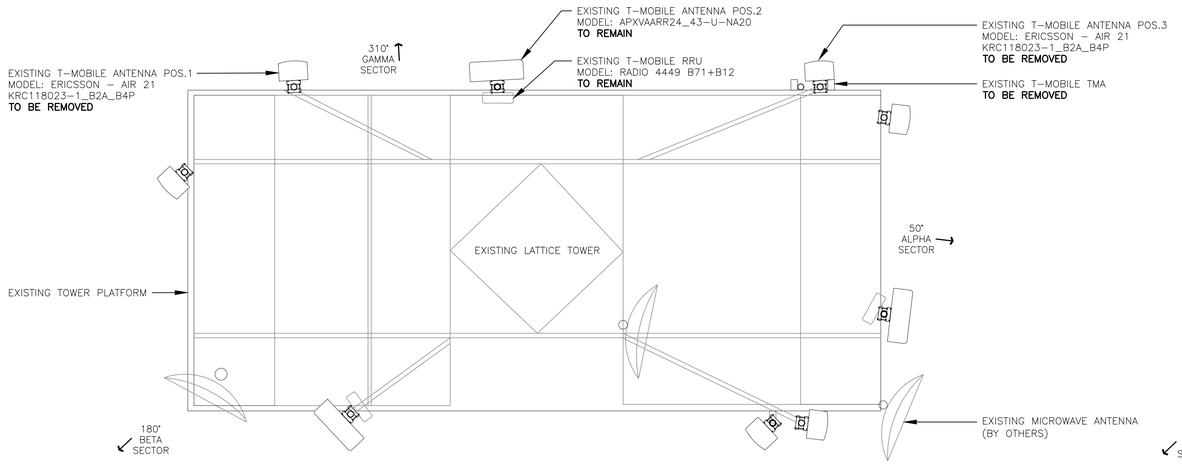
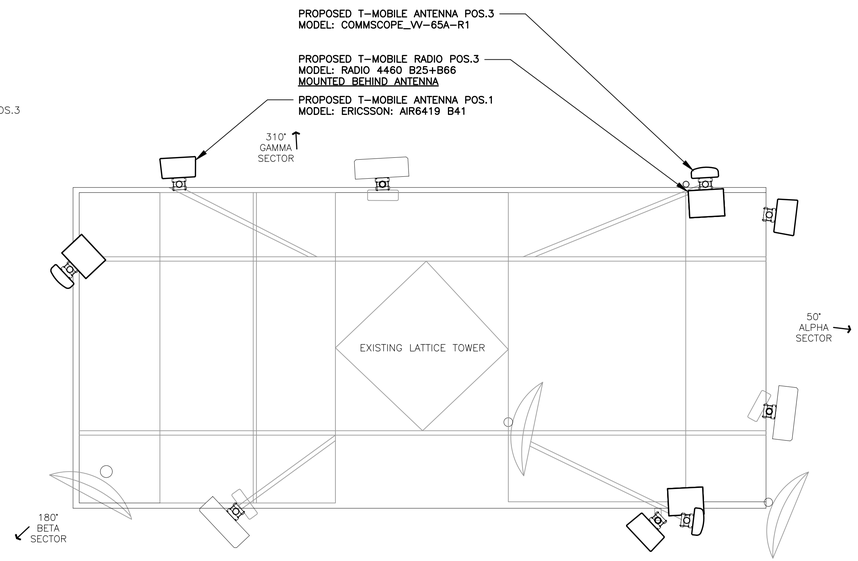
COMPOUND PLAN, EQUIPMENT PLANS, AND ELEVATION

C-1

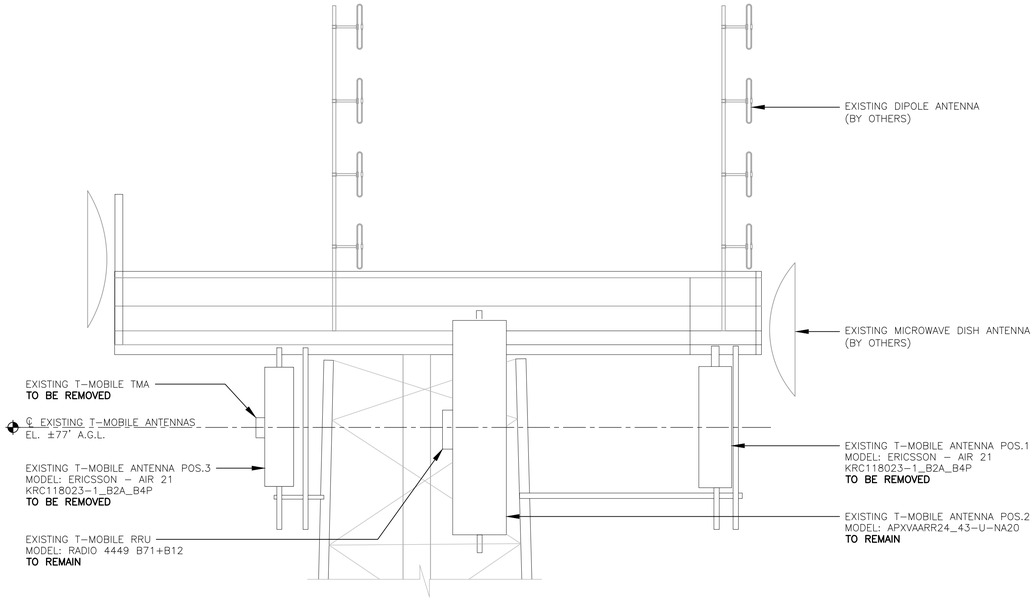
SHEET NO. 3 OF 9



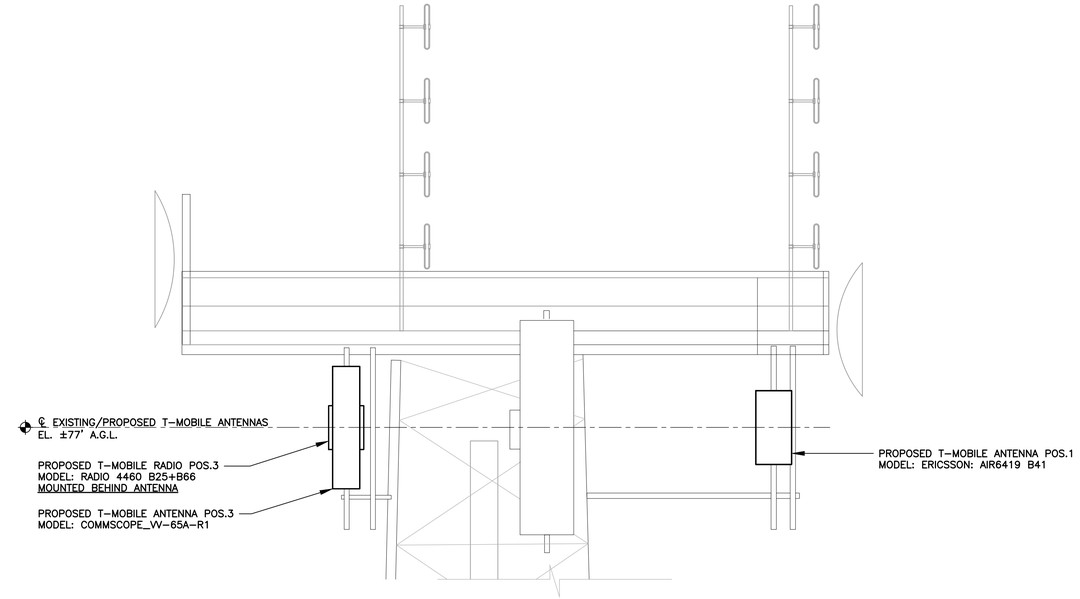
1 C-2 **ANTENNA PLAN - EXISTING**
SCALE: 3/8" = 1'
TRUE NORTH



2 C-2 **ANTENNA PLAN - PROPOSED**
SCALE: 3/8" = 1'
TRUE NORTH



1A C-2 **ANTENNA ELEVATION - EXISTING**
SCALE: 3/8" = 1'



2A C-2 **ANTENNA ELEVATION - PROPOSED**
SCALE: 3/8" = 1'

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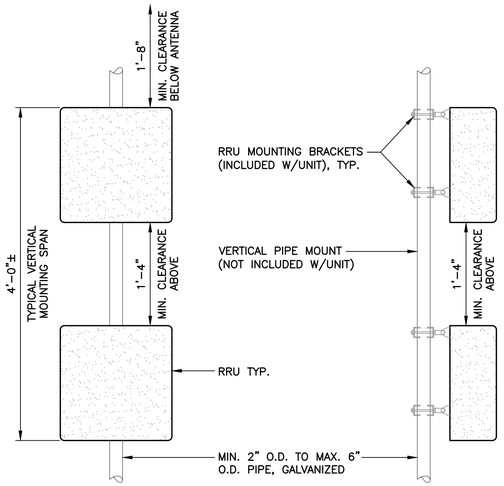
ANTENNA PLANS AND ELEVATIONS

C-2

SHEET NO. 4 OF 9



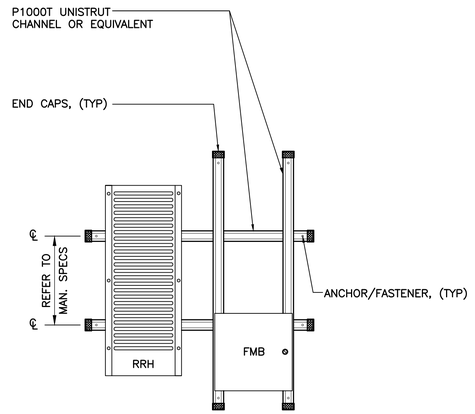
FRONT ELEVATION SIDE ELEVATION

NOTES: (PIPE MOUNTING)

1. T–MOBILE SHALL SUPPLY RRU, AND RRU POLE–MOUNTING BRACKET. CONTRACTOR SHALL SUPPLY POLE/PIPE AND INSTALL ALL MOUNTING HARDWARE INCLUDING ERICSSON RRU POLE–MOUNTING BRACKET.
2. NO PAINTING OF THE RRU OR SOLAR SHIELD IS ALLOWED.

1 C-3 TYPICAL RRU MOUNTING DETAILS

SCALE: NOT TO SCALE



FRONT ELEVATION

NOTES: (UNISTRUT MOUNTING)

1. INSTALL A MINIMUM OF (2) ANCHORS PER UNISTRUT (± 16"o/c MIN).
2. MOUNT RRU TO UNISTRUT WITH 3/8"ø UNISTRUT BOLTING HARDWARE AND SPRING NUTS. TYPICAL FOUR PER BRACKET.
3. NO PAINTING OF THE RRU OR SOLAR SHIELD IS ALLOWED.

AIR6419 B41

VV-65A-R1

ALPHA/BETA/GAMMA ANTENNA		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: ERICSSON MODEL: AIR6419 B41	33"L x 16"W x 9"D	±41 LBS.
MAKE: COMMSCOPE MODEL: VV–65A–R1	54.7"L x 12.08"W x 4.6"D	±23 LBS.
NOTES: 1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH T–MOBILE CONSTRUCTION MANAGER PRIOR TO ORDERING.		

2 C-3 PROPOSED ANTENNA DETAIL

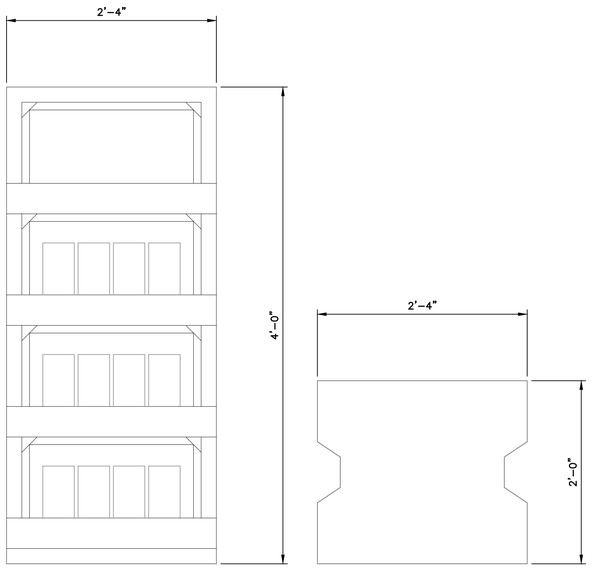
SCALE: NOT TO SCALE

RADIO 4460 B25+B66

RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: RADIO 4460 B25+B66	19.6"L x 15.7"W x 12.1"D	±109 LBS.	BEHIND ANT.: 8" MIN. BELOW ANT.: 20" MIN. BELOW RRU: 16" MIN.
NOTES: 1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH T–MOBILE CONSTRUCTION MANAGER PRIOR TO ORDERING.			

3 C-3 PROPOSED RRU DETAIL

SCALE: NOT TO SCALE

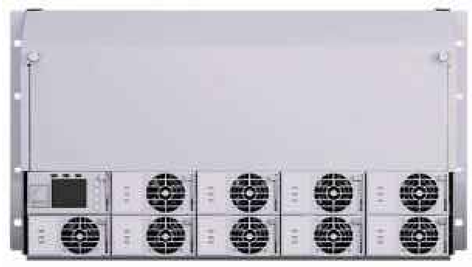


FRONT PLAN

6230 BATTERY RACK		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: ERICSSON MODEL: POWER 6230 BATTERY RACK	48.0"H x 28.0"W x 24."D	±2400 LBS.

4 C-3 POWER 6230 BATTERY RACK

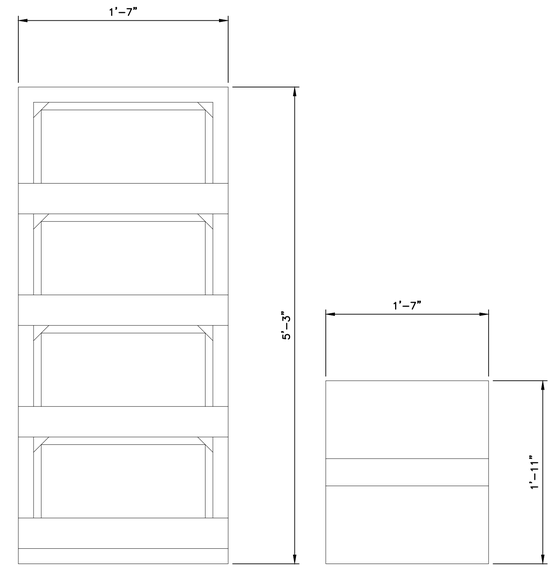
SCALE: NOT TO SCALE



POWER ENCLOSURE		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: ERICSSON MODEL: POWER 6230	14.0"H x 19.0"W x 16.0"D	53 LBS

5 C-3 6230 POWER CABINET DETAIL

SCALE: NOT TO SCALE



FRONT PLAN

ERICSSON 19" RACK		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: ERICSSON MODEL: 19" RACK	63.0"H x 19.0"W x 23.0"D	±200 LBS.

6 C-3 ERICSSON 19" RACK

SCALE: NOT TO SCALE

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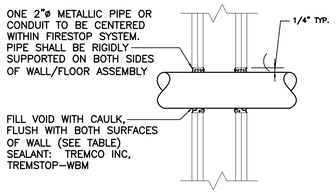
TYPICAL EQUIPMENT DETAILS

C-3

SHEET NO. 5 OF 9

PIPE OR CONDUIT	ANNULAR SPACE IN.	MIN. FILL MATERIAL THICKNESS	F RATING HR
PIPE	3/4"	1 1/4"	2
CONDUIT	3/4"	3/4"	1

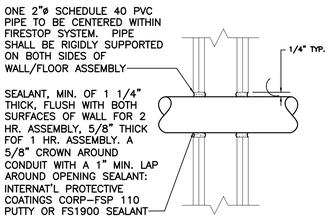


UL SYSTEM NUMBER: WL1051
F RATING – 1 & 2 HR.

1 C-4 PIPE AND CONDUIT PENETRATION DETAIL IN GYPSUM WALLBOARD

SCALE: NOT TO SCALE

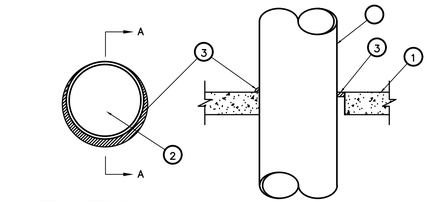
MAX. DIA. OF THROUGH PENETRANT	NOMINAL ANNULAR SPACE IN.	FILL MATERIAL TYPE
1"	1/2"	FSP 1100 PUTTY
2"	1"	FS 1900 SEALANT



UL SYSTEM NUMBER:
WL2038
F RATING – 1 & 2 HR.

3 C-4 PVC CONDUIT PENETRATION DETAIL IN GYPSUM WALLBOARD

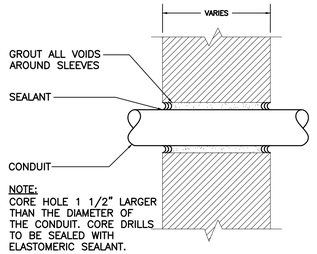
SCALE: NOT TO SCALE



UL SYSTEM NUMBER: C-AJ-1291
F RATING – 2-HR

2 C-4 METAL PIPE THROUGH CONCRETE FLOOR/ WALL OR BLOCK WALL

SCALE: NOT TO SCALE



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

4 C-4 PIPE AND CONDUIT PENETRATION DETAIL IN NON-RATED PARTITION

SCALE: NOT TO SCALE

NOTES:

1. FLOOR OR WALL ASSEMBLY – MIN 2-1/2 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF OPENING IS 30-7/8 IN. SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

   A. STEEL FLOOR UNIT/FLOOR ASSEMBLY (NOT SHOWN) – AS AN ALTERNATE TO ITEM 1, THE FLOOR ASSEMBLY MAY CONSIST OF A FLUTED STEEL FLOOR UNIT/ CONCRETE FLOOR ASSEMBLY. THE FLOOR ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL FLOOR CEILING DESIGN IN THE FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTUCTION FEATURES:

   B. CONCRETE – MIN 2-1/2 IN. THICK REINFORCED LIGHTWEIGHT ON NORMAL WEIGHT (100-150 PCF) CONCRETE, AS MEASURED FROM THE TOP PLANE OF THE FLOOR UNITS.

   C. STEEL FLOOR AND FORM UNITS* – COMPOSITE OR NON-COMPOSITE 1-1/2 TO 3 IN. DEEP FLUTED GALV STEEL UNITS AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. MAX DIAM OF OPENING IS 30-7/8 IN.

2. THROUGH-PENETRANT – ONE METALLIC PIPE OR CONDUIT TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE OR CONDUIT AND PERIPHERY OF OPENING SHALL BE MIN 0 IN. TO MAX 7/8 IN. PIPE OR CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR CONDUITS MAY BE USED:

   A. STEEL PIPE NOM 30 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.

   B. IRON PIPE NOM 30 IN. DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.

   C. COPPER PIPE NOM 6 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

   D. COPPER TUBING NOM 6 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.

   E. CONDUIT NOM 6 IN. DIAM (OR SMALLER) STEEL CONDUIT.

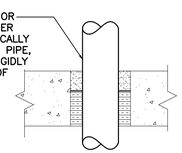
   F. CONDUIT NOM 4 IN. DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING (EMT).

3. FILL, VOID OR CAVITY MATERIAL* – SEALANT – MIN 1/2 IN. THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL. AT THE POINT CONTACT LOCATION BETWEEN PIPE AND CONCRETE, A MIN 1/4 IN. DIAM BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE CONCRETE/PIPE INTERFACE ON THE TOP SURFACE OF FLOOR AND ON BOTH SURFACES OF WALL.

FLOOR OR WALL	MIN. THICK.	MAX. PIPE DIA.	MIN. ANNULAR SPACE	MAX. ANNULAR SPACE	MIN. FILL MAT. THICK.	MIN. FORM. MAT. THICK.	F RATING
F	3 3/4"	1 1/2"	3/8"	2 1/8"	1"	2 3/4"	2
F	3 3/4"	6"	3/8"	3/4"	1"	2 3/4"	2
F	3 3/4"	6"	3/8"	1"	2"	1 3/4"	2
F	4 1/2"	1 1/2"	3/8"	2 1/8"	1"	3 1/2"	3
F	4 1/2"	6"	3/8"	3/4"	1"	3 1/2"	3
F	4 1/2"	6"	3/8"	1"	2"	2 1/2"	3
W	5 1/2"	1 1/2"	3/8"	2 1/8"	1"	3 1/2"	3
W	5 1/2"	6"	3/8"	3/4"	1"	3 1/2"	3
W	6 1/2"	1 1/2"	3/8"	2 1/8"	2"	2 1/2"	3
W	6 1/2"	6"	3/8"	1"	2"	2 1/2"	3

THROUGH PENETRANTS
ONE METALLIC PIPE, CONDUIT OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL.

FORMING MATERIAL SHALL BE A MIN. OF 1 1/2" THICK OF MIN. 4.0 PCF MINERAL WOOL BATT INSULATION FIRMLY PACKED IN OPENING, USG INTERIORS-TYPE SAF



THICKNESS OF SEALANT APPLIED FLUSH W/THE TOP SURFACE OF BOTH SIDES OF FLOOR/WALL (SEE TABLE), USG INTERIORS-TYPE SS

UL SYSTEM NUMBER: CAJ1020

F RATING – 3 HR.

5 C-4 PIPE AND CONDUIT PENETRATION DETAIL IN CONCRETE OR MASONRY

SCALE: NOT TO SCALE

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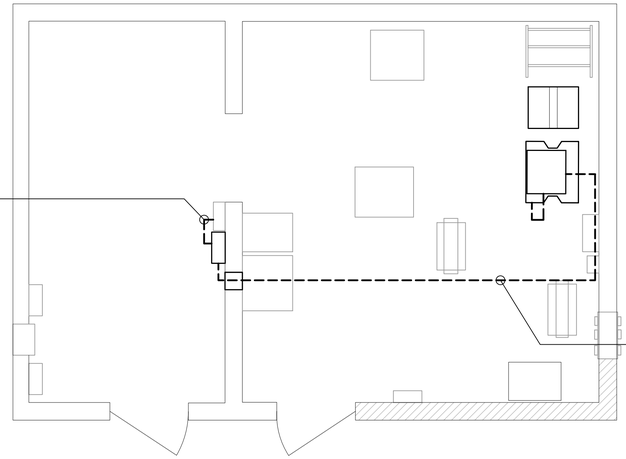
CONDUIT PENETRATION DETAILS

C-4

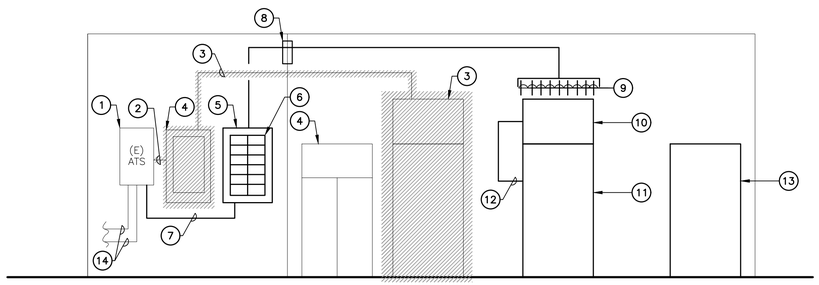
SHEET NO. 6 OF 9



1 / E–1 **ELECTRICAL CONDUIT ROUTING PLAN**
SCALE: 1/4" = 1'

RISER DIAGRAM NOTES

1. EXISTING AUTOMATIC TRANSFER SWITCH TO REMAIN
2. EXISTING CONDUITS AND CONDUCTORS TO BE REMOVED.
3. EXISTING EQUIPMENT CABINET AND ASSOCIATED CONDUITS, CONDUCTORS AND CIRCUIT BREAKER(S) TO BE REMOVED
4. EXISTING ELECTRICAL PANEL PP–1A TO BE REMOVED AND REPLACED. RELOCATE ALL EXISTING CIRCUIT BREAKERS TO NEW ELECTRICAL PANEL, INCLUDING EXISTING 150A CIRCUIT BREAKER AND EXISTING 100A CIRCUIT BREAKER. CONTRACTOR TO COORDINATE ALL OUTAGES WITH BUILDING OWNER
5. 120/240V, SINGLE PHASE, 225A RATED, 200A MAIN CIRCUIT BREAKER, 42 POSITION DISTRIBUTION PANEL, 65 KAIC, 200A MCB, NEMA 1, SURFACE MOUNT, FRONT TRIM HINGED TO CABINET, BOLT–ON BREAKERS, COPPER BUS
6. (9) NEW 25A/2P CIRCUIT BREAKER TO SERVE NEW EQUIPMENT.
7. (3) 3/0 AWG, (1) #6 AWG GROUND. 2" CONDUIT.
8. WALL PENETRATION. COORDINATE WITH CIVIL DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL PENETRATIONS ARE FIREPROOF AND FIRE RATING OF WALLS AND FLOORS IS MAINTAINED.
9. 9 SETS OF: (3) #10 AWG, (1) #10 AWG GROUND. 3/4" CONDUIT.
10. NEW T–MOBILE 6230 EQUIPMENT CABINET
11. NEW T–MOBILE 6230 BATTERY RACK
12. DC CONDUIT AND CONDUCTORS FOR BATTERY CABINET CONNECTION PER MANUFACTURERS SPECIFICATIONS
13. NEW T–MOBILE FIF RACK
14. EXISTING INCOMING NORMAL AND EMERGENCY POWER



2 / E–1 **ELECTRICAL POWER RISER DIAGRAM**
SCALE: NOT TO SCALE

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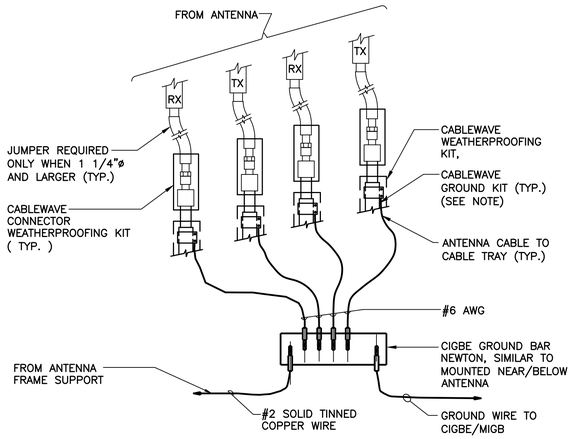
ELECTRICAL DIAGRAM AND CONDUIT ROUTING

E-1

SHEET NO. 7 OF 9

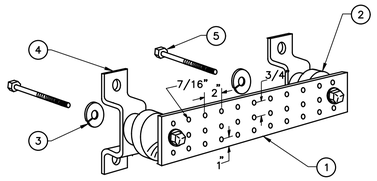


NOTES:

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

1 E-2 CONNECTION OF GROUND WIRES TO GROUND BAR

SCALE: NOT TO SCALE

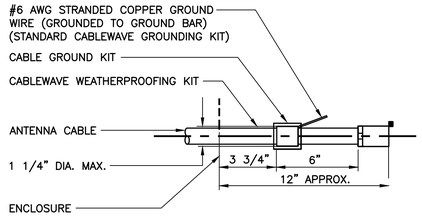


NOTES

1. TINNED COPPER GROUND BAR, 1/4" x 4" x 20", NEWTON INSTRUMENT CO. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
2. INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4.
3. 5/8" LOCK WASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8.
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-6056.
5. 5/8-11 x 1" STAINLESS STEEL TRUSS SPANNER MACHINE SCREWS.

2 E-2 GROUND BAR DETAIL

SCALE: NOT TO SCALE

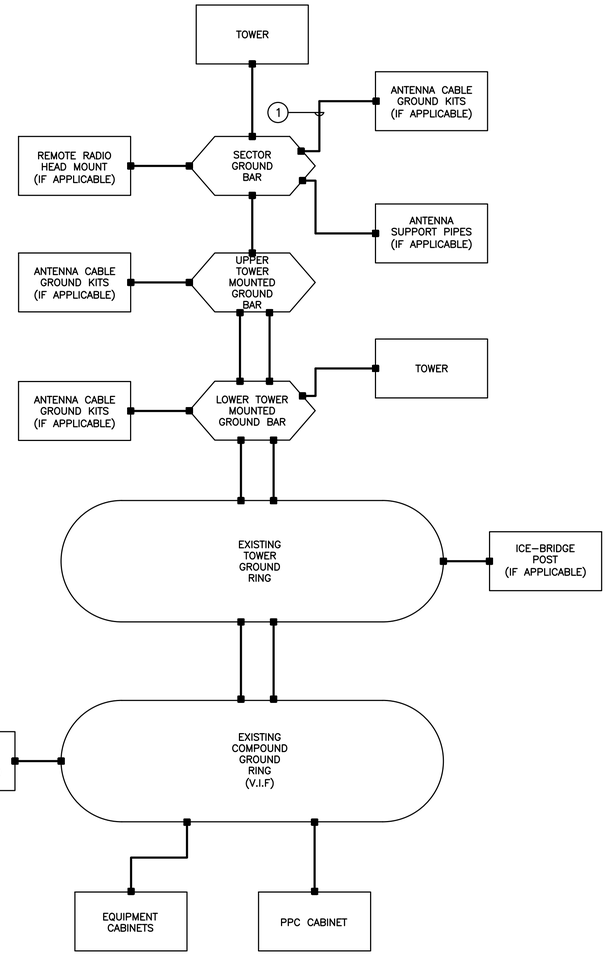


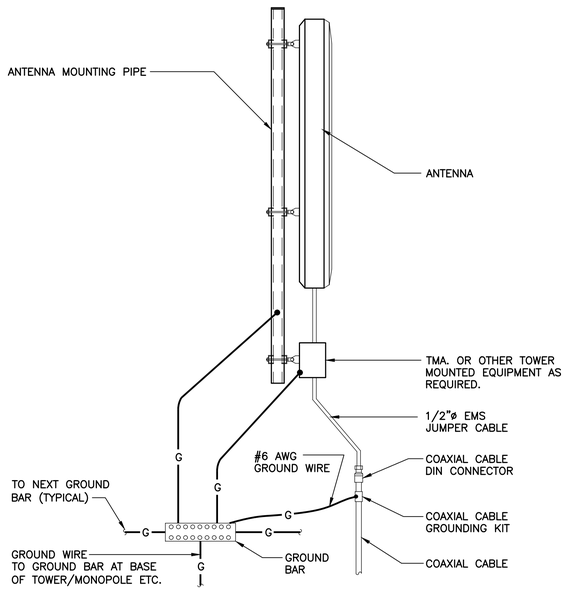
NOTES:

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

3 E-2 ANTENNA CABLE GROUNDING DETAIL

SCALE: NOT TO SCALE

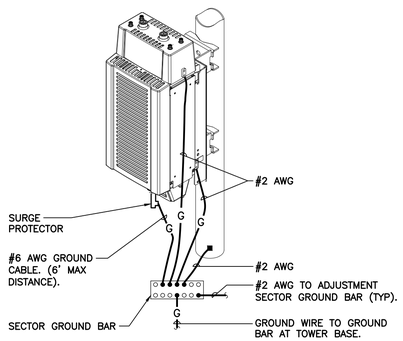




4 E-2 TYPICAL ANTENNA GROUNDING DETAIL

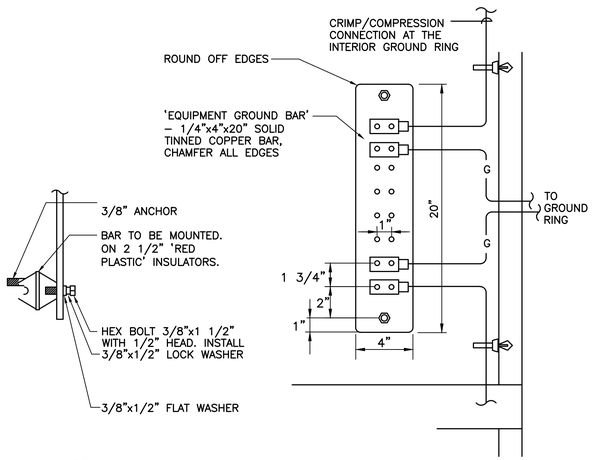
SCALE: NOT TO SCALE

EACH RRH CABINET SHALL BE GROUNDED IN THE FOLLOWING MANNER:
1. AT TOP OF THE CABINET
2. AT RIGHT SIDE OF THE CABINET.



5 E-2 RRH POLE MOUNT GROUNDING

SCALE: NOT TO SCALE



6 E-2 EQUIPMENT GROUND BAR DETAIL

SCALE: NOT TO SCALE

GROUNDING SCHEMATIC NOTES

#6 AWG

GENERAL NOTES:

1. ALL SURGE SUPPRESSION EQUIPMENT SHALL BE BONDED TO GROUND PER MANUFACTURER'S SPECIFICATIONS
2. UNLESS OTHERWISE NOTED OR REQUIRED BY CODE, GROUND CONDUCTORS SHOWN SHALL BE #2 AWG (SOLID TINNED BCW – EXTERIOR; STRANDED GREEN INSULATED – INTERIOR).
3. BOND CABLE TRAY SECTIONS TOGETHER WITH #6 AWG STRANDED GREEN INSULATED JUMPERS.
4. ALL SECTOR GROUND BARS SHALL BE BONDED TOGETHER WITH #2 AWG SOLID TINNED BCW.
5. BOND ALL EQUIPMENT CABINETS AND BATTERY CABINETS TO GROUND PER MANUFACTURER'S SPECIFICATIONS.
6. REFER TO ALL ELECTRICAL AND GROUNDING DETAILS.
7. COORDINATE ALL TOWER MOUNTED EQUIPMENT WITH OWNER.
8. ALL ROOF MOUNTED AMPLIFIERS AND ASSOCIATED EQUIPMENT SHALL BE BONDED TO THE SECTOR GROUND BAR PER MANUFACTURER'S SPECIFICATIONS.
9. ALL GROUNDING SHALL BE IN ACCORDANCE WITH NEC AND OWNER'S REQUIREMENTS.

7 E-2 ELECTRICAL SCHEMATIC DIAGRAM

SCALE: NOT TO SCALE

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TYPICAL ELECTRICAL DETAILS

E-2

SHEET NO. 8 OF 9

ELECTRICAL SPECIFICATIONS

SECTION 16010

1.02. GENERAL REQUIREMENTS

A. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE MADE IN STRICT ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES AND REGULATIONS WHICH MAY APPLY AND NOTHING IN THE DRAWINGS OR SPECIFICATIONS SHALL BE INTERPRETED AS AN INFRINGEMENT OF SUCH CODES OR REGULATIONS.

B. THE ELECTRICAL CONTRACTOR IS TO BE RESPONSIBLE FOR THE COMPLETE INSTALLATION AND COORDINATION OF THE ENTIRE ELECTRICAL SERVICE. ALL ACTIVITIES TO BE COORDINATED THROUGH OWNERS REPRESENTATIVE, DESIGN ENGINEER AND OTHER AUTHORITIES HAVING JURISDICTION OF TRADES.

C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND PAY ALL FEES THAT MAY BE REQUIRED FOR THE ELECTRICAL WORK AND FOR THE SCHEDULING OF ALL INSPECTIONS THAT MAY BE REQUIRED BY THE LOCAL AUTHORITY.

D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE BUILDING OWNER FOR NEW AND/OR DEMOLITION WORK INVOLVED.

E. NO MATERIAL OTHER THAN THAT CONTAINED IN THE "LATEST LIST OF ELECTRICAL FITTINGS" APPROVED BY THE UNDERWRITERS' LABORATORIES, SHALL BE USED IN ANY PART OF THE WORK. ALL MATERIAL FOR WHICH LABEL SERVICE HAS BEEN ESTABLISHED SHALL BEAR THE U.L. LABEL.

F. THE CONTRACTOR SHALL GUARANTEE ALL NEW WORK FOR A PERIOD OF ONE YEAR FROM THE ACCEPTANCE DATE BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING WARRANTIES FROM ALL EQUIPMENT MANUFACTURERS FOR SUBMISSION TO THE OWNER.

G. DRAWINGS INDICATE GENERAL ARRANGEMENT OF WORK INCLUDED IN CONTRACT. CONTRACTOR SHALL, WITHOUT EXTRA CHARGE, MAKE MODIFICATIONS TO THE LAYOUT OF THE WORK TO PREVENT CONFLICT WITH WORK OF OTHER TRADES AND FOR THE PROPER INSTALLATION OF WORK. CHECK ALL DRAWINGS AND VISIT JOB SITE TO VERIFY SPACE AND TYPE OF EXISTING CONDITIONS IN WHICH WORK WILL BE DONE, PRIOR TO SUBMITTAL OF BID.

H. THE ELECTRICAL CONTRACTOR SHALL SUPPLY THREE (3) COMPLETE SETS OF APPROVED DRAWINGS, ENGINEERING DATA SHEETS, MAINTENANCE AND OPERATING INSTRUCTION MANUALS FOR ALL SYSTEMS AND THEIR RESPECTIVE EQUIPMENT. THESE MANUALS SHALL BE INSERTED IN VINYL COVERED 3-RING BINDERS AND TURNED OVER TO OWNER'S REPRESENTATIVE ONE (1) WEEK PRIOR TO FINAL PUNCH LIST.

I. ALL WORK SHALL BE INSTALLED IN A NEAT AND WORKMAN LIKE MANNER AND WILL BE SUBJECT TO THE APPROVAL OF THE OWNER'S REPRESENTATIVE.

J. ALL EQUIPMENT AND MATERIALS TO BE INSTALLED SHALL BE NEW, UNLESS OTHERWISE NOTED.

K. BEFORE FINAL PAYMENT, THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF PRINTS (AS-BUILTS), LEGIBLY MARKED IN RED PENCIL TO SHOW ALL CHANGES FROM THE ORIGINAL PLANS.

L. PROVIDE TEMPORARY POWER AND LIGHTING IN WORK AREAS AS REQUIRED.

M. SHOP DRAWINGS:

1. CONTRACTOR SHALL SUBMIT SIX (6) COPIES OF SHOP DRAWINGS ON ALL EQUIPMENT AND MATERIALS PROPOSED FOR USE ON THIS PROJECT, GIVING ALL DETAILS, WHICH INCLUDE DIMENSIONS, CAPACITIES, ETC.

2. CONTRACTOR SHALL SUBMIT SIX (6) COPIES OF ALL TEST REPORTS CALLED FOR IN THE SPECIFICATIONS AND DRAWINGS.

N. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE IN ACCORDANCE WITH OWNER'S SPECIFICATIONS, AND REQUIREMENTS OF ALL LOCAL AUTHORITIES HAVING JURISDICTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH APPROPRIATE INDIVIDUALS TO OBTAIN ALL SUCH SPECIFICATIONS AND REQUIREMENTS. NOTHING CONTAINED IN, OR OMITTED FROM, THESE DOCUMENTS SHALL RELIEVE CONTRACTOR FROM THIS OBLIGATION.

SECTION 16111

1.01. CONDUITS

A. MINIMUM CONDUIT SIZE FOR BRANCH CIRCUITS, LOW VOLTAGE CONTROL AND ALARM CIRCUITS SHALL BE 3/4". CONDUITS SHALL BE PROPERLY FASTENED AS REQUIRED BY THE N.E.C.

B. THE INTERIOR OF RACEWAYS/ENCLOSURES INSTALLED UNDERGROUND SHALL BE CONSIDERED TO BE WET LOCATION, INSULATED CONDUCTORS SHALL BE LISTED FOR USE IN WET LOCATIONS. PROVIDE WEATHERPROOF CONSTRUCTION IN WET LOCATIONS.

C. CONDUIT INSTALLED UNDERGROUND SHALL BE INSTALLED TO MEET MINIMUM COVER REQUIREMENTS OF TABLE 300.5.

D. PROVIDE RIGID GALVANIZED STEEL CONDUIT (RMC) FOR THE FIRST 10 FOOT SECTION WHEN LEAVING A BUILDING OR SECTIONS PASSING THROUGH FLOOR SLABS

E. ONLY LISTED PVC CONDUIT AND FITTINGS ARE PERMITTED FOR THE INSTALLATION OF ELECTRICAL CONDUCTORS, SUITABLE FOR UNDERGROUND APPLICATIONS.

CONDUIT SCHEDULE SECTION 16111

CONDUIT TYPE	NEC REFERENCE	APPLICATION	MIN. BURIAL DEPTH (PER NEC TABLE 300.5) [2,3]
EMT	ARTICLE 358	INTERIOR CIRCUITING, EQUIPMENT ROOMS, SHELTERS	N/A
RMC, RIGID GALV. STEEL	ARTICLE 344, 300.5, 300.50	ALL INTERIOR/ EXTERIOR CIRCUITING, ALL UNDERGROUND INSTALLATIONS.	6 INCHES
PVC, SCHEDULE 40	ARTICLE 352, 300.5, 300.50	INTERIOR/ EXTERIOR CIRCUITING AND GROUNDING SYSTEMS, UNDERGROUND INSTALLATIONS, WHERE NOT SUBJECT TO PHYSICAL DAMAGE. [1]	18 INCHES
PVC, SCHEDULE 80	ARTICLE 352, 300.5, 300.50	INTERIOR/ EXTERIOR CIRCUITING AND GROUNDING SYSTEMS, UNDERGROUND INSTALLATIONS, WHERE SUBJECT TO PHYSICAL DAMAGE. [1]	18 INCHES
LIQUID TIGHT FLEX. METAL	ARTICLE 350	SHORT LENGTHS (MAX. 3FT.) WIRING TO VIBRATING EQUIPMENT IN WET LOCATIONS.	N/A
FLEX. METAL	ARTICLE 348	SHORT LENGTHS (MAX. 3FT.) WIRING TO VIBRATING EQUIPMENT IN WET LOCATIONS.	N/A

[1] PHYSICAL DAMAGE IS SUBJECT TO THE AUTHORITY HAVING JURISDICTION.

[2] UNDERGROUND CONDUIT INSTALLED UNDER ROADS, HIGHWAYS, DRIVEWAYS, PARKING LOTS SHALL HAVE MINIMUM DEPTH OF 24".

[3] WHERE SOLID ROCK PREVENTS COMPLIANCE WITH MINIMUM COVER DEPTHS, WIRING SHALL BE INSTALLED IN PERMITTED RACEWAY FOR DIRECT BURIAL. THE RACEWAY SHALL BE COVERED BY A MINIMUM OF 2" OF CONCRETE EXTENDING DOWN TO ROCK.

SECTION 16123

1.01. CONDUCTORS

A. ALL CONDUCTORS SHALL BE TYPE THWN (INT. APPLICATION) AND XHHW (EXT. APPLICATION), 75 DEGREE C, 600 VOLT INSULATION, SOFT ANNEALED STRANDED COPPER. #10 AWG AND SMALLER SHALL BE SPLICED USING ACCEPTABLE SOLDERLESS PRESSURE CONNECTORS. #8 AWG AND LARGER SHALL BE SPLICED USING COMPRESSION SPLIT-BOLT TYPE CONNECTORS. #12 AWG SHALL BE THE MINIMUM SIZE CONDUCTOR FOR LINE VOLTAGE BRANCH CIRCUITS. REFER TO PANEL SCHEDULE FOR BRANCH CIRCUIT CONDUCTOR SIZE(S). CONDUCTORS SHALL BE COLOR CODED FOR CONSISTENT PHASE IDENTIFICATION:

	120/208/240V	277/480V
LINE	COLOR	COLOR
A	BLACK	BROWN
B	RED	ORANGE
C	BLUE	YELLOW
N	CONTINUOUS WHITE	GREY
G	CONTINUOUS GREEN	GREEN WITH YELLOW STRIPE

B. MINIMUM BENDING RADIUS FOR CONDUCTORS SHALL BE 12 TIMES THE LARGEST DIAMETER OF BRANCH CIRCUIT CONDUCTOR.

SECTION 16130

1.01. BOXES

A. FURNISH AND INSTALL OUTLET BOXES FOR ALL DEVICES, SWITCHES, RECEPTACLES, ETC.. BOXES TO BE ZINC COATED STEEL.

B. FURNISH AND INSTALL PULL BOXES IN MAIN FEEDERS RUNS WHERE REQUIRED. PULL BOXES SHALL BE GALVANIZED STEEL WITH SCREW REMOVABLE COVERS, SIZE AND QUANTITY AS REQUIRED. PROVIDE WEATHERPROOF CONSTRUCTION IN WET LOCATIONS.

SECTION 16140

1.01. WIRING DEVICES

A. THE FOLLOWING LIST IS PROVIDED TO CONVEY THE QUALITY AND RATING OF WIRING DEVICES WHICH ARE TO BE INSTALLED. A COMPLETE LIST OF ALL DEVICES MUST BE SUBMITTED BEFORE INSTALLATION FOR APPROVAL.

1. 15 MINUTE TIMER SWITCH - INTERMATIC #FF15M (INTERIOR LIGHTS)

2. DUPLEX RECEPTACLE - P&S #2095 (GFCI) SPECIFICATION GRADE

3. SINGLE POLE SWITCH - P&S #CSB20AC2 (20A-120V HARD USE) SPECIFICATION GRADE

4. DUPLEX RECEPTACLE - P&S #5362 (20A-120V HARD USE) SPECIFICATION GRADE

B. PLATES - ALL PLATES USED SHALL BE CORROSION RESISTANT TYPE 304 STAINLESS STEEL. PLATES SHALL BE FROM SAME MANUFACTURER AS SWITCHES AND RECEPTACLES. PROVIDE WEATHERPROOF HOUSING FOR DEVICES LOCATED IN WET LOCATIONS.

C. OTHER MANUFACTURERS OF THE SWITCHES, RECEPTACLES AND PLATES MAY BE SUBMITTED FOR APPROVAL BY THE ENGINEER.

SECTION 16170

1.01. DISCONNECT SWITCHES

A. FUSIBLE AND NON-FUSIBLE, 600V, HEAVY DUTY DISCONNECT SWITCHES SHALL BE AS MANUFACTURED BY SQUARE "D". PROVIDE FUSES AS CALLED FOR ON THE CONTRACT DRAWINGS. AMPERE RATING SHALL BE CONSISTENT WITH LOAD BEING SERVED. DISCONNECT SWITCH COVER SHALL BE MECHANICALLY INTERLOCKED TO PREVENT COVER FROM OPENING WHEN THE SWITCH IS IN THE "ON" POSITION. EXTERIOR APPLICATIONS SHALL BE NEMA 3R CONSTRUCTION WITH PADLOCK FEATURE.

SECTION 16190

1.01. SEISMIC RESTRAINT

A. ALL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH ZONE 2 SEISMIC REQUIREMENTS.

SECTION 16195

1.01. LABELING AND IDENTIFICATION NOMENCLATURE FOR ELECTRICAL EQUIPMENT

A. CONTRACTOR SHALL FURNISH AND INSTALL NON-METALLIC ENGRAVED BACK-LIT NAMEPLATES ON ALL PANELS AND MAJOR ITEMS OF ELECTRICAL EQUIPMENT.

B. LETTERS TO BE WHITE ON BLACK BACKGROUND WITH LETTERS 1-1/2 INCH HIGH WITH 1/4 INCH MARGIN.

C. IDENTIFICATION NOMENCLATURE SHALL BE IN ACCORDANCE WITH OWNER'S STANDARDS.

SECTION 16450

1.01. GROUNDING

A. ALL NON-CURRENT CARRYING PARTS OF THE ELECTRICAL AND TELEPHONE CONDUIT SYSTEMS SHALL BE MECHANICALLY AND ELECTRICALLY CONNECTED TO PROVIDE AN INDEPENDENT RETURN PATH TO THE EQUIPMENT GROUNDING SOURCES.

B. GROUNDING SYSTEM WILL BE IN ACCORDANCE WITH THE LATEST ACCEPTABLE EDITION OF THE NATIONAL ELECTRICAL CODE AND REQUIREMENTS PER LOCAL INSPECTOR HAVING JURISDICTION.

C. GROUNDING OF PANELBOARDS:

1. PANELBOARD SHALL BE GROUNDED BY TERMINATING THE PANELBOARD FEEDER'S EQUIPMENT GROUND CONDUCTOR TO THE EQUIPMENT GROUND BAR KIT(S) LUGGED TO THE CABINET. ENSURE THAT THE SURFACE BETWEEN THE KIT AND CABINET ARE BARE METAL TO BARE METAL. PRIME AND PAINT OVER TO PREVENT CORROSION.

2. CONDUIT(S) TERMINATING INTO THE PANELBOARD SHALL HAVE GROUNDING TYPE BUSHINGS. THE BUSHINGS SHALL BE BONDED TOGETHER WITH BARE #10 AWG COPPER CONDUCTOR WHICH IN TURN IS TERMINATED INTO THE PANELBOARD'S EQUIPMENT GROUND BAR KIT(S).

D. EQUIPMENT GROUNDING CONDUCTOR:

1. EACH EQUIPMENT GROUND CONDUCTOR SHALL BE SIZED IN ACCORDANCE WITH THE N.E.C. ARTICLE 250-122.

2. THE MINIMUM SIZE OF EQUIPMENT GROUND CONDUCTOR SHALL BE #12 AWG COPPER.

3. EACH FEEDER OR BRANCH CIRCUIT SHALL HAVE EQUIPMENT GROUND CONDUCTOR(S) INSTALLED IN THE SAME RACEWAY(S).

E. CELLULAR GROUNDING SYSTEM:

CONTRACTOR SHALL PROVIDE A CELLULAR GROUNDING SYSTEM WITH THE MAXIMUM AC RESISTANCE TO GROUND OF 10 OHM BETWEEN ANY POINT ON THE GROUNDING SYSTEM AS MEASURED BY 3-POINT GROUNDING TEST. (REFER TO SECTION 16960).

PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO:

1. GROUND BARS

2. EXTERIOR GROUNDING (WHERE REQUIRED DUE TO MEASURED AC RESISTANCE GREATER THAN SPECIFIED).

3. ANTENNA GROUND CONNECTIONS AND PLATES.

F. CONTRACTOR, AFTER COMPLETION OF THE COMPLETE GROUNDING SYSTEM BUT PRIOR TO CONCEALMENT/BURIAL OF SAME, SHALL NOTIFY OWNER'S PROJECT ENGINEER WHO WILL HAVE A DESIGN ENGINEER VISIT SITE AND MAKE A VISUAL INSPECTION OF THE GROUNDING GRID AND CONNECTIONS OF THE SYSTEM.

G. ALL EQUIPMENT SHALL BE BONDED TO GROUND AS REQUIRED BY N.E.C., MFG. SPECIFICATIONS, AND OWNER'S SPECIFICATIONS.

SECTION 16470

1.01. DISTRIBUTION EQUIPMENT

A. REFER TO CONTRACT DRAWINGS FOR DETAILS AND SCHEDULES.

SECTION 16477

1.01. FUSES

A. FUSES SHALL BE NONRENEWABLE TYPE AS MANUFACTURED BY "BUSSMAN" OR APPROVED EQUAL. FUSES RATED TO 1/10 AMPERE UP TO 600 AMPERES SHALL BE EQUIVALENT TO BUSSMAN TYPE LPN-RK (250V) UL CLASS RK1, LOW PEAK, DUAL ELEMENT, TIME-DELAY FUSES. FUSES SHALL HAVE SEPARATE SHORT CIRCUIT AND OVERLOAD ELEMENTS AND HAVE AN INTERRUPTING RATING OF 200 KAIC. UPON COMPLETION OF WORK, PROVIDE ONE SPARE SET OF FUSES FOR EACH TYPE INSTALLED.

SECTION 16960

1.01. TESTS BY INDEPENDENT ELECTRICAL TESTING FIRM

A. CONTRACTOR SHALL RETAIN THE SERVICES OF A LOCAL INDEPENDENT ELECTRICAL TESTING FIRM (WITH MINIMUM 5 YEARS COMMERCIAL EXPERIENCE IN THE ELECTRICAL TESTING INDUSTRY) AS SPECIFIED BY OWNER TO PERFORM:

TEST 1: THERMAL OVERLOAD AND MAGNETIC TRIP TEST, AND CABLE INSULATION TEST FOR ALL CIRCUIT BREAKERS RATED 100 AMPS OR GREATER.

TEST 2: RESISTANCE TO GROUND TEST ON THE CELLULAR GROUNDING SYSTEM.

THE TESTING FIRM SHALL INCLUDE THE FOLLOWING INFORMATION WITH THE REPORT:

1. TESTING PROCEDURE INCLUDING THE MAKE AND MODEL OF TEST EQUIPMENT.

2. CERTIFICATION OF TESTING EQUIPMENT CALIBRATION WITHIN SIX (6) MONTHS OF DATE OF TESTING. INCLUDE CERTIFICATION LAB ADDRESS AND TELEPHONE NUMBER.

3. GRAPHICAL DESCRIPTION OF TESTING METHOD ACTUALLY IMPLEMENTED.

B. THESE TESTS SHALL BE PERFORMED IN THE PRESENCE AND TO THE SATISFACTION OF OWNER'S CONSTRUCTION REPRESENTATIVE. TESTING DATA SHALL BE INITIALED AND DATED BY THE CONSTRUCTION REPRESENTATIVE AND INCLUDED WITH THE WRITTEN REPORT/ANALYSIS.

C. THE CONTRACTOR SHALL FORWARD SIX (6) COPIES OF THE INDEPENDENT ELECTRICAL TESTING FIRM'S REPORT/ANALYSIS TO ENGINEER A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO THE JOB TURNOVER.

D. CONTRACTOR TO PROVIDE A MINIMUM OF ONE (1) WEEK NOTICE TO OWNER AND ENGINEER FOR ALL TESTS REQUIRING WITNESSING.

SECTION 16961

1.01. TESTS BY CONTRACTOR

A. ALL TESTS AS REQUIRED UPON COMPLETION OF WORK, SHALL BE MADE BY THIS CONTRACTOR. THESE SHALL BE CONTINUITY AND INSULATION TESTS; TEST TO DETERMINE THE QUALITY OF MATERIALS, ETC. AND SHALL BE MADE IN ACCORDANCE WITH N.E.C. RECOMMENDATIONS. ALL FEEDERS AND BRANCH CIRCUIT WIRING (EXCEPT CLASS 2 SIGNAL CIRCUITS) MUST BE TESTED FREE FROM SHORT CIRCUIT AND GROUND FAULT CONDITIONS AT 500V IN A REASONABLY DRY AMBIENT OF APPROXIMATELY 70 DEGREES F.

B. CONTRACTOR SHALL PERFORM LOAD PHASE BALANCING TESTS. CIRCUITS SHALL BE CONNECTED TO THE PANELBOARDS SO THAT THE NEW LOAD IS DISTRIBUTED AS EQUALLY AS POSSIBLE BETWEEN EACH LOAD AND NEUTRAL. 10% SHALL BE CONSIDERED AS A REASONABLE AND ACCEPTABLE ALLOWANCE. BRANCH CIRCUITS SHALL BE BALANCED ON THEIR OWN PANELBOARDS; FEEDER LOADS SHALL, IN TURN, BE BALANCED ON THE SERVICE EQUIPMENT. REASONABLE LOAD TEST SHALL BE ARRANGED TO VERIFY LOAD BALANCE IF REQUESTED BY THE ENGINEER.

C. ALL TESTS, UPON REQUEST, SHALL BE REPEATED IN THE PRESENCE OF OWNER'S REPRESENTATIVE. ALL TESTS SHALL BE DOCUMENTED AND TURNED OVER TO OWNER. OWNER SHALL HAVE THE AUTHORITY TO STOP ANY OF THE WORK NOT BEING PROPERLY INSTALLED. ALL SUCH DETECTED WORK SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL EXPENSE TO THE OWNER AND THE TESTS SHALL BE REPEATED.

REV.	DATE	DRAWN BY	CHECKED BY	DESCRIPTION
0	04/14/22	JLD	TJR	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER SEAL

T-Mobile

Transcend Wireless

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

T-MOBILE NORTHEAST LLC

SITE NAME: WOLCOTT/ ANDREWS RD_1
SITE ID: CT11403A
ANDREWS RD
WOLCOTT, CT 06716

DATE: 03/07/22
SCALE: AS NOTED
JOB NO. 22022.02

ELECTRICAL SPECIFICATIONS

E-3

SHEET NO. 9 OF 9

CENTEK engineering

Centered on Solutions℠

Structural Analysis Report

Antenna Mount and Platform Analysis

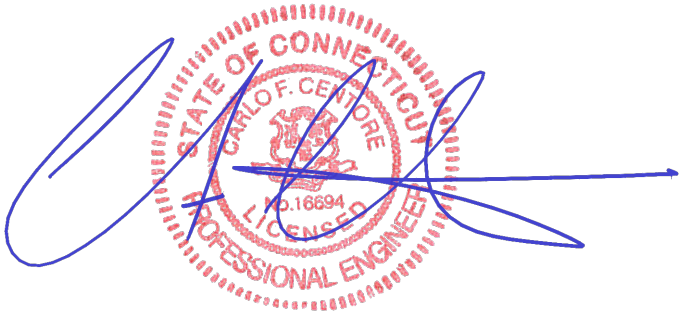
Proposed T-Mobile Antenna Upgrade

Site Ref: CT11403A

Andrews Road
Wolcott, CT

CENTEK Project No. 22022.02

Date: March 22, 2022



Prepared for:

T-Mobile USA
35 Griffin Road
Bloomfield, CT 06002

63-2 North Branford Road, Branford, CT 06405 203.488.0580 Fax 203.488.8587 www.CentekEng.com

Table of Contents

Introduction

This structural analysis report (SAR) was prepared to address the structural viability of installing T-Mobile's proposed antenna configuration attached to the existing, 80-ft, self-supporting lattice tower located at Andrews Road, Wolcott, Connecticut.

The antenna mount assembly consists of pipe masts attached at the top to the platform base frame. The platform is at the top of the self-supporting lattice tower at elevation 80-ft. The bottom of the antenna masts are braced with stiff arms attaching to the legs of the lattice tower. This structural analysis report verifies the adequacy of aforementioned antenna mount assembly only and the platform.

The antenna mount assembly geometry and member information were gathered through a site visit to investigate the current conditions, performed by Centek personnel on 03/10/2022, and a tower and platform mapping report prepared by Armor Tower Engineering, Job No. VZN-WolcottNW, dated December 21, 2017. Proposed/existing antenna and appurtenance information was taken from an RF data sheet dated 03/02/2022 provided by T-Mobile.

Primary Assumptions Used in the Analysis

- The host structure's theoretical capacity not including any assessment of the condition of the host structure.
- The existing elevated steel antenna frames carry the horizontal and vertical loads due to the weight of equipment, and wind and transfers into host structure.
- Structure is in plumb condition.
- Loading for equipment and enclosure as listed in this report.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
- All member protective coatings are in good condition.

Antenna and Equipment Summary

Location	Appurtenance / Equipment	Rad Center Elevation (AGL)	Mount Type
Alpha/Beta /Gamma	**(1) Ericsson – AIR 6419 B41 Antenna** **(1) Commscope VV-65A-R1 Antenna** (1) RFS APXVAARR24_43-U_NA20 Antenna **(1) Ericsson 4460 B25+B66 Radio** (1) 4449 B71+B12 Radio	77-ft	V-Frame sector mounts attached to host lattice tower legs

Equipment – Indicates existing equipment to be relocated.
Equipment – Indicates proposed equipment to be installed.

Analysis

The antenna frames were analyzed using a comprehensive computer program titled Risa3D. The program examines the antenna mounts considering the worst-case code prescribed loading condition. The structures were considered to be loaded by concentric forces, and the model assumes that the members are subjected to bending, axial, and shear forces.

Design Loading

Loading was determined per the requirements of the 2006 ANSI TIA-222-G, 2015 International Building Code amended by the 2018 CSBC and ASCE 7-10 “Minimum Design Loads for Buildings and Other Structures”.

Basic Wind Speed:	V_{asd} = 97 mph	*Appendix N of the 2018 CT State Building Code*
Basic Wind Speed w/ Ice:	V_i = 50 mph	*Annex B of TIA-222-G*
Risk Category:	II	*2015 IBC; Table 1604.05*
Exposure Category:	Surface Roughness B	*ASCE 7-10; Section 26.7.2*
Dead Load	Equipment and framing self-weight	*Identified within SAR design calculations*
Ground Snow Load:	S_G = 35 psf	*Appendix N of the 2018 CT State Building Code*

Reference Standards

2015 International Building Code:

1. AISC 360-10, *Specification for Structural Steel Buildings.*

Results

Member stresses and design reactions were calculated utilizing the structural analysis software RISA 3D.

The antenna mounting assembly and impacted host building components were found to be structurally acceptable as presented in the following table:

Sector	Component	Stress Ratio (percentage of capacity)	Result
All Sectors	Pipe 2.0 STD (Existing Antenna Mast)	52%	**PASS**
	L3X3X1/4 (Existing Antenna Mast Stiff-Arm)	48%	**PASS**
	C7X12.25 (Existing Platform Baseframe)	20%	**PASS**
	5/8" A325 Bolt (Existing connection of Platform and Lattice Tower)	65%	**PASS**

Conclusion

This analysis shows that the proposed subject antenna mount assemblies and lattice tower platform are **STRUCTURALLY ADEQUETE** to support the proposed T-Mobile modified antenna configuration.

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

Please feel free to call with any questions or comments.

Respectfully Submitted by:

Carlo F. Centore, PE
Principle ~ Structural Engineer

Prepared by:

Pablo Perez-Gomez
Engineer

Standard Conditions for Furnishing of Professional Engineering Services on Existing Structures

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

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

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

Subject: Loads on Equipment

Location: Wolcott, CT

Rev. 0: 03/21/2022

Prepared by: PPG Checked by: CFC
Job No. 22022.02

Development of Design Heights, Exposure Coefficients, and Velocity Pressures Per TIA-222-G

Wind Speeds

Basic Wind Speed	$V := 97$	mph	(User Input per Appendix N of CSBC 2018)
Basic Wind Speed with Ice	$V_i := 50$	mph	(User Input per Annex B of TIA-222-G)

Input

Structure Type =	$Structure\_Type := Lattice$		(User Input)
Structure Category =	$SC := II$		(User Input)
Exposure Category =	$Exp := B$		(User Input)
Structure Height =	$h := 80$	ft	(User Input)
Height to Center of Antennas =	$z := 77$	ft	(User Input)
Radial Ice Thickness =	$t_i := 0.75$	in	(User Input per Annex B of TIA-222-G)
Radial Ice Density =	$Id := 56.00$	pcf	(User Input)
Topographic Category =	$TC := 1$		(User Input)
Gust Effect Factor =	$G_H = 0.85$		(User Input)

Output

Wind Direction Probability Factor =

$$K_d := \begin{cases} \text{if } Structure\_Type = Pole \\ \quad 0.95 \\ \text{if } Structure\_Type = Lattice \\ \quad 0.85 \end{cases} = 0.85$$

(Per Table 2-2 of TIA-222-G)

(Per Table 2-3 of TIA-222-G)

Importance Factors =

$$I_{Wind} := \begin{cases} \text{if } SC = 1 \\ \quad 0.87 \\ \text{if } SC = 2 \\ \quad 1.00 \\ \text{if } SC = 3 \\ \quad 1.15 \end{cases} = 1 \qquad I_{Wind\_w\_Ice} := \begin{cases} \text{if } SC = 1 \\ \quad 0 \\ \text{if } SC = 2 \\ \quad 1.00 \\ \text{if } SC = 3 \\ \quad 1.00 \end{cases} = 1 \qquad I_{ice} := \begin{cases} \text{if } SC = 1 \\ \quad 0 \\ \text{if } SC = 2 \\ \quad 1.00 \\ \text{if } SC = 3 \\ \quad 1.25 \end{cases} = 1$$

Topographic Factor =

$$K_{zt} := \begin{cases} \text{if } TC > 1 \\ \quad \left(1 + \frac{K_e \cdot K_t}{K_h}\right)^2 \\ \text{if } TC = 1 \\ \quad 1.0 \end{cases} = 1$$

$$K_a := 1.0$$

Height Escalation factor for Ice Thick. =

$$K_{iz} := \left(\frac{z}{33}\right)^{0.1} = 1.088$$

Velocity Pressure Coefficient Antennas =

$$t_{iz} := 2.0 \cdot t_i \cdot I_{ice} \cdot K_{iz} \cdot K_{zt}{}^{0.35} = 1.633$$

$$Kz := 2.01 \cdot \left(\left(\frac{z}{zg}\right)\right)^{\frac{2}{\alpha}} = 0.917$$

Velocity Pressure w/o Ice Antennas = $qz := 0.00256 \cdot K_d \cdot Kz \cdot V^2 \cdot I_{Wind} = 18.777$ psf

Velocity Pressure with Ice Antennas = $qz_{ice} := 0.00256 \cdot K_d \cdot Kz \cdot V_i{}^2 \cdot I_{Wind} = 4.989$ psf

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	RFS APXVAARR24_43-U-NA20		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 95.9$	in	(User Input)
Antenna Width =	$W_{ant} := 24$	in	(User Input)
Antenna Thickness =	$T_{ant} := 8.7$	in	(User Input)
Antenna Weight =	$WT_{ant} := 153.3$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)
Antenna Aspect Ratio =	$Ar_{ant} := \frac{L_{ant}}{W_{ant}} = 4.0$		
Antenna Force Coefficient =	$Ca_{ant} = 1.27$		

Wind Load (without ice)

Surface Area for One Antenna =	$SA_{antF} := \frac{L_{ant} \cdot W_{ant}}{144} = 16$	sf
Total Antenna Wind Force Front =	$F_{ant} := qz \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antF} = 323$	lbs
Surface Area for One Antenna =	$SA_{antS} := \frac{L_{ant} \cdot T_{ant}}{144} = 5.8$	sf
Total Antenna Wind Force Side =	$F_{ant} := qz \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antS} = 117$	lbs

Wind Load (with ice)

Surface Area for One Antenna w/ Ice =	$SA_{ICEantF} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz})}{144} = 18.8$	sf
Total Antenna Wind Force w/ Ice Front =	$Fi_{ant} := qz_{ice} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantF} = 101$	lbs
Surface Area for One Antenna w/ Ice =	$SA_{ICEantS} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz})}{144} = 8.2$	sf
Total Antenna Wind Force w/ Ice Side =	$Fi_{ant} := qz_{ice} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantS} = 44$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 153$	lbs

Gravity Loads (ice only)

Volume of Each Antenna =	$V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 2 \cdot 10^4$	cu in
Volume of Ice on Each Antenna =	$V_{ice} := (L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz}) - V_{ant} = 1 \cdot 10^4$	cu in
Weight of Ice on Each Antenna =	$W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 399$	lbs
Weight of Ice on All Antennas =	$W_{ICEant} \cdot N_{ant} = 399$	lbs

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	Commscope VV-65A-R1		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 54.7$	in	(User Input)
Antenna Width =	$W_{ant} := 12.08$	in	(User Input)
Antenna Thickness =	$T_{ant} := 4.6$	in	(User Input)
Antenna Weight =	$WT_{ant} := 23$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)
Antenna Aspect Ratio =	$Ar_{ant} := \frac{L_{ant}}{W_{ant}} = 4.5$		
Antenna Force Coefficient =	$Ca_{ant} = 1.29$		

Wind Load (without ice)

Surface Area for One Antenna =	$SA_{antF} := \frac{L_{ant} \cdot W_{ant}}{144} = 4.6$	sf
Total Antenna Wind Force Front =	$F_{ant} := qz \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antF} = 94$	lbs
Surface Area for One Antenna =	$SA_{antS} := \frac{L_{ant} \cdot T_{ant}}{144} = 1.7$	sf
Total Antenna Wind Force Side =	$F_{ant} := qz \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antS} = 36$	lbs

Wind Load (with ice)

Surface Area for One Antenna w/ Ice =	$SA_{ICEantF} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz})}{144} = 6.2$	sf
Total Antenna Wind Force w/ Ice Front =	$Fi_{ant} := qz_{ice} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantF} = 34$	lbs
Surface Area for One Antenna w/ Ice =	$SA_{ICEantS} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz})}{144} = 3.2$	sf
Total Antenna Wind Force w/ Ice Side =	$Fi_{ant} := qz_{ice} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantS} = 17$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 23$	lbs

Gravity Loads (ice only)

Volume of Each Antenna =	$V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 3040$	cu in
Volume of Ice on Each Antenna =	$V_{ice} := (L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz}) - V_{ant} = 3957$	cu in
Weight of Ice on Each Antenna =	$W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 128$	lbs
Weight of Ice on All Antennas =	$W_{ICEant} \cdot N_{ant} = 128$	lbs

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	Ericsson AIR6419 B41		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 33$	in	(User Input)
Antenna Width =	$W_{ant} := 16$	in	(User Input)
Antenna Thickness =	$T_{ant} := 8.9$	in	(User Input)
Antenna Weight =	$WT_{ant} := 41$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)
Antenna Aspect Ratio =	$Ar_{ant} := \frac{L_{ant}}{W_{ant}} = 2.1$		
Antenna Force Coefficient =	$Ca_{ant} = 1.2$		

Wind Load (without ice)

Surface Area for One Antenna =	$SA_{antF} := \frac{L_{ant} \cdot W_{ant}}{144} = 3.7$	sf
Total Antenna Wind Force Front =	$F_{ant} := qz \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antF} = 70$	lbs
Surface Area for One Antenna =	$SA_{antS} := \frac{L_{ant} \cdot T_{ant}}{144} = 2$	sf
Total Antenna Wind Force Side =	$F_{ant} := qz \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antS} = 39$	lbs

Wind Load (with ice)

Surface Area for One Antenna w/ Ice =	$SA_{ICEantF} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz})}{144} = 4.9$	sf
Total Antenna Wind Force w/ Ice Front =	$Fi_{ant} := qz_{ice} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantF} = 25$	lbs
Surface Area for One Antenna w/ Ice =	$SA_{ICEantS} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz})}{144} = 3.1$	sf
Total Antenna Wind Force w/ Ice Side =	$Fi_{ant} := qz_{ice} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantS} = 16$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 41$	lbs

Gravity Loads (ice only)

Volume of Each Antenna =	$V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 4699$	cu in
Volume of Ice on Each Antenna =	$V_{ice} := (L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz}) - V_{ant} = 3800$	cu in
Weight of Ice on Each Antenna =	$W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 123$	lbs
Weight of Ice on All Antennas =	$W_{ICEant} \cdot N_{ant} = 123$	lbs

RRUS Data:

RRUS Model =	Ericsson 4449 B71+B12		
RRUS Shape =	Flat		(User Input)
RRUS Height =	$L_{RRUS} := 17.9$	in	(User Input)
RRUS Width =	$W_{RRUS} := 13.2$	in	(User Input)
RRUS Thickness =	$T_{RRUS} := 9.5$	in	(User Input)
RRUS Weight =	$WT_{RRUS} := 75$	lbs	(User Input)
Number of RRUS's =	$N_{RRUS} := 1$		
RRUS Aspect Ratio =	$Ar_{RRUS} := \frac{L_{RRUS}}{W_{RRUS}} = 1.4$		
RRUS Force Coefficient =	$Ca_{RRUS} = 1.2$		

Wind Load (without ice)

Surface Area for One RRUS =	$SA_{RRUSF} := \frac{L_{RRUS} \cdot W_{RRUS}}{144} = 1.6$	sf
Total RRUS Wind Force =	$F_{RRUS} := qz \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{RRUSF} = 31$	lbs
Surface Area for One RRUS =	$SA_{RRUSS} := \frac{L_{RRUS} \cdot T_{RRUS}}{144} = 1.2$	sf
Total RRUS Wind Force =	$F_{RRUS} := qz \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{RRUSS} = 23$	lbs

Wind Load (with ice)

Surface Area for One RRUS w/ Ice =	$SA_{ICERRUSF} := \frac{(L_{RRUS} + 2 \cdot t_{iz}) \cdot (W_{RRUS} + 2 \cdot t_{iz})}{144} = 2.4$	sf
Total RRUS Wind Force w/ Ice =	$Fi_{RRUS} := qz_{ice} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{ICERRUSF} = 12$	lbs
Surface Area for One RRUS w/ Ice =	$SA_{ICERRUSS} := \frac{(L_{RRUS} + 2 \cdot t_{iz}) \cdot (T_{RRUS} + 2 \cdot t_{iz})}{144} = 1.9$	sf
Total RRUS Wind Force w/ Ice =	$Fi_{RRUS} := qz_{ice} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{ICERRUSS} = 10$	lbs

Gravity Load (without ice)

Weight of All RRUSs =	$WT_{RRUS} \cdot N_{RRUS} = 75$	lbs

Gravity Loads (ice only)

Volume of Each RRUS =	$V_{RRUS} := L_{RRUS} \cdot W_{RRUS} \cdot T_{RRUS} = 2245$	cu in
Volume of Ice on Each RRUS =	$V_{ice} := (L_{RRUS} + 2 \cdot t_{iz}) \cdot (W_{RRUS} + 2 \cdot t_{iz}) \cdot (T_{RRUS} + 2 \cdot t_{iz}) - V_{RRUS} = 2204$	cu in
Weight of Ice on Each RRUS =	$W_{ICERRUS} := \frac{V_{ice}}{1728} \cdot Id = 71$	lbs
Weight of Ice on All RRUSs =	$W_{ICERRUS} \cdot N_{RRUS} = 71$	lbs

Development of Wind & Ice Load on RRUS's

RRUS Data:

RRUS Model = Ericsson 4460 B25+B66

RRUS Shape = Flat (User Input)

RRUS Height = $L_{RRUS} := 19.6$ in (User Input)

RRUS Width = $W_{RRUS} := 15.7$ in (User Input)

RRUS Thickness = $T_{RRUS} := 12.1$ in (User Input)

RRUS Weight = $WT_{RRUS} := 109$ lbs (User Input)

Number of RRUS's = $N_{RRUS} := 1$

RRUS Aspect Ratio = $Ar_{RRUS} := \frac{L_{RRUS}}{W_{RRUS}} = 1.2$

RRUS Force Coefficient = $Ca_{RRUS} = 1.2$

Wind Load (without ice)

Surface Area for One RRUS = $SA_{RRUSF} := \frac{L_{RRUS} \cdot W_{RRUS}}{144} = 2.1$ sf

Total RRUS Wind Force = $F_{RRUS} := qz \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{RRUSF} = 41$ lbs

Surface Area for One RRUS = $SA_{RRUSS} := \frac{L_{RRUS} \cdot T_{RRUS}}{144} = 1.6$ sf

Total RRUS Wind Force = $F_{RRUS} := qz \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{RRUSS} = 32$ lbs

Wind Load (with ice)

Surface Area for One RRUS w/ Ice = $SA_{ICERRUSF} := \frac{(L_{RRUS} + 2 \cdot t_{iz}) \cdot (W_{RRUS} + 2 \cdot t_{iz})}{144} = 3$ sf

Total RRUS Wind Force w/ Ice = $Fi_{RRUS} := qz_{ice} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{ICERRUSF} = 15$ lbs

Surface Area for One RRUS w/ Ice = $SA_{ICERRUSS} := \frac{(L_{RRUS} + 2 \cdot t_{iz}) \cdot (T_{RRUS} + 2 \cdot t_{iz})}{144} = 2.4$ sf

Total RRUS Wind Force w/ Ice = $Fi_{RRUS} := qz_{ice} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{ICERRUSS} = 12$ lbs

Gravity Load (without ice)

Weight of All RRUSs = $WT_{RRUS} \cdot N_{RRUS} = 109$ lbs

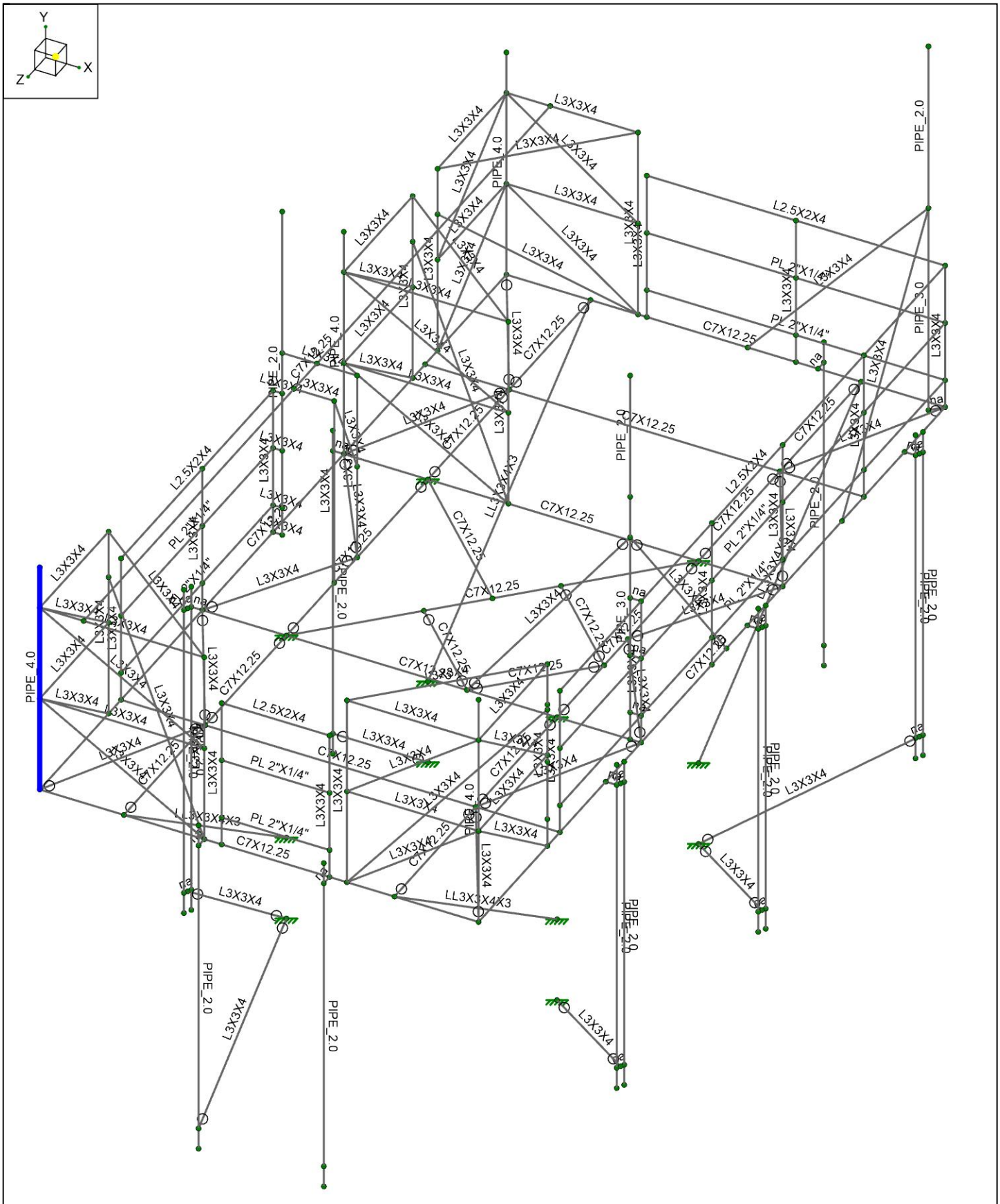
Gravity Loads (ice only)

Volume of Each RRUS = $V_{RRUS} := L_{RRUS} \cdot W_{RRUS} \cdot T_{RRUS} = 3723$ cu in

Volume of Ice on Each RRUS = $V_{ice} := (L_{RRUS} + 2 \cdot t_{iz}) \cdot (W_{RRUS} + 2 \cdot t_{iz}) \cdot (T_{RRUS} + 2 \cdot t_{iz}) - V_{RRUS} = 2940$ cu in

Weight of Ice on Each RRUS = $W_{ICERRUS} := \frac{V_{ice}}{1728} \cdot Id = 95$ lbs

Weight of Ice on All RRUSs = $W_{ICERRUS} \cdot N_{RRUS} = 95$ lbs



Envelope Only Solution

Centek	CT11403A_AMA	SK-8
PPG		Mar 21, 2022
22022.02	Existing Lattice Tower Platform Base Frame	CT11403A_Platform & Antenna M…

Nodes

	Label	X [in]	Y [in]	Z [in]	Temp [deg F]	Detach From Dia…
1	N27	0	0	0		
2	N2	-120	0	0		
3	N3	0	0	-244		
4	N4	-120	0	-244		
5	N5	0	0	-42.5		
6	N6	-120	0	-42.5		
7	N7	0	0	-85		
8	N8	-120	0	-85		
9	N9	0	0	-201.5		
10	N10	-120	0	-201.5		
11	N11	0	0	-159		
12	N12	-120	0	-159		
13	N13	-23	0	0		
14	N14	-23	0	-244		
15	N15	-23	0	-42.5		
16	N16	-23	0	-85		
17	N17	-23	0	-201.5		
18	N18	-23	0	-159		
19	N19	-97	0	0		
20	N20	-97	0	-42.5		
21	N21	-97	0	-85		
22	N22	-97	0	-159		
23	N23	-97	0	-201.5		
24	N24	-97	0	-244		
25	N25	-60	0	-122		
26	N26	0	66	0		
27	N28	-120	66	0		
28	N29	-120	66	-244		
29	N31	-120	54	0		
30	N32	-120	54	-36		
31	N33	-120	0	-36		
32	N34	-120	27	0		
33	N35	-120	27	-36		
34	N36	-75	27	0		
35	N37	-75	0	0		
36	N38	-75	54	0		
37	N39	-97	0	-122		
38	N40	-23	0	-122		
39	N41	-120	40.5	-36		
40	N42	0	54	0		
41	N43	0	54	-36		
42	N44	0	27	0		
43	N45	0	27	-36		
44	N46	-36	27	0		
45	N47	-36	54	0		
46	N48	0	40.5	-36		
47	N49	0	0	-36		
48	N50	-36	0	0		
49	N51	-120	54	-244		
50	N52	-120	54	-208		
51	N53	-120	27	-244		
52	N54	-120	27	-208		
53	N55	-84	27	-244		
54	N56	-84	54	-244		
55	N57	-120	40.5	-208		
56	N58	-120	0	-208		
57	N59	-84	0	-244		
58	N60	-108	54	0		

Nodes (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [deg F]	Detach From Dia…
59	N61	-108	54	-244		
60	N63	-47.625	0	-85		
61	N62	-23	0	-109.62		
62	N66	-72.322921	0	-109.677079		
63	N67	-47.69	0	-134.31		
64	N68	-72.3125	0	-109.666667		
65	N69	-120	66	-159		
66	N70	-120	54	-159		
67	N71	-120	54	-195		
68	N72	-120	27	-159		
69	N73	-120	27	-195		
70	N74	-75	27	-159		
71	N75	-75	54	-159		
72	N76	-120	40.5	-195		
73	N77	-120	0	-195		
74	N78	-75	0	-159		
75	N79	0	42	-244		
76	N80	0	25	-244		
77	N81	0	8	-244		
78	N82	-81.6	42	-244		
79	N83	-81.6	25	-244		
80	N84	-81.6	8	-244		
81	N85	-40.8	42	-244		
82	N86	-40.8	25	-244		
83	N87	-40.8	8	-244		
84	N88	-81.6	0	-244		
85	N89	-40.8	0	-244		
86	N90	0	0	-122		
87	N91	0	8	-42.5		
88	N92	0	8	-85		
89	N93	0	8	-201.5		
90	N94	0	8	-159		
91	N95	0	8	-122		
92	N96	0	25	-42.5		
93	N97	0	25	-85		
94	N98	0	25	-201.5		
95	N99	0	25	-159		
96	N100	0	25	-122		
97	N101	0	42	-42.5		
98	N102	0	42	-85		
99	N103	0	42	-201.5		
100	N104	0	42	-159		
101	N105	0	42	-122		
102	N107	-3	0	-241		
103	N108	-54	0	-244		
104	N109	0	0	-190		
105	N110	-3	60	-241		
106	N111	-3	108	-241		
107	N112	-120	8	-42.5		
108	N113	-120	25	-42.5		
109	N114	-120	42	-42.5		
110	N119	-120	0	-122		
111	N120	-120	8	-122		
112	N121	-120	25	-122		
113	N122	-120	42	-122		
114	N116	-120	8	-85		
115	N117	-120	25	-85		
116	N118	-120	42	-85		

Nodes (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [deg F]	Detach From Dia…
117	N123	-97	0	-110		
118	N124	-97	54	-122		
119	N125	-97	54	-110		
120	N126	-97	27	-122		
121	N127	-117.5	54	-122		
122	N128	-108	54	-110		
123	N129	-117.5	0	-122		
124	N130	-117.5	96	-122		
125	N131	-108	54	-122		
126	N132	0	0	-66.5		
127	N133	3	0	-66.5		
128	N134	3	6	-66.5		
129	N135	3	-90	-66.5		
130	N136	0	0	-140.5		
131	N137	3	0	-140.5		
132	N138	3	6	-140.5		
133	N139	3	-90	-140.5		
134	N140	0	0	-222.75		
135	N141	3	0	-222.75		
136	N142	3	6	-222.75		
137	N143	3	-90	-222.75		
138	N144	4	-90	-68.5		
139	N145	4	-90	-142.5		
140	N146	4	-90	-224.75		
141	N147	4	6	-68.5		
142	N148	4	6	-142.5		
143	N149	4	6	-224.75		
144	N150	4	-84	-68.5		
145	N151	4	-84	-142.5		
146	N152	4	-84	-224.75		
147	N153	4	0	-68.5		
148	N154	4	0	-142.5		
149	N155	4	0	-224.75		
150	N156	3	-84	-66.5		
151	N157	3	-84	-140.5		
152	N158	3	-84	-222.75		
153	N159	-40.75	0	0		
154	N160	-70.25	0	0		
155	N161	-40.75	8	0		
156	N162	-70.25	8	0		
157	N163	-40.75	25	0		
158	N164	-70.25	25	0		
159	N165	-40.75	42	0		
160	N166	-70.25	42	0		
161	N167	-75	0	3		
162	N168	-40.75	0	3		
163	N169	-75	6	3		
164	N170	-40.75	6	3		
165	N171	-75	-90	3		
166	N172	-40.75	-90	3		
167	N173	-123	0	-85		
168	N174	-123	-90	-85		
169	N175	-123	6	-85		
170	N176	-124	0	-83		
171	N177	-124	-90	-83		
172	N178	-124	6	-83		
173	N179	-123	-84	-85		
174	N180	-124	-84	-83		

Nodes (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [deg F]	Detach From Dia…
175	N181	-123	0	-159		
176	N182	-123	6	-159		
177	N183	-123	-90	-159		
178	N184	-117.5	8	-122		
179	N185	-117.5	25	-122		
180	N186	-117.5	42	-122		
181	N187	-34.75	0	-244		
182	N188	-34.75	0	-247		
183	N189	-34.75	6	-247		
184	N190	-34.75	-90	-247		
185	N191	3.5	-84	-67.5		
186	N192	3.5	-84	-141.5		
187	N193	3.5	-84	-223.75		
188	N194	3.5	0	-67.5		
189	N195	3.5	0	-141.5		
190	N196	3.5	0	-223.75		
191	N197	-123.5	0	-84		
192	N198	-123.5	-84	-84		
193	N199	-23	-84	-85		
194	N200	-23	-84	-159		
195	N201	-97	-84	-85		
196	N202	-97	-84	-159		
197	N203	-23	-60	-85		
198	N204	-23	-60	-159		
199	N205	-97	-60	-85		
200	N206	-97	-60	-159		
201	N207	-75	-84	3		
202	N208	-40.75	-84	3		
203	N209	-123	-84	-159		
204	N210	-34.75	-84	-247		
205	N211	-3	0	-85		
206	N212	-3	72	-85		
207	N213	-3	108	-85		
208	N214	-3	60	-85		
209	N215	0	0	-129.62		
210	N216	-3	8	-85		
211	N217	-3	25	-85		
212	N218	-3	42	-85		
213	N219	0	42	-36		
214	N220	0	8	-36		
215	N221	0	25	-36		

Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	N18	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N16	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N22	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N21	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N199	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N200	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
7	N201	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
8	N202	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
9	N203	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
10	N204	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
11	N205	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
12	N206	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. C…	Density [k…	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	58	1.2
3	A992	29000	11154	0.3	0.65	0.49	50	1.1	58	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 Grad…	29000	11154	0.3	0.65	0.49	35	1.5	58	1.2

General Section Sets

	Label	Shape	Type	Material	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	GEN1A	RE4X4	Beam	gen_Conc3NW	16	21.333	21.333	31.573
2	RIGID		None	RIGID	1e+06	1e+06	1e+06	1e+06

Hot Rolled Member Properties

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp t…	Lcomp…	L-Torqu…	K y-y	K z-z	Cb	Function
1	M1	Platfor…	244			Lbyy						Lateral
2	M2	Platfor…	244			Lbyy						Lateral
3	M3	Platfor…	120			Lbyy						Lateral
4	M4	Platfor…	120			Lbyy						Lateral
5	M5	Platfor…	120			Lbyy						Lateral
6	M6	Platfor…	120			Lbyy						Lateral
7	M7	Platfor…	120			Lbyy						Lateral
8	M8	Platfor…	120			Lbyy						Lateral
9	M9	Platfor…	42.5			Lbyy						Lateral
10	M10	Platfor…	42.5			Lbyy						Lateral
11	M11	Platfor…	74			Lbyy						Lateral
12	M12	Platfor…	42.5			Lbyy						Lateral
13	M13	Platfor…	42.5			Lbyy						Lateral
14	M14	Platfor…	42.5			Lbyy						Lateral
15	M15	Platfor…	42.5			Lbyy						Lateral
16	M16	Platfor…	74			Lbyy						Lateral
17	M17	Platfor…	42.5			Lbyy						Lateral
18	M18	Platfor…	42.5			Lbyy						Lateral
19	M19	Platfor…	104.652			Lbyy						Lateral
20	M20	Platfor…	52.326			Lbyy						Lateral
21	M21	Corner…	66			Lbyy						Lateral
22	M22	Corner…	66			Lbyy						Lateral
23	M24	Corner…	66			Lbyy						Lateral
24	M25	L3X3X4	36			Lbyy						Lateral
25	M26	L3X3X4	36			Lbyy						Lateral
26	M27	L3X3X4	45			Lbyy						Lateral
27	M28	L3X3X4	45			Lbyy						Lateral
28	M29	L3X3X4	54			Lbyy						Lateral
29	M30	L3X3X4	54			Lbyy						Lateral
30	M31	L3X3X4	48.324			Lbyy						Lateral
31	M32	L3X3X4	48.324			Lbyy						Lateral
32	M33	L3X3X4	48.324			Lbyy						Lateral
33	M34	L3X3X4	48.324			Lbyy						Lateral
34	M35	L3X3X4	48.324			Lbyy						Lateral
35	M36	L3X3X4	48.324			Lbyy						Lateral
36	M37	L3X3X4	48.324			Lbyy						Lateral
37	M38	L3X3X4	48.324			Lbyy						Lateral
38	M39	L3X3X4	43.566			Lbyy						Lateral
39	M40	L3X3X4	43.566			Lbyy						Lateral
40	M41	L3X3X4	43.566			Lbyy						Lateral
41	M42	L3X3X4	43.566			Lbyy						Lateral
42	M43	L3X3X4	45			Lbyy						Lateral
43	M44	L3X3X4	52.479			Lbyy						Lateral

Hot Rolled Member Properties (Continued)

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp t…	Lcomp…	L-Torqu…	K y-y	K z-z	Cb	Function
44	M45	L3X3X4	52.479			Lbyy						Lateral
45	M46	L3X3X4	45			Lbyy						Lateral
46	M47	L3X3X4	57.628			Lbyy						Lateral
47	M48	L3X3X4	70.436			Lbyy						Lateral
48	M49	L3X3X4	36			Lbyy						Lateral
49	M50	L3X3X4	36			Lbyy						Lateral
50	M51	L3X3X4	36			Lbyy						Lateral
51	M52	L3X3X4	36			Lbyy						Lateral
52	M53	L3X3X4	54			Lbyy						Lateral
53	M54	L3X3X4	54			Lbyy						Lateral
54	M55	L3X3X4	45			Lbyy						Lateral
55	M56	L3X3X4	45			Lbyy						Lateral
56	M57	L3X3X4	45			Lbyy						Lateral
57	M58	L3X3X4	45			Lbyy						Lateral
58	M59	L3X3X4	50.912			Lbyy						Lateral
59	M60	L3X3X4	65.056			Lbyy						Lateral
60	M61	L3X3X4	36			Lbyy						Lateral
61	M62	L3X3X4	36			Lbyy						Lateral
62	M63	L3X3X4	36			Lbyy						Lateral
63	M64	L3X3X4	36			Lbyy						Lateral
64	M65	L3X3X4	54			Lbyy						Lateral
65	M66	L3X3X4	54			Lbyy						Lateral
66	M67	L3X3X4	45			Lbyy						Lateral
67	M68	L3X3X4	45			Lbyy						Lateral
68	M69	L3X3X4	45			Lbyy						Lateral
69	M70	L3X3X4	45			Lbyy						Lateral
70	M71	L3X3X4	50.912			Lbyy						Lateral
71	M72	L3X3X4	65.056			Lbyy						Lateral
72	M73	Platfor…	244			Lbyy						Lateral
73	M74	Platfor…	34.917			Lbyy						Lateral
74	M75	Platfor…	34.913			Lbyy						Lateral
75	M76	Platfor…	34.821			Lbyy						Lateral
76	M77	Corner…	66			Lbyy						Lateral
77	M78	L3X3X4	36			Lbyy						Lateral
78	M79	L3X3X4	36			Lbyy						Lateral
79	M80	L3X3X4	45			Lbyy						Lateral
80	M81	L3X3X4	45			Lbyy						Lateral
81	M82	L3X3X4	54			Lbyy						Lateral
82	M83	L3X3X4	54			Lbyy						Lateral
83	M84	L3X3X4	45			Lbyy						Lateral
84	M85	L3X3X4	52.479			Lbyy						Lateral
85	M86	L3X3X4	52.479			Lbyy						Lateral
86	M87	L3X3X4	45			Lbyy						Lateral
87	M88	L3X3X4	57.628			Lbyy						Lateral
88	M89	L3X3X4	70.436			Lbyy						Lateral
89	M90	L3X3X4	42			Lbyy						Lateral
90	M91	L3X3X4	42			Lbyy						Lateral
91	M92	L2.5X2X4	81.6			Lbyy						Lateral
92	M93	PL 2"X1…	81.6			Lbyy						Lateral
93	M94	PL 2"X1…	81.6			Lbyy						Lateral
94	M95	L3X3X4	42			Lbyy						Lateral
95	M96	L3X3X4	42			Lbyy						Lateral
96	M97	L3X3X4	42			Lbyy						Lateral
97	M98	L3X3X4	42			Lbyy						Lateral
98	M99	L3X3X4	42			Lbyy						Lateral
99	M100	L3X3X4	42			Lbyy						Lateral
100	M101	L2.5X2X4	201.5			Lbyy						Lateral
101	M102	PL 2"X1…	201.5	36	36	Lbyy						Lateral

Hot Rolled Member Properties (Continued)

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp t…	Lcomp…	L-Torqu…	K y-y	K z-z	Cb	Function
102	M103	PL 2"X1…	201.5	36	36	Lbyy						Lateral
103	M104	L3X3X4	78.804			Lbyy						Lateral
104	M105	L3X3X4	78.804			Lbyy						Lateral
105	M106	PIPE_3.0	60			Lbyy						Lateral
106	M107	PIPE_2.0	48			Lbyy						Lateral
107	M109	L3X3X4	42			Lbyy						Lateral
108	M110	L3X3X4	42			Lbyy						Lateral
109	M111	L3X3X4	42			Lbyy						Lateral
110	M112	L2.5X2X4	79.5			Lbyy						Lateral
111	M113	PL 2"X1…	79.5			Lbyy						Lateral
112	M114	PL 2"X1…	79.5			Lbyy						Lateral
113	M115	L3X3X4	54			Lbyy						Lateral
114	M116	L3X3X4	54			Lbyy						Lateral
115	M117	L3X3X4	29.547			Lbyy						Lateral
116	M118	L3X3X4	11			Lbyy						Lateral
117	M119	L3X3X4	20.5			Lbyy						Lateral
118	M120	PIPE_2.0	96			Lbyy						Lateral
119	M121	PIPE_2.0	96			Lbyy						Lateral
120	M123	PIPE_2.0	96			Lbyy						Lateral
121	M125	PIPE_2.0	96			Lbyy						Lateral
122	M127	PIPE_2.0	96			Lbyy						Lateral
123	M128	PIPE_2.0	96			Lbyy						Lateral
124	M129	PIPE_2.0	96			Lbyy						Lateral
125	M136	L3X3X4	42			Lbyy						Lateral
126	M137	L3X3X4	42			Lbyy						Lateral
127	M138	L2.5X2X4	29.5			Lbyy						Lateral
128	M139	PL 2"X1…	29.5			Lbyy						Lateral
129	M140	PL 2"X1…	29.5			Lbyy						Lateral
130	M141	PIPE_2.0	96			Lbyy						Lateral
131	M142	PIPE_2.0	96			Lbyy						Lateral
132	M146	PIPE_2.0	96			Lbyy						Lateral
133	M147	PIPE_2.0	96			Lbyy						Lateral
134	M151	PIPE_2.0	96			Lbyy						Lateral
135	M152	L3X3X4	2.5			Lbyy						Lateral
136	M153	L3X3X4	2.5			Lbyy						Lateral
137	M154	L3X3X4	2.5			Lbyy						Lateral
138	M155	L3X3X4	2.5			Lbyy						Lateral
139	M156	PIPE_2.0	96			Lbyy						Lateral
140	M158	LL3X3X…	104.043			Lbyy						Lateral
141	M159	LL3X3X…	104.043			Lbyy						Lateral
142	M160	LL3X3X…	104.043			Lbyy						Lateral
143	M161	LL3X3X…	104.043			Lbyy						Lateral
144	M162	L3X3X4	31.757			Lbyy						Lateral
145	M163	L3X3X4	31.757			Lbyy						Lateral
146	M164	L3X3X4	69.963			Lbyy						Lateral
147	M165	L3X3X4	26.519			Lbyy						Lateral
148	M166	L3X3X4	90.708			Lbyy						Lateral
149	M167	L3X3X4	26			Lbyy						Lateral
150	M168	PIPE_3.0	72			Lbyy						Lateral
151	M169	PIPE_2.0	36			Lbyy						Lateral
152	M170	L3X3X4	74.776			Lbyy						Lateral
153	M171	L3X3X4	74.833			Lbyy						Lateral

Member Point Loads (BLC 2 : Dead Load)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(in, %)]	Inactive [(k, k-ft), (in,…
1	M151	Y	-0.153	%50	Active
2	M142	Y	-0.153	%50	Active
3	M123	Y	-0.153	%50	Active

Member Point Loads (BLC 2 : Dead Load) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(in, %)]	Inactive [(k, k-ft), (in,…
4	M121	Y	-0.023	28	Active
5	M147	Y	-0.023	28	Active
6	M156	Y	-0.023	68	Active
7	M125	Y	-0.041	17	Active
8	M141	Y	-0.041	17	Active
9	M146	Y	-0.041	17	Active
10	M142	Y	-0.075	72	Active
11	M123	Y	-0.075	72	Active
12	M151	Y	-0.075	72	Active
13	M121	Y	-0.109	70	Active
14	M156	Y	-0.109	26	Active
15	M147	Y	-0.109	70	Active

Member Point Loads (BLC 3 : Ice Load)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(in, %)]	Inactive [(k, k-ft), (in,…
1	M151	Y	-0.399	%50	Active
2	M142	Y	-0.399	%50	Active
3	M123	Y	-0.399	%50	Active
4	M156	Y	-0.128	68	Active
5	M121	Y	-0.128	28	Active
6	M147	Y	-0.128	28	Active
7	M146	Y	-0.123	17	Active
8	M141	Y	-0.123	17	Active
9	M125	Y	-0.123	17	Active
10	M151	Y	-0.071	72	Active
11	M123	Y	-0.071	72	Active
12	M142	Y	-0.071	72	Active
13	M121	Y	-0.095	70	Active
14	M147	Y	-0.095	70	Active
15	M156	Y	-0.095	26	Active

Member Point Loads (BLC 4 : Wind with Ice X (8psf))

	Member Label	Direction	Magnitude [k, k-ft]	Location [(in, %)]	Inactive [(k, k-ft), (in,…
1	M123	X	0.101	%50	Active
2	M151	X	0.101	%50	Active
3	M142	X	0.044	%50	Active
4	M156	X	0.017	68	Active
5	M121	X	0.034	28	Active
6	M147	X	0.034	28	Active
7	M125	X	0.025	17	Active
8	M146	X	0.025	17	Active
9	M141	X	0.016	17	Active
10	M142	X	0.01	72	Active
11	M123	X	0.012	72	Active
12	M151	X	0.012	72	Active
13	M156	X	0.012	26	Active
14	M121	X	0.015	70	Active
15	M147	X	0.015	70	Active

Member Point Loads (BLC 5 : Wind X(34psf))

	Member Label	Direction	Magnitude [k, k-ft]	Location [(in, %)]	Inactive [(k, k-ft), (in,…
1	M151	X	0.323	%50	Active
2	M123	X	0.323	%50	Active
3	M142	X	0.117	%50	Active
4	M156	X	0.036	68	Active
5	M121	X	0.094	28	Active
6	M147	X	0.094	28	Active

Member Point Loads (BLC 5 : Wind X(34psf)) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(in, %)]	Inactive [(k, k-ft), (in,…
7	M146	X	0.07	17	Active
8	M125	X	0.07	17	Active
9	M141	X	0.039	17	Active
10	M151	X	0.031	72	Active
11	M123	X	0.031	72	Active
12	M142	X	0.023	72	Active
13	M156	X	0.032	26	Active
14	M147	X	0.041	70	Active
15	M121	X	0.041	70	Active

Member Point Loads (BLC 6 : Wind with Ice Z(8psf))

	Member Label	Direction	Magnitude [k, k-ft]	Location [(in, %)]	Inactive [(k, k-ft), (in,…
1	M151	Z	0.044	%50	Active
2	M123	Z	0.044	%50	Active
3	M142	Z	0.101	%50	Active
4	M121	Z	0.017	28	Active
5	M147	Z	0.017	28	Active
6	M156	Z	0.034	68	Active
7	M125	Z	0.016	17	Active
8	M146	Z	0.016	17	Active
9	M141	Z	0.025	17	Active
10	M142	Z	0.012	72	Active
11	M123	Z	0.01	72	Active
12	M151	Z	0.01	72	Active
13	M121	Z	0.012	70	Active
14	M147	Z	0.012	70	Active
15	M156	Z	0.015	26	Active

Member Point Loads (BLC 7 : Wind Z(34psf))

	Member Label	Direction	Magnitude [k, k-ft]	Location [(in, %)]	Inactive [(k, k-ft), (in,…
1	M151	Z	0.117	%50	Active
2	M123	Z	0.117	%50	Active
3	M142	Z	0.323	%50	Active
4	M121	Z	0.036	28	Active
5	M147	Z	0.036	28	Active
6	M156	Z	0.094	68	Active
7	M146	Z	0.039	17	Active
8	M125	Z	0.039	17	Active
9	M141	Z	0.07	17	Active
10	M123	Z	0.023	72	Active
11	M151	Z	0.023	72	Active
12	M142	Z	0.031	72	Active
13	M121	Z	0.032	70	Active
14	M147	Z	0.032	70	Active
15	M156	Z	0.041	26	Active

Member Distributed Loads (BLC 4 : Wind with Ice X (8psf))

	Member Label	Direction	Start Magnitud…	End Magnitude…	Start Location […]	End Location [(…	Inactive [(k, k-f…
1	M156	X	0.001	0.001	0	%100	Active
2	M129	X	0.001	0.001	0	%100	Active
3	M125	X	0.001	0.001	0	%100	Active
4	M151	X	0.001	0.001	0	%100	Active
5	M128	X	0.001	0.001	0	%100	Active
6	M123	X	0.001	0.001	0	%100	Active
7	M147	X	0.001	0.001	0	%100	Active
8	M146	X	0.001	0.001	0	%100	Active
9	M142	X	0.001	0.001	0	%100	Active

Member Distributed Loads (BLC 4 : Wind with Ice X (8psf)) (Continued)

	Member Label	Direction	Start Magnitud…	End Magnitude…	Start Location […	End Location [(…	Inactive [(k, k-f…
10	M141	X	0.001	0.001	0	%100	Active
11	M127	X	0.001	0.001	0	%100	Active
12	M121	X	0.001	0.001	0	%100	Active
13	M2	X	0.003	0.003	0	%100	Active
14	M1	X	0.003	0.003	0	%100	Active
15	M25	X	0.001	0.001	0	%100	Active
16	M43	X	0.001	0.001	0	%100	Active
17	M26	X	0.001	0.001	0	%100	Active
18	M46	X	0.001	0.001	0	%100	Active
19	M29	X	0.001	0.001	0	%100	Active
20	M21	X	0.001	0.001	0	%100	Active
21	M78	X	0.001	0.001	0	%100	Active
22	M61	X	0.001	0.001	0	%100	Active
23	M65	X	0.001	0.001	0	%100	Active
24	M82	X	0.001	0.001	0	%100	Active
25	M77	X	0.001	0.001	0	%100	Active
26	M84	X	0.001	0.001	0	%100	Active
27	M79	X	0.001	0.001	0	%100	Active
28	M87	X	0.001	0.001	0	%100	Active
29	M73	X	0.001	0.001	0	%100	Active
30	M71	X	0.001	0.001	0	%100	Active
31	M67	X	0.001	0.001	0	%100	Active
32	M62	X	0.001	0.001	0	%100	Active
33	M72	X	0.001	0.001	0	%100	Active
34	M88	X	0.001	0.001	0	%100	Active
35	M89	X	0.001	0.001	0	%100	Active
36	M24	X	0.001	0.001	0	%100	Active
37	M112	X	0.001	0.001	0	%100	Active
38	M114	X	0.001	0.001	0	%100	Active
39	M113	X	0.001	0.001	0	%100	Active
40	M109	X	0.001	0.001	0	%100	Active
41	M111	X	0.001	0.001	0	%100	Active
42	M120	X	0.001	0.001	0	%100	Active
43	M116	X	0.001	0.001	0	%100	Active
44	M115	X	0.001	0.001	0	%100	Active
45	M110	X	0.001	0.001	0	%100	Active
46	M101	X	0.001	0.001	0	%100	Active
47	M90	X	0.001	0.001	0	%100	Active
48	M102	X	0.001	0.001	0	%100	Active
49	M103	X	0.001	0.001	0	%100	Active
50	M100	X	0.001	0.001	0	%100	Active
51	M99	X	0.001	0.001	0	%100	Active
52	M104	X	0.001	0.001	0	%100	Active
53	M107	X	0.001	0.001	0	%100	Active
54	M169	X	0.001	0.001	0	%100	Active
55	M168	X	0.001	0.001	0	%100	Active
56	M171	X	0.001	0.001	0	%100	Active
57	M98	X	0.001	0.001	0	%100	Active
58	M97	X	0.001	0.001	0	%100	Active
59	M96	X	0.001	0.001	0	%100	Active
60	M106	X	0.001	0.001	0	%100	Active
61	M49	X	0.001	0.001	0	%100	Active
62	M50	X	0.001	0.001	0	%100	Active
63	M53	X	0.001	0.001	0	%100	Active
64	M55	X	0.001	0.001	0	%100	Active
65	M60	X	0.001	0.001	0	%100	Active
66	M59	X	0.001	0.001	0	%100	Active
67	M58	X	0.001	0.001	0	%100	Active

Member Distributed Loads (BLC 4 : Wind with Ice X (8psf)) (Continued)

	Member Label	Direction	Start Magnitud…	End Magnitude…	Start Location […	End Location [(…	Inactive [(k, k-f…
68	M22	X	0.001	0.001	0	%100	Active

Member Distributed Loads (BLC 5 : Wind X(34psf))

	Member Label	Direction	Start Magnitud…	End Magnitude…	Start Location […	End Location [(…	Inactive [(k, k-f…
1	M128	X	0.004	0.004	0	%100	Active
2	M129	X	0.004	0.004	0	%100	Active
3	M127	X	0.004	0.004	0	%100	Active
4	M146	X	0.004	0.004	33	%100	Active
5	M141	X	0.004	0.004	33	%100	Active
6	M125	X	0.004	0.004	33	%100	Active
7	M156	X	0.004	0.004	0	41	Active
8	M121	X	0.004	0.004	55	%100	Active
9	M147	X	0.004	0.004	55	%100	Active
10	M142	X	0.004	0.004	0	%100	Active
11	M90	X	0.005	0.005	0	%100	Active
12	M106	X	0.005	0.005	0	%100	Active
13	M107	X	0.005	0.005	0	%100	Active
14	M104	X	0.005	0.005	0	%100	Active
15	M102	X	0.005	0.005	0	%100	Active
16	M101	X	0.005	0.005	0	%100	Active
17	M103	X	0.005	0.005	0	%100	Active
18	M100	X	0.005	0.005	0	%100	Active
19	M99	X	0.005	0.005	0	%100	Active
20	M98	X	0.005	0.005	0	%100	Active
21	M171	X	0.005	0.005	0	%100	Active
22	M97	X	0.005	0.005	0	%100	Active
23	M168	X	0.005	0.005	0	%100	Active
24	M169	X	0.005	0.005	0	%100	Active
25	M96	X	0.005	0.005	0	%100	Active
26	M53	X	0.005	0.005	0	%100	Active
27	M49	X	0.005	0.005	0	%100	Active
28	M55	X	0.005	0.005	0	%100	Active
29	M50	X	0.005	0.005	0	%100	Active
30	M58	X	0.005	0.005	0	%100	Active
31	M60	X	0.005	0.005	0	%100	Active
32	M59	X	0.005	0.005	0	%100	Active
33	M22	X	0.005	0.005	0	%100	Active
34	M25	X	0.005	0.005	0	%100	Active
35	M43	X	0.005	0.005	0	%100	Active
36	M26	X	0.005	0.005	0	%100	Active
37	M46	X	0.005	0.005	0	%100	Active
38	M29	X	0.005	0.005	0	%100	Active
39	M21	X	0.005	0.005	0	%100	Active
40	M73	X	0.005	0.005	0	%100	Active
41	M120	X	0.005	0.005	0	%100	Active
42	M109	X	0.005	0.005	0	%100	Active
43	M110	X	0.005	0.005	0	%100	Active
44	M114	X	0.005	0.005	0	%100	Active
45	M113	X	0.005	0.005	0	%100	Active
46	M112	X	0.005	0.005	0	%100	Active
47	M115	X	0.005	0.005	0	%100	Active
48	M116	X	0.005	0.005	0	%100	Active
49	M117	X	0.005	0.005	0	%100	Active
50	M77	X	0.005	0.005	0	%100	Active
51	M87	X	0.005	0.005	0	%100	Active
52	M79	X	0.005	0.005	0	%100	Active
53	M78	X	0.005	0.005	0	%100	Active
54	M82	X	0.005	0.005	0	%100	Active

Member Distributed Loads (BLC 5 : Wind X(34psf)) (Continued)

	Member Label	Direction	Start Magnitud…	End Magnitude…	Start Location […	End Location [(…	Inactive [(k, k-f…
55	M65	X	0.005	0.005	0	%100	Active
56	M70	X	0.005	0.005	0	%100	Active
57	M62	X	0.005	0.005	0	%100	Active
58	M67	X	0.005	0.005	0	%100	Active
59	M61	X	0.005	0.005	0	%100	Active
60	M71	X	0.005	0.005	0	%100	Active
61	M72	X	0.005	0.005	0	%100	Active
62	M24	X	0.005	0.005	0	%100	Active
63	M1	X	0.011	0.011	0	%100	Active
64	M2	X	0.011	0.011	0	%100	Active

Member Distributed Loads (BLC 6 : Wind with Ice Z(8psf))

	Member Label	Direction	Start Magnitud…	End Magnitude…	Start Location […	End Location [(…	Inactive [(k, k-f…
1	M142	Z	0.001	0.001	0	%100	Active
2	M141	Z	0.001	0.001	0	%100	Active
3	M121	Z	0.001	0.001	0	%100	Active
4	M127	Z	0.001	0.001	0	%100	Active
5	M123	Z	0.001	0.001	0	%100	Active
6	M128	Z	0.001	0.001	0	%100	Active
7	M125	Z	0.001	0.001	0	%100	Active
8	M129	Z	0.001	0.001	0	%100	Active
9	M156	Z	0.001	0.001	0	%100	Active
10	M151	Z	0.001	0.001	0	%100	Active
11	M146	Z	0.001	0.001	0	%100	Active
12	M147	Z	0.001	0.001	0	%100	Active
13	M69	Z	0.001	0.001	0	%100	Active
14	M63	Z	0.001	0.001	0	%100	Active
15	M68	Z	0.001	0.001	0	%100	Active
16	M64	Z	0.001	0.001	0	%100	Active
17	M66	Z	0.001	0.001	0	%100	Active
18	M24	Z	0.001	0.001	0	%100	Active
19	M93	Z	0.001	0.001	0	%100	Active
20	M91	Z	0.001	0.001	0	%100	Active
21	M94	Z	0.001	0.001	0	%100	Active
22	M92	Z	0.001	0.001	0	%100	Active
23	M95	Z	0.001	0.001	0	%100	Active
24	M90	Z	0.001	0.001	0	%100	Active
25	M107	Z	0.001	0.001	0	%100	Active
26	M105	Z	0.001	0.001	0	%100	Active
27	M106	Z	0.001	0.001	0	%100	Active
28	M71	Z	0.001	0.001	0	%100	Active
29	M72	Z	0.001	0.001	0	%100	Active
30	M89	Z	0.001	0.001	0	%100	Active
31	M88	Z	0.001	0.001	0	%100	Active
32	M77	Z	0.001	0.001	0	%100	Active
33	M81	Z	0.001	0.001	0	%100	Active
34	M85	Z	0.001	0.001	0	%100	Active
35	M86	Z	0.001	0.001	0	%100	Active
36	M80	Z	0.001	0.001	0	%100	Active
37	M83	Z	0.001	0.001	0	%100	Active
38	M120	Z	0.001	0.001	0	%100	Active
39	M119	Z	0.001	0.001	0	%100	Active
40	M118	Z	0.001	0.001	0	%100	Active
41	M115	Z	0.001	0.001	0	%100	Active
42	M116	Z	0.001	0.001	0	%100	Active
43	M30	Z	0.001	0.001	0	%100	Active
44	M28	Z	0.001	0.001	0	%100	Active
45	M21	Z	0.001	0.001	0	%100	Active

Member Distributed Loads (BLC 6 : Wind with Ice Z(8psf)) (Continued)

	Member Label	Direction	Start Magnitud…	End Magnitude…	Start Location […	End Location [(…	Inactive [(k, k-f…
46	M44	Z	0.001	0.001	0	%100	Active
47	M47	Z	0.001	0.001	0	%100	Active
48	M45	Z	0.001	0.001	0	%100	Active
49	M27	Z	0.001	0.001	0	%100	Active
50	M48	Z	0.001	0.001	0	%100	Active
51	M138	Z	0.001	0.001	0	%100	Active
52	M136	Z	0.001	0.001	0	%100	Active
53	M139	Z	0.001	0.001	0	%100	Active
54	M137	Z	0.001	0.001	0	%100	Active
55	M140	Z	0.001	0.001	0	%100	Active
56	M52	Z	0.001	0.001	0	%100	Active
57	M51	Z	0.001	0.001	0	%100	Active
58	M57	Z	0.001	0.001	0	%100	Active
59	M56	Z	0.001	0.001	0	%100	Active
60	M54	Z	0.001	0.001	0	%100	Active
61	M22	Z	0.001	0.001	0	%100	Active
62	M59	Z	0.001	0.001	0	%100	Active
63	M60	Z	0.001	0.001	0	%100	Active
64	M169	Z	0.001	0.001	0	%100	Active
65	M168	Z	0.001	0.001	0	%100	Active
66	M170	Z	0.001	0.001	0	%100	Active
67	M4	Z	0.003	0.003	0	%100	Active
68	M3	Z	0.003	0.003	0	%100	Active

Member Distributed Loads (BLC 7 : Wind Z(34psf))

	Member Label	Direction	Start Magnitud…	End Magnitude…	Start Location […	End Location [(…	Inactive [(k, k-f…
1	M129	Z	0.004	0.004	0	%100	Active
2	M128	Z	0.004	0.004	0	%100	Active
3	M127	Z	0.004	0.004	0	%100	Active
4	M125	Z	0.004	0.004	33	%100	Active
5	M141	Z	0.004	0.004	33	%100	Active
6	M146	Z	0.004	0.004	33	%100	Active
7	M156	Z	0.004	0.004	0	41	Active
8	M147	Z	0.004	0.004	55	%100	Active
9	M121	Z	0.004	0.004	55	%100	Active
10	M151	Z	0.004	0.004	0	%100	Active
11	M123	Z	0.004	0.004	0	%100	Active
12	M64	Z	0.005	0.005	0	%100	Active
13	M68	Z	0.005	0.005	0	%100	Active
14	M63	Z	0.005	0.005	0	%100	Active
15	M69	Z	0.005	0.005	0	%100	Active
16	M91	Z	0.005	0.005	0	%100	Active
17	M95	Z	0.005	0.005	0	%100	Active
18	M90	Z	0.005	0.005	0	%100	Active
19	M92	Z	0.005	0.005	0	%100	Active
20	M94	Z	0.005	0.005	0	%100	Active
21	M24	Z	0.005	0.005	0	%100	Active
22	M66	Z	0.005	0.005	0	%100	Active
23	M93	Z	0.005	0.005	0	%100	Active
24	M106	Z	0.005	0.005	0	%100	Active
25	M107	Z	0.005	0.005	0	%100	Active
26	M4	Z	0.011	0.011	0	%100	Active
27	M3	Z	0.011	0.011	0	%100	Active
28	M28	Z	0.005	0.005	0	%100	Active
29	M44	Z	0.005	0.005	0	%100	Active
30	M27	Z	0.005	0.005	0	%100	Active
31	M45	Z	0.005	0.005	0	%100	Active
32	M21	Z	0.005	0.005	0	%100	Active

Member Distributed Loads (BLC 7 : Wind Z(34psf)) (Continued)

	Member Label	Direction	Start Magnitud…	End Magnitude…	Start Location […	End Location [(…	Inactive [(k, k-f…
33	M30	Z	0.005	0.005	0	%100	Active
34	M137	Z	0.005	0.005	0	%100	Active
35	M138	Z	0.005	0.005	0	%100	Active
36	M136	Z	0.005	0.005	0	%100	Active
37	M139	Z	0.005	0.005	0	%100	Active
38	M140	Z	0.005	0.005	0	%100	Active
39	M54	Z	0.005	0.005	0	%100	Active
40	M51	Z	0.005	0.005	0	%100	Active
41	M57	Z	0.005	0.005	0	%100	Active
42	M56	Z	0.005	0.005	0	%100	Active
43	M52	Z	0.005	0.005	0	%100	Active
44	M22	Z	0.005	0.005	0	%100	Active
45	M81	Z	0.005	0.005	0	%100	Active
46	M83	Z	0.005	0.005	0	%100	Active
47	M85	Z	0.005	0.005	0	%100	Active
48	M86	Z	0.005	0.005	0	%100	Active
49	M80	Z	0.005	0.005	0	%100	Active
50	M88	Z	0.005	0.005	0	%100	Active
51	M89	Z	0.005	0.005	0	%100	Active
52	M71	Z	0.005	0.005	0	%100	Active
53	M72	Z	0.005	0.005	0	%100	Active
54	M47	Z	0.005	0.005	0	%100	Active
55	M48	Z	0.005	0.005	0	%100	Active
56	M59	Z	0.005	0.005	0	%100	Active
57	M60	Z	0.005	0.005	0	%100	Active
58	M120	Z	0.005	0.005	0	%100	Active
59	M169	Z	0.005	0.005	0	%100	Active
60	M168	Z	0.005	0.005	0	%100	Active
61	M105	Z	0.005	0.005	0	%100	Active
62	M118	Z	0.005	0.005	0	%100	Active
63	M119	Z	0.005	0.005	0	%100	Active
64	M115	Z	0.005	0.005	0	%100	Active
65	M116	Z	0.005	0.005	0	%100	Active
66	M170	Z	0.005	0.005	0	%100	Active

Member Distributed Loads (BLC 8 : BLC 2 Transient Area Loads)

	Member Label	Direction	Start Magnitud…	End Magnitude…	Start Location […	End Location [(…	Inactive [(k, k-f…
1	M3	Y	-0.007	-0.007	84	120	Active
2	M5	Y	-0.026	-0.014	96	120	Active
3	M31	Y	-0.006	-0.007	0	16.108	Active
4	M31	Y	-0.007	-0.007	16.108	32.216	Active
5	M31	Y	-0.007	-0.006	32.216	48.324	Active
6	M6	Y	-0.008	-0.015	84	120	Active
7	M32	Y	-0.006	-0.007	0	16.108	Active
8	M32	Y	-0.007	-0.007	16.108	32.216	Active
9	M32	Y	-0.007	-0.006	32.216	48.324	Active
10	M8	Y	-0.006	-0.017	84	120	Active
11	M41	Y	-0.009	-0.01	0	8.713	Active
12	M41	Y	-0.01	-0.013	8.713	17.426	Active
13	M41	Y	-0.013	-0.013	17.426	26.14	Active
14	M41	Y	-0.013	-0.01	26.14	34.853	Active
15	M41	Y	-0.01	-0.01	34.853	43.566	Active
16	M42	Y	-0.006	-0.01	0	8.713	Active
17	M42	Y	-0.01	-0.014	8.713	17.426	Active
18	M42	Y	-0.014	-0.014	17.426	26.14	Active
19	M42	Y	-0.014	-0.011	26.14	34.853	Active
20	M42	Y	-0.011	-0.008	34.853	43.566	Active
21	M152	Y	-0.004	-0.047	0	0.833	Active

Member Distributed Loads (BLC 8 : BLC 2 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitud…	End Magnitude…	Start Location […]	End Location [(…	Inactive [(k, k-f…
22	M152	Y	-0.047	-0.051	0.833	1.667	Active
23	M152	Y	-0.051	-0.004	1.667	2.5	Active
24	M7	Y	-0.023	-0.017	96	120	Active
25	M34	Y	-0.006	-0.007	0	16.108	Active
26	M34	Y	-0.007	-0.007	16.108	32.216	Active
27	M34	Y	-0.007	-0.006	32.216	48.324	Active
28	M4	Y	-0.006	-0.007	84	120	Active
29	M33	Y	-0.006	-0.007	0	16.108	Active
30	M33	Y	-0.007	-0.007	16.108	32.216	Active
31	M33	Y	-0.007	-0.006	32.216	48.324	Active
32	M3	Y	-0.018	-0.018	23	97	Active
33	M5	Y	-0.035	-0.035	23	97	Active
34	M6	Y	-0.018	-0.018	23	97	Active
35	M7	Y	-0.035	-0.035	23	97	Active
36	M8	Y	-0.018	-0.018	23	97	Active
37	M4	Y	-0.018	-0.018	23	97	Active
38	M3	Y	-0.007	-0.007	0	36	Active
39	M5	Y	-0.026	-0.014	0	24	Active
40	M35	Y	-0.006	-0.007	0	16.108	Active
41	M35	Y	-0.007	-0.007	16.108	32.216	Active
42	M35	Y	-0.007	-0.006	32.216	48.324	Active
43	M6	Y	-0.01	-0.015	0	36	Active
44	M36	Y	-0.006	-0.007	0	16.108	Active
45	M36	Y	-0.007	-0.007	16.108	32.216	Active
46	M36	Y	-0.007	-0.006	32.216	48.324	Active
47	M8	Y	-0.007	-0.018	0	36	Active
48	M39	Y	-0.021	-0.012	0	10.892	Active
49	M39	Y	-0.012	-0.012	10.892	21.783	Active
50	M39	Y	-0.012	-0.011	21.783	32.675	Active
51	M39	Y	-0.011	-0.0002523	32.675	43.566	Active
52	M40	Y	-0.0002523	-0.011	0	10.892	Active
53	M40	Y	-0.011	-0.012	10.892	21.783	Active
54	M40	Y	-0.012	-0.012	21.783	32.675	Active
55	M40	Y	-0.012	-0.021	32.675	43.566	Active
56	M7	Y	-0.009	-0.011	0	24	Active
57	M38	Y	-0.006	-0.007	0	16.108	Active
58	M38	Y	-0.007	-0.007	16.108	32.216	Active
59	M38	Y	-0.007	-0.006	32.216	48.324	Active
60	M4	Y	-0.0002829	-0.006	0	7.2	Active
61	M4	Y	-0.006	-0.013	7.2	14.4	Active
62	M4	Y	-0.013	-0.008	14.4	21.6	Active
63	M4	Y	-0.008	-0.0002829	21.6	28.8	Active
64	M4	Y	-0.0002829	-0.0002829	28.8	36	Active
65	M7	Y	-0.018	-0.009	0	12	Active
66	M7	Y	-0.009	8.406e-05	12	24	Active
67	M37	Y	-0.008	-0.008	0	9.665	Active
68	M37	Y	-0.008	-0.008	9.665	19.33	Active
69	M37	Y	-0.008	-0.008	19.33	28.995	Active
70	M37	Y	-0.008	-0.008	28.995	38.66	Active
71	M37	Y	-0.008	-0.01	38.66	48.324	Active
72	M108	Y	-0.0009027	-0.001	0	0.849	Active
73	M108	Y	-0.001	-0.001	0.849	1.697	Active
74	M108	Y	-0.001	-0.0005491	1.697	2.546	Active
75	M108	Y	-0.0005491	-0.0002911	2.546	3.394	Active
76	M108	Y	-0.0002911	-2.826e-05	3.394	4.243	Active
77	M6	Y	-0.002	-0.005	12	28.8	Active
78	M6	Y	-0.005	-0.005	28.8	45.6	Active
79	M6	Y	-0.005	-0.007	45.6	62.4	Active

Member Distributed Loads (BLC 8 : BLC 2 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitud…	End Magnitude…	Start Location […]	End Location [(…	Inactive [(k, k-f…
80	M6	Y	-0.007	-0.007	62.4	79.2	Active
81	M6	Y	-0.007	-0.0007239	79.2	96	Active
82	M8	Y	-0.002	-0.007	24	38.4	Active
83	M8	Y	-0.007	-0.012	38.4	52.8	Active
84	M8	Y	-0.012	-0.012	52.8	67.2	Active
85	M8	Y	-0.012	-0.008	67.2	81.6	Active
86	M8	Y	-0.008	-0.005	81.6	96	Active
87	M19	Y	-0.029	-0.014	0	20.93	Active
88	M19	Y	-0.014	-0.01	20.93	41.861	Active
89	M19	Y	-0.01	-0.012	41.861	62.791	Active
90	M19	Y	-0.012	-0.011	62.791	83.721	Active
91	M19	Y	-0.011	-0.013	83.721	104.652	Active
92	M20	Y	-0.024	-0.017	0	10.465	Active
93	M20	Y	-0.017	-0.018	10.465	20.93	Active
94	M20	Y	-0.018	-0.014	20.93	31.396	Active
95	M20	Y	-0.014	-0.013	31.396	41.861	Active
96	M20	Y	-0.013	-0.026	41.861	52.326	Active
97	M74	Y	-0.0002809	-0.012	0	6.983	Active
98	M74	Y	-0.012	-0.022	6.983	13.967	Active
99	M74	Y	-0.022	-0.02	13.967	20.95	Active
100	M74	Y	-0.02	-0.018	20.95	27.934	Active
101	M74	Y	-0.018	-0.012	27.934	34.917	Active
102	M75	Y	-0.007	-0.009	0	11.638	Active
103	M75	Y	-0.009	-0.01	11.638	23.276	Active
104	M75	Y	-0.01	-0.012	23.276	34.913	Active
105	M76	Y	-0.012	-0.009	0	11.607	Active
106	M76	Y	-0.009	-0.007	11.607	23.214	Active
107	M76	Y	-0.007	-0.006	23.214	34.821	Active

Member Distributed Loads (BLC 9 : BLC 3 Transient Area Loads)

	Member Label	Direction	Start Magnitud…	End Magnitude…	Start Location […]	End Location [(…	Inactive [(k, k-f…
1	M3	Y	-0.023	-0.023	84	120	Active
2	M5	Y	-0.091	-0.049	96	120	Active
3	M31	Y	-0.021	-0.026	0	16.108	Active
4	M31	Y	-0.026	-0.026	16.108	32.216	Active
5	M31	Y	-0.026	-0.021	32.216	48.324	Active
6	M6	Y	-0.029	-0.051	84	120	Active
7	M32	Y	-0.021	-0.026	0	16.108	Active
8	M32	Y	-0.026	-0.026	16.108	32.216	Active
9	M32	Y	-0.026	-0.021	32.216	48.324	Active
10	M8	Y	-0.019	-0.061	84	120	Active
11	M41	Y	-0.032	-0.036	0	8.713	Active
12	M41	Y	-0.036	-0.047	8.713	17.426	Active
13	M41	Y	-0.047	-0.046	17.426	26.14	Active
14	M41	Y	-0.046	-0.036	26.14	34.853	Active
15	M41	Y	-0.036	-0.034	34.853	43.566	Active
16	M42	Y	-0.022	-0.036	0	8.713	Active
17	M42	Y	-0.036	-0.049	8.713	17.426	Active
18	M42	Y	-0.049	-0.05	17.426	26.14	Active
19	M42	Y	-0.05	-0.039	26.14	34.853	Active
20	M42	Y	-0.039	-0.028	34.853	43.566	Active
21	M152	Y	-0.012	-0.163	0	0.833	Active
22	M152	Y	-0.163	-0.179	0.833	1.667	Active
23	M152	Y	-0.179	-0.012	1.667	2.5	Active
24	M7	Y	-0.08	-0.061	96	120	Active
25	M34	Y	-0.021	-0.026	0	16.108	Active
26	M34	Y	-0.026	-0.026	16.108	32.216	Active
27	M34	Y	-0.026	-0.021	32.216	48.324	Active

Member Distributed Loads (BLC 9 : BLC 3 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitud…	End Magnitude…	Start Location […]	End Location [(…	Inactive [(k, k-f…
28	M4	Y	-0.021	-0.026	84	120	Active
29	M33	Y	-0.021	-0.026	0	16.108	Active
30	M33	Y	-0.026	-0.026	16.108	32.216	Active
31	M33	Y	-0.026	-0.021	32.216	48.324	Active
32	M3	Y	-0.062	-0.062	23	97	Active
33	M5	Y	-0.124	-0.124	23	97	Active
34	M6	Y	-0.062	-0.062	23	97	Active
35	M6	Y	-0.007	-0.016	12	28.8	Active
36	M6	Y	-0.016	-0.016	28.8	45.6	Active
37	M6	Y	-0.016	-0.024	45.6	62.4	Active
38	M6	Y	-0.024	-0.026	62.4	79.2	Active
39	M6	Y	-0.026	-0.003	79.2	96	Active
40	M8	Y	-0.007	-0.024	24	38.4	Active
41	M8	Y	-0.024	-0.042	38.4	52.8	Active
42	M8	Y	-0.042	-0.043	52.8	67.2	Active
43	M8	Y	-0.043	-0.03	67.2	81.6	Active
44	M8	Y	-0.03	-0.017	81.6	96	Active
45	M19	Y	-0.102	-0.05	0	20.93	Active
46	M19	Y	-0.05	-0.037	20.93	41.861	Active
47	M19	Y	-0.037	-0.041	41.861	62.791	Active
48	M19	Y	-0.041	-0.037	62.791	83.721	Active
49	M19	Y	-0.037	-0.047	83.721	104.652	Active
50	M20	Y	-0.082	-0.06	0	10.465	Active
51	M20	Y	-0.06	-0.062	10.465	20.93	Active
52	M20	Y	-0.062	-0.05	20.93	31.396	Active
53	M20	Y	-0.05	-0.047	31.396	41.861	Active
54	M20	Y	-0.047	-0.092	41.861	52.326	Active
55	M74	Y	-0.0009832	-0.043	0	6.983	Active
56	M74	Y	-0.043	-0.077	6.983	13.967	Active
57	M74	Y	-0.077	-0.071	13.967	20.95	Active
58	M74	Y	-0.071	-0.063	20.95	27.934	Active
59	M74	Y	-0.063	-0.043	27.934	34.917	Active
60	M75	Y	-0.024	-0.03	0	11.638	Active
61	M75	Y	-0.03	-0.036	11.638	23.276	Active
62	M75	Y	-0.036	-0.042	23.276	34.913	Active
63	M76	Y	-0.042	-0.033	0	11.607	Active
64	M76	Y	-0.033	-0.026	11.607	23.214	Active
65	M76	Y	-0.026	-0.021	23.214	34.821	Active
66	M7	Y	-0.124	-0.124	23	97	Active
67	M8	Y	-0.062	-0.062	23	97	Active
68	M4	Y	-0.062	-0.062	23	97	Active
69	M1	Y	-0.004	-0.016	0	24.4	Active
70	M1	Y	-0.016	-0.028	24.4	48.8	Active
71	M9	Y	-0.032	-0.018	0	21.25	Active
72	M9	Y	-0.018	-0.005	21.25	42.5	Active
73	M35	Y	-0.012	-0.035	0	16.108	Active
74	M35	Y	-0.035	-0.035	16.108	32.216	Active
75	M35	Y	-0.035	-0.012	32.216	48.324	Active
76	M1	Y	-0.018	-0.011	24.4	61	Active
77	M1	Y	-0.011	-0.003	61	97.6	Active
78	M10	Y	-0.005	-0.018	0	21.25	Active
79	M10	Y	-0.018	-0.032	21.25	42.5	Active
80	M36	Y	-0.012	-0.035	0	16.108	Active
81	M36	Y	-0.035	-0.035	16.108	32.216	Active
82	M36	Y	-0.035	-0.012	32.216	48.324	Active
83	M1	Y	-0.001	-0.015	73.2	105.733	Active
84	M1	Y	-0.015	-0.015	105.733	138.267	Active
85	M1	Y	-0.015	-0.001	138.267	170.8	Active

Member Distributed Loads (BLC 9 : BLC 3 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitud…	End Magnitude…	Start Location […]	End Location [(…	Inactive [(k, k-f…
86	M11	Y	-0.03	-0.016	0	18.5	Active
87	M11	Y	-0.016	-0.009	18.5	37	Active
88	M11	Y	-0.009	-0.016	37	55.5	Active
89	M11	Y	-0.016	-0.03	55.5	74	Active
90	M39	Y	-0.023	-0.037	0	14.522	Active
91	M39	Y	-0.037	-0.034	14.522	29.044	Active
92	M39	Y	-0.034	-0.015	29.044	43.566	Active
93	M40	Y	-0.015	-0.034	0	14.522	Active
94	M40	Y	-0.034	-0.037	14.522	29.044	Active
95	M40	Y	-0.037	-0.023	29.044	43.566	Active
96	M1	Y	-0.003	-0.011	146.4	183	Active
97	M1	Y	-0.011	-0.018	183	219.6	Active
98	M12	Y	-0.032	-0.018	0	21.25	Active
99	M12	Y	-0.018	-0.005	21.25	42.5	Active
100	M38	Y	-0.012	-0.035	0	16.108	Active
101	M38	Y	-0.035	-0.035	16.108	32.216	Active
102	M38	Y	-0.035	-0.012	32.216	48.324	Active
103	M1	Y	-0.021	-0.025	195.2	204.96	Active
104	M1	Y	-0.025	-0.021	204.96	214.72	Active
105	M1	Y	-0.021	-0.012	214.72	224.48	Active
106	M1	Y	-0.012	-0.008	224.48	234.24	Active
107	M1	Y	-0.008	-0.003	234.24	244	Active
108	M13	Y	-0.003	-0.011	0	8.5	Active
109	M13	Y	-0.011	-0.013	8.5	17	Active
110	M13	Y	-0.013	-0.02	17	25.5	Active
111	M13	Y	-0.02	-0.029	25.5	34	Active
112	M13	Y	-0.029	-0.028	34	42.5	Active
113	M37	Y	-0.019	-0.025	0	9.665	Active
114	M37	Y	-0.025	-0.028	9.665	19.33	Active
115	M37	Y	-0.028	-0.026	19.33	28.995	Active
116	M37	Y	-0.026	-0.026	28.995	38.66	Active
117	M37	Y	-0.026	-0.029	38.66	48.324	Active
118	M108	Y	-0.03	-0.015	0	0.849	Active
119	M108	Y	-0.015	-0.023	0.849	1.697	Active
120	M108	Y	-0.023	-0.037	1.697	2.546	Active
121	M108	Y	-0.037	-0.023	2.546	3.394	Active
122	M108	Y	-0.023	-0.002	3.394	4.243	Active

Member Area Loads (BLC 2 : Dead Load)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]	Inactive [(k,…
1	N2	N6	N20	N19	Y	A-B	-0.01	Active
2	N6	N8	N21	N20	Y	A-B	-0.01	Active
3	N8	N12	N22	N21	Y	A-B	-0.01	Active
4	N12	N10	N23	N22	Y	A-B	-0.01	Active
5	N10	N4	N24	N23	Y	A-B	-0.01	Active
6	N19	N20	N15	N13	Y	A-B	-0.01	Active
7	N20	N21	N16	N15	Y	A-B	-0.01	Active
8	N22	N23	N17	N18	Y	A-B	-0.01	Active
9	N23	N24	N14	N17	Y	A-B	-0.01	Active
10	N13	N15	N5	N27	Y	A-B	-0.01	Active
11	N15	N16	N7	N5	Y	A-B	-0.01	Active
12	N16	N18	N11	N7	Y	A-B	-0.01	Active
13	N18	N17	N9	N11	Y	A-B	-0.01	Active
14	N17	N14	N3	N9	Y	A-B	-0.01	Active
15	N21	N22	N18	N16	Y	A-B	-0.01	Active

Member Area Loads (BLC 3 : Ice Load)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]	Inactive [(k,…
1	N2	N6	N20	N19	Y	A-B	-0.035	Active
2	N6	N8	N21	N20	Y	A-B	-0.035	Active
3	N8	N12	N22	N21	Y	A-B	-0.035	Active
4	N12	N10	N23	N22	Y	A-B	-0.035	Active
5	N10	N4	N24	N23	Y	A-B	-0.035	Active
6	N19	N21	N16	N13	Y	A-B	-0.035	Active
7	N21	N22	N18	N16	Y	A-B	-0.035	Active
8	N22	N23	N17	N18	Y	A-B	-0.035	Active
9	N23	N24	N14	N17	Y	A-B	-0.035	Active
10	N27	N13	N15	N5	Y	A-B	-0.035	Active
11	N5	N15	N16	N7	Y	A-B	-0.035	Active
12	N7	N16	N18	N11	Y	A-B	-0.035	Active
13	N11	N18	N17	N9	Y	A-B	-0.035	Active
14	N9	N17	N14	N3	Y	A-B	-0.035	Active

Basic Load Cases

	BLC Desc…	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Point	Distributed	Area(Me…	Surface(P…
1	Self Weight	None		-1						
2	Dead Load	None					15		15	
3	Ice Load	None					15		14	
4	Wind with…	None					15	68		
5	Wind X(3…	None					15	64		
6	Wind with…	None					15	68		
7	Wind Z(3…	None					15	66		
8	BLC 2 Tra…	None						107		
9	BLC 3 Tra…	None						122		

Load Combinations

	De…	So…	PD…	SR…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…
1	1.2…	Yes	Y		1	1.2	2	1.2	5	1.6														
2	0.9…	Yes	Y		1	0.9	2	0.9	5	1.6														
3	1.2…	Yes	Y		1	1.2	2	1.2	3	1	4	1												
4	1.2…	Yes	Y		1	1.2	2	1.2	7	1.6														
5	0.9…	Yes	Y		1	0.9	2	0.9	7	1.6														
6	1.2…	Yes	Y		1	1.2	2	1.2	3	1	6	1												

Node Reactions

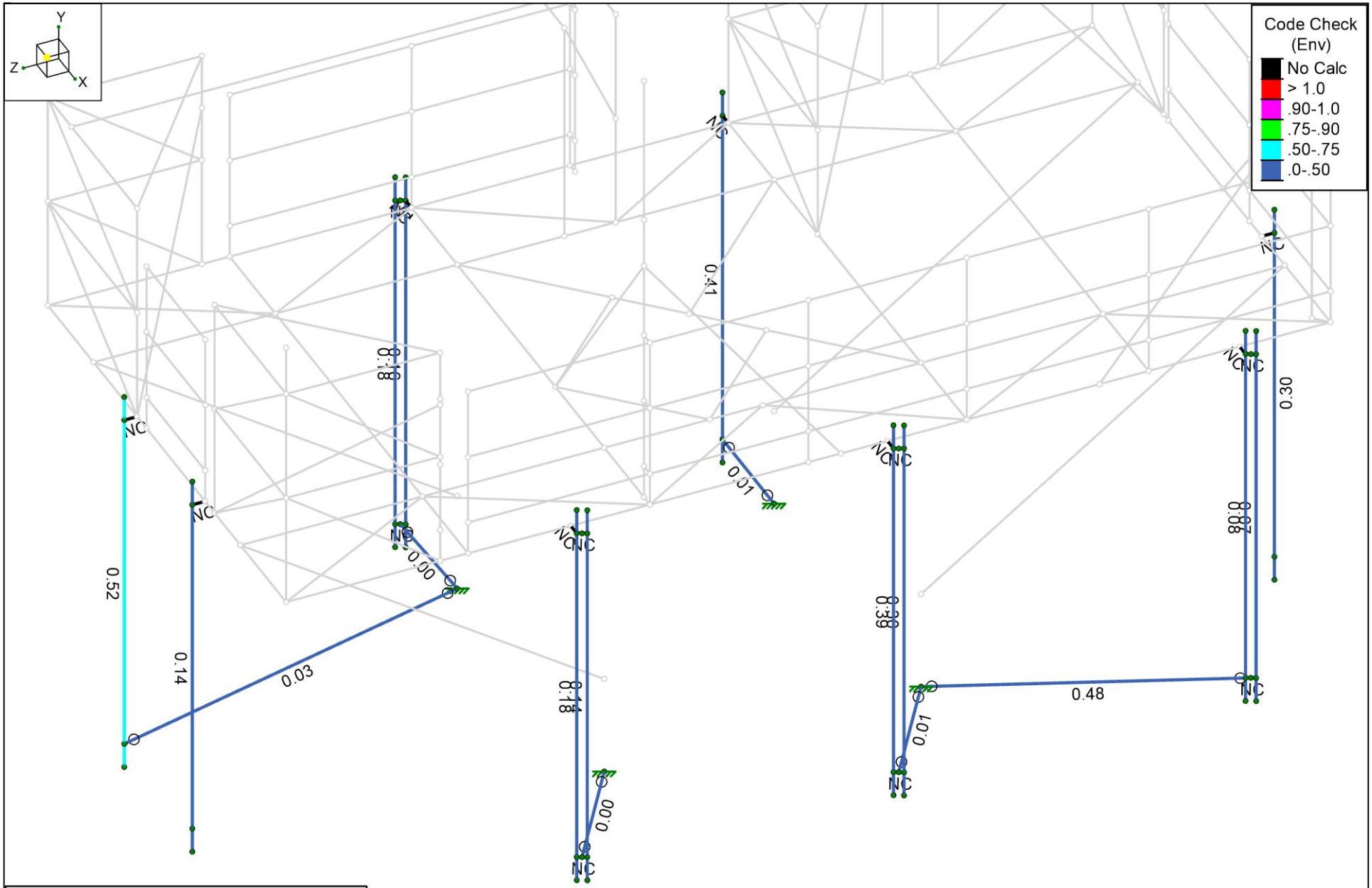
	Node…		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N18	max	0.252	6	3.08	6	2.91	1	-0.155	5	0.103	1	2.596	6
2		min	-0.875	2	0.838	2	-0.248	5	-0.515	3	-0.043	5	0.663	2
3	N16	max	0.336	4	2.934	3	-1.786	5	0	5	0.013	5	2.947	3
4		min	-1.175	2	0.864	5	-2.656	1	0	3	-0.065	1	0.853	5
5	N22	max	-0.086	5	3.266	6	1.569	6	-0.107	5	0.12	4	-1.034	2
6		min	-1.245	1	1.033	2	-1.064	2	-0.367	3	0.034	3	-2.76	6
7	N21	max	-0.118	5	2.919	3	0.796	2	0.53	6	0.016	5	-0.56	5
8		min	-1.491	1	0.98	5	-2.746	6	0.158	2	-0.02	1	-2.127	3
9	N199	max	0.012	6	0.008	3	0.008	6	0.003	5	0	6	0.002	5
10		min	-0.113	2	0.006	2	-0.073	2	-0.003	1	0	1	-0.002	1
11	N200	max	0.028	6	0.028	6	0.006	6	0.005	4	0	6	0.003	4
12		min	-0.33	2	0.002	2	-0.117	2	-0.006	2	0	1	-0.006	2
13	N201	max	-0.024	6	0.029	4	-0.001	3	0.004	5	0	6	0.003	5
14		min	-0.109	1	0.022	2	-0.196	5	-0.002	1	0	1	-0.006	2
15	N202	max	-0.002	5	0.006	4	0	4	0.022	5	0	6	0	6
16		min	-0.199	1	0.005	2	0	6	0	2	0	1	0	1
17	N203	max	0.039	4	1.778	6	2.425	6	-0.073	5	0.095	4	0.022	2
18		min	-0.002	2	0.851	2	1.137	2	-0.106	6	-0.031	2	-0.067	4
19	N204	max	0.013	3	1.769	3	-1.095	5	0.092	1	0.062	5	0.044	5

Node Reactions (Continued)

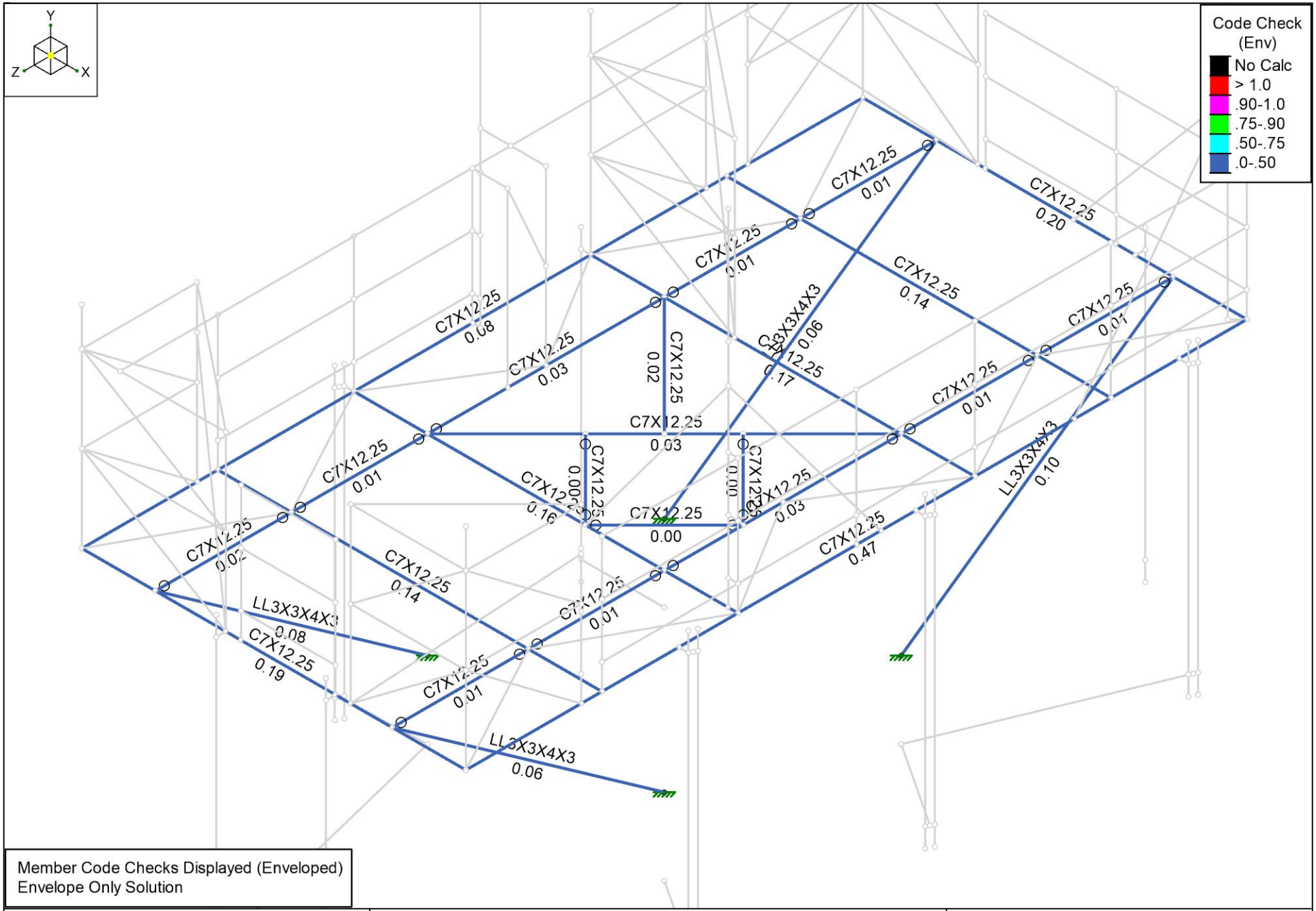
Node…			X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
20		min	-0.026	5	0.763	5	-2.442	6	-0.065	5	-0.027	3	-0.019	3
21	N205	max	-0.014	3	2.302	3	3.17	3	-0.068	2	-0.038	3	0.08	4
22		min	-0.049	4	0.873	5	1.165	5	-0.107	6	-0.112	4	0.027	3
23	N206	max	0.009	5	1.708	3	-0.769	5	0.102	6	0.061	1	0.043	1
24		min	-0.022	3	0.592	5	-2.327	3	0.07	2	-0.02	5	-0.014	5
25	Totals:	max	0	6	19.677	3	0	3						
26		min	-5.498	1	7.585	5	-4.302	5						

Material Take-Off

	Material	Size	Pieces	Length [in]	Weight [k]
1	General				
2	RIGID		20	55.1	0
3	Total General		20	55.1	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	C7X12.25	24	2201.6	2.241
7	A36 Gr.36	L2.5X2X4	3	312.6	0.095
8	A36 Gr.36	L3X3X4	72	3420.4	1.397
9	A36 Gr.36	PIPE_2.0	11	1008	0.292
10	A36 Gr.36	PIPE_3.0	1	60	0.035
11	A36 Gr.36	PIPE_4.0	4	264	0.222
12	A36 Gr.36	PL 2"X1/4"	6	625.2	0.089
13	A500 Gr.46	L2.5X2X4	1	79.5	0.024
14	A500 Gr.46	L3X3X4	20	731.4	0.299
15	A500 Gr.46	LL3X3X4X3	4	416.2	0.34
16	A500 Gr.46	PIPE_2.0	4	324	0.094
17	A500 Gr.46	PIPE_3.0	1	72	0.042
18	A500 Gr.46	PL 2"X1/4"	2	159	0.023
19	Total HR Steel		153	9673.9	5.191

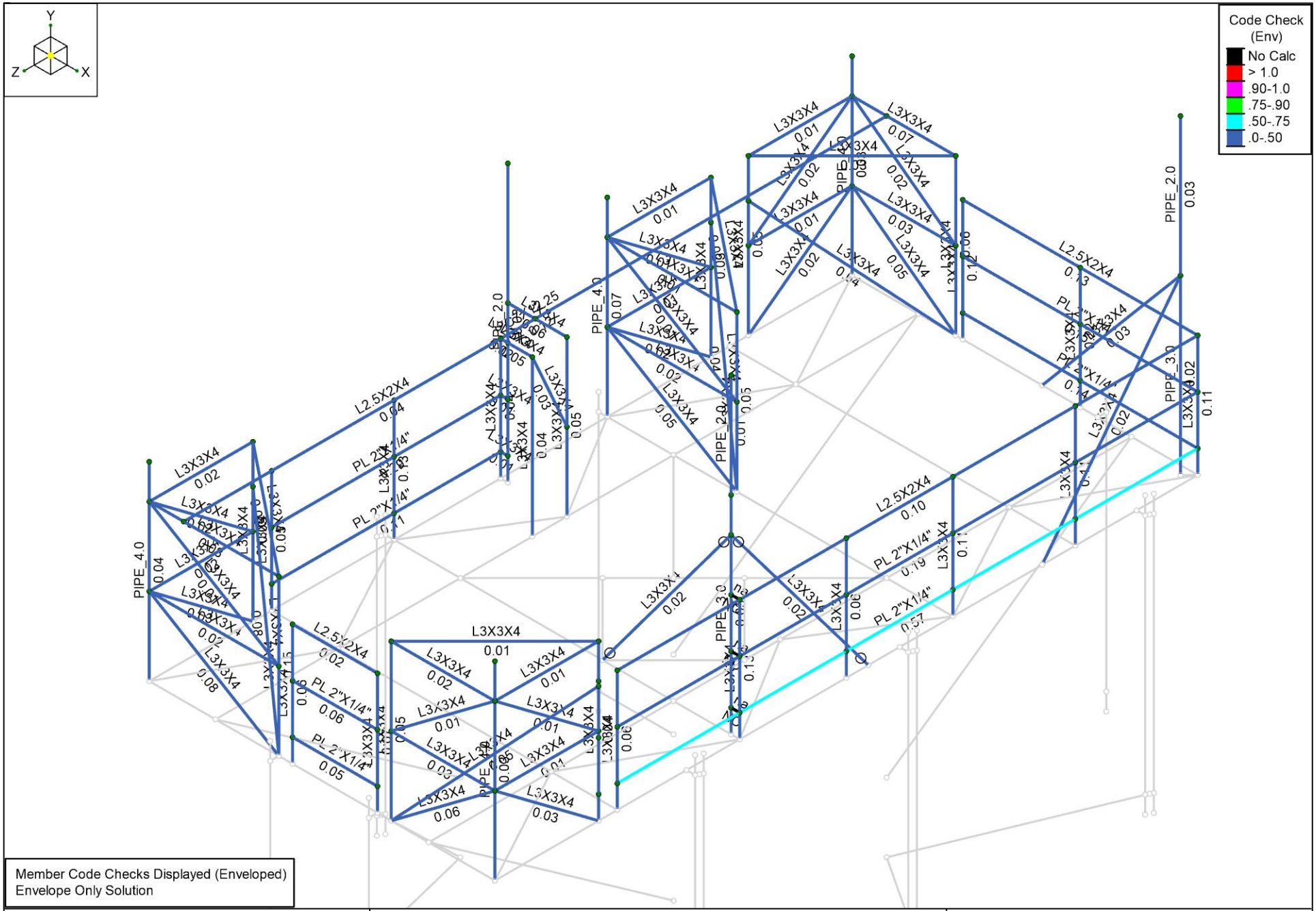


Centek	CT11403A_AMA	SK-6
PPG		Mar 21, 2022
22022.02	Antenna Mast Assemblies	CT11403A_Platform & Antenna Masts.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Centek	CT11403A_AMA	SK-7
PPG		Mar 21, 2022
22022.02	Existing Lattice Tower Platform Base Frame	CT11403A_Platform & Antenna Masts.r3d



Centek	CT11403A_AMA	SK-4
PPG		Mar 21, 2022
22022.02	Existing Platform Hand Rails & Dish/Whip Antenna Mounts	CT11403A_Platform & Antenna Masts.r3d

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

Subject: Connection to Lattice Tower

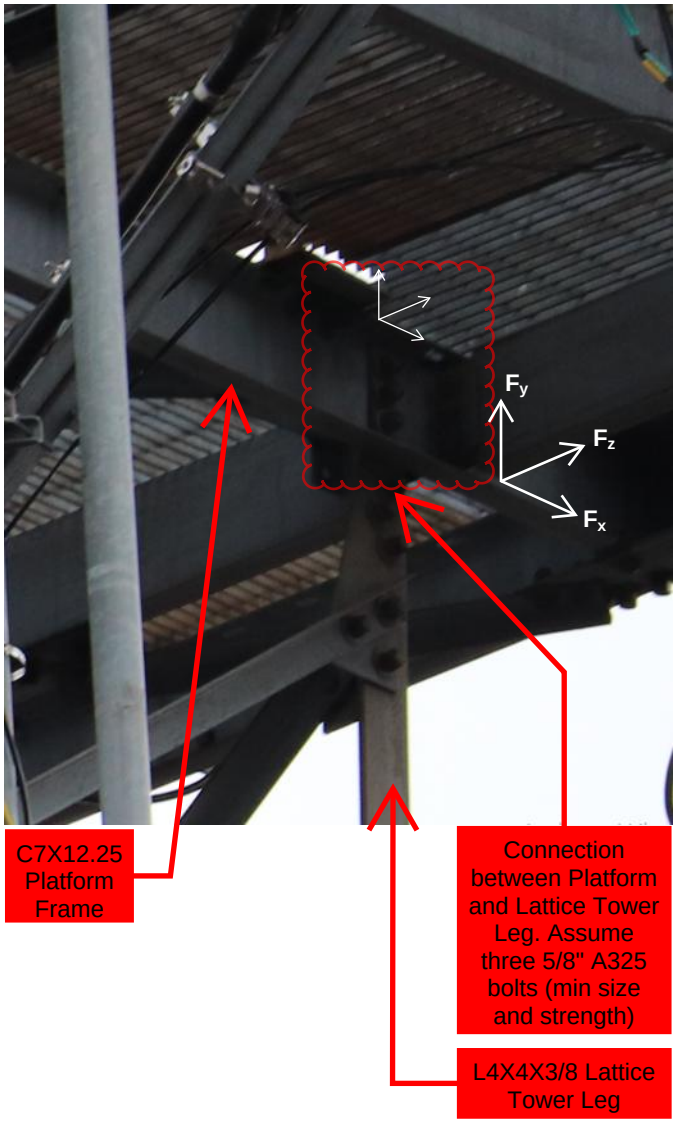
Location: Wolcott, CT

Date: 03/22/2022 Prepared by: PPG; Checked by: CFC
Job No. 22022.02

Platform to Lattice Tower Leg Connection:

Description:

The platform atop the lattice tower was checked in Risa3D software. Using the output force reactions, the connection between the platform and the lattice tower was checked. Assumptions made for the purpose of analyzing the connection have been noted. From pictures one could tell that there are at least three thru-bolts connecting the platform channel and the tower angle legs.



Anchor Data

5/8" Dia. A325 Thru-Bolt

Threaded Rod Dia. =	$D := 0.625\ in$	
Number of Bolts =	$N := 3$	(User Input)
Spacing Between Bolts =	$S := 4\ in$	(User Input)
Yield Strength =	$F_Y := 27.0\ ksi$	
Tensile Strength =	$F_T := 45.0\ ksi$	
Design Shear Strength =	$\Phi F_{nt} := \left(D^2 \cdot \frac{\pi}{4}\right) \cdot F_Y = 8.3\ kip$	
Design Tensile Strength =	$\Phi F_{nv} := \left(D^2 \cdot \frac{\pi}{4}\right) \cdot F_T = 13.8\ kip$	

Design Reactions: LC6 N22

Force X =	$Shear_x := 0.27 \cdot kip$	(User Input)
Force Y =	$Vertical := 3.267\ kip$	(User Input)
Force Z =	$Shear_z := 1.57 \cdot kip$	(User Input)
Moment X =	$M_X := 0.366 \cdot kip \cdot ft$	(User Input)
Moment Y =	$M_Y := 0.038 \cdot kip \cdot ft$	(User Input)
Moment Z =	$M_Z := 2.76\ kip \cdot ft$	(User Input)

Anchor Check:

Max Tension Force = $T_{Max} := \frac{Shear_z}{N} + \frac{M_Y + M_X}{S \cdot \frac{N}{2}} = 1.33\ kip$

Max Shear Force = $V_{Max} := \frac{Shear_x + Vertical}{N} + \frac{M_Z}{S \cdot \frac{N}{2}} = 6.7\ kip$

Condition 1 = $Condition1 := \text{if}\left(\frac{T_{Max}}{\Phi F_{nt}} \le 1.00\ ,\ \text{“OK”}\ ,\ \text{“NG”}\right) = \text{“OK”}$

Condition 2 = $Condition2 := \text{if}\left(\frac{V_{Max}}{\Phi F_{nv}} \le 1.00\ ,\ \text{“OK”}\ ,\ \text{“NG”}\right) = \text{“OK”}$

Condition 3 = $Condition3 := \text{if}\left(\frac{T_{Max}}{\Phi F_{nt}} + \frac{V_{Max}}{\Phi F_{nv}} \le 1.0\ ,\ \text{“OK”}\ ,\ \text{“NG”}\right) = \text{“OK”}$

% of Capacity = $\max\left(\frac{T_{Max}}{\Phi F_{nt}}, \frac{V_{Max}}{\Phi F_{nv}}, \left(\frac{T_{Max}}{\Phi F_{nt}}\right) + \left(\frac{V_{Max}}{\Phi F_{nv}}\right)\right) = 64.6\%$

Structural Analysis of an 80 ft Self-Supporting Tower

T-Mobile Site Number: CT11403A
Everest Infrastructure Site Number: 701770
Site Name: Andrews Rd 1
County: New Haven
Location: Andrews Rd, Wolcott, CT

Checked By:

Patrick Propert

Patrick Propert
Structural Design Engineer III

STATE OF CONNECTICUT
KENNETH TANG
PEN.0034951
LICENSED
PROFESSIONAL ENGINEER

Kenneth Tang

Digitally signed by Kenneth Tang
Date: 2022.05.16 11:52:27 -07'00'

Two Allegheny Ctr

Nova Tower 2, Suite 1002

Pittsburgh, PA 15212

May 2022

9 North Main Street, 2nd Floor, Cortland, NY 13045
(607)591-5381 Fax: (866)870-0840 www.ArmorTower.com

May 11, 2022

Tom Rigg
Everest Infrastructure Partners
Two Allegheny Ctr
Nova Tower 2, Suite 1002
Pittsburgh, PA 15212

RE: T-Mobile – CT11403A – Wolcott/Andres Rd 1
EIP #701770
Andrews Rd, Wolcott, CT

Tom:

We have completed the structural analysis of the subject tower and **have found it to be adequate within the scope of this analysis to support the proposed antenna loading**. The tower was analyzed according to the code wind and ice parameters outlined in the *Code Requirements Table* following this letter.

The subject tower is an 80' self-supporting tower consisting of all-bolted sections with angle legs and bracing. Tower face dimensions range from 6'1" at the top to 10'7" at the base. Foundation capacities are based on a geotechnical report prepared by our office in December 2017 and a dispersive wave investigation completed in July 2013.

The loading used in the analysis consisted of the existing antennas/lines as well as the following for T-Mobile at 80' on the existing unmodified platform:

- (3) APXVAARR24_43-U-NA20, (3) VV-65A-R1, (3) AIR 6419 antennas
- (3) Radio 4449 B71/B85, (3) Radio 4460 B25/B66 RRHs
- (4) 1-3/8" hybrid cable, (1) 2" hybrid cable. Existing (12) coax are to be removed.

The proposed hybrid line are to belocated as shown on drawing E-7.

The results of the analysis showed all tower and foundation elements to be loaded within allowable limits with a maximum stress rating of 67%. We recommend a post-construction inspection be completed by a structural engineer to document that tower-mounted equipment has been placed in compliance with the requirements of this analysis. For a detailed listing of tower performance, please see pages 21 to 26 of the calculations.

We appreciate the opportunity to provide our professional services to Everest Infrastructure Partners and T-Mobile and if you have any questions concerning this analysis, please contact us.

Sincerely,

ARMOR TOWER, INC.

Patrick Botimer
Structural Design Engineer V

STATE OF CONNECTICUT
KENNETH TANG
PEN.0034951
LICENSED
PROFESSIONAL ENGINEER

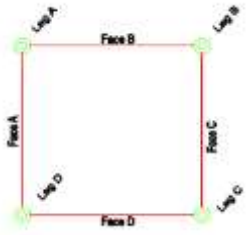
Kenneth Tang
Digitally signed by Kenneth Tang
Date: 2022.05.16 11:52:10 -07'00'

9 North Main Street, 2nd Floor, Cortland, NY 13045
(607)591-5381 Fax: (866)870-0840 www.ArmorTower.com

CODE REQUIREMENTS

Governing code:	2015 CT State Building Code
Code basis/adoption:	2015 International Building Code
Referenced standard:	ANSI/TIA 222-G-2
Basic wind speed: (3-sec. gust):	V_{ult}: 125 mph with no ice 50 mph with 1" concurrent ice
County of site location:	**New Haven**
ASCE 7 Special wind region:	No
Structure/Risk Category:	II
Exposure Category:	B
Topographic Category: (Method 1)	1 - no topographic escalation
Crest Height/Tower Base AMSL Elevation:	0 ft/ 1006 ft
Site Spectral Response:	S_s=0.190, S_1=0.054

PRIMARY ASSUMPTIONS CONSIDERED IN THIS PROJECT

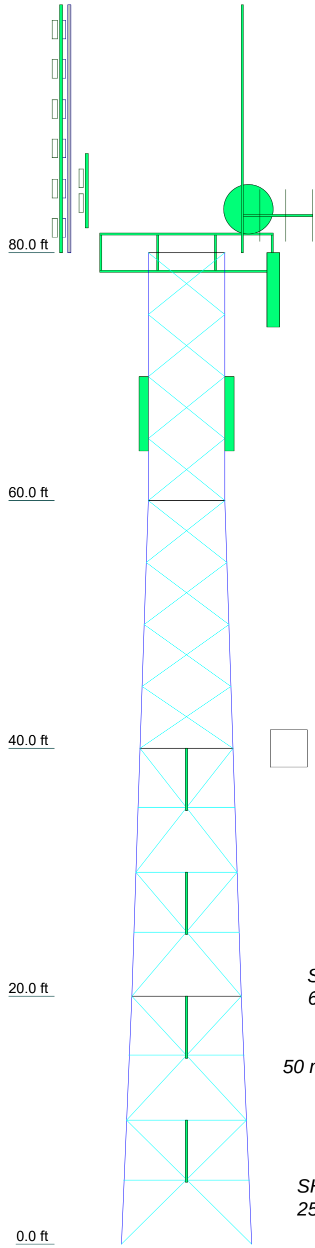


1. Leg A is assumed to be oriented West.
2. Allowable steel stresses are defined by AISC-LRFD-99/360-16 and all welds conform to AWS D1.1 specification.
3. If reserved antennas/feed lines by other carriers are to be considered in this analysis, it is the responsibility of Everest Infrastructure and its affiliates to provide this information.
4. Any deviation from the analyzed antenna loading will require a re-analysis of the tower for verification of structural integrity. This analysis has considered the proposed feed lines to be located as shown on drawing E-7.
5. This analysis assumes all tower members are galvanized adequately to prevent corrosion of the steel and that all tower members are in "like new" condition with no physical deterioration. This analysis also assumes the tower has been maintained properly per TIA 222-G Annex J recommended inspection and maintenance procedures for tower owners and is in a plumb condition. Armor Tower has not completed a condition assessment of the tower.
6. No accounting for residual stresses due to incorrect tower erection can be made. This analysis assumes all bolts are appropriately tightened providing necessary connection continuity and that the installation of the tower was performed by a qualified tower erector.
7. Foundation details are based on a geotechnical report prepared by this office in Decemberr 2017 and a dispersive wave foundation investigation in July 2013.
8. No conclusions, expressed or implied, shall indicate that Armor Tower has made an evaluation of the original design, materials, fabrication, or potential installation or erection deficiencies. Any information contrary to that assumed for the purpose of preparing this analysis could alter the findings and conclusions stated herein.
9. Tower member sizes, geometry, and existing antenna loading are based on a tower mapping completed by this office in December 2017. It is our assumption that this data is complete and accurately reflects the existing conditions of the tower and equipment. Armor Tower has not been

commissioned to field-validate this data. Armor Tower reserves the right to add to or modify this report as more information becomes available. Proposed equipment was outlined in a Colo App dated 4/12/22.

10. The investigation of the load carrying capacities of the antenna supporting frames/mounts is outside the scope of this analysis. Antenna mount certification can be completed under a separate contract.
11. Armor Tower can assist the contractor in providing a Class IV rigging plan for equipment lifting.

Section	T1	T2	T3	T4	
Legs	L4x4x3/8	L5x5x1/2	L6x6x1/2	L6x6x5/8	
Leg Grade	A36				
Diagonals	L2 1/2x2 1/2x1/4	L2 1/2x2x1/4	L3x3x1/4	L3x3x5/16	
Diagonal Grade	A36				
Top Girts	L3x3x1/4	C7x12.25	L2 1/2x2 1/2x1/4		
Horizontals	N.A.		L2 1/2x2 1/2x1/4		
Sec. Horizontals	N.A.		L2 1/2x2 1/2x1/4		
Inner Bracing	SR 9/16				
Face Width (ft)	6.16927	7.53385	8.90104	10.5391	
# Panels @ (ft)	8 @ 5		4 @ 10		
Weight (K)	2.0	2.7	3.2	4.0	11.9



ALL REACTIONS ARE FACTORED

MAX. CORNER REACTI
DOWN: 101 K
SHEAR: 13 K

UPLIFT: -89 K
SHEAR: 12 K

AXIAL 82 K
SHEAR 6 K
MOMEN 363 kip-
TORQUE 1 kip-ft
50 mph WIND - 1.0000 in ICE

AXIAL 27 K
SHEAR 25 K
MOMENT 1396 kip-ft
TORQUE 3 kip-ft
REACTIONS - 125 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
2.5"ODx20' Omni (E)	90	(2) NNHH-65B-R4 w. Mtg Pipe (VZW-Delta)	67
20' Dipole (E)	90	(2) NNHH-65B-R4 w. Mtg Pipe (VZW-Gamma)	67
20' Dipole (E)	90	AWS(B66)/PCS(B2) Dual Band RRH (VZW-Delta)	67
10' Dipole (E)	85	AWS(B66)/PCS(B2) Dual Band RRH (VZW-Gamma)	67
Yagi (E)	83	RVZDC-6627-PF-48 (12Circuit OVP) (VZW-Delta)	67
Top Platform - WolcottNW (E)	80	700(B13)/850(B5) Dual Band RRH (VZW-Delta)	67
4 FT DISH	80	700(B13)/850(B5) Dual Band RRH (VZW-Gamma)	67
4 FT DISH	80	(4) R5-216 Mount Bracket (VZW)	67
V V-65A-R1 w. Mtg Pipe (P-TMO-Alpha)	77	L2 1/2x2x1/4 @ 5ft Vert. (E)	37.5
V V-65A-R1 w. Mtg Pipe (P-TMO-Beta)	77	L2 1/2x2x1/4 @ 5ft Vert. (E)	37.5
V V-65A-R1 w. Mtg Pipe (P-TMO-Gamma)	77	L2 1/2x2x1/4 @ 5ft Vert. (E)	37.5
Ericsson AIR6419 B41 w. MtgPipe (P-TMO-Alpha)	77	L2 1/2x2x1/4 @ 5ft Vert. (E)	37.5
Ericsson AIR6419 B41 w. MtgPipe (P-TMO-Beta)	77	L2 1/2x2x1/4 @ 5ft Vert. (E)	27.5
Ericsson AIR6419 B41 w. MtgPipe (P-TMO-Gamma)	77	L2 1/2x2x1/4 @ 5ft Vert. (E)	27.5
APXVAARR24_43-U-NA20 w. MtgPipe (E-TMobile)	77	L2 1/2x2x1/4 @ 5ft Vert. (E)	27.5
APXVAARR24_43-U-NA20 w. MtgPipe (E-TMobile)	77	L2 1/2x2x1/4 @ 5ft Vert. (E)	27.5
APXVAARR24_43-U-NA20 w. MtgPipe (E-TMobile)	77	L2 1/2x2x1/4 @ 5ft Vert. (E)	17.5
Ericsson Radio 4449 B71/B85 (E-TMobile)	77	L2 1/2x2x1/4 @ 5ft Vert. (E)	17.5
Ericsson Radio 4449 B71/B85 (E-TMobile)	77	L2 1/2x2x1/4 @ 5ft Vert. (E)	17.5
Ericsson Radio 4449 B71/B85 (E-TMobile)	77	L2 1/2x2x1/4 @ 5ft Vert. (E)	17.5
Ericsson Radio 4460 B25+B66 (P-TMO-Alpha)	77	L2 1/2x2x1/4 @ 5ft Vert. (E)	7.5
Ericsson Radio 4460 B25+B66 (P-TMO-Beta)	77	L2 1/2x2x1/4 @ 5ft Vert. (E)	7.5
Ericsson Radio 4460 B25+B66 (P-TMO-Gamma)	77	L2 1/2x2x1/4 @ 5ft Vert. (E)	7.5
		L2 1/2x2x1/4 @ 5ft Vert. (E)	7.5

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36	36 ksi	58 ksi			

TOWER DESIGN NOTES

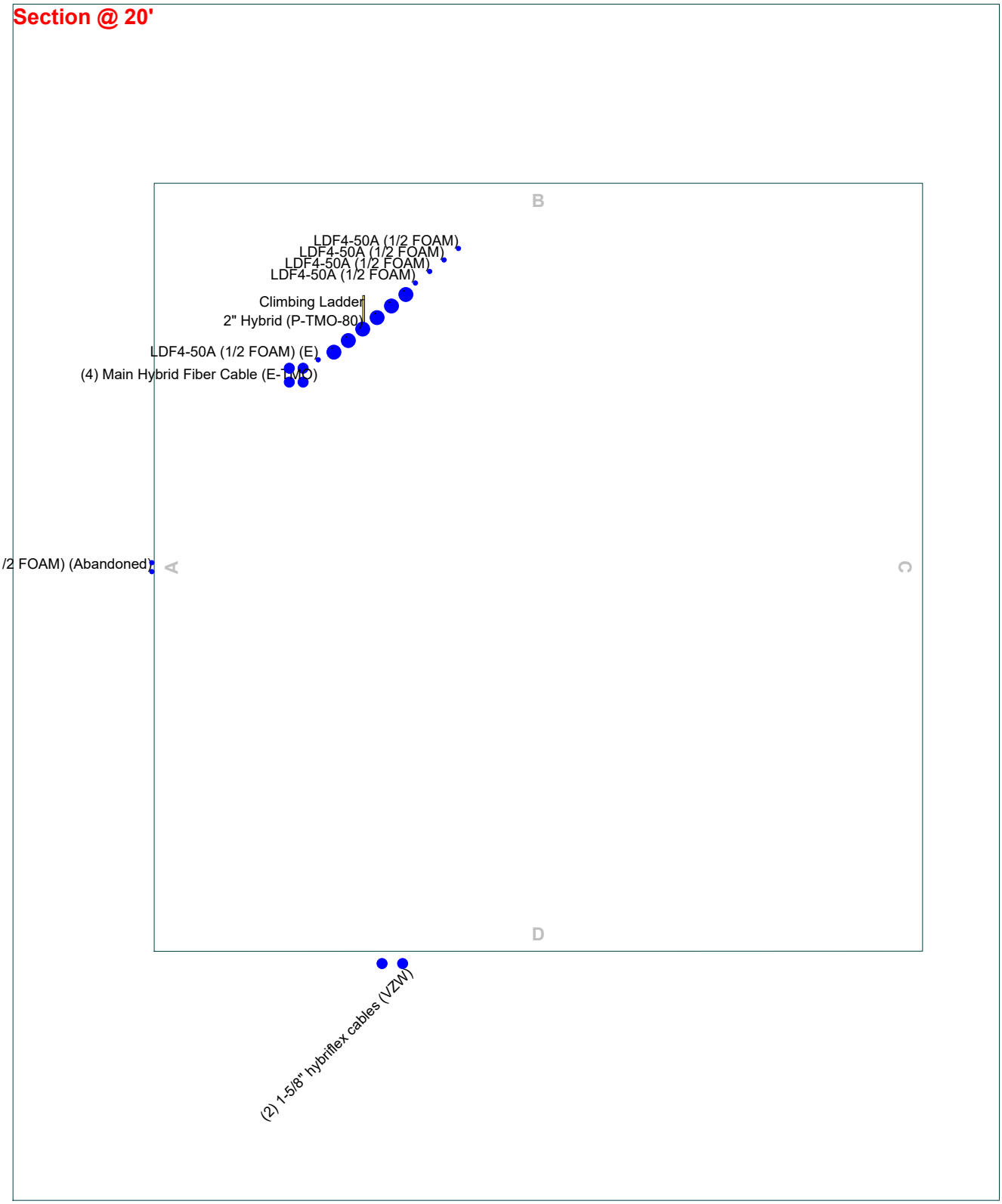
1. Tower designed for Exposure B to the TIA-222-G Standard.
2. Tower designed for a 125 mph basic wind in accordance with the TIA-222-G Standard.
3. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category II.
6. Topographic Category 1 with Crest Height of 0'
7. Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications.
8. Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
9. Welds are fabricated with ER-70S-6 electrodes.
10. Vult(125 mph) = Vasd(97 mph) Per ASCE7
11. (E)xisting or (P)roposed.
12. TOWER RATING: 67.2%

ARMOR TOWER, INC
9 North Main
Cortland, NY 13045
Phone: 607-591-5381
FAX: 866-870-0840

Job: 80' Self-Supporting Tower Analysis			
Project: T-Mobile CT11403A Wolcott/Andrews Rd 1			
Client: Everest Infrastructure #701770	Drawn by: PB	App'd:	
Code: TIA-222-G	Date: 05/11/22	Scale: NTS	
Path:		Dwg No. E-1	

Feed Line Plan
20'

Round Flat App In Face App Out Face



ARMOR TOWER

ARMOR TOWER, INC
9 North Main
Cortland, NY 13045
Phone: 607-591-5381
FAX: 866-870-0840

Job:	***80' Self-Supporting Tower Analysis***		
Project:	***T-Mobile CT11403A Wolcott/Andrews Rd 1***		
Client:	Everest Infrastructure #701770	Drawn by: PB	App'd:
Code:	TIA-222-G	Date: 05/11/22	Scale: NTS
Path:			Dwg No. E-7

ARMOR TOWER, INC
9 North Main
Cortland, NY 13045
Phone: 607-591-5381
FAX: 866-870-0840

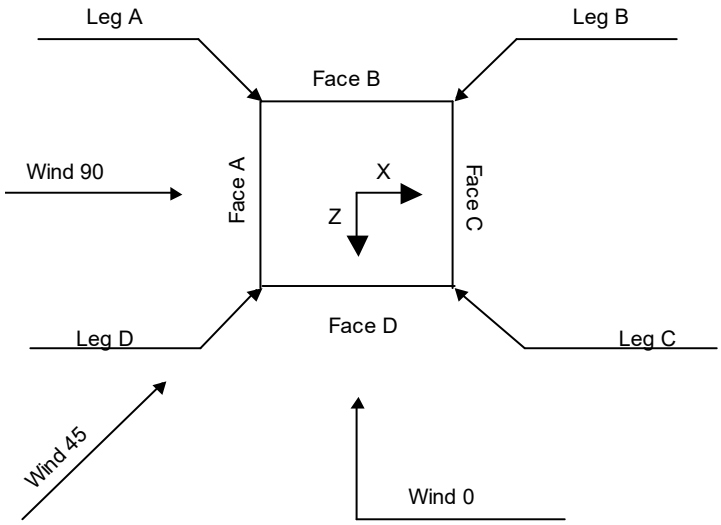
Tower Input Data

The main tower is a 4x free standing tower with an overall height of 80' above the ground line.
The base of the tower is set at an elevation of 0' above the ground line.
The face width of the tower is 6'2-1/32" at the top and 10'6-15/32" at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

ASCE 7-10 Wind Data is used.
Basic wind speed of 125 mph.
Risk Category II.
Exposure Category B.
Topographic Category 1.
Crest Height 0'.
Nominal ice thickness of 1.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications.
Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
Welds are fabricated with ER-70S-6 electrodes.
Vult(125 mph) = Vasd(97 mph) Per ASCE7.
(E)xisting or (P)roposed.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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



Square Tower

Tower Section Geometry

Tower Section	*Tower Elevation*	*Assembly Database*	*Description*	*Section Width*	*Number of Sections*	*Section Length*
	ft			*ft*		*ft*
T1	80'-60'			6'2-1/32"	1	20'
T2	60'-40'			6'2-1/32"	1	20'
T3	40'-20'			7'6-3/8"	1	20'
T4	20'-0'			8'10-13/16"	1	20'

Tower Section Geometry *(cont'd)*

Tower Section	*Tower Elevation*	*Diagonal Spacing*	*Bracing Type*	*Has K Brace End Panels*	*Has Horizontals*	*Top Girt Offset*	*Bottom Girt Offset*
	ft	*ft*				*in*	*in*
T1	80'-60'	5'	X Brace	No	No	0.0000	0.0000
T2	60'-40'	5'	X Brace	No	No	0.0000	0.0000
T3	40'-20'	10'	X Brace	No	Yes	0.0000	0.0000
T4	20'-0'	10'	X Brace	No	Yes	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation	*Leg Type*	*Leg Size*	*Leg Grade*	*Diagonal Type*	*Diagonal Size*	*Diagonal Grade*
ft						
T1 80'-60'	Equal Angle	L4x4x3/8	A36 (36 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T2 60'-40'	Equal Angle	L5x5x1/2	A36 (36 ksi)	Single Angle	L2 1/2x2x1/4	A36 (36 ksi)
T3 40'-20'	Equal Angle	L6x6x1/2	A36 (36 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T4 20'-0'	Equal Angle	L6x6x5/8	A36 (36 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 80'-60'	Equal Angle	L3x3x1/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T2 60'-40'	Channel	C7x12.25	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T3 40'-20'	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T4 20'-0'	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T3 40'-20'	None	Flat Bar		A36 (36 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T4 20'-0'	None	Flat Bar		A36 (36 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T1 80'-60'	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	A572-50 (50 ksi)
T2 60'-40'	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	A572-50 (50 ksi)
T3 40'-20'	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Solid Round	9/16	A572-50 (50 ksi)
T4 20'-0'	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Solid Round	9/16	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 80'-60'	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
T2 60'-40'	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
T3 40'-20'	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
T4 20'-0'	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X	X Brace Diags Y	K Single Diags X	K Single Diags Y	Girts X	Girts Y	Horiz. X	Horiz. Y	Sec. Horiz. X	Sec. Horiz. Y	Inner Brace X	Inner Brace Y
T1 80'-60'	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
T2 60'-40'	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
T3 40'-20'	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
T4 20'-0'	No	No	1	1	1	1	1	1	1	0.5	1	1	1	1	1

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

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 80'-60'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 60'-40'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 40'-20'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 20'-0'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 80'-60'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 60'-40'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 40'-20'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 20'-0'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 80'-60'	Sleeve DS	0.7500 A307	8	0.7500 A307	2	0.7500 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 60'-40'	Sleeve DS	0.7500 A307	12	0.7500 A307	2	0.7500 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 40'-20'	Sleeve DS	0.7500 A307	16	0.7500 A307	2	0.7500 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.7500 A307	2	0.7500 A307	2
T4 20'-0'	Sleeve DS	0.7500 A307	20	0.7500 A307	2	0.7500 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.7500 A307	2	0.7500 A307	2

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
Climbing Ladder	A	No	No	Af (CaAa)	80' - 0'	-29.0000	0.335	1	1	2.0000	4.0000		10.50
LDF4-50A (1/2 FOAM) (Abandoned)	A	No	No	Ar (CaAa)	80' - 0'	0.0000	0	2	2	0.6300	0.6300		0.15
1-5/8" hybriflex cables (VZW)	D	No	No	Ar (CaAa)	67' - 0'	1.0000	0.19	2	2	1.4300	1.4300		1.63
Main Hybrid Fiber Cable (E-TMO)	A	No	No	Ar (CaAa)	80' - 0'	-20.0000	0.25	4	2	0.5000	1.4300		1.63
LDF4-50A (1/2 FOAM) (E)	A	No	No	Ar (CaAa)	80' - 0'	-22.5000	0.27	1	1	0.6300	0.6300		0.15
.	A	No	No	Ar (CaAa)	80' - 0'	-24.0000	0.28	1	1	1.9800	1.9800		0.72
.	A	No	No	Ar (CaAa)	80' - 0'	-26.0000	0.295	1	1	1.9800	1.9800		0.72
2" Hybrid (P-TMO-80)	A	No	No	Ar (CaAa)	80' - 0'	-28.0000	0.31	1	1	1.9800	1.9800		0.72

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
.	A	No	No	Ar (CaAa)	80' - 0'	-30.0000	0.325	1	1	1.9800	1.9800		0.72
.	A	No	No	Ar (CaAa)	80' - 0'	-32.0000	0.34	1	1	1.9800	1.9800		0.72
.	A	No	No	Ar (CaAa)	80' - 0'	-34.0000	0.355	1	1	1.9800	1.9800		0.72
LDF4-50A (1/2 FOAM)	A	No	No	Ar (CaAa)	80' - 0'	-36.0000	0.37	1	1	0.6300	0.6300		0.15
LDF4-50A (1/2 FOAM)	A	No	No	Ar (CaAa)	80' - 0'	-38.0000	0.385	1	1	0.6300	0.6300		0.15
LDF4-50A (1/2 FOAM)	A	No	No	Ar (CaAa)	80' - 0'	-40.0000	0.4	1	1	0.6300	0.6300		0.15
LDF4-50A (1/2 FOAM)	A	No	No	Ar (CaAa)	80' - 0'	-42.0000	0.415	1	1	0.6300	0.6300		0.15

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	80'-60'	A	0.000	0.000	57.353	0.000	0.45
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
		D	0.000	0.000	2.002	0.000	0.02
T2	60'-40'	A	0.000	0.000	57.353	0.000	0.45
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
		D	0.000	0.000	5.720	0.000	0.07
T3	40'-20'	A	0.000	0.000	57.353	0.000	0.45
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
		D	0.000	0.000	5.720	0.000	0.07
T4	20'-0'	A	0.000	0.000	57.353	0.000	0.45
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
		D	0.000	0.000	5.720	0.000	0.07

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	80'-60'	A	2.156	0.000	0.000	193.844	0.000	3.31
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
		D		0.000	0.000	9.050	0.000	0.13
T2	60'-40'	A	2.085	0.000	0.000	189.414	0.000	3.17
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
		D		0.000	0.000	25.363	0.000	0.36
T3	40'-20'	A	1.981	0.000	0.000	182.967	0.000	2.96
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		D		0.000	0.000	24.644	0.000	0.34
T4	20'-0'	A	1.775	0.000	0.000	170.170	0.000	2.58
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
		D		0.000	0.000	23.219	0.000	0.30

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	80'-60'	-2.7126	-6.1998	-4.1208	-9.5317
T2	60'-40'	-3.6493	-5.5626	-5.9056	-8.7811
T3	40'-20'	-5.1232	-5.9440	-8.9256	-10.0457
T4	20'-0'	-6.7020	-6.5618	-11.9911	-11.3581

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	2	Climbing Ladder	60.00 - 80.00	0.6000	0.5133
T1	9	LDF4-50A (1/2 FOAM)	60.00 - 80.00	0.6000	0.5133
T1	10	1-5/8" hybriflex cables	60.00 - 67.00	0.6000	0.5133
T1	11	Main Hybrid Fiber Cable	60.00 - 80.00	0.6000	0.5133
T1	12	LDF4-50A (1/2 FOAM)	60.00 - 80.00	0.6000	0.5133
T1	13	.	60.00 - 80.00	0.6000	0.5133
T1	14	.	60.00 - 80.00	0.6000	0.5133
T1	16	2" Hybrid	60.00 - 80.00	0.6000	0.5133
T1	17	.	60.00 - 80.00	0.6000	0.5133
T1	18	.	60.00 - 80.00	0.6000	0.5133
T1	19	.	60.00 - 80.00	0.6000	0.5133
T1	20	LDF4-50A (1/2 FOAM)	60.00 - 80.00	0.6000	0.5133
T1	21	LDF4-50A (1/2 FOAM)	60.00 - 80.00	0.6000	0.5133
T1	22	LDF4-50A (1/2 FOAM)	60.00 - 80.00	0.6000	0.5133
T1	23	LDF4-50A (1/2 FOAM)	60.00 - 80.00	0.6000	0.5133
T2	2	Climbing Ladder	40.00 - 60.00	0.6000	0.5200
T2	9	LDF4-50A (1/2 FOAM)	40.00 - 60.00	0.6000	0.5200
T2	10	1-5/8" hybriflex cables	40.00 - 60.00	0.6000	0.5200
T2	11	Main Hybrid Fiber Cable	40.00 - 60.00	0.6000	0.5200
T2	12	LDF4-50A (1/2 FOAM)	40.00 - 60.00	0.6000	0.5200
T2	13	.	40.00 - 60.00	0.6000	0.5200
T2	14	.	40.00 - 60.00	0.6000	0.5200
T2	16	2" Hybrid	40.00 - 60.00	0.6000	0.5200
T2	17	.	40.00 - 60.00	0.6000	0.5200
T2	18	.	40.00 - 60.00	0.6000	0.5200
T2	19	.	40.00 - 60.00	0.6000	0.5200
T2	20	LDF4-50A (1/2 FOAM)	40.00 - 60.00	0.6000	0.5200
T2	21	LDF4-50A (1/2 FOAM)	40.00 - 60.00	0.6000	0.5200
T2	22	LDF4-50A (1/2 FOAM)	40.00 - 60.00	0.6000	0.5200
T2	23	LDF4-50A (1/2 FOAM)	40.00 - 60.00	0.6000	0.5200
T3	2	Climbing Ladder	20.00 - 40.00	0.6000	0.5599
T3	9	LDF4-50A (1/2 FOAM)	20.00 - 40.00	0.6000	0.5599

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T3	10	1-5/8" hybriflex cables	20.00 - 40.00	0.6000	0.5599
T3	11	Main Hybrid Fiber Cable	20.00 - 40.00	0.6000	0.5599
T3	12	LDF4-50A (1/2 FOAM)	20.00 - 40.00	0.6000	0.5599
T3	13	.	20.00 - 40.00	0.6000	0.5599
T3	14	.	20.00 - 40.00	0.6000	0.5599
T3	16	2" Hybrid	20.00 - 40.00	0.6000	0.5599
T3	17	.	20.00 - 40.00	0.6000	0.5599
T3	18	.	20.00 - 40.00	0.6000	0.5599
T3	19	.	20.00 - 40.00	0.6000	0.5599
T3	20	LDF4-50A (1/2 FOAM)	20.00 - 40.00	0.6000	0.5599
T3	21	LDF4-50A (1/2 FOAM)	20.00 - 40.00	0.6000	0.5599
T3	22	LDF4-50A (1/2 FOAM)	20.00 - 40.00	0.6000	0.5599
T3	23	LDF4-50A (1/2 FOAM)	20.00 - 40.00	0.6000	0.5599
T4	2	Climbing Ladder	0.00 - 20.00	0.6000	0.6000
T4	9	LDF4-50A (1/2 FOAM)	0.00 - 20.00	0.6000	0.6000
T4	10	1-5/8" hybriflex cables	0.00 - 20.00	0.6000	0.6000
T4	11	Main Hybrid Fiber Cable	0.00 - 20.00	0.6000	0.6000
T4	12	LDF4-50A (1/2 FOAM)	0.00 - 20.00	0.6000	0.6000
T4	13	.	0.00 - 20.00	0.6000	0.6000
T4	14	.	0.00 - 20.00	0.6000	0.6000
T4	16	2" Hybrid	0.00 - 20.00	0.6000	0.6000
T4	17	.	0.00 - 20.00	0.6000	0.6000
T4	18	.	0.00 - 20.00	0.6000	0.6000
T4	19	.	0.00 - 20.00	0.6000	0.6000
T4	20	LDF4-50A (1/2 FOAM)	0.00 - 20.00	0.6000	0.6000
T4	21	LDF4-50A (1/2 FOAM)	0.00 - 20.00	0.6000	0.6000
T4	22	LDF4-50A (1/2 FOAM)	0.00 - 20.00	0.6000	0.6000
T4	23	LDF4-50A (1/2 FOAM)	0.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral / Vert ft / ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Top Platform - WolcottNW (E)	A	None		0.0000	80'	No Ice	353.84	297.42	5.26
						1/2" Ice	392.53	336.16	6.84
						1" Ice	431.23	374.89	8.42
L2 1/2x2x1/4 @ 5ft Vert. (E)	A	From Face	0.00 0' 0'	0.0000	7'6"	No Ice	1.67	2.05	0.02
						1/2" Ice	2.16	2.41	0.03
						1" Ice	2.53	2.78	0.04
L2 1/2x2x1/4 @ 5ft Vert. (E)	B	From Face	0.00 0' 0'	0.0000	7'6"	No Ice	1.67	2.05	0.02
						1/2" Ice	2.16	2.41	0.03
						1" Ice	2.53	2.78	0.04
L2 1/2x2x1/4 @ 5ft Vert. (E)	C	From Face	0.00 0' 0'	0.0000	7'6"	No Ice	1.67	2.05	0.02
						1/2" Ice	2.16	2.41	0.03
						1" Ice	2.53	2.78	0.04
L2 1/2x2x1/4 @ 5ft Vert. (E)	D	From Face	0.00 0' 0'	0.0000	7'6"	No Ice	1.67	2.05	0.02
						1/2" Ice	2.16	2.41	0.03
						1" Ice	2.53	2.78	0.04
L2 1/2x2x1/4 @ 5ft Vert. (E)	A	From Face	0.00 0' 0'	0.0000	17'6"	No Ice	1.67	2.05	0.02
						1/2" Ice	2.16	2.41	0.03
						1" Ice	2.53	2.78	0.04
L2 1/2x2x1/4 @ 5ft Vert. (E)	B	From Face	0.00 0' 0'	0.0000	17'6"	No Ice	1.67	2.05	0.02
						1/2" Ice	2.16	2.41	0.03
						1" Ice	2.53	2.78	0.04

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* ft ft ft	*Azimuth Adjustment* °	*Placement* ft		C_AA_A *Front* ft^2	C_AA_A *Side* ft^2	*Weight* K
L2 1/2x2x1/4 @ 5ft Vert.	C	From Face	0.00	0.0000	17'6"	No Ice	1.67	2.05	0.02
(E)			0'			1/2" Ice	2.16	2.41	0.03
			0'			1" Ice	2.53	2.78	0.04
L2 1/2x2x1/4 @ 5ft Vert.	D	From Face	0.00	0.0000	17'6"	No Ice	1.67	2.05	0.02
(E)			0'			1/2" Ice	2.16	2.41	0.03
			0'			1" Ice	2.53	2.78	0.04
L2 1/2x2x1/4 @ 5ft Vert.	A	From Face	0.00	0.0000	27'6"	No Ice	1.67	2.05	0.02
(E)			0'			1/2" Ice	2.16	2.41	0.03
			0'			1" Ice	2.53	2.78	0.04
L2 1/2x2x1/4 @ 5ft Vert.	B	From Face	0.00	0.0000	27'6"	No Ice	1.67	2.05	0.02
(E)			0'			1/2" Ice	2.16	2.41	0.03
			0'			1" Ice	2.53	2.78	0.04
L2 1/2x2x1/4 @ 5ft Vert.	C	From Face	0.00	0.0000	27'6"	No Ice	1.67	2.05	0.02
(E)			0'			1/2" Ice	2.16	2.41	0.03
			0'			1" Ice	2.53	2.78	0.04
L2 1/2x2x1/4 @ 5ft Vert.	D	From Face	0.00	0.0000	27'6"	No Ice	1.67	2.05	0.02
(E)			0'			1/2" Ice	2.16	2.41	0.03
			0'			1" Ice	2.53	2.78	0.04
L2 1/2x2x1/4 @ 5ft Vert.	A	From Face	0.00	0.0000	37'6"	No Ice	1.67	2.05	0.02
(E)			0'			1/2" Ice	2.16	2.41	0.03
			0'			1" Ice	2.53	2.78	0.04
L2 1/2x2x1/4 @ 5ft Vert.	B	From Face	0.00	0.0000	37'6"	No Ice	1.67	2.05	0.02
(E)			0'			1/2" Ice	2.16	2.41	0.03
			0'			1" Ice	2.53	2.78	0.04
L2 1/2x2x1/4 @ 5ft Vert.	C	From Face	0.00	0.0000	37'6"	No Ice	1.67	2.05	0.02
(E)			0'			1/2" Ice	2.16	2.41	0.03
			0'			1" Ice	2.53	2.78	0.04
L2 1/2x2x1/4 @ 5ft Vert.	D	From Face	0.00	0.0000	37'6"	No Ice	1.67	2.05	0.02
(E)			0'			1/2" Ice	2.16	2.41	0.03
			0'			1" Ice	2.53	2.78	0.04
** Exsiting Antennas									
2.5"ODx20' Omni	C	From Leg	2.00	0.0000	90'	No Ice	5.00	5.00	0.02
(E)			0'			1/2" Ice	7.03	7.03	0.06
			0'			1" Ice	9.07	9.07	0.11
20' Dipole	A	From Leg	2.00	0.0000	90'	No Ice	5.00	5.00	0.02
(E)			-7'			1/2" Ice	7.03	7.03	0.06
			0'			1" Ice	9.07	9.07	0.11
20' Dipole	D	From Leg	2.00	0.0000	90'	No Ice	5.00	5.00	0.02
(E)			8'			1/2" Ice	7.03	7.03	0.06
			0'			1" Ice	9.07	9.07	0.11
10' Dipole	D	From Leg	0.00	0.0000	85'	No Ice	3.29	3.29	0.04
(E)			7'			1/2" Ice	4.97	4.97	0.07
			0'			1" Ice	5.57	5.57	0.10
Yagi	C	From Leg	2.00	0.0000	83'	No Ice	0.30	0.30	0.01
(E)			0'			1/2" Ice	0.54	0.54	0.01
			0'			1" Ice	0.78	0.78	0.01
*									
TMO-2022									
V V-65A-R1 w. Mtg Pipe	A	From Face	2.00	0.0000	77'	No Ice	5.93	3.62	0.04
(P-TMO-Alpha)			-7'			1/2" Ice	6.29	4.20	0.09
			0'			1" Ice	6.66	4.81	0.14
V V-65A-R1 w. Mtg Pipe	B	From Face	2.00	0.0000	77'	No Ice	5.93	3.62	0.04
(P-TMO-Beta)			7'			1/2" Ice	6.29	4.20	0.09
			0'			1" Ice	6.66	4.81	0.14
V V-65A-R1 w. Mtg Pipe	D	From Face	2.00	0.0000	77'	No Ice	5.93	3.62	0.04
(P-TMO-Gamma)			-7'			1/2" Ice	6.29	4.20	0.09
			0'			1" Ice	6.66	4.81	0.14

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Ericsson AIR6419 B41 w. MtgPipe	A	From Face	2.00 -7' 0'	0.0000	77'	No Ice 1/2" Ice 1" Ice	6.53 6.91 7.31	3.74 4.23 4.74	0.10 0.15 0.21
(P-TMO-Alpha)									
Ericsson AIR6419 B41 w. MtgPipe	B	From Face	2.00 7' 0'	0.0000	77'	No Ice 1/2" Ice 1" Ice	6.53 6.91 7.31	3.74 4.23 4.74	0.10 0.15 0.21
(P-TMO-Beta)									
Ericsson AIR6419 B41 w. MtgPipe	D	From Face	2.00 -7' 0'	0.0000	77'	No Ice 1/2" Ice 1" Ice	6.53 6.91 7.31	3.74 4.23 4.74	0.10 0.15 0.21
(P-TMO-Gamma)									
APXVAARR24_43-U-NA20 w. MtgPipe	A	From Face	2.00 -7' 0'	0.0000	77'	No Ice 1/2" Ice 1" Ice	20.24 20.89 21.55	10.79 12.21 13.49	0.18 0.32 0.46
(E-TMobile)									
APXVAARR24_43-U-NA20 w. MtgPipe	B	From Face	2.00 7' 0'	0.0000	77'	No Ice 1/2" Ice 1" Ice	20.24 20.89 21.55	10.79 12.21 13.49	0.18 0.32 0.46
(E-TMobile)									
APXVAARR24_43-U-NA20 w. MtgPipe	D	From Face	2.00 -7' 0'	0.0000	77'	No Ice 1/2" Ice 1" Ice	20.24 20.89 21.55	10.79 12.21 13.49	0.18 0.32 0.46
(E-TMobile)									
Ericsson Radio 4449 B71/B85	A	From Face	2.00 7' 0'	0.0000	77'	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	1.15 1.29 1.43	0.08 0.09 0.11
(E-TMobile)									
Ericsson Radio 4449 B71/B85	B	From Face	7.00 -7' 0'	0.0000	77'	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	1.15 1.29 1.43	0.08 0.09 0.11
(E-TMobile)									
Ericsson Radio 4449 B71/B85	D	From Face	2.00 5' 0'	0.0000	77'	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	1.15 1.29 1.43	0.08 0.09 0.11
(E-TMobile)									
Ericsson Radio 4460 B25+B66	A	From Face	2.00 -7' 0'	0.0000	77'	No Ice 1/2" Ice 1" Ice	2.56 2.76 2.97	1.98 2.16 2.34	0.11 0.13 0.16
(P-TMO-Alpha)									
Ericsson Radio 4460 B25+B66	B	From Face	2.00 7' 0'	0.0000	77'	No Ice 1/2" Ice 1" Ice	2.56 2.76 2.97	1.98 2.16 2.34	0.11 0.13 0.16
(P-TMO-Beta)									
Ericsson Radio 4460 B25+B66	D	From Face	2.00 -7' 0'	0.0000	77'	No Ice 1/2" Ice 1" Ice	2.56 2.76 2.97	1.98 2.16 2.34	0.11 0.13 0.16
(P-TMO-Gamma)									
*									
*VZW - 2019***									
(2) NNHH-65B-R4 w. Mtg Pipe	D	From Leg	0.50 0' 0'	0.0000	67'	No Ice 1/2" Ice 1" Ice	12.27 12.77 13.27	7.17 8.13 8.97	0.10 0.19 0.28
(VZW-Delta)									
(2) NNHH-65B-R4 w. Mtg Pipe	C	From Leg	0.50 0' 0'	0.0000	67'	No Ice 1/2" Ice 1" Ice	12.27 12.77 13.27	7.17 8.13 8.97	0.10 0.19 0.28
(VZW-Gamma)									
AWS(B66)/PCS(B2) Dual Band RRH	D	From Leg	0.50 0' 0'	0.0000	67'	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.25 1.39 1.54	0.08 0.10 0.12
(VZW-Delta)									
AWS(B66)/PCS(B2) Dual Band RRH	C	From Leg	0.50 0' 0'	0.0000	67'	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.25 1.39 1.54	0.08 0.10 0.12
(VZW-Gamma)									
RVZDC-6627-PF-48 (12Circuit OVP)	D	From Leg	0.50 0' 0'	0.0000	67'	No Ice 1/2" Ice 1" Ice	3.79 4.04 4.30	2.51 2.73 2.95	0.03 0.06 0.10
(VZW-Delta)									
700(B13)/850(B5) Dual Band RRH	D	From Leg	0.50 0' 0'	0.0000	67'	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.01 1.14 1.28	0.07 0.09 0.11
(VZW-Delta)									
700(B13)/850(B5) Dual Band	C	From Leg	0.50	0.0000	67'	No Ice	1.88	1.01	0.07

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
RRH			0'			1/2" Ice	2.05	1.14	0.09
(VZW-Gamma)			0'			1" Ice	2.22	1.28	0.11
(4) R5-216 Mount Bracket	C	None		0.0000	67'	No Ice	8.31	8.31	0.15
(VZW)						1/2" Ice	11.95	11.95	0.19
						1" Ice	14.13	14.13	0.27

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
4 FT DISH	B	Grid	From Face	7.00 5' 3'6"	0.0000		80'	4.00	No Ice 1/2" Ice 1" Ice	12.56 13.09 13.62	0.17 0.24 0.30
4 FT DISH	D	Grid	From Face	7.00 -5' 3'6"	0.0000		80'	4.00	No Ice 1/2" Ice 1" Ice	12.56 13.09 13.62	0.17 0.24 0.30

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 45 deg - No Ice
5	0.9 Dead+1.0 Wind 45 deg - No Ice
6	1.2 Dead+1.0 Wind 90 deg - No Ice
7	0.9 Dead+1.0 Wind 90 deg - No Ice
8	1.2 Dead+1.0 Wind 135 deg - No Ice
9	0.9 Dead+1.0 Wind 135 deg - No Ice
10	1.2 Dead+1.0 Wind 180 deg - No Ice
11	0.9 Dead+1.0 Wind 180 deg - No Ice
12	1.2 Dead+1.0 Wind 225 deg - No Ice
13	0.9 Dead+1.0 Wind 225 deg - No Ice
14	1.2 Dead+1.0 Wind 270 deg - No Ice
15	0.9 Dead+1.0 Wind 270 deg - No Ice
16	1.2 Dead+1.0 Wind 315 deg - No Ice
17	0.9 Dead+1.0 Wind 315 deg - No Ice
18	1.2 Dead+1.0 Ice+1.0 Temp
19	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
20	1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp
21	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
22	1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp
23	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
24	1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp

Comb. No.	Description
25	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
26	1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 45 deg - Service
29	Dead+Wind 90 deg - Service
30	Dead+Wind 135 deg - Service
31	Dead+Wind 180 deg - Service
32	Dead+Wind 225 deg - Service
33	Dead+Wind 270 deg - Service
34	Dead+Wind 315 deg - Service

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg D	Max. Vert	12	100.54	9.55	-9.37
	Max. H_x	12	100.54	9.55	-9.37
	Max. H_z	5	-88.44	-8.39	8.22
	Min. Vert	5	-88.44	-8.39	8.22
	Min. H_x	5	-88.44	-8.39	8.22
	Min. H_z	12	100.54	9.55	-9.37
Leg C	Max. Vert	8	100.46	-9.44	-9.46
	Max. H_x	17	-88.34	8.28	8.31
	Max. H_z	17	-88.34	8.28	8.31
	Min. Vert	17	-88.34	8.28	8.31
	Min. H_x	8	100.46	-9.44	-9.46
	Min. H_z	8	100.46	-9.44	-9.46
Leg B	Max. Vert	4	100.40	-9.39	9.51
	Max. H_x	13	-88.54	8.26	-8.36
	Max. H_z	4	100.40	-9.39	9.51
	Min. Vert	13	-88.54	8.26	-8.36
	Min. H_x	4	100.40	-9.39	9.51
	Min. H_z	13	-88.54	8.26	-8.36
Leg A	Max. Vert	16	100.30	9.48	9.40
	Max. H_x	16	100.30	9.48	9.40
	Max. H_z	16	100.30	9.48	9.40
	Min. Vert	9	-88.46	-8.35	-8.26
	Min. H_x	9	-88.46	-8.35	-8.26
	Min. H_z	9	-88.46	-8.35	-8.26

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	22.83	0.00	0.00	1.29	-0.14	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	27.39	0.01	-23.62	-1352.75	-0.82	3.27
0.9 Dead+1.0 Wind 0 deg - No Ice	20.54	0.01	-23.62	-1353.13	-0.78	3.27
1.2 Dead+1.0 Wind 45 deg - No Ice	27.39	17.46	-17.77	-997.45	-974.56	3.06
0.9 Dead+1.0 Wind 45 deg - No Ice	20.54	17.46	-17.77	-997.84	-974.51	3.06

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 90 deg - No Ice	27.39	23.03	-0.01	0.89	-1309.38	0.90
0.9 Dead+1.0 Wind 90 deg - No Ice	20.54	23.03	-0.01	0.50	-1309.34	0.90
1.2 Dead+1.0 Wind 135 deg - No Ice	27.39	17.44	17.76	999.61	-973.63	-1.25
0.9 Dead+1.0 Wind 135 deg - No Ice	20.54	17.44	17.76	999.23	-973.59	-1.25
1.2 Dead+1.0 Wind 180 deg - No Ice	27.39	-0.01	23.62	1355.83	0.49	-3.27
0.9 Dead+1.0 Wind 180 deg - No Ice	20.54	-0.01	23.62	1355.45	0.53	-3.27
1.2 Dead+1.0 Wind 225 deg - No Ice	27.39	-17.46	17.77	1000.54	974.22	-2.93
0.9 Dead+1.0 Wind 225 deg - No Ice	20.54	-17.46	17.77	1000.15	974.27	-2.93
1.2 Dead+1.0 Wind 270 deg - No Ice	27.39	-23.03	0.01	2.20	1309.05	-0.90
0.9 Dead+1.0 Wind 270 deg - No Ice	20.54	-23.03	0.01	1.81	1309.09	-0.90
1.2 Dead+1.0 Wind 315 deg - No Ice	27.39	-17.44	-17.76	-996.52	973.30	1.11
0.9 Dead+1.0 Wind 315 deg - No Ice	20.54	-17.44	-17.76	-996.91	973.34	1.11
1.2 Dead+1.0 Ice+1.0 Temp	82.27	0.00	0.00	-1.01	8.69	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	82.27	0.00	-6.13	-348.58	8.59	-0.56
1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp	82.27	4.48	-4.61	-258.69	-237.95	-1.48
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	82.27	5.95	-0.00	-1.11	-324.88	-1.31
1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp	82.27	4.48	4.61	256.53	-237.81	-0.23
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	82.27	-0.00	6.13	346.57	8.79	0.56
1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp	82.27	-4.48	4.61	256.67	255.33	0.84
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	82.27	-5.95	0.00	-0.91	342.26	1.31
1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp	82.27	-4.48	-4.61	-258.55	255.18	0.87
Dead+Wind 0 deg - Service	22.83	0.00	-5.44	-310.74	-0.29	0.75
Dead+Wind 45 deg - Service	22.83	4.02	-4.09	-228.88	-224.64	0.71
Dead+Wind 90 deg - Service	22.83	5.31	-0.00	1.14	-301.78	0.21
Dead+Wind 135 deg - Service	22.83	4.02	4.09	231.24	-224.42	-0.29
Dead+Wind 180 deg - Service	22.83	-0.00	5.44	313.31	0.01	-0.75
Dead+Wind 225 deg - Service	22.83	-4.02	4.09	231.45	224.36	-0.67
Dead+Wind 270 deg - Service	22.83	-5.31	0.00	1.44	301.51	-0.21
Dead+Wind 315 deg - Service	22.83	-4.02	-4.09	-228.67	224.15	0.26

Maximum Tower Deflections - Service Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
T1	80 - 60	0.554	30	0.0559	0.0053

ARMOR TOWER, INC
9 North Main
Cortland, NY 13045
Phone: 607-591-5381
FAX: 866-870-0840

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T2	60 - 40	0.323	30	0.0457	0.0033
T3	40 - 20	0.148	30	0.0302	0.0013
T4	20 - 0	0.040	30	0.0145	0.0003

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
90'	2.5"ODx20' Omni	30	0.554	0.0559	0.0053	275263
85'	10' Dipole	30	0.554	0.0559	0.0053	275263
83'6"	4 FT DISH	30	0.554	0.0559	0.0053	275263
83'	Yagi	30	0.554	0.0559	0.0053	275263
80'	Top Platform - WolcottNW	30	0.554	0.0559	0.0053	275263
77'	V V-65A-R1 w. Mtg Pipe	30	0.518	0.0546	0.0050	275263
67'	(2) NNHH-65B-R4 w. Mtg Pipe	30	0.400	0.0498	0.0040	105870
37'6"	L2 1/2x2x1/4 @ 5ft Vert.	30	0.131	0.0281	0.0011	74485
27'6"	L2 1/2x2x1/4 @ 5ft Vert.	30	0.072	0.0202	0.0006	62444
17'6"	L2 1/2x2x1/4 @ 5ft Vert.	30	0.032	0.0126	0.0003	64043
7'6"	L2 1/2x2x1/4 @ 5ft Vert.	32	0.010	0.0054	0.0001	148286

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	80 - 60	2.366	8	0.2348	0.0231
T2	60 - 40	1.388	8	0.1945	0.0144
T3	40 - 20	0.640	8	0.1295	0.0058
T4	20 - 0	0.174	12	0.0625	0.0015

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
90'	2.5"ODx20' Omni	8	2.366	0.2348	0.0231	68491
85'	10' Dipole	8	2.366	0.2348	0.0231	68491
83'6"	4 FT DISH	8	2.366	0.2348	0.0231	68491
83'	Yagi	8	2.366	0.2348	0.0231	68491
80'	Top Platform - WolcottNW	8	2.366	0.2348	0.0231	68491
77'	V V-65A-R1 w. Mtg Pipe	8	2.213	0.2297	0.0218	68491
67'	(2) NNHH-65B-R4 w. Mtg Pipe	8	1.713	0.2110	0.0175	26343
37'6"	L2 1/2x2x1/4 @ 5ft Vert.	8	0.565	0.1209	0.0050	17379
27'6"	L2 1/2x2x1/4 @ 5ft Vert.	12	0.311	0.0870	0.0026	14522
17'6"	L2 1/2x2x1/4 @ 5ft Vert.	12	0.140	0.0545	0.0012	14870
7'6"	L2 1/2x2x1/4 @ 5ft Vert.	12	0.045	0.0232	0.0004	34430

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	80	Leg	A307	0.7500	8	6.48	17.89	0.362 ✔	1	Bolt DS
		Diagonal	A307	0.7500	2	2.46	8.95	0.275 ✔	1	Bolt Shear
		Top Girt	A325N	0.7500	2	0.08	11.15	0.007 ✔	1	Member Block Shear
T2	60	Leg	A307	0.7500	12	8.82	17.89	0.493 ✔	1	Bolt DS
		Diagonal	A307	0.7500	2	2.03	8.95	0.227 ✔	1	Bolt Shear
		Top Girt	A325N	0.7500	2	0.07	17.89	0.004 ✔	1	Bolt Shear
T3	40	Leg	A307	0.7500	16	8.60	17.89	0.481 ✔	1	Bolt DS
		Diagonal	A307	0.7500	2	3.77	8.95	0.422 ✔	1	Bolt Shear
		Horizontal	A307	0.7500	2	2.73	8.95	0.306 ✔	1	Bolt Shear
		Secondary Horizontal	A307	0.7500	2	0.18	8.95	0.020 ✔	1	Bolt Shear
		Top Girt	A325N	0.7500	2	1.44	10.47	0.138 ✔	1	Member Block Shear
T4	20	Leg	A307	0.7500	20	8.97	17.89	0.501 ✔	1	Bolt DS
		Diagonal	A307	0.7500	2	3.96	8.95	0.443 ✔	1	Bolt Shear
		Horizontal	A307	0.7500	2	3.15	8.95	0.352 ✔	1	Bolt Shear
		Secondary Horizontal	A307	0.7500	2	0.21	8.95	0.023 ✔	1	Bolt Shear
		Top Girt	A325N	0.7500	2	2.42	10.47	0.231 ✔	1	Member Block Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	80 - 60	L4x4x3/8	20'	5'	76.1 K=1.00	2.8600	-25.91	68.29	0.379 [1] ✔
T2	60 - 40	L5x5x1/2	20'1/4"	5'1/8"	61.1 K=1.00	4.7500	-52.91	126.43	0.418 [1] ✔
T3	40 - 20	L6x6x1/2	20'1/4"	10'1/8"	101.8 K=1.00	5.7500	-68.81	107.95	0.637 [1] ✔
T4	20 - 0	L6x6x5/8	20'3/8"	10'1/4"	101.9 K=1.00	7.1100	-89.68	133.41	0.672 [1] ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	80 - 60	L2 1/2x2 1/2x1/4	7'11-9/32"	3'9-1/8"	91.8 K=1.00	1.1900	-4.92	24.74	0.199 [1] ✔
T2	60 - 40	L2 1/2x2x1/4	8'10-13/16"	4'3-19/32"	121.8 K=1.00	1.0600	-3.99	15.73	0.253 [1] ✔
T3	40 - 20	L3x3x1/4	13'2-1/32"	6'5-17/32"	131.0 K=1.00	1.4400	-7.53	18.91	0.398 [1] ✔
T4	20 - 0	L3x3x5/16	14'2-7/8"	7'23/32"	143.8 K=1.00	1.7800	-7.93	19.45	0.407 [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 $\frac{P_u}{\phi P_n}$
T3	40 - 20	L2 1/2x2 1/2x1/4	8'2-5/8"	7'8-5/8"	188.6 K=1.00	1.1900	-4.57	7.56	0.605 [1] ✔
T4	20 - 0	L2 1/2x2 1/2x1/4	9'8-5/8"	9'2-5/8"	112.7 K=0.50	1.1900	-5.29	19.76	0.268 [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 $\frac{P_u}{\phi P_n}$
T3	40 - 20	L2 1/2x2 1/2x1/4	8'6-19/32"	8'19/32"	125.5 K=1.00	1.1900	-0.34	16.82	0.020 [1] ✔
T4	20 - 0	L2 1/2x2 1/2x1/4	10'1-5/16"	9'7-5/16"	150.0 K=1.00	1.1900	-0.34	11.95	0.028 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	80 - 60	L3x3x1/4	6'2-1/32''	5'10-3/32"	118.3 K=1.00	1.4400	-0.19	22.33	0.009 [1] ✔
T2	60 - 40	C7x12.25	6'2-1/32''	5'9"	120.9 K=1.00	3.6000	-0.14	54.04	0.003 [1] ✔
T3	40 - 20	L2 1/2x2 1/2x1/4	7'6-3/8"	7'3/8"	171.9 K=1.00	1.1900	-2.47	9.10	0.272 [1] ✔
T4	20 - 0	L2 1/2x2 1/2x1/4 KL/R > 200 (C) - 131	8'10-13/16"	8'4-13/16"	205.3 K=1.00	1.1900	-4.15	6.38	0.651 [1] ✔

[1] P_u / ϕP_n controls

Inner Bracing Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	80 - 60	9/16 KL/R > 250 (C) - 5	8'8-5/8"	8'4-11/16"	716.1 K=1.00	0.2485	-0.02	0.11	0.144 [1] ✔
T2	60 - 40	9/16 KL/R > 250 (C) - 47	8'8-5/8"	8'3-23/32"	708.9 K=1.00	0.2485	-0.00	0.11	0.042 [1] ✔

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	80 - 60	L4x4x3/8	20'	5'	48.8	1.6528	20.22	71.90	0.281 [1] ✔
T2	60 - 40	L5x5x1/2	20'1/4"	5'1/8"	39.0	2.9063	45.53	126.42	0.360 [1] ✔
T3	40 - 20	L6x6x1/2	20'1/4"	10'1/8"	64.6	3.6563	60.86	159.05	0.383 [1] ✔
T4	20 - 0	L6x6x5/8	20'3/8"	10'1/4"	65.3	4.5122	79.45	196.28	0.405 [1] ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	80 - 60	L2 1/2x2 1/2x1/4	7'11-9/32"	3'9-1/8"	58.6	0.7284	4.80	31.69	0.152 [1] ✔
T2	60 - 40	L2 1/2x2x1/4	8'4-3/16'	4'3/8"	81.6	0.6309	4.06	27.45	0.148 [1] ✔
T3	40 - 20	L3x3x1/4	13'2-1/32"	6'5-17/32"	83.4	0.9159	6.69	39.84	0.168 [1] ✔
T4	20 - 0	L3x3x5/16	14'2-7/8'	7'23/32"	91.8	1.1299	6.94	49.15	0.141 [1] ✔

[1] P_u / ϕP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T3	40 - 20	L2 1/2x2 1/2x1/4	8'2-5/8"	7'8-5/8"	120.4	0.7284	5.47	31.69	0.173 [1] ✔
T4	20 - 0	L2 1/2x2 1/2x1/4	9'8-5/8"	9'2-5/8"	143.9	0.7284	6.29	31.69	0.199 [1] ✔

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T3	40 - 20	L2 1/2x2 1/2x1/4	8'6-19/32"	8'19/32"	125.5	0.7284	0.36	31.69	0.012 [1] ✔
T4	20 - 0	L2 1/2x2 1/2x1/4	9'3-15/32"	8'9-15/32"	137.2	0.7284	0.42	31.69	0.013 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

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

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	80 - 60	L3x3x1/4	6'2-1/32''	5'10-3/32''	75.3	0.9159	0.16	39.84	0.004 [1] ✔
T2	60 - 40	C7x12.25	6'2-1/32''	5'9''	120.9	2.4939	0.09	108.49	0.001 [1] ✔
T3	40 - 20	L2 1/2x2 1/2x1/4	7'6-3/8''	7'3/8''	109.8	0.7284	2.88	31.69	0.091 [1] ✔
T4	20 - 0	L2 1/2x2 1/2x1/4	8'10-13/16''	8'4-13/16''	131.1	0.7284	4.84	31.69	0.153 [1] ✔

[1] P_u / ϕP_n controls

Inner Bracing Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T3	40 - 20	9/16 L/R > 500 (T) - 89	10'7-13/16''	10'1-13/16''	866.5	0.2485	0.15	11.18	0.013 [1] ✔
T4	20 - 0	9/16 L/R > 500 (T) - 127	12'7-3/32''	12'1-3/32''	1031.5	0.2485	0.31	11.18	0.028 [*1] ✔

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

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	80 - 60	Leg	L4x4x3/8	2	-25.91	68.29	37.9	Pass
T2	60 - 40	Leg	L5x5x1/2	44	-52.91	126.43	41.8 49.3 (b)	Pass
T3	40 - 20	Leg	L6x6x1/2	86	-68.81	107.95	63.7	Pass
T4	20 - 0	Leg	L6x6x5/8	123	-89.68	133.41	67.2	Pass
T1	80 - 60	Diagonal	L2 1/2x2 1/2x1/4	13	-4.92	24.74	19.9 27.5 (b)	Pass
T2	60 - 40	Diagonal	L2 1/2x2x1/4	56	-3.99	15.73	25.3	Pass
T3	40 - 20	Diagonal	L3x3x1/4	95	-7.53	18.91	39.8 42.2 (b)	Pass
T4	20 - 0	Diagonal	L3x3x5/16	133	-7.93	19.45	40.7 44.3 (b)	Pass
T3	40 - 20	Horizontal	L2 1/2x2 1/2x1/4	105	-4.57	7.56	60.5	Pass
T4	20 - 0	Horizontal	L2 1/2x2 1/2x1/4	143	-5.29	19.76	26.8 35.2 (b)	Pass
T3	40 - 20	Secondary Horizontal	L2 1/2x2 1/2x1/4	110	-0.34	16.82	2.0	Pass
T4	20 - 0	Secondary Horizontal	L2 1/2x2 1/2x1/4	148	-0.34	11.95	2.8	Pass
T1	80 - 60	Top Girt	L3x3x1/4	7	-0.19	22.33	0.9	Pass
T2	60 - 40	Top Girt	C7x12.25	49	-0.13	54.04	0.3	Pass

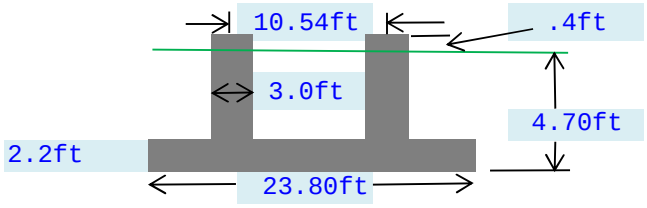
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
							0.4 (b)	
T3	40 - 20	Top Girt	L2 1/2x2 1/2x1/4	93	-2.47	9.10	27.2	Pass
T4	20 - 0	Top Girt	L2 1/2x2 1/2x1/4	131	-4.15	6.38	65.1	Pass
T1	80 - 60	Inner Bracing	9/16	6	-0.02	0.11	14.4	Pass
T2	60 - 40	Inner Bracing	9/16	48	-0.00	0.11	4.2	Pass
T3	40 - 20	Inner Bracing	9/16	89	0.15	11.18	1.3	Pass
T4	20 - 0	Inner Bracing	9/16	127	0.31	11.18	2.8	Pass
							Summary	
						Leg (T4)	67.2	Pass
						Diagonal (T4)	44.3	Pass
						Horizontal (T3)	60.5	Pass
						Secondary Horizontal (T4)	2.8	Pass
						Top Girt (T4)	65.1	Pass
						Inner Bracing (T1)	14.4	Pass
						Bolt Checks	50.1	Pass
						RATING =	**67.2**	**Pass**

SS Tower Pad & 3Pier Calculations

Client: EIP/TMO
Project: Wolcott, CT
05/11/22 15:48
Code: TIA-222-G

Applied Factored Loads:

OTM:	1396	kip-ft
Uplift:	89	kip
DownLoad:	101	kip
ΣDeadLoad:	27.00	kip
Total Shear	25.00	kip



Specific Gravity:	2.65	
Soil Unit Weight:	110	lb/ft^3
Submerged Unit Wt:	68.49	lb/ft^3
Concrete Unit Wt:	150	lb/ft^3
Concrete f`c:	3000	psi
Rebar Fy:	60000	psi
Σ Concr Vol:	48.4	cuyd
Depth to Water:	4.7	ft

Pier Depth:	2.5	ft
Total Moment:	1614	kip-ft

OTM Safety Factor: 0.75 TIA-G 9.4.1 Toe:
Add Toe at Base of Pad? No 0

Bearing Pressure: ϕs: 0.75

Soil Type @ Bearing Location:	Sand	fb(max):	1307 psf
SPT-N @ Bearing Location:	50	Fb:	9000 psf
			14.5% Loaded

Overturning Moment Capacity:
3644 kip ft 59.0% Loaded

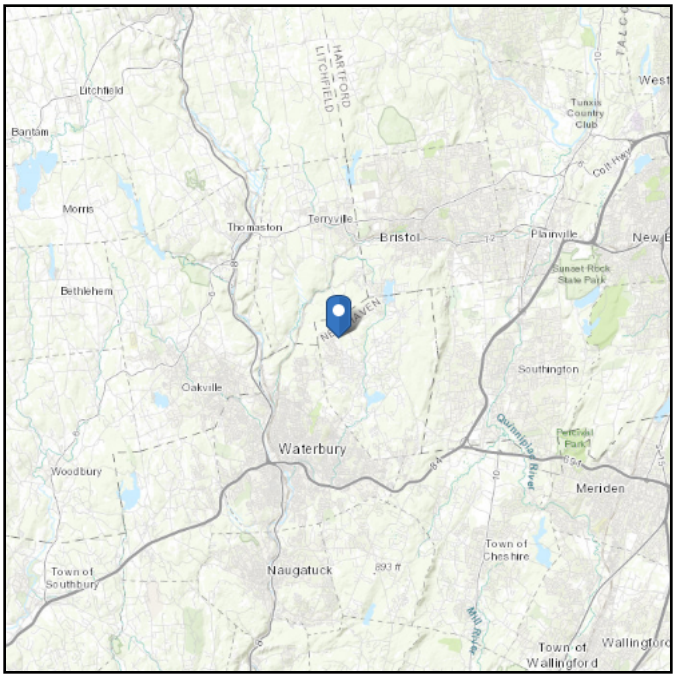
Global Check:
Foundation Design per ACI 318 **OK**

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 1006.38 ft ()
Latitude: 41.617693
Longitude: -73.004574



Wind

Results:

Wind Speed	117 Vmph	125 mph CT State Builidng Code Appendix N New Haven CT
10-year MRI	75 Vmph	
25-year MRI	84 Vmph	
50-year MRI	90 Vmph	
100-year MRI	97 Vmph	

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Wed May 11 2022

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

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

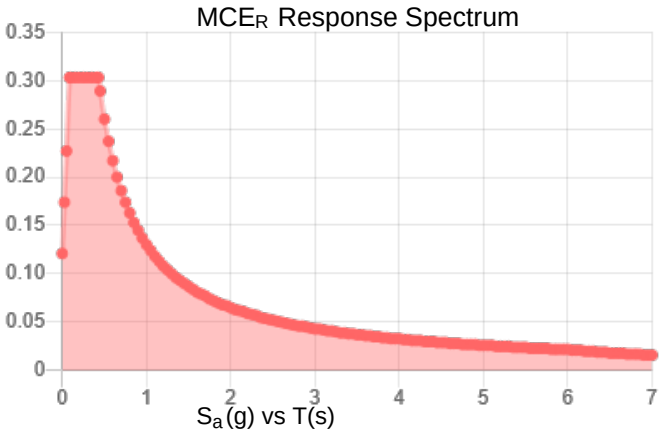
Seismic

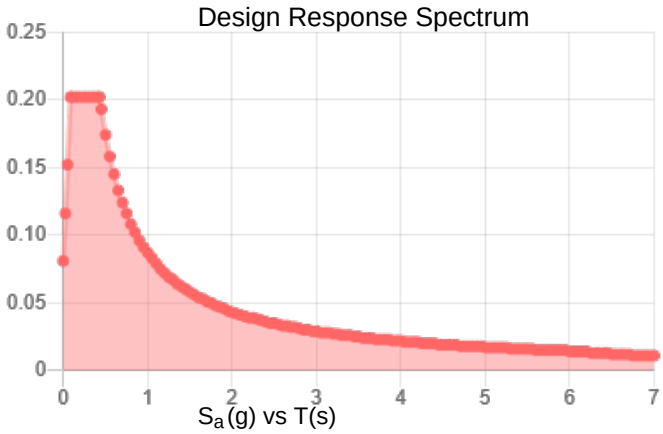
Site Soil Class: D - Stiff Soil

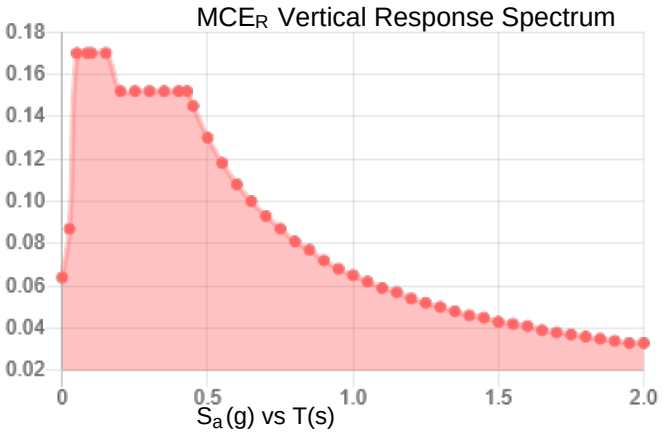
Results:

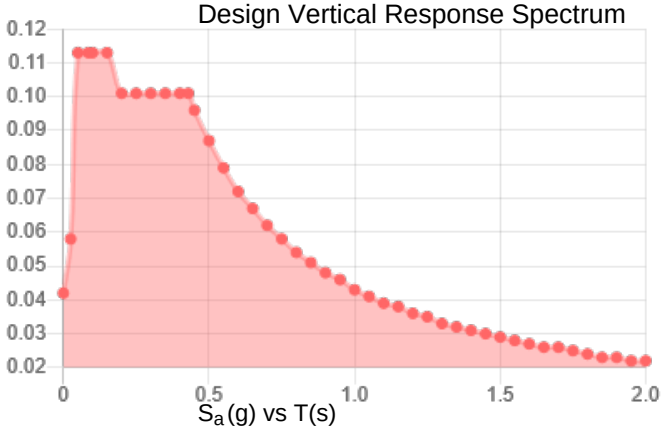
S_S :	0.19	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.104
F_v :	2.4	PGA_M :	0.165
S_{MS} :	0.303	F_{PGA} :	1.593
S_{M1} :	0.13	I_e :	1
S_{DS} :	0.202	C_v :	0.7

Seismic Design Category B









Data Accessed: **Wed May 11 2022**

Date Source:

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Wed May 11 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 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

RAN Template:	A&L Template:
67D5D998E Indoor	67D5998E_1xAIR+1OP+1QP

CT11403A_Anchor_10

Print Name: Preliminary (RFDS_For_Scoping)
PORs: Anchor_Phase 3

Section 1 - Site Information

Site ID: CT11403A
Status: Final
Version: 10
Project Type: Anchor
Approved: 3/8/2022 12:31:46 PM
Approved By: Pratik.Patil30@T-Mobile.com
Last Modified: 3/8/2022 12:31:46 PM
Last Modified By: Pratik.Patil30@T-Mobile.com

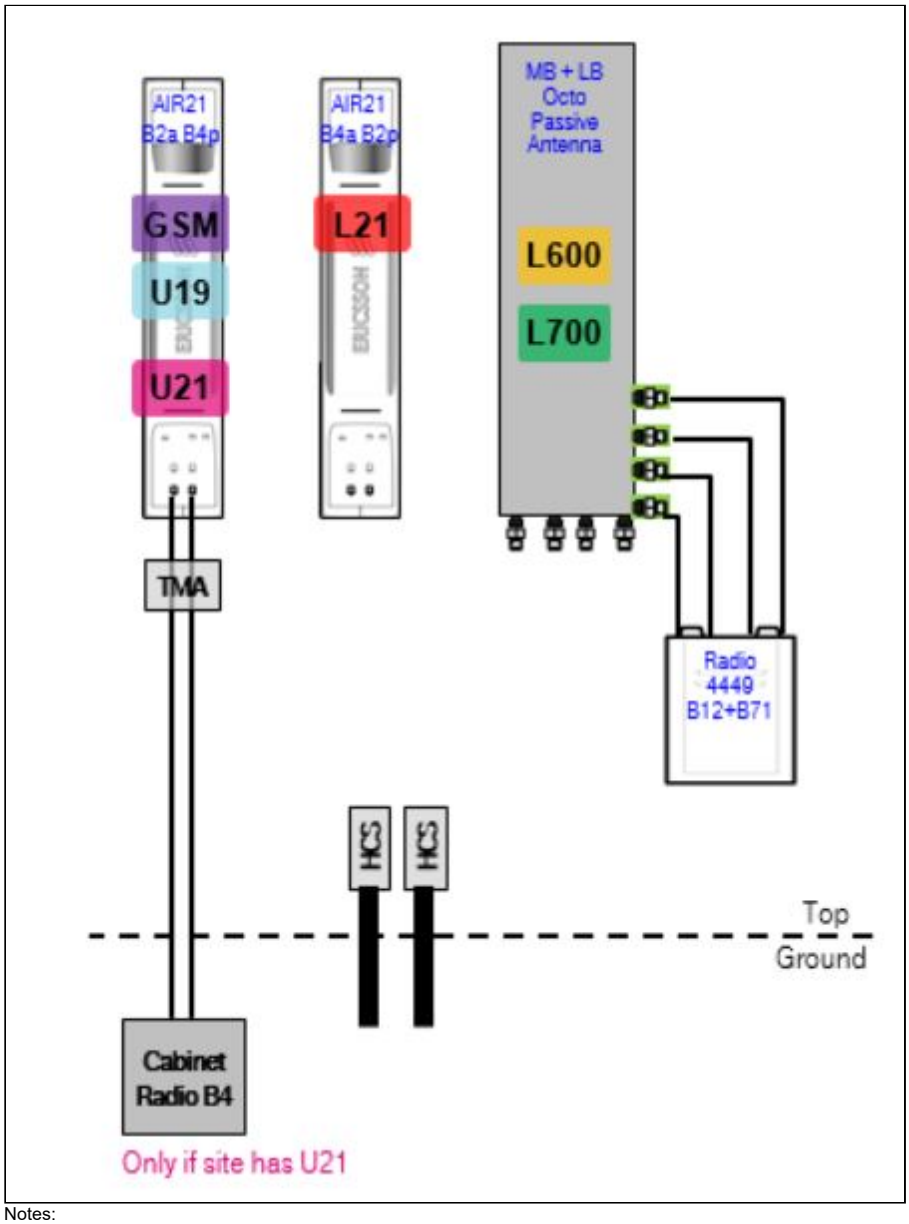
Site Name: Wolcott/ Andrews Rd._1
Site Class: Self Support Tower
Site Type: Structure Non Building
Plan Year: 2022
Market: CONNECTICUT CT
Vendor: Ericsson
Landlord: AT&T CORP

Latitude: 41.61770000
Longitude: -73.00450000
Address: Andrews Rd
City, State: Wolcott, CT
Region: NORTHEAST

RAN Template: 67D5D998E Indoor		AL Template: 67D5998E_1xAIR+1OP+1QP		
Sector Count: 3	**Antenna Count:** 9	**Coax Line Count:** 0	**TMA Count:** 0	**RRU Count:** 6

Section 2 - Existing Template Images

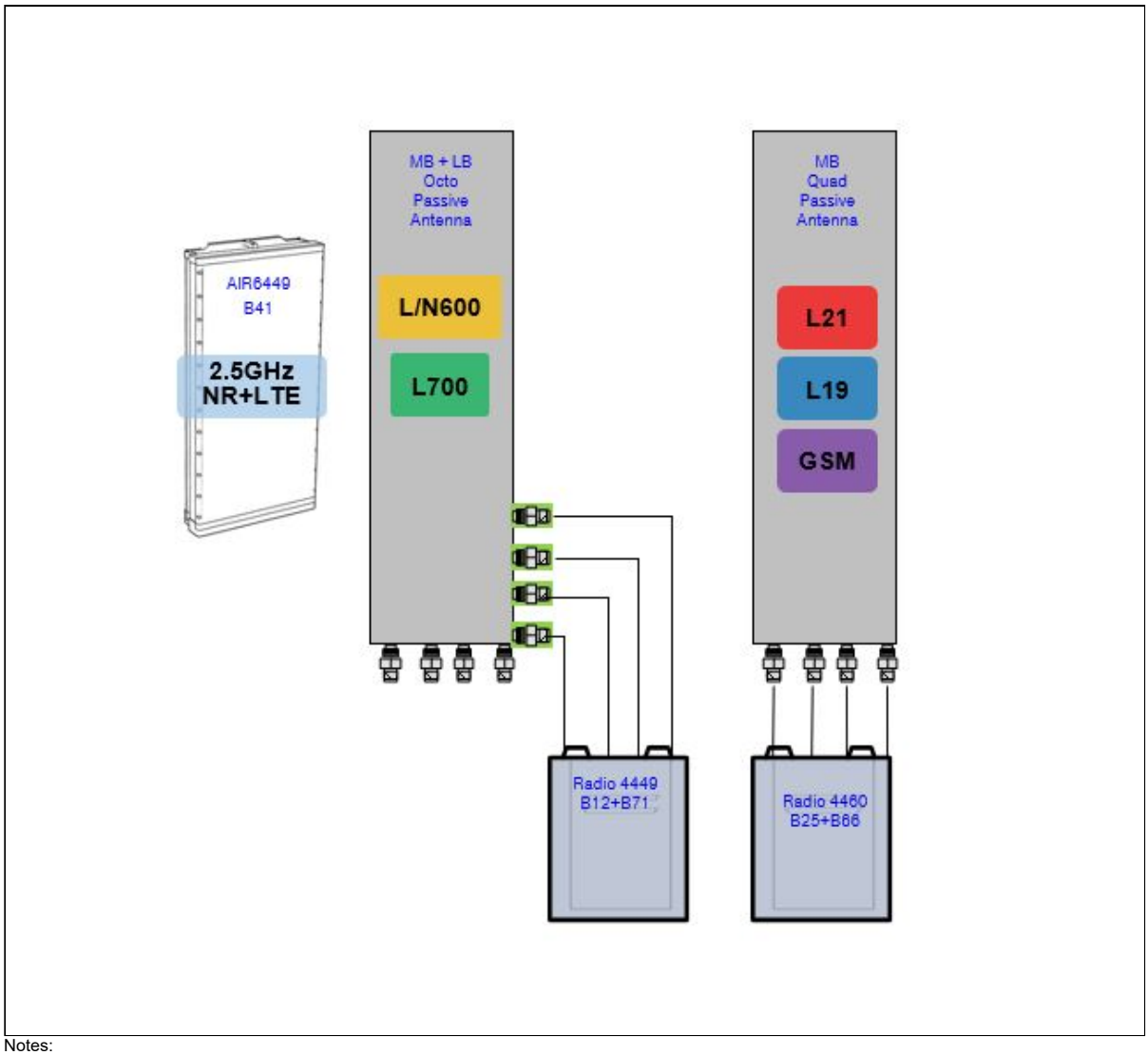
67D02C.JPG



Notes:

Section 3 - Proposed Template Images

67D5998E_1xAIR+1OP+1QP.JPG



Notes:

Section 4 - Siteplan Images

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RAN Template:	A&L Template:
67D5D998E Indoor	67D5998E_1xAIR+1OP+1QP

CT11403A_Anchor_10

Print Name: Preliminary (RFDS_For_Scoping)
PORs: Anchor_Phase 3

Section 5 - RAN Equipment

Existing RAN Equipment

Template: 67D92C Indoor

Enclosure	1	2
Enclosure Type	RBS 3206	PBC 6200
Baseband	DUW30 (U2100); DUW30; DUG20 (G1900); RBS6601 **(x 2)**; BB 6630 (L1900, L2100); BB 6630 (L700, L600, N600)	
Hybrid Cable System	Ericsson 9x18 HCS *Select Length* Ericsson 6x12 HCS *Select Length & AWG* **(x 3)**	
Radio	RU22 **(x 6)** (U2100)	

Proposed RAN Equipment

Template: 67D5D998E Indoor

Enclosure	1	2	3
Enclosure Type	RBS 3206	Ericsson - 19 Inch Rack	Power 6230
Baseband	DUW30 (U2100); DUG20 (G1900); RBS6601 **(x 2)**; BB 6630 (L2100, L1900); BB 6630 (L700, L600, N600)	RP 6651 (L2500, N2500)	
Hybrid Cable System	Ericsson 6x12 HCS *Select Length & AWG* **(x 3)**	PSU 4813 vR4A (Kit) Ericsson Hybrid Trunk 6/24 4AWG 50m	
Transport System		CSR IXRe V2 (Gen2)	

RAN Scope of Work:

Remove and return all cabinet radios from existing base station cabinet.

Add (1) 19 inch Rack.

Add (1) iXRe Router to new 19 inch Rack.

Add (1) RP 6651 for L2500/N2500 to new 19 inch Rack

Add (1) PSU4813 Voltage Booster to new 19 inch Rack.

Add (1) power 6230..

Existing : (3) 6x12, (1) 9x18

Remove all Coax, remove (1) 9x18

Add (1) 6X24 HCS terminating at 19 inch Rack Connect DC for the AIR6419 B41 to the PSU4813 Voltage Booster.

RAN Template:	A&L Template:
67D5D998E Indoor	67D5998E_1xAIR+1OP+1QP

CT11403A_Anchor_10

Print Name: Preliminary (RFDS_For_Scoping)
PORs: Anchor_Phase 3

Section 6 - A&L Equipment

Existing Template: 67D92C_2xAIR+1OP
Proposed Template: 67D5998E_1xAIR+1OP+1QP

Sector 1 (Existing) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2				3	
Antenna Model	Ericsson - AIR21 KRC118023-1_B2A_B4P (Quad)		RFS - APXVAARR24_43-U-NA20 (Octo)				Ericsson - AIR21 KRC118023-1_B2P_B4A (Quad)	
Azimuth	50		50				50	
M. Tilt	0		0				0	
Height	77		77				77	
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	L1900 G1900	U2100	L700 L600 N600	L700 L600 N600			L2100	
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt	3	3	2	2			3	
Cables	Fiber Jumper - 15 ft. **(x2)**	1-1/4" Coax - 124 ft. **(x2)**	Coax Jumper **(x2)** Fiber Jumper - 15 ft.	Coax Jumper **(x2)**			Fiber Jumper - 15 ft. **(x2)**	
TMAs		Generic Twin Style 1B - AWS (AtAntenna)						
Diplexers / Combiners								
Radio			Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)				
Sector Equipment								

Unconnected Equipment:

Cable: 1-1/4" Coax - 124 ft.
Cable: 1-1/4" Coax - 124 ft.

Scope of Work:

Replace LB Dual in Position 2 with (1) LB/MB Octo.
Replace RRUS11 B12 in Position 2 with (1) Radio 4449 B71+B12 for L600 and L700.

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

RAN Template:	A&L Template:
67D5D998E Indoor	67D5998E_1xAIR+1OP+1QP

CT11403A_Anchor_10

Print Name: Preliminary (RFDS_For_Scoping)
PORs: Anchor_Phase 3

Sector 1 (Proposed) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2				3	
Antenna Model	AIR 6419 B41 (Active Antenna - Massive MIMO)		RFS - APXVAARR24_43-U-NA20 (Octo)				Commscope_VV-65A-R1 (Quad)	
Azimuth	50		50				50	
M. Tilt	0		0				0	
Height	77		77				77	
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	L2500 N2500	L2500 N2500	L700 L600 N600	L700 L600 N600			L2100 L1900 G1900 U2100	L2100 L1900 G1900 U2100
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt	2	2	2	2			3	3
Cables	Fiber Jumper **(x2)**	Fiber Jumper **(x2)**	Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper			Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper
TMAs								
Diplexers / Combiners								
Radio			Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)			Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)
Sector Equipment								

Unconnected Equipment:

Scope of Work:

There will be Three antennae per sector.

Remove all TMAs.

Remove all diplexers.

Remove all Coaxial Lines.

Replace AIR21 B2A/B4P from Position 1 with (1) AIR6419 B41 for L2500 and N2500.

Replace AIR21 B2P/B4A with (1) mid-band Quad VV-65A-R1 in Position 3 .

Add (1) Radio 4460 B25+B66 for L2100, L1900 (Both carriers), and GSM to Position 3 at antenna.

Ensure RET control is enabled for all technology layers according to the Design Documents

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

RAN Template:	A&L Template:
67D5D998E Indoor	67D5998E_1xAIR+1OP+1QP

CT11403A_Anchor_10

Print Name: Preliminary (RFDS_For_Scoping)
PORs: Anchor_Phase 3

Sector 2 (Existing) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2				3	
Antenna Model	Ericsson - AIR21 KRC118023-1_B2P_B4A (Quad)		RFS - APXVAARR24_43-U-NA20 (Octo)				Ericsson - AIR21 KRC118023-1_B2A_B4P (Quad)	
Azimuth	180		180				180	
M. Tilt	0		0				0	
Height	77		77				77	
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	L2100		L700 L600 N600	L700 L600 N600			L1900 G1900	U2100
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt	3		2	2			3	3
Cables	Fiber Jumper - 15 ft. **(x2)**		Coax Jumper **(x2)** Fiber Jumper - 15 ft.	Coax Jumper **(x2)**			Fiber Jumper - 15 ft. **(x2)**	1-1/4" Coax - 124 ft. **(x2)**
TMAs								Generic Twin Style 1B - AWS (AtAntenna)
Diplexers / Combiners								
Radio			Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)				
Sector Equipment								

Unconnected Equipment:

Cable: 1-1/4" Coax - 124 ft. | Cable: 1-1/4" Coax - 124 ft. | Cable: 1-1/4" Coax - 124 ft. | Cable: 1-1/4" Coax - 124 ft.

Scope of Work:

Replace LB Dual in Position 2 with (1) LB/MB Octo.
Replace RRUS11 B12 in Position 2 with (1) Radio 4449 B71+B12 for L600 and L700.

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

RAN Template:	A&L Template:
67D5D998E Indoor	67D5998E_1xAIR+1OP+1QP

CT11403A_Anchor_10

Print Name: Preliminary (RFDS_For_Scoping)
PORs: Anchor_Phase 3

Sector 2 (Proposed) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2				3	
Antenna Model	AIR 6419 B41 (Active Antenna - Massive MIMO)		RFS - APXVAARR24_43-U-NA20 (Octo)				Commscope_VV-65A-R1 (Quad)	
Azimuth	180		180				180	
M. Tilt	0		0				0	
Height	77		77				77	
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	L2500 N2500	L2500 N2500	L700 L600 N600	L700 L600 N600			L2100 L1900 G1900 U2100	L2100 L1900 G1900 U2100
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt	2	2	2	2			3	3
Cables	Fiber Jumper **(x2)**	Fiber Jumper **(x2)**	Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper			Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper
TMAs								
Diplexers / Combiners								
Radio			Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)			Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)
Sector Equipment								

Unconnected Equipment:

Scope of Work:

There will be Three antennae per sector.

Remove all TMAs.

Remove all diplexers.

Remove all Coaxial Lines.

Replace AIR21 B2A/B4P from Position 1 with (1) AIR6419 B41 for L2500 and N2500.

Replace AIR21 B2P/B4A with (1) mid-band Quad VV-65A-R1 in Position 3 .

Add (1) Radio 4460 B25+B66 for L2100, L1900 (Both carriers), and GSM to Position 3 at antenna.

Ensure RET control is enabled for all technology layers according to the Design Documents

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

RAN Template:	A&L Template:
67D5D998E Indoor	67D5998E_1xAIR+1OP+1QP

CT11403A_Anchor_10

Print Name: Preliminary (RFDS_For_Scoping)
PORs: Anchor_Phase 3

Sector 3 (Existing) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2				3	
Antenna Model	Ericsson - AIR21 KRC118023-1_B2P_B4A (Quad)		RFS - APXVAARR24_43-U-NA20 (Octo)				Ericsson - AIR21 KRC118023-1_B2A_B4P (Quad)	
Azimuth	310		310				310	
M. Tilt	0		0				0	
Height	77		77				77	
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	L2100		L700 L600 N600	L700 L600 N600			L1900 G1900	U2100
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt	3		2	2			3	3
Cables	Fiber Jumper - 15 ft. **(x2)**		Coax Jumper **(x2)** Fiber Jumper - 15 ft.	Coax Jumper **(x2)**			Fiber Jumper - 15 ft. **(x2)**	1-1/4" Coax - 124 ft. **(x2)**
TMAs								Generic Twin Style 1B - AWS (AtAntenna)
Diplexers / Combiners								
Radio			Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)				
Sector Equipment								

Unconnected Equipment:

Cable: 1-1/4" Coax - 124 ft. | Cable: 1-1/4" Coax - 124 ft. | Cable: 1-1/4" Coax - 124 ft. | Cable: 1-1/4" Coax - 124 ft.

Scope of Work:

Replace LB Dual in Position 2 with (1) LB/MB Octo.
Replace RRUS11 B12 in Position 2 with (1) Radio 4449 B71+B12 for L600 and L700.

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

RAN Template:	A&L Template:
67D5D998E Indoor	67D5998E_1xAIR+1OP+1QP

CT11403A_Anchor_10

Print Name: Preliminary (RFDS_For_Scoping)
PORs: Anchor_Phase 3

Sector 3 (Proposed) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2				3	
Antenna Model	AIR 6419 B41 (Active Antenna - Massive MIMO)		RFS - APXVAARR24_43-U-NA20 (Octo)				Commscope_VV-65A-R1 (Quad)	
Azimuth	310		310				310	
M. Tilt	0		0				0	
Height	77		77				77	
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	L2500 N2500	L2500 N2500	L700 L600 N600	L700 L600 N600			L2100 L1900 G1900 U2100	L2100 L1900 G1900 U2100
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt	2	2	2	2			3	3
Cables	Fiber Jumper **(x2)**	Fiber Jumper **(x2)**	Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper			Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper
TMAs								
Diplexers / Combiners								
Radio			Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)			Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)
Sector Equipment								

Unconnected Equipment:

Scope of Work:

There will be Three antennae per sector.

Remove all TMAs.

Remove all diplexers.

Remove all Coaxial Lines.

Replace AIR21 B2A/B4P from Position 1 with (1) AIR6419 B41 for L2500 and N2500.

Replace AIR21 B2P/B4A with (1) mid-band Quad VV-65A-R1 in Position 3 .

Add (1) Radio 4460 B25+B66 for L2100, L1900 (Both carriers), and GSM to Position 3 at antenna.

Ensure RET control is enabled for all technology layers according to the Design Documents

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

RAN Template:	A&L Template:
67D5D998E Indoor	67D5998E_1xAIR+1OP+1QP

CT11403A_Anchor_10

Print Name: Preliminary (RFDS_For_Scoping)
PORs: Anchor_Phase 3

Section 7 - Power Systems Equipment

Existing Power Systems Equipment
----- This section is intentionally blank. -----

	Proposed Power Systems Equipment
Enclosure	1
Enclosure Type	Power 6230

EBI Consulting

environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CT11403A

Wolcott/ Andrews Rd._1
Andrews Road
Wolcott, Connecticut 06716

May 30, 2022

EBI Project Number: 6222003530

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**66.18%**

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

May 30, 2022

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

Emissions Analysis for Site: CT11403A - Wolcott/ Andrews Rd._1

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **Andrews Road** in **Wolcott, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at Andrews Road in Wolcott, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

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

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

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

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

5) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

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

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

8) 1 LTE Traffic channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 60 Watts.

9) 1 LTE Broadcast channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 20 Watts.

10) 1 NR Traffic channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.

11) 1 NR Broadcast channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts.

12) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

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

14) The antennas used in this modeling are the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Commscope VV-65A-R1 for the 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz channel(s) in Sector A, the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Commscope VV-65A-R1 for the 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz channel(s) in Sector B, the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Commscope VV-65A-R1 for the 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and

associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

15) The antenna mounting height centerline of the proposed antennas is 77 feet above ground level (AGL).

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

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

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T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 6419	Make / Model:	Ericsson AIR 6419	Make / Model:	Ericsson AIR 6419
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.05 dBd / 15.55 dBd / 22.05 dBd / 15.55 dBd	Gain:	22.05 dBd / 15.55 dBd / 22.05 dBd / 15.55 dBd	Gain:	22.05 dBd / 15.55 dBd / 22.05 dBd / 15.55 dBd
Height (AGL):	77 feet	Height (AGL):	77 feet	Height (AGL):	77 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240.00 Watts	Total TX Power (W):	240.00 Watts	Total TX Power (W):	240.00 Watts
ERP (W):	31,011.95	ERP (W):	31,011.95	ERP (W):	31,011.95
Antenna A1 MPE %:	**22.12%**	Antenna B1 MPE %:	**22.12%**	Antenna C1 MPE %:	**22.12%**
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd
Height (AGL):	77 feet	Height (AGL):	77 feet	Height (AGL):	77 feet
Channel Count:	5	Channel Count:	5	Channel Count:	5
Total TX Power (W):	200.00 Watts	Total TX Power (W):	200.00 Watts	Total TX Power (W):	200.00 Watts
ERP (W):	4,059.02	ERP (W):	4,059.02	ERP (W):	4,059.02
Antenna A2 MPE %:	**6.91%**	Antenna B2 MPE %:	**6.91%**	Antenna C2 MPE %:	**6.91%**
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Commscope VV-65A-R1	Make / Model:	Commscope VV-65A-R1	Make / Model:	Commscope VV-65A-R1
Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz
Gain:	15.55 dBd / 15.55 dBd / 16.05 dBd / 16.05 dBd	Gain:	15.55 dBd / 15.55 dBd / 16.05 dBd / 16.05 dBd	Gain:	15.55 dBd / 15.55 dBd / 16.05 dBd / 16.05 dBd
Height (AGL):	77 feet	Height (AGL):	77 feet	Height (AGL):	77 feet
Channel Count:	10	Channel Count:	10	Channel Count:	10
Total TX Power (W):	420.00 Watts	Total TX Power (W):	420.00 Watts	Total TX Power (W):	420.00 Watts
ERP (W):	15,863.03	ERP (W):	15,863.03	ERP (W):	15,863.03
Antenna A3 MPE %:	**11.31%**	Antenna B3 MPE %:	**11.31%**	Antenna C3 MPE %:	**11.31%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	40.34%
Verizon	22.93%
Personal Vision	0%
SNET TMRS	2.91%
Site Total MPE % :	66.18%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	40.34%
T-Mobile Sector B Total:	40.34%
T-Mobile Sector C Total:	40.34%
Site Total MPE % :	66.18%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 2500 MHz LTE 1C & 2C Traffic	1	9619.47	77.0	68.60	2500 MHz LTE 1C & 2C Traffic	1000	6.86%
T-Mobile 2500 MHz LTE 1C & 2C Broadcast	1	717.84	77.0	5.12	2500 MHz LTE 1C & 2C Broadcast	1000	0.51%
T-Mobile 2500 MHz NR Traffic	1	19238.94	77.0	137.21	2500 MHz NR Traffic	1000	13.72%
T-Mobile 2500 MHz NR Broadcast	1	1435.69	77.0	10.24	2500 MHz NR Broadcast	1000	1.02%
T-Mobile 600 MHz LTE	2	591.73	77.0	8.44	600 MHz LTE	400	2.11%
T-Mobile 600 MHz NR	1	1577.94	77.0	11.25	600 MHz NR	400	2.81%
T-Mobile 700 MHz LTE	2	648.82	77.0	9.25	700 MHz LTE	467	1.98%
T-Mobile 1900 MHz GSM	4	1076.77	77.0	30.72	1900 MHz GSM	1000	3.07%
T-Mobile 1900 MHz LTE	2	2153.53	77.0	30.72	1900 MHz LTE	1000	3.07%
T-Mobile 2100 MHz UMTS	2	1208.15	77.0	17.23	2100 MHz UMTS	1000	1.72%
T-Mobile 2100 MHz LTE	2	2416.30	77.0	34.47	2100 MHz LTE	1000	3.45%
						Total:	**40.34%**

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

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	40.34%
Sector B:	40.34%
Sector C:	40.34%
T-Mobile Maximum MPE % (Sector A):	40.34%
Site Total:	66.18%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **66.18%** 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.