INDUSTRIAL AVE,
TE 3
HWAH NJ 07430

ONE: 201.684.0055
X: 201.684.0066

Transcend Wireless

December 10, 2021

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

RE: Notice of Exempt Modification
8 Old Route 79, Madison, CT 06443
Latitude: 41.28553333
Longitude: -72.60134167
T-Mobile Site#: CT11167A - Anchor

Dear Ms. Bachman:

T-Mobile currently maintains eight (8) antennas at the 120' level of the 148' monopole located at 8 Old Route 79 in Madison, CT. The monopole is owned by American Tower and the property is owned by CK Builders LLC. T-Mobile now intends to replace four (4) of its existing antennas with four (4) L700/L600/L1900/L2100/N2100 antennas. The new antennas would be installed at the same 120' level of the tower. The new antennas support 5G services.

Planned Modifications:
Tower:
Install New:
(4) RFS APXVAAL24 Antennas
(4) Radio 4480 B71/B85

To Be Removed:
(4) RFS APX16DWV Antennas

Existing to Remain:
(4) Ericsson AIR6449 B41 Antennas
(4) Radio 4460 B25/B66
(8) 6 x 24 HCS Cables

This tower was approved to be rebuilt as a monopole by the Town of Madison's Inland Wetlands Enforcement Officer on February 2, 1999. The Connecticut Siting Council approved tower sharing in 2001. None of the modifications break the conditions given.

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 First Selectwoman Peggy Lyons, Elected Official, and The Planning and Zoning Department of Madison, as well as the property and tower owner.

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

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

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

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

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

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

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

For the foregoing reasons, 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: Peggy Lyons - First Selectwoman of Madison
Joseph Bunovsky - Planning and Zoning Board
CK Builders LLC - Property Owner
American Towers - Tower Owner

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
PLANNING AND ZONING DEPARTMENT
8 CAMPUS DRIVE
MADISON CT 06443

CT 065 2-03

UPS GROUND

TRACKING #: 1Z V25 742 03 9098 3656

BILLING: P/P

Reference #1: CT11167A

XOL 21.11.24 NV45 50.0A 12/2021*

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
FIRST SELECTWOMAN
PEGGY LYONS
8 CAMPUS DRIVE
MADISON CT 06443

CT 065 2-03

UPS GROUND

TRACKING #: 1Z V25 742 03 9232 1643

BILLING: P/P

Reference #1: CT11167A

XOL 21.11.24 NV45 50.0A 12/2021*

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
AMERICAN TOWER CORPORATION
10 PRESIDENTIAL WAY
WOBURN MA 01801

MA 018 9-04

UPS GROUND
TRACKING #: 1Z V25 742 03 9431 9670

BILLING: P/P

Reference #1: CT11167A

XOL 21.11.24 NV45 50.0A 12/2021*

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
CK BUILDERS LLC
109 OLD DIKE ROAD
TRUMBULL CT 06611

CT 066 9-07

UPS GROUND
TRACKING #: 1Z V25 742 03 9444 9664

BILLING: P/P

Reference #1: CT11167A

XOL 21.11.24 NV45 50.0A 12/2021*

Hello, your package has been delivered.

Delivery Date: Thursday, 12/09/2021
Delivery Time: 11:50 AM
Left At: OTHER-RELEAS

Set Delivery Instructions | Manage Preferences

TRANSCEND WIRELESS

Tracking Number:	1ZV257420394449664
Ship To:	CK BUILDERS LLC 109 OLD DIKE ROAD TRUMBULL, CT 06611 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CT11167A

Hello, your package has been delivered.

Delivery Date: Thursday, 12/09/2021
Delivery Time: 11:49 AM
Left At: FRONT DESK
Signed by: ANCRI

TRANSCEND WIRELESS

Tracking Number:	1ZV257420394319670
Ship To:	AMERICAN TOWER CORPORATION 10 PRESIDENTIAL WAY WOBURN, MA 01801 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CT11167A

Hello, your package has been delivered.

Delivery Date: Thursday, 12/09/2021

Delivery Time: 2:06 PM

Left At: OFFICE

Signed by: TOWN CLERK

TRANSCEND WIRELESS

Tracking Number:	1ZV257420390983656
Ship To:	PLANNING AND ZONING DEPARTMENT 8 CAMPUS DRIVE MADISON, CT 06443 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CT11167A

Hello, your package has been delivered.

Delivery Date: Thursday, 12/09/2021

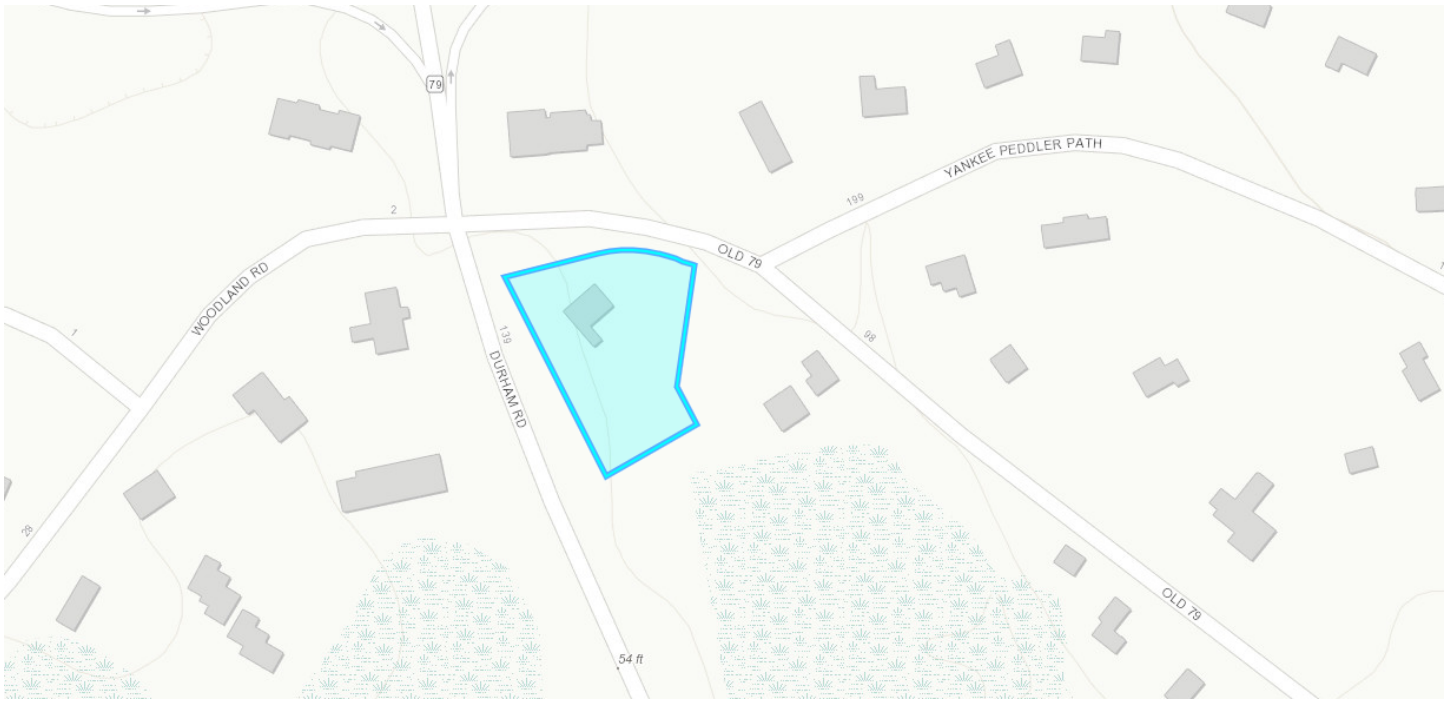
Delivery Time: 2:06 PM

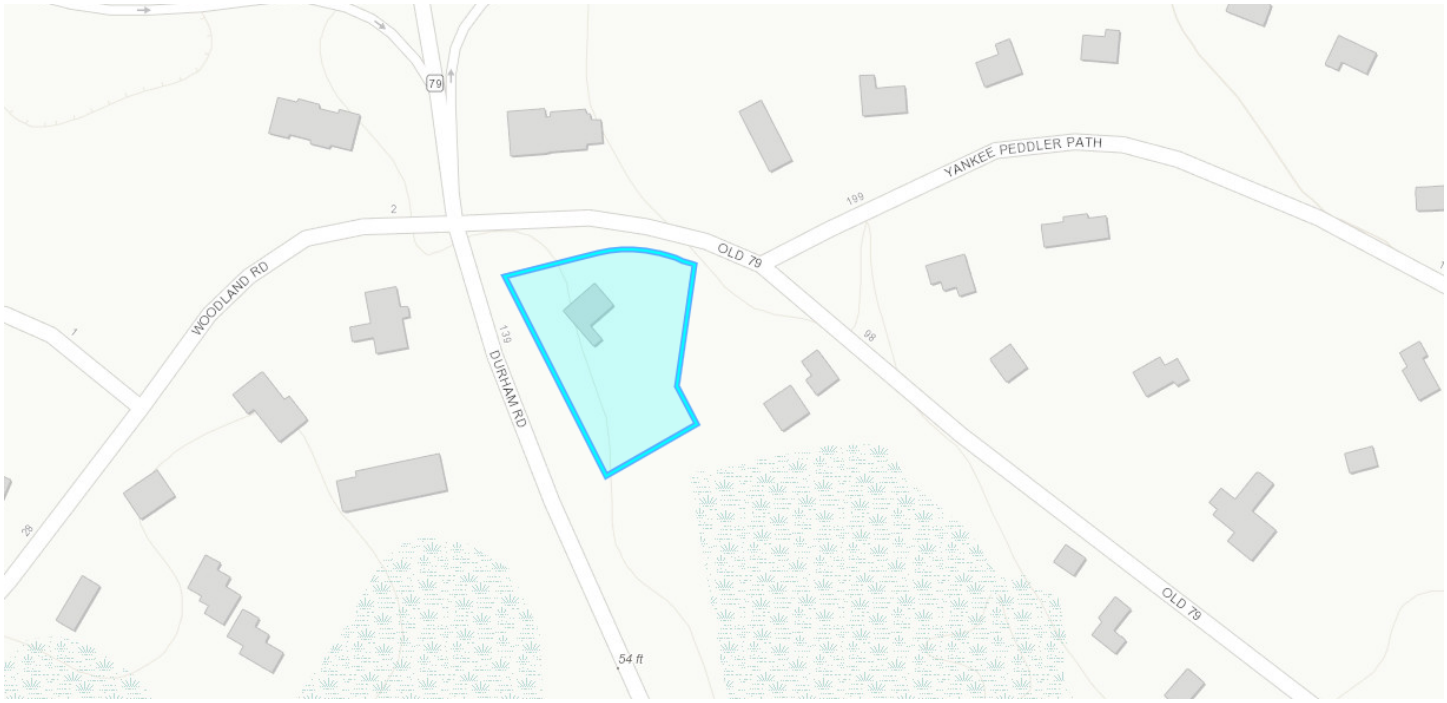
Left At: OFFICE

Signed by: TOWN CLERK

TRANSCEND WIRELESS

Tracking Number:	1ZV257420392321643
Ship To:	PEGGY LYONS 8 CAMPUS DRIVE MADISON, CT 06443 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CT11167A


79
YANKEE PEDDLER PATH
199
2
OLD 79
WOODLAND RD
1
DURHAM RD
139
98
28
OLD 79
54 ft


79
YANKEE PEDDLER PATH
199
2
OLD 79
WOODLAND RD
1
DURHAM RD
139
98
28
54 ft
OLD 79

8 OLD ROUTE 79

Sales | Print | Map It

Location	8 OLD ROUTE 79	**MBLU**	48/ 53/ / /
Acct#	00321200	**Owner**	CK BUILDERS LLC
Assessment	$299,500	**Appraisal**	$427,700
PID	3310	**Building Count**	1
Dev. Map			

Current Value

Appraisal					
Valuation Year	Building	Extra Features	Outbuildings	Land	Total
2020	$0	$0	$22,500	$405,200	$427,700
Assessment					
Valuation Year	Building	Extra Features	Outbuildings	Land	Total
2020	$0	$0	$15,800	$283,700	$299,500

Parcel Addreses

Additional Addresses
No Additional Addresses available for this parcel

Owner of Record

Owner	CK BUILDERS LLC	**Sale Price**	$0
Co-Owner		**Book & Page**	1340/0270
Care Of		**Sale Date**	12/21/2004
		Instrument	15

Ownership History

Ownership History				
Owner	Sale Price	Book & Page	Instrument	Sale Date
CK BUILDERS LLC	$0	1340/0270	15	12/21/2004
TOWN OF MADISON	$0	0136/0597		

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0

Building Attributes	
Field	Description
Style:	Vacant Land
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 Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	

Building Photo

Building Layout

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

Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Num Kitchens	
Cndtn	
Fireplace(s)	
Xtra FPL Open	
Num Park	
Fireplaces	
Fndtn Cndtn	
Basement	

Extra Features

Extra Features
No Data for Extra Features

Land

Land Use

Use Code 4310
Description TEL REL TW
Zone R-1

Land Line Valuation

Size (Acres) 1.02

Outbuildings

Outbuildings						
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
FND	Foundation			1.00 UNITS	$22,500	1

8 CAMPUS DRIVE
MADISON, CONNECTICUT 06443-2563
(203) 245-5632
FAX (203) 245-5613

TOW

L

Z 594 530 629

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail (See reverse)

Sent to: SMART SMR/Nextel Communications
Street & Number: 100 Corporate Place
Post Office, State, & ZIP Code: Rocky Hill, CT 06067

Postage	$ .33
Certified Fee	1.40
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	$ 1.73
Postmark or Date	FEB 2 1999 06443

PS Form 3800, April 1995

February 2, 1999

SMART SMR of New York, Inc.
Nextel Communications
100 Corporate Place
Rocky Hill, CT 06067

Re: Application 99-4: 8 OLD ROUTE 79. Request for Regulated Activity Permit to allow replacement of tower with monopole encroaching into the wetlands buffer.

Gentlemen:

At their regular meeting on February 1, 1999, the Madison Inland Wetlands Agency approved the application above referenced as presented at the meeting and as shown on the ***Site Plan Modification Plan*** and ***Site Plan Modification Plan Details,*** sheets C-1 and C-2, dated 11-09-98.

The duration of this permit is for two years, unless extended by the Agency, and all activities must be completed within this time.

Very truly yours,

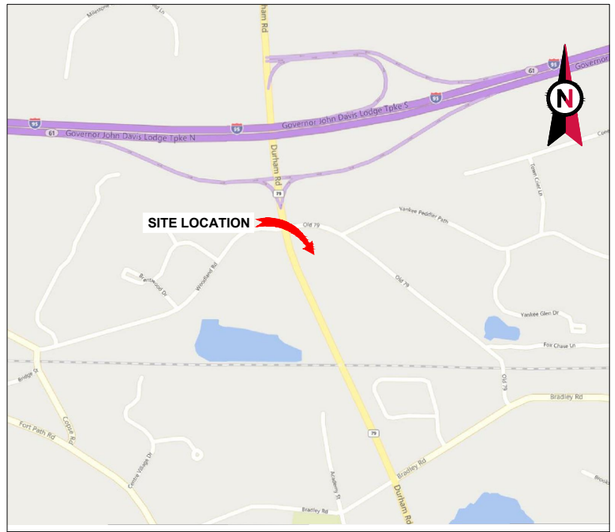
Robert E Kuchta

Robert E. Kuchta
Inland Wetlands Enforcement Officer

For GLENN W. FALK
Chairman, Madison Inland Wetlands Agency

:drk

Copy to URS Greiner Woodward Clyde



VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: MADISON CT 6
ATC SITE NUMBER: 302540
T-MOBILE SITE NAME: MADISON SOUTH / RT 1
T-MOBILE SITE NUMBER: CT11167A
SITE ADDRESS: 8 OLD 79
MADISON, CT 06443

LOCATION MAP

T-MOBILE L600 ANTENNA AMENDMENT PLAN
4SEC-67E5A998E CONFIGURATION

COMPLIANCE CODE

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

1. CT STATE BUILDING CODE, INCORPORATING THE 2018 INTERNATIONAL BUILDING CODE
2. 2017 NATIONAL ELECTRIC CODE (NEC)
3. LOCAL BUILDING CODE
4. CITY/COUNTY ORDINANCES

UTILITY COMPANIES

POWER COMPANY: EVERSOURCE
PHONE: (877) 659-6326

TELEPHONE COMPANY: FRONTIER COMMUNICATIONS
PHONE: (800) 376-6843

811 Know what's below. Call before you dig.

PROJECT SUMMARY

SITE ADDRESS:

8 OLD 79

MADISON, CT 06443

COUNTY: NEW HAVEN

GEOGRAPHIC COORDINATES:

LATITUDE: 41.28553333

LONGITUDE: -72.60134167

GROUND ELEVATION: 30' AMSL

PROJECT TEAM

TOWER OWNER:

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

APPLICANT:

T-MOBILE

ENGINEER:

COLLIERS ENGINEERING & DESIGN CT, P.C.
135 NEW ROAD
MADISON, CT 06443

PROJECT#:
21904438A

PROPERTY OWNER:

MADISON CT
8 OLD 79
MADISON, CT 06443

PROJECT DESCRIPTION

THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW:

REMOVE (4) ANTENNA(s)

INSTALL (4) ANTENNA(s) AND (4) RRH(s)

EXISTING (4) ANTENNA(s), (4) RRH(s) AND (8) HYBRID CABLE(s) TO REMAIN

PROJECT NOTES

1. THE FACILITY IS UNMANNED.
2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE.
3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE.
4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED.
5. HANDICAP ACCESS IS NOT REQUIRED.
6. THE PROJECT DEPICTED IN THESE PLANS QUALIFIES AS AN ELIGIBLE FACILITIES REQUEST ENTITLED TO EXPEDITED REVIEW UNDER 47 U.S.C. § 1455(A) AS A MODIFICATION OF AN EXISTING WIRELESS TOWER THAT INVOLVES THE COLLOCATION, REMOVAL, AND/OR REPLACEMENT OF TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE UNDER CFR § 1.61000 (B)(7).

PROJECT LOCATION DIRECTIONS

FROM NEW LONDON - TAKE I95 SOUTH TO EXIT 61 . TAKE LEFT AT OFF RAMP AND LEFT AT FIRST SET OF LIGHTS.

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	TITLE SHEET	2	11/30/21	JLK
G-002	GENERAL NOTES	2	11/30/21	JLK
C-101	DETAILED SITE PLAN	2	11/30/21	JLK
C-201	TOWER ELEVATION	2	11/30/21	JLK
C-401	ANTENNA INFORMATION & SCHEDULE	2	11/30/21	JLK
C-501	CONSTRUCTION DETAILS	2	11/30/21	JLK
E-501	GROUNDING DETAILS	2	11/30/21	JLK
R-601	SUPPLEMENTAL			
R-602	SUPPLEMENTAL			
R-603	SUPPLEMENTAL			
R-604	SUPPLEMENTAL			

AMERICAN TOWER®

Colliers Engineering & Design
www.colliersengineering.com
Doing Business as MASER CONSULTING
MADISON
135 New Road
Madison, CT 06443
Phone: 860.395.0055
COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING

REV.	DESCRIPTION	BY	DATE
A	PRELIM	JLK	09/15/21
0	FOR CONSTRUCTION	AMN	09/21/21
1	FOR CONSTRUCTION	AMN	11/10/21
2	FOR CONSTRUCTION	RMD	11/30/21

ATC SITE NUMBER:
302540

ATC SITE NAME:
MADISON CT 6

T-MOBILE SITE NAME:
MADISON SOUTH / RT 1

SITE ADDRESS:
8 OLD 79
MADISON, CT 06443

SEAL:

Digitally signed by Eric Anderson
Date: 2021.12.01 19:02:25-05'00'

C.T. JPC.0000131

T-Mobile

DATE DRAWN:	09/15/21
ATC JOB NO:	13726694_D1
CUSTOMER ID:	MADISON SOUTH / RT 1
CUSTOMER #:	CT11167A

TITLE SHEET

SHEET NUMBER:	REVISION:
G-001	2

GENERAL CONSTRUCTION NOTES:

1. OWNER FURNISHED MATERIALS, T-MOBILE "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL
   - A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)
   - B. AC/TELCO INTERFACE BOX (PPC)
   - C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
   - D. TOWERS, MONOPOLES
   - E. TOWER LIGHTING
   - F. GENERATORS & LIQUID PROPANE TANK
   - G. ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING
   - H. ANTENNAS (INSTALLED BY OTHERS)
   - I. TRANSMISSION LINE
   - J. TRANSMISSION LINE JUMPERS
   - K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
   - L. TRANSMISSION LINE GROUND KITS
   - M. HANGERS
   - N. HOISTING GRIPS
   - O. BTS EQUIPMENT
2. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF T-MOBILE TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
3. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS.
4. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
6. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
7. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
8. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
9. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
11. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
12. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE T-MOBILE REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE T-MOBILE REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE T-MOBILE REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
14. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE T-MOBILE CONSTRUCTION MANAGER.
15. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
16. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE T-MOBILE REP AND ENGINEER OF RECORD IMMEDIATELY.
17. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
18. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
19. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AMERICAN TOWER CORPORATION (ATC) AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
20. CONTRACTOR SHALL FURNISH T-MOBILE AND AMERICAN TOWER CORPORATION (ATC) WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.
22. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY T-MOBILE MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH T-MOBILE SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO T-MOBILE FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO T-MOBILE SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
26. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
27. CONTRACTOR SHALL NOTIFY T-MOBILE REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
28. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
29. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
30. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE T-MOBILE REP. ANY WORK FOUND BY THE T-MOBILE REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
31. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.
32. T-MOBILE FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE T-MOBILE WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP.
33. T-MOBILE OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OWN OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO T-MOBILE OR THEIR ARCHITECT/ENGINEER.

SPECIAL CONSTRUCTION ANTENNA INSTALLATION NOTES:

1. WORK INCLUDED:
   - A. ANTENNA AND COAXIAL CABLES ARE FURNISHED BY T-MOBILE UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OD COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL AND
   - B. INSTALL ANTENNA AS INDICATE ON DRAWINGS AND T-MOBILE SPECIFICATIONS.
   - C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS
   - D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE.
   - E. CONTRACTOR SHALL PROVIDE FOUR (4) SETS OF SWEEP TESTS USING ANRITZU-PACKARD 8713B RF SCALAR NETWORK ANALYZER. SUBMIT FREQUENCY DOMAIN REFLECTOMETER(FDR) TESTS RESULTS TO THE PROJECT MANAGER. SWEEP TESTS SHALL BE AS PER ATTACHED RFS "MINIMUM FIELD TESTING RECOMMENDED FOR ANTENNA AND HELIAX COAXIAL CABLE SYSTEMS" DATED 10/5/93. TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.
   - F. INSTALL COAXIAL CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTIONS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.
   - G. ANTENNA AND COAXIAL CABLE GROUNDING:
2. ALL EXTERIOR #6 GREED GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPLICE WEATHERPROOFING KIT #221213 OR EQUAL.
3. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS)

ALL DISCREPANCIES FROM WHAT IS SHOWN ON THESE CONSTRUCTION DRAWINGS SHALL BE COMMUNICATED TO ATC ENGINEERING IMMEDIATELY FOR CORRECTION OR RE-DESIGN. FAILURE TO COMMUNICATE DIRECTLY WITH ATC ENGINEERING OR ANY CHANGES FROM THE DESIGN CONDUCTED WITHOUT PRIOR APPROVAL FROM ATC ENGINEERING SHALL BE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

AMERICAN TOWER®

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MADISON
135 New Road
Madison, CT 06443
Phone: 860.395.0055
COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING

REV.	DESCRIPTION	BY	DATE
A	PRELIM	JLK	09/15/21
0	FOR CONSTRUCTION	AMN	09/21/21
1	FOR CONSTRUCTION	AMN	11/10/21
2	FOR CONSTRUCTION	RMD	11/30/21

ATC SITE NUMBER:
302540

ATC SITE NAME:
MADISON CT 6

T-MOBILE SITE NAME:
MADISON SOUTH / RT 1

SITE ADDRESS:
8 OLD 79
MADISON, CT 06443

SEAL:

Digitally signed by Eric Anderson
Date: 2021.12.01 19:02:28-05'00'

C.T. JPC.0000131

T-Mobile

DATE DRAWN:	09/15/21
ATC JOB NO:	13726694_D1
CUSTOMER ID:	MADISON SOUTH / RT 1
CUSTOMER #:	CT11167A

GENERAL NOTES

SHEET NUMBER:	REVISION:
G-002	2

SITE PLAN NOTES:

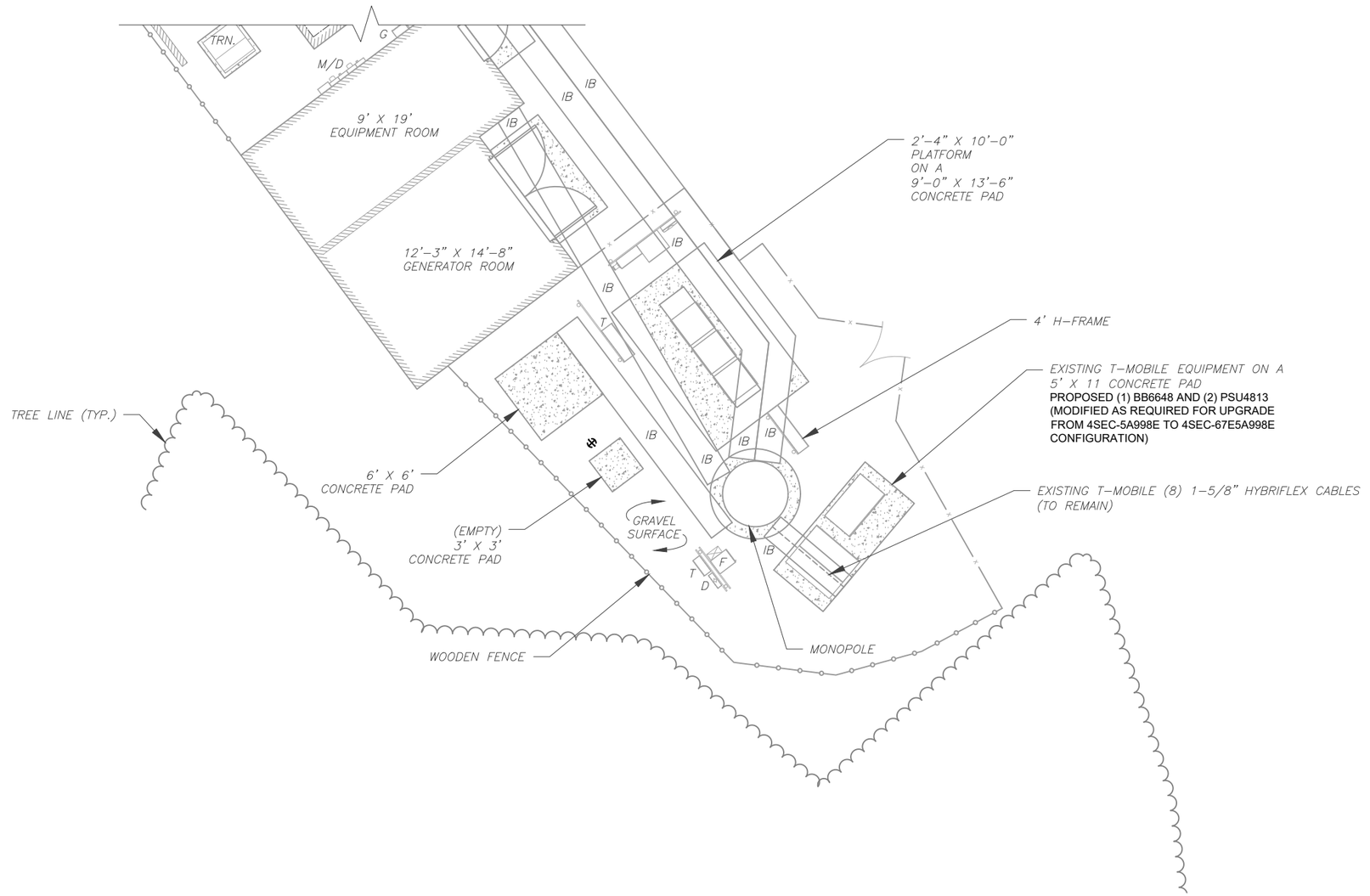
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.

2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.

3. THIS PROJECT INCLUDES NO INSTALL OR MODIFICATION AT GRADE.

LEGEND

⊗	GROUNDING TEST WELL
ATS	AUTOMATIC TRANSFER SWITCH
B	BOLLARD
CSC	CELL SITE CABINET
D	DISCONNECT
E	ELECTRICAL
F	FIBER
GEN	GENERATOR
G	GENERATOR RECEPTACLE
HH, V	HAND HOLE, VAULT
IB	ICE BRIDGE
K	KENTROX BOX
LC	LIGHTING CONTROL
M	METER
PB	PULL BOX
PP	POWER POLE
T	TELCO
TRN	TRANSFORMER
——x——	CHAINLINK FENCE



1 DETAILED SITE PLAN

GRAPHIC SCALE

10 0 5 10

(IN FEET)
1 UNIT = 10 FEET

N

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ATC SITE NUMBER:
302540

ATC SITE NAME:
MADISON CT 6

T-MOBILE SITE NAME:
MADISON SOUTH / RT 1

SITE ADDRESS:
8 OLD 79
MADISON, CT 06443

SEAL:

STATE OF CONNECTICUT · ERIC T. ANDERSON · 32224 · LICENSED PROFESSIONAL ENGINEER

Digitally signed by Eric Anderson
Date: 2021.12.01 19:02:30-05'00'

C.T. JPC.0000131

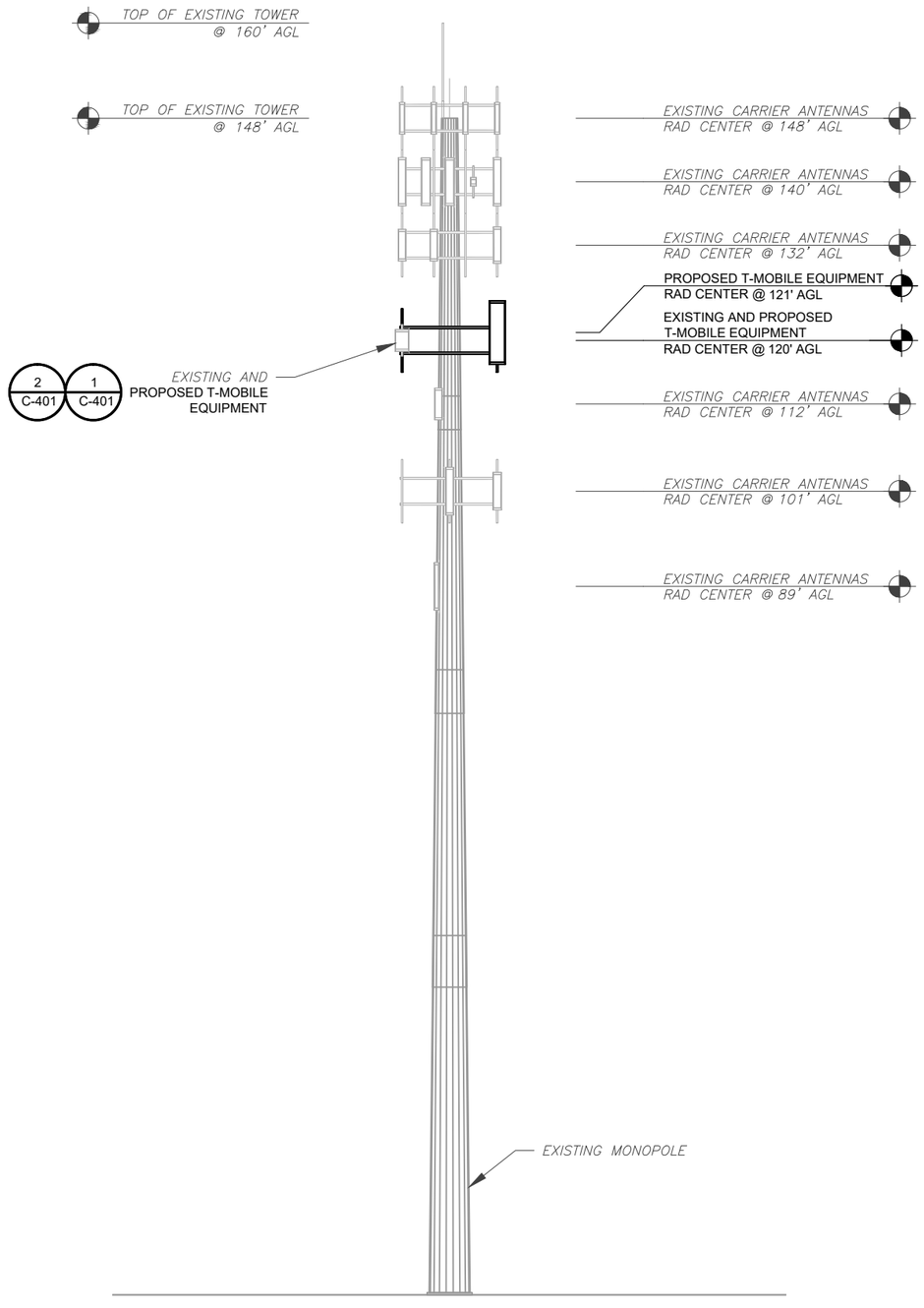
T-Mobile

DATE DRAWN:	09/15/21
ATC JOB NO:	13726694_D1
CUSTOMER ID:	MADISON SOUTH / RT 1
CUSTOMER #:	CT11167A

DETAILED SITE PLAN

SHEET NUMBER:	REVISION:
C-101	2

PER MOUNT ANALYSIS COMPLETED BY AMERICAN TOWER CORPORATION, DATED 11/04/21, THE PROPOSED MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.



1 TOWER ELEVATION
SCALE: N.T.S.

TOWER NOTE:
1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE PROJECT MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
2. WHERE APPLICABLE, ALL NEW ANTENNAS, EQUIPMENT, MOUNTS, CABLING, ETC. SHALL BE PAINTED/SOCKED TO MATCH EXISTING EQUIPMENT IN ACCORDANCE WITH FAA, JURISDICTION, AND/OR OTHER LOCAL REQUIREMENTS.
3. TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)

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ATC SITE NAME:
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T-MOBILE SITE NAME:
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SITE ADDRESS:
8 OLD 79
MADISON, CT 06443

SEAL:

Digitally signed by Eric Anderson
Date: 2021.12.01 19:02:32-05'00'

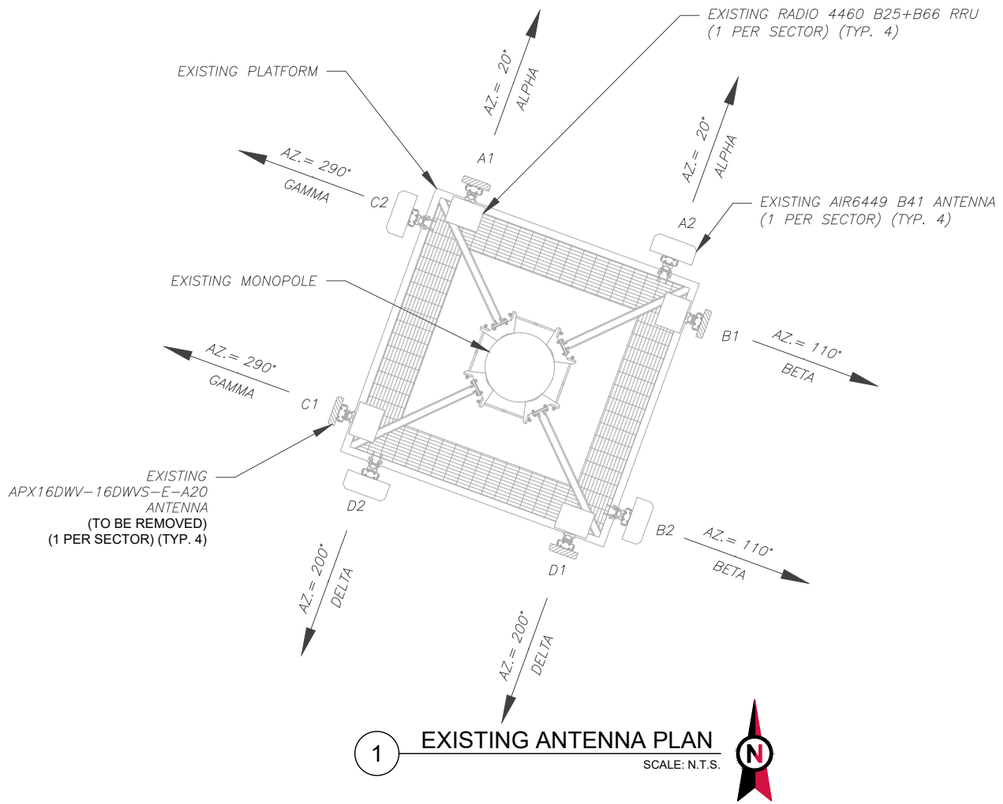
C.T. JPC.0000131

T-Mobile

DATE DRAWN:	09/15/21
ATC JOB NO:	13726694_D1
CUSTOMER ID:	MADISON SOUTH / RT 1
CUSTOMER #:	CT11167A

TOWER ELEVATION

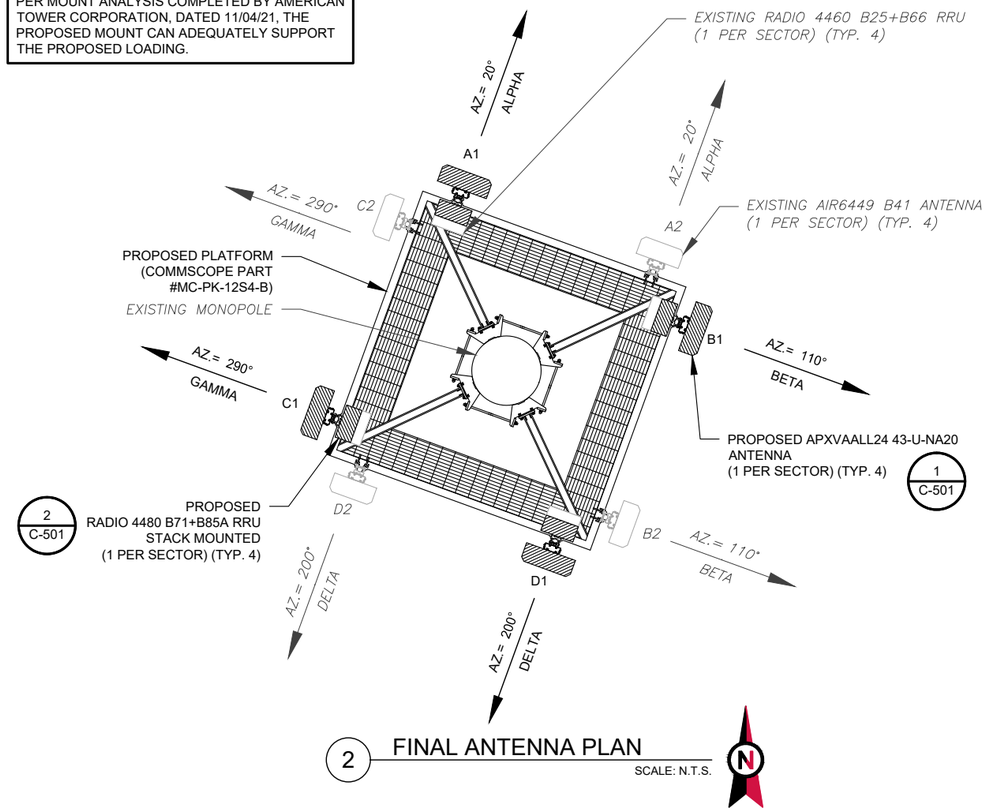
SHEET NUMBER:	REVISION:
C-201	2



1 EXISTING ANTENNA PLAN

SCALE: N.T.S.

PER MOUNT ANALYSIS COMPLETED BY AMERICAN TOWER CORPORATION, DATED 11/04/21, THE PROPOSED MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.



2 FINAL ANTENNA PLAN

SCALE: N.T.S.

EXISTING ANTENNA SCHEDULE

LOCATION			ANTENNA SUMMARY					NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	120'	20°	A1	APX16DWV-16DWVS-E-A20	U2100/L1900 G1900/L2100	0/2/2	RMV	RADIO 4460 B25+B66	RMN
			A2	AIR6449 B41	L2500/N2500	0/2/2	RMN	–	–
BETA	120'	110°	B1	APX16DWV-16DWVS-E-A20	U2100/L1900 G1900/L2100	0/2/2	RMV	RADIO 4460 B25+B66	RMN
			B2	AIR6449 B41	L2500/N2500	0/2/2	RMN	–	–
GAMMA	120'	290°	C1	APX16DWV-16DWVS-E-A20	U2100/L1900 G1900/L2100	0/2/2	RMV	RADIO 4460 B25+B66	RMN
			C2	AIR6449 B41	L2500/N2500	0/2/2	RMN	–	–
DELTA	120'	200°	D1	APX16DWV-16DWVS-E-A20	U2100/L1900 G1900/L2100	0/2/2	RMV	RADIO 4460 B25+B66	RMN
			D2	AIR6449 B41	L2500/N2500	0/2/2	RMN	–	–

NOTES

1. CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
2. CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.

STATUS ABBREVIATIONS

RMV: TO BE REMOVED
RMN: TO REMAIN
REL: TO BE RELOCATED
ADD: TO BE ADDED

CABLE LENGTHS FOR JUMPERS

JUNCTION BOX TO RRU: 15'
RRU TO ANTENNA: 10'

FINAL ANTENNA SCHEDULE

LOCATION			ANTENNA SUMMARY					NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	121' 120'	20°	A1	APXVAALL24 43-U-NA20	L700/L600/N600/U2100 L1900/G1900/L2100	0/2/2	ADD	RADIO 4460 B25+B66 RADIO 4480 B71+B85A	RMN ADD
			A2	AIR6449 B41	L2500/N2500	0/2/2	RMN	-	-
BETA	121' 120'	110°	B1	APXVAALL24 43-U-NA20	L700/L600/N600/U2100 L1900/G1900/L2100	0/2/2	ADD	RADIO 4460 B25+B66 RADIO 4480 B71+B85A	RMN ADD
			B2	AIR6449 B41	L2500/N2500	0/2/2	RMN	-	-
GAMMA	121' 120'	290°	C1	APXVAALL24 43-U-NA20	L700/L600/N600/U2100 L1900/G1900/L2100	0/2/2	ADD	RADIO 4460 B25+B66 RADIO 4480 B71+B85A	RMN ADD
			C2	AIR6449 B41	L2500/N2500	0/2/2	RMN	-	-
DELTA	121' 120'	200°	D1	APXVAALL24 43-U-NA20	L700/L600/N600/U2100 L1900/G1900/L2100	0/2/2	ADD	RADIO 4460 B25+B66 RADIO 4480 B71+B85A	RMN ADD
			D2	AIR6449 B41	L2500/N2500	0/2/2	RMN	-	-

EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
–	–	–	(8) 1-5/8"	RMN

3 EQUIPMENT SCHEDULES

FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	–	(8) 1-5/8"	RMN

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2	FOR CONSTRUCTION	RMD	11/30/21

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302540

ATC SITE NAME:
MADISON CT 6

T-MOBILE SITE NAME:
MADISON SOUTH / RT 1

SITE ADDRESS:
8 OLD 79
MADISON, CT 06443

SEAL:

Digitally signed by Eric Anderson
Date: 2021.12.01 19:02:35-05'00'

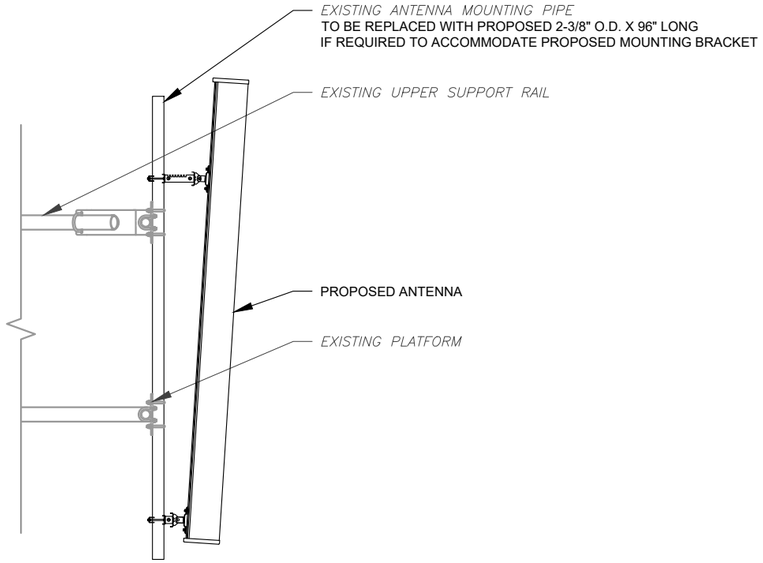
C.T. JPC.0000131

T-Mobile

DATE DRAWN:	09/15/21
ATC JOB NO:	13726694_D1
CUSTOMER ID:	MADISON SOUTH / RT 1
CUSTOMER #:	CT11167A

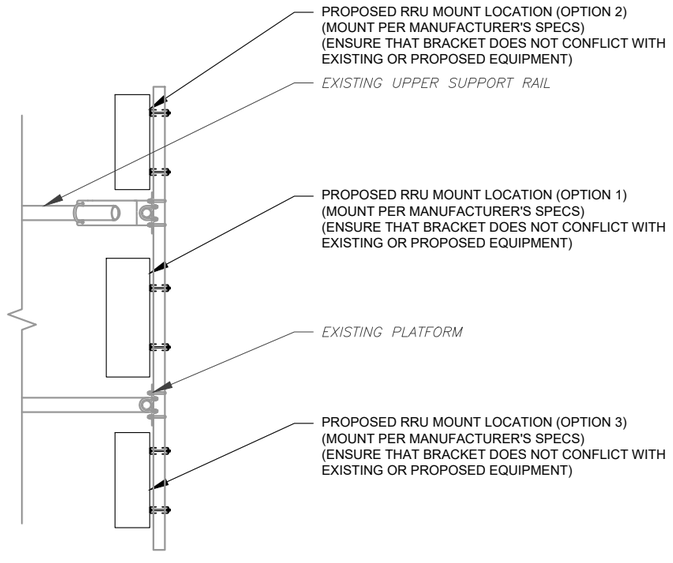
ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:	REVISION:
C-401	2



1 PROPOSED ANTENNA MOUNTING DETAIL - TYPICAL

SCALE: N.T.S.



2 PROPOSED RRU MOUNTING DETAIL - TYPICAL

SCALE: N.T.S.

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MADISON, CT 06443

SEAL:

Digitally signed by Eric Anderson
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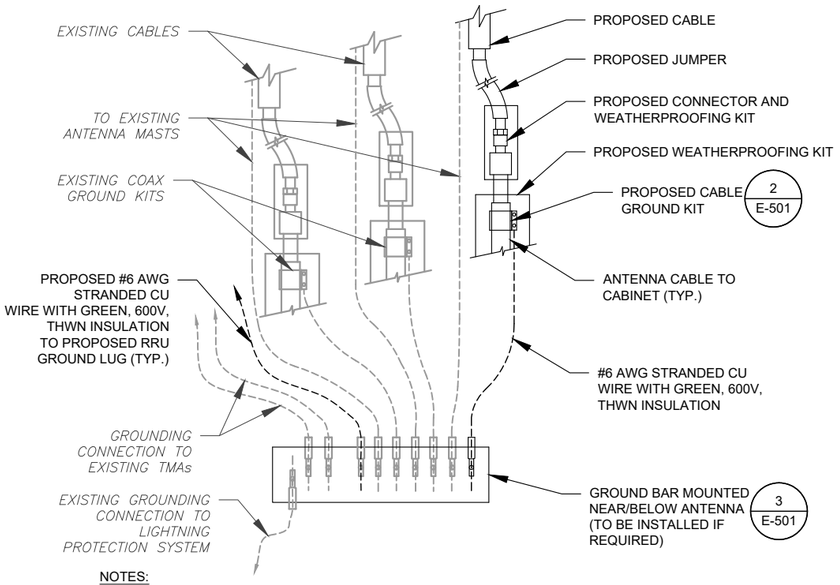
C.T. JPC.0000131

T-Mobile

DATE DRAWN:	09/15/21
ATC JOB NO:	13726694_D1
CUSTOMER ID:	MADISON SOUTH / RT 1
CUSTOMER #:	CT11167A

CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-501	2

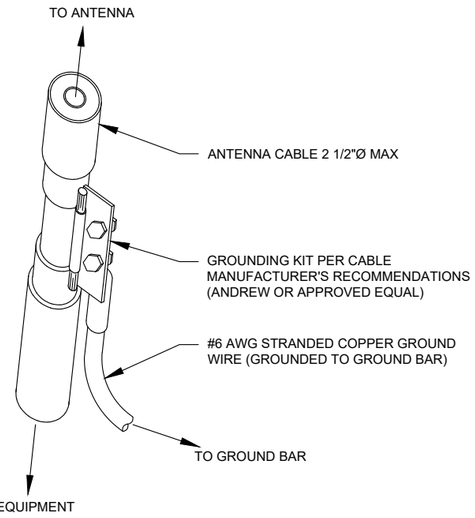


NOTES:

1. THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
2. SITE GROUNDING SHALL COMPLY WITH T-MOBILE GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH T-MOBILE GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT THEY SHALL GOVERN.

1 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: N.T.S.

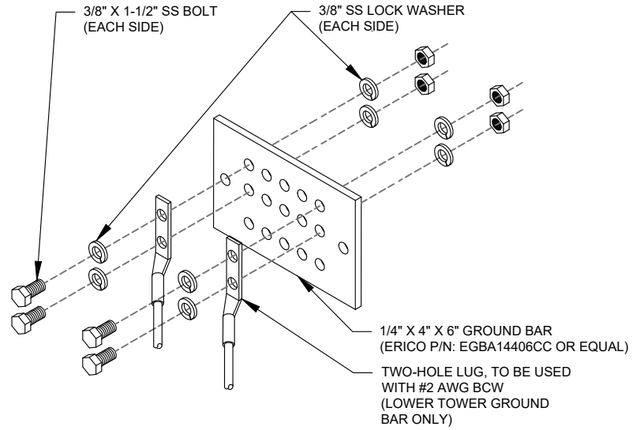


GROUND KIT NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. CONTRACTOR SHALL PROVIDE WEATHERPROOFING KIT (ANDREW PART NUMBER 221213) AND INSTALL/TAPE PER MANUFACTURER'S SPECIFICATIONS.

2 CABLE GROUND KIT CONNECTION DETAIL

SCALE: N.T.S.



GROUND BAR NOTES:

1. GROUND BAR KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
2. GROUND BAR TO BE BONDED DIRECTLY TO TOWER.

3 TOWER GROUND BAR DETAIL

SCALE: N.T.S.

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MADISON, CT 06443

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T-Mobile

DATE DRAWN:	09/15/21
ATC JOB NO:	13726694_D1
CUSTOMER ID:	MADISON SOUTH / RT 1
CUSTOMER #:	CT11167A

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	2

Proposed RAN Equipment			
Template: 4Sec-67E5A998E Hybrid			
Enclosure	**1**	**2**	**3**
Enclosure Type	RBS 6102	Enclosure 6160	B160
Baseband	DUW30 U2100 DUG20 (x 2) G1900 BB 6648 L1900 L2100 BB 6648 L700 L600 N600	BB 6648 L2500 N2500	
Hybrid Cable System	Ericsson Hybrid Trunk 6/24 4AWG 50m (x 4) PSU 4813 (x 2)	PSU 4813 (x 2) Ericsson Hybrid Trunk 6/24 4AWG 50m (x 4)	
Transport System		CSR IXRe V2 (Gen2)	

RAN Scope of Work:

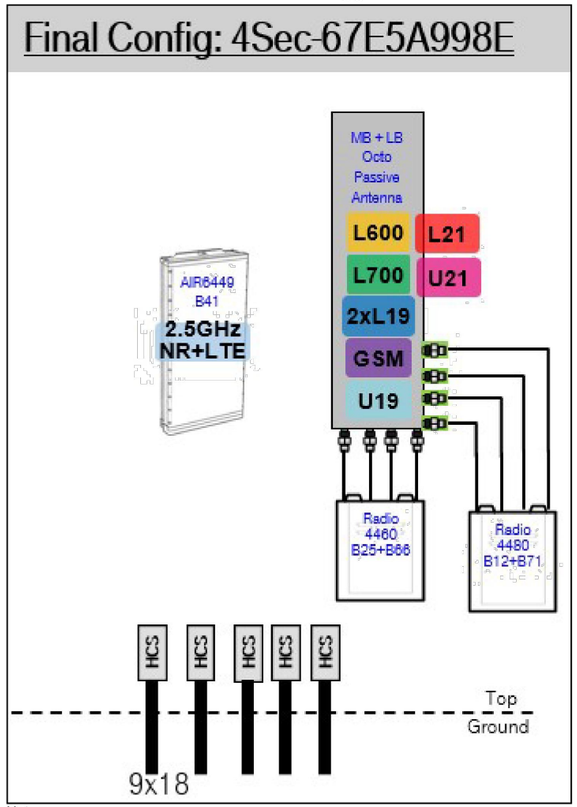
Add (1) BB6648 for L600, L700, and N600 (MMBB - Mixed Mode Baseband) to the existing base station cabinet.

Add (2) PSU4813 Voltage Booster. Connect DC for the Radio 4480 B71+B85 to the new PSU4813 Voltage Boosters.

1 CABINET CONFIGURATION

SCALE: NOT TO SCALE

4Sec-67E5A998E.jpg



Notes:

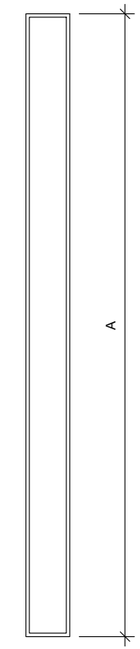
2 ANTENNA CONFIGURATION

SCALE: NOT TO SCALE

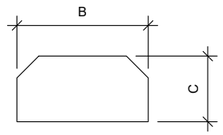
NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-601	-



FRONT VIEW

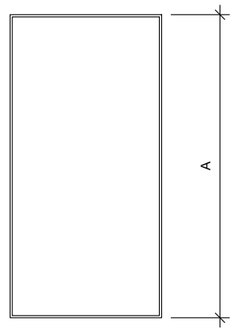


TOP VIEW

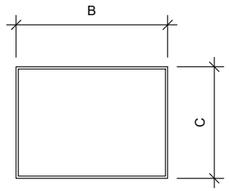
1 ANTENNA SPECIFICATIONS

FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

ANTENNA SPECIFICATIONS				
ANTENNA MODEL	A	B	C	WEIGHT (LBS)
APXVAALL24 43-U-NA20	95.9"	24.0"	8.5"	123.0



FRONT VIEW



TOP VIEW

2 RRU SPECIFICATIONS

FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

RRU SPECIFICATIONS				
RRU MODEL	A	B	C	WEIGHT (LBS)
4480	21.8"	15.7"	7.5"	84.0

SUPPLEMENTAL

SHEET NUMBER: R-602

REVISION: -

AMERICAN TOWER® CORPORATION

Mount Analysis Report

ATC Site Name	:	**Madison CT 6, CT**
ATC Site Number	:	**302540**
Engineering Number	:	**13726694_C8_05**
Mount Elevation	:	**118 ft**
Carrier	:	**T-Mobile**
Carrier Site Name	:	**Madison South / Rt 1**
Carrier Site Number	:	**CT11167A**
Site Location	:	**8 Old 79** **Madison, CT 06443-2685** **41.28553333 , -72.60134167**
County	:	**New Haven**
Date	:	**November 4, 2021**
Max Usage	:	**77%**
Result	:	**Pass**

Prepared By:
Rohith Koduru
Structural Engineer I

Reviewed By:

STATE OF CONNECTICUT · ESHA KAUSHAL MODI · 32593 · LICENSED PROFESSIONAL ENGINEER

Authorized by "EOR"
05 Nov 2021 09:08:11 cosign

COA: PEC.0001553

Introduction

The purpose of this report is to summarize results of the mount analysis performed for T-Mobile at 118 ft.

Supporting Documents

Specifications Sheet	Commscope MC-PK-12S4-B, dated July 13, 2016
Radio Frequency Data Sheet	RFDS ID #CT11167A, dated July 26, 2021
Reference Photos	Site photos from 2019

Analysis

This mount was analyzed using American Tower Corporation's Mount Analysis Program and RISA-3D

Basic Wind Speed:	123 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1" radial ice concurrent
Codes:	ANSI/TIA-222-H
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Flat
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.205, S1 = 0.054
Site Class:	D - Stiff Soil
Live Loads:	Lm = 500 lbs

*** Based on experience, it has been determined that the Lv load cases will not control over Lm load cases in platform mount analyses. Therefore, these load cases have been excluded from this analysis.**

Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above. The mount can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

A.T. Engineering Service, PLLC - 3500 Regency Parkway, Suite 100 - Cary, NC 27518 - 919.468.0112 Office - 919.466.5414 Fax - www.americantower.com

AMERICAN TOWER® CORPORATION
Eng. Number 13726694_C8_05
November 4, 2021
Page 2

Application Loading

Mount Centerline (ft)	Equipment Centerline (ft)	Qty	Equipment Manufacturer & Model
118.0	121.0	4	RFS APXVAALL24 43-U-NA20
	120.0	4	Ericsson Air6449 B41
		4	Ericsson Radio 4480 B71+B85A
		4	Ericsson Radio 4460 B25+B66

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Horizontals	77%	Pass
Mount Pipes	54%	Pass
Connection Check	34%	Pass

A.T. Engineering Service, PLLC - 3500 Regency Parkway, Suite 100 - Cary, NC 27518 - 919.468.0112 Office - 919.466.5414 Fax - www.americantower.com

1 MOUNT ANALYSIS

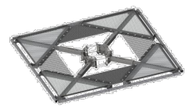
NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT. PLEASE REFERENCE THE MOUNT ANALYSIS REPORT FOR COMPLETE MOUNT ANALYSIS CALCULATIONS AND DETAILS. SUPPLEMENTAL PAGES INCLUDED IN THE CONSTRUCTION DRAWINGS ARE FOR REFERENCE ONLY. GENERAL CONTRACTOR IS TO VERIFY THEY HAVE THE MOST RECENT MOUNT ANALYSIS PRIOR TO CONSTRUCTION.

SUPPLEMENTAL

SHEET NUMBER: R-603

REVISION: -

MC-PK12S4-B



4-Sector Monopole Co-location Platform kit, 10 in to 30 in OD, 12 ft 6 in face

Product Classification

Product Type	Monopole platform kit

General Specifications

Mounting	Monopole, 254–762 mm (10–30 in) OD
Pipe, quantity	0
Sectors, quantity	4

Dimensions

Height	254 mm | 10 in
Face Width	3.81 m | 12.5 ft
Width	3810 mm | 150 in
Length	914.4 mm | 36 in
Mounting Diameter, maximum	762 mm | 30 in
Mounting Diameter, minimum	254 mm | 10 in
Pipe Outer Diameter	60.96 mm | 2.4 in
Stand-off Distance	914.4 mm | 36 in
Mounting Circumference, maximum	2,392.68 mm | 94.2 in
Mounting Circumference, minimum	797.56 mm | 31.4 in

Material Specifications

Material Type	Hot dip galvanized steel

Mechanical Specifications

Wind Rating	120 mph (BWS) at 100 ft AGL | 140 mph (3-second gust) at 150 ft AGL using Exposure D per FBC

1 MOUNT DETAIL

NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER: R-604

REVISION: -

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**148 ft Monopole**
ATC Site Name	:	**Madison CT 6,CT**
ATC Site Number	:	**302540**
Engineering Number	:	**13726694_C3_03**
Proposed Carrier	:	**T-MOBILE**
Carrier Site Name	:	**Madison South / Rt 1**
Carrier Site Number	:	**CT11167A**
Site Location	:	**8 Old 79** **Madison, CT 06443-2685** **41.2855, -72.6013**
County	:	**New Haven**
Date	:	**September 9, 2021**
Max Usage	:	**61%**
Result	:	**Pass**

Prepared By:

Nathan Haselden
Structural Engineer III

Reviewed By:

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32593
LICENSED
PROFESSIONAL ENGINEER

Authorized by "EOR"
09 Sep 2021 10:18:44 cosign

COA : PEC.0001553

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 148 ft Monopole to reflect the change in loading by T-MOBILE.

Supporting Documents

Tower Drawings	Summit, PJF Job #29299-729, dated November 12, 1999
Foundation Drawing	Spectrasite Project #F301896.00, dated January 4, 2000
Geotechnical Report	Dr. Clarence Welti, P.E., P.C., dated November 19, 1999

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	123 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.00" radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.20, S_1 = 0.05
Site Class:	D - Stiff Soil - Default

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
157.0	1	Generic 18' Dipole	Side Arm	(5) 7/8" Coax	OTHER
153.0	1	Generic 8' Omni			
152.0	1	Generic 8' Dipole			
149.0	12	Generic 48" x 8" Panel	Low Profile Platform	(12) 1 1/4" Coax	SPRINT NEXTEL
140.0	3	Samsung B5/B13 RRH-BR04C	Low Profile Platform	(2) 1 5/8" (1.63"-41.3mm) Fiber (11) 1 5/8" Coax	VERIZON WIRELESS
	1	RFS DB-C1-12C-24AB-0Z			
	3	Samsung MT6407-77A			
	1	Commscope LNX-6514DS-A1M			
	2	Andrew LNX-8513DS-A1M			
	3	Samsung B2/B66A RRH-BR049			
	6	Commscope JAHH-65B-R3B			
	3	Samsung Outdoor CBRS 20W RRH –Clip-on Antenna			
	3	Commscope CBC78T-DS-43-2X			
	3	Samsung RT4401-48A			
132.0	3	Ericsson RRUS A2 B2	Low Profile Platform	(2) 0.39" (10mm) Fiber Trunk (4) 0.78" (19.7mm) 8 AWG 6 (12) 1 5/8" Coax (1) 2" conduit (3) 3" conduit	AT&T MOBILITY
	3	Ericsson Radio 4449 B13, B5			
	2	Raycap DC6-48-60-18-8F ("Squid")			
	6	Powerwave Allgon TT19-08BP111-001			
	6	Powerwave Allgon LGP13519			
	3	Ericsson RRUS 32 B30 (53 lbs)			
	3	Kathrein Scala 80010964			
	3	Commscope SBNHH-1D65A			
	3	KMW AM-X-CD-14-65-00T-RET			
	3	Ericsson RRUS-12 B2			
120.0	4	Ericsson Air6449 B41	Square Low Profile Platform	(8) 1 5/8" Hybriflex	T-MOBILE
	4	Ericsson Radio 4460 B25+B66			
112.0	6	Generic 6.7" x 10.7" TTA	Flush	-	OTHER
	3	Generic 48" x 12" Panel			
110.0	3	Fujitsu TA08025-B605	Triangular Platform with Handrails	(1) 1.60" (40.6mm) Hybrid	DISH WIRELESS L.L.C.
	3	Fujitsu TA08025-B604			
	1	Commscope RDIDC-9181-PF-48			
	3	JMA Wireless MX08FRO665-21			
97.5	3	Alcatel-Lucent 800 MHz 2X50W RRH w/ Filter	Platform with Handrails	(4) 1 1/4" Hybriflex Cable	SPRINT NEXTEL
	3	Alcatel-Lucent 1900 MHz 4X45 RRH			
	3	RFS APXVSPP18-C-A20			
	3	RFS APXV9TM14-ALU-I20			
	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
86.0	3	RFS APXV18-206517S-C	Collar	(6) 1 5/8" Coax	METRO PCS INC
73.0	1	Generic GPS	Flush	(1) 1/2" Coax	SPRINT NEXTEL

Equipment to be Removed

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
120.0	4	RFS APX16DWV-16DWVS-E-A20	-	-	T-MOBILE

Proposed Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
121.0	4	RFS APXVAALL24 43-U-NA20	Square Low Profile Platform	-	T-MOBILE
120.0	4	Ericsson Radio 4480 B71+B85A			

[1] Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	59%	Pass
Shaft	61%	Pass
Base Plate	49%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	5050.0	6817.5	4025.5	59%
Shear (Kips)	47.0	63.4	36.7	58%
* The design reactions are factored by 1.35 per ANSI/TIA-222-H, Sec. 15.6.2				

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Deflection, Twist and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
121.0	RFS APXVAALL24 43-U-NA20	T-MOBILE	0.822	0.810
120.0	Ericsson Radio 4480 B71+B85A	T-MOBILE	0.808	0.810

***Deflection, Twist and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-H**

Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

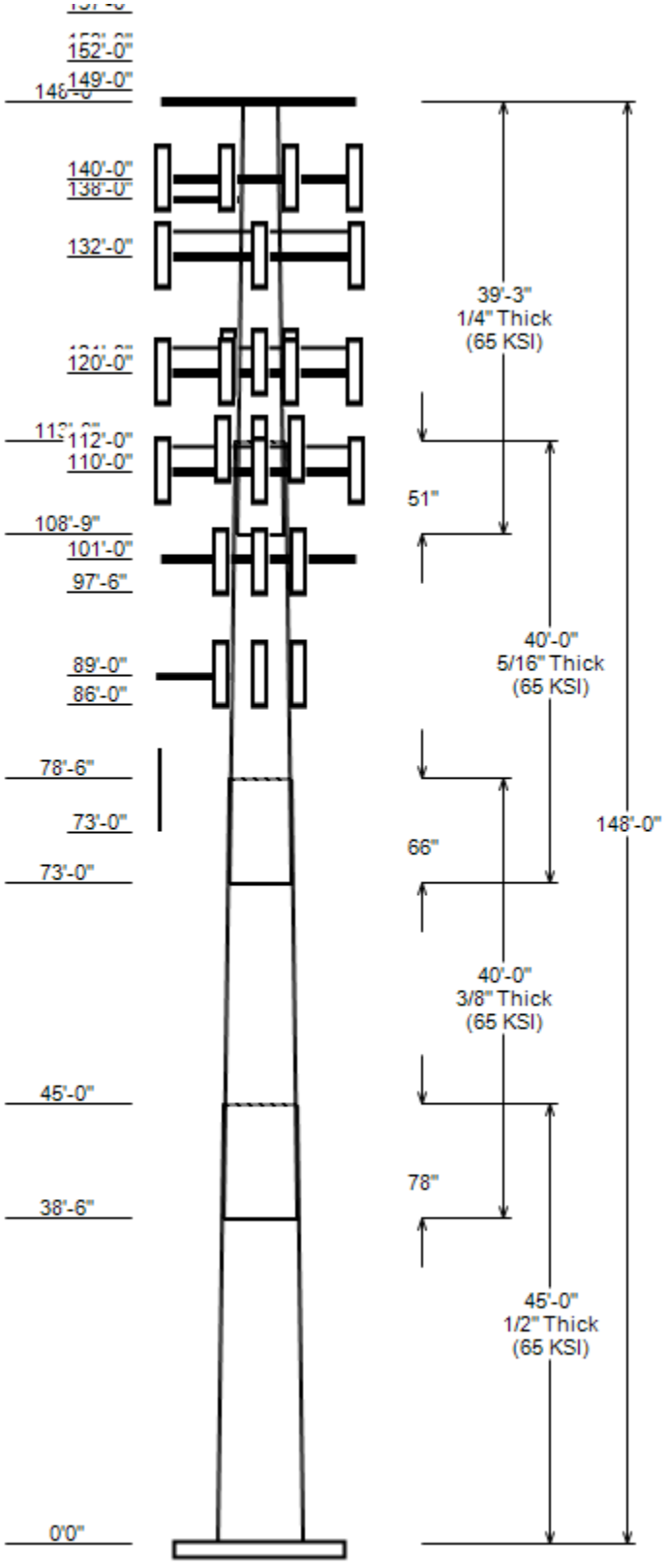
All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

JOB INFORMATION

Asset :	302540, Madison CT 6	Height :	148 ft
Client :	T-MOBILE	Base Width :	61.05
Code :	ANSI/TIA-222-H	Shape :	18 Sides



SITE PARAMETERS

Base Elev (ft):	0.00	Structure Class:	II
Taper :	0.26300 (In/ft)	Exposure :	B
Topographic Category :	1	Topographic Feature:	
Topo Method :	Method 1		

SECTION PROPERTIES

Shaft Section	Length (ft)	Diameter (in) Across Flats Top	Diameter (in) Across Flats Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	45.000	49.22	61.05	0.500		0.000	18 Sides	65
2	40.000	41.15	51.67	0.375	Slip Joint	78.000	18 Sides	65
3	40.000	32.70	43.23	0.312	Slip Joint	66.000	18 Sides	65
4	39.250	24.00	34.32	0.250	Slip Joint	51.000	18 Sides	65

DISCRETE APPURTENANCE

Attach Elev (ft)	Force Elev (ft)	Qty	Description
157.0	157.0	1	Generic 18' Dipole
153.0	153.0	1	Generic 8' Omni
152.0	152.0	1	Generic 8' Dipole
149.0	149.0	12	Generic 48" x 8" Panel
148.0	148.0	1	Flat Low Profile Platform
140.0	140.0	3	Commscope CBC78T-DS-43-2X
140.0	140.0	3	Samsung Outdoor CBRS 20W RRH –
140.0	140.0	3	Samsung RT4401-48A
140.0	140.0	3	Samsung B2/B66A RRH-BR049
140.0	140.0	3	Samsung B5/B13 RRH-BR04C
140.0	140.0	1	RFS DB-C1-12C-24AB-0Z
140.0	140.0	3	Samsung MT6407-77A
140.0	140.0	1	Commscope LNX-6514DS-A1M
140.0	140.0	2	Andrew LNX-8513DS-A1M
140.0	140.0	6	Commscope JAHH-65B-R3B
140.0	140.0	1	Flat Low Profile Platform
138.0	138.0	1	Collar
132.0	132.0	6	Powerwave Allgon LGP13519
132.0	132.0	6	Powerwave Allgon TT19-08BP111-
132.0	132.0	2	Raycap DC6-48-60-18-8F ("Squid
132.0	132.0	3	Ericsson Radio 4449 B13, B5
132.0	132.0	3	Ericsson RRUS A2 B2
132.0	132.0	3	Ericsson RRUS 32 B30 (53 lbs)
132.0	132.0	3	Ericsson RRUS-12 B2
132.0	132.0	3	KMW AM-X-CD-14-65-00T-RET
132.0	132.0	3	Commscope SBNHH-1D65A
132.0	132.0	1	Generic Mount Reinforcement
132.0	132.0	3	Kathrein Scala 80010964
132.0	132.0	1	Generic Flat Platform with Han
121.0	121.0	4	RFS APXVAALL24 43-U-NA20
120.0	120.0	4	Ericsson Radio 4460 B25+B66
120.0	120.0	4	Ericsson Radio 4480 B71+B85A
120.0	120.0	4	Ericsson Air6449 B41
120.0	120.0	1	Generic Square Platform with H
112.0	112.0	6	Generic 6.7" x 10.7" TTA
112.0	112.0	3	Generic 48" x 12" Panel
110.0	110.0	1	Commscope RDIDC-9181-PF-48
110.0	110.0	3	Fujitsu TA08025-B605
110.0	110.0	3	Fujitsu TA08025-B604
110.0	110.0	3	JMA Wireless MX08FRO665-21
110.0	110.0	1	Generic Flat Platform with Han
101.0	101.0	1	Flat Platform w/ Handrails
97.5	101.0	3	Alcatel-Lucent 800 MHz 2X50W R
97.5	101.0	3	Alcatel-Lucent 1900 MHz 4X45 R

JOB INFORMATION

Asset :	302540, Madison CT 6	Height :	148 ft
Client :	T-MOBILE	Base Width :	61.05
Code :	ANSI/TIA-222-H	Shape :	18 Sides

DISCRETE APPURTENANCE

Attach Elev (ft)	Force Elev (ft)	Qty	Description
97.5	101.0	3	Alcatel-Lucent TD-RRH8x20-25 w
97.5	101.0	3	RFS APXV9TM14-ALU-I20
97.5	101.0	3	RFS APXVSPP18-C-A20
89.0	89.0	1	Collar
86.0	89.0	3	RFS APXV18-206517S-C
73.0	75.0	1	Generic GPS

LINEAR APPURTENANCE

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
0.0	157.0	7/8" Coax	No
0.0	153.0	7/8" Coax	No
0.0	152.0	7/8" Coax	No
0.0	149.0	1 1/4" Coax	No
0.0	140.0	1 5/8" Coax	No
0.0	140.0	1 5/8" (1.63"-41.3mm) Fiber	No
0.0	132.0	3" conduit	No
0.0	132.0	2" conduit	No
0.0	132.0	1 5/8" Coax	No
0.0	132.0	0.78" (19.7mm) 8 AWG 6	No
0.0	132.0	0.39" (10mm) Fiber Trunk	No
0.0	120.0	1 5/8" Hybriflex	No
0.0	110.0	1.60" (40.6mm) Hybrid	No
0.0	97.5	1 1/4" Hybriflex Cable	No
0.0	86.0	1 5/8" Coax	No
0.0	73.0	1/2" Coax	Yes

LOAD CASES

1.2D + 1.0W Normal	123 mph wind with no ice
0.9D + 1.0W Normal	123 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Nor	50 mph wind with 1" radial ice
1.2D + 1.0Ev + 1.0Eh Nor	Seismic
0.9D - 1.0Ev + 1.0Eh Nor	Seismic (Reduced DL)
1.0D + 1.0W Service Norm	60 mph Wind with No Ice

REACTIONS

Load Case	Moment (kip-ft)	Shear (Kip)	Axial (Kip)
1.2D + 1.0W Normal	4025.49	36.71	73.08
0.9D + 1.0W Normal	3982.66	36.69	54.80
1.2D + 1.0Di + 1.0Wi Normal	1001.37	9.18	94.08
1.2D + 1.0Ev + 1.0Eh Normal	218.25	1.83	73.27
0.9D - 1.0Ev + 1.0Eh Normal	215.31	1.83	50.44
1.0D + 1.0W Service Normal	851.48	7.81	60.93

DISH DEFLECTIONS

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)

ANALYSIS PARAMETERS

Location:	New Haven County,CT	Height:	148 ft
Type and Shape:	Taper, 18 Sides	Base Diameter:	61.05 in
Manufacturer:	Undetermined	Top Diameter:	24.00 in
K_d (non-service):	0.95	Taper:	0.2630 in/ft
K_e:	1.00	Rotation:	0.000°

ICE & WIND PARAMETERS

Exposure Category:	B	Design Wind Speed w/o Ice:	123 mph
Risk Category:	II	Design Wind Speed w/Ice:	50 mph
Topo Factor Procedure:	Method 1	Operational Wind Speed:	60 mph
Topographic Category:	1	Design Ice Thickness:	1.00 in
Crest Height:	0 ft	HMSL:	30.00 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil			Period Based on Rayleigh Method (sec):	2.22
T_L (sec):	6	P:	1	$C_{s:}$	0.030
$S_{s:}$	0.205	$S_{1:}$	0.054	C_s Max:	0.030
$F_{a:}$	1.600	$F_{v:}$	2.400	C_s Min:	0.030
$S_{ds:}$	0.219	$S_{d1:}$	0.086		

LOAD CASES

1.2D + 1.0W Normal	123 mph wind with no ice
0.9D + 1.0W Normal	123 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Normal	50 mph wind with 1" radial ice
1.2D + 1.0Ev + 1.0Eh Normal	Seismic
0.9D - 1.0Ev + 1.0Eh Normal	Seismic (Reduced DL)
1.0D + 1.0W Service Normal	60 mph Wind with No Ice

SHAFT SECTION PROPERTIES

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in^2)	Bottom Ix (in^4)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (in)	Top Area (in^2)	Top Ix (in^4)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	45.00	0.5000	65		0.00	13,276	61.05	0.000	96.09	44,509.9	19.77	122.10	49.22	45.00	77.31	23,179.0	15.59	98.43	0.2630
2-18	40.00	0.3750	65	Slip	78.00	7,458	51.67	38.500	61.06	20,300.6	22.53	137.80	41.15	78.50	48.54	10,197.3	17.59	109.74	0.2630
3-18	40.00	0.3125	65	Slip	66.00	5,083	43.23	73.000	42.56	9,902.9	22.63	138.32	32.70	113.00	32.13	4,259.3	16.69	104.66	0.2630
4-18	39.25	0.2500	65	Slip	51.00	3,064	34.32	108.750	27.04	3,965.7	22.45	137.29	24.00	148.00	18.85	1,343.0	15.16	96.00	0.2630
				Shaft Weight		28,881													

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor
157.00	Generic 18' Dipole	1	1.00	0.000	55.00	6.770	1.00	187.84	13.893	1.00
153.00	Generic 8' Omni	1	1.00	0.000	25.00	2.400	1.00	65.65	4.231	1.00
152.00	Generic 8' Dipole	1	1.00	0.000	25.00	3.010	1.00	84.56	6.115	1.00
149.00	Generic 48" x 8" Panel	12	0.80	0.000	20.00	3.615	0.73	78.91	4.860	0.73
148.00	Flat Low Profile Platform	1	1.00	0.000	1500.00	26.100	1.00	1931.79	38.824	1.00
140.00	Flat Low Profile Platform	1	1.00	0.000	1500.00	26.100	1.00	1929.53	38.757	1.00
140.00	Andrew LNX-8513DS-A1M	2	0.80	0.000	39.20	8.173	0.77	155.83	10.042	0.77
140.00	Commscope JAHH-65B-R3B	6	0.80	0.000	60.60	9.113	0.69	194.72	10.952	0.69
140.00	Commscope LNX-6514DS-A1M	1	0.80	0.000	38.80	8.173	1.00	155.44	10.042	1.00
140.00	Samsung MT6407-77A	3	0.80	0.000	81.60	4.709	0.61	149.17	5.716	0.61
140.00	RFS DB-C1-12C-24AB-0Z	1	0.80	0.000	32.00	4.056	1.00	116.26	4.961	1.00
140.00	Samsung B5/B13 RRH-BR04C	3	0.80	0.000	70.30	1.875	0.50	108.22	2.473	0.50
140.00	Samsung B2/B66A RRH-BR049	3	0.80	0.000	84.40	1.875	0.50	126.69	2.473	0.50
140.00	Samsung RT4401-48A	3	0.80	0.000	18.60	0.996	0.50	36.50	1.450	0.50
140.00	Samsung Outdoor CBRS 20W RRH –	3	0.80	0.000	4.40	0.892	0.50	16.34	1.316	0.50
140.00	Commscope CBC78T-DS-43-2X	3	0.80	0.000	20.70	0.552	0.50	35.35	0.889	0.50
138.00	Collar	1	1.00	0.000	560.00	8.500	1.00	869.81	13.202	1.00
132.00	Ericsson RRUS 32 B30 (53 lbs)	3	0.80	0.000	53.00	2.743	0.67	101.47	3.514	0.67
132.00	Ericsson RRUS-12 B2	3	0.80	0.000	58.00	3.145	0.62	111.31	3.909	0.62
132.00	KMW AM-X-CD-14-65-00T-RET	3	0.80	0.000	36.40	4.994	0.66	109.75	6.225	0.66
132.00	Commscope SBNHH-1D65A	3	0.80	0.000	33.50	5.883	0.69	122.71	7.285	0.69
132.00	Generic Mount Reinforcement	1	1.00	0.000	200.00	7.500	1.00	327.55	12.435	1.00
132.00	Kathrein Scala 80010964	3	0.80	0.000	83.80	9.997	0.62	218.62	11.553	0.62
132.00	Generic Flat Platform with Han	1	1.00	0.000	2500.00	42.400	1.00	3670.78	56.222	1.00
132.00	Ericsson Radio 4449 B13, B5	3	0.80	0.000	70.60	1.969	0.50	113.03	2.583	0.50
132.00	Ericsson RRUS A2 B2	3	0.80	0.000	22.00	2.064	0.67	51.06	2.686	0.67
132.00	Powerwave Allgon LGP13519	6	0.80	0.000	5.30	0.290	0.50	11.55	0.545	0.50
132.00	Powerwave Allgon TT19-08BP111-	6	0.80	0.000	16.00	0.553	0.50	29.31	0.890	0.50
132.00	Raycap DC6-48-60-18-8F ("Squid	2	0.80	0.000	31.80	1.470	1.00	72.46	1.930	1.00
121.00	RFS APXVAALL24 43-U-NA20	4	0.80	0.000	122.80	20.243	0.63	377.37	22.667	0.63
120.00	Generic Square Platform with H	1	1.00	0.000	3790.00	49.300	1.00	6681.75	104.828	1.00
120.00	Ericsson Air6449 B41	4	0.80	0.000	104.00	5.682	0.63	192.85	6.717	0.63
120.00	Ericsson Radio 4460 B25+B66	4	0.80	0.000	109.00	2.564	0.67	166.62	3.251	0.67
120.00	Ericsson Radio 4480 B71+B85A	4	0.80	0.000	84.00	2.852	0.67	133.25	3.580	0.67
112.00	Generic 48" x 12" Panel	3	1.00	0.000	30.00	5.067	0.66	103.39	6.280	0.66
112.00	Generic 6.7" x 10.7" TTA	6	1.00	0.000	9.90	0.597	0.50	15.66	0.943	0.50
110.00	Generic Flat Platform with Han	1	1.00	0.000	2500.00	42.400	1.00	3649.85	55.975	1.00
110.00	JMA Wireless MX08FRO665-21	3	0.75	0.000	64.50	12.489	0.64	230.86	14.308	0.64
110.00	Fujitsu TA08025-B605	3	0.75	0.000	75.00	1.962	0.50	115.55	2.557	0.50
110.00	Fujitsu TA08025-B604	3	0.75	0.000	63.90	1.962	0.50	101.65	2.557	0.50
110.00	Commscope RDIDC-9181-PF-48	1	0.75	0.000	21.90	1.867	1.00	58.73	2.450	1.00
101.00	Flat Platform w/ Handrails	1	1.00	0.000	2000.00	42.400	1.00	2912.13	55.860	1.00
97.50	Alcatel-Lucent 800 MHz 2X50W R	3	0.75	3.500	64.00	2.058	0.67	113.23	2.670	0.67
97.50	RFS APXV9TM14-ALU-I20	3	0.75	3.500	55.10	6.381	0.66	143.04	7.782	0.66
97.50	Alcatel-Lucent TD-RRH8x20-25 w	3	0.75	3.500	70.00	4.046	0.61	130.39	4.894	0.61
97.50	RFS APXVSPP18-C-A20	3	0.75	3.500	57.00	8.024	0.69	167.23	9.807	0.69
97.50	Alcatel-Lucent 1900 MHz 4X45 R	3	0.75	3.500	60.00	2.322	0.67	111.50	3.013	0.67
89.00	Collar	1	1.00	0.000	560.00	8.500	1.00	856.33	12.998	1.00
86.00	RFS APXV18-206517S-C	3	1.00	3.000	26.40	5.160	0.68	84.92	6.654	0.68
73.00	Generic GPS	1	1.00	2.000	10.00	0.900	1.00	28.15	1.297	1.00
Totals	Num Loadings: 50	141			21,539.30			37,723.39		

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg) : _

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax/ Row	Dist Between Rows(in)	Dist Between Cols(in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	157.00	2	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	Other
0.00	153.00	1	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	Other
0.00	152.00	2	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	OTHER
0.00	149.00	12	1 1/4" Coax	1.55	0.63	N	0	0	0	0	0	N	SPRINT NEXTEL
0.00	140.00	11	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	VERIZON WIREL
0.00	140.00	2	1 5/8" (1.63"-41.3mm)	1.63	1.61	N	0	0	0	0	0	N	VERIZON WIREL
0.00	132.00	12	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	132.00	4	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	132.00	3	3" conduit	3.5	7.58	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	132.00	2	0.39" (10mm) Fiber Tr	0.39	0.06	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	132.00	1	2" conduit	2.38	3.65	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	120.00	8	1 5/8" Hybriflex	1.98	1.3	N	0	0	0	0	0	N	T-MOBILE
0.00	110.00	1	1.60" (40.6mm) Hybrid	1.6	2.34	N	0	0	0	0	0	N	DISH WIRELESS
0.00	97.50	4	1 1/4" Hybriflex Cabl	1.54	1	N	0	0	0	0	0	N	SPRINT NEXTEL
0.00	86.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	METRO PCS INC
0.00	73.00	1	1/2" Coax	0.63	0.15	N	1	0	0	30	0.5	Y	SPRINT NEXTEL

SEGMENT PROPERTIES

(Max Len: 5.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.5000	61.050	96.089	44,509.90	19.77	122.10	78.2	1436.0	0.0	0.0
5.00		0.5000	59.735	94.003	41,672.40	19.30	119.47	78.7	1374.0	0.0	1,617.1
10.00		0.5000	58.420	91.916	38,958.20	18.84	116.84	79.2	1313.5	0.0	1,581.6
15.00		0.5000	57.105	89.829	36,364.40	18.38	114.21	79.8	1254.3	0.0	1,546.1
20.00		0.5000	55.790	87.742	33,888.40	17.91	111.58	80.3	1196.4	0.0	1,510.6
25.00		0.5000	54.475	85.655	31,527.40	17.45	108.95	80.9	1139.9	0.0	1,475.1
30.00		0.5000	53.160	83.568	29,278.70	16.98	106.32	81.4	1084.8	0.0	1,439.6
35.00		0.5000	51.845	81.481	27,139.60	16.52	103.69	82	1031.1	0.0	1,404.1
38.50	Bot - Section 2	0.5000	50.924	80.020	25,705.90	16.20	101.85	82.4	994.2	0.0	961.7
40.00		0.5000	50.530	79.394	25,107.30	16.06	101.06	82.5	978.7	0.0	717.3
45.00	Top - Section 1	0.3750	49.965	59.022	18,337.90	21.73	133.24	75.8	722.9	0.0	2,350.6
50.00		0.3750	48.650	57.457	16,917.40	21.11	129.73	76.6	684.9	0.0	990.9
55.00		0.3750	47.335	55.892	15,572.20	20.49	126.23	77.3	648.0	0.0	964.3
60.00		0.3750	46.020	54.327	14,300.30	19.88	122.72	78	612.0	0.0	937.6
65.00		0.3750	44.705	52.761	13,099.60	19.26	119.21	78.8	577.1	0.0	911.0
70.00		0.3750	43.390	51.196	11,968.00	18.64	115.71	79.5	543.3	0.0	884.4
73.00	Bot - Section 3	0.3750	42.601	50.257	11,321.40	18.27	113.60	79.9	523.4	0.0	517.8
75.00		0.3750	42.075	49.631	10,903.60	18.02	112.20	80.2	510.4	0.0	627.8
78.50	Top - Section 2	0.3125	41.779	41.128	8,934.80	21.81	133.69	75.7	421.2	0.0	1,079.8
80.00		0.3125	41.385	40.737	8,682.30	21.59	132.43	76	413.2	0.0	208.9
85.00		0.3125	40.069	39.433	7,874.70	20.85	128.22	76.9	387.1	0.0	682.0
86.00		0.3125	39.806	39.172	7,719.50	20.70	127.38	77.1	382.0	0.0	133.7
89.00		0.3125	39.017	38.389	7,266.00	20.25	124.86	77.6	366.8	0.0	395.9
90.00		0.3125	38.754	38.128	7,118.90	20.10	124.01	77.8	361.8	0.0	130.2
95.00		0.3125	37.439	36.824	6,413.00	19.36	119.81	78.6	337.4	0.0	637.6
97.50		0.3125	36.782	36.172	6,078.30	18.99	117.70	79.1	325.5	0.0	310.5
100.00		0.3125	36.124	35.520	5,755.40	18.62	115.60	79.5	313.8	0.0	304.9
101.00		0.3125	35.861	35.259	5,629.50	18.47	114.76	79.7	309.2	0.0	120.4
105.00		0.3125	34.809	34.215	5,144.40	17.88	111.39	80.4	291.1	0.0	472.8
108.75	Bot - Section 4	0.3125	33.823	33.237	4,715.60	17.32	108.23	81	274.6	0.0	430.4
110.00		0.3125	33.494	32.911	4,578.20	17.14	107.18	81.2	269.2	0.0	255.1
112.00		0.3125	32.968	32.389	4,363.90	16.84	105.50	81.6	260.7	0.0	403.0
113.00	Top - Section 3	0.2500	33.205	26.149	3,588.10	21.66	132.82	75.9	212.8	0.0	199.1
115.00		0.2500	32.679	25.732	3,419.00	21.29	130.72	76.4	206.1	0.0	176.5
120.00		0.2500	31.364	24.688	3,019.70	20.36	125.46	77.5	189.6	0.0	428.9
121.00		0.2500	31.101	24.480	2,943.80	20.17	124.41	77.7	186.4	0.0	83.7
125.00		0.2500	30.049	23.645	2,652.80	19.43	120.20	78.5	173.9	0.0	327.5
130.00		0.2500	28.734	22.601	2,316.80	18.50	114.94	79.6	158.8	0.0	393.4
132.00		0.2500	28.208	22.184	2,190.80	18.13	112.83	80.1	153.0	0.0	152.4
135.00		0.2500	27.419	21.558	2,010.50	17.58	109.68	80.7	144.4	0.0	223.3
138.00		0.2500	26.630	20.932	1,840.40	17.02	106.52	81.4	136.1	0.0	216.9
140.00		0.2500	26.104	20.515	1,732.50	16.65	104.42	81.8	130.7	0.0	141.0
145.00		0.2500	24.789	19.471	1,481.40	15.72	99.16	82.6	117.7	0.0	340.2
148.00		0.2500	24.000	18.845	1,343.00	15.16	96.00	82.6	110.2	0.0	195.6
									Totals:		28,881.3

Load Case: 1.2D + 1.0W Normal 123 mph wind with no ice 22 Iterations
Gust Response Factor: 1.10
Dead load Factor: 1.20
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-73.08	-36.71	0.00	-4,025.5	0.00	4,025.49	6,758.62	1,686.37	9,222.92	8,416.93	0	0	0.490
5.00	-70.57	-36.35	0.00	-3,841.9	0.00	3,841.92	6,657.98	1,649.74	8,826.71	8,110.05	0.07	-0.13	0.485
10.00	-68.10	-35.98	0.00	-3,660.2	0.00	3,660.20	6,555.29	1,613.12	8,439.20	7,806.21	0.27	-0.25	0.480
15.00	-65.68	-35.62	0.00	-3,480.3	0.00	3,480.30	6,450.55	1,576.49	8,060.39	7,505.59	0.6	-0.38	0.474
20.00	-63.29	-35.26	0.00	-3,302.2	0.00	3,302.20	6,343.77	1,539.87	7,690.27	7,208.36	1.08	-0.52	0.469
25.00	-60.95	-34.91	0.00	-3,125.9	0.00	3,125.90	6,234.93	1,503.25	7,328.86	6,914.68	1.69	-0.65	0.462
30.00	-58.66	-34.55	0.00	-2,951.4	0.00	2,951.37	6,124.05	1,466.62	6,976.14	6,624.72	2.45	-0.79	0.456
35.00	-56.41	-34.23	0.00	-2,778.6	0.00	2,778.62	6,011.12	1,430.00	6,632.12	6,338.64	3.35	-0.93	0.448
38.50	-54.88	-34.04	0.00	-2,658.8	0.00	2,658.80	5,930.85	1,404.36	6,396.48	6,140.79	4.07	-1.03	0.443
40.00	-53.82	-33.79	0.00	-2,607.8	0.00	2,607.75	5,896.14	1,393.37	6,296.80	6,056.62	4.4	-1.07	0.440
45.00	-50.43	-33.36	0.00	-2,438.8	0.00	2,438.80	4,028.71	1,035.84	4,639.55	4,111.86	5.6	-1.21	0.607
50.00	-48.67	-32.97	0.00	-2,272.0	0.00	2,272.01	3,959.48	1,008.37	4,396.77	3,933.24	6.95	-1.36	0.591
55.00	-46.93	-32.59	0.00	-2,107.2	0.00	2,107.16	3,888.20	980.90	4,160.52	3,756.41	8.47	-1.54	0.574
60.00	-45.22	-32.20	0.00	-1,944.2	0.00	1,944.23	3,814.88	953.43	3,930.79	3,581.54	10.19	-1.73	0.556
65.00	-43.55	-31.80	0.00	-1,783.2	0.00	1,783.24	3,739.51	925.96	3,707.59	3,408.81	12.1	-1.91	0.536
70.00	-41.93	-31.47	0.00	-1,624.2	0.00	1,624.25	3,662.08	898.49	3,490.91	3,238.38	14.2	-2.1	0.514
73.00	-40.96	-31.22	0.00	-1,529.8	0.00	1,529.78	3,614.65	882.01	3,364.03	3,137.29	15.56	-2.21	0.500
75.00	-39.97	-30.99	0.00	-1,467.3	0.00	1,467.33	3,582.61	871.03	3,280.75	3,070.41	16.5	-2.29	0.490
78.50	-38.29	-30.75	0.00	-1,358.9	0.00	1,358.86	2,803.83	721.80	2,703.37	2,392.99	18.23	-2.42	0.583
80.00	-37.84	-30.51	0.00	-1,312.7	0.00	1,312.74	2,786.75	714.93	2,652.18	2,355.62	18.99	-2.47	0.573
85.00	-36.48	-30.24	0.00	-1,160.2	0.00	1,160.22	2,728.50	692.04	2,485.09	2,231.98	21.69	-2.67	0.535
86.00	-36.11	-29.68	0.00	-1,128.8	0.00	1,128.76	2,716.60	687.46	2,452.32	2,207.43	22.26	-2.72	0.527
89.00	-34.68	-29.14	0.00	-1,039.7	0.00	1,039.72	2,680.42	673.73	2,355.33	2,134.18	24	-2.84	0.502
90.00	-34.38	-28.93	0.00	-1,010.6	0.00	1,010.58	2,668.19	669.15	2,323.43	2,109.89	24.6	-2.88	0.494
95.00	-33.11	-28.60	0.00	-866.0	0.00	865.95	2,605.84	646.26	2,167.21	1,989.53	27.71	-3.06	0.450
97.50	-31.45	-26.97	0.00	-789.7	0.00	789.67	2,573.90	634.81	2,091.13	1,930.05	29.34	-3.15	0.423
100.00	-30.84	-26.81	0.00	-722.3	0.00	722.26	2,541.44	623.37	2,016.42	1,871.06	31.02	-3.24	0.400
101.00	-28.29	-24.79	0.00	-695.4	0.00	695.45	2,528.32	618.79	1,986.91	1,847.61	31.7	-3.28	0.389
105.00	-27.34	-24.45	0.00	-596.3	0.00	596.30	2,474.99	600.48	1,871.07	1,754.65	34.51	-3.41	0.353
108.75	-26.48	-24.22	0.00	-504.6	0.00	504.60	2,423.81	583.31	1,765.62	1,668.80	37.23	-3.52	0.315
110.00	-22.47	-21.13	0.00	-474.3	0.00	474.32	2,406.50	577.59	1,731.16	1,640.47	38.16	-3.56	0.300
112.00	-21.67	-20.48	0.00	-432.1	0.00	432.06	2,378.52	568.43	1,676.71	1,595.46	39.66	-3.62	0.281
113.00	-21.34	-20.35	0.00	-411.6	0.00	411.58	1,786.92	458.92	1,366.00	1,211.99	40.42	-3.64	0.353
115.00	-20.94	-20.07	0.00	-370.9	0.00	370.89	1,768.50	451.59	1,322.75	1,180.21	41.96	-3.7	0.328
120.00	-14.24	-16.35	0.00	-270.6	0.00	270.55	1,721.02	433.28	1,217.66	1,101.60	45.9	-3.83	0.255
121.00	-13.59	-14.39	0.00	-254.2	0.00	254.21	1,711.28	429.62	1,197.16	1,086.03	46.71	-3.85	0.243
125.00	-12.92	-14.01	0.00	-196.6	0.00	196.65	1,671.50	414.97	1,116.92	1,024.32	49.97	-3.94	0.201
130.00	-12.09	-13.69	0.00	-126.6	0.00	126.61	1,619.93	396.65	1,020.53	948.55	54.15	-4.03	0.142
132.00	-7.34	-8.77	0.00	-99.2	0.00	99.22	1,598.72	389.33	983.19	918.69	55.84	-4.06	0.113
135.00	-7.01	-8.53	0.00	-72.9	0.00	72.91	1,566.31	378.34	928.49	874.44	58.4	-4.09	0.088
138.00	-6.04	-7.91	0.00	-47.3	0.00	47.33	1,533.15	367.35	875.35	830.84	60.98	-4.11	0.061
140.00	-2.70	-3.43	0.00	-31.5	0.00	31.52	1,510.64	360.03	840.79	802.17	62.7	-4.13	0.041
145.00	-2.26	-3.12	0.00	-14.4	0.00	14.36	1,446.60	341.72	757.45	728.72	67.03	-4.15	0.021
148.00	0.00	-2.95	0.00	-5.0	0.00	4.99	1,400.09	330.73	709.53	682.38	69.64	-4.15	0.007

Load Case: 0.9D + 1.0W Normal — 123 mph wind with no ice — 22 Iterations
Gust Response Factor: 1.10
Dead load Factor: 0.90
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-54.80	-36.69	0.00	-3,982.7	0.00	3,982.66	6,758.62	1,686.37	9,222.92	8,416.93	0	0	0.482
5.00	-52.90	-36.28	0.00	-3,799.2	0.00	3,799.19	6,657.98	1,649.74	8,826.71	8,110.05	0.07	-0.12	0.477
10.00	-51.03	-35.88	0.00	-3,617.8	0.00	3,617.77	6,555.29	1,613.12	8,439.20	7,806.21	0.27	-0.25	0.472
15.00	-49.19	-35.49	0.00	-3,438.4	0.00	3,438.36	6,450.55	1,576.49	8,060.39	7,505.59	0.6	-0.38	0.466
20.00	-47.38	-35.09	0.00	-3,260.9	0.00	3,260.94	6,343.77	1,539.87	7,690.27	7,208.36	1.07	-0.51	0.460
25.00	-45.61	-34.71	0.00	-3,085.5	0.00	3,085.48	6,234.93	1,503.25	7,328.86	6,914.68	1.67	-0.64	0.454
30.00	-43.87	-34.32	0.00	-2,912.0	0.00	2,911.95	6,124.05	1,466.62	6,976.14	6,624.72	2.42	-0.78	0.447
35.00	-42.18	-33.98	0.00	-2,740.4	0.00	2,740.35	6,011.12	1,430.00	6,632.12	6,338.64	3.31	-0.92	0.440
38.50	-41.01	-33.77	0.00	-2,621.4	0.00	2,621.41	5,930.85	1,404.36	6,396.48	6,140.79	4.02	-1.01	0.434
40.00	-40.21	-33.51	0.00	-2,570.8	0.00	2,570.75	5,896.14	1,393.37	6,296.80	6,056.62	4.35	-1.06	0.432
45.00	-37.65	-33.06	0.00	-2,403.2	0.00	2,403.22	4,028.71	1,035.84	4,639.55	4,111.86	5.53	-1.2	0.595
50.00	-36.31	-32.64	0.00	-2,237.9	0.00	2,237.92	3,959.48	1,008.37	4,396.77	3,933.24	6.86	-1.34	0.579
55.00	-34.99	-32.23	0.00	-2,074.7	0.00	2,074.70	3,888.20	980.90	4,160.52	3,756.41	8.37	-1.52	0.562
60.00	-33.69	-31.82	0.00	-1,913.5	0.00	1,913.54	3,814.88	953.43	3,930.79	3,581.54	10.06	-1.7	0.544
65.00	-32.41	-31.39	0.00	-1,754.5	0.00	1,754.47	3,739.51	925.96	3,707.59	3,408.81	11.94	-1.89	0.525
70.00	-31.18	-31.05	0.00	-1,597.5	0.00	1,597.51	3,662.08	898.49	3,490.91	3,238.38	14.02	-2.07	0.503
73.00	-30.45	-30.79	0.00	-1,504.3	0.00	1,504.31	3,614.65	882.01	3,364.03	3,137.29	15.36	-2.18	0.489
75.00	-29.69	-30.55	0.00	-1,442.7	0.00	1,442.72	3,582.61	871.03	3,280.75	3,070.41	16.29	-2.25	0.479
78.50	-28.43	-30.31	0.00	-1,335.8	0.00	1,335.79	2,803.83	721.80	2,703.37	2,392.99	17.99	-2.38	0.570
80.00	-28.08	-30.05	0.00	-1,290.3	0.00	1,290.33	2,786.75	714.93	2,652.18	2,355.62	18.74	-2.44	0.560
85.00	-27.05	-29.78	0.00	-1,140.1	0.00	1,140.10	2,728.50	692.04	2,485.09	2,231.98	21.4	-2.63	0.523
86.00	-26.77	-29.21	0.00	-1,109.1	0.00	1,109.10	2,716.60	687.46	2,452.32	2,207.43	21.96	-2.68	0.514
89.00	-25.69	-28.68	0.00	-1,021.5	0.00	1,021.48	2,680.42	673.73	2,355.33	2,134.18	23.68	-2.79	0.490
90.00	-25.46	-28.44	0.00	-992.8	0.00	992.81	2,668.19	669.15	2,323.43	2,109.89	24.27	-2.83	0.482
95.00	-24.49	-28.11	0.00	-850.6	0.00	850.60	2,605.84	646.26	2,167.21	1,989.53	27.34	-3.02	0.439
97.50	-23.26	-26.49	0.00	-775.6	0.00	775.55	2,573.90	634.81	2,091.13	1,930.05	28.94	-3.11	0.413
100.00	-22.80	-26.33	0.00	-709.3	0.00	709.33	2,541.44	623.37	2,016.42	1,871.06	30.59	-3.19	0.390
101.00	-20.90	-24.34	0.00	-683.0	0.00	683.00	2,528.32	618.79	1,986.91	1,847.61	31.26	-3.23	0.379
105.00	-20.18	-24.00	0.00	-585.7	0.00	585.66	2,474.99	600.48	1,871.07	1,754.65	34.02	-3.36	0.344
108.75	-19.53	-23.77	0.00	-495.7	0.00	495.66	2,423.81	583.31	1,765.62	1,668.80	36.71	-3.47	0.307
110.00	-16.57	-20.74	0.00	-466.0	0.00	465.95	2,406.50	577.59	1,731.16	1,640.47	37.62	-3.51	0.292
112.00	-15.97	-20.10	0.00	-424.5	0.00	424.46	2,378.52	568.43	1,676.71	1,595.46	39.1	-3.56	0.274
113.00	-15.72	-19.97	0.00	-404.4	0.00	404.36	1,786.92	458.92	1,366.00	1,211.99	39.85	-3.59	0.344
115.00	-15.42	-19.69	0.00	-364.4	0.00	364.42	1,768.50	451.59	1,322.75	1,180.21	41.36	-3.64	0.319
120.00	-10.44	-16.08	0.00	-266.0	0.00	265.99	1,721.02	433.28	1,217.66	1,101.60	45.25	-3.77	0.249
121.00	-9.98	-14.13	0.00	-249.9	0.00	249.91	1,711.28	429.62	1,197.16	1,086.03	46.04	-3.79	0.237
125.00	-9.47	-13.76	0.00	-193.4	0.00	193.39	1,671.50	414.97	1,116.92	1,024.32	49.25	-3.88	0.196
130.00	-8.86	-13.45	0.00	-124.6	0.00	124.60	1,619.93	396.65	1,020.53	948.55	53.36	-3.97	0.138
132.00	-5.37	-8.62	0.00	-97.7	0.00	97.69	1,598.72	389.33	983.19	918.69	55.03	-3.99	0.110
135.00	-5.12	-8.39	0.00	-71.8	0.00	71.82	1,566.31	378.34	928.49	874.44	57.55	-4.03	0.086
138.00	-4.40	-7.78	0.00	-46.7	0.00	46.67	1,533.15	367.35	875.35	830.84	60.09	-4.05	0.059
140.00	-1.97	-3.38	0.00	-31.1	0.00	31.10	1,510.64	360.03	840.79	802.17	61.78	-4.06	0.040
145.00	-1.65	-3.08	0.00	-14.2	0.00	14.22	1,446.60	341.72	757.45	728.72	66.05	-4.08	0.021
148.00	0.00	-2.95	0.00	-5.0	0.00	4.99	1,400.09	330.73	709.53	682.38	68.61	-4.09	0.007

Load Case: 1.2D + 1.0Di + 1.0Wi Normal		50 mph wind with 1" radial ice			21 Iterations
Gust Response Factor:	1.10	Ice Dead Load Factor	1.00		
Dead load Factor:	1.20			Ice Importance Factor	1.00
Wind Load Factor:	1.00				

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-94.08	-9.18	0.00	-1,001.4	0.00	1,001.37	6,758.62	1,686.37	9,222.92	8,416.93	0	0	0.133
5.00	-91.35	-9.08	0.00	-955.5	0.00	955.49	6,657.98	1,649.74	8,826.71	8,110.05	0.02	-0.03	0.132
10.00	-88.63	-8.99	0.00	-910.1	0.00	910.09	6,555.29	1,613.12	8,439.20	7,806.21	0.07	-0.06	0.130
15.00	-85.95	-8.89	0.00	-865.2	0.00	865.17	6,450.55	1,576.49	8,060.39	7,505.59	0.15	-0.1	0.129
20.00	-83.30	-8.80	0.00	-820.7	0.00	820.72	6,343.77	1,539.87	7,690.27	7,208.36	0.27	-0.13	0.127
25.00	-80.70	-8.70	0.00	-776.7	0.00	776.73	6,234.93	1,503.25	7,328.86	6,914.68	0.42	-0.16	0.125
30.00	-78.14	-8.61	0.00	-733.2	0.00	733.21	6,124.05	1,466.62	6,976.14	6,624.72	0.61	-0.2	0.123
35.00	-75.62	-8.53	0.00	-690.2	0.00	690.16	6,011.12	1,430.00	6,632.12	6,338.64	0.83	-0.23	0.121
38.50	-73.89	-8.47	0.00	-660.3	0.00	660.32	5,930.85	1,404.36	6,396.48	6,140.79	1.01	-0.26	0.120
40.00	-72.78	-8.41	0.00	-647.6	0.00	647.61	5,896.14	1,393.37	6,296.80	6,056.62	1.09	-0.27	0.119
45.00	-69.13	-8.30	0.00	-605.6	0.00	605.56	4,028.71	1,035.84	4,639.55	4,111.86	1.39	-0.3	0.164
50.00	-67.12	-8.19	0.00	-564.1	0.00	564.08	3,959.48	1,008.37	4,396.77	3,933.24	1.73	-0.34	0.160
55.00	-65.14	-8.09	0.00	-523.1	0.00	523.12	3,888.20	980.90	4,160.52	3,756.41	2.11	-0.38	0.156
60.00	-63.20	-7.99	0.00	-482.6	0.00	482.65	3,814.88	953.43	3,930.79	3,581.54	2.53	-0.43	0.151
65.00	-61.30	-7.89	0.00	-442.7	0.00	442.69	3,739.51	925.96	3,707.59	3,408.81	3.01	-0.48	0.146
70.00	-59.44	-7.80	0.00	-403.3	0.00	403.26	3,662.08	898.49	3,490.91	3,238.38	3.53	-0.52	0.141
73.00	-58.32	-7.73	0.00	-379.8	0.00	379.85	3,614.65	882.01	3,364.03	3,137.29	3.87	-0.55	0.137
75.00	-57.25	-7.67	0.00	-364.4	0.00	364.38	3,582.61	871.03	3,280.75	3,070.41	4.1	-0.57	0.135
78.50	-55.40	-7.61	0.00	-337.5	0.00	337.52	2,803.83	721.80	2,703.37	2,392.99	4.53	-0.6	0.161
80.00	-54.91	-7.55	0.00	-326.1	0.00	326.11	2,786.75	714.93	2,652.18	2,355.62	4.72	-0.61	0.158
85.00	-53.32	-7.47	0.00	-288.4	0.00	288.38	2,728.50	692.04	2,485.09	2,231.98	5.39	-0.66	0.149
86.00	-52.77	-7.35	0.00	-280.6	0.00	280.65	2,716.60	687.46	2,452.32	2,207.43	5.53	-0.67	0.147
89.00	-50.95	-7.21	0.00	-258.6	0.00	258.61	2,680.42	673.73	2,355.33	2,134.18	5.96	-0.7	0.140
90.00	-50.65	-7.15	0.00	-251.4	0.00	251.41	2,668.19	669.15	2,323.43	2,109.89	6.11	-0.71	0.138
95.00	-49.15	-7.06	0.00	-215.7	0.00	215.67	2,605.84	646.26	2,167.21	1,989.53	6.89	-0.76	0.127
97.50	-46.48	-6.70	0.00	-197.0	0.00	197.05	2,573.90	634.81	2,091.13	1,930.05	7.29	-0.78	0.120
100.00	-45.76	-6.66	0.00	-180.3	0.00	180.30	2,541.44	623.37	2,016.42	1,871.06	7.71	-0.81	0.114
101.00	-42.37	-6.19	0.00	-173.6	0.00	173.65	2,528.32	618.79	1,986.91	1,847.61	7.88	-0.81	0.111
105.00	-41.25	-6.10	0.00	-148.9	0.00	148.89	2,474.99	600.48	1,871.07	1,754.65	8.58	-0.85	0.102
108.75	-40.22	-6.03	0.00	-126.0	0.00	126.03	2,423.81	583.31	1,765.62	1,668.80	9.25	-0.88	0.092
110.00	-34.50	-5.34	0.00	-118.5	0.00	118.48	2,406.50	577.59	1,731.16	1,640.47	9.48	-0.89	0.087
112.00	-33.38	-5.19	0.00	-107.8	0.00	107.80	2,378.52	568.43	1,676.71	1,595.46	9.86	-0.9	0.082
113.00	-33.00	-5.15	0.00	-102.6	0.00	102.62	1,786.92	458.92	1,366.00	1,211.99	10.05	-0.91	0.103
115.00	-32.53	-5.07	0.00	-92.3	0.00	92.32	1,768.50	451.59	1,322.75	1,180.21	10.43	-0.92	0.097
120.00	-22.53	-3.92	0.00	-67.0	0.00	66.95	1,721.02	433.28	1,217.66	1,101.60	11.41	-0.95	0.074
121.00	-20.94	-3.52	0.00	-63.0	0.00	63.04	1,711.28	429.62	1,197.16	1,086.03	11.61	-0.96	0.070
125.00	-20.08	-3.41	0.00	-49.0	0.00	48.95	1,671.50	414.97	1,116.92	1,024.32	12.42	-0.98	0.060
130.00	-19.03	-3.32	0.00	-31.9	0.00	31.91	1,619.93	396.65	1,020.53	948.55	13.46	-1	0.045
132.00	-11.61	-2.18	0.00	-25.3	0.00	25.27	1,598.72	389.33	983.19	918.69	13.88	-1.01	0.035
135.00	-11.14	-2.11	0.00	-18.7	0.00	18.73	1,566.31	378.34	928.49	874.44	14.52	-1.02	0.029
138.00	-9.77	-1.94	0.00	-12.4	0.00	12.40	1,533.15	367.35	875.35	830.84	15.16	-1.02	0.021
140.00	-4.30	-0.91	0.00	-8.5	0.00	8.52	1,510.64	360.03	840.79	802.17	15.59	-1.03	0.013
145.00	-3.65	-0.82	0.00	-4.0	0.00	3.98	1,446.60	341.72	757.45	728.72	16.67	-1.03	0.008
148.00	0.00	-0.75	0.00	-1.5	0.00	1.53	1,400.09	330.73	709.53	682.38	17.32	-1.03	0.002

Load Case: 1.0D + 1.0W Service Normal 60 mph Wind with No Ice 21 Iterations
Gust Response Factor: 1.10
Dead load Factor: 1.00
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-60.93	-7.81	0.00	-851.5	0.00	851.48	6,758.62	1,686.37	9,222.92	8,416.93	0	0	0.110
5.00	-58.90	-7.73	0.00	-812.4	0.00	812.42	6,657.98	1,649.74	8,826.71	8,110.05	0.01	-0.03	0.109
10.00	-56.91	-7.65	0.00	-773.8	0.00	773.77	6,555.29	1,613.12	8,439.20	7,806.21	0.06	-0.05	0.108
15.00	-54.95	-7.56	0.00	-735.5	0.00	735.54	6,450.55	1,576.49	8,060.39	7,505.59	0.13	-0.08	0.107
20.00	-53.03	-7.48	0.00	-697.7	0.00	697.72	6,343.77	1,539.87	7,690.27	7,208.36	0.23	-0.11	0.105
25.00	-51.14	-7.40	0.00	-660.3	0.00	660.30	6,234.93	1,503.25	7,328.86	6,914.68	0.36	-0.14	0.104
30.00	-49.28	-7.32	0.00	-623.3	0.00	623.29	6,124.05	1,466.62	6,976.14	6,624.72	0.52	-0.17	0.102
35.00	-47.47	-7.25	0.00	-586.7	0.00	586.67	6,011.12	1,430.00	6,632.12	6,338.64	0.71	-0.2	0.100
38.50	-46.22	-7.21	0.00	-561.3	0.00	561.28	5,930.85	1,404.36	6,396.48	6,140.79	0.86	-0.22	0.099
40.00	-45.37	-7.15	0.00	-550.5	0.00	550.47	5,896.14	1,393.37	6,296.80	6,056.62	0.93	-0.23	0.099
45.00	-42.61	-7.06	0.00	-514.7	0.00	514.70	4,028.71	1,035.84	4,639.55	4,111.86	1.18	-0.26	0.136
50.00	-41.21	-6.97	0.00	-479.4	0.00	479.39	3,959.48	1,008.37	4,396.77	3,933.24	1.47	-0.29	0.132
55.00	-39.83	-6.89	0.00	-444.5	0.00	444.52	3,888.20	980.90	4,160.52	3,756.41	1.79	-0.33	0.129
60.00	-38.48	-6.80	0.00	-410.1	0.00	410.07	3,814.88	953.43	3,930.79	3,581.54	2.15	-0.36	0.125
65.00	-37.15	-6.72	0.00	-376.0	0.00	376.05	3,739.51	925.96	3,707.59	3,408.81	2.56	-0.4	0.120
70.00	-35.85	-6.64	0.00	-342.5	0.00	342.47	3,662.08	898.49	3,490.91	3,238.38	3	-0.44	0.116
73.00	-35.08	-6.59	0.00	-322.5	0.00	322.53	3,614.65	882.01	3,364.03	3,137.29	3.29	-0.47	0.113
75.00	-34.29	-6.54	0.00	-309.4	0.00	309.35	3,582.61	871.03	3,280.75	3,070.41	3.49	-0.48	0.110
78.50	-32.92	-6.49	0.00	-286.4	0.00	286.45	2,803.83	721.80	2,703.37	2,392.99	3.85	-0.51	0.132
80.00	-32.58	-6.44	0.00	-276.7	0.00	276.72	2,786.75	714.93	2,652.18	2,355.62	4.01	-0.52	0.129
85.00	-31.49	-6.38	0.00	-244.6	0.00	244.55	2,728.50	692.04	2,485.09	2,231.98	4.58	-0.56	0.121
86.00	-31.20	-6.26	0.00	-237.9	0.00	237.91	2,716.60	687.46	2,452.32	2,207.43	4.7	-0.57	0.119
89.00	-30.01	-6.15	0.00	-219.1	0.00	219.13	2,680.42	673.73	2,355.33	2,134.18	5.07	-0.6	0.114
90.00	-29.80	-6.10	0.00	-213.0	0.00	212.99	2,668.19	669.15	2,323.43	2,109.89	5.2	-0.61	0.112
95.00	-28.77	-6.03	0.00	-182.5	0.00	182.51	2,605.84	646.26	2,167.21	1,989.53	5.85	-0.65	0.103
97.50	-27.36	-5.68	0.00	-166.4	0.00	166.42	2,573.90	634.81	2,091.13	1,930.05	6.2	-0.67	0.097
100.00	-26.87	-5.65	0.00	-152.2	0.00	152.22	2,541.44	623.37	2,016.42	1,871.06	6.55	-0.68	0.092
101.00	-24.68	-5.22	0.00	-146.6	0.00	146.57	2,528.32	618.79	1,986.91	1,847.61	6.7	-0.69	0.089
105.00	-23.91	-5.15	0.00	-125.7	0.00	125.69	2,474.99	600.48	1,871.07	1,754.65	7.29	-0.72	0.081
108.75	-23.21	-5.10	0.00	-106.4	0.00	106.37	2,423.81	583.31	1,765.62	1,668.80	7.86	-0.74	0.073
110.00	-19.74	-4.45	0.00	-100.0	0.00	100.00	2,406.50	577.59	1,731.16	1,640.47	8.06	-0.75	0.069
112.00	-19.04	-4.31	0.00	-91.1	0.00	91.09	2,378.52	568.43	1,676.71	1,595.46	8.38	-0.76	0.065
113.00	-18.77	-4.29	0.00	-86.8	0.00	86.78	1,786.92	458.92	1,366.00	1,211.99	8.54	-0.77	0.082
115.00	-18.46	-4.23	0.00	-78.2	0.00	78.21	1,768.50	451.59	1,322.75	1,180.21	8.86	-0.78	0.077
120.00	-12.71	-3.45	0.00	-57.1	0.00	57.08	1,721.02	433.28	1,217.66	1,101.60	9.69	-0.81	0.059
121.00	-12.08	-3.03	0.00	-53.6	0.00	53.63	1,711.28	429.62	1,197.16	1,086.03	9.86	-0.81	0.056
125.00	-11.51	-2.95	0.00	-41.5	0.00	41.49	1,671.50	414.97	1,116.92	1,024.32	10.55	-0.83	0.047
130.00	-10.81	-2.89	0.00	-26.7	0.00	26.73	1,619.93	396.65	1,020.53	948.55	11.43	-0.85	0.035
132.00	-6.59	-1.85	0.00	-21.0	0.00	20.95	1,598.72	389.33	983.19	918.69	11.79	-0.86	0.027
135.00	-6.31	-1.80	0.00	-15.4	0.00	15.40	1,566.31	378.34	928.49	874.44	12.33	-0.86	0.022
138.00	-5.47	-1.67	0.00	-10.0	0.00	10.00	1,533.15	367.35	875.35	830.84	12.88	-0.87	0.016
140.00	-2.44	-0.72	0.00	-6.7	0.00	6.66	1,510.64	360.03	840.79	802.17	13.24	-0.87	0.010
145.00	-2.06	-0.66	0.00	-3.0	0.00	3.04	1,446.60	341.72	757.45	728.72	14.15	-0.87	0.006
148.00	0.00	-0.63	0.00	-1.1	0.00	1.06	1,400.09	330.73	709.53	682.38	14.7	-0.88	0.002

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

(Based on ASCE7-16 Chapters 11, 12 and 15)

Spectral Response Acceleration for Short Period (S_S):	0.205
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.054
Long-Period Transition Period (T_L – Seconds):	6
Importance Factor (I_e):	1.000
Site Coefficient F_a:	1.600
Site Coefficient F_v:	2.400
Response Modification Coefficient (R):	1.500
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.219
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.086
Seismic Response Coefficient (C_s):	0.030
Upper Limit C_S:	0.030
Lower Limit C_S:	0.030
Period based on Rayleigh Method (sec):	2.220
Redundancy Factor (p):	1.000
Seismic Force Distribution Exponent (k):	1.860
Total Unfactored Dead Load:	60.940 k
Seismic Base Shear (E):	1.830 k

1.2D + 1.0Ev + 1.0Eh Normal **Seismic**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
43	146.5	223	2,371	0.009	16	278
42	142.5	386	3,897	0.015	27	480
41	139	184	1,772	0.007	12	229
40	136.5	281	2,619	0.010	18	350
39	133.5	288	2,570	0.010	18	358
38	131	273	2,353	0.009	16	339
37	127.5	694	5,696	0.021	39	863
36	123	568	4,360	0.016	30	707
35	120.5	144	1,062	0.004	7	179
34	117.5	782	5,510	0.021	38	972
33	114	318	2,117	0.008	15	395
32	112.5	270	1,753	0.007	12	335
31	111	544	3,451	0.013	24	677
30	109.375	346	2,136	0.008	15	431
29	106.875	704	4,159	0.016	29	875
28	103	764	4,218	0.016	29	951
27	100.5	193	1,019	0.004	7	240
26	98.75	487	2,486	0.009	17	606
25	96.25	503	2,446	0.009	17	625
24	92.5	1,022	4,618	0.017	32	1,271
23	89.5	207	880	0.003	6	258
22	87.5	627	2,553	0.010	18	779
21	85.5	216	841	0.003	6	268
20	82.5	1,091	3,986	0.015	27	1,357
19	79.25	332	1,124	0.004	8	412
18	76.75	1,366	4,363	0.016	30	1,699
17	74	791	2,362	0.009	16	984
16	71.5	764	2,138	0.008	15	950
15	67.5	1,294	3,256	0.012	22	1,610
14	62.5	1,321	2,880	0.011	20	1,643
13	57.5	1,347	2,516	0.010	17	1,676
12	52.5	1,374	2,166	0.008	15	1,709
11	47.5	1,401	1,833	0.007	13	1,742
10	42.5	2,760	2,938	0.011	20	3,433

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
9	39.25	840	771	0.003	5	1,045
8	36.75	1,249	1,014	0.004	7	1,553
7	32.5	1,814	1,173	0.004	8	2,256
6	27.5	1,849	876	0.003	6	2,300
5	22.5	1,885	615	0.002	4	2,344
4	17.5	1,920	393	0.002	3	2,389
3	12.5	1,956	214	0.001	1	2,433
2	7.5	1,991	84	0.000	1	2,477
1	2.5	2,027	11	0.000	0	2,521
Generic 18' Dipole	148	55	595	0.002	4	68
Generic 8' Omni	148	25	271	0.001	2	31
Generic 8' Dipole	148	25	271	0.001	2	31
Generic 48" x 8" Panel	148	240	2,598	0.010	18	298
Flat Low Profile Platform	148	1,500	16,238	0.061	112	1,866
Flat Low Profile Platform	140	1,500	14,644	0.055	101	1,866
Commscope CBC78T-DS-43-2X	140	62	606	0.002	4	77
Samsung Outdoor CBRS 20W RRH –Clip-on Antenna	140	13	129	0.000	1	16
Samsung RT4401-48A	140	56	545	0.002	4	69
Samsung B2/B66A RRH-BR049	140	253	2,472	0.009	17	315
Samsung B5/B13 RRH-BR04C	140	211	2,059	0.008	14	262
RFS DB-C1-12C-24AB-0Z	140	32	312	0.001	2	40
Samsung MT6407-77A	140	245	2,390	0.009	16	304
Commscope LNX-6514DS-A1M	140	39	379	0.001	3	48
Andrew LNX-8513DS-A1M	140	78	765	0.003	5	98
Commscope JAHH-65B-R3B	140	364	3,550	0.013	24	452
Collar	138	560	5,323	0.020	37	696
Collar	89	560	2,355	0.009	16	696
Powerwave Allgon LGP13519	132	32	278	0.001	2	40
Powerwave Allgon TT19-08BP111-001	132	96	840	0.003	6	119
Raycap DC6-48-60-18-8F ("Squid")	132	64	557	0.002	4	79
Ericsson Radio 4449 B13, B5	132	212	1,854	0.007	13	263
Ericsson RRUS A2 B2	132	66	578	0.002	4	82
Ericsson RRUS 32 B30 (53 lbs)	132	159	1,391	0.005	10	198
Ericsson RRUS-12 B2	132	174	1,523	0.006	10	216
KMW AM-X-CD-14-65-00T-RET	132	109	956	0.004	7	136
Commscope SBNHH-1D65A	132	100	880	0.003	6	125
Generic Mount Reinforcement	132	200	1,750	0.007	12	249
Kathrein Scala 80010964	132	251	2,200	0.008	15	313
Generic Flat Platform with Handrails	132	2,500	21,878	0.082	150	3,109
Generic Flat Platform with Handrails	110	2,500	15,589	0.059	107	3,109
RFS APXVAALL24 43-U-NA20	121	491	3,657	0.014	25	611
Ericsson Radio 4460 B25+B66	120	436	3,196	0.012	22	542
Ericsson Radio 4480 B71+B85A	120	336	2,463	0.009	17	418
Ericsson Air6449 B41	120	416	3,049	0.012	21	517
Generic Square Platform with Handrails	120	3,790	27,782	0.104	191	4,714
Generic 6.7" x 10.7" TTA	112	59	383	0.001	3	74
Generic 48" x 12" Panel	112	90	580	0.002	4	112
Commscope RDIDC-9181-PF-48	110	22	137	0.000	1	27
Fujitsu TA08025-B604	110	192	1,195	0.004	8	238
Fujitsu TA08025-B605	110	225	1,403	0.005	10	280
JMA Wireless MX08FRO665-21	110	194	1,207	0.004	8	241
Flat Platform w/ Handrails	101	2,000	10,641	0.040	73	2,487
Alcatel-Lucent 800 MHz 2X50W RRH w/ Filter	97.5	192	957	0.004	7	239
Alcatel-Lucent 1900 MHz 4X45 RRH	97.5	180	897	0.003	6	224
Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield	97.5	210	1,046	0.004	7	261
RFS APXV9TM14-ALU-I20	97.5	165	824	0.003	6	206
RFS APXVSPP18-C-A20	97.5	171	852	0.003	6	213
RFS APXV18-206517S-C	86	79	313	0.001	2	99
Generic GPS	73	10	29	0.000	0	12
		60,936	265,991	1.000	1,828	75,789

0.9D - 1.0Ev + 1.0Eh Normal **Seismic (Reduced DL)**

Segment	Height Above	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force	Vertical Force

	Base (ft)				(lb)	(lb)
43	146.5	223	2,371	0.009	16	191
42	142.5	386	3,897	0.015	27	331
41	139	184	1,772	0.007	12	157
40	136.5	281	2,619	0.010	18	241
39	133.5	288	2,570	0.010	18	246
38	131	273	2,353	0.009	16	234
37	127.5	694	5,696	0.021	39	594
36	123	568	4,360	0.016	30	486
35	120.5	144	1,062	0.004	7	123
34	117.5	782	5,510	0.021	38	669
33	114	318	2,117	0.008	15	272
32	112.5	270	1,753	0.007	12	231
31	111	544	3,451	0.013	24	466
30	109.375	346	2,136	0.008	15	296
29	106.875	704	4,159	0.016	29	603
28	103	764	4,218	0.016	29	655
27	100.5	193	1,019	0.004	7	166
26	98.75	487	2,486	0.009	17	417
25	96.25	503	2,446	0.009	17	430
24	92.5	1,022	4,618	0.017	32	875
23	89.5	207	880	0.003	6	177
22	87.5	627	2,553	0.010	18	537
21	85.5	216	841	0.003	6	185
20	82.5	1,091	3,986	0.015	27	934
19	79.25	332	1,124	0.004	8	284
18	76.75	1,366	4,363	0.016	30	1,170
17	74	791	2,362	0.009	16	678
16	71.5	764	2,138	0.008	15	654
15	67.5	1,294	3,256	0.012	22	1,108
14	62.5	1,321	2,880	0.011	20	1,131
13	57.5	1,347	2,516	0.010	17	1,154
12	52.5	1,374	2,166	0.008	15	1,177
11	47.5	1,401	1,833	0.007	13	1,199
10	42.5	2,760	2,938	0.011	20	2,364
9	39.25	840	771	0.003	5	719
8	36.75	1,249	1,014	0.004	7	1,069
7	32.5	1,814	1,173	0.004	8	1,553
6	27.5	1,849	876	0.003	6	1,584
5	22.5	1,885	615	0.002	4	1,614
4	17.5	1,920	393	0.002	3	1,644
3	12.5	1,956	214	0.001	1	1,675
2	7.5	1,991	84	0.000	1	1,705
1	2.5	2,027	11	0.000	0	1,736
Generic 18' Dipole	148	55	595	0.002	4	47
Generic 8' Omni	148	25	271	0.001	2	21
Generic 8' Dipole	148	25	271	0.001	2	21
Generic 48" x 8" Panel	148	240	2,598	0.010	18	206
Flat Low Profile Platform	148	1,500	16,238	0.061	112	1,284
Flat Low Profile Platform	140	1,500	14,644	0.055	101	1,284
Commscope CBC78T-DS-43-2X	140	62	606	0.002	4	53
Samsung Outdoor CBRS 20W RRH –Clip-on Antenna	140	13	129	0.000	1	11
Samsung RT4401-48A	140	56	545	0.002	4	48
Samsung B2/B66A RRH-BR049	140	253	2,472	0.009	17	217
Samsung B5/B13 RRH-BR04C	140	211	2,059	0.008	14	181
RFS DB-C1-12C-24AB-0Z	140	32	312	0.001	2	27
Samsung MT6407-77A	140	245	2,390	0.009	16	210
Commscope LNX-6514DS-A1M	140	39	379	0.001	3	33
Andrew LNX-8513DS-A1M	140	78	765	0.003	5	67
Commscope JAHH-65B-R3B	140	364	3,550	0.013	24	311
Collar	138	560	5,323	0.020	37	480
Collar	89	560	2,355	0.009	16	480
Powerwave Allgon LGP13519	132	32	278	0.001	2	27
Powerwave Allgon TT19-08BP111-001	132	96	840	0.003	6	82
Raycap DC6-48-60-18-8F ("Squid")	132	64	557	0.002	4	54
Ericsson Radio 4449 B13, B5	132	212	1,854	0.007	13	181
Ericsson RRUS A2 B2	132	66	578	0.002	4	57
Ericsson RRUS 32 B30 (53 lbs)	132	159	1,391	0.005	10	136
Ericsson RRUS-12 B2	132	174	1,523	0.006	10	149
KMW AM-X-CD-14-65-00T-RET	132	109	956	0.004	7	94
Commscope SBNHH-1D65A	132	100	880	0.003	6	86
Generic Mount Reinforcement	132	200	1,750	0.007	12	171

	Base (ft)				(lb)	(lb)
Kathrein Scala 80010964	132	251	2,200	0.008	15	215
Generic Flat Platform with Handrails	132	2,500	21,878	0.082	150	2,141
Generic Flat Platform with Handrails	110	2,500	15,589	0.059	107	2,141
RFS APXVAALL24 43-U-NA20	121	491	3,657	0.014	25	421
Ericsson Radio 4460 B25+B66	120	436	3,196	0.012	22	373
Ericsson Radio 4480 B71+B85A	120	336	2,463	0.009	17	288
Ericsson Air6449 B41	120	416	3,049	0.012	21	356
Generic Square Platform with Handrails	120	3,790	27,782	0.104	191	3,245
Generic 6.7" x 10.7" TTA	112	59	383	0.001	3	51
Generic 48" x 12" Panel	112	90	580	0.002	4	77
Commscope RDIDC-9181-PF-48	110	22	137	0.000	1	19
Fujitsu TA08025-B604	110	192	1,195	0.004	8	164
Fujitsu TA08025-B605	110	225	1,403	0.005	10	193
JMA Wireless MX08FRO665-21	110	194	1,207	0.004	8	166
Flat Platform w/ Handrails	101	2,000	10,641	0.040	73	1,713
Alcatel-Lucent 800 MHz 2X50W RRH w/ Filter	97.5	192	957	0.004	7	164
Alcatel-Lucent 1900 MHz 4X45 RRH	97.5	180	897	0.003	6	154
Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield	97.5	210	1,046	0.004	7	180
RFS APXV9TM14-ALU-I20	97.5	165	824	0.003	6	142
RFS APXVSPP18-C-A20	97.5	171	852	0.003	6	146
RFS APXV18-206517S-C	86	79	313	0.001	2	68
Generic GPS	73	10	29	0.000	0	9
		60,936	265,991	1.000	1,828	52,178

1.2D + 1.0Ev + 1.0Eh Normal **Seismic**

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-73.27	-1.83	0.00	-218.25	0.00	218.25	6,758.62	1,686.37	9,223	8,416.93	0.00	0.00	0.04
5.00	-70.79	-1.84	0.00	-209.09	0.00	209.09	6,657.98	1,649.74	8,827	8,110.05	0.00	-0.01	0.04
10.00	-68.36	-1.85	0.00	-199.89	0.00	199.89	6,555.29	1,613.12	8,439	7,806.21	0.01	-0.01	0.04
15.00	-65.97	-1.85	0.00	-190.66	0.00	190.66	6,450.55	1,576.49	8,060	7,505.59	0.03	-0.02	0.04
20.00	-63.62	-1.85	0.00	-181.40	0.00	181.40	6,343.77	1,539.87	7,690	7,208.36	0.06	-0.03	0.04
25.00	-61.32	-1.85	0.00	-172.13	0.00	172.13	6,234.93	1,503.25	7,329	6,914.68	0.09	-0.04	0.04
30.00	-59.07	-1.85	0.00	-162.86	0.00	162.86	6,124.05	1,466.62	6,976	6,624.72	0.13	-0.04	0.03
35.00	-57.51	-1.85	0.00	-153.59	0.00	153.59	6,011.12	1,430.00	6,632	6,338.64	0.18	-0.05	0.03
38.50	-56.47	-1.85	0.00	-147.12	0.00	147.12	5,930.85	1,404.36	6,396	6,140.79	0.22	-0.06	0.03
40.00	-53.04	-1.83	0.00	-144.34	0.00	144.34	5,896.14	1,393.37	6,297	6,056.62	0.24	-0.06	0.03
45.00	-51.29	-1.82	0.00	-135.19	0.00	135.19	4,028.71	1,035.84	4,640	4,111.86	0.31	-0.07	0.05
50.00	-49.58	-1.81	0.00	-126.08	0.00	126.08	3,959.48	1,008.37	4,397	3,933.24	0.38	-0.07	0.05
55.00	-47.91	-1.80	0.00	-117.01	0.00	117.01	3,888.20	980.90	4,161	3,756.41	0.46	-0.08	0.04
60.00	-46.26	-1.79	0.00	-108.00	0.00	108.00	3,814.88	953.43	3,931	3,581.54	0.56	-0.10	0.04
65.00	-44.65	-1.77	0.00	-99.05	0.00	99.05	3,739.51	925.96	3,708	3,408.81	0.66	-0.11	0.04
70.00	-43.70	-1.76	0.00	-90.20	0.00	90.20	3,662.08	898.49	3,491	3,238.38	0.78	-0.12	0.04
73.00	-42.71	-1.75	0.00	-84.91	0.00	84.91	3,614.65	882.01	3,364	3,137.29	0.86	-0.12	0.04
75.00	-41.01	-1.72	0.00	-81.42	0.00	81.42	3,582.61	871.03	3,281	3,070.41	0.91	-0.13	0.04
78.50	-40.60	-1.71	0.00	-75.41	0.00	75.41	2,803.83	721.80	2,703	2,392.99	1.00	-0.13	0.05
80.00	-39.24	-1.69	0.00	-72.84	0.00	72.84	2,786.75	714.93	2,652	2,355.62	1.05	-0.14	0.05
85.00	-38.97	-1.68	0.00	-64.41	0.00	64.41	2,728.50	692.04	2,485	2,231.98	1.19	-0.15	0.04
86.00	-38.09	-1.67	0.00	-62.73	0.00	62.73	2,716.60	687.46	2,452	2,207.43	1.23	-0.15	0.04
89.00	-37.14	-1.64	0.00	-57.73	0.00	57.73	2,680.42	673.73	2,355	2,134.18	1.32	-0.16	0.04
90.00	-35.87	-1.61	0.00	-56.09	0.00	56.09	2,668.19	669.15	2,323	2,109.89	1.36	-0.16	0.04
95.00	-35.24	-1.60	0.00	-48.03	0.00	48.03	2,605.84	646.26	2,167	1,989.53	1.53	-0.17	0.04
97.50	-33.49	-1.55	0.00	-44.03	0.00	44.03	2,573.90	634.81	2,091	1,930.05	1.62	-0.17	0.04
100.00	-33.25	-1.54	0.00	-40.16	0.00	40.16	2,541.44	623.37	2,016	1,871.06	1.71	-0.18	0.04
101.00	-29.82	-1.43	0.00	-38.62	0.00	38.62	2,528.32	618.79	1,987	1,847.61	1.75	-0.18	0.03
105.00	-28.94	-1.40	0.00	-32.90	0.00	32.90	2,474.99	600.48	1,871	1,754.65	1.90	-0.19	0.03
108.75	-28.51	-1.39	0.00	-27.63	0.00	27.63	2,423.81	583.31	1,766	1,668.80	2.05	-0.19	0.03
110.00	-23.94	-1.22	0.00	-25.90	0.00	25.90	2,406.50	577.59	1,731	1,640.47	2.11	-0.20	0.03
112.00	-23.42	-1.20	0.00	-23.46	0.00	23.46	2,378.52	568.43	1,677	1,595.46	2.19	-0.20	0.03
113.00	-23.02	-1.18	0.00	-22.27	0.00	22.27	1,786.92	458.92	1,366	1,211.99	2.23	-0.20	0.03
115.00	-22.05	-1.14	0.00	-19.90	0.00	19.90	1,768.50	451.59	1,323	1,180.21	2.32	-0.20	0.03
120.00	-15.68	-0.86	0.00	-14.19	0.00	14.19	1,721.02	433.28	1,218	1,101.60	2.53	-0.21	0.02
121.00	-14.36	-0.80	0.00	-13.33	0.00	13.33	1,711.28	429.62	1,197	1,086.03	2.58	-0.21	0.02
125.00	-13.50	-0.76	0.00	-10.11	0.00	10.11	1,671.50	414.97	1,117	1,024.32	2.76	-0.22	0.02
130.00	-13.16	-0.75	0.00	-6.30	0.00	6.30	1,619.93	396.65	1,021	948.55	2.99	-0.22	0.02

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
132.00	-7.87	-0.47	0.00	-4.81	0.00	4.81	1,598.72	389.33	983	918.69	3.08	-0.22	0.01
135.00	-7.52	-0.45	0.00	-3.40	0.00	3.40	1,566.31	378.34	928	874.44	3.22	-0.22	0.01
138.00	-6.60	-0.40	0.00	-2.05	0.00	2.05	1,533.15	367.35	875	830.84	3.36	-0.23	0.01
140.00	-2.57	-0.16	0.00	-1.26	0.00	1.26	1,510.64	360.03	841	802.17	3.46	-0.23	0.00
145.00	-2.29	-0.15	0.00	-0.44	0.00	0.44	1,446.60	341.72	757	728.72	3.70	-0.23	0.00
148.00	0.00	-0.14	0.00	0.00	0.00	0.00	1,400.09	330.73	710	682.38	3.84	-0.23	0.00

0.9D - 1.0Ev + 1.0Eh Normal **Seismic (Reduced DL)**

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-50.44	-1.83	0.00	-215.31	0.00	215.31	6,758.62	1,686.37	9,223	8,416.93	0.00	0.00	0.03
5.00	-48.74	-1.84	0.00	-206.15	0.00	206.15	6,657.98	1,649.74	8,827	8,110.05	0.00	-0.01	0.03
10.00	-47.06	-1.84	0.00	-196.98	0.00	196.98	6,555.29	1,613.12	8,439	7,806.21	0.01	-0.01	0.03
15.00	-45.42	-1.84	0.00	-187.78	0.00	187.78	6,450.55	1,576.49	8,060	7,505.59	0.03	-0.02	0.03
20.00	-43.80	-1.84	0.00	-178.57	0.00	178.57	6,343.77	1,539.87	7,690	7,208.36	0.06	-0.03	0.03
25.00	-42.22	-1.84	0.00	-169.36	0.00	169.36	6,234.93	1,503.25	7,329	6,914.68	0.09	-0.04	0.03
30.00	-40.67	-1.84	0.00	-160.15	0.00	160.15	6,124.05	1,466.62	6,976	6,624.72	0.13	-0.04	0.03
35.00	-39.60	-1.83	0.00	-150.96	0.00	150.96	6,011.12	1,430.00	6,632	6,338.64	0.18	-0.05	0.03
38.50	-38.88	-1.83	0.00	-144.54	0.00	144.54	5,930.85	1,404.36	6,396	6,140.79	0.22	-0.06	0.03
40.00	-36.51	-1.81	0.00	-141.80	0.00	141.80	5,896.14	1,393.37	6,297	6,056.62	0.24	-0.06	0.03
45.00	-35.31	-1.80	0.00	-132.74	0.00	132.74	4,028.71	1,035.84	4,640	4,111.86	0.30	-0.07	0.04
50.00	-34.14	-1.79	0.00	-123.73	0.00	123.73	3,959.48	1,008.37	4,397	3,933.24	0.37	-0.07	0.04
55.00	-32.98	-1.78	0.00	-114.77	0.00	114.77	3,888.20	980.90	4,161	3,756.41	0.46	-0.08	0.04
60.00	-31.85	-1.76	0.00	-105.88	0.00	105.88	3,814.88	953.43	3,931	3,581.54	0.55	-0.09	0.04
65.00	-30.74	-1.74	0.00	-97.07	0.00	97.07	3,739.51	925.96	3,708	3,408.81	0.65	-0.10	0.04
70.00	-30.09	-1.73	0.00	-88.35	0.00	88.35	3,662.08	898.49	3,491	3,238.38	0.77	-0.11	0.04
73.00	-29.40	-1.72	0.00	-83.16	0.00	83.16	3,614.65	882.01	3,364	3,137.29	0.84	-0.12	0.04
75.00	-28.23	-1.69	0.00	-79.72	0.00	79.72	3,582.61	871.03	3,281	3,070.41	0.89	-0.12	0.03
78.50	-27.95	-1.68	0.00	-73.82	0.00	73.82	2,803.83	721.80	2,703	2,392.99	0.99	-0.13	0.04
80.00	-27.01	-1.65	0.00	-71.30	0.00	71.30	2,786.75	714.93	2,652	2,355.62	1.03	-0.13	0.04
85.00	-26.83	-1.65	0.00	-63.03	0.00	63.03	2,728.50	692.04	2,485	2,231.98	1.17	-0.15	0.04
86.00	-26.22	-1.63	0.00	-61.37	0.00	61.37	2,716.60	687.46	2,452	2,207.43	1.21	-0.15	0.04
89.00	-25.57	-1.61	0.00	-56.48	0.00	56.48	2,680.42	673.73	2,355	2,134.18	1.30	-0.15	0.04
90.00	-24.69	-1.58	0.00	-54.87	0.00	54.87	2,668.19	669.15	2,323	2,109.89	1.33	-0.16	0.04
95.00	-24.26	-1.56	0.00	-46.97	0.00	46.97	2,605.84	646.26	2,167	1,989.53	1.50	-0.17	0.03
97.50	-23.06	-1.51	0.00	-43.06	0.00	43.06	2,573.90	634.81	2,091	1,930.05	1.59	-0.17	0.03
100.00	-22.89	-1.51	0.00	-39.28	0.00	39.28	2,541.44	623.37	2,016	1,871.06	1.68	-0.18	0.03
101.00	-20.53	-1.40	0.00	-37.77	0.00	37.77	2,528.32	618.79	1,987	1,847.61	1.72	-0.18	0.03
105.00	-19.92	-1.37	0.00	-32.17	0.00	32.17	2,474.99	600.48	1,871	1,754.65	1.87	-0.18	0.03
108.75	-19.63	-1.36	0.00	-27.02	0.00	27.02	2,423.81	583.31	1,766	1,668.80	2.02	-0.19	0.02
110.00	-16.48	-1.19	0.00	-25.33	0.00	25.33	2,406.50	577.59	1,731	1,640.47	2.07	-0.19	0.02
112.00	-16.12	-1.17	0.00	-22.95	0.00	22.95	2,378.52	568.43	1,677	1,595.46	2.15	-0.20	0.02
113.00	-15.85	-1.16	0.00	-21.78	0.00	21.78	1,786.92	458.92	1,366	1,211.99	2.19	-0.20	0.03
115.00	-15.18	-1.12	0.00	-19.47	0.00	19.47	1,768.50	451.59	1,323	1,180.21	2.27	-0.20	0.03
120.00	-10.79	-0.84	0.00	-13.88	0.00	13.88	1,721.02	433.28	1,218	1,101.60	2.49	-0.21	0.02
121.00	-9.89	-0.79	0.00	-13.04	0.00	13.04	1,711.28	429.62	1,197	1,086.03	2.53	-0.21	0.02
125.00	-9.29	-0.75	0.00	-9.89	0.00	9.89	1,671.50	414.97	1,117	1,024.32	2.71	-0.21	0.02
130.00	-9.06	-0.73	0.00	-6.17	0.00	6.17	1,619.93	396.65	1,021	948.55	2.93	-0.22	0.01
132.00	-5.42	-0.46	0.00	-4.71	0.00	4.71	1,598.72	389.33	983	918.69	3.03	-0.22	0.01
135.00	-5.18	-0.44	0.00	-3.33	0.00	3.33	1,566.31	378.34	928	874.44	3.16	-0.22	0.01
138.00	-4.54	-0.39	0.00	-2.01	0.00	2.01	1,533.15	367.35	875	830.84	3.30	-0.22	0.01
140.00	-1.77	-0.16	0.00	-1.23	0.00	1.23	1,510.64	360.03	841	802.17	3.39	-0.22	0.00
145.00	-1.58	-0.14	0.00	-0.43	0.00	0.43	1,446.60	341.72	757	728.72	3.63	-0.22	0.00
148.00	0.00	-0.14	0.00	0.00	0.00	0.00	1,400.09	330.73	710	682.38	3.77	-0.22	0.00

ANALYSIS SUMMARY

	Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.0W Normal	36.71	0.00	73.08	0.00	0.00	4025.49	45.00	0.61
0.9D + 1.0W Normal	36.69	0.00	54.80	0.00	0.00	3982.66	45.00	0.59
1.2D + 1.0Di + 1.0Wi Normal	9.18	0.00	94.08	0.00	0.00	1001.37	45.00	0.16
1.2D + 1.0Ev + 1.0Eh Normal	1.85	0.00	73.27	0.00	0.00	218.25	78.50	0.05
0.9D - 1.0Ev + 1.0Eh Normal	1.84	0.00	50.44	0.00	0.00	215.31	45.00	0.04
1.0D + 1.0W Service Normal	7.81	0.00	60.93	0.00	0.00	851.48	45.00	0.14

Base Plate & Anchor Rod Analysis

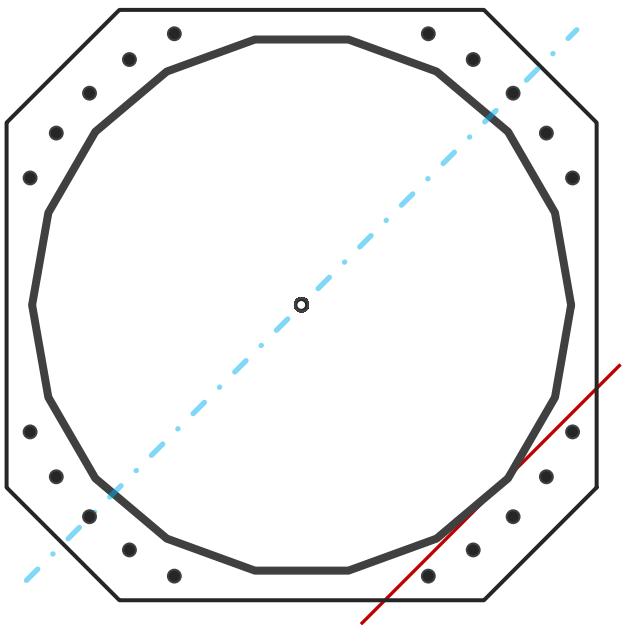
Pole Dimensions		
Number of Sides	18	-
Diameter	61.05	in
Thickness	0.5	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	4025.5	k-ft
Axial, Pu	73.1	k
Shear, Vu	36.7	k
Neutral Axis	225	°

Report Capacities		
Component	Capacity	Result
Base Plate	49%	Pass
Anchor Rods	59%	Pass
Dwyidag	-	-

Base Plate		
Shape	Square	-
Width	68	in
Thickness	3 1/4	in
Grade	A572-50	
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	13	in
Orientation Offset	0	°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	2021.2	k
Bending Stress, ϕMn	4158.0	k

Original Anchor Rods		
Arrangement	Cluster	-
Quantity	20	-
Diameter, ø	2 1/4	in
Bolt Circle	69	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	6.0	in
Orientation Offset	0	°
Applied Force, Pu	143.6	k
Anchor Rods, ϕPn	243.6	k



Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	36.7	4025.5	1.00
Anchor Rod Forces	36.7	4025.5	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	94.6296	5.2572	0.4399		43375.50
Bolt	3.9761	3.2477	0.8393	4.5	38672.41
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Square	-
Width, W	68	in
Thickness, t	3.25	in
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Base Plate Chord	29.948	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods		
Anchor Rod Quantity, N	20	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	69	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	143.6	k
Applied Shear, Vu	0.5	k
Compressive Capacity, ϕPn	243.6	k
Tensile Capacity, ϕRnt	0.590	OK
Interaction Capacity	0.594	OK

External Base Plate		
Chord Length AA	34.992	in
Additional AA	0.000	in
Section Modulus, Z	92.399	in^3
Applied Moment, Mu	2021.2	k-ft
Bending Capacity, ϕMn	4158.0	k-ft
Capacity, Mu/ϕMn	0.486	OK
Chord Length AB	34.048	in
Additional AB	0.000	in
Section Modulus, Z	89.907	in^3
Applied Moment, Mu	1692.3	k-ft
Bending Capacity, ϕMn	4045.8	k-ft
Capacity, Mu/ϕMn	0.418	OK
Bend Line Length	0.000	in
Additional Bend Line	0.000	in
Section Modulus, Z	0.000	in^3
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

Internal Base Plate		
Arc Length	0.000	in
Section Modulus, Z	0.000	in^3
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

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Mount Analysis Report

ATC Site Name	:	**Madison CT 6, CT**
ATC Site Number	:	**302540**
Engineering Number	:	**13726694_C8_05**
Mount Elevation	:	**118 ft**
Carrier	:	**T-Mobile**
Carrier Site Name	:	**Madison South / Rt 1**
Carrier Site Number	:	**CT11167A**
Site Location	:	**8 Old 79** **Madison, CT 06443-2685** **41.28553333 , -72.60134167**
County	:	**New Haven**
Date	:	**November 4, 2021**
Max Usage	:	**77%**
Result	:	**Pass**

Prepared By:
Rohith Koduru
Structural Engineer I

Reviewed By:

Authorized by "EOR"
05 Nov 2021 09:08:11 cosign

COA: PEC.0001553

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Table of Contents

Introduction

The purpose of this report is to summarize results of the mount analysis performed for T-Mobile at 118 ft.

Supporting Documents

Specifications Sheet	Commscope MC-PK-12S4-B, dated July 13, 2016
Radio Frequency Data Sheet	RFDS ID #CT11167A, dated July 26, 2021
Reference Photos	Site photos from 2019

Analysis

This mount was analyzed using American Tower Corporation's Mount Analysis Program and RISA-3D

Basic Wind Speed:	123 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1'' radial ice concurrent
Codes:	ANSI/TIA-222-H
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Flat
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.205, S1 = 0.054
Site Class:	D - Stiff Soil
Live Loads:	Lm = 500 lbs

*** Based on experience, it has been determined that the Lv load cases will not control over Lm load cases in platform mount analyses. Therefore, these load cases have been excluded from this analysis.**

Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above. The mount can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

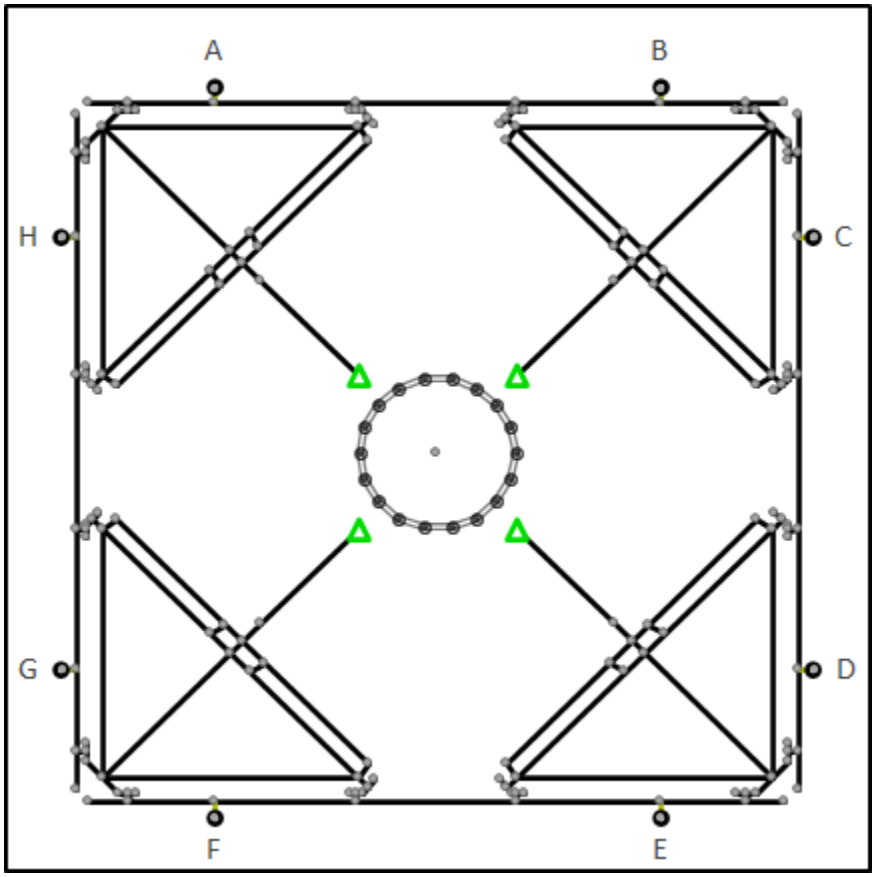
Application Loading

Mount Centerline (ft)	Equipment Centerline (ft)	Qty	Equipment Manufacturer & Model
118.0	121.0	4	RFS APXVAALL24 43-U-NA20
	120.0	4	Ericsson Air6449 B41
		4	Ericsson Radio 4480 B71+B85A
		4	Ericsson Radio 4460 B25+B66

Structure Usages

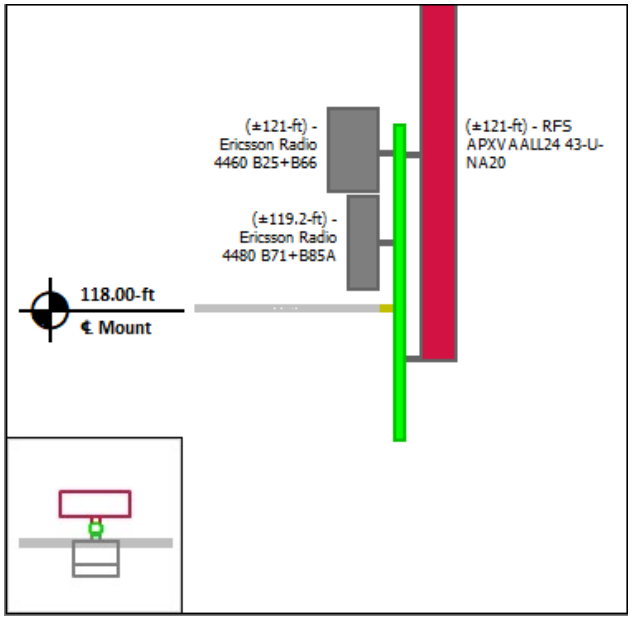
Structural Component	Controlling Usage	Pass/Fail
Horizontals	77%	Pass
Mount Pipes	54%	Pass
Connection Check	34%	Pass

Mount Layout

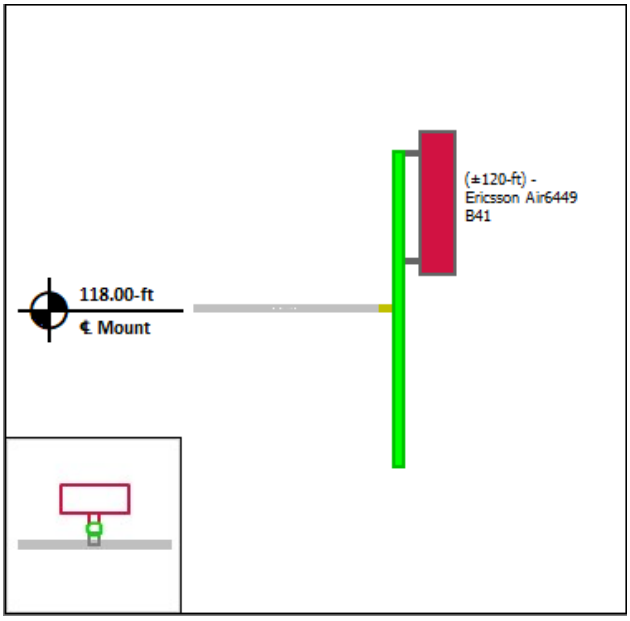


Equipment Layout

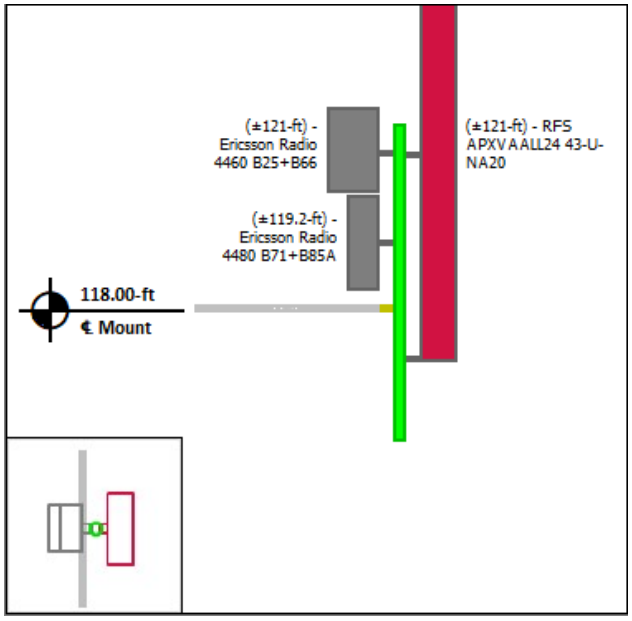
Mount Pipe A



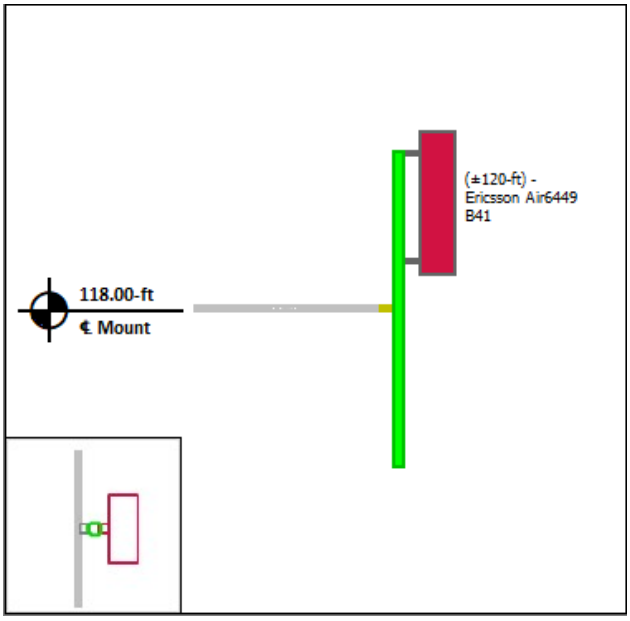
Mount Pipe B



Mount Pipe C

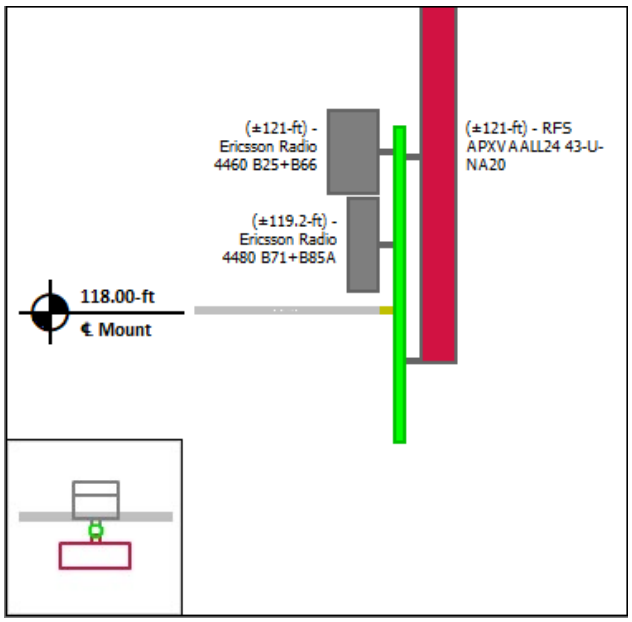


Mount Pipe D

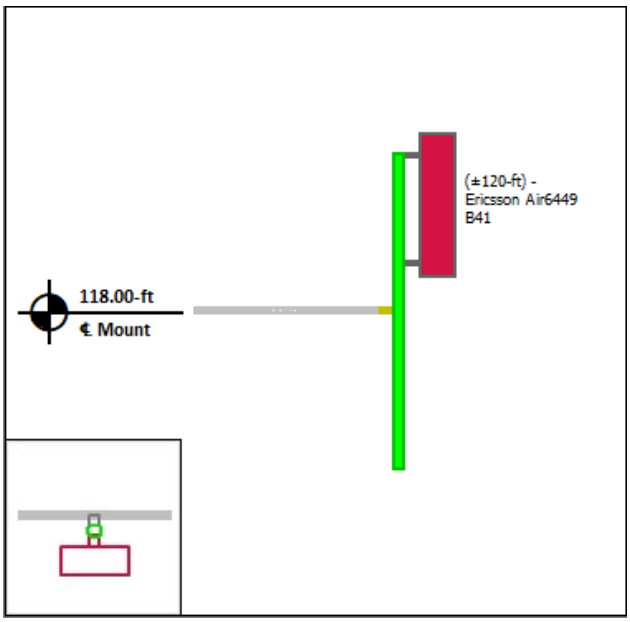


Equipment Layout Cont'd.

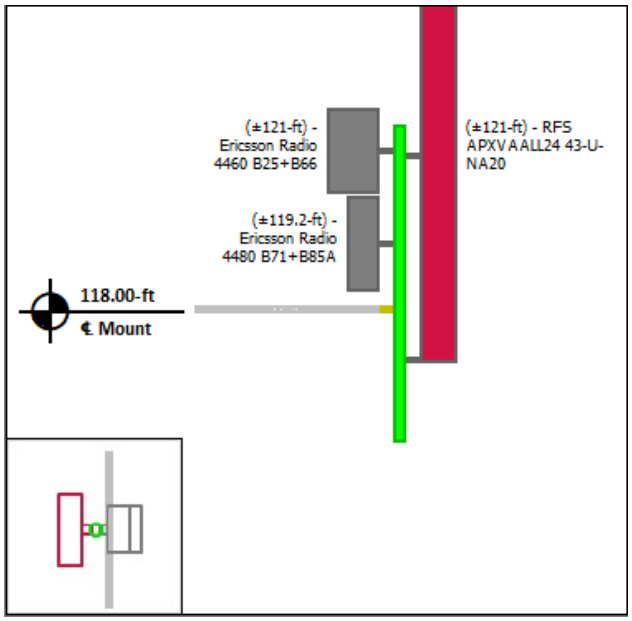
Mount Pipe E



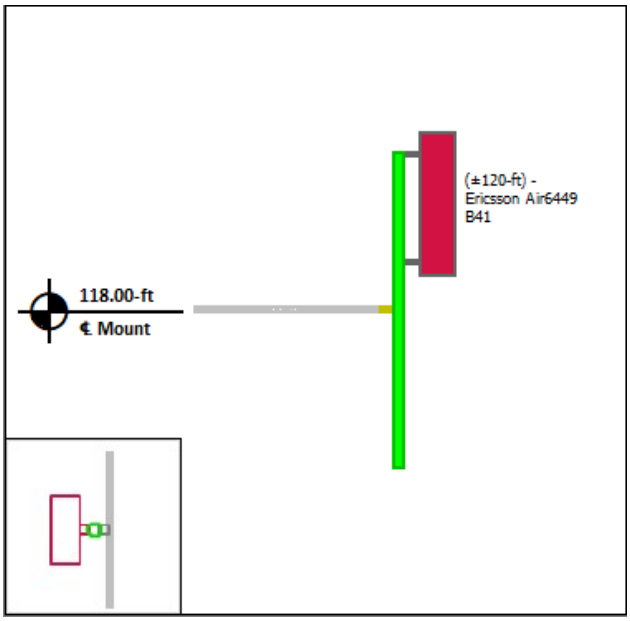
Mount Pipe F



Mount Pipe G



Mount Pipe H



Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding equipment, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

All connections are to be verified for condition and tightness by the installation contractor preceding any changes to the appurtenance mounting system and/or equipment attached to it.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

Installation of all equipment and steel should be confirmed not to cause tower conflicts nor impede the tower climbing pegs.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

AMERICAN TOWER®
CORPORATION

Site Number:	*302540*
Project Number:	*13726694_C8_05*
Carrier:	*T-Mobile*
Mount Elevation:	*118 ft*
Date:	11/4/2021

Mount Analysis Force Calculations

Wind & Ice Load Calculations			
Velocity Pressure Coefficient	K_z	1.04	
Topographic Factor	K_{zt}	1.00	
Rooftop Wind Speed-up Factor	K_s	1.00	
Shielding Factor	K_a	0.90	
Ground Elevation Factor	K_e	1.00	
Wind Direction Probability Factor	K_d	0.95	
Basic Wind Speed	V	123	mph
Velocity Pressure	q_z	38.1	psf
Height Escalation Factor	K_{iz}	1.14	
Thickness of Radial Glaze Ice	T_{iz}	1.14	in

Seismic Load Calculations			
Short Period DSRAP	S_{DS}	0.219	
1 Second DSRAP	S_{D1}	0.086	
Importance Factor	I	1.0	
Response Modification Coefficient	R	2.0	
Seismic Response Coefficient	C_S	0.109	
Amplification Factor	A	1.0	
Total Weight	W	3450.8	lbs
Total Shear Force	V_S	377.3	lbs
Horizontal Seismic Load	Eh	377.3	lbs
Vertical Seismic Load	Ev	150.9	lbs

Antenna Calculations (Elevations per Application/RFDS)*

Equipment	Height	Width	Depth	Weight	EPA_N	EPA_T	EPA_{Ni}	EPA_{Ti}
Model #	in	in	in	lbs	sqft	sqft	sqft	sqft
RFS APXVAALL24 43-U-NA20	95.9	24.0	8.5	122.8	20.24	3.40	22.68	4.41
Ericsson Air6449 B41	33.1	20.6	8.6	104.0	5.68	1.56	6.74	2.11
Ericsson Radio 4480 B71+B85A	21.8	15.7	7.5	84.0	2.85	1.38	3.61	1.99
Ericsson Radio 4460 B25+B66	19.6	15.7	12.1	109.0	2.56	1.98	3.28	2.62

**** Equipment with EPA values N/A were not considered in the mount analysis***

AMERICAN TOWER®
CORPORATION

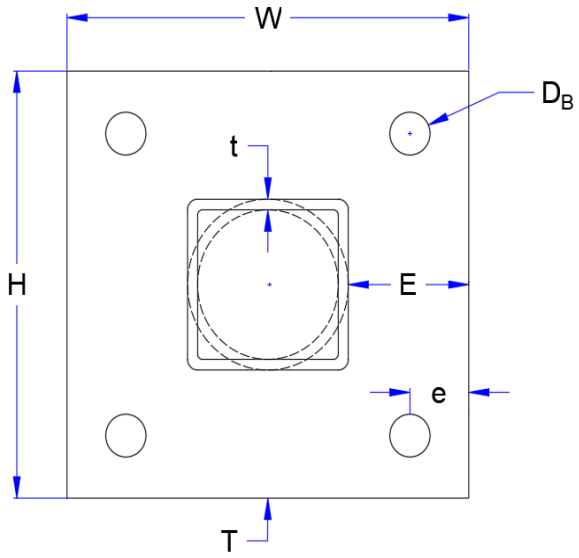
Site Number:	*302540*
Project Number:	*13726694_C8_05*
Carrier:	*T-Mobile*
Mount Elevation:	*118 ft*
Date:	11/4/2021

Mount-to-Tower Connection Analysis

Applied Loads from RISA 3D			
Controlling Load Combination		33	
Node Label		N002	
Force in X	Fx	-332.3	lbs
Force in Y	Fy	2003.9	lbs
Force in Z	Fz	-448.8	lbs
Moment about X	Mx	-6320.5	lb-ft
Moment about Y	My	146.1	lb-ft
Moment about Z	Mz	6053.6	lb-ft

Bolt Shear and Tensile Capacity			
Bolt Quantity	n	4	
Bolt Diameter	D_B	5/8	in
Bolt Edge Distance	e	1.5	in
Bolt Grade		A325	
Bolt Fy	Fy_B	92	ksi
Bolt Fu	Fu_B	120	ksi
Applied Shear	Vu	1.43	k
Applied Tension	Tu	5.43	k
Tensile Strength	ϕTn	20.3	k
Interaction Capacity	(Tu+Vu)/ϕTn	34%	Pass

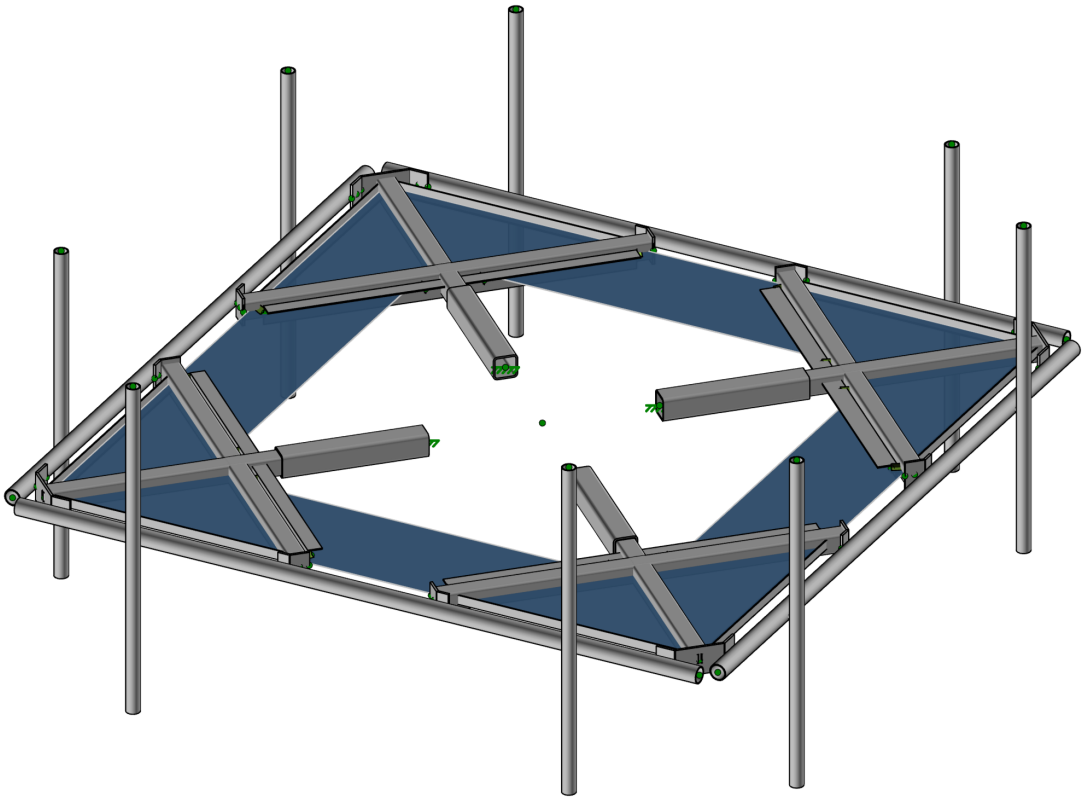
Plate Flexural Capacity			
Plate Height	H	10	in
Plate Width	W	10	in
Plate Thickness	T	5/8	in
Plate Grade		A36	
Plate Fy	Fy_P	36	ksi
Plate Fu	Fu_P	58	ksi
Shear Capacity	ϕVn	41.8	k
Applied Moment	Mu	10.9	k-in
Flexural Strength	ϕMn	51.0	k-in
Flexural Capacity	Mu/ϕMn	21%	Pass



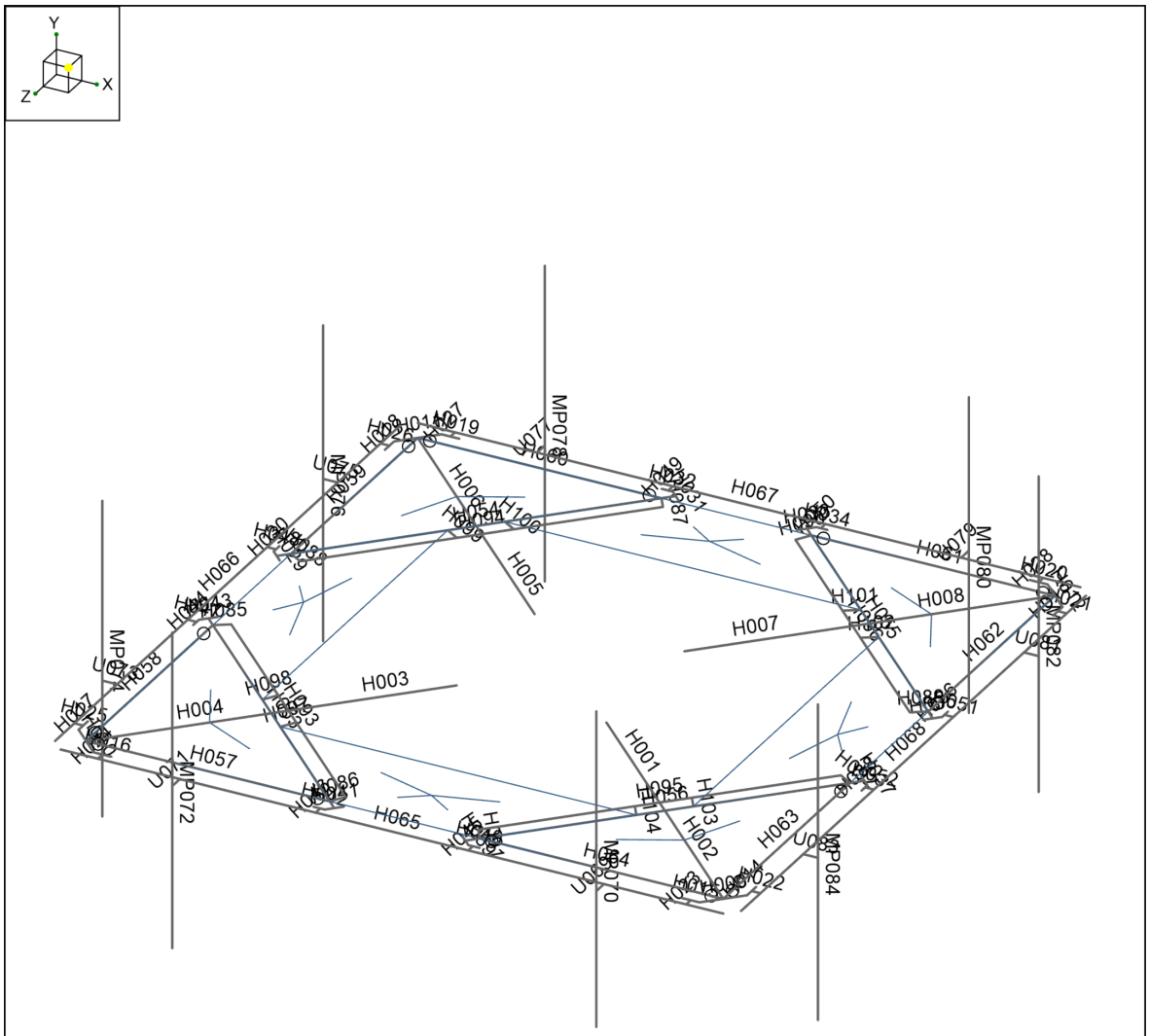
Weld and Base Metal Capacity			
Standoff Type		Tube	
Standoff Member		HSS5x5x6	
Member Edge Distance	E	2.5	in
Member Width	w	5	in
Member Thickness	t	0.375	in
Member Grade		A53 Gr. B	
Member Fy	Fy_M	35	ksi
Member Fu	Fu_M	60	ksi
Weld Size	a	5/16	in
Weld Length	l	20.0	in
Applied Load	Pu	10.9	k
Weld Strength	ϕRn	69.6	k
Weld Capacity	Pu/ϕRn	16%	Pass

Minimum Base Metal Thickness	0.258	in
Controlling Base Metal Thickness	0.375	in
Base Metal Result	Acceptable	

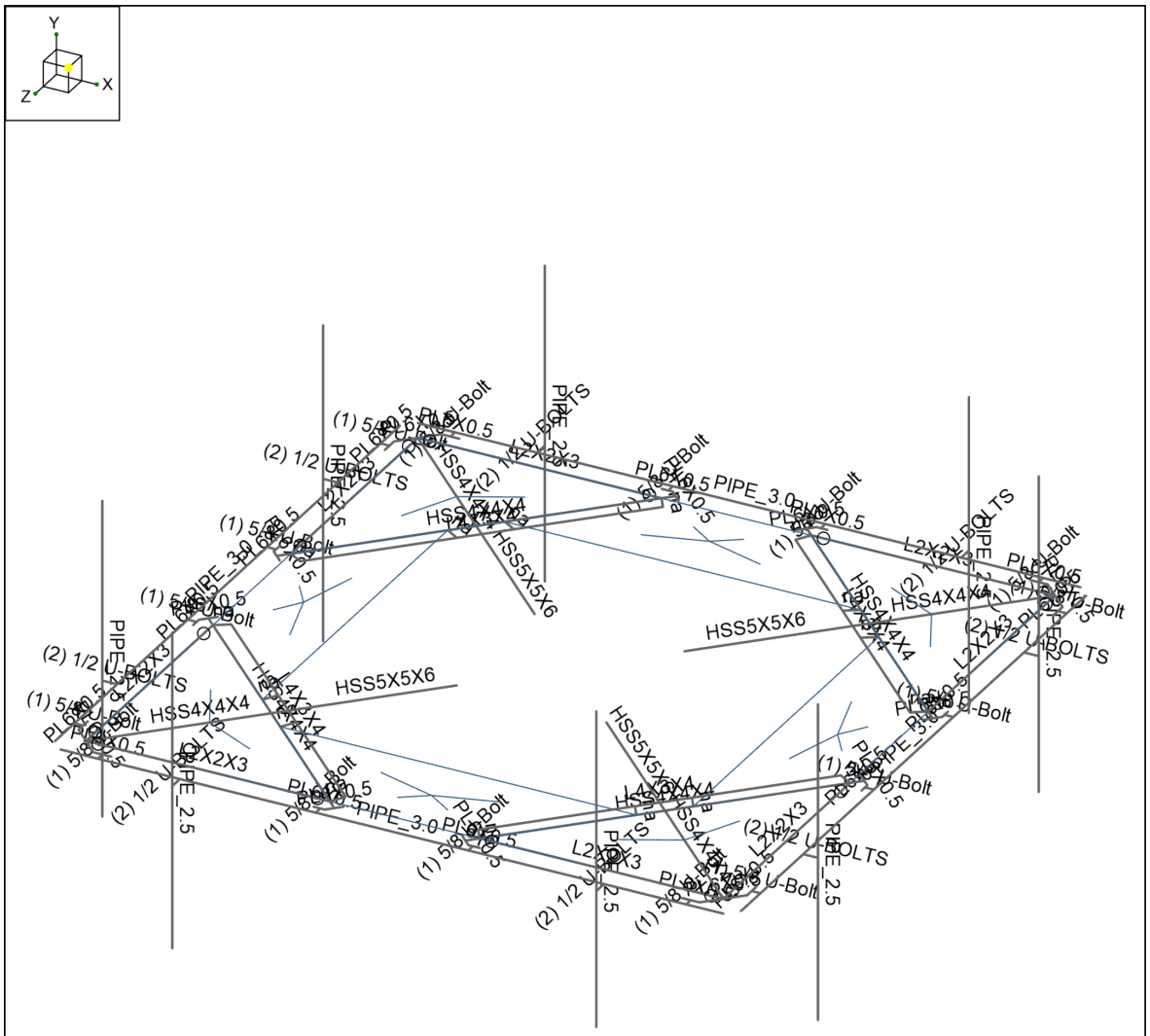
Prying Action Considerations							
Moment Arm	b	1.00	in	Minimum Thickness	t_{min}	0.22	in
Effective Moment Arm	b'	0.69	in	No Prying Thickness	t_{np}	0.30	in
Tributary Length	p	3.25	in	Min Bolt Strength Thickness	t_c	0.57	k-in
Effective Edge Distance	a'	1.56	in	Prying Action Bolt Tension	T_{up}	0.00	k



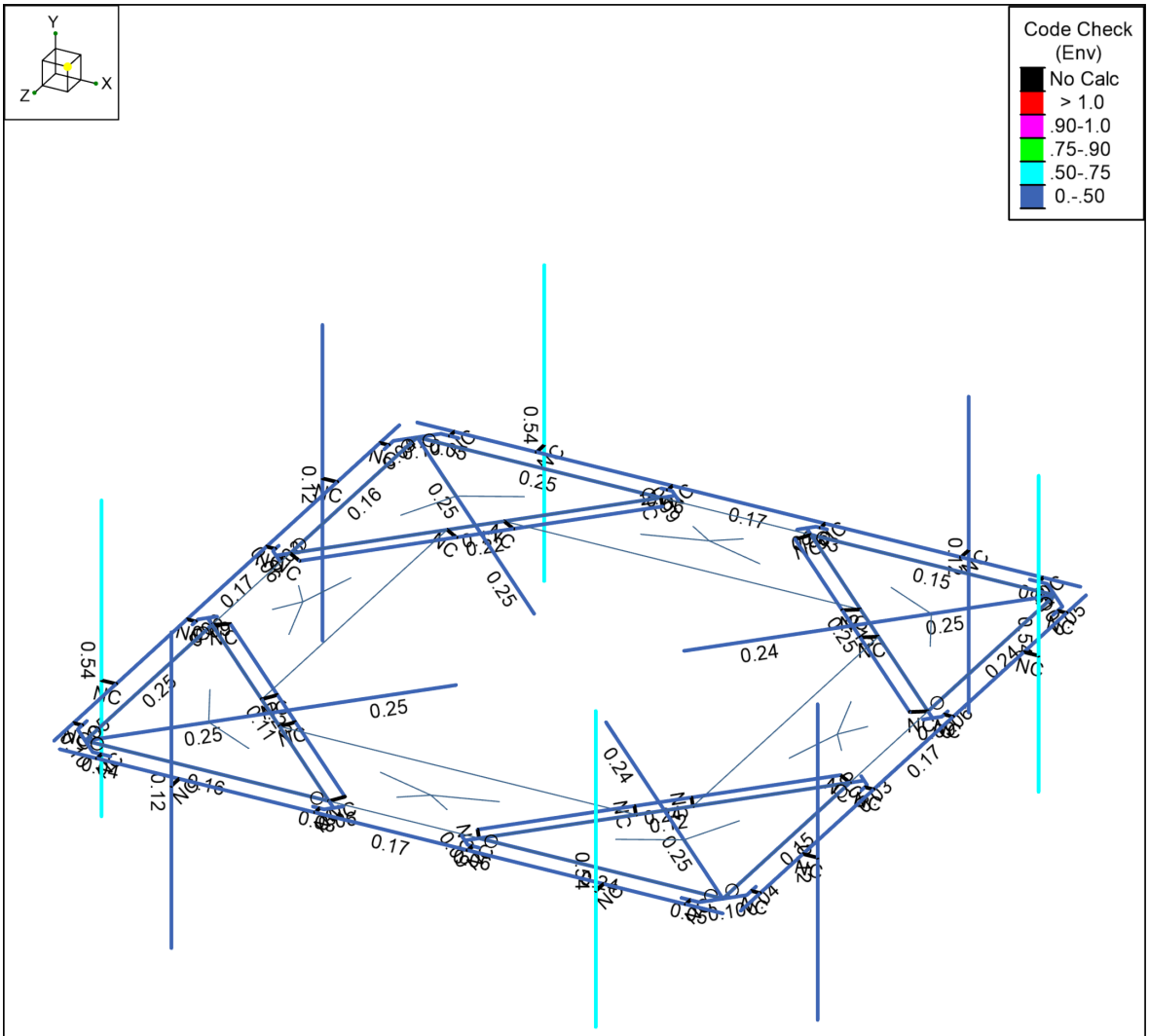
American Tower Corp.	302540, Madison CT 6	SK-1
Rohith.Koduru		Nov 04, 2021
13726694_C8_05		R3D. T-MOBILE @ 302540, Ma…



American Tower Corp.	302540, Madison CT 6	SK-2
Rohith.Koduru		Nov 04, 2021
13726694_C8_05		R3D. T-MOBILE @ 302540, Ma…

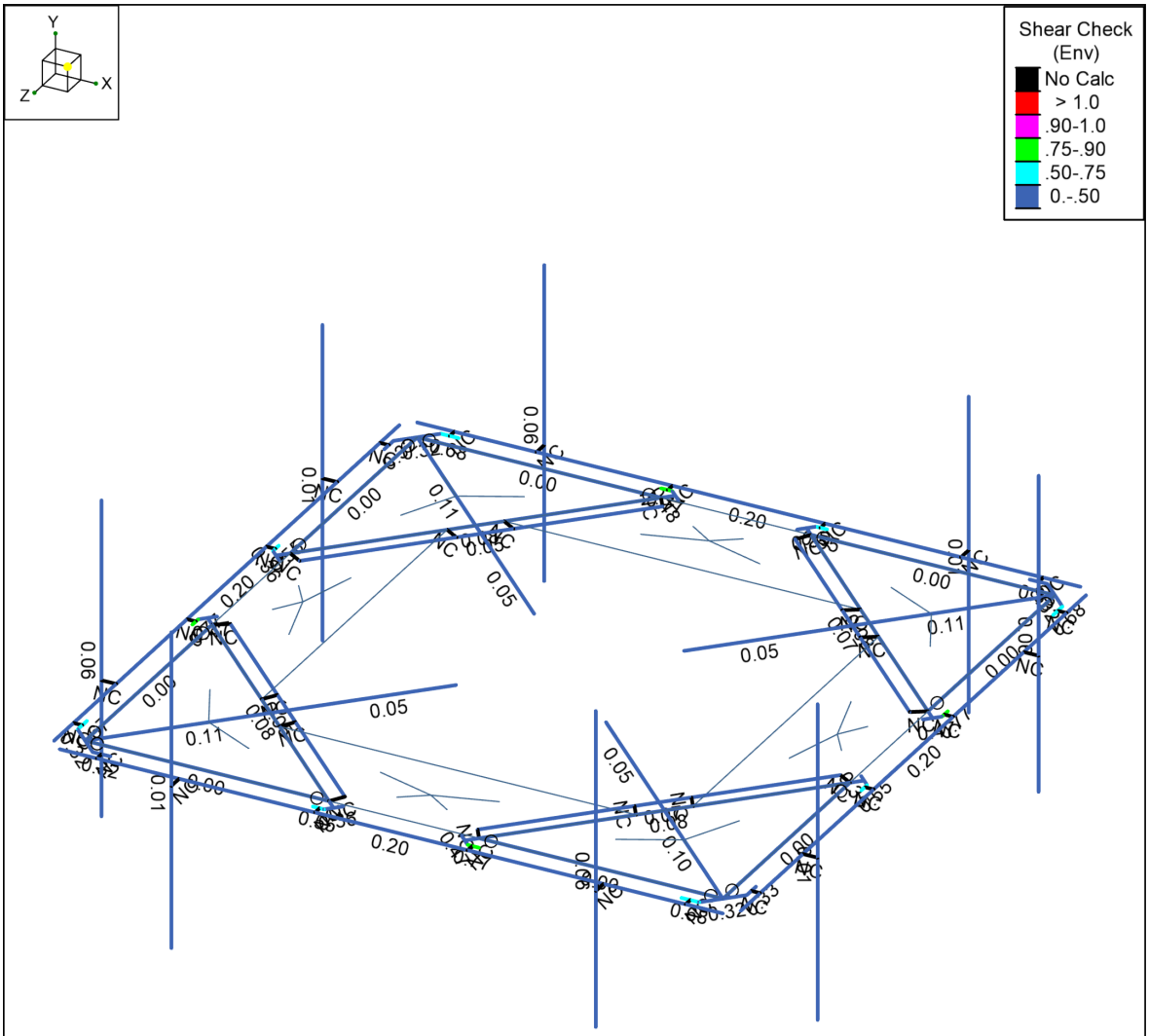


American Tower Corp.	302540, Madison CT 6	SK-3
Rohith.Koduru		Nov 04, 2021
13726694_C8_05		R3D. T-MOBILE @ 302540, Ma…



Member Code Checks Displayed (Enveloped)

American Tower Corp.	302540, Madison CT 6	SK-4
Rohith.Koduru		Nov 04, 2021
13726694_C8_05		R3D. T-MOBILE @ 302540, Ma…



Member Shear Checks Displayed (Enveloped)

American Tower Corp.	302540, Madison CT 6	SK-5
Rohith.Koduru		Nov 04, 2021
13726694_C8_05		R3D. T-MOBILE @ 302540, Ma…

Node Boundary Conditions

	Node Label	X [lb/in]	Y [lb/in]	Z [lb/in]	X Rot [k-in/rad]	Y Rot [k-in/rad]	Z Rot [k-in/rad]
1	N002	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N005	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N006	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N007	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	H001	N002	N003		HSS5X5X6	Beam	None	A500 Gr. C	Typical
2	H002	N003	N004		HSS4X4X4	Beam	None	A500 Gr. C	Typical
3	H003	N006	N008		HSS5X5X6	Beam	None	A500 Gr. C	Typical
4	H004	N008	N012		HSS4X4X4	Beam	None	A500 Gr. C	Typical
5	H005	N005	N009		HSS5X5X6	Beam	None	A500 Gr. C	Typical
6	H006	N009	N011		HSS4X4X4	Beam	None	A500 Gr. C	Typical
7	H007	N007	N010		HSS5X5X6	Beam	None	A500 Gr. C	Typical
8	H008	N010	N013		HSS4X4X4	Beam	None	A500 Gr. C	Typical
9	H009	N016	N017		PL6X0.5	Beam	None	A572-50	Typical
10	H010	N018	N019		PL6X0.5	Beam	None	A572-50	Typical
11	H011	N015	N014		PL6X0.5	Beam	None	A572-50	Typical
12	H012	N021	N020		PL6X0.5	Beam	None	A572-50	Typical
13	H013	N020	N029		PL6X0.5	Beam	None	A572-50	Typical
14	H014	N016	N028		PL6X0.5	Beam	None	A572-50	Typical
15	H015	N017	N042		PL6X0.5	Beam	None	A572-50	Typical
16	H016	N018	N039		PL6X0.5	Beam	None	A572-50	Typical
17	H017	N019	N034		PL6X0.5	Beam	None	A572-50	Typical
18	H018	N015	N035		PL6X0.5	Beam	None	A572-50	Typical
19	H019	N014	N045		PL6X0.5	Beam	None	A572-50	Typical
20	H020	N021	N048		PL6X0.5	Beam	None	A572-50	Typical
21	H021	N026	N030		(1) 5/8 U-Bolt	Beam	None	A36	Typical
22	H022	N027	N031		(1) 5/8 U-Bolt	Beam	None	A36	Typical
23	H023	N041	N043		(1) 5/8 U-Bolt	Beam	None	A36	Typical
24	H024	N038	N040		(1) 5/8 U-Bolt	Beam	None	A36	Typical
25	H025	N033	N037		(1) 5/8 U-Bolt	Beam	None	A36	Typical
26	H026	N032	N036		(1) 5/8 U-Bolt	Beam	None	A36	Typical
27	H027	N044	N046		(1) 5/8 U-Bolt	Beam	None	A36	Typical
28	H028	N047	N049		(1) 5/8 U-Bolt	Beam	None	A36	Typical
29	H029	N058	N061		PL6X0.5	Beam	None	A572-50	Typical
30	H030	N061	N059		PL6X0.5	Beam	None	A572-50	Typical
31	H031	N062	N065		PL6X0.5	Beam	None	A572-50	Typical
32	H032	N065	N063		PL6X0.5	Beam	None	A572-50	Typical
33	H033	N082	N085		PL6X0.5	Beam	None	A572-50	Typical
34	H034	N085	N083		PL6X0.5	Beam	None	A572-50	Typical
35	H035	N074	N077		PL6X0.5	Beam	None	A572-50	Typical
36	H036	N077	N075		PL6X0.5	Beam	None	A572-50	Typical
37	H037	N078	N081		PL6X0.5	Beam	None	A572-50	Typical
38	H038	N081	N079		PL6X0.5	Beam	None	A572-50	Typical
39	H039	N086	N089		PL6X0.5	Beam	None	A572-50	Typical
40	H040	N089	N087		PL6X0.5	Beam	None	A572-50	Typical
41	H041	N070	N073		PL6X0.5	Beam	None	A572-50	Typical
42	H042	N073	N071		PL6X0.5	Beam	None	A572-50	Typical
43	H043	N066	N069		PL6X0.5	Beam	None	A572-50	Typical
44	H044	N069	N067		PL6X0.5	Beam	None	A572-50	Typical
45	H045	N094	N098		(1) 5/8 U-Bolt	Beam	None	A36	Typical
46	H046	N093	N099		(1) 5/8 U-Bolt	Beam	None	A36	Typical
47	H047	N097	N100		(1) 5/8 U-Bolt	Beam	None	A36	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
48	H048	N090	N101		(1) 5/8 U-Bolt	Beam	None	A36	Typical
49	H049	N091	N102		(1) 5/8 U-Bolt	Beam	None	A36	Typical
50	H050	N092	N103		(1) 5/8 U-Bolt	Beam	None	A36	Typical
51	H051	N096	N104		(1) 5/8 U-Bolt	Beam	None	A36	Typical
52	H052	N095	N105		(1) 5/8 U-Bolt	Beam	None	A36	Typical
53	H053	N072	N068		HSS4X4X4	Beam	None	A500 Gr. B [SQR]	Typical
54	H054	N060	N064		HSS4X4X4	Beam	None	A500 Gr. B [SQR]	Typical
55	H055	N084	N076		HSS4X4X4	Beam	None	A500 Gr. B [SQR]	Typical
56	H056	N080	N088		HSS4X4X4	Beam	None	A500 Gr. B [SQR]	Typical
57	H057	N115	N012		L2X2X3	Beam	None	A572-50	Typical
58	H058	N012	N121		L2X2X3	Beam	None	A572-50	Typical
59	H059	N120	N011		L2X2X3	Beam	None	A572-50	Typical
60	H060	N011	N117		L2X2X3	Beam	None	A572-50	Typical
61	H061	N116	N013		L2X2X3	Beam	None	A572-50	Typical
62	H062	N013	N119		L2X2X3	Beam	None	A572-50	Typical
63	H063	N118	N004		L2X2X3	Beam	None	A572-50	Typical
64	H064	N004	N114		L2X2X3	Beam	None	A572-50	Typical
65	H065	N057	N056		PIPE_3.0	Beam	None	A500 Gr. C	Typical
66	H066	N055	N054		PIPE_3.0	Beam	None	A500 Gr. C	Typical
67	H067	N050	N051		PIPE_3.0	Beam	None	A500 Gr. C	Typical
68	H068	N053	N052		PIPE_3.0	Beam	None	A500 Gr. C	Typical
69	U069	N122	N130		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
70	MP070	N131	N132		PIPE_2.5	Column	None	A53 Gr. B	Typical
71	U071	N123	N133		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
72	MP072	N134	N135		PIPE_2.5	Column	None	A53 Gr. B	Typical
73	U073	N124	N136		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
74	MP074	N137	N138		PIPE_2.5	Column	None	A53 Gr. B	Typical
75	U075	N125	N139		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
76	MP076	N140	N141		PIPE_2.5	Column	None	A53 Gr. B	Typical
77	U077	N126	N142		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
78	MP078	N143	N144		PIPE_2.5	Column	None	A53 Gr. B	Typical
79	U079	N127	N145		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
80	MP080	N146	N147		PIPE_2.5	Column	None	A53 Gr. B	Typical
81	U081	N128	N148		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
82	MP082	N149	N150		PIPE_2.5	Column	None	A53 Gr. B	Typical
83	U083	N129	N151		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
84	MP084	N152	N153		PIPE_2.5	Column	None	A53 Gr. B	Typical
85	H085	N121	N154		RIGID	None	None	RIGID	Typical
86	H086	N115	N155		RIGID	None	None	RIGID	Typical
87	H087	N117	N157		RIGID	None	None	RIGID	Typical
88	H088	N120	N156		RIGID	None	None	RIGID	Typical
89	H089	N119	N159		RIGID	None	None	RIGID	Typical
90	H090	N116	N158		RIGID	None	None	RIGID	Typical
91	H091	N114	N161		RIGID	None	None	RIGID	Typical
92	H092	N118	N160		RIGID	None	None	RIGID	Typical
93	H093	N154	N155	180	L4X3X4	Beam	None	A36	Typical
94	H094	N157	N156	180	L4X3X4	Beam	None	A36	Typical
95	H095	N160	N161	90	L4X3X4	Beam	None	A36	Typical
96	H096	N158	N159	90	L4X3X4	Beam	None	A36	Typical
97	H097	N167	N109		RIGID	None	None	RIGID	Typical
98	H098	N166	N108		RIGID	None	None	RIGID	Typical
99	H099	N169	N106		RIGID	None	None	RIGID	Typical
100	H100	N168	N107		RIGID	None	None	RIGID	Typical
101	H101	N170	N113		RIGID	None	None	RIGID	Typical
102	H102	N171	N112		RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
103	H103	N111	N172		RIGID	None	None	RIGID	Typical
104	H104	N110	N173		RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	I Release	J Release	Physical	Deflection Ratio Options	Activation	Seismic DR
1	H001			Yes	N/A		None
2	H002			Yes	N/A		None
3	H003			Yes	N/A		None
4	H004			Yes	N/A		None
5	H005			Yes	N/A		None
6	H006			Yes	N/A		None
7	H007			Yes	N/A		None
8	H008			Yes	N/A		None
9	H009			Yes	N/A		None
10	H010			Yes	N/A		None
11	H011			Yes	N/A		None
12	H012			Yes	N/A		None
13	H013			Yes	N/A		None
14	H014			Yes	N/A		None
15	H015			Yes	N/A		None
16	H016			Yes	N/A		None
17	H017			Yes	N/A		None
18	H018			Yes	N/A		None
19	H019			Yes	N/A		None
20	H020			Yes	N/A		None
21	H021			Yes	Default	Exclude	None
22	H022			Yes	Default	Exclude	None
23	H023			Yes	Default	Exclude	None
24	H024			Yes	Default	Exclude	None
25	H025			Yes	Default	Exclude	None
26	H026			Yes	Default	Exclude	None
27	H027			Yes	Default	Exclude	None
28	H028			Yes	Default	Exclude	None
29	H029			Yes	N/A		None
30	H030			Yes	N/A		None
31	H031			Yes	N/A		None
32	H032			Yes	N/A		None
33	H033			Yes	N/A		None
34	H034			Yes	N/A		None
35	H035			Yes	N/A		None
36	H036			Yes	N/A		None
37	H037			Yes	N/A		None
38	H038			Yes	N/A		None
39	H039			Yes	N/A		None
40	H040			Yes	N/A		None
41	H041			Yes	N/A		None
42	H042			Yes	N/A		None
43	H043			Yes	N/A		None
44	H044			Yes	N/A		None
45	H045			Yes	Default	Exclude	None
46	H046			Yes	Default	Exclude	None
47	H047			Yes	Default	Exclude	None
48	H048			Yes	Default	Exclude	None
49	H049			Yes	Default	Exclude	None
50	H050			Yes	Default	Exclude	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Activation	Seismic DR
51	H051			Yes	Default	Exclude	None
52	H052			Yes	Default	Exclude	None
53	H053			Yes	N/A		None
54	H054			Yes	N/A		None
55	H055			Yes	N/A		None
56	H056			Yes	N/A		None
57	H057	BenPIN	BenPIN	Yes	N/A		None
58	H058	BenPIN	BenPIN	Yes	N/A		None
59	H059	BenPIN	BenPIN	Yes	N/A		None
60	H060	BenPIN	BenPIN	Yes	N/A		None
61	H061	BenPIN	BenPIN	Yes	N/A		None
62	H062	BenPIN	BenPIN	Yes	N/A		None
63	H063	BenPIN	BenPIN	Yes	N/A		None
64	H064	BenPIN	BenPIN	Yes	N/A		None
65	H065			Yes	N/A		None
66	H066			Yes	N/A		None
67	H067			Yes	N/A		None
68	H068			Yes	N/A		None
69	U069			Yes	N/A	Exclude	None
70	MP070			Yes	** NA **		None
71	U071			Yes	N/A	Exclude	None
72	MP072			Yes	** NA **		None
73	U073			Yes	N/A	Exclude	None
74	MP074			Yes	** NA **		None
75	U075			Yes	N/A	Exclude	None
76	MP076			Yes	** NA **		None
77	U077			Yes	N/A	Exclude	None
78	MP078			Yes	** NA **		None
79	U079			Yes	N/A	Exclude	None
80	MP080			Yes	** NA **		None
81	U081			Yes	N/A	Exclude	None
82	MP082			Yes	** NA **		None
83	U083			Yes	N/A	Exclude	None
84	MP084			Yes	** NA **		None
85	H085			Yes	** NA **		None
86	H086			Yes	** NA **		None
87	H087			Yes	** NA **		None
88	H088			Yes	** NA **		None
89	H089			Yes	** NA **		None
90	H090			Yes	** NA **		None
91	H091			Yes	** NA **		None
92	H092			Yes	** NA **		None
93	H093			Yes	N/A		None
94	H094			Yes	N/A		None
95	H095			Yes	N/A		None
96	H096			Yes	N/A		None
97	H097			Yes	** NA **		None
98	H098			Yes	** NA **		None
99	H099			Yes	** NA **		None
100	H100			Yes	** NA **		None
101	H101			Yes	** NA **		None
102	H102			Yes	** NA **		None
103	H103			Yes	** NA **		None
104	H104			Yes	** NA **		None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function
1	H001	HSS5X5X6	30			Lbyy		1	1	Lateral
2	H002	HSS4X4X4	48			Lbyy		0.65	0.65	Lateral
3	H003	HSS5X5X6	30			Lbyy		1	1	Lateral
4	H004	HSS4X4X4	48			Lbyy		0.65	0.65	Lateral
5	H005	HSS5X5X6	30			Lbyy		1	1	Lateral
6	H006	HSS4X4X4	48			Lbyy		0.65	0.65	Lateral
7	H007	HSS5X5X6	30			Lbyy		1	1	Lateral
8	H008	HSS4X4X4	48			Lbyy		0.65	0.65	Lateral
9	H009	PL6X0.5	10			Lbyy		0.65	0.65	Lateral
10	H010	PL6X0.5	10			Lbyy		0.65	0.65	Lateral
11	H011	PL6X0.5	10			Lbyy		0.65	0.65	Lateral
12	H012	PL6X0.5	10			Lbyy		0.65	0.65	Lateral
13	H013	PL6X0.5	4			Lbyy		0.65	0.65	Lateral
14	H014	PL6X0.5	4.001			Lbyy		0.65	0.65	Lateral
15	H015	PL6X0.5	4.001			Lbyy		0.65	0.65	Lateral
16	H016	PL6X0.5	4.001			Lbyy		0.65	0.65	Lateral
17	H017	PL6X0.5	4.001			Lbyy		0.65	0.65	Lateral
18	H018	PL6X0.5	4			Lbyy		0.65	0.65	Lateral
19	H019	PL6X0.5	4.001			Lbyy		0.65	0.65	Lateral
20	H020	PL6X0.5	4.001			Lbyy		0.65	0.65	Lateral
21	H021	(1) 5/8 U-Bolt	2			Lbyy		0.65	0.65	Lateral
22	H022	(1) 5/8 U-Bolt	2			Lbyy		0.65	0.65	Lateral
23	H023	(1) 5/8 U-Bolt	2			Lbyy		0.65	0.65	Lateral
24	H024	(1) 5/8 U-Bolt	2			Lbyy		0.65	0.65	Lateral
25	H025	(1) 5/8 U-Bolt	2			Lbyy		0.65	0.65	Lateral
26	H026	(1) 5/8 U-Bolt	2			Lbyy		0.65	0.65	Lateral
27	H027	(1) 5/8 U-Bolt	2			Lbyy		0.65	0.65	Lateral
28	H028	(1) 5/8 U-Bolt	2			Lbyy		0.65	0.65	Lateral
29	H029	PL6X0.5	4			Lbyy		1	1	Lateral
30	H030	PL6X0.5	2.5			Lbyy		1	1	Lateral
31	H031	PL6X0.5	4			Lbyy		1	1	Lateral
32	H032	PL6X0.5	2.5			Lbyy		1	1	Lateral
33	H033	PL6X0.5	4			Lbyy		1	1	Lateral
34	H034	PL6X0.5	2.5			Lbyy		1	1	Lateral
35	H035	PL6X0.5	4			Lbyy		1	1	Lateral
36	H036	PL6X0.5	2.5			Lbyy		1	1	Lateral
37	H037	PL6X0.5	4			Lbyy		1	1	Lateral
38	H038	PL6X0.5	2.5			Lbyy		1	1	Lateral
39	H039	PL6X0.5	4			Lbyy		1	1	Lateral
40	H040	PL6X0.5	2.5			Lbyy		1	1	Lateral
41	H041	PL6X0.5	4			Lbyy		1	1	Lateral
42	H042	PL6X0.5	2.5			Lbyy		1	1	Lateral
43	H043	PL6X0.5	4			Lbyy		1	1	Lateral
44	H044	PL6X0.5	2.5			Lbyy		1	1	Lateral
45	H045	(1) 5/8 U-Bolt	2			Lbyy		0.65	0.65	Lateral
46	H046	(1) 5/8 U-Bolt	2			Lbyy		0.65	0.65	Lateral
47	H047	(1) 5/8 U-Bolt	2			Lbyy		0.65	0.65	Lateral
48	H048	(1) 5/8 U-Bolt	2			Lbyy		0.65	0.65	Lateral
49	H049	(1) 5/8 U-Bolt	2			Lbyy		0.65	0.65	Lateral
50	H050	(1) 5/8 U-Bolt	2			Lbyy		0.65	0.65	Lateral
51	H051	(1) 5/8 U-Bolt	2			Lbyy		0.65	0.65	Lateral
52	H052	(1) 5/8 U-Bolt	2			Lbyy		0.65	0.65	Lateral
53	H053	HSS4X4X4	84			Lbyy		0.65	0.65	Lateral
54	H054	HSS4X4X4	84			Lbyy		0.65	0.65	Lateral
55	H055	HSS4X4X4	84			Lbyy		0.65	0.65	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function
56	H056	HSS4X4X4	84			Lbyy		0.65	0.65	Lateral
57	H057	L2X2X3	55.154			Lbyy		1	1	Lateral
58	H058	L2X2X3	55.154			Lbyy		1	1	Lateral
59	H059	L2X2X3	55.154			Lbyy		1	1	Lateral
60	H060	L2X2X3	55.154			Lbyy		1	1	Lateral
61	H061	L2X2X3	55.154			Lbyy		1	1	Lateral
62	H062	L2X2X3	55.154			Lbyy		1	1	Lateral
63	H063	L2X2X3	55.154			Lbyy		1	1	Lateral
64	H064	L2X2X3	55.154			Lbyy		1	1	Lateral
65	H065	PIPE_3.0	150			Lbyy		1	1	Lateral
66	H066	PIPE_3.0	150			Lbyy		1	1	Lateral
67	H067	PIPE_3.0	150			Lbyy		1	1	Lateral
68	H068	PIPE_3.0	150			Lbyy		1	1	Lateral
69	U069	(2) 1/2 U-BOLTS	3.34			Lbyy		0.5	0.5	Lateral
70	MP070	PIPE_2.5	72	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
71	U071	(2) 1/2 U-BOLTS	3.34			Lbyy		0.5	0.5	Lateral
72	MP072	PIPE_2.5	72	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
73	U073	(2) 1/2 U-BOLTS	3.34			Lbyy		0.5	0.5	Lateral
74	MP074	PIPE_2.5	72	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
75	U075	(2) 1/2 U-BOLTS	3.34			Lbyy		0.5	0.5	Lateral
76	MP076	PIPE_2.5	72	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
77	U077	(2) 1/2 U-BOLTS	3.34			Lbyy		0.5	0.5	Lateral
78	MP078	PIPE_2.5	72	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
79	U079	(2) 1/2 U-BOLTS	3.34			Lbyy		0.5	0.5	Lateral
80	MP080	PIPE_2.5	72	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
81	U081	(2) 1/2 U-BOLTS	3.34			Lbyy		0.5	0.5	Lateral
82	MP082	PIPE_2.5	72	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
83	U083	(2) 1/2 U-BOLTS	3.34			Lbyy		0.5	0.5	Lateral
84	MP084	PIPE_2.5	72	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
85	H093	L4X3X4	76.368			Lbyy		0.65	0.65	Lateral
86	H094	L4X3X4	76.368			Lbyy		0.65	0.65	Lateral
87	H095	L4X3X4	76.368			Lbyy		0.65	0.65	Lateral
88	H096	L4X3X4	76.368			Lbyy		0.65	0.65	Lateral

Hot Rolled Steel Properties

	Label	E [psi]	G [psi]	Nu	Therm. Coeff. [1e^{5}°F^{-1}]	Density [lb/ft^{3}]	Yield [psi]	Ry	Fu [psi]	Rt
1	A500 Gr. C	2.9e+07	1.115e+07	0.3	0.65	490	46000	1.4	62000	1.3
2	A572-50	2.9e+07	1.115e+07	0.3	0.65	490	50000	1.1	65000	1.1
3	A36	2.9e+07	1.115e+07	0.3	0.65	490	36000	1.5	58000	1.2
4	A500 Gr. B [SQR]	2.9e+07	1.115e+07	0.3	0.65	527	46000	1.4	58000	1.3
5	A53 Gr. B	2.9e+07	1.115e+07	0.3	0.65	490	35000	1.6	60000	1.2

Envelope Node Reactions

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N002	max	1602.925	16	2006.64	34	2069.403	15	-696.068	15	1264.069	19	6303.374	154
2		min	-1652.929	10	519.136	16	-2121.243	9	-6395.485	69	-1266.692	13	370.163	16
3	N005	max	1674.339	4	2025.654	28	2140.872	3	6469.652	111	1307.206	25	-357.275	22
4		min	-1624.07	22	527.93	22	-2089.191	21	707.97	21	-1308.618	7	-6299.019	100
5	N006	max	2141.74	6	2026.559	31	1625.729	25	-359.038	25	1301.942	4	-698.715	24
6		min	-2090.118	24	521.279	25	-1675.795	7	-6340.309	79	-1301.025	22	-6424.564	90
7	N007	max	2068.494	18	2005.738	37	1651.514	13	6262.229	133	1269.426	22	6440.348	144
8		min	-2120.364	12	525.723	19	-1601.29	19	368.806	19	-1274.58	4	705.156	18
9	Totals:	max	5407.927	4	7861.537	31	5407.929	3						

Envelope Node Reactions (Continued)

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
10		min	-5407.927	22	3230.7	25	-5407.929	21						

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
1	H001	HSS5X5X6	0.244	0	33	0.052	0	y	67	251478.499	255852	36570	36570	1.292	H1-1b
2	H002	HSS4X4X4	0.25	0	9	0.103	0	y	67	135626.172	139518	16180.5	16180.5	2.075	H1-1b
3	H003	HSS5X5X6	0.245	0	30	0.052	0	y	88	251478.499	255852	36570	36570	1.294	H1-1b
4	H004	HSS4X4X4	0.248	0	6	0.105	0	y	88	135626.172	139518	16180.5	16180.5	2.089	H1-1b
5	H005	HSS5X5X6	0.245	0	27	0.054	0	y	121	251478.499	255852	36570	36570	1.294	H1-1b
6	H006	HSS4X4X4	0.248	0	3	0.109	0	y	121	135626.172	139518	16180.5	16180.5	2.088	H1-1b
7	H007	HSS5X5X6	0.244	0	36	0.053	0	y	142	251478.499	255852	36570	36570	1.292	H1-1b
8	H008	HSS4X4X4	0.25	0	12	0.107	0	y	142	135626.172	139518	16180.5	16180.5	2.074	H1-1b
9	H009	PL6X0.5	0.099	5	9	0.316	5	y	8	116395.393	135000	1406.25	16875	1.239	H1-1b
10	H010	PL6X0.5	0.099	5	6	0.317	5	y	5	116395.393	135000	1406.25	16875	1.242	H1-1b
11	H011	PL6X0.5	0.1	5	3	0.318	5	y	2	116395.393	135000	1406.25	16875	1.243	H1-1b
12	H012	PL6X0.5	0.1	5	12	0.317	5	y	11	116395.393	135000	1406.25	16875	1.24	H1-1b
13	H013	PL6X0.5	0.05	2	11	0.679	0	y	11	131834.808	135000	1406.25	16875	1.444	H1-1b
14	H014	PL6X0.5	0.039	2	10	0.326	0	y	11	131833.567	135000	1406.25	16875	1.358	H1-1b
15	H015	PL6X0.5	0.049	2	8	0.676	0	y	8	131833.567	135000	1406.25	16875	1.445	H1-1b
16	H016	PL6X0.5	0.039	2	7	0.321	0	y	8	131833.567	135000	1406.25	16875	1.353	H1-1b
17	H017	PL6X0.5	0.049	2	5	0.673	0	y	5	131833.567	135000	1406.25	16875	1.444	H1-1b
18	H018	PL6X0.5	0.039	2	4	0.32	0	y	5	131834.808	135000	1406.25	16875	1.353	H1-1b
19	H019	PL6X0.5	0.05	2	2	0.676	0	y	2	131833.567	135000	1406.25	16875	1.444	H1-1b
20	H020	PL6X0.5	0.039	2	13	0.325	0	y	2	131833.567	135000	1406.25	16875	1.358	H1-1b
21	H029	PL6X0.5	0.056	2	4	0.356	2	y	5	127628.119	135000	1406.25	16875	1.343	H1-1b
22	H030	PL6X0.5	0.027	0	4	0.553	0	y	5	132070.992	135000	1406.25	16875	2.906	H1-1b
23	H031	PL6X0.5	0.093	4	2	0.475	2	y	2	127628.119	135000	1406.25	16875	1.326	H1-1b
24	H032	PL6X0.5	0.062	0	3	0.774	0	y	2	132070.992	135000	1406.25	16875	2.466	H1-1b
25	H033	PL6X0.5	0.056	2	13	0.35	2	y	2	127628.119	135000	1406.25	16875	1.342	H1-1b
26	H034	PL6X0.5	0.028	0	13	0.546	0	y	2	132070.992	135000	1406.25	16875	2.839	H1-1b
27	H035	PL6X0.5	0.092	4	11	0.469	2	y	11	127628.119	135000	1406.25	16875	1.326	H1-1b
28	H036	PL6X0.5	0.062	0	12	0.77	0	y	11	132070.992	135000	1406.25	16875	2.442	H1-1b
29	H037	PL6X0.5	0.056	2	10	0.35	2	y	11	127628.119	135000	1406.25	16875	1.342	H1-1b
30	H038	PL6X0.5	0.028	0	10	0.547	0	y	11	132070.992	135000	1406.25	16875	2.852	H1-1b
31	H039	PL6X0.5	0.092	4	8	0.467	2	y	8	127628.119	135000	1406.25	16875	1.325	H1-1b
32	H040	PL6X0.5	0.062	0	9	0.766	0	y	8	132070.992	135000	1406.25	16875	2.44	H1-1b
33	H041	PL6X0.5	0.056	2	7	0.356	2	y	8	127628.119	135000	1406.25	16875	1.343	H1-1b
34	H042	PL6X0.5	0.028	0	7	0.554	0	y	8	132070.992	135000	1406.25	16875	2.921	H1-1b
35	H043	PL6X0.5	0.093	4	5	0.473	2	y	5	127628.119	135000	1406.25	16875	1.326	H1-1b
36	H044	PL6X0.5	0.062	0	6	0.771	0	y	5	132070.992	135000	1406.25	16875	2.463	H1-1b
37	H053	HSS4X4X4	0.113	42	30	0.081	81.375	z	5	127938.751	139518	16180.5	16180.5	1.362	H1-1b
38	H054	HSS4X4X4	0.112	42	27	0.082	81.375	z	2	127938.751	139518	16180.5	16180.5	1.359	H1-1b
39	H055	HSS4X4X4	0.121	42	36	0.082	81.375	z	11	127938.751	139518	16180.5	16180.5	1.35	H1-1b
40	H056	HSS4X4X4	0.122	42	33	0.081	81.375	z	8	127938.751	139518	16180.5	16180.5	1.354	H1-1b
41	H057	L2X2X3	0.156	28.152	7	0.004	55.154	z	8	8113.664	32490	774.606	1321.702	1.136	H2-1
42	H058	L2X2X3	0.246	27.003	6	0.003	55.154	z	10	8113.664	32490	774.606	1321.702	1.136	H2-1
43	H059	L2X2X3	0.155	28.152	4	0.004	55.154	z	5	8113.664	32490	774.606	1321.702	1.136	H2-1
44	H060	L2X2X3	0.246	27.003	3	0.003	55.154	z	13	8113.664	32490	774.606	1321.702	1.136	H2-1
45	H061	L2X2X3	0.154	28.152	13	0.004	55.154	z	2	8113.664	32490	774.606	1321.702	1.136	H2-1
46	H062	L2X2X3	0.244	27.003	12	0.003	55.154	z	10	8113.664	32490	774.606	1321.702	1.136	H2-1
47	H063	L2X2X3	0.154	28.152	10	0.004	55.154	z	11	8113.664	32490	774.606	1321.702	1.136	H2-1
48	H064	L2X2X3	0.244	27.003	9	0.003	55.154	z	7	8113.664	32490	774.606	1321.702	1.136	H2-1
49	H065	PIPE_3.0	0.17	28.125	3	0.203	56.25		8	28615.556	85698	7555.5	7555.5	1.904	H1-1b
50	H066	PIPE_3.0	0.17	28.125	12	0.203	56.25		5	28615.556	85698	7555.5	7555.5	1.893	H1-1b
51	H067	PIPE_3.0	0.171	28.125	9	0.204	56.25		2	28615.556	85698	7555.5	7555.5	1.906	H1-1b

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
52	H068	PIPE_3.0	0.171	28.125	6	0.203	56.25		11	28615.556	85698	7555.5	7555.5	1.918	H1-1b
53	MP070	PIPE_2.5	0.542	40.5	9	0.057	40.5		9	33279.138	50715	3596.25	3596.25	1.901	H1-1b
54	MP072	PIPE_2.5	0.12	34.5	7	0.015	34.5		7	37308.199	50715	3596.25	3596.25	1.949	H1-1b
55	MP074	PIPE_2.5	0.542	40.5	6	0.057	40.5		6	33279.138	50715	3596.25	3596.25	2.259	H1-1b
56	MP076	PIPE_2.5	0.12	34.5	4	0.015	34.5		4	37308.199	50715	3596.25	3596.25	1.949	H1-1b
57	MP078	PIPE_2.5	0.544	40.5	3	0.057	40.5		3	33279.138	50715	3596.25	3596.25	2.246	H1-1b
58	MP080	PIPE_2.5	0.12	34.5	13	0.015	34.5		13	37308.199	50715	3596.25	3596.25	2.964	H1-1b
59	MP082	PIPE_2.5	0.544	40.5	12	0.057	40.5		12	33279.138	50715	3596.25	3596.25	1.899	H1-1b
60	MP084	PIPE_2.5	0.12	34.5	10	0.015	34.5		10	37308.199	50715	3596.25	3596.25	2.964	H1-1b
61	H093	L4X3X4	0.227	42.957	79	0.051	42.957	y	7	39025.289	54756	1795.037	4128.445	1.5	H2-1
62	H094	L4X3X4	0.224	42.957	100	0.051	42.957	y	4	39025.289	54756	1795.037	4128.445	1.5	H2-1
63	H095	L4X3X4	0.244	42.957	7	0.067	42.957	z	9	39025.289	54756	1843.734	4600.961	1.5	H2-1
64	H096	L4X3X4	0.248	42.957	10	0.067	42.957	z	12	39025.289	54756	1843.734	4600.961	1.5	H2-1

RAN Template:	A&L Template:
4Sec-67E5A998E Hybrid	4Sec-67E5998E_1xAIR+1OP

CT11167A_L600_5_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: L600_L600 Coverage

Section 1 - Site Information

Site ID: CT11167A
Status: Draft
Version: 5
Project Type: L600
Approved: Not Approved
Approved By: Not Approved
Last Modified: 7/6/2021 3:38:56 PM
Last Modified By: Dominic.Kallas2@T-Mobile.com

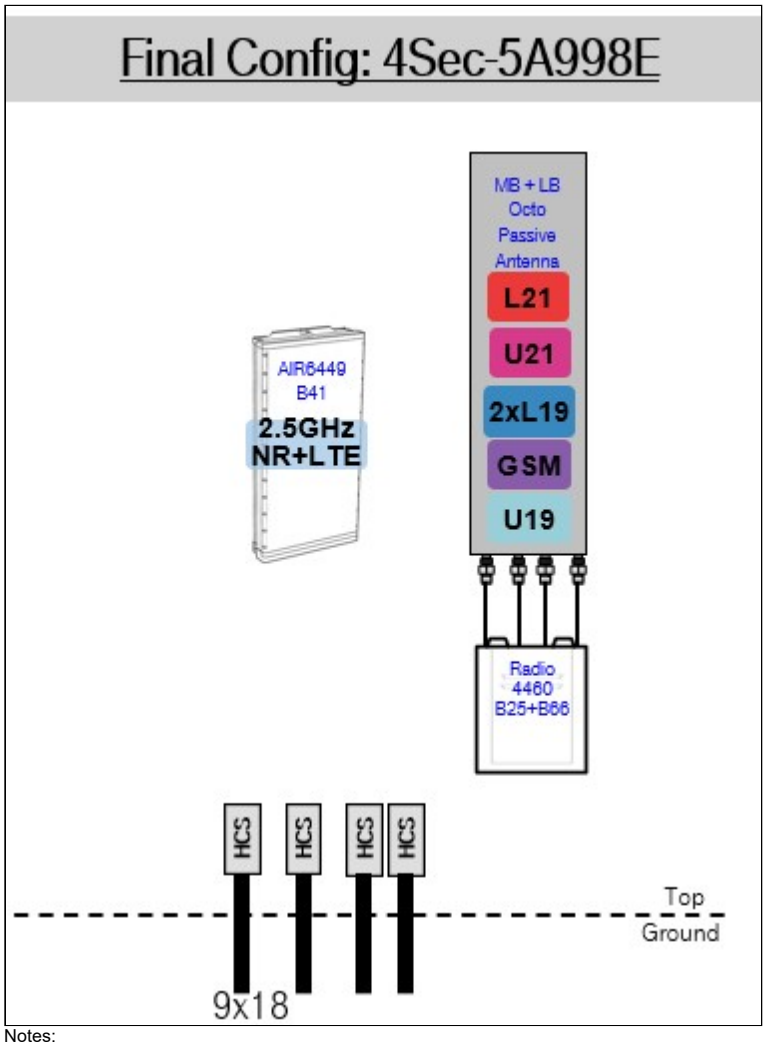
Site Name: Madison South / Rt 1
Site Class: Monopole
Site Type: Structure Non Building
Plan Year: 2021
Market: CONNECTICUT CT
Vendor: Ericsson
Landlord: <undefined>

Latitude: 41.28562400
Longitude: -72.60131100
Address: 8 Old Route 79
City, State: Madison, CT
Region: NORTHEAST

RAN Template: 4Sec-67E5A998E Hybrid			AL Template: 4Sec-67E5998E_1xAIR+1OP	
Sector Count: 4	**Antenna Count:** 8	**Coax Line Count:** 0	**TMA Count:** 0	**RRU Count:** 8

Section 2 - Existing Template Images

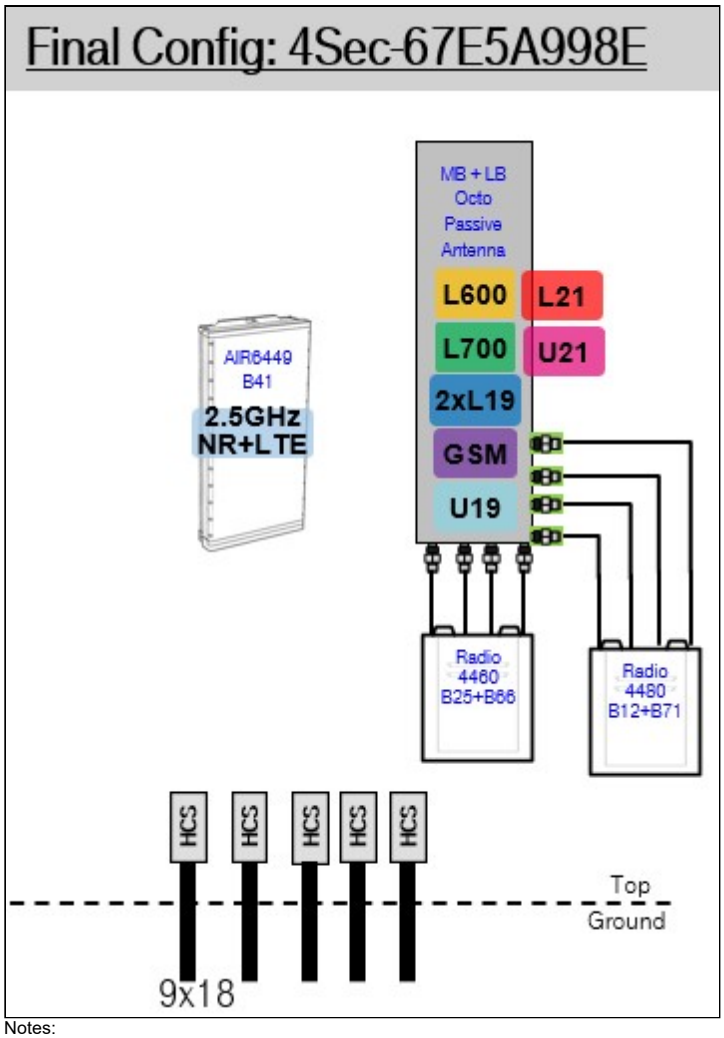
4Sec-5A998E.jpg



Notes:

Section 3 - Proposed Template Images

4Sec-67E5A998E.jpg



Notes:

Section 4 - Siteplan Images

----- This section is intentionally blank. -----

RAN Template:	A&L Template:
4Sec-67E5A998E Hybrid	4Sec-67E5998E_1xAIR+1OP

CT11167A_L600_5_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: L600_L600 Coverage

Section 5 - RAN Equipment

Existing RAN Equipment

Template: 4Sec-5A998E Hybrid

Enclosure	1	2	3
Enclosure Type	RBS 6102	Enclosure 6160	B160
Baseband	DUW30 (U2100); DUG20 (x 2) (G1900); BB 6648 (L1900, L2100)	BB 6648 (L2500, N2500)	
Hybrid Cable System	Ericsson Hybrid Trunk 6/24 4AWG 50m (x 4)	PSU 4813 (x 2); Ericsson Hybrid Trunk 6/24 4AWG 50m (x 4)	
Transport System		CSR IXRe V2 (Gen2)	

Proposed RAN Equipment

Template: 4Sec-67E5A998E Hybrid

Enclosure	1	2	3
Enclosure Type	RBS 6102	Enclosure 6160	B160
Baseband	DUW30 (U2100); DUG20 (x 2) (G1900); BB 6648 (L1900, L2100); BB 6648 (L700, L600, N600)	BB 6648 (L2500, N2500)	
Hybrid Cable System	Ericsson Hybrid Trunk 6/24 4AWG 50m (x 4); PSU 4813 (x 2)	PSU 4813 (x 2); Ericsson Hybrid Trunk 6/24 4AWG 50m (x 4)	
Transport System		CSR IXRe V2 (Gen2)	

RAN Scope of Work:

Add (1) BB6648 for L600, L700, and N600 (MMBB - Mixed Mode Baseband) to the existing base station cabinet.

Add (2) PSU4813 Voltage Booster. Connect DC for the Radio 4480 B71+B85 to the new PSU4813 Voltage Boosters.

RAN Template:	A&L Template:
4Sec-67E5A998E Hybrid	4Sec-67E5998E_1xAIR+1OP

CT11167A_L600_5_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: L600_L600 Coverage

Section 6 - A&L Equipment

Existing Template: 4Sec-5998E_1xAIR+1QP
Proposed Template: 4Sec-67E5998E_1xAIR+1OP

Sector 1 (Existing) view from behind

Coverage Type	A - Outdoor Macro			
Antenna	**1**		**2**	
Antenna Model	RFS - APX16DWV-16DWV-S-E-A20 (Quad)		Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)	
Azimuth	20		20	
M. Tilt	0		0	
Height	120		120	
Ports	**P1**	**P2**	**P3**	**P4**
Active Tech.	U2100 L1900 G1900 L2100	U2100 L1900 G1900 L2100	L2500 N2500	L2500 N2500
Dark Tech.				
Restricted Tech.				
Decomm. Tech.				
E. Tilt	2	2	2	2
Cables	Coax Jumper **(x2)** Fiber Jumper **(x2)**	Coax Jumper **(x2)** Fiber Jumper **(x2)**	Fiber Jumper **(x2)**	Fiber Jumper **(x2)**
TMAs				
Diplexers / Combiners				
Radio	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)		
Sector Equipment				

Unconnected Equipment:

Scope of Work:

Remove all existing antennae.

Remove all TMAs.

Remove all coaxial lines.

Install (1) Mid-Band Quad in Position 1.

Add (1) Radio 4460 B25+B66 for L2100, L1900, GSM, and U2100 to Position 1 at antenna.

Install (1) AIR6449 B41 for L2500 and N2500 in Position 2.

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:
4Sec-67E5A998E Hybrid	4Sec-67E5998E_1xAIR+1OP

CT11167A_L600_5_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: L600_L600 Coverage

Sector 1 (Proposed) view from behind

Coverage Type	A - Outdoor Macro					
Antenna	1				2	
Antenna Model	RFS - APXVAALL24_43-U-NA20 (Octo)				Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)	
Azimuth	20				20	
M. Tilt	0				0	
Height	120				120	
Ports	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**
Active Tech.	L700 L600 N600	L700 L600 N600	U2100 L1900 G1900 L2100	U2100 L1900 G1900 L2100	L2500 N2500	L2500 N2500
Dark Tech.						
Restricted Tech.						
Decomm. Tech.						
E. Tilt	2	2			2	2
Cables	Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper **(x2)**	Coax Jumper **(x2)** Fiber Jumper **(x2)**	Fiber Jumper **(x2)**	Fiber Jumper **(x2)**
TMAs						
Diplexers / Combiners						
Radio	Radio 4480 B71+B85 (At Antenna)	SHARED Radio 4480 B71+B85 (At Antenna)	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)		
Sector Equipment						

Unconnected Equipment:

Scope of Work:

Replace Mid-Band Quad in Position 1 with (1) Low-Band/Mid-Band Octo.

Connect the Radio 4460 B25+B66 to the Mid-Band ports of the Octo Antenna.

Add (1) Radio 4480 B71+B85 for L600, L700, and N600 in Position 1 at antenna, and connect its ports to the Low-Band ports of the Octo 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:
4Sec-67E5A998E Hybrid	4Sec-67E5998E_1xAIR+1OP

CT11167A_L600_5_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: L600_L600 Coverage

Sector 2 (Existing) view from behind				
Coverage Type	A - Outdoor Macro			
Antenna	1		2	
Antenna Model	RFS - APX16DWV-16DWV-S-E-A20 (Quad)		Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)	
Azimuth	110		110	
M. Tilt	0		0	
Height	120		120	
Ports	P1	P2	P3	P4
Active Tech.	U2100 L1900 G1900 L2100	U2100 L1900 G1900 L2100	L2500 N2500	L2500 N2500
Dark Tech.				
Restricted Tech.				
Decomm. Tech.				
E. Tilt	2	2	2	2
Cables	Coax Jumper **(x2)** Fiber Jumper **(x2)**	Coax Jumper **(x2)** Fiber Jumper **(x2)**	Fiber Jumper **(x2)**	Fiber Jumper **(x2)**
TMAs				
Diplexers / Combiners				
Radio	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)		
Sector Equipment				

Unconnected Equipment:

Scope of Work:

Remove all existing antennae.

Remove all TMAs.

Remove all coaxial lines.

Install (1) Mid-Band Quad in Position 1.

Add (1) Radio 4460 B25+B66 for L2100, L1900, GSM, and U2100 to Position 1 at antenna.

Install (1) AIR6449 B41 for L2500 and N2500 in Position 2.

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:
4Sec-67E5A998E Hybrid	4Sec-67E5998E_1xAIR+1OP

CT11167A_L600_5_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: L600_L600 Coverage

Sector 2 (Proposed) view from behind

Coverage Type	A - Outdoor Macro					
Antenna	1				2	
Antenna Model	RFS - APXVAALL24_43-U-NA20 (Octo)				Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)	
Azimuth	110				110	
M. Tilt	0				0	
Height	120				120	
Ports	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**
Active Tech.	L700 L600 N600	L700 L600 N600	U2100 L1900 G1900 L2100	U2100 L1900 G1900 L2100	L2500 N2500	L2500 N2500
Dark Tech.						
Restricted Tech.						
Decomm. Tech.						
E. Tilt	2	2			2	2
Cables	Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper **(x2)**	Coax Jumper **(x2)** Fiber Jumper **(x2)**	Fiber Jumper **(x2)**	Fiber Jumper **(x2)**
TMAs						
Diplexers / Combiners						
Radio	Radio 4480 B71+B85 (At Antenna)	SHARED Radio 4480 B71+B85 (At Antenna)	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)		
Sector Equipment						

Unconnected Equipment:

Scope of Work:

Replace Mid-Band Quad in Position 1 with (1) Low-Band/Mid-Band Octo.

Connect the Radio 4460 B25+B66 to the Mid-Band ports of the Octo Antenna.

Add (1) Radio 4480 B71+B85 for L600, L700, and N600 in Position 1 at antenna, and connect its ports to the Low-Band ports of the Octo 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:
4Sec-67E5A998E Hybrid	4Sec-67E5998E_1xAIR+1OP

CT11167A_L600_5_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: L600_L600 Coverage

Sector 3 (Existing) view from behind

Coverage Type	A - Outdoor Macro			
Antenna	**1**		**2**	
Antenna Model	RFS - APX16DWV-16DWV-S-E-A20 (Quad)		Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)	
Azimuth	290		290	
M. Tilt	0		0	
Height	120		120	
Ports	**P1**	**P2**	**P3**	**P4**
Active Tech.	U2100 L1900 G1900 L2100	U2100 L1900 G1900 L2100	L2500 N2500	L2500 N2500
Dark Tech.				
Restricted Tech.				
Decomm. Tech.				
E. Tilt	2	2	2	2
Cables	Coax Jumper **(x2)** Fiber Jumper **(x2)**	Coax Jumper **(x2)** Fiber Jumper **(x2)**	Fiber Jumper **(x2)**	Fiber Jumper **(x2)**
TMAs				
Diplexers / Combiners				
Radio	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)		
Sector Equipment				

Unconnected Equipment:

Scope of Work:

Remove all existing antennae.

Remove all TMAs.

Remove all coaxial lines.

Install (1) Mid-Band Quad in Position 1.

Add (1) Radio 4460 B25+B66 for L2100, L1900, GSM, and U2100 to Position 1 at antenna.

Install (1) AIR6449 B41 for L2500 and N2500 in Position 2.

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:
4Sec-67E5A998E Hybrid	4Sec-67E5998E_1xAIR+1OP

CT11167A_L600_5_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: L600_L600 Coverage

Sector 3 (Proposed) view from behind

Coverage Type	A - Outdoor Macro					
Antenna	1				2	
Antenna Model	RFS - APXVAALL24_43-U-NA20 (Octo)				Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)	
Azimuth	290				290	
M. Tilt	0				0	
Height	120				120	
Ports	P1	P2	P3	P4	P5	P6
Active Tech.	L700 L600 N600	L700 L600 N600	U2100 L1900 G1900 L2100	U2100 L1900 G1900 L2100	L2500 N2500	L2500 N2500
Dark Tech.						
Restricted Tech.						
Decomm. Tech.						
E. Tilt	2	2			2	2
Cables	Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper **(x2)**	Coax Jumper **(x2)** Fiber Jumper **(x2)**	Fiber Jumper **(x2)**	Fiber Jumper **(x2)**
TMAs						
Diplexers / Combiners						
Radio	Radio 4480 B71+B85 (At Antenna)	SHARED Radio 4480 B71+B85 (At Antenna)	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)		
Sector Equipment						

Unconnected Equipment:

Scope of Work:

Replace Mid-Band Quad in Position 1 with (1) Low-Band/Mid-Band Octo.

Connect the Radio 4460 B25+B66 to the Mid-Band ports of the Octo Antenna.

Add (1) Radio 4480 B71+B85 for L600, L700, and N600 in Position 1 at antenna, and connect its ports to the Low-Band ports of the Octo 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:
4Sec-67E5A998E Hybrid	4Sec-67E5998E_1xAIR+1OP

CT11167A_L600_5_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: L600_L600 Coverage

Sector 4 (Existing) view from behind				
Coverage Type	A - Outdoor Macro			
Antenna	**1**		**2**	
Antenna Model	RFS - APX16DWV-16DWV-S-E-A20 (Quad)		Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)	
Azimuth	200		200	
M. Tilt	0		0	
Height	120		120	
Ports	**P1**	**P2**	**P3**	**P4**
Active Tech.	U2100 L1900 G1900 L2100	U2100 L1900 G1900 L2100	L2500 N2500	L2500 N2500
Dark Tech.				
Restricted Tech.				
Decomm. Tech.				
E. Tilt	2	2	2	2
Cables	Coax Jumper **(x2)** Fiber Jumper **(x2)**	Coax Jumper **(x2)** Fiber Jumper **(x2)**	Fiber Jumper **(x2)**	Fiber Jumper **(x2)**
TMAs				
Diplexers / Combiners				
Radio	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)		
Sector Equipment				

Unconnected Equipment:

Scope of Work:

Remove all existing antennae.

Remove all TMAs.

Remove all coaxial lines.

Install (1) Mid-Band Quad in Position 1.

Add (1) Radio 4460 B25+B66 for L2100, L1900, GSM, and U2100 to Position 1 at antenna.

Install (1) AIR6449 B41 for L2500 and N2500 in Position 2.

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:
4Sec-67E5A998E Hybrid	4Sec-67E5998E_1xAIR+1OP

CT11167A_L600_5_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: L600_L600 Coverage

Sector 4 (Proposed) view from behind

Coverage Type	A - Outdoor Macro					
Antenna	1				2	
Antenna Model	RFS - APXVAALL24_43-U-NA20 (Octo)				Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)	
Azimuth	200				200	
M. Tilt	0				0	
Height	120				120	
Ports	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**
Active Tech.	L700 L600 N600	L700 L600 N600	U2100 L1900 G1900 L2100	U2100 L1900 G1900 L2100	L2500 N2500	L2500 N2500
Dark Tech.						
Restricted Tech.						
Decomm. Tech.						
E. Tilt	2	2			2	2
Cables	Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper **(x2)**	Coax Jumper **(x2)** Fiber Jumper **(x2)**	Fiber Jumper **(x2)**	Fiber Jumper **(x2)**
TMAs						
Diplexers / Combiners						
Radio	Radio 4480 B71+B85 (At Antenna)	SHARED Radio 4480 B71+B85 (At Antenna)	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)		
Sector Equipment						

Unconnected Equipment:

Scope of Work:

Replace Mid-Band Quad in Position 1 with (1) Low-Band/Mid-Band Octo.

Connect the Radio 4460 B25+B66 to the Mid-Band ports of the Octo Antenna.

Add (1) Radio 4480 B71+B85 for L600, L700, and N600 in Position 1 at antenna, and connect its ports to the Low-Band ports of the Octo 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:
4Sec-67E5A998E Hybrid	4Sec-67E5998E_1xAIR+1OP

CT11167A_L600_5_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: L600_L600 Coverage

Section 7 - Power Systems Equipment

	Existing Power Systems Equipment
Enclosure	**1**
Enclosure Type	Enclosure 6160
Baseband	BB 6648 L2500 N2500
Hybrid Cable System	PSU 4813 **(x 2)** Ericsson Hybrid Trunk 6/24 4AWG 50m **(x 4)**
Transport System	CSR IXRe V2 (Gen2)

	Proposed Power Systems Equipment
Enclosure	**1**
Enclosure Type	Enclosure 6160

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: CT11167A

Madison South / Rt 1
8 Old Route 79
Madison, Connecticut 06443

December 8, 2021

EBI Project Number: 6221007675

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**40.75%**

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

December 8, 2021

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

Emissions Analysis for Site: CT11167A - Madison South / Rt 1

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **8 Old Route 79** in **Madison, 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 8 Old Route 79 in Madison, 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 power density calculations, the broadcast footprint of the AIR6449 antenna has been considered. Due to the beamforming nature of this antenna, the actual beam locations vary depending on demand and are narrow in nature. Using the broadcast footprint accounts for the potential location of beams at any given time.

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 RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector A, the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector B, the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 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 centerlines of the proposed antennas are 120 and 121 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.

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd / 16.45 dBd
Height (AGL):	121 feet	Height (AGL):	121 feet	Height (AGL):	121 feet
Channel Count:	15	Channel Count:	15	Channel Count:	15
Total TX Power (W):	620 Watts	Total TX Power (W):	620 Watts	Total TX Power (W):	620 Watts
ERP (W):	20,518.14	ERP (W):	20,518.14	ERP (W):	20,518.14
Antenna A1 MPE %:	**7.14%**	Antenna B1 MPE %:	**7.14%**	Antenna C1 MPE %:	**7.14%**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd
Height (AGL):	120 feet	Height (AGL):	120 feet	Height (AGL):	120 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	36,356.09	ERP (W):	36,356.09	ERP (W):	36,356.09
Antenna A2 MPE %:	**10.06%**	Antenna B2 MPE %:	**10.06%**	Antenna C2 MPE %:	**10.06%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	17.19%
AT&T	4.36%
Metro PCS	1.06%
Nextel	0.34%
Verizon	16.17%
Town	0.14%
Sprint	1.49%
Site Total MPE % :	40.75%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	17.19%
T-Mobile Sector B Total:	17.19%
T-Mobile Sector C Total:	17.19%
Site Total MPE % :	40.75%

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 600 MHz LTE	2	591.73	121.0	3.22	600 MHz LTE	400	0.80%
T-Mobile 600 MHz NR	1	1577.94	121.0	4.29	600 MHz NR	400	1.07%
T-Mobile 700 MHz LTE	2	695.22	121.0	3.78	700 MHz LTE	467	0.81%
T-Mobile 1900 MHz GSM	4	1052.26	121.0	11.44	1900 MHz GSM	1000	1.14%
T-Mobile 1900 MHz LTE	2	2104.51	121.0	11.44	1900 MHz LTE	1000	1.14%
T-Mobile 2100 MHz UMTS	2	1324.71	121.0	7.20	2100 MHz UMTS	1000	0.72%
T-Mobile 2100 MHz LTE	2	2649.42	121.0	14.40	2100 MHz LTE	1000	1.44%
T-Mobile 2500 MHz LTE 1C & 2C Traffic	1	11044.63	120.0	30.55	2500 MHz LTE 1C & 2C Traffic	1000	3.06%
T-Mobile 2500 MHz LTE 1C & 2C Broadcast	1	1074.06	120.0	2.97	2500 MHz LTE 1C & 2C Broadcast	1000	0.30%
T-Mobile 2500 MHz NR Traffic	1	22089.26	120.0	61.11	2500 MHz NR Traffic	1000	6.11%
T-Mobile 2500 MHz NR Broadcast	1	2148.13	120.0	5.94	2500 MHz NR Broadcast	1000	0.59%
						Total:	**17.19%**

• 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:	17.19%
Sector B:	17.19%
Sector C:	17.19%
T-Mobile Maximum MPE % (Sector A):	17.19%
Site Total:	40.75%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **40.75%** 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.